

About DW-8K

The Korg DW-8000 arrived during one of the most exciting periods in synthesizer history. Digital technology was transforming electronic music, enabling entirely new sounds and ways of creating them. Yet analog synthesizers still possessed something musicians weren't ready to give up: the warmth and expressive character of real voltage-controlled filters and amplifiers. The DW-8000 brought these two worlds together in an exceptionally powerful and versatile instrument.

Introduced in the mid-1980s, the DW-8000 was an eight-voice programmable polyphonic synthesizer built around Korg's Digital Waveform Generation System, or DWGS. Rather than relying entirely on the familiar sawtooth, square, and pulse waves of traditional analog synths, the DW-8000 provided 16 digitally generated waveforms with considerably more varied harmonic character. These included conventional synthesizer waveforms alongside

complex tones inspired by acoustic instruments such as pianos, organs, guitars, brass, and strings.

Two independent digital oscillators per voice allowed musicians to combine these waveforms, adjust their relative tuning, and create sounds that would have been difficult to achieve with conventional analog oscillators alone. But instead of sending these digital waveforms through an entirely digital synthesis engine, Korg routed them through analog voltage-controlled filters and amplifiers. The result combined the distinctive harmonic structures of digital waveforms with the familiar warmth and tonal shaping of analog subtractive synthesis. This meant that bright, metallic, and harmonically complex waveforms could be softened into lush pads, shaped into punchy basses, or swept through resonant filters to produce animated, evolving timbres. The instrument could sound unmistakably digital one moment and surprisingly analog the next, often finding its most interesting territory somewhere between the two.

The DW-8000 also offered more sophisticated sound shaping than its relatively modest control panel might suggest. Independent six-stage filter and amplifier envelopes provided more flexibility than conventional ADSR designs, while oscillator autobend, a modulation generator, velocity sensitivity, and keyboard aftertouch added even more expressive possibilities.

Its built-in digital delay was another key ingredient. Capable of producing chorus, flanging, and delay effects, it gave the DW-8000 an additional dimension of ambience and movement. An integrated arpeggiator, MIDI implementation, and programmable patch memory further established the instrument as an extremely capable performance and production synthesizer.

That said, programming the original required patience. Rather than providing a dedicated knob for every function, the DW-8000 relied on numbered parameters, an edit slider, buttons, and small numerical displays. The underlying synthesis architecture was versatile and rewarding, but exploring it wasn't always easy or immediate.

Nevertheless, the DW-8000 earned an enduring reputation for its distinctive sound. Its combination of digital harmonic complexity, resonant analog filtering, complex envelopes, and rich modulation effects gave it a musical personality that remains appealing even today.

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Enter Cherry Audio's DW-8K

Cherry Audio's DW-8K brings the character and distinctive synthesis approach of the original Korg instrument into a modern software synthesizer, while expanding its capabilities far beyond what was practical on the original hardware. At the heart of DW-8K are two digital waveform oscillators drawing on the DW-8000's characteristic 16-waveform architecture. The original instrument's oscillator tuning, autobend, analog-style filtering, six-stage envelopes, modulation generator, and digital delay provide a familiar foundation for exploring its distinctive hybrid sound.

But Cherry Audio hasn't simply recreated the original instrument's interface. DW-8K presents its synthesis controls on an expansive, hands-on panel where oscillators, filters, envelopes, modulation, and performance settings are immediately accessible. The sound-design process becomes more visual and direct, inviting experimentation without requiring musicians to memorize parameter numbers or navigate menus for every adjustment.

And there's even more to explore. DW-8K expands the oscillator architecture with additional waveform-shaping controls, an analog-style sub oscillator, and additional noise sources. Expanded filtering, modulation generators, a flexible modulation matrix, and expressive performance controls provide new possibilities for shaping and animating sounds.

A dual-layer architecture makes it possible to combine contrasting or complimentary timbres, create elaborate layered sounds, and construct keyboard splits. Modern performance features, including expanded MPE support, extend the instrument's expressive capabilities, while an integrated arpeggiator, polyphonic sequencer, parameter animation, and comprehensive effects processing provide powerful tools for adding still more movement, rhythm, and depth.

These additions make DW-8K considerably more versatile than its hardware ancestor while preserving the appeal of combining digital waveforms with subtractive synthesis.

The instrument's interface is organized around three main views:

Keyboard View provides an onscreen keyboard and performance controls for playing, auditioning, and shaping sounds in real time.

Motion View brings together the arpeggiator, sequencer, and parameter animation tools for creating rhythmic patterns, evolving sequences, and animated sound textures.

Effects View provides dedicated processing chains for the Upper and Lower synth layers, along with Global effects for shaping the combined sound.

Together, these views make it easy to move between creating a sound, performing it, bringing it to life with motion, and adding the finishing polish with a broad palette of effects.

Key Features

- Dual-layer operation with independent sound settings, keyboard splits, layering, dedicated effects processing, and up to 16 voices per layer.
- Two digital waveform oscillators featuring 16 selectable DWGS-style waveforms, additional waveform-shaping controls, oscillator tuning, and autobend
- An analog-style sub oscillator and multiple noise types for adding weight, texture, and additional harmonic complexity
- Expanded voltage-controlled filter modeling with resonance, keyboard tracking, envelope modulation, and selectable filter responses
- Flexible six-stage filter and amplifier envelopes for creating detailed tonal and amplitude contours
- Multiple modulation generators and a versatile modulation matrix for creating everything from subtle movement to complex, evolving sounds
- The original instrument's distinctive digital delay architecture, complemented by an expanded collection of modern effects
- Expressive performance features including velocity response, aftertouch, MPE, glide, and multiple voice assignment modes
- An integrated arpeggiator, step sequencer, and parameter animation tools for creating rhythmic and evolving performances
- Three independent effect chains with 25 studio-quality effects, including the astounding new Crush, Shimmer, and Sculpt effects
- A comprehensive preset browser, MIDI controller mapping, and support for standalone operation or use as a plug-in inside a compatible DAW
- Import original DW-8000 programs with SysEx or cassette data backup (as WAV files) via drag-and-drop

Getting to Know DW-8K

One of the pleasures of DW-8K is how much sonic territory can be explored with just a few controls. Start with a single digital oscillator and audition its

waveforms. Notice how dramatically the harmonic character changes as you move between conventional synthesizer shapes and the more complex instrument-inspired waves. Open the filter to hear each waveform's full character, then gradually lower the cutoff and listen to how the sound changes.

Add the second oscillator and experiment with its interval and detune controls. Small tuning differences can create richness and movement, while larger intervals introduce entirely new harmonic relationships. Adjust the filter envelope to give the sound a sharp attack, a gentle swell, or a slowly evolving contour. Then introduce modulation or digital delay to add movement and dimension.

These simple experiments reveal much of what made the original DW-8000 special. Its sound wasn't defined by one particular oscillator waveform, filter setting, or effect. It emerged from the interaction of all these elements, particularly the way digitally generated harmonics responded to analog-style filtering and modulation.

Cherry Audio's additions provide even more territory to explore, but there's no need to master everything at once. Begin with the basic sound-generating architecture, learn how the filter and envelopes shape it, and introduce additional modulation, layers, sequencing, and effects as your musical ideas develop. Whether you're recreating the distinctive sounds of the original DW-8000 or exploring entirely new territory, DW-8K offers plenty of opportunities for discovery.

The chapters that follow explain each section of DW-8K in detail, with practical examples and sound-design techniques to help you make the most of the instrument.

Technical Assistance

Cherry Audio provides several resources to help with installation, authorization, software operation, and technical questions.

The Cherry Audio Forums are useful for general questions, sound-design discussions, product information, and advice from other Cherry Audio users.

For account, installation, authorization, or technical issues requiring direct assistance, contact Cherry Audio Technical Support.

Cherry Audio Forums: https://forums.cherryaudio.com/

Cherry Audio Technical Support: https://cherryaudio.kayako.com/

The next chapter, Getting Started, covers installation, authorization, audio and MIDI configuration, controller setup, and the quickest route to making your first sounds with DW-8K.

Getting Started

Cherry Audio DW-8K can be used as a standalone software instrument or as a plug-in inside a compatible digital audio workstation (DAW). Whether you're exploring factory presets, designing sounds from scratch, or incorporating DW-8K into a recording project, getting up and running is straightforward.

This chapter covers system requirements, installation and activation, audio and MIDI configuration, basic editing techniques, MIDI controller assignments, and the quickest route to making your first sounds.

System Requirements

DW-8K is designed for 64-bit Windows and macOS systems. Before installing, make sure your computer meets the following requirements.

Windows

- Windows 7 or newer
- 64-bit operating system required
- 3.4 GHz quad-core computer with 8 GB RAM recommended
- Internet connection for product download and activation

macOS

- macOS 10.13 or newer
- 64-bit operating system required
- Intel or Apple Silicon processor
- 3.4 GHz quad-core or Apple Silicon CPU with 8 GB RAM recommended
- Internet connection for product download and activation

DW-8K is available as a standalone instrument and as a plug-in for compatible DAWs.

Installing DW-8K

DW-8K can be installed using the downloadable installer from your Cherry Audio account or through Cherry Audio Sync, the company's free product management application.

Installing with the DW-8K Installer

To download and install DW-8K:

1. Sign in to your Cherry Audio account and locate DW-8K in your product library.
2. Download the appropriate installer for Windows or macOS.
3. When the download is complete, locate the installer and double-click it to begin installation.
4. Follow the on-screen instructions and select the desired standalone and plug-in formats.
5. When installation is complete, close the installer.

Installing with Cherry Audio Sync

Cherry Audio Sync provides a convenient way to download, install, update, and manage compatible Cherry Audio instruments, effects, and preset packs from one location.

To install DW-8K using Cherry Audio Sync:

1. Download and install Cherry Audio Sync from the Cherry Audio website.
2. Launch Sync and sign in using your Cherry Audio account credentials.
3. Locate DW-8K in your product library.
4. Follow the on-screen instructions to install the instrument.

Sync is particularly useful if you own several Cherry Audio products and want to manage their installations and updates without downloading separate installers.

Activating DW-8K

DW-8K requires authorization through your Cherry Audio account. When launching DW-8K for the first time, follow the login and authorization instructions that appear on screen. Because Cherry Audio's authorization process may change over time, always follow the instructions presented by the current version of the software.

Once authorized, DW-8K can be launched either as a standalone application or as an instrument plug-in inside a compatible DAW.

Using DW-8K as a Standalone Instrument

The standalone version of DW-8K can be played without opening a DAW. This is useful for exploring presets, practicing, experimenting with sound design, or simply enjoying the instrument without the additional setup of a recording project.

Before playing, open Settings > Audio/MIDI to choose the audio output and MIDI input devices you want to use. This tab is available only in the standalone application; when DW-8K runs as a plug-in, the host DAW manages its audio and MIDI connections.

Configuring Audio and MIDI

Use the Audio/MIDI tab to select an output device, sample rate, buffer size, and active MIDI inputs.

To configure DW-8K for standalone use:

1. Launch the standalone DW-8K application.
2. Click the **Settings** gear icon in the top toolbar.
3. Select the **Audio/MIDI** tab.
4. Choose your preferred audio interface or output device from the **Output** menu.
5. Select the desired **Sample Rate**.
6. Choose an appropriate **Audio Buffer Size**.
7. Under **Active MIDI Inputs**, enable the MIDI keyboard or controller you want to use.
8. Close the Settings window, then play your MIDI controller to confirm that DW-8K produces sound.

More than one MIDI input can be enabled. This is useful if your setup includes separate keyboards, pad controllers, control surfaces, or other MIDI devices.

Audio Buffer Size

The **Audio Buffer Size** determines the balance between playing responsiveness and audio processing stability.

- **Lower buffer sizes** reduce latency, or the delay between playing a note and hearing the result. This makes DW-8K feel more immediate when performing.
- **Higher buffer sizes** give your computer more time to process audio and can help prevent clicks, crackles, and dropouts when the system is under heavier load.

For normal playing, choose the lowest buffer setting that operates reliably on your system. A buffer size of 128 or 256 samples is often a reasonable starting point, although the ideal setting depends on your computer, audio interface, sample rate, and overall system load.

An external audio interface will generally provide better low-latency performance than a computer's built-in audio hardware, particularly when using a dedicated audio driver. If you hear clicks or dropouts while playing complex patches, increasing the buffer size is usually a good first troubleshooting step.

Playing DW-8K Without a MIDI Controller

You don't need an external MIDI keyboard to play DW-8K. The instrument provides two convenient ways to trigger notes directly from your computer.

The Virtual Keyboard

Click **KEYBOARD** at the lower-left corner of the DW-8K interface to display the instrument's full virtual keyboard and performance controls. You can play notes by clicking the onscreen keys with your mouse. The Keyboard view also provides access to pitch bend, modulation, tuning, octave selection, and other performance-related controls.

This is a quick way to audition presets, test sound-design changes, or explore DW-8K when a hardware controller isn't available.

QWERTY Musical Typing Keyboard

Cherry Audio also provides a separate **QWERTY Musical Typing Keyboard**, which lets you play notes using your computer's keyboard. Click the circular keyboard icon in the top toolbar to open the Musical Typing Keyboard.

The Musical Typing Keyboard lets you trigger notes using the corresponding computer keys or by clicking its onscreen keyboard. It also includes controls

for changing the keyboard range and working with velocity, pitch bend, modulation, and sustain. The Musical Typing Keyboard is particularly useful when working on a laptop or when you want to audition sounds without connecting external MIDI hardware.

Using DW-8K in a DAW

DW-8K can also run as an instrument plug-in inside a compatible DAW. The exact procedure varies between hosts, but the basic setup is similar.

To use DW-8K in a DAW:

1. Launch your DAW.
2. Create a new software instrument or instrument track.
3. Insert DW-8K as the instrument plug-in.
4. Select, enable, or record-arm the track as required by your DAW.
5. Play your MIDI controller and confirm that DW-8K receives MIDI data and produces audio.

If DW-8K does not appear in the DAW’s plug-in list after installation, restart the DAW or run its plug-in scan, and confirm that the appropriate plug-in format was installed.

When DW-8K runs as a plug-in, audio routing, MIDI input, sample rate, and buffer size are normally controlled by the DAW rather than DW-8K itself.

Tempo-related functions can follow the host application's tempo when their synchronization options are enabled. This makes it easy to keep DW-8K's rhythmic modulation and motion features aligned with your project.

Useful Editing Conventions

DW-8k uses Cherry Audio's standard editing conventions, making it easy to adjust parameters, enter precise values, and configure the interface to suit your working style. A few basic techniques are worth learning before exploring the instrument in detail.

Adjusting Controls

Click and drag a knob or slider to change its value. Click switches and buttons to select their available settings.

The **Settings > Interface** tab provides options for customizing the way controls respond to mouse movements.

The **Knob Movement** preference offers three operating methods:

- **Vertical Drag:** Move the mouse up or down to adjust a knob.
- **Horizontal Drag:** Move the mouse left or right to adjust a knob.
- **Rotary Drag:** Move the mouse around the knob to adjust its position.

Choose whichever method feels most comfortable.

The **Mouse Wheel Adjusts Control Value** option allows you to adjust compatible controls using your mouse's scroll wheel. This can be useful for making small adjustments without clicking and dragging.

Entering an Exact Value

Some sound-design tasks require more precision than simply dragging a control. When **Settings > Interface > On Control Double-Click** is set to **Edit Value**, double-click a compatible control, type the desired value, then press **Enter** or **Return**. This is particularly useful when you want to reproduce a parameter setting precisely or experiment with specific numerical values.

Resetting a Control

The same double-click preference can be configured to reset controls to their default values. When **On Control Double-Click** is set to **Sets Default Value**, double-clicking a compatible control returns it to its default setting. Because double-click behavior is configurable, check this preference if double-clicking a control doesn't produce the result you expect.

Tooltips

DW-8K displays useful parameter information in tooltips when controls are adjusted. The **Settings > Interface** tab includes options for configuring tooltip behavior, including tooltip delay and whether values are displayed during manual editing or automation.

Tooltips are especially helpful while learning DW-8K because they provide precise parameter information without cluttering the interface with permanently displayed values.

Focus and Interface Display

DW-8K includes Cherry Audio's **FOCUS** feature, which enlarges interface areas to make their controls easier to see and edit. Click **FOCUS** in the top

toolbar to enter Focus mode, then use the available interface controls to concentrate on the area you want to work with. The **HIDE EXTRAS** button provides another way to simplify the interface by hiding additional interface elements when they aren't needed.

These features are particularly useful when working on smaller displays or when you want to concentrate on a specific group of synthesis controls.

Using MIDI Learn

MIDI Learn lets you assign physical knobs, sliders, wheels, buttons, and other MIDI controls to onscreen DW-8K parameters. This can make programming and performing considerably more hands-on. For example, you might assign a hardware knob to filter cutoff, another to resonance, and a slider to envelope intensity. Once configured, these controls can be adjusted directly from your MIDI controller rather than requiring mouse movements.

Assigning a MIDI Controller

Cherry Audio's MIDI Learn system allows assignments to be created directly from the control you want to operate.

To assign a hardware control using MIDI Learn:

1. Right-click the DW-8K control you want to assign. For example, right-click **CUTOFF** in the Voltage Controlled Filter section.
2. Choose **MIDI Learn** from the context menu.
3. Move the desired knob, slider, wheel, or other control on your external MIDI controller.
4. DW-8K learns the incoming MIDI message and assigns it to the selected parameter.
5. Move the hardware control again to confirm that the onscreen parameter responds.

During MIDI Learn, Cherry Audio displays a colored overlay indicating that the selected control is waiting for incoming MIDI data. The overlay disappears when the assignment is completed.

If you accidentally enter MIDI Learn mode, right-click the control and choose **Stop Learning**.

The MIDI Tab

Click **MIDI** in DW-8K's top toolbar to display the MIDI tab. The MIDI tab provides a central location for viewing and editing MIDI controller assignments. Depending on the assigned controller and parameter, it allows you to adjust operating ranges, change response curves, invert controller behavior, and remove assignments. It also provides a convenient way to assign several controls in one session.

To assign multiple controls using the MIDI tab:

1. Click **MIDI** in the top toolbar.
2. Click **MIDI Learn**.
3. Click the first DW-8K control you want to assign.
4. Move the desired hardware control.
5. Click another DW-8K control.
6. Move the next hardware control.
7. Continue assigning controls as needed.
8. Click **Stop Learning** when you've finished.

A single hardware control can also be assigned to more than one DW-8K parameter. Combined with individual range and response settings, this makes it possible to create performance macros in which one hardware gesture changes several aspects of a sound at once.

For example, you could assign a single modulation wheel to increase filter cutoff while simultaneously increasing resonance or modulation intensity.

Removing MIDI Assignments

To remove an existing MIDI assignment, right-click the assigned parameter in the MIDI tab and choose **Unlearn**. Choose **Unlearn All** to clear the current set of controller assignments. Cherry Audio displays a warning before removing all assignments.

Remembering MIDI Mappings

Cherry Audio's MIDI settings include an option called **Remember MIDI Mappings For New Plug-in Instances**. When enabled, this allows your configured MIDI controller assignments to be reused when opening additional plug-in instances. This is particularly useful if you regularly use the same hardware controller with DW-8K. Once you've created a comfortable layout

for filter, envelope, modulation, and performance controls, you won't need to reconstruct those assignments every time you open another instance.

Your First Sound

With DW-8K installed and running, the best way to become familiar with the instrument is to start playing. The original Korg DW-8000 combined digital waveform generation with analog-style subtractive synthesis, giving it a distinctive character that could move effortlessly between familiar analog textures and bright, unusual digital timbres. Cherry Audio's DW-8K preserves that approach while adding an extensive collection of modern synthesis, modulation, layering, sequencing, and effects capabilities.

Despite all those additions, its basic signal path remains approachable. Digital oscillators generate the raw sound, the filter shapes its harmonic character, and the amplifier and envelopes determine how the sound develops over time.

The following exercise introduces the most important controls without requiring you to understand every detail of the instrument.

Exploring Your First DW-8K Patch

Begin with a factory preset you like, preferably a relatively simple sound without extensive sequencing or modulation.

1. Click the current preset name in the top toolbar to open the Preset Browser, then load a preset that interests you.
2. Play several notes and chords across the keyboard. Listen to the character of the sound, paying particular attention to its brightness, attack, sustain, and release.
3. Locate the **DIGITAL WAVEFORM OSCILLATOR 1** section on the left. Change its **WAVEFORM SELECT** setting and listen to how the different waveforms affect the basic timbre. Some will sound warm and familiar, while others introduce more complex digital harmonics.
4. Adjust Oscillator 1's **LEVEL** control. Notice how its contribution changes relative to the other sound sources.
5. Experiment with **DIGITAL WAVEFORM OSCILLATOR 2**. Change its waveform, then adjust **INTERVAL** and **DETUNE** to hear how the two oscillators interact.
6. Locate the **VOLTAGE CONTROLLED FILTER** section and adjust **CUTOFF**. Lowering the cutoff generally removes upper harmonics, making the

sound progressively darker. Raising it allows more high-frequency content through. Experiment with different **TYPE**, **RESPONSE**, and **SLOPE** settings. These are covered in greater detail in the Filter chapter.

7. Increase **RESONANCE** and listen to how the filter emphasizes frequencies around its cutoff point. Depending on the selected filter mode and cutoff setting, resonance can introduce anything from a subtle tonal emphasis to a pronounced, singing quality.
8. Adjust the filter's **EG INTENSITY** control. This determines how strongly the filter envelope influences cutoff, making it possible to create more pronounced attacks, sweeps, and evolving timbres.
9. Select **VCF** in the Envelope section, then click **VISUAL** to display the filter envelope graphically. Observe how its Attack, Decay, Break Point, Slope, Sustain, and Release stages determine the shape of the contour.
10. Select **VCA** to examine the amplifier envelope. Experiment with the Attack and Release settings to hear how the sound's volume develops when notes are played and released.
11. Explore the **MODULATION GENERATOR** section. Choose a modulation waveform, adjust **FREQUENCY**, and experiment with **OSC AMOUNT** for pitch movement or **VCF AMOUNT** for filter movement. Listen to how each destination changes the sound.
12. Experiment with the **DIGITAL DELAY** controls. Increase its effect level and explore different delay times and feedback settings to add space, dimension, or rhythmic echoes.
13. Click **EFFECTS** at the lower-left corner of the interface to open the Effects view. Explore the available processing controls and listen to how effects change the overall character of the patch.
14. Return to **KEYBOARD** view and continue experimenting with one or two controls at a time.

As you explore, keep in mind that DW-8K supports independent Upper and Lower synth layers. If a preset uses both layers, changes to the currently selected layer may affect only part of the overall sound. We'll explore layer editing and keyboard assignments in detail in later chapters.

You don't need to master every feature before you start creating interesting sounds. In fact, working with a fairly simple patch and making deliberate changes is often the fastest way to understand how the synth behaves. Start with the oscillators, shape the result with the filter and envelopes, then

introduce modulation and effects when you want additional movement or character. DW-8K rewards experimentation, and you'll quickly discover that even small changes can lead to surprisingly different sounds.

What to Explore Next

Once you’re comfortable changing presets and adjusting the main controls, try building a sound around one idea at a time. Begin with a digital waveform and shape it with the filter and VCF/VCA envelopes. Add Oscillator 2 or the Analog Sub Oscillator when you want more harmonic complexity or weight.

Next, introduce movement with the Modulation Generator or Digital Delay. When you’re ready for more elaborate sounds, explore the Mod Matrix, Upper and Lower layers, Motion Controls, and Effects view. The individual chapters explain each section in detail and include musical examples you can use as starting points for your own patches.

If You Don't Hear Anything

If DW-8K is running but doesn't make sound, check the following:

- Make sure the correct audio device is selected in **Settings > Audio/MIDI** when using the standalone application.
- Confirm that your MIDI keyboard or controller is enabled under **Active MIDI Inputs**.
- Check that the **MASTER VOLUME** control is turned up.
- Make sure at least one digital oscillator's **LEVEL** control is raised.
- Check the **VCA** envelope settings, particularly Sustain, to make sure the sound isn't fading away unexpectedly.
- Confirm that **FILTER CUTOFF** isn't set so low that most of the oscillator signal is being removed.
- If you're using a layered preset, check the selected layer and its output level.
- If you're using DW-8K in a DAW, make sure the instrument track is selected, enabled, or record-armed as required by the host.
- Confirm that your DAW is receiving MIDI data from the correct controller.
- Check that your audio interface, speakers, or headphones are connected and operating normally.

If a MIDI note is stuck, click the **MIDI Panic** button in the top toolbar to stop the notes.

Once DW-8K is making sound, you're ready to begin exploring the instrument in greater depth. The chapters that follow introduce its controls and synth architecture section by section.

DW-8K Overview

Cherry Audio DW-8K combines the familiar architecture of the original Korg DW-8000 with a considerably more extensive collection of sound-design and performance controls. Although there's plenty to explore, the interface is organized so that most of the instrument's essential synthesis functions are immediately accessible.

The main synthesis controls occupy the upper portion of the interface, while three selectable views provide access to the virtual keyboard, Motion Controls, and effects. Additional display options let you switch between the **Mod-Matrix** and **Motion-Touch** panels and choose how the envelopes are presented.

This arrangement makes it easy to move between sound design, performance, sequencing, and effects without losing sight of the instrument's core synthesis controls.

Let's take a quick tour.

Getting Oriented

The DW-8K interface can be divided into four main areas:

1. **Top Toolbar:** Provides preset management, settings, MIDI functions, tempo, and interface display options.
2. **Main Synthesis Panel:** Contains the oscillators, filters, envelopes, modulation controls, delay, glide, voice assignment, and layer output settings.
3. **Keyboard, Motion, and Effects Views:** Three selectable lower-panel displays provide access to performance controls, sequencing functions, and effects processing.
4. **Effects Strip:** A compact, five-slot effects section remains accessible along the bottom of the instrument, regardless of the selected view.

The main synthesis panel remains visible as you switch between Keyboard, Motion, and Effects views. This is particularly useful when designing sounds, since you can adjust oscillators, filters, and envelopes while working with the sequencer or effects.

DW-8K also supports two independent synth layers, called **Upper** and **Lower**. These can be used to create more elaborate sounds, including layered textures and keyboard splits. The layer selection controls determine which part of the instrument you're working with, while additional controls govern how the layers are assigned and played.



The Top Toolbar

The toolbar runs across the top of the DW-8K interface and provides access to frequently used functions.

New: Initializes a new preset, providing a starting point for creating a sound from scratch.

Save: Opens the preset-saving function so you can preserve your work.

Preset Name: Displays the currently loaded preset. Clicking the name opens the Preset Browser, where you can explore and load sounds from the instrument's preset library.

Previous/Next Preset: The left and right arrow buttons step through presets without opening the full browser.

Undo/Redo: Reverses or restores recent editing operations. These controls are particularly useful when experimenting with unfamiliar parameters.

Settings: Opens the Settings window, which includes interface preferences, audio and MIDI configuration where applicable, and other application options.

MIDI: Opens the MIDI assignment interface for mapping physical controller knobs, sliders, buttons, and other MIDI controls to DW-8K parameters.

MIDI Panic: Sends an all-notes-off command to help stop stuck or hanging notes.

Tempo: Displays the current tempo in beats per minute (BPM). Tempo-related settings are used by the instrument's synchronization-capable modulation, sequencing, and effects functions.

QWERTY Keyboard: Opens Cherry Audio's Musical Typing Keyboard, allowing you to play DW-8K using your computer keyboard.

Help: Provides access to help and documentation resources.

Focus: Activates Cherry Audio's Focus feature, which enlarges interface areas for easier viewing and editing.

Hide Extras: Provides a simplified interface presentation by hiding additional interface elements.

The toolbar also displays an **Edited** indicator when changes have been made to the currently loaded preset.

For more information about preset operations, see the **Top Toolbar and Preset Browser** chapter.



The Main Synthesis Panel

The main synthesis panel occupies the upper portion of the DW-8K interface. Its layout follows the instrument's sound-generating and sound-shaping architecture, with the primary synthesis controls grouped into clearly labeled sections.

These controls are available in all three main views.



Oscillator Waveforms

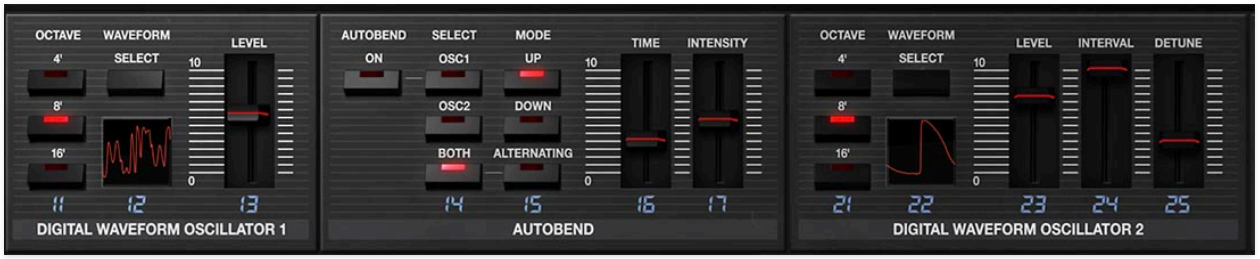
Across the upper-left portion of the interface is the **Oscillator Waveforms** display. This area presents DW-8K's 16 digital waveforms as miniature graphical representations, allowing you to see the shape and harmonic complexity of each waveform before selecting it. The waveforms include familiar shapes such as sawtooth, square, and sine, along with more complex waves inspired by acoustic instruments and other timbres.

The currently selected waveforms for Oscillator 1 and Oscillator 2 are highlighted in the display. Above the waveforms are individual **Phase**, **Fold**, and **Drive** controls for each oscillator, providing additional ways to shape their harmonic character.

The **Link** button between the two oscillator groups lets you operate these controls together. With **Link** enabled, adjusting **Phase**, **Fold**, or **Drive** changes the corresponding parameter for both oscillators. Disable Link to shape each oscillator independently.

The Oscillator Waveforms display also provides a quick way to select waveforms: hovering over the upper corner of a waveform reveals an **OSC1** selection label, while hovering over the lower corner reveals **OSC2**. Click the corresponding label to assign that waveform to the desired oscillator.

The **Oscillators** chapter explores the waveforms, Phase/Fold/Drive controls, and the musical possibilities of combining DW-8K’s sound sources.



Digital Waveform Oscillators 1 and 2

The two Digital Waveform Oscillator sections are located directly beneath the waveform display. Each oscillator includes controls for selecting its waveform, setting its octave range, and adjusting its output level. Oscillator 2 also provides **Interval** and **Detune** controls for changing its pitch relationship to Oscillator 1.

These two oscillators form the foundation of the DW-8K's distinctive sound. They can produce everything from simple, harmonically rich analog-style waveforms to more complex digital timbres. Because the oscillators can use

different waveforms and pitch settings, combining them offers considerably more tonal variety than using either oscillator alone.

Autobend

The **Autobend** section sits between the two digital oscillator sections. Autobend creates automatic pitch movement, allowing notes to begin above or below their intended pitch before settling into place. The section provides controls for enabling Autobend, selecting Oscillator 1, Oscillator 2, or both, choosing **Up**, **Down**, or **Alternating** pitch movement, and adjusting Time and Intensity. In Alternating mode, successive notes alternate between upward and downward bends.

This is particularly useful for expressive synthesizer brass, plucked sounds, percussive attacks, and other sounds that benefit from a little pitch movement at the beginning of a note.



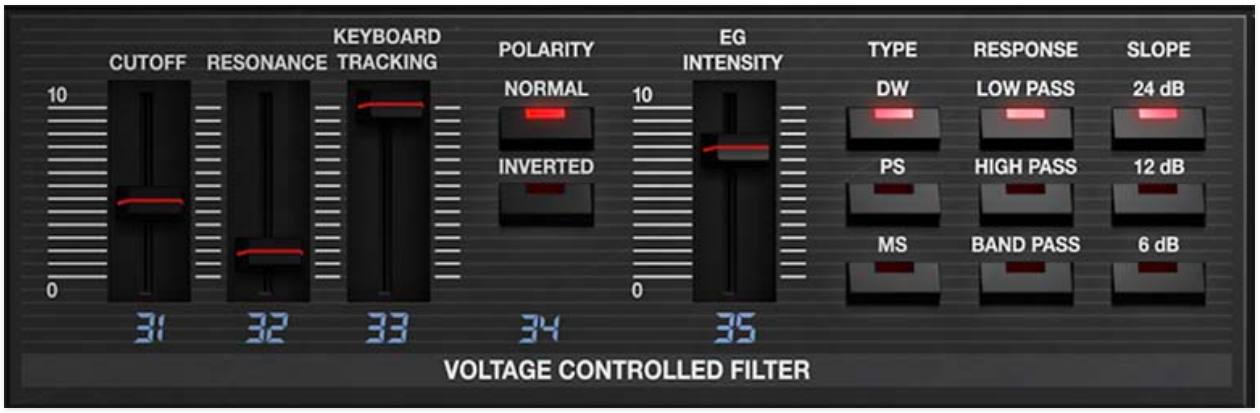
Noise Generator

The **Noise** section provides an additional sound source that can be mixed with the digital oscillators. It includes a Level control and three selectable noise types: White, Pink, and Brown. Noise is useful for creating breathy textures, percussion, wind effects, and the noisy attack components of acoustic and synthetic sounds.

Analog Sub Oscillator

Next to the Noise section is the **Analog Sub Oscillator**, which adds a further oscillator source to the instrument. It includes octave and waveform selections, along with controls for Interval, Drift, and Level. The sub oscillator

is especially useful for reinforcing bass frequencies, thickening leads, and adding additional body to sounds built around the two digital oscillators.



Voltage Controlled Filter

The **Voltage Controlled Filter** section provides DW-8K's primary tonal shaping controls. Here you'll find Cutoff, Resonance, Keyboard Tracking, envelope Polarity, and EG Intensity, along with selections for filter Type, Response, and Slope. The filter determines which portions of the oscillators' harmonic content are emphasized or attenuated, making it one of the most important controls for shaping the character of a sound.

In addition to the classic DW-style filter, DW-8K provides expanded filtering options that allow a broader range of tonal treatments. The **Filter** chapter explores these controls in detail, including practical techniques for basses, leads, pads, and more experimental sounds.



Envelope Generators

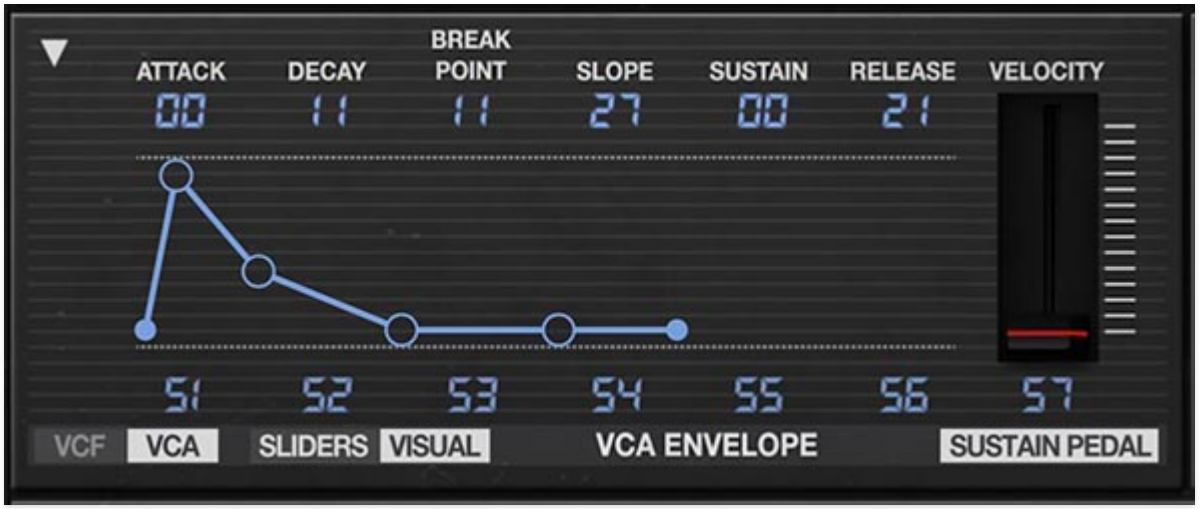
The envelope section is located along the lower-left portion of the main synthesis panel. DW-8K provides separate envelopes for the Voltage Controlled Filter (**VCF**) and Voltage Controlled Amplifier (**VCA**). Select the envelope you want to view using the VCF and VCA buttons at the lower-left corner of the section.

The envelopes include seven controls:

- **Attack:** Determines the initial rise of the envelope.
- **Decay:** Controls the transition from the initial peak toward the Break Point.
- **Break Point:** Sets an intermediate envelope level.
- **Slope:** Controls the transition from the Break Point toward the Sustain level.
- **Sustain:** Determines the envelope level while a note is held, following the preceding stages.
- **Release:** Controls how the envelope returns to its resting level after a note is released.
- **Velocity:** Adjusts the envelope's response to playing velocity.

Unlike a conventional ADSR envelope, DW-8K's additional Break Point and Slope stages make it possible to create more elaborate contours.

This is especially useful for sounds that change their brightness or volume in several distinct phases.



Sliders and Visual Display Modes

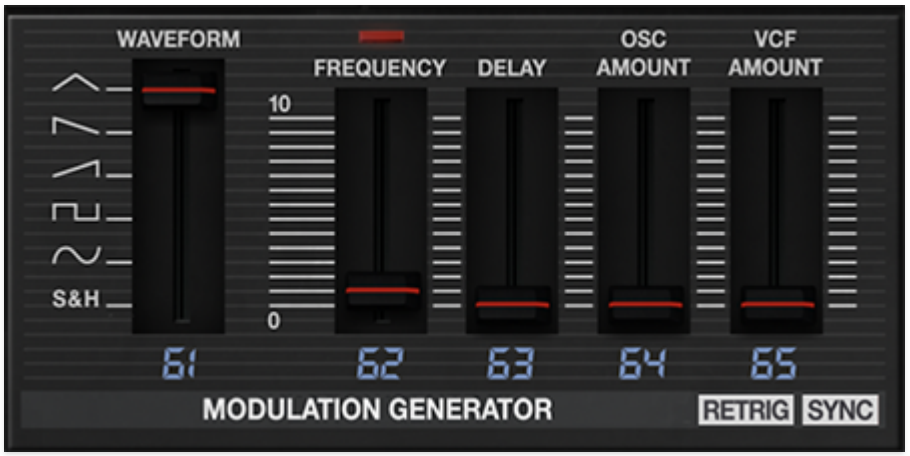
The envelope section offers two alternative display modes, selected using the **Sliders** and **Visual** buttons.

Sliders Mode presents the envelope parameters as individual vertical sliders. This provides a familiar, direct approach to adjusting each stage.

Visual Mode presents the envelope as a graphical contour, with stage points showing how its level changes over time. Parameter labels and values remain visible, making it easy to understand the relationship between the envelope's settings and its overall shape.Drag the envelope stage points to edit their timing and level directly. The corresponding parameter values update as you move them

Both modes provide access to the same underlying envelope settings. Switching between them changes how the envelope is presented, rather than selecting a different envelope. The Velocity control remains accessible alongside the graphical display.

You can choose whichever presentation best suits the task. Sliders are convenient for working with individual parameters, while Visual mode makes it easier to understand the contour as a whole. The **Envelopes** chapter explains both display modes and the musical applications of the expanded envelope architecture.



Modulation Generator

The **Modulation Generator** section is located to the right of the envelopes. It provides several modulation waveforms, along with Frequency, Delay, Osc Amount, and VCF Amount controls.

The modulation generator can introduce periodic movement to the oscillator pitch and filter cutoff, providing familiar effects such as vibrato and repeating filter sweeps. Retrigger and synchronization controls are also available.

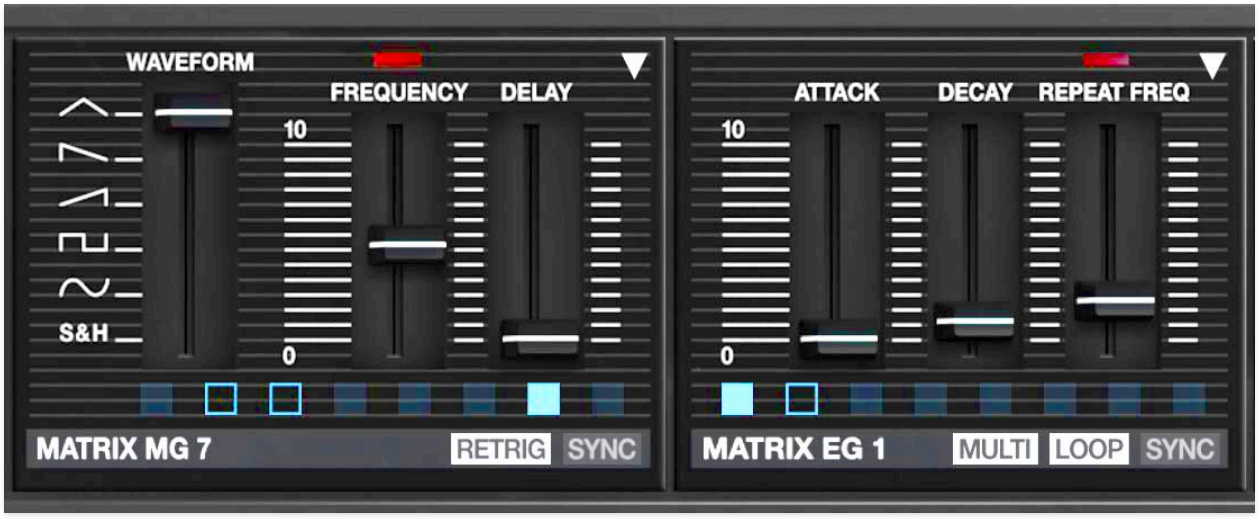


Digital Delay

The **Digital Delay** section provides delay processing as part of the instrument's main synthesis architecture. Its controls include Time, Factor, Feedback, Frequency, Intensity, and Level, along with synchronization options. This section is distinct from the additional effects available in the Effects view. The digital delay can add space, repeating echoes, rhythmic interest, and additional complexity to the instrument's sound.

Glide

The **Glide** section controls transitions between note pitches. It includes a Time control and selectable Portamento and Glissando behavior. Glide is particularly useful for expressive monophonic leads, sliding bass sounds, and other performances in which the movement between notes is as important as the notes themselves.



Matrix Modulation Generator and Envelope

Toward the right side of the main synthesis panel are the **Matrix MG** and **Matrix EG** sections. These provide eight individually configurable LFO-style modulation generators and eight additional envelope generators that can be assigned through the Mod Matrix.

Matrix MG provides Waveform, Frequency, and Delay controls, while Matrix EG provides Attack, Decay, and Repeat Freq. The small selection squares beneath each section identify generators that have been activated by a modulation routing, allowing you to switch between their settings. The **Modulation** chapter explains how these sources connect to the Mod Matrix and how to use them musically.



Key Assign

At the far right of the upper synthesis panel is the **Key Assign** section. This area provides controls for the instrument's voice and keyboard behavior, including Mono, Poly, Unison, and MPE modes.

Additional controls include voice-related settings and detuning options. The Key Assign section determines how DW-8K responds when notes are played, whether as individual monophonic lines, polyphonic chords, or more complex voice configurations. The **Performance Controls** chapter explains these modes and their applications.



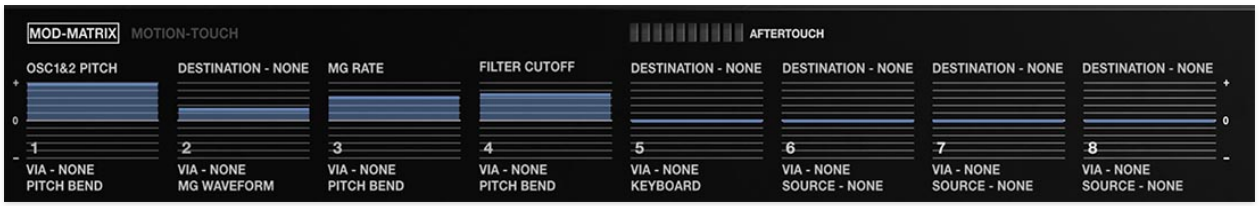
Layer Output

Directly beneath Key Assign, the Layer Output section provides Tune, Pan, and Level controls for the currently selected layer. These controls, along with layer selection and keyboard-range settings, are covered in the Layers and Splits chapter



Master Volume and Limiter

Above the Key Assign section are the **Master Volume** control, the **Limiter** switch, and the output meters. Master Volume sets the instrument’s overall output level, while the Limiter helps control excessive signal peaks. The meters provide a visual indication of output activity. These controls are covered in greater detail in the **Performance Controls** chapter.

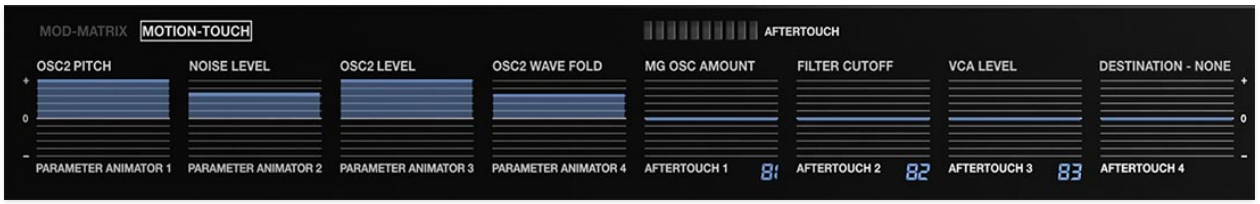


Mod-Matrix and Motion-Touch Displays

One of DW-8K's most significant interface additions is the switchable display at the upper-right portion of the instrument, above the filter and performance controls. This area can show either **Mod-Matrix** or **Motion-Touch**, selected using the corresponding buttons at the top of the display. The selection changes which modulation controls are shown without changing the main synthesis panel below.

Mod-Matrix Display

Selecting **Mod-Matrix** reveals eight modulation routing slots. Each slot provides a selectable **Source**, **Destination**, and **Via** control, plus a bipolar modulation amount ranging from -100% to +100%. Via allows an additional modulation source or controller to scale the effect of a routing. These assignments connect envelopes, modulation generators, performance controls, and other sources to the parameters you want to animate.



Motion-Touch Display

Selecting **Motion-Touch** replaces the Mod Matrix display with eight bipolar assignments divided into two groups. **Parameter Animator 1–4** correspond directly to the four Parameter Animator lanes in the Sequencer. Each lane supplies step-based modulation values, while Motion-Touch lets you select its destination and amount.

Aftertouch 1–4 use keyboard aftertouch as their fixed source. Each assignment has its own selectable destination and bipolar amount, allowing pressure to change several sound parameters at once.

When **MPE** is enabled in Key Assign, the four Aftertouch assignments change to **MPE-X**, **MPE-Y**, **MPE-Z**, and **MPE-Velocity**. The four Parameter Animator assignments remain available. The **Modulation** chapter describes both systems in detail.



Working With Upper and Lower Layers

DW-8K features two independent synthesizer layers, Upper and Lower, which can be played individually, combined into richer sounds, or assigned to separate keyboard regions. The layer controls, located in the horizontal strip beneath the main synthesis panel, let you select which layer to edit, choose between Whole, Dual, and Split modes, and adjust the balance between the two sounds.

In Dual mode, each layer has an independently adjustable keyboard range, allowing the two sounds to overlap or occupy different regions. Split mode divides the keyboard into distinct Lower and Upper regions, with an adjustable split point. Additional controls let you solo individual layers and manage their settings when building more elaborate presets.

Selecting a layer for editing does not necessarily change which layers are playing. In Dual or Split mode, both layers can remain active while the main synthesis panel displays the controls for only the selected layer. Upper is identified in red, while Lower is identified in green throughout the interface.

See the Layers and Splits chapter for detailed explanations of these controls, keyboard-range adjustments, layer management, and practical techniques for creating layered and split sounds

The Three Main Views

The lower portion of the DW-8K interface can display three different working areas: **Keyboard**, **Motion**, and **Effects**. The view selector buttons are located at the lower-left corner of the instrument. Clicking one of these buttons changes the lower-panel display while leaving the main synthesis controls visible above.

This makes it possible to work with the different aspects of a sound without constantly switching between separate windows.



Keyboard View

Keyboard view displays DW-8K's full virtual piano keyboard and performance controls. Click **Keyboard** in the lower-left view selector to open it. The virtual keyboard can be played directly with the mouse, making it convenient for auditioning presets and experimenting with sound-design changes.

To the left of the virtual keyboard are the Bend and Mod levers, along with **Bend Amount**, **Mod Amount**, **Master Tune**, **VCF Sweep**, **Link Layers**, **Octave**, **Glide**, **Pitch Mod**, and **Filter Mod**. The Glide switch uses the Time and Portamento/Glissando settings in the main Glide section. Together, these controls provide immediate access to tuning, expressive pitch movement, and performed modulation.



Motion View

Click **Motion** to replace the virtual keyboard with DW-8K's arpeggiator and sequencer. Motion view is divided into two main sections:

Arpeggiator

The **Arpeggiator** section occupies the left side of Motion view. It includes controls for enabling the arpeggiator, selecting trigger sources, choosing playback patterns and directions, and specifying the note range. Additional controls include Speed, Swing, Chance, Feel, Hold, and synchronization options.

The arpeggiator is useful for transforming held notes or chords into repeating musical phrases. Depending on its settings, these can range from straightforward ascending and descending patterns to more varied and unpredictable performances.

Sequencer

The **Sequencer** occupies the center and right side of Motion view. It provides a 16-step programming area, along with controls for note and modulation triggering, playback modes, pattern selection, keyboard interaction, and step recording. Additional functions include Live Rec, step programming modes, Parameter Animator controls, synchronization, and playback timing adjustments.

Four pattern selections, labeled **A**, **B**, **C**, and **D**, are available, along with sequence length-related controls.

At the far right of Motion view is the **Play** section, which includes separate layer-start controls and a main Start/Stop button. Together, the arpeggiator and sequencer provide a powerful way to create rhythmic patterns, melodic sequences, and evolving textures.

The **Motion Controls** chapter explores these functions in detail.



Effects View

Click **Effects** to display the instrument's expanded effects interface. Effects view provides five effect slots and a dedicated Effects Modulator.

The effects system is organized around three selectable groups:

- **Upper:** Effects associated with the Upper synth layer, identified by red controls.
- **Lower:** Effects associated with the Lower synth layer, identified by green controls.
- **Global:** Shared effects processing, identified by gray controls.

This arrangement allows different processing treatments to be applied to the two layers while providing additional processing for the combined sound. For example, the Upper layer might use chorus and delay, while the Lower layer uses a different combination of effects. A Global reverb can then help place both sounds within the same acoustic space.

Each effect slot provides an effect selection menu and additional controls for enabling, adjusting, and managing the effect. The Effects Modulator includes Speed, Waveform, and Delay controls, along with synchronization and other modulation-related functions.

The **Effects** chapter explains the available processors, their parameters, and how to build and manage effects chains.



The Effects Strip

A compact effects strip runs along the bottom of DW-8K and remains visible in Keyboard, Motion, and Effects views. It contains five effect slots, each with its own effect selector and associated controls. This allows you to make quick effects adjustments while working elsewhere in the instrument.

For example, you can remain in Keyboard view while changing an effect's wet/dry balance, or work in Motion view while adjusting an effect alongside a sequenced pattern.

At the left side of the strip are the **All FX** controls, including On/Off, Level, and Stereo. The expanded Effects view provides a more comprehensive working area for managing the instrument's effects configuration.

A Few Tips

DW-8K contains a considerable amount of synthesis power, but a few simple habits will make the instrument easier to navigate.

Start in Keyboard View. This keeps the virtual keyboard and performance controls visible while you explore the oscillators, filter, and envelopes. It's the quickest way to establish a connection between what you're adjusting and what you're hearing.

Check the Selected Layer. When working with Dual or Split presets, remember that the Upper and Lower layers can have different settings. Make sure you're editing the intended layer before making substantial changes.

Use the Envelope Display That Suits the Task. Sliders mode provides direct access to individual envelope stages, while Visual mode makes it easier to understand the complete contour.

Keep the Modulation Matrix Close at Hand. When experimenting with more elaborate modulation, switch to Mod-Matrix to review the available routing slots and their assignments.

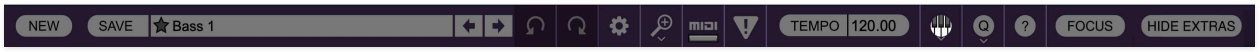
Don't Overlook the Effects Strip. You don't always need to open Effects view to make a quick adjustment. The compact strip provides convenient access to the effect slots while you're working with other parts of the instrument.

Experiment With Simple Sounds First. A single oscillator and a straightforward filter envelope can teach you a great deal about DW-8K's character. Once you've established the basic sound, the additional oscillators, modulation sources, layers, and effects can take it in entirely new directions.

Moving Forward

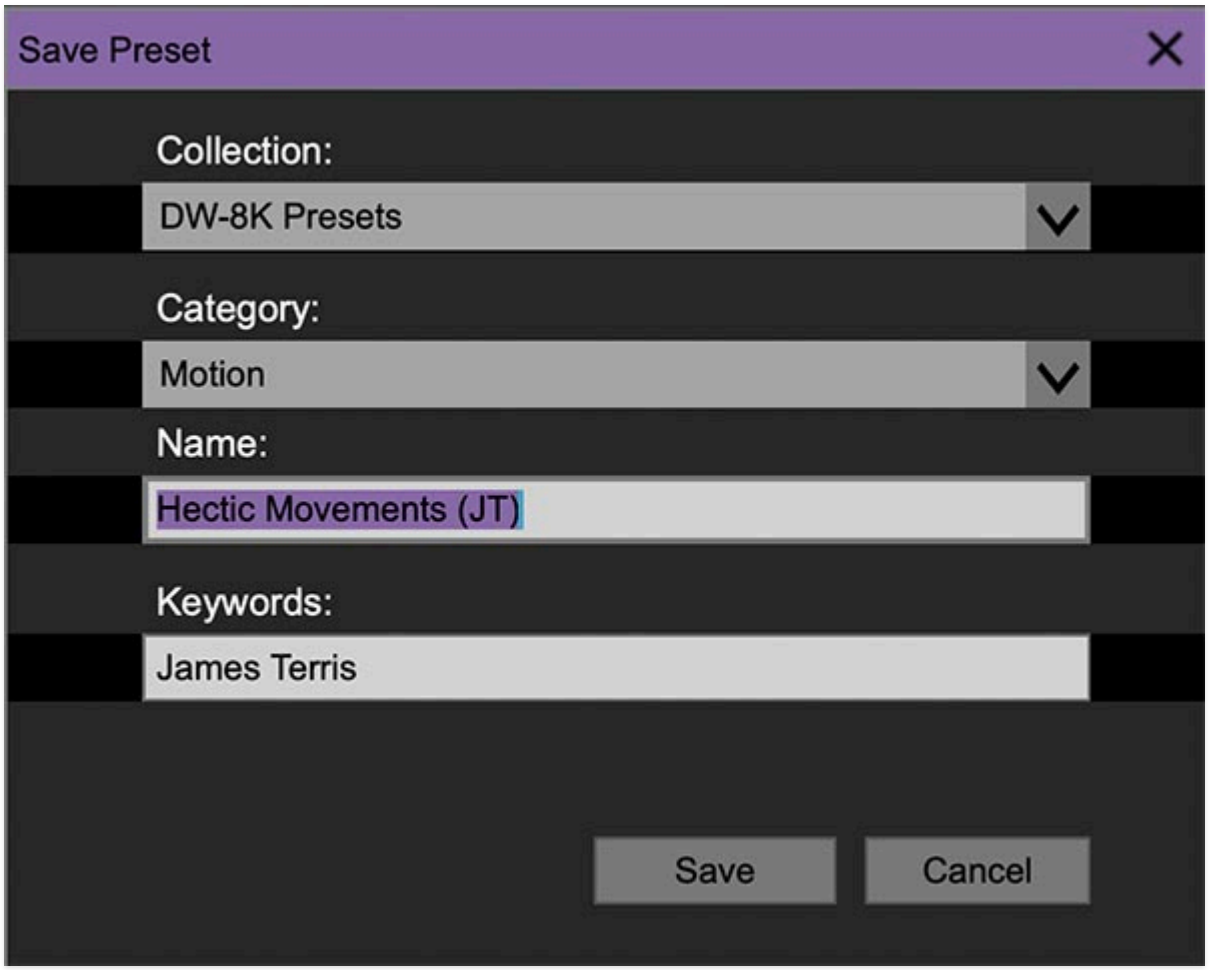
Now that you are familiar with DW-8K's interface, the following chapters explore its controls in greater detail. We will begin with the Top Toolbar and Preset Browser, then look at combining sounds with Layers and Splits. From there, we will explore the oscillators, filter, envelopes, modulation, performance controls, and DW-8K's Motion and Effects systems.

Top Toolbar and Preset Browser



The dark purple strip at the top of DW-8K contains the newly designed Preset browser, navigation, "under-the-hood" settings, UI zoom and focus control, and more.

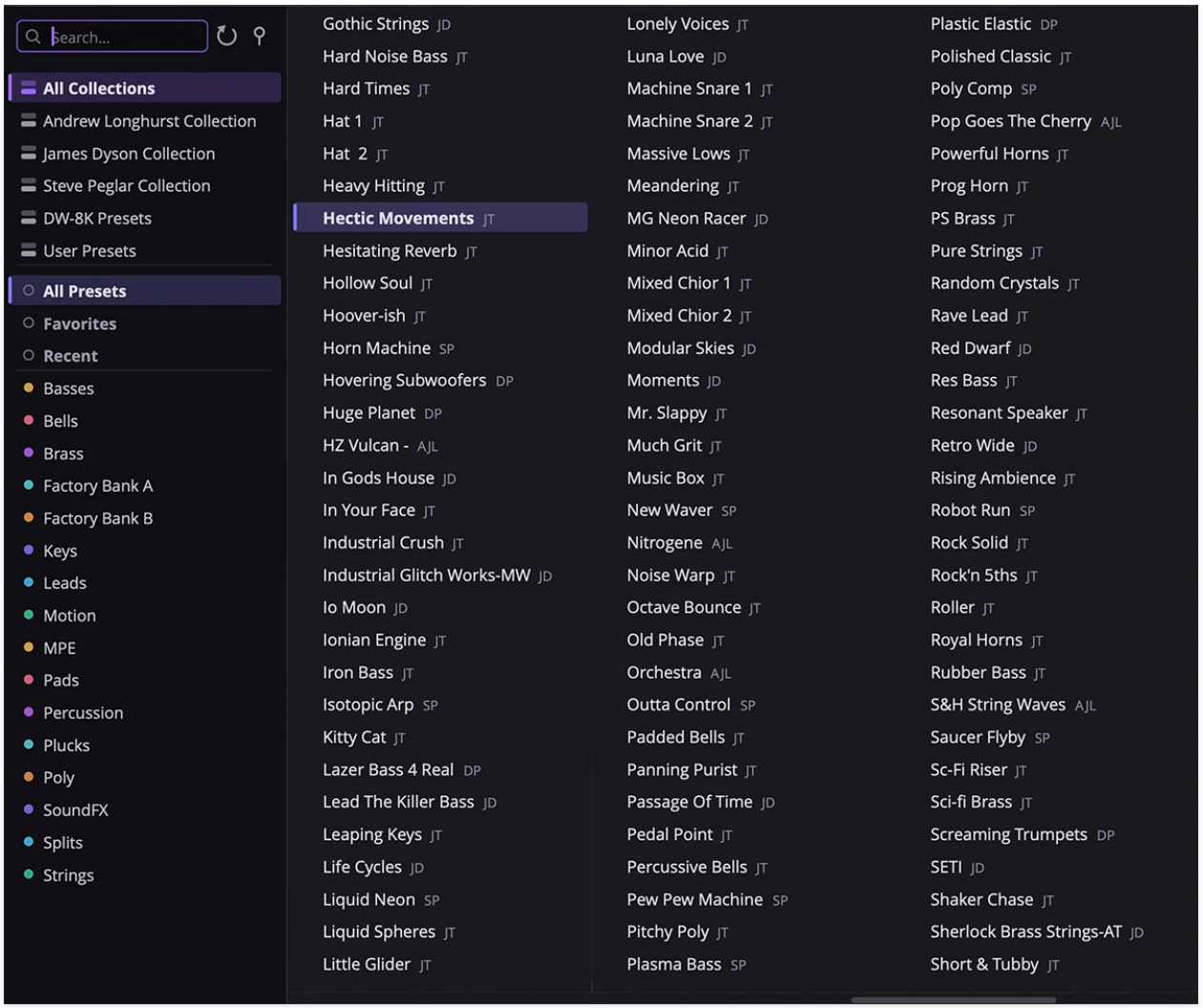
New- Opens a new blank patch preset. If an unsaved patch is currently open or you've modified an existing saved patch, a dialog asks if you'd like to save the patch in its current state. This greatly reduces the possibility of losing an edited unsaved patch.



Save - Use this to save patch presets. There are a couple of levels of hierarchy that appear in the Save Preset box, which correlate to the Preset Browser below.

- **Collection**- This is the top level of organization, and contains entire “sets” of presets. The *DW-8K Presets* are the factory collection. There is also a *User Presets* collection for storing user presets, but you’re free to create your own collections. To create a new collection, click in the *Collection* text field (where it says *User Presets* above) and type a name. User-created sounds can be freely saved to any collection; we like to keep them separated for organizational purposes. Select a collection in the left panel to filter the display of presets on the right to just those presets.
  - All Collections - Displays the available presets from all of the collections below, and any you may add in the future, such as the Foundation Preset Pack from Cherry Audio.
  - User Presets - Waiting for your creations!
- **Category**- Within each *Collection* are a number of sound categories. As with collections, you’re free to create as many categories as you like. To create a category, click in the *Category* text field of the *Save* dialog window and type a new category name.
- **Name**- The name for an individual sound preset. To save a patch, simply type the name in the *Name* field and click *Save*. Note that if you add characters into parentheses after the name, those characters are displayed as a suffix to the main name. You can use this as a handy way to indicate functionality (such as AT for aftertouch) or the name/initials of the sound designer.
- **Keywords**- You can add descriptive words such as “huge,” “noisy,” “poly,” etc., to patches to make them appear when terms are typed in the *Search* field. Use commas to separate multiple keywords entries.

Presets now also include the initials of the sound designer who created the patch.



The Preset Browser

A preset browser with a presentation of the Collections, Search, filters for All/Favorites/Recent, and Presets by Category.

Browsing Patches- Patches can be browsed by clicking the *<Select Preset>* field. To select a preset collection, click in the area that says *<All Collections>* or on the downward-facing arrow next to it.

Clicking on the left-side categories narrows down which patches are displayed.

- **All Presets** will show presets from all collections and categories.
- **Favorites** displays presets that you have designated as favorites (by clicking the **star** icon next to the preset name in the preset name field).
- **Recent** displays recently used presets.
- **Refresh**- This is the circular arrow button to the right of the downward arrow; clicking this checks the Cherry Audio server for new or updated

presets.

Preset- *Step Back/Forward Arrows*- These step to the previous or next preset. macOS [⌘+left/right arrow key] or Windows [CTRL+left/right arrow key] will navigate through presets back and forth in the currently selected collection/category.

Undo/Redo- These circular arrows will undo or redo the last action. It remembers many steps, so if you really loused something up, keep on (un)clickin'...

Settings- This is where user preferences for user interface, audio interfaces, user account, and more are configured. See the **Settings** section for full information.

Importing Presets with drag-and-drop
Presets (user or third-party) can be imported singly or en masse (as a single compressed ZIP file) simply by dragging and dropping from the desktop anywhere on the user interface.

If a single .*preset file is dragged and dropped, the sound is immediately loaded and the standard Save Preset dialog appears; this lets you save the sound to the instrument's preset browser. Note that you don't have to save the sound to preset browser; if you just want to hear and play the sound, click the Cancel button in the Save Preset dialog - the sound will still be loaded.

Compressed zip files containing multiple sounds can also be drag and dropped onto the UI. This works the same as with single sounds, but instead of the Save Preset dialog, you'll see the Import Preset Collection dialog. The presets will be added as a new collection and available in the categories for which they were tagged.

Zoom Magnifying Glass- Click to resize the interface window. Selecting *100%* returns the user interface to native size.

MIDI tab- Opens the MIDI controllers tab for configuring internal and hardware MIDI controls. See the **MIDI Controllers Setup and MIDI Tab** section for full information.

! (MIDI Panic)- Click to send an all-notes-off message in case of rare, "make this #$!%ing thing shut up?!?" stuck-note incidents.

Tempo (Standalone Version Only)- Displays DW-8K current internal tempo setting. DW-8K internal tempo affects the LFO, Arpeggio, and the Echo section rates when their corresponding *Sync* buttons are enabled. The tempo

setting can be changed by moving the mouse up and down anywhere in the tempo section, or by double-clicking the number and entering the desired BPM value.

The tempo display only appears in the standalone version of DW-8K. VST, AU, and AAX plug-in versions receive tempo data from their host DAW app.



QWERTY Musical Typing Keyboard- Opens an onscreen keyboard allowing a standard QWERTY computer keyboard to be used for playing music notes. For more information, see the **QWERTY Musical Typing Keyboard (MTK)** section.



? (Help)- Clicking this launches your web browser and opens the help document you're already reading. Confusing circular logic at its finest.

Cherry Audio DW-8K Synthesizer logo- Clicking this displays "about" information, and shows the version number and current registered user ID.

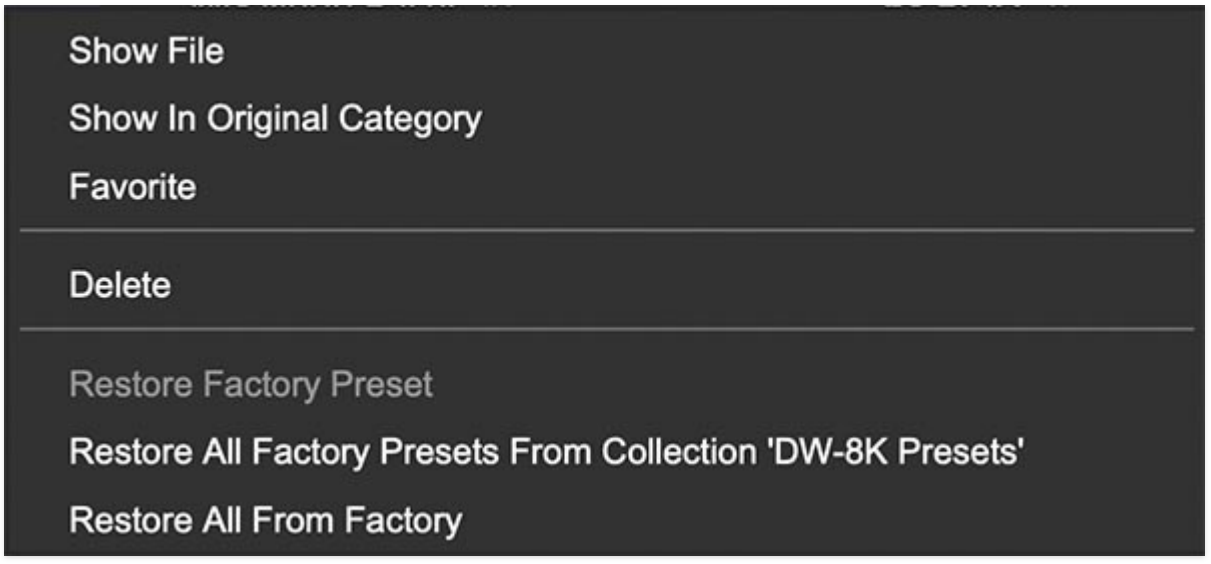
Focus Button



Since the original instrument is over three feet wide and your display likely isn't, it was necessary to ensmallinate lots of things (sure, that's a word). If you're using a tiny laptop, this could make things hard to see. With this in mind, the *Focus* button conveniently enlarges DW-8K's user interface to roughly twice its normal size within the current window size. Unlike the *Zoom* "magnifying glass" function, *Focus* doesn't affect the current window size. By default, the patch panel section fills the current window, but the view can be scrolled vertically and horizontally with a mouse wheel, track pad, or Apple Mighty Mouse finger-scrolling. Or if you're the last person on earth still using a single-button mouse, scroll bars will appear at the window edges when in *Focus* mode. (Drop us a line from your AOL account, umkay?)

Using *Focus* mode couldn't be easier - just click the *Focus* button the top menu bar. To return to standard view, click *Reset*. **There's also a superfast key shortcut** - on Mac, hold the ⌘ [COMMAND] key and click the mouse; in Windows, hold the [OPTION] key and click the mouse. Focus can be reset with the same key shortcuts.

Preset List Right-Click Functions



Show File- This displays the selected preset in the Mac or Windows folder containing it. This is useful for backing up or sending a preset file to another user.

Show In Original Category- Selects the preset within its category, i.e. the category will highlight in the left preset menu. The *Show In Original Category* command only displays if the preset was selected within the <*All Presets*>, <*Favorites*>, or <*Recent*> categories.

Favorites- Favorited presets will show in when the *<Favorites>* category is selected. A star will display next to the preset name. Right-click on the preset and reselect *Favorite* to un-favorite it.

Delete- Deletes the selected preset.

Restore Factory Preset- If one of the factory (i.e. not user) patches is edited and saved, selecting this command restores the patch to its unaltered "factory" setting. This menu will be grayed-out for user bank patches.

Restore All Factory Presets From Collection "DW-8K Presets" - If any patches from the "factory" bank are edited and saved, selecting this command restores *all* of them to their unaltered factory setting.

Restore All From Factory- If any patches from the factory banks are edited and saved, selecting this command restores *all* of them to their unaltered factory setting. At the time of writing, the bank mentioned above is the only factory bank, so this function and the *Restore All Factory Presets From Collection 'DW-8K Presets'* above have the same effect.

Show File- This displays the selected preset in the Mac or Windows folder containing it. This is useful for backing up or sending a preset file to another user.

Layers and Splits

DW-8K gives you two fully independent synth layers: **Upper** and **Lower**. Each layer has its own complete synth engine, including oscillators, filter, envelopes, modulation, and effects.

This is one of Cherry Audio’s biggest expansions of the DW-8K concept. A preset can be a single focused sound, two sounds stacked together, or two different sounds split across the keyboard. Each layer can also have up to **16 voices**, giving DW-8K generous room for long releases, dense chords, layered pads, sequenced patterns, and expressive performance setups.



Layer Controls

The layer controls are located in the horizontal strip beneath DW-8K's main synthesis panel. They let you select which layer to edit, choose between **Whole**, **Dual**, and **Split** keyboard modes, solo an individual layer, and adjust the balance between Upper and Lower. These controls make it easy to work with a single sound, combine two sounds into a richer texture, or assign different sounds to separate keyboard regions.

DW-8K uses color coding to distinguish the two layers throughout the interface. **Upper** is identified in red, while **Lower** is identified in green. These colors appear in the layer controls, keyboard range indicators, and Effects view, making it easy to identify which layer you're working with.

An important distinction is that **selecting a layer for editing doesn't necessarily change which layers are playing**. In Dual or Split mode, both layers can remain active while the main synthesis panel displays the controls for only the selected layer. This allows you to adjust its oscillators, filter, envelopes, and other settings independently without affecting the other layer.

The following controls determine how the two layers are selected, combined, and managed. The separate **Master Volume** control, located at the upper-right corner of the main panel, adjusts DW-8K's overall output level.

Controls:

• **Utility** – Displays a utility menu for swapping, copying, resetting, or importing and exporting layer settings.

• **Lower** – Selects Lower layer for editing. Lower layer is color-coded green.

• **Upper** – Selects the Upper layer for editing. Upper layer is color-coded red.

• **Layer Solo** – Solos the currently selected layer, making it easier to hear and edit one layer at a time.

• **Balance** – Balances Upper and Lower layers. Move the slider toward **Lower** to emphasize Lower layer, or toward **Upper** to emphasize Upper layer.

- **WHOLE**: Plays a single synthesizer layer across the keyboard. In the DW-8K interface shown here, Upper is the active layer in Whole mode. This is a useful starting point for creating or editing one sound without the added complexity of a second layer.
- **DUAL**: Enables both Upper and Lower layers. Each layer has its own adjustable keyboard range, so the two sounds can play across the same notes, occupy different ranges, or overlap across selected regions. Use Dual for layered pads, contrasting attacks, and more elaborate performance setups.
- **SPLIT**: Divides the keyboard into two non-overlapping regions. Lower plays below the split point and Upper plays above it. Drag the single white triangular handle to establish the division.

Tip 1: If you move a filter slider, change an oscillator wave, or adjust an envelope and don’t hear the expected change, check which layer is selected. You may simply be editing the other layer.

Tip 2: In a layered patch, the Balance slider is one of the fastest ways to reshape the sound without editing either layer. If Upper provides a warm pad and Lower adds a bright digital shimmer, Balance decides whether the patch feels soft and rounded or more open and sparkling.

Whole Mode

Whole Mode

Whole mode provides single-layer operation, playing Upper across the full keyboard without the additional complexity of a second layer. This is the simplest way to use DW-8K when you want to focus on one sound.

Whole mode is especially useful when building a patch from scratch, exploring oscillator waveforms, adjusting the filter, shaping envelopes, or troubleshooting modulation. It keeps the signal path clear and lets you hear exactly what the Upper layer is doing.

Tip: Start in Whole mode when designing a new sound. Once Upper is working the way you want, switch to Dual or Split mode and build around it.

Dual Mode

Dual mode enables both Upper and Lower layers, allowing them to play together wherever their assigned keyboard ranges overlap. Each layer can span the entire keyboard or be restricted to a selected range. When both layers are assigned to the same notes, playing those notes triggers both sounds simultaneously.

This is where DW-8K can become especially lush, wide, and animated. One layer might provide the attack while the other supplies the sustain. One might be bright and digital while the other is darker and filtered. One might use slow modulation while the other remains steady. Dual mode is excellent for pads, keys, leads, soundscapes, hybrid brass, animated textures, and more elaborate performance sounds.

Tip: A good layered patch usually gives each layer a clear job. Try using Upper for body and Lower for attack, shimmer, motion, width, or edge. If both layers are trying to be the whole sound, they may fight each other.

Split

Split divides the keyboard so **Lower** plays on the lower range and **Upper** plays on the upper range. Split is useful for performance setups such as bass on the left hand and lead on the right, pad below and keys above, or a sequenced lower part with a manually played upper sound.

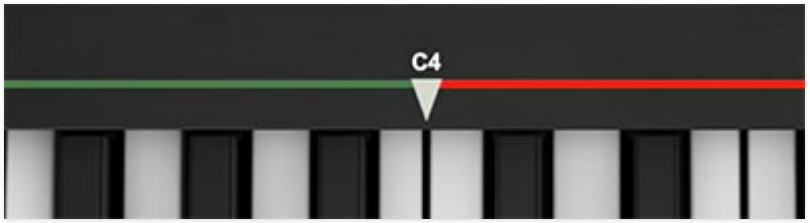
Keyboard Range Controls

In Dual and Split modes, colored bars above the onscreen keyboard show the playing ranges of the two layers. Green identifies Lower and red identifies Upper; note labels identify the boundaries. In Dual mode, each layer has an independently adjustable lower and upper limit. Drag either white triangular handle on a range bar to set that layer’s playable notes. The ranges can overlap, allowing both sounds to play together in a shared region. In Split mode, a single white triangular handle sets the exact boundary between the

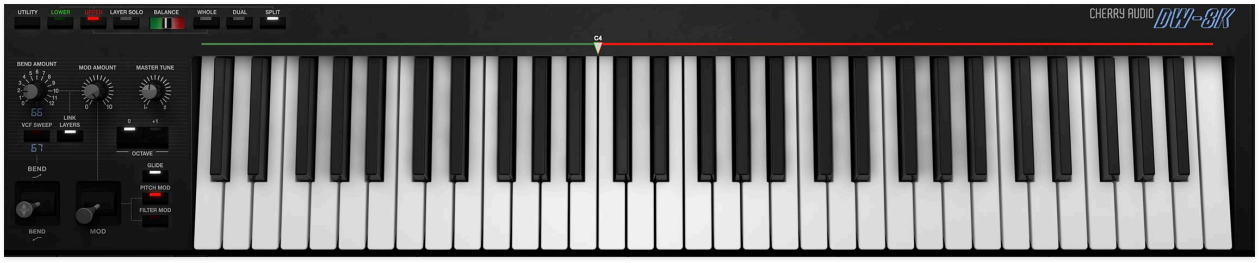
Lower and Upper regions. Drag it to the desired note to reposition the split. Unlike Dual, Split uses two distinct, non-overlapping regions.

Tip: Dual mode is particularly useful when you want a secondary sound to appear only within a selected register, such as a bell layered over the upper octaves of a pad. Split mode is better suited to performing two independent parts, such as bass with the left hand and a lead with the right.









Layer Solo

Layer Solo lets you hear only the currently selected layer. This is one of the most useful controls when working with layered or split sounds.

A preset may sound like one unified patch, but underneath, the two layers may be doing very different things. Soloing each layer lets you hear what each one contributes.

Use Layer Solo when balancing oscillator levels, adjusting envelopes, editing modulation, setting effects, or diagnosing a patch that sounds muddy, too bright, too slow, or too busy.

Tip: After editing a layer in solo, turn Layer Solo off and listen again in context. The goal is not for each layer to sound perfect by itself. The goal is for the two layers to work together.



Layer Output

The Layer Output section, located below Key Assign at the right of the main synthesis panel, contains Tune, Pan, and Level controls for the currently selected layer. Select Upper or Lower before making adjustments.

TUNE: (-100% to +100%) Adjusts the selected layer’s tuning. Small differences between layers can add thickness and movement; matching their tuning creates a more focused sound.

PAN: (-100% to +100%) Positions the selected layer in the stereo field. Slightly different pan settings can help two layered sounds remain distinct without relying entirely on effects.

LEVEL: (0–100%) Sets the selected layer’s output level. Use the individual layer levels to establish the contribution of each sound, then use Balance for broad adjustments to their relative prominence. Master Volume controls the final instrument output, not the individual layers.

Copying and Managing Layers

The **UTILITY** button provides commands for copying, resetting, swapping, and transferring layer settings. These functions are particularly useful when building layered sounds from existing presets.

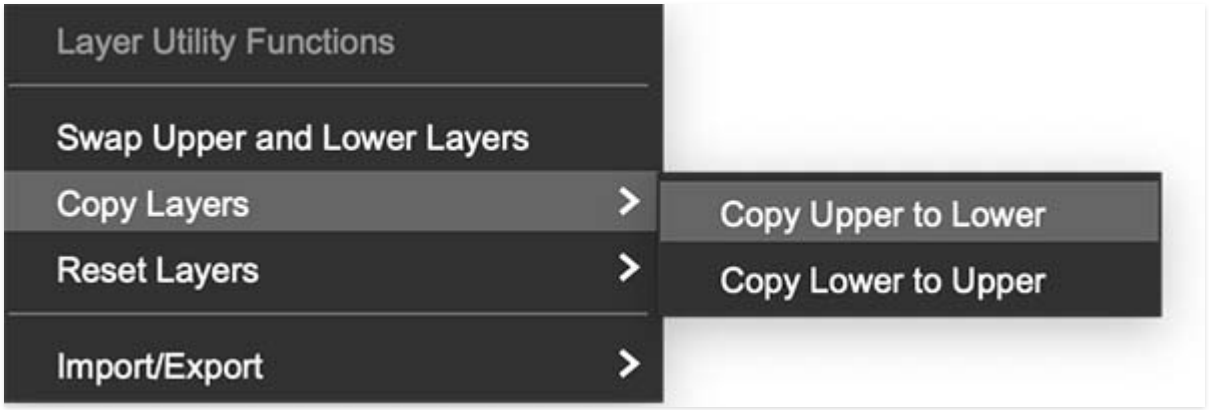
You can copy settings between Upper and Lower within the same preset, or use the **Import/Export** commands to transfer a layer's settings between different presets. For example, you might copy an existing sound to the other

layer, then change its waveform, filter, tuning, or envelope to create a complementary variation. Alternatively, you can combine favorite sounds from two separate presets into a new Dual or Split configuration.

Common uses:

- Copy Upper to Lower, then detune or filter Lower for width.
- Create a Dual layer or Split layer preset from two other preset layers.
- Copy a finished sound to the other layer and give it a slower attack.
- Reset one layer without disturbing the other.
- Swap Upper and Lower layers when reworking a split.

Tip: Try copying a strong single-layer sound to the second layer, then change only the waveform, filter mode, envelope attack, or effects. It’s a quick way to create a richer patch while keeping both layers musically related.



Combining Layers From Different Presets

DW-8K's **Utility > Import/Export** menu makes it easy to combine sounds from different presets into a new Dual or Split configuration. You can copy the settings of an existing layer into memory, load another preset, then paste the copied settings into its Upper or Lower layer. This is particularly useful when you want to combine two favorite sounds without having to recreate either one from scratch.

For example, suppose you have a single-layer electric piano preset called *Ambient EP*, but you'd like to create a keyboard split with the electric piano in the upper register and a string sound in the lower register. You can accomplish this by copying the sound from another preset into the Lower layer.

To combine two existing presets into a keyboard split:

1. Load the *Ambient EP* preset and select **SPLIT** in the layer controls.
2. Save the modified preset under a new name, such as *Ambient Split*, so the original remains unchanged.
3. Load the *Low Strings* preset containing the string sound you want to use for the lower keyboard range.
4. Click **UTILITY**, open the **Import/Export** submenu, and select **Copy to Upper Memory**. This copies the sound settings from the preset's Upper layer into DW-8K's temporary memory.
5. Reload your saved *Ambient Split* preset.
6. Click **LOWER** to select the destination layer. Open **UTILITY > Import/Export** and choose **Paste to Lower**. The copied string sound now replaces the Lower layer's settings, while the original electric piano remains in Upper.
7. Adjust the keyboard split point using the white triangular handle above the keyboard. Position it so the strings occupy the desired lower range and the electric piano plays above the split.
8. Adjust each layer's **Level**, **Pan**, and other settings as needed, then save *Ambient Split* again to preserve the completed combination.

You now have a new Split preset assembled from two existing sounds, without altering either original preset.

The same procedure can be used to create a **Dual** preset. Simply select Dual instead of Split, then copy and paste the desired layer settings. In Dual mode, you can independently adjust the Upper and Lower keyboard ranges, including creating overlapping regions where both sounds play together.

Tip: When combining presets, remember that the copied settings come from the source layer, while the paste command determines which layer receives them. A sound copied from Upper can be pasted into Lower, making it easy to assemble new combinations from single-layer presets. Always save the finished preset under a new name if you want to preserve the original sounds.

Practical Layering Ideas

A strong layered patch usually begins with contrast.

Try these approaches:

• Pair a bright attack layer with a darker sustained layer.
• Use one layer as the main harmonic bed and the other as shimmer or motion.
• Use one layer for the core key sound and another for transient brightness or octave reinforcement.
• Use one layer as a stable lead center and the other as a slightly detuned support layer.
• Use one layer as a slow pad and the other as a texture that fades in later.

Tip: The best layered sounds often feel like one instrument, not two presets playing at once. Use Balance, envelopes, filter settings, and effects to make the layers cooperate.

Practical Split Ideas

Splits are ideal for performance and composition. A classic setup is bass on the lower keys and lead on the upper keys. Another useful setup is pad below and keys above, with the lower range holding sustained harmony while the upper range plays rhythmic or melodic parts.

You can also create a split where one layer is sequenced or arpeggiated while the other remains manually playable. This can make a single preset feel like a small arrangement.

Tip: In split patches, watch envelope release times. A long-release lower layer can blur fast left-hand changes, while an upper layer with too short a release may feel abrupt if it’s meant to float.

Avoiding Layer Overload

Two independent layers, 16 voices per layer, two oscillators and a sub-oscillator per voice, modulation, Motion tools, and effects give you a lot of power. They also give you many opportunities to overbuild. If a layered preset sounds too dense, solo each layer and listen separately. Check for overlapping frequency ranges, similar envelopes, excessive release times, too much low end, or too many bright oscillators competing for attention.

Common fixes:

• Reduce one layer with the **Balance** slider.
• Darken one layer’s filter.
• Shorten the release on one layer.
• Reduce low-end content from the upper layer.
• Use different envelope attacks so both layers don’t speak at exactly the

same moment.
• Move some depth or space to the Global effects rather than both layer effects.

Tip: Layering works best when each part has a job. If one layer provides body and the other adds color, motion, attack, or space, the patch will usually feel intentional.

Quick Layering Exercise

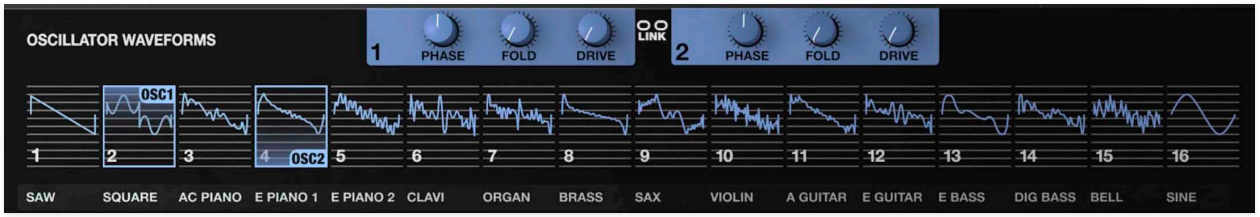
1. Start with a single-layer sound in **Whole** mode. Choose a saw waveform and shape it with the filter and filter envelope. This will be the body layer.
2. Switch to **Dual** mode and select the Lower layer. Use **Layer Solo** so you can hear it by itself. Create a brighter or more textured sound with a faster attack and a slightly shorter release.
3. Turn Layer Solo off and use the **Balance** slider to blend the two layers. The first layer should provide the foundation. The second should add definition, shimmer, or motion.
4. Now open the Effects view. Add a subtle effect to only one layer, such as chorus on the body layer or delay on the brighter layer. Then add a small amount of Global reverb to place both layers together.

Quick Split Exercise

To create a keyboard split with bass on the left and a lead sound on the right:

1. Select **SPLIT** in the layer controls.
2. Select **LOWER** and create or load a bass sound. Keep its envelope relatively tight and its low end focused.
3. Select **UPPER** and create or load a lead, keyboard, or pad sound. Give it enough brightness and sustain to suit the upper register.
4. Drag the white triangular split-point handle to establish the desired division between the two keyboard regions.
5. Play a bass line with your left hand and a melody or chord part with your right.
6. Adjust **BALANCE** and the individual Layer Output **LEVEL** controls until the two sounds work comfortably together.

Tip: If the bass feels too roomy, shorten its Release or reduce its effects. If the upper sound feels too dry, try adding delay or reverb to the Upper effects chain, or use Global effects to give both sounds a shared sense of space.



Oscillators

DW-8K's sound begins with two digital waveform oscillators, a noise generator, and an analog-style sub oscillator. Each provides a different kind of raw material: the digital oscillators supply the instrument's distinctive harmonic character, Noise adds unpitched texture, and the Sub Oscillator supplies additional low-frequency weight. Autobend adds automatic pitch movement to the digital oscillators, while Phase, Fold, and Drive provide further ways to reshape their waveforms.

This combination is central to what makes DW-8K interesting. You can build a compelling sound from a single waveform, or combine several sources to create much more elaborate tones before the signal reaches the filter, envelopes, and effects. Understanding how these generators complement one another makes sound design both easier and more rewarding.

The Story Behind the DW Waveforms

The original Korg DW-8000 introduced a distinctive approach to digital sound generation in the mid-1980s. Its designers used additive synthesis to create waveforms by combining sine waves at different frequencies. The resulting timbres were then captured as 8-bit, single-cycle samples, stored in ROM, and played back at different rates to produce musical pitches.

A single-cycle sample contains one complete repetition of a waveform. Repeating that cycle produces a sustained pitched tone. Unlike a recording of an entire piano note or guitar performance, however, a single-cycle waveform doesn't contain a changing attack, decay, or other performance details. The synthesizer's filter and envelopes supply much of that movement.

Cherry Audio recreated the DW-8K waveforms using a different technique. Rather than playing back copies of the original 8-bit samples, the developers

analyzed the original waveforms to identify the underlying sine-wave components and reconstructed the waveforms using modern additive synthesis. DW-8K generates these sounds with high-precision, 64-bit waveforms, while advanced processing allows them to be played at very high frequencies without introducing digital aliasing.

Aliasing is an unwanted digital artifact that can create pitches or tones not present in the intended sound, particularly toward the upper end of a digital oscillator's range. Cherry Audio's approach preserves the characteristic harmonic structures of the DW-8000 waveforms while avoiding this limitation of the original hardware. The waveforms are therefore faithful modern reconstructions, not bit-for-bit copies of the original ROM samples.

The practical benefit here is a familiar palette of digital timbres with greater precision and cleaner high-register behavior. Just as importantly, DW-8K lets you take those waveforms beyond their original roles with additional oscillator shaping, modulation, and layering.

Digital Waveform Oscillators 1 and 2

Each of DW-8K's two digital oscillators can select any of 16 waveforms. Both have independent Octave, Waveform Select, Level, Phase, Fold, and Drive controls. Oscillator 2 adds Interval and Detune, which determine its pitch relationship to Oscillator 1.

The oscillators occupy the left side of the main synthesis panel. Their individual control sections appear beneath the larger Oscillator Waveforms display, where all 16 waveforms are arranged in numerical order. The selected waveform for each oscillator is indicated in this display, and the small waveform window within each oscillator section provides a quick visual reminder of its selection.



The 16 Digital Waveforms

The names describe the general character of the waveforms, not complete sampled instruments. For example, selecting A PIANO doesn't play back a full piano recording. It selects a piano-inspired repeating waveform that can be

shaped by the filter, envelopes, and other controls. A waveform's name is therefore a useful suggestion, not a restriction on how it can be used.

No.	Waveform	Character and Useful Starting Points
1	Saw	Bright and harmonically rich; classic leads, strings, brass, and basses.
2	Square	Hollow and focused; electronic basses, leads, and reed-like sounds.
3	A Piano	Piano-inspired harmonic structure; percussive keys and unusual pads.
4	E Piano 1	Electric-piano character; mellow or percussive keyboard textures.
5	E Piano 2	Alternative electric-piano spectrum; bells, keys, and evolving tones.
6	Clavi	Bright, cutting character; plucks and rhythmic keyboard sounds.
7	Organ	Sustained, organ-like spectrum; ensemble tones and layered keyboards.
8	Brass	Brass-inspired spectrum; expressive leads and envelope-shaped attacks.
9	Sax	Reed-like character; melodic leads and expressive solo sounds.
10	Violin	String-inspired harmonics; bowed textures and sustained pads.
11	A Guitar	Acoustic-guitar-inspired character; plucks and delicate transients.
12	E Guitar	Electric-guitar-inspired spectrum; biting leads and percussive tones.
13	E Bass	Electric-bass-inspired character; rounded and plucked low-end sounds.
14	Dig Bass	Distinctive digital bass timbre; punchy and synthetic low-end sounds.
15	Bell	Bright, complex spectrum; bells, metallic textures, and percussion.

16	Sine	Nearly pure fundamental tone; soft basses and harmonic-shaping experiments.

Some of the more complex waveforms may sound bright with the filter fully open, then become warm or smooth when the cutoff is lowered. It's worth auditioning each waveform over several octaves and at different filter settings rather than judging it from just a single note.

Selecting Waveforms Directly

In addition to using each oscillator's **WAVEFORM SELECT** control (covered below), DW-8K lets you assign waveforms directly from the Oscillator Waveforms display at the top left of the panel.

Hovering over the upper or lower corner of any waveform displays a red **OSC1** or **OSC2** selection label. Clicking the label assigns that waveform to the corresponding oscillator.

To select a waveform directly:

1. Move the mouse over the upper corner of the desired waveform. A red **OSC1** label appears.
2. Click **OSC1** to assign that waveform to Digital Waveform Oscillator 1.
3. Alternatively, hover over the lower corner of a waveform to display the red **OSC2** label.
4. Click **OSC2** to assign that waveform to Digital Waveform Oscillator 2.

The selected waveform is highlighted in the display, making it easy to identify the current selection for each oscillator.

This provides a convenient way to audition different waveform combinations. For example, you can keep Oscillator 1 set to a sawtooth waveform while stepping through different waveforms for Oscillator 2, listening to how each changes the overall sound.

Tip: When experimenting with waveform combinations, try keeping one oscillator's waveform and level fixed while changing the other. This makes it easier to hear the specific harmonic contribution of each waveform and discover combinations that you might overlook.

Shared Oscillator Controls

Octave: *(4', 8', 16')* Selects the oscillator's basic pitch range using traditional organ-footage notation. The 8' setting is the default range, 4' sounds one

octave higher, and 16' sounds one octave lower. Each digital oscillator has its own Octave selection, so the two can occupy the same register or reinforce different ones.

Waveform Select: *(1–16)* Chooses one of the 16 digital waveforms. Click the Waveform Select control to open the waveform menu, then choose the desired entry. The oscillator's waveform display and the larger Oscillator Waveforms display reflect the selection.

Level: *(0–31)* Sets the oscillator's output level. At 0, the oscillator makes no sound. Higher values increase its contribution to the combined signal. When using both oscillators, try treating one as the main voice and adding the other gradually, rather than setting both to maximum by default.

Oscillator 2 Pitch Controls

Interval: *(Unison, Minor Third, Major Third, Perfect Fourth, Perfect Fifth)* Selects a fixed musical interval for Oscillator 2 relative to Oscillator 1. Unison keeps the two at the same pitch when their octave settings match. The other choices add a harmonized pitch that follows each played note. Interval works alongside the independent Octave settings, allowing anything from close two-note harmonies to more widely spaced combinations.

Detune: *(0–6)* Introduces a tuning offset for Oscillator 2. Small amounts make closely related oscillator pitches beat against each other, producing gentle movement and thickness. Higher settings make the difference more noticeable. Detune is especially useful with sustained sounds, although a small amount can also give short basses and leads more character.

When Oscillator 2 uses a non-unison Interval, Detune changes the tuning of that interval rather than creating a same-pitch two-oscillator chorus effect. Keep this in mind when deciding whether a patch needs harmonic reinforcement or gentle beating.



Phase, Fold, and Drive

Above the waveform display, each digital oscillator has independent Phase, Fold, and Drive controls. These provide additional shaping at the sound

source, before you begin using the filter and effects to change the finished tone.

Phase: *(-180° to +180°)* Adjusts the oscillator waveform's phase position. Phase describes a position within the repeating waveform cycle, rather than a change in musical pitch. Its audible contribution depends on the selected waveforms and how the two oscillators interact. It is particularly worth exploring with closely tuned, similar waveforms, where their relative phase can change the character of the combined signal.

Fold: *(0–100%)* Applies wavefolding to reshape the oscillator and introduce additional harmonic complexity. A sine wave provides a particularly clear demonstration: starting with a simple, smooth tone, increasing Fold can produce a brighter, more intricate spectrum. Richer waveforms can become more edgy or metallic as Fold increases.

Drive: *(0–100%)* Adds harmonic coloration to the oscillator signal. Use lower amounts to give a sound additional presence, or explore higher settings for more pronounced saturation and aggression. Drive is not simply another Level control: changing its amount can alter the timbre, not just the loudness.

Link: *(Off/On)* Links the Phase, Fold, and Drive controls of Oscillators 1 and 2 so that corresponding parameters are adjusted together. When Link is enabled, changing Phase, Fold, or Drive on either oscillator simultaneously adjusts the same parameter on the other oscillator. This makes it easy to apply identical waveform shaping to both oscillators without adjusting each set of controls separately.

With Link disabled, the controls operate independently, allowing each oscillator to have its own Phase, Fold, and Drive settings. This is particularly useful when combining contrasting waveforms or creating sounds in which one oscillator provides a relatively clean foundation while the other contributes additional harmonic complexity.

Fold and Drive are particularly useful in combination with the filter. Create or emphasize harmonics at the oscillator, then shape them with Cutoff and Resonance. The most musical setting is not necessarily the highest one. If the result becomes harsh or loses definition, reduce Fold or Drive before reaching for an effect to repair it.

Tip: Try linking the oscillators while experimenting with Fold and Drive to hear how identical shaping affects their combined sound. Then disable Link and reduce the shaping on one oscillator while increasing it on the other. This

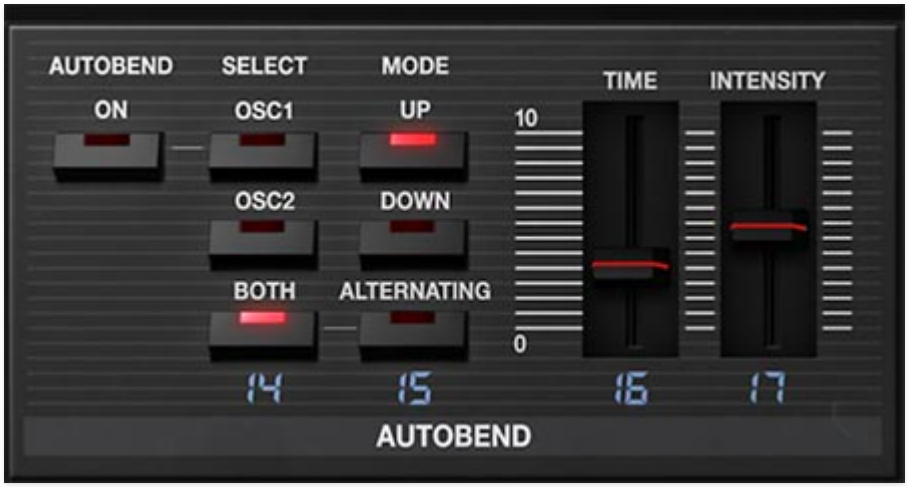
can produce a richer, more balanced tone by combining a clean waveform with a more harmonically complex one.

Auditioning the Waveforms

To hear the character of each waveform without too many competing influences:

1. Load a simple preset or initialize a new sound, and select one layer for editing.
2. Set Oscillator 1 Level to a comfortable value, then reduce Oscillator 2, Noise, and Sub Oscillator levels to 0.
3. Open the filter enough to hear the waveform's upper harmonics, and keep Resonance modest.
4. Choose a simple VCA envelope with a quick Attack and a useful Sustain level. Reduce effects if necessary.
5. Select Saw for Oscillator 1, play several sustained notes, and listen to the sound in different registers.
6. Step through the remaining waveforms using Waveform Select. Then lower and raise the filter cutoff to hear how the character of each waveform changes.

Try the same exercise with Sine, increasing Fold or Drive gradually. It makes a good demonstration of the difference between selecting a naturally complex waveform and generating additional harmonics from a simple one.



Autobend

Unlike Portamento, which creates a glide between successive notes, Autobend introduces a pitch movement at the beginning of each note, making it useful for shaping the attack and character of individual sounds. This produces expressive pitch changes automatically, without requiring movement of the Bend lever or other performance controls. When you play a note, the selected oscillator starts above or below its normal pitch, then rises or falls to the intended note. The result can range from subtle, natural-sounding pitch inflections to dramatic swoops and dives.

Autobend is particularly useful for creating expressive brass, woodwind, and vocal-like sounds, where a slight pitch movement at the beginning of a note can make a performance feel more natural. It's equally effective for synthesizer leads, electronic percussion, and special effects.

Autobend can affect Oscillator 1, Oscillator 2, or both oscillators simultaneously. Five controls determine whether Autobend is enabled, which oscillators are affected, the direction of the bend, its duration, and its intensity.

ON: *(Off/On)* Enables or disables Autobend. When enabled, the effect is applied automatically whenever a new note is played, according to the selected settings.

SELECT: *(Osc1, Osc2, Both)* Determines which digital waveform oscillators are affected by Autobend. Selecting Osc1 or Osc2 applies pitch bending to that oscillator alone, while Both applies the effect to both oscillators.

Applying Autobend to only one oscillator can produce particularly interesting results. For example, allowing Oscillator 1 to maintain a steady pitch while Oscillator 2 bends into tune creates a brief, evolving harmonic relationship between them. This can add movement and complexity to otherwise static sounds.

MODE: *(Up, Down, Alternating)* Determines the direction of the automatic pitch bend.

- **Up:** The oscillator begins below the played note and rises to the correct pitch.
- **Down:** The oscillator begins above the played note and falls to the correct pitch.
- **Alternating:** Alternates between upward and downward pitch bends with each successive note, adding variation and movement to successive notes.

TIME: *(0–31)* Determines how long the pitch takes to reach its intended value. Lower settings produce quick, subtle pitch movements that add a natural attack characteristic to brass and other sounds. Higher settings create longer, more dramatic bends suitable for synthesizer leads and special effects.

INTENSITY: *(0–31)* Determines the amount of pitch change at the beginning of each note. At 0, no pitch bend occurs. Increasing Intensity produces a greater difference between the initial pitch and the intended note, making the effect more noticeable.

Creating an Expressive Pitch Attack

This exercise makes Autobend easy to hear, then shows why its oscillator selection matters.

1. Begin with a simple sound using both digital oscillators at audible levels.
2. Select Unison for Oscillator 2 Interval and use matching octave settings.
3. Enable Autobend and choose Osc 1 under Select.
4. Set Mode to Up, with Time and Intensity at moderate values.
5. Play a series of separate notes and listen to Oscillator 1 moving against the steady pitch of Oscillator 2.
6. Switch Mode to Down and compare the attack character.
7. Select Both and listen to the difference when the oscillators bend together.
8. Adjust Time and Intensity to suit the sound, then try shorter envelope settings for a more percussive result.

With only one oscillator bending, the pitch relationship between the two oscillators changes during the attack. That can create a more complex impression than bending both together. For a natural-feeling lead, try keeping the Intensity low. For an bolder electronic attack, raise it and experiment with the different modes.

Creative Uses for Autobend

- For expressive brass and wind sounds, try selecting Both, choosing Up mode, and using a short Time with a relatively low Intensity. The slight upward movement at the beginning of each note can help simulate the natural pitch inflections of acoustic instruments.

- For more dramatic synthesizer leads, increase Time and Intensity to create pronounced pitch sweeps. Down mode works especially well for falling electronic effects, while Alternating can introduce additional movement into melodic sequences.
- For thicker, more animated sounds, apply Autobend to only one oscillator while leaving the other unaffected. Experiment with different oscillator waveforms, intervals, and detuning settings to create evolving harmonics as the bending oscillator approaches its final pitch.



Noise Generator

The Noise Generator provides an unpitched sound source that complements the pitched digital oscillators. Rather than repeating a regular waveform, noise contains a broad spread of frequencies, making it useful for breath, hiss, wind, percussion, and transient detail. Noise is often most effective at a relatively low level. A small amount added to the beginning of a plucked or struck sound can make the attack feel more convincing. In a sustained patch, a little noise can create an airy edge that helps the sound sit differently in a mix.

The original DW-8000 included a white-noise generator, while Cherry Audio expands the available palette with Pink and Brown noise. These additional noise types provide different spectral characteristics, making it easier to create softer breath textures, darker atmospheric sounds, and more varied electronic percussion without relying entirely on filtering.

Noise Controls

LEVEL: *(0–31)* Sets the amount of noise mixed into the sound. At 0, Noise contributes no signal. Increase it gradually while listening to how it combines with the pitched oscillators. Small amounts can add breath or attack detail, while higher levels are useful for percussion, wind, and atmospheric effects.

Type: *(White, Pink, Brown)* Selects one of three noise spectra.

White: Contains broadly distributed energy across the frequency spectrum, with a relatively bright, hiss-like character. It's useful for breathy attacks, cymbal-like textures, and bright electronic percussion.

Pink: Places comparatively less emphasis on the highest frequencies than white noise, producing a softer, more balanced character. It can be effective for wind, soft air, and subtle background texture.

Brown: Concentrates more energy toward lower frequencies, producing a deeper, rumbling character. Try it for low wind, distant thunder-like effects, and darker atmospheric sounds.

These are different spectral balances of noise, not three pitched waveforms. You can use the filter and envelopes to emphasize a particular frequency range or make the noise appear only briefly during a note.

Using Noise to Add a Breath or Pick Attack

You can use Noise to make a pitched sound feel more physical without turning it into a noise effect.

1. Start with a simple patch using one or both digital oscillators.
2. Select White Noise and raise Noise Level just enough to hear it behind the pitched sound.
3. Shorten the overall envelope for a plucked or percussive patch, or use a gentle attack for a breathy pad.
4. Compare White and Pink to find the character that blends best with the waveform.
5. Temporarily reduce **NOISE LEVEL** to zero, then restore it to compare the sound with and without noise. Adjust the level until the noise adds useful attack detail without becoming a separate, distracting layer of hiss.

For wind or other atmospheric effect, turn the digital oscillator levels down and work primarily with Noise, filter cutoff, and envelope shape. Brown Noise can be particularly effective for darker textures.

Tip: The Noise Generator shares the main filter and VCA envelopes with the digital oscillators, so changing those envelopes affects the entire sound. If you want a brief burst of noise at the beginning of a sustained note, try using the Mod Matrix to assign a Matrix EG to **Noise Level**. With a fast Attack, short Decay, and suitable modulation depth, the noise can fade quickly while the pitched oscillators continue to sustain. This is particularly useful for breathy leads, plucked strings, and percussion sounds that need a little extra realism at the beginning of each note.



Analog Sub Oscillator

The Analog Sub Oscillator is a Cherry Audio addition not found on the original DW-8000 hardware. It provides an additional pitched sound source, with a deliberately simple choice of sine or square waveforms and octave settings below those of the main digital oscillators. It's an easy way to give a bass, lead, or pad more low-frequency foundation without using Oscillator 2 solely for bass reinforcement.

The Sub Oscillator has its own Level, Octave, Waveform, Interval, and Drift controls. Its simpler waveforms are useful precisely because they can fill out the bottom of a complex digital patch without adding too much upper-frequency activity.

Sub Oscillator Controls

Octave: *(32', 64')* Selects the Sub Oscillator's basic register. Both choices sit below the main digital oscillators' conventional 4', 8', and 16' ranges. The 64' setting is one octave lower than 32'.

Waveform: *(Square, Sine)* Selects the Sub Oscillator's waveform. Sine produces a smooth, fundamental-heavy tone that's especially useful for unobtrusive low-end reinforcement. Square introduces additional odd harmonics, giving the sub signal more presence and definition.

Interval: *(-12 to +12 semitones)* Transposes the Sub Oscillator relative to its selected octave setting. Use small offsets for special pitch relationships, or move by 12 semitones to shift its output an octave. This greatly expands the usable pitch relationships between the sub and digital oscillators.

Drift: *(0–100%)* Introduces pitch drift to give the Sub Oscillator a less rigid character. Low settings can contribute gentle movement, while higher settings make the effect more apparent. Because the useful amount depends on the patch, begin conservatively, especially for bass sounds that need a stable fundamental.

Level: *(0–31)* Sets the Sub Oscillator's contribution to the combined sound. Bring it up gradually while listening to how it changes the weight of the digital oscillators. Too much sub energy can make a patch sound indistinct, especially when several low notes are played together.

Adding Weight

Here is a quick way to create a firm bass foundation while keeping the main oscillator sound clear.

1. Select E Bass, Dig Bass, Saw, or Square for Digital Waveform Oscillator 1.
2. Set Oscillator 1 to 16' and establish a comfortable Level.
3. Select Sine for the Sub Oscillator and set Octave to 32'.
4. Set Sub Oscillator Interval to 0 semitones and start with Drift at minimum.
5. Raise Sub Oscillator Level slowly until the lowest notes feel stronger, then back it off slightly.
6. Experiment with Square in place of Sine if the sub needs more harmonic definition.
7. Adjust filter cutoff and the VCA envelope to suit the patch, and check how it sounds across the keyboard.

When a bass sounds big in isolation but disappears or becomes woolly in a mix, adding still more low end isn't always the answer. Try less Sub Oscillator Level, or choose Square so that a few upper harmonics help the bass remain audible on smaller speakers.

Combining the Sound Generators

The two digital oscillators, Noise, and Sub Oscillator work best when each has a clear purpose. One digital The two digital oscillators, Noise Generator, and Sub Oscillator work best when each has a clear purpose. One digital oscillator might establish the main timbre, the other add a contrasting waveform or pitch interval, Noise contribute transient detail, and the Sub Oscillator reinforce the low end. There's no need to use every sound source in every preset.

A good habit is to begin with Oscillator 1, then add each additional source individually. Bring its Level up from zero and ask what it contributes. If the sound gets louder but not more interesting, the contribution may be unnecessary or may need a different waveform, octave, or balance.

A Warm Digital Pad

Use two contrasting DW waveforms for movement and richness without relying entirely on effects.

1. Select Saw for Oscillator 1 at 8'.
2. Select Violin or E Piano 1 for Oscillator 2 at 8'.
3. Set Interval to Unison and add a small amount of Detune.
4. Balance the oscillator levels so the second waveform adds character without overpowering the first.
5. Lower the filter cutoff slightly and use a slow VCA Attack and Release.
6. Add a small amount of Sub Oscillator Sine if the patch needs more foundation, then finish with restrained effects.

A little contrast between the oscillator spectra can be more interesting than two equally loud sawtooth waves. Try switching Oscillator 2 among Violin, Organ, and E Piano 1 while holding the same chord.

A Brass Attack With Autobend

Combine the familiar filter-envelope brass character with an automatic pitch movement.

1. Select Brass or Saw for Oscillator 1 and choose a complementary waveform for Oscillator 2.
2. Set both oscillators to a suitable common octave, with Interval at Unison.
3. Enable Autobend for Oscillator 1 and select Up or Down.
4. Start with a short Time and modest Intensity, then play repeated notes.
5. Use a fast VCA Attack and a filter envelope that starts relatively bright and settles back.
6. Compare bending Oscillator 1 alone with bending Both oscillators, then adjust the oscillator levels to taste.

For a more exaggerated synthesizer brass sound, increase Autobend Intensity. For a believable expressive touch, keep it subtle enough that you notice the attack without hearing a conspicuous pitch swoop on every note.

A Plucked Digital Keyboard

Let the waveform provide the body while Noise adds a little edge to the attack.

1. Select Clavi, AC Piano, or E Piano 2 for Oscillator 1.
2. Set a fast VCA Attack with a short-to-medium decay and low Sustain.
3. Choose White or Pink Noise and raise its Level just above minimum.
4. Adjust the filter so the attack is lively without becoming harsh.
5. Try a small amount of Fold or Drive for extra harmonic character.
6. Reduce the noise and Fold settings until the patch feels focused rather than abrasive.

The noise should support the attack, not sound like a separate layer of hiss. A tiny amount is often enough.

A Pure Tone Becomes a Complex One

Explore the expanded oscillator engine without changing the basic waveform selection.

1. Use Oscillator 1 alone and select Sine.
2. Keep the filter open, resonance low, and effects reduced.

3. Raise Fold gradually and listen for newly emphasized harmonics.
4. Return Fold to minimum, then increase Drive to compare its tonal effect.
5. Combine modest Fold and Drive settings.
6. Bring in Oscillator 2 at a low level, using a contrasting waveform such as Bell or Dig Bass.
7. Shape the result with filter cutoff rather than adding more processing immediately.

This exercise illustrates a useful difference between the original DW-8000 hardware and DW-8K's expanded design: the original waveform is the starting point, but it doesn't have to determine the final harmonic character.

Sound-Design Tips

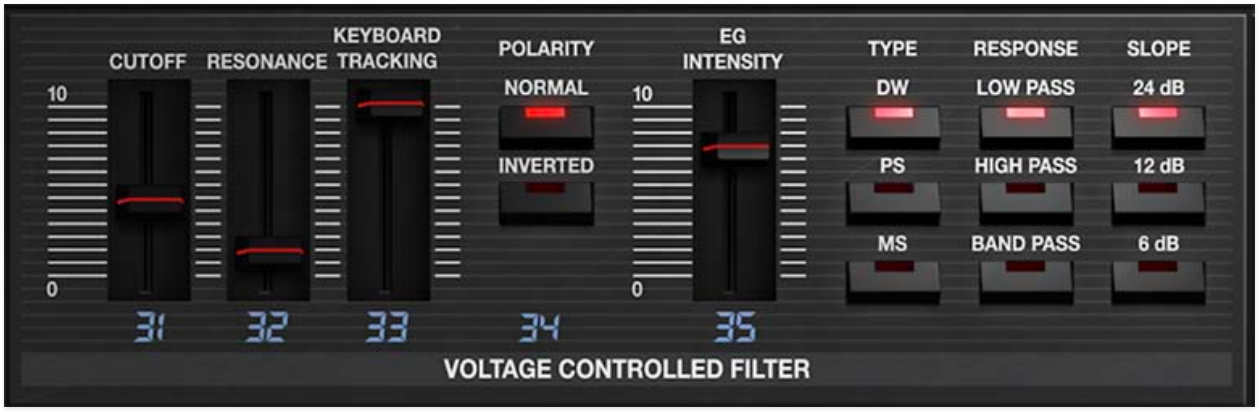
Use level as a balancing tool. Oscillator Level, Noise Level, and Sub Oscillator Level are not simply four controls to turn up. Start with the source that matters most, then introduce the others until they make a useful contribution.

Remember the register. A waveform combination that's in the middle octaves may become crowded in the bass or too sharp at the top of the keyboard. Test sounds across the notes they'll actually be used to play.

Choose your source of movement. Slight Detune, Autobend, Drift, modulation, and effects can all add motion, but they do it in different ways. Often one carefully chosen source of movement is more convincing than several competing effects.

Keep the filter in the conversation. A waveform that's too bright on its own may be perfect once filtered. Similarly, Fold and Drive can create harmonics that become musically useful only after the filter shapes them.

Save simple discoveries. Some of the most distinctive DW-8K sounds begin with one unexpected waveform, an interesting tuning relationship, and a well-chosen envelope. When that combination works, save it before adding another layer of complexity.



Filter

The Voltage Controlled Filter (VCF) is how DW-8K’s digital waveforms become warm pads, sharply defined basses, expressive brass, and everything in between. The oscillators provide the harmonic material; the filter shapes that material by removing or emphasizing different frequencies. A small adjustment can soften a bright waveform, highlight an interesting overtone, or completely change the character of a sound.

The original Korg DW-8000 paired its digital oscillators with an analog lowpass filter built around the NJM2069 chip. Cherry Audio expands on this hybrid design with three distinctive filter models, three response types, and three selectable slopes. The models are inspired by classic Korg instruments, but the available responses and slopes are modern DW-8K additions.

DW-8K's filter offers three independent choices: **TYPE** selects the filter model and its underlying tonal character; **RESPONSE** determines which frequencies are passed or attenuated; and **SLOPE** determines how sharply the rejected frequencies are reduced. All three filter models, DW, PS, and MS, can operate in Lowpass, Highpass, or Bandpass mode at 6, 12, or 24 dB/octave. That gives you 27 combinations before even touching Cutoff or Resonance.

Filter Type Selection

The DW, PS, and MS settings select three vintage-inspired filter personalities. This is more than a choice between dark and bright: the models can differ in resonance behavior, intensity, and how they react as Cutoff moves. The most revealing differences often emerge when Resonance is raised and the filter is swept.

DW: *(DW-8000)* Based on the character of the Korg DW-8000's NJM2069 analog filter. The DW model is a natural choice for warm, rounded pads, classic hybrid synthesizer tones, musical basses, and bright digital waveforms that need a little softening. It is a useful starting point when you want the sound of the original instrument.

PS: *(PS-3300)* Inspired by the Korg PS-3300's characteristically clean-sounding filter. The PS model is well suited to strings, pads, and smoothly moving textures that let the oscillator waveforms stay in the spotlight. The original PS-3300 used 12 dB/octave lowpass filters; DW-8K extends this distinctive character with additional slopes and responses.

MS: *(MS-20)* Inspired by the more aggressive Korg MS-20 filter character, with a stronger, edgier resonant personality. Choose MS for biting leads, deep sweeps, animated sequences, and sounds that benefit from a bit of controlled rudeness. It can be particularly expressive when paired with Bandpass mode or a steeper slope.

Tip: To compare the three models, keep the response, slope, and oscillator settings unchanged. Set Resonance to a moderate value, then switch between DW, PS, and MS while repeating the same phrase. Afterward, try the comparison again with more resonance.

Filter Response

Filter response determines which portion of the frequency spectrum is emphasized or attenuated. Each response is available with every filter model and every slope.

Lowpass: *(LP)* Allows frequencies below Cutoff to pass while progressively reducing frequencies above it. Lower Cutoff settings produce darker, rounder sounds; higher settings allow more upper harmonics through. Lowpass is the classic choice for warm pads, basses, brass-like attacks, and familiar synthesizer sweeps.

Highpass: *(HP)* Allows frequencies above Cutoff to pass while progressively reducing lower frequencies. Raising Cutoff thins out the low end, making the sound leaner, lighter, and sometimes more percussive. Highpass is useful for removing excess bass from pads, creating bright textures, or making a part sit above a bass instrument in a mix.

Bandpass: *(BP)* Emphasizes a band of frequencies around Cutoff while reducing frequencies above and below it. Sweeping Cutoff moves that emphasized region through the sound, often producing hollow, nasal, or

vowel-like colors. Bandpass is especially effective for expressive leads, unusual percussion, and rhythmic filter movement.

Tip: If a sound becomes too thin with Highpass or Bandpass selected, this is often the intended effect of the response rather than a problem with the oscillator. Lower Cutoff, reduce Resonance, or switch to a gentler slope to regain some body.

Filter Slope

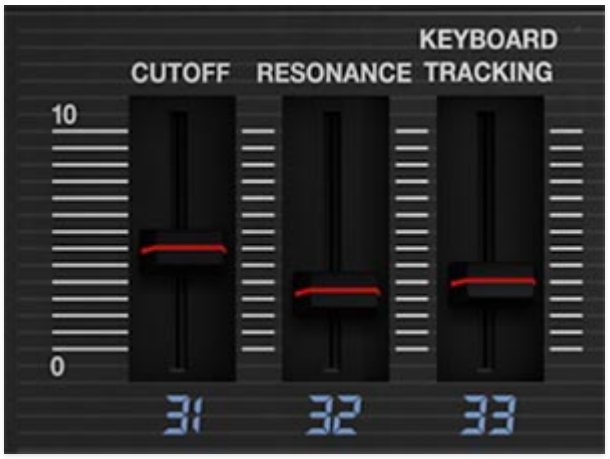
SLOPE: *(6, 12, 24 dB/octave)* Sets how quickly frequencies outside the selected filter response are reduced. The slope can be changed independently of the filter model and response. In Lowpass mode, the attenuation occurs above Cutoff; in Highpass, below Cutoff; and in Bandpass, on both sides of the emphasized frequency region.

6 dB/octave: The gentlest setting. It preserves more of the surrounding harmonic content for an open, subtle tone. A useful choice for soft tonal shaping, airy pads, and filter movements that should be heard rather than felt as a dramatic effect.

12 dB/octave: A balanced middle ground with a more noticeable filter effect while retaining some openness. Good for expressive brass, leads, evolving textures, and musical Bandpass sweeps.

24 dB/octave: The steepest setting. It provides more decisive separation between passed and rejected frequencies, making Lowpass sounds darker, Highpass sounds leaner, and Bandpass effects more focused. Try it for punchy basses, striking resonant sweeps, and tighter, more pronounced timbral changes.

Tip: For a quick demonstration of slope, choose a harmonically rich waveform, set Resonance fairly low, and switch between 6, 12, and 24 dB/octave without moving Cutoff. You will hear how much harmonic detail each slope allows to remain.



Filter Controls

CUTOFF: *(0-63)* Sets the filter's operating frequency. With Lowpass response, lowering Cutoff removes upper harmonics and darkens the sound. In Highpass, raising Cutoff removes more low-frequency energy. In Bandpass, moving Cutoff shifts the highlighted frequency region, often giving the sound a speaking or vowel-like quality. Cutoff also provides the starting point for movement produced by the filter envelope and other modulation sources.

RESONANCE: *(0-31)* Emphasizes frequencies around the Cutoff region. At modest settings, it adds definition and character; higher settings produce a more pronounced peak, making filter sweeps easier to hear. The audible result depends on the selected model, response, and slope. High settings may introduce prominent ringing or whistling, so listen for changes in volume and low-frequency weight.

Cutoff and Resonance work together. With Lowpass selected, a resonant sweep can transform an ordinary bright waveform into a familiar animated synthesizer tone. With Bandpass selected, the same sweep can sound more hollow and vocal-like. In Highpass mode, a resonant peak may emphasize the edge of a bright, thin sound rather than its low-frequency body.

KEYBOARD TRACKING: *(0-3)* Determines how Cutoff changes as notes are played higher or lower on the keyboard. Increasing keyboard tracking can help preserve a more consistent sense of brightness across the instrument's range, particularly in Lowpass mode. It also changes how a resonant peak relates to the notes you play, making it a valuable tool for tuned, expressive filter effects.

Tip: If your bass notes sound nicely rounded but upper notes become unexpectedly dull, try increasing keyboard tracking. If you want a darker top

end or a pronounced tonal contrast between low and high notes, reduce it instead.



Filter Envelope Modulation

The VCF Envelope adds movement to the filter's Cutoff setting over the life of each note. A fast sweep can give a sound a brassy punch or a plucked attack, while a slow sweep can gradually reveal upper harmonics in a pad. The envelope can also produce interesting movement in Highpass and Bandpass modes.

The **EG Intensity** and **Polarity** controls in the Filter section determine how strongly the envelope affects Cutoff and whether that movement is positive or inverted. The envelope's Attack, Decay, Break Point, Slope, Sustain, Release, and Velocity controls are located in the separate Envelopes section. See the **Envelopes** chapter for details.

EG INTENSITY: *(0-31)* Determines how strongly the VCF Envelope modulates the filter cutoff. Low settings produce subtle changes in tone, while higher settings create more pronounced sweeps. At zero, the envelope has no effect on Cutoff.

The audible result depends on the starting Cutoff setting, the envelope's shape, and the selected Polarity. For example, a relatively low Cutoff combined with a high EG Intensity can produce a dramatic filter opening during the envelope's Attack stage.

POLARITY: *(Normal/Inverted)* Determines the direction of the filter envelope's modulation.

With **Normal** selected, the envelope raises Cutoff as its level increases, then lowers it as the envelope falls. This is the conventional setting for bright attacks, expressive brass, and plucked synthesizer sounds.

With **Inverted** selected, the envelope operates in the opposite direction. As the envelope rises, Cutoff moves downward; as the envelope falls, Cutoff moves back upward. This can produce unusual inward-moving sweeps, darker attacks, and sounds that become brighter as their initial envelope movement subsides.

VELOCITY: *(0-7)* The VCF Envelope's Velocity control determines how strongly playing velocity influences its response. Increasing velocity sensitivity allows harder and softer keystrokes to produce different amounts of filter-envelope movement.

With Normal polarity, stronger playing can produce a more pronounced upward filter sweep. With Inverted polarity, stronger playing can produce greater downward movement instead. This makes Velocity especially useful for expressive keyboard sounds, brass, plucked instruments, and dynamically responsive pads.

Periodic and performance-controlled modulation can also bring the filter to life. Try a slow Modulation Generator for gentle movement, a Matrix EG for an additional independent envelope, or the Parameter Animator for rhythmic changes in Cutoff. See the **Modulation** and **Motion Controls** chapters for more information.

Tip: If a positive envelope sweep seems barely audible in Lowpass mode, lower the starting Cutoff so the envelope has room to open it. In Highpass mode, remember that moving Cutoff upward removes bass rather than adding brightness in the same way as a Lowpass sweep.

Creating Sounds With the Filter

Compare the Models, Responses, and Slopes

A short listening experiment makes the three independent choices much easier to understand. Start simple, changing only one setting at a time.

1. Choose a harmonically rich waveform for Oscillator 1, and reduce other sound generators if necessary so the filter is easy to hear.
2. Select DW, Lowpass, and 12 dB/octave. Lower Cutoff to a middle setting and add a modest amount of Resonance.
3. Play a repeated phrase, then switch to PS and MS without changing anything else. Listen for shifts in weight, edge, and resonance.
4. Return to your favorite filter Type and switch the response between Lowpass, Highpass, and Bandpass. Adjust Cutoff as needed to hear the most useful part of each response.

5. Keep the chosen response, then compare 6, 12, and 24 dB/octave. Notice how the steepness changes the amount of harmonic detail and the focus of the filter.
6. Finally, introduce a little filter-envelope movement and tune the combination by ear. The best choice is the one that supports the musical part, not necessarily the most dramatic one.

Sound Design Starting Points

Classic DW pads: Try DW with Lowpass at 12 or 24 dB/octave. Use modest Resonance, a moderately open Cutoff, and a slow filter-envelope movement. The result can soften the digital oscillators without hiding their distinctive harmonic detail.

Silky vintage strings: Start with PS, Lowpass, and 6 or 12 dB/octave. Keep Resonance gentle and use gradual Cutoff movement. This makes a good setting for spacious chords that need to remain smooth as they evolve.

Expressive synth brass: Choose DW or PS with Lowpass at 12 dB/octave. Begin with Cutoff slightly lowered, then use a short, positive filter-envelope movement to brighten the attack. Add just enough Resonance to define the articulation.

Solid bass with a defined attack: Use DW, Lowpass, and 24 dB/octave. Start with a fairly low Cutoff and a short envelope sweep. For a more aggressive bass, compare MS at the same settings, then readjust Resonance and output level as needed.

Bright, mix-friendly layers: Try PS with Highpass at 6 or 12 dB/octave. Gradually raise Cutoff until the patch stops competing with the bass and kick drum. A gentler slope can preserve a little warmth while reducing unnecessary low end.

Vocal-like leads: Select PS or MS with Bandpass at 12 dB/octave, then sweep Cutoff slowly with moderate Resonance. PS is a good starting point for smooth, rounded movement; MS pushes the same idea toward a more pronounced edge.

Percussive electronic accents: Choose MS with Highpass or Bandpass at 24 dB/octave. Use a short filter-envelope movement and experiment with Resonance for sharp, animated attacks. Short notes and a touch of ambience can give these sounds plenty of personality.

Evolving sequences: Start with MS, Bandpass, and 12 or 24 dB/octave. Modulate Cutoff while a repeating note pattern plays. Small movements can

produce rhythmic color changes; larger sweeps turn the filter into a central part of the performance.

A Few More Filter Tips

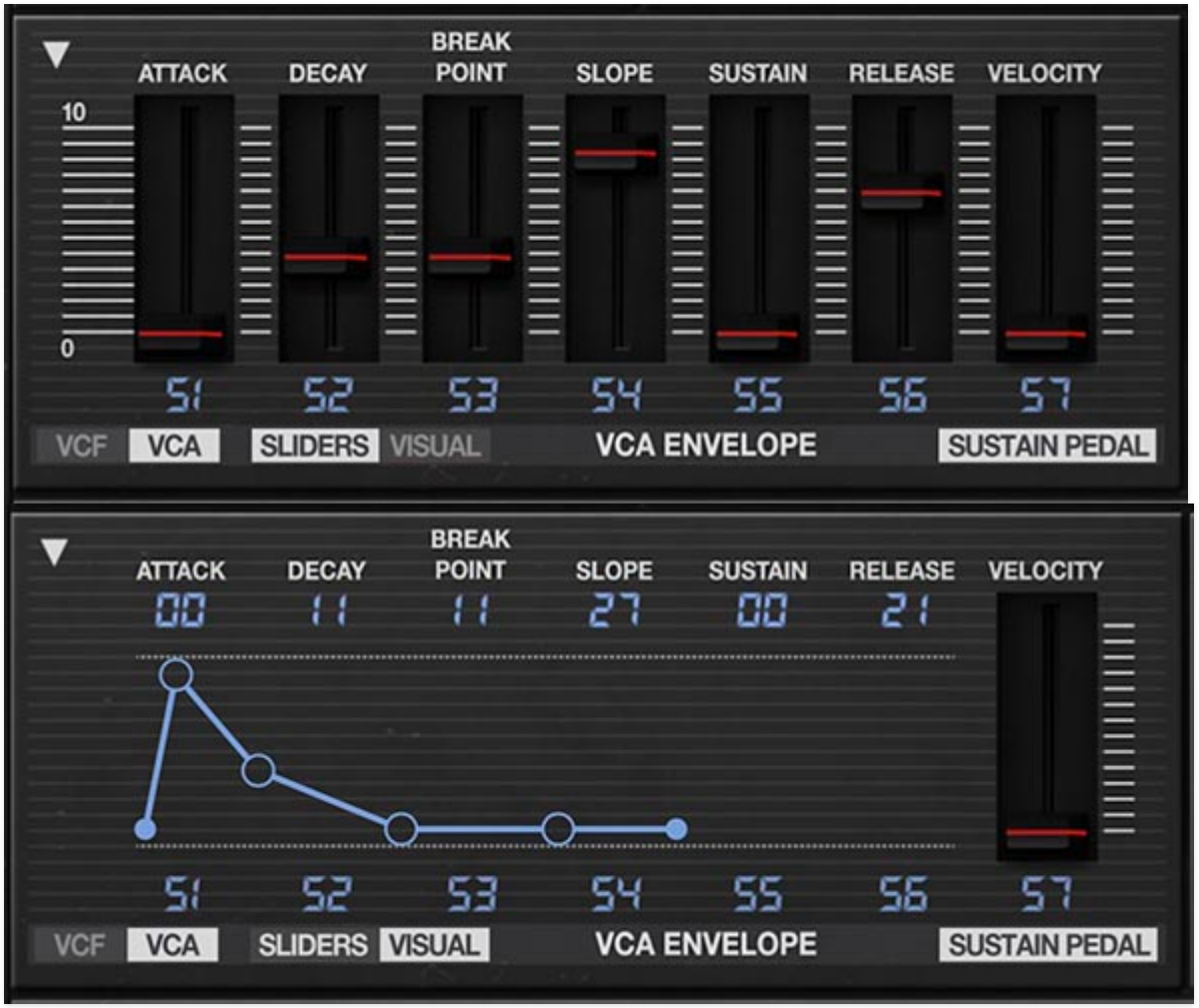
Start with the sound source: A filter cannot reveal harmonics that the oscillator does not produce. If a sweep seems too subtle, try a brighter waveform or temporarily raise the oscillator level while comparing settings.

Use Resonance sparingly: A little resonance often adds more character than a lot. Excessive amounts can draw attention away from the played note, particularly with the more assertive MS model.

Think in terms of arrangement: A thick pad may sound impressive on its own but compete with bass and piano parts in a mix. Highpass response can create room without changing the notes, voicing, or performance.

Explore unexpected combinations: The PS model is not limited to gentle Lowpass pads, and MS is not restricted to aggressive leads. Try PS with a steep Bandpass setting, or MS with a gentle 6 dB/octave Lowpass response. The model, response, and slope can each contribute a different part of the sound.

Adjust by ear after changing models: The same numeric Cutoff and Resonance positions may not give equally loud or equally bright results across filter models. Compare them in a musical context and make small compensating adjustments.



Envelopes

Envelopes give a synthesizer sound its shape. They determine whether a note begins with a sharp attack or rises gradually, whether it settles quickly or changes over several seconds, and what happens after a key is released. On DW-8K, two independent envelope generators control two equally important aspects of the sound: **VCF** shapes its changing brightness, while **VCA** shapes its volume.

Like the original Korg DW-8000, DW-8K goes beyond the conventional four-stage ADSR envelope. In addition to Attack, Decay, Sustain, and Release, each envelope includes **Break Point** and **Slope**. These introduce an extra level and an extra timed transition between the initial decay and the eventual sustain level. The result is a versatile six-stage contour capable of everything from simple percussive notes to sounds that dip, rise again, or change character while a key remains held.

The VCF and VCA envelopes share the same controls and display area. Once you're familiar with one, you'll find the other easy to use.



Selecting the VCF or VCA Envelope

The envelope section is located along the lower-left portion of the main synthesis panel. Click the **VCF** or **VCA** label at the bottom-left of the section to display the corresponding envelope and its settings.

VCF: Selects the filter envelope, which controls changes in filter cutoff over time. Its audible effect also depends on the filter's **EG Intensity**, **Polarity**, and **Cutoff** settings. For example, a short filter envelope can make a sustained note begin brightly and quickly become darker.

VCA: Selects the amplifier envelope, which controls the note's volume over time. A fast attack with a short decay can create a plucked note; a slower attack and long release are useful for strings and pads.

The two envelopes are independent. Editing the VCF envelope doesn't change the VCA envelope, and vice versa. This lets a sound become darker while remaining loud, for example, or swell in volume while its brightness follows an entirely different contour.

To switch between the two envelopes:

1. Click **VCF** at the bottom-left of the envelope section to display the filter envelope.
2. Adjust its parameters as desired.
3. Click **VCA** to display the amplifier envelope.
4. Adjust the VCA envelope independently.

When using a preset with Upper and Lower layers, check which layer is selected before editing. The envelope controls show the settings for the currently selected layer.



Sliders and Visual Views

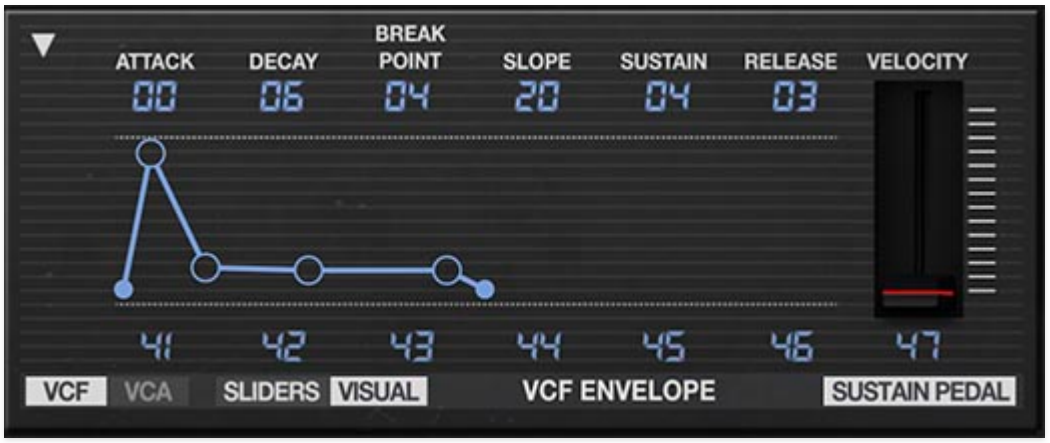
DW-8K provides two ways to view the selected envelope. Click **SLIDERS** or **VISUAL** at the bottom of the envelope section to switch between them. Both views represent the same envelope settings, so changing the view doesn't change the sound.



Sliders View

Click **SLIDERS** to show the six envelope parameters as individual vertical sliders: Attack, Decay, Break Point, Slope, Sustain, and Release. A separate **Velocity** slider appears to their right.

Sliders view is particularly useful when you want to adjust one parameter at a time or make small, deliberate changes while listening to the result.



Visual View

Click **VISUAL** to replace the six stage sliders with an interactive graphical envelope display. A blue line connects the envelope's stage points, making it easy to see the attack peak, Break Point level, transition to Sustain, and

release. The parameter names and numerical values remain visible above the graph, while the Velocity slider stays at the right.

In Visual view, you can edit the envelope directly by clicking and dragging its stage points. Drag a point horizontally to adjust its timing or vertically to change its level, as appropriate for that stage. The envelope contour updates immediately as you make adjustments, and the corresponding numerical values change to reflect the new settings.

Visual view is particularly useful for understanding how Break Point and Slope work together. Dragging the point at the end of the Decay stage vertically adjusts the Break Point level, while moving it horizontally changes the Decay time. Adjusting the Slope stage changes the duration of the subsequent transition from Break Point to Sustain. This makes it easy to experiment with two-stage decays, gradual swells, and more elaborate envelope shapes while immediately seeing the results of your adjustments.

Both views provide access to the same envelope parameters. **Sliders** view offers precise, individual control over each stage, while **Visual** view lets you shape the entire envelope graphically, making it especially convenient for creating and refining complex contours.

Understanding the Six Envelope Stages

A conventional ADSR envelope rises during Attack, falls during Decay, settles at a Sustain level, and enters Release when the key is lifted. DW-8K adds another destination and another timed movement before Sustain:

Key down → Attack peak → Decay to Break Point → Slope to Sustain → Key up → Release

This distinction matters. **Break Point sets a level**, while **Slope sets a time**. Neither is simply a second Sustain control. With Break Point higher than Sustain, the envelope falls in two stages: first from its peak to Break Point, then from Break Point to Sustain. With Break Point lower than Sustain, the second transition rises instead, creating a second attack or swell. When Break Point and Sustain are equal, there is no level change between them, and the contour behaves much like an ordinary ADSR envelope.

The original DW-8000 used values of 0–31 for all six envelope parameters, an arrangement retained in DW-8K. Four parameters, Attack, Decay, Slope, and Release, determine the timing of the envelope's transitions. The remaining two, Break Point and Sustain, establish the intermediate and sustained

levels. Understanding this distinction makes the extended envelope much easier to program.

Envelope Controls

ATTACK: *(0–31)* Sets how long the envelope takes to rise from its initial level to its peak after a note is played. Low settings produce a quick, sharp onset; higher settings create a slower rise. In the VCA envelope, this changes how quickly the sound becomes loud. In the VCF envelope, it changes how quickly the filter envelope reaches maximum intensity.

DECAY: *(0–31)* Sets the time required for the envelope to move from its Attack peak to the **Break Point** level. Low values make the first drop quick, while higher values extend it. Unlike a conventional ADSR envelope, Decay doesn't necessarily end at Sustain: it ends at Break Point, which may be above or below Sustain.

BREAK POINT: *(0–31)* Sets the intermediate envelope level reached at the end of Decay. Higher values keep the envelope closer to its initial peak, while lower values produce a more substantial first drop. Break Point doesn't lengthen Decay itself; it changes the level at which that stage ends. A high Break Point followed by a long Slope can create the impression that the note holds its initial strength or brightness before settling gradually.

SLOPE: *(0–31)* Sets how long the envelope takes to travel from Break Point to Sustain. Low values make this second transition quick; higher values stretch it out. If Break Point is higher than Sustain, Slope creates a second decay. If Break Point is lower than Sustain, it creates a second attack. This makes Slope useful for everything from natural-sounding two-stage decays to pads that dip and then bloom again.

SUSTAIN: *(0–31)* Sets the level maintained after the Slope stage has finished, for as long as the note remains held. Sustain is a **level**, not a duration. Higher values keep the envelope elevated; low values allow the filter movement or volume to settle close to zero. If Break Point equals Sustain, the Slope stage has no level difference to traverse.

RELEASE: *(0–31)* Sets how long the envelope takes to return to its resting level after a note is released. Low values produce a quick ending; higher values create longer tails. The VCA Release determines how long the note remains audible, while VCF Release determines how its brightness continues to change during that tail.

VELOCITY: *(0–7)* Sets how strongly keyboard playing velocity affects the selected envelope. Higher sensitivity produces a greater difference between

softly and firmly played notes. In the VCA envelope, this can make harder notes louder; in the VCF envelope, it can make them brighter or more dynamically shaped, depending on the filter settings.

Making the Most of Break Point and Slope

Break Point and Slope are the controls that make this envelope particularly interesting. Instead of moving directly from an initial peak to a sustained level, you can define an intermediate point and decide how quickly the envelope moves away from it.

A Two-Stage Decay

Set **Break Point higher than Sustain**. The envelope first falls from the Attack peak to Break Point at the Decay rate, then continues downward to Sustain at the Slope rate.

With a relatively high Break Point and a slow Slope, the sound stays closer to its initial intensity before fading more gradually. On a VCA envelope, this can suggest the lingering body of a plucked string or struck instrument. On a VCF envelope, it can let a bright attack retain some presence before slowly becoming warmer and darker.

It's worth making the distinction clear: raising Break Point doesn't extend the Decay time. It raises the level reached when Decay ends. Increasing **Slope** is what lengthens the second transition.

A Second Attack

Set **Break Point lower than Sustain**. After the envelope falls to Break Point, the Slope stage moves upward toward Sustain rather than continuing downward.

This produces a second rise without retriggering the note. It's an excellent way to create an evolving pad, a slowly blooming string texture, or an electronic sound that seems to regain energy after its initial attack.

For a pronounced effect, try a quick Attack, a moderate Decay, a low Break Point, a higher Sustain, and a long Slope. In the VCF envelope, the sound can begin bright, become darker, then slowly brighten again. In the VCA envelope, it can become quieter after the initial attack before swelling back to a sustained level.

A Familiar ADSR Contour

Set **Break Point to the same value as Sustain**. The envelope arrives at that level at the end of Decay, so the subsequent Slope stage has no further

change in level to make. The overall contour behaves like a conventional ADSR envelope, regardless of how long the Slope setting would otherwise be.

This is a useful starting point when programming familiar basses, leads, organs, and straightforward pads. Once the basic shape sounds right, separate Break Point from Sustain and adjust Slope to introduce a second movement.

VCF Envelope

The VCF envelope controls the changing tonal character of a note by modulating the filter cutoff. It doesn't directly control volume, although a very low cutoff can remove enough harmonics to make a sound seem quieter.

The **EG Intensity** control in the Voltage Controlled Filter section determines how strongly the envelope affects cutoff. If EG Intensity is at zero, changing the VCF envelope may produce no audible cutoff movement. The filter's **Polarity** setting determines whether the envelope drives cutoff in its normal or inverted direction.

For a classic plucked synthesizer sound, use a quick VCF Attack, a short Decay, and a lower Break Point and Sustain level. The note begins with a bright accent, then quickly loses upper harmonics. Raising Break Point or lengthening Slope allows that brightness to linger or disappear more gradually.

For an evolving pad, try a slower Attack and a Slope stage that continues to change the cutoff long after the note begins. The VCF envelope can move independently from the VCA envelope, so you can maintain steady volume while the harmonic character slowly changes.

Tip: When experimenting with VCF envelope shapes, begin with moderate filter resonance and enough EG Intensity to hear the movement clearly. Once you've established the contour, adjust Cutoff, Resonance, and Polarity to place the movement where it works best musically.

VCA Envelope

The VCA envelope determines how a note's volume develops over time. It's one of the most important factors in whether a patch feels percussive, plucked, sustained, or atmospheric.

A short Attack and low Sustain are useful for plucked and struck sounds, while a longer Attack and higher Sustain create softer entries and more

continuous tones. Release determines how naturally notes fade after you lift the keys.

Break Point and Slope make these familiar contours more flexible. A high Break Point with a long downward Slope can produce a strong initial body followed by a gentle extended fade. A low Break Point with a higher Sustain creates a dip and a second swell, something a standard ADSR envelope can't produce on its own.

The two envelopes don't have to match. For example, you might use a fast VCA Attack so the note speaks immediately, while giving the VCF envelope a slow Attack so brightness gradually increases. Or use a slow VCA Attack with a quick VCF transient for a sound that swells in volume but carries a brief tonal accent at the beginning.

Envelopes and the Mod Matrix

In addition to their primary filter and amplifier functions, the VCF and VCA envelopes can also be selected as modulation sources in DW-8K's Mod Matrix. This allows their contours to influence additional parameters, opening up possibilities beyond conventional filter and volume shaping. For example, try using the VCF Envelope to modulate Noise Level, allowing a burst of noise to follow the same contour as a filter sweep. Or route the VCA Envelope to Delay Level so the delayed signal changes as the note develops.

These assignments can be useful when you want several aspects of a sound to follow a related contour without programming multiple independent modulation sources. DW-8K also provides eight additional Matrix Envelope Generators, each with its own Attack, Decay, and repeating-envelope options. These are described in detail in the Modulation chapter.

Sustain Pedal

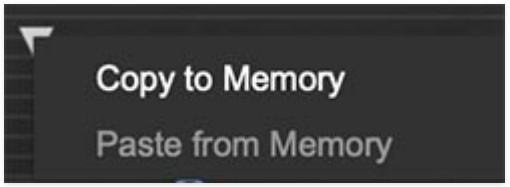
A **SUSTAIN PEDAL** button appears at the lower-right of the envelope section. This is separate from the **SUSTAIN** envelope parameter. Sustain sets an envelope's held level; a sustain pedal is a performance control associated with holding notes after keys are released. The button controls whether sustain-pedal performance messages can hold notes beyond the physical release of the keys.

Copying Envelope Settings

The small **white triangle** at the upper-left corner of the envelope section opens a utility menu with two commands: **Copy to Memory** and **Paste**

from Memory.

This provides a convenient way to reuse an envelope shape instead of recreating its settings one parameter at a time.



To copy and paste an envelope:

1. Click **VCF** or **VCA** to display the envelope you want to copy.
2. Click the **white triangle** at the upper-left corner of the section.
3. Choose **Copy to Memory**.
4. Select the envelope you want to receive the copied settings.
5. Open the triangle menu again and choose **Paste from Memory**, when available.

This is a useful way to establish related filter and amplifier contours, or to begin with a familiar shape and modify it for a different purpose.

Envelope Sound Design Techniques

The following exercises provide a few practical starting points. They're most revealing with a simple oscillator sound and minimal effects, since long reverbs or delays can disguise the actual envelope contour.

Creating a Plucked Sound With a Lingering Body

Use the VCA envelope to establish a strong initial attack followed by a slower second decay.

1. Select **VCA**, then click **VISUAL** so you can see the complete contour.
2. Set **ATTACK** close to minimum for a quick onset.
3. Choose a relatively short **DECAY** so the first drop occurs quickly.
4. Set **BREAK POINT** above the eventual Sustain level.
5. Set **SLOPE** to a medium or long value so the envelope falls gradually from Break Point to Sustain.

6. Set **SUSTAIN** low, then adjust **RELEASE** for the desired tail.
7. Hold a note long enough to hear both decay stages, then vary Break Point and Slope independently.

A higher Break Point retains more of the initial body. A longer Slope extends the gradual fade toward Sustain. This technique works especially well with electric piano, plucked string, bell, and digital percussion waveforms.

Making a Pad That Dips and Blooms

Use Break Point below Sustain to create a second rise after the initial attack.

1. Select **VCF** and set the filter's **POLARITY** to **Normal**. Choose a moderately low **CUTOFF** setting and raise **EG INTENSITY** enough to hear the envelope's movement clearly.
2. Set a moderate **ATTACK** and **DECAY** to establish the initial rise and subsequent fall toward Break Point.
3. Set **BREAK POINT** relatively low.
4. Set **SUSTAIN** higher than Break Point.
5. Increase **SLOPE** to make the second rise slow and expressive.
6. Use a VCA envelope with enough Sustain and Release to keep the sound audible throughout the movement.
7. Hold a chord and listen as the brightness changes through the two distinct phases.

For a more dramatic version, create a similar dip-and-rise contour in the VCA envelope. The note can soften after its initial onset before swelling back into view.

Programming a Classic ADSR Bass or Lead

Simplify the envelope first, then introduce an extra stage only when the sound needs it.

1. Select **VCA** and choose a fast **ATTACK**.
2. Set **BREAK POINT** and **SUSTAIN** to the same level.
3. Adjust **DECAY** for the desired initial fall in volume.
4. Set **RELEASE** to suit the articulation of the part.

5. Repeat the approach with **VCF**, using its envelope to shape the brightness of each note.
6. Once the basic sound works, raise or lower **BREAK POINT** relative to Sustain and adjust **SLOPE** to hear what the extra stage contributes.

This approach makes it easy to understand the additional controls without losing the simplicity of a familiar ADSR sound.

Making Filter and Amplifier Envelopes Work Together

Give the two envelopes different jobs so a sound changes in more than one way.

1. Set the **VCA** envelope for a smooth, sustained pad with a moderate Attack and a relatively long Release.
2. Select **VCF** and use a faster Attack with a higher Break Point.
3. Set VCF **SUSTAIN** lower than Break Point and use a long **SLOPE**.
4. Adjust the filter's **Cutoff** and **EG Intensity** to hear a gradual reduction in brightness while the note maintains its volume.
5. Try the opposite relationship by setting VCF Break Point below Sustain, creating a secondary brightening motion.

The VCA keeps the sound present while the VCF gives it an evolving tonal character. This separation is one of the simplest ways to make sustained patches feel more organic and expressive.

A Few Final Envelope Tips

Remember Which Parameters Control Time. Attack, Decay, Slope, and Release determine rates or durations. Break Point and Sustain determine levels. Keeping that distinction in mind makes complex envelopes much easier to program.

Hold Notes Long Enough to Hear the Slope Stage. With a long Slope setting, short notes may be released before the envelope completes its movement toward Sustain. For testing, hold a sustained note or chord so you can hear the entire contour.

Use Visual View to Understand the Shape. If a patch doesn't behave as expected, switch to Visual view and examine the relationship between Break

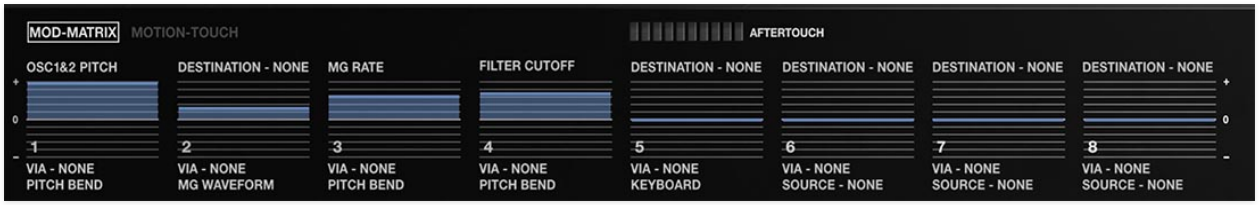
Point and Sustain. The graphical contour is especially valuable when the second transition moves upward rather than downward.

Give the Filter and Amplifier Different Jobs. The VCF envelope can create a transient or extended tonal change while the VCA envelope controls the overall note shape. They don't need identical settings to sound cohesive.

Try Subtle Velocity Sensitivity. A small amount of velocity response can give a patch a more natural playing feel without making every note sound radically different. Larger amounts can be useful for expressive keyboard and percussive sounds.

Use Break Point and Slope With Restraint. The extra stage is powerful, but it doesn't need to be obvious. A gentle second decay can make a sound feel more natural, while a slight upward transition can introduce movement without drawing attention to the envelope itself.

The six-stage VCF and VCA envelopes are central to DW-8K's expressive character. Start with a familiar ADSR contour, then use Break Point and Slope to shape the space between the initial attack and the sustained portion of the note. Often, that's where a patch begins to feel genuinely alive.



Modulation

A well-designed synth patch is rarely static. Its pitch can drift gently, a filter can open as a note develops, and a touch of keyboard pressure can bring a previously quiet texture to life. DW-8K's modulation system provides the connections that make these changes possible, from familiar vibrato and filter sweeps to much more complex movement.

At the center is an eight-slot **Mod Matrix**, where you choose a modulation **Source**, the parameter it will affect (**Destination**), and an optional **Via** controller that determines how much modulation gets through. Each routing has its own bipolar **Depth** control with a heavy blue line to click and drag up or down.

Alongside its main **Modulation Generator**, DW-8K provides eight **Matrix MG** modulation generators and eight **Matrix EG** envelope generators. These are independently selectable sources that can be assigned through the Mod Matrix. A switchable **Motion-Touch** display gives you access to four Parameter Animator assignments and four Aftertouch assignments, bringing sequenced movement and playing expression into the same sound-design workflow.

The important idea is simple: the Mod Matrix makes the connection, the modulation source provides the movement, and Depth determines how strongly that movement affects the sound.

Understanding Modulation Routing

A modulation routing has three essential parts:

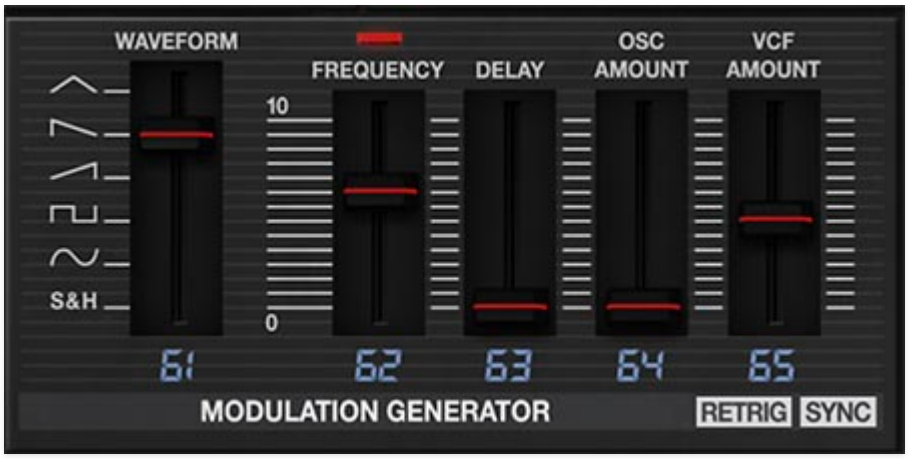
• **Source:** The signal that produces movement or responds to a performance gesture. Examples include a Matrix MG, a Matrix EG, velocity, a modulation wheel, or aftertouch.

• **Destination:** The parameter receiving that signal, such as filter cutoff, oscillator tuning, or an effects setting.

• **Depth:** The amount and direction of the change.

A **Via** assignment is optional. It lets another source, such as the Mod Wheel, control the strength of the main modulation. For example, a Matrix MG can generate vibrato continuously, while the Mod Wheel determines how much of that vibrato you actually hear.

This separation between *what moves*, *what is moved*, and *how much* keeps complex patches manageable. The system is flexible enough to route several different sources to one destination, or one source to several destinations using multiple slots.



The Main Modulation Generator

Before turning to the Mod Matrix, it's useful to understand the **Modulation Generator** on the main panel. This is DW-8K's direct, original-style modulation section, with its own waveform and timing controls and dedicated amounts for oscillator and filter modulation.

For familiar tasks such as adding vibrato or a repeating filter sweep, the main Modulation Generator provides a convenient starting point. The eight Matrix MG sources extend that idea by letting you create additional, independently configured modulation signals and route them to a much wider selection of destinations.

WAVEFORM: *(six selectable waveforms)* Chooses the periodic shape of the modulation signal. The icons show the available shapes, including smooth, ramped, stepped, and sample-and-hold-style movement. A smooth wave is a natural choice for vibrato; sharper shapes produce more noticeable changes.

FREQUENCY: Sets the modulation speed. Slower settings suit gentle swells and long filter movements, while faster settings create more obvious vibrato or rapid rhythmic changes.

DELAY: Sets the time before the modulation begins to develop following a note trigger. Try adding a little Delay to a lead sound so the initial pitch is steady before vibrato arrives.

OSC AMOUNT: Sets the amount of Modulation Generator movement applied to oscillator pitch. This is a quick way to create vibrato without first establishing a Mod Matrix routing.

VCF AMOUNT: Sets the amount of Modulation Generator movement applied to the filter cutoff. Small settings can bring a sustained pad to life; larger amounts produce clearly audible filter sweeps.

RETRIG: *(Off/On)* Selects whether modulation is retriggered in response to note events, rather than continuing independently through its cycle.

SYNC: *(Off/On)* Enables tempo synchronization for the Modulation Generator. Use it when the modulation should follow the timing of a sequence or DAW project.

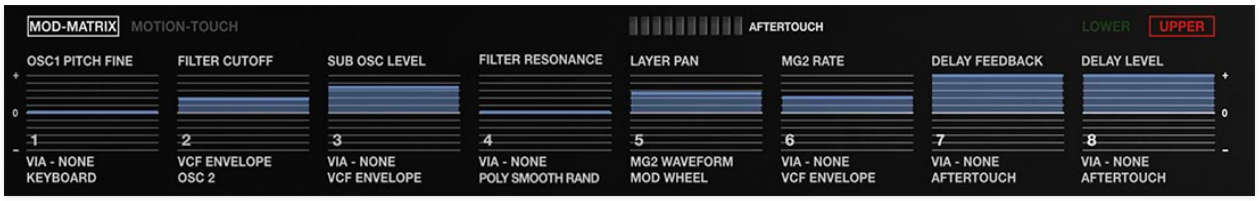
Tip: To hear the difference between pitch and filter modulation, start with a sustained sound, choose a smooth waveform, and raise OSC AMOUNT while leaving VCF AMOUNT at minimum. Then lower OSC AMOUNT and raise VCF AMOUNT. The first creates pitch movement; the second changes the sound's brightness. A small amount of each can produce an animated patch without elaborate routing.

The main Modulation Generator and the Matrix MG sources are complementary. Use the direct controls for straightforward pitch and filter movement, then bring in the Mod Matrix when the patch needs more sources, more destinations, or independent modulation rates.

The Mod Matrix

The Mod Matrix occupies the upper-right portion of the main synthesis panel. Click **MOD-MATRIX** above the display to show its eight modulation slots. Click **MOTION-TOUCH** to switch to the alternate performance and animation assignments described later in this chapter.

Each of the eight Mod Matrix slots includes a Source selection, a Destination selection, an optional Via selection, and a vertical bipolar Depth display. Click the corresponding text field to open its selection menu. The assignments are organized by category, with arrows indicating additional submenus.



The **Mod** lever in Keyboard view also provides real-time control over pitch and filter modulation. Its **PITCH MOD** and **FILTER MOD** switches determine which modulation effects can be introduced during a performance, while **MOD AMOUNT** establishes the available modulation response. For example, you can program a gentle vibrato using the Modulation Generator, then introduce it gradually with the Mod lever rather than applying the full effect continuously. See the **Performance Controls** chapter for details.

Modulation and Layer Selection

When working with a Dual or Split preset, pay attention to the **Upper** and **Lower** layer selection controls. These determine which layer's synthesis settings are displayed for editing. Before creating or adjusting modulation assignments, make sure you've selected the intended layer. This is particularly important when programming layered sounds, where you may want different modulation behavior for each component of the patch.

Tip: When working with two contrasting layers, experiment with subtle modulation on one and more pronounced movement on the other. This can create a rich, evolving sound without making both layers compete for attention.



Mod Matrix Controls

SOURCE: *(selection menu)* Chooses the modulation signal that will control the destination. The menu contains both conventional modulation sources, such as the Modulation Generator and VCF/VCA envelopes, and extended sources, including the eight Matrix MGs, eight Matrix EGs, performance controls, and Sequence Animators. Select **None** to leave a routing without a modulation source.

DESTINATION: *(selection menu)* Chooses the parameter to be modulated. Destinations are grouped by instrument section so you can locate the required control without searching one enormous list. Select **None** when no destination is required.

VIA: *(None or source selection)* Selects an optional secondary source that scales the amount of modulation from the primary Source. When Via is **None**, the selected Source acts according to the Depth setting without an additional performance controller. When Via is assigned, its signal determines how much of the available modulation depth is applied.

DEPTH: *(-100% to +100%)* Sets the amount and polarity of modulation for the slot. At **0%**, no modulation is applied. Positive values move the destination in the positive direction; negative values invert the modulation's effect. The audible result depends on both the source and the parameter being controlled. Click and drag the heavy blue line up or down to change the value, or double-click to set the -/+ percentage value manually.

For example, a positive Matrix MG routing to filter cutoff can make the filter open as the modulation signal rises. A negative routing produces the opposite response. With a bipolar waveform, both positive and negative movement may be heard around the destination's starting value.

Modulation is limited by the destination parameter's available range. A high Depth setting cannot force a control beyond its normal minimum or maximum.

Source and Via Selection Menus

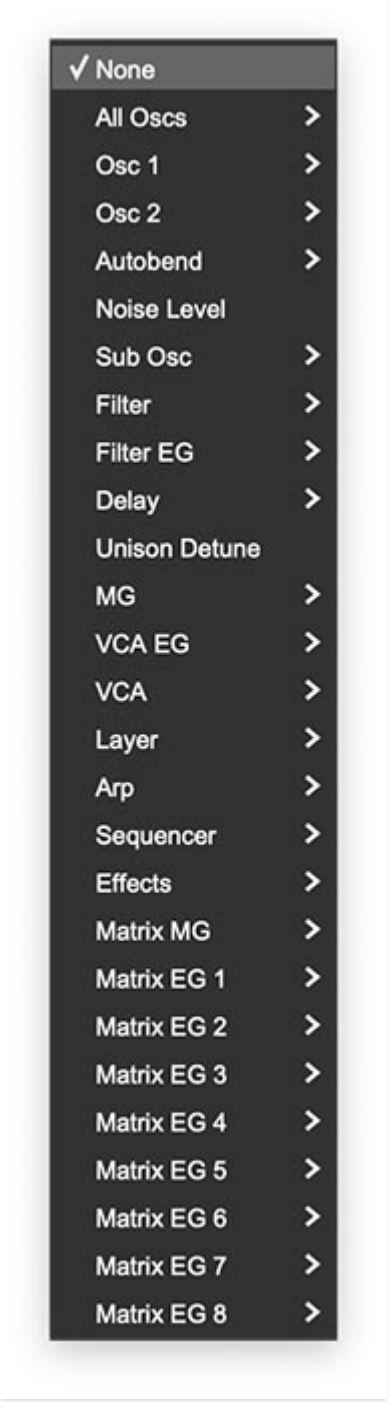
The Source and Via menus use the same broad organization, including these visible categories and entries:

- **Osc**, **Noise**, and **Modulation Generator**
- **VCF Envelope** and **VCA Envelope**
- **Pitch Bend**, **Mod Wheel**, **Keyboard**, **Keyboard Glide**, **Velocity**, and **Aftertouch**
- **MPE**, **Random**, **DC**, and **CV**

• **Effects**, **Matrix MG**, **Matrix EG**, and **Sequence Animators**

Entries with submenu arrows provide more specific choices. For example, the **Matrix MG** and **Matrix EG** categories let you select individual generators. Some sources offer direct responses to your playing, while others provide continuously changing, envelope-shaped, random, or sequenced control signals.

DC is useful to recognize as a constant control source rather than a repeating LFO or envelope. Its exact behavior in a particular routing depends on the destination and modulation depth. The available **CV** submenus provide further control-signal options.



DW-8K Mod Matrix Assignment Reference

Mod Sources	Mod Destinations	Via
None	**None**	**None**
Osc 1 · 2 · Sub	**All Oscs** Waveform · Pitch · Pitch Fine · Level · Phase · Fold · Drive	**Osc** 1 · 2 · Sub

Noise
White · Pink · Brown

Modulation Generator
MG Waveform · MG Saw - Exponential · MG Saw - Logarithmic · MG Saw - 3-Step · MG Saw - 4-Step · MG Ramp - Exponential · MG Ramp - Logarithmic · MG Ramp - 3-Step · MG Ramp - 4-Step

VCF Envelope

VCA Envelope

Pitch Bend

Mod Wheel

Keyboard

Keyboard Glide

Velocity

Aftertouch

Osc 1
Waveform · Pitch · Pitch Fine · Level · Phase · Fold · Drive

Osc 2
Waveform · Pitch · Pitch Fine · Level · Interval · Detune · Phase · Fold · Drive

Autobend
Time · Intensity

Noise Level

Sub Osc
Pitch · Pitch Fine · Level

Filter
Cutoff · Resonance

Filter EG
Intensity · Attack · Decay · Breakpoint · Slope · Sustain · Release

Delay
Time · Factor · Feedback · Frequency · Intensity · Level

Unison Detune

MG
Rate · Osc Amount · VCF Amount

Noise
White · Pink · Brown

Modulation Generator
MG Waveform · MG Saw - Exponential · MG Saw - Logarithmic · MG Saw - 3-Step · MG Saw - 4-Step · MG Ramp - Exponential · MG Ramp - Logarithmic · MG Ramp - 3-Step · MG Ramp - 4-Step

VCF Envelope

VCA Envelope

Pitch Bend

Mod Wheel

Keyboard

Keyboard Glide

Velocity

Aftertouch

MPE
X · Y · Z

Random
Mono · Mono Smooth · Poly · Poly Smooth

DC

CV
Arp · Lowest Note · Highest Note

Effects
Layer 1 LFO · Layer 2 LFO · Global LFO

Matrix MG
MG 1 Waveform · MG 2 Waveform · MG 3 Waveform · MG 4 Waveform · MG 5 Waveform · MG 6 Waveform · MG 7 Waveform · MG 8 Waveform

Matrix EG
EG 1 · EG 2 · EG 3 · EG 4 · EG 5 · EG 6 · EG 7 · EG 8

Sequence Animators
Sequence Animator 1 · Sequence Animator 2

VCA EG
Attack · Decay · Breakpoint · Slope · Sustain · Release

VCA
Level

Layer
Level · Pan · Tune · Mix

Arp
Speed · Swing · Chance · Feel

Sequencer
Speed · Swing · Chance · Feel

Effects
Layer 1 LFO Rate · Layer 1 Level · Layer 2 LFO Rate · Layer 2 Level · Global LFO Rate · Global Level · Level · Stereo Width

Matrix MG
MG 1 Frequency · MG 2 Frequency · MG 3 Frequency · MG 4 Frequency · MG 5 Frequency · MG 6 Frequency · MG 7 Frequency · MG 8 Frequency

Matrix EG 1–8
Each separately selectable: Attack ·

MPE
X · Y · Z

Random
Mono · Mono Smooth · Poly · Poly Smooth

DC

CV
Arp · Lowest Note · Highest Note

Effects
Layer 1 LFO · Layer 2 LFO · Global LFO

Matrix MG
MG 1 Waveform · MG 2 Waveform · MG 3 Waveform · MG 4 Waveform · MG 5 Waveform · MG 6 Waveform · MG 7 Waveform · MG 8 Waveform

Matrix EG
EG 1 · EG 2 · EG 3 · EG 4 · EG 5 · EG 6 · EG 7 · EG 8

Sequence Animators
Sequence Animator 1 · Sequence Animator 2

· Sequence Animator 3 · Sequence Animator 4

· Decay · Repeat Frequency

· Sequence Animator 3 · Sequence Animator 4

Creating a Basic Modulation Routing

To route a Matrix MG to filter cutoff:

1. Load a relatively simple sustained preset and make sure the filter has room to open and close.

2. Click **MOD-MATRIX** to display the modulation slots.

3. In an unused slot, click **SOURCE** and choose **Matrix MG**, then select **Matrix MG 1**.

4. Click **DESTINATION** and select the filter cutoff parameter from the **Filter** submenu.

5. Leave **VIA** set to **None**.

6. Raise **DEPTH** to a modest positive value.

7. Hold a note and listen for movement in the filter.

8. Adjust the Frequency and waveform of Matrix MG 1 to change the character of the movement.

The exact amount of movement depends on the preset's filter setting and the chosen modulation waveform. If the effect is difficult to hear, try a brighter waveform or a filter cutoff setting near the middle of its useful range.

Using Via for Performance Control

Via lets you keep an expressive effect ready without having it run at full strength all the time.

To bring in vibrato with the Mod Wheel:

1. Choose an unused Mod Matrix slot.

2. Select **Matrix MG 2** as the Source.

3. Choose an oscillator pitch destination from the **All Oscs** category.

4. Set **VIA** to **Mod Wheel**.

5. Set a small positive **DEPTH**.

6. Select a smooth modulation waveform for Matrix MG 2 and choose a suitable Frequency.

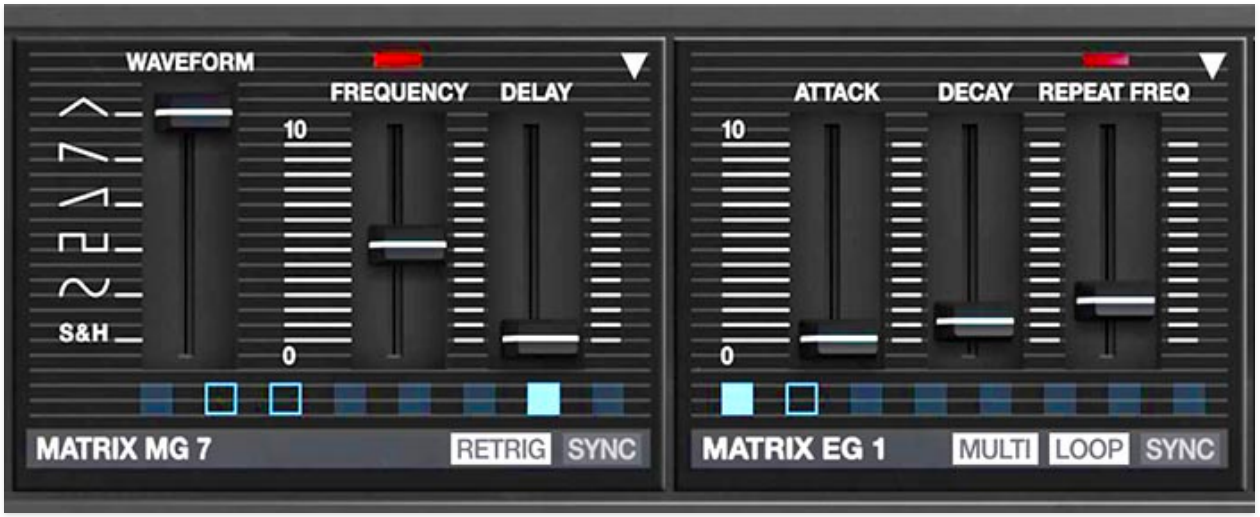
7. Hold a note and move your controller's modulation wheel to introduce the vibrato.

A small amount usually sounds more natural than a dramatic pitch sweep. If the pitch movement is too large, reduce Depth rather than trying to compensate with the wheel.

Via can also use velocity or other sources. For instance, setting Via to **Velocity** can make the amount of an envelope-driven filter sweep depend on how firmly a key is played.

Combining Multiple Mod Matrix Slots

A destination can receive modulation from more than one slot. This is useful when a sound needs both continuous movement and performance response. One slot might send a slow Matrix MG to filter cutoff while another sends keyboard aftertouch to the same destination. The first produces gentle motion; the second lets the player add extra brightness when desired. Keep the individual Depth settings moderate when several routings influence the same parameter. Their combined movement may reach a destination's minimum or maximum sooner than expected.



Matrix MG: Eight Additional Modulation Generators

The **Matrix MG** section is located in the lower-right portion of the main panel. It provides controls for eight independently configurable modulation generators, numbered 1 through 8. Think of these as eight additional LFO-style sources that can perform different modulation duties within a patch.

Unlike the instrument's primary Modulation Generator, the Matrix MG generators are designed to be brought into use through the Mod Matrix. You assign a Matrix MG as a Source in a modulation slot, choose its Destination, and set the modulation Depth. Once assigned, that generator becomes available for editing in the Matrix MG section.

The section includes a waveform selector, Frequency and Delay sliders, Retrig and Sync buttons, a row of eight generator-selection squares, and a white triangle that opens its settings-copy menu.

Selecting a Matrix MG

The eight small squares below the Matrix MG controls show which of its generators have been activated through modulation routing.

• A **solid blue square** identifies a Matrix MG that is active, available, and currently selected for editing.

• An **outlined blue square** identifies a Matrix MG that is active and available, but not currently selected.

• An **unlit square** indicates a generator that has not been activated by a modulation routing.

Click an active square to display that generator's settings. The section label updates to show the selected number, for example **MATRIX MG 7**. The same Frequency, Delay, waveform, and button controls are reused to edit whichever Matrix MG is selected; changing one generator's settings does not mean you are editing all eight.

An assigned generator may be available even when its modulation Depth is set to zero. The routing establishes the source's availability; Depth determines how much of its signal reaches the destination.

Matrix MG Parameters

WAVEFORM: *(Triangle, descending ramp, ascending ramp, square, sine, S&H)* Selects the shape of the modulation signal. The waveform selector uses small graphical symbols rather than a large text menu.

• **Triangle** produces an even rise and fall, useful for smooth periodic motion.

• **Descending ramp** falls through its cycle before returning abruptly to the beginning.

• **Ascending ramp** rises through its cycle before returning abruptly to the beginning.

• **Square** alternates between two levels, producing stepped, on/off-style changes.

• **Sine** produces smooth, rounded movement, particularly useful for vibrato and gentle filter animation.

• **S&H (Sample & Hold)** creates stepped changes suited to less predictable, electronic movement.

These shapes are useful for different musical purposes. A slow sine can produce a barely perceptible filter sway, while a square wave can alternate a parameter between two contrasting settings. S&H can give a sound a wandering, synthetic quality that is difficult to achieve with ordinary repeating curves.

FREQUENCY: *(0–31)* Sets the speed of the selected Matrix MG. Lower settings produce slower movement, while higher settings produce faster modulation. The numeric range is a control scale rather than a direct display of frequency in hertz.

DELAY: *(0–31)* Sets the delay before the selected Matrix MG's modulation develops after a note is triggered. Delay is particularly useful for bringing vibrato or other movement into a sound after its initial attack.

RETRIG: *(Off/On)* Enables retrigger behavior for the selected Matrix MG, allowing the modulation cycle to restart in response to note triggering. This is useful when you want a repeated note to begin with a predictable modulation phase rather than encountering the waveform at an arbitrary point.

SYNC: *(Off/On)* Enables tempo synchronization for the selected Matrix MG. Use Sync when a repeating modulation pattern should align with the music's tempo rather than move at an independent free-running rate.

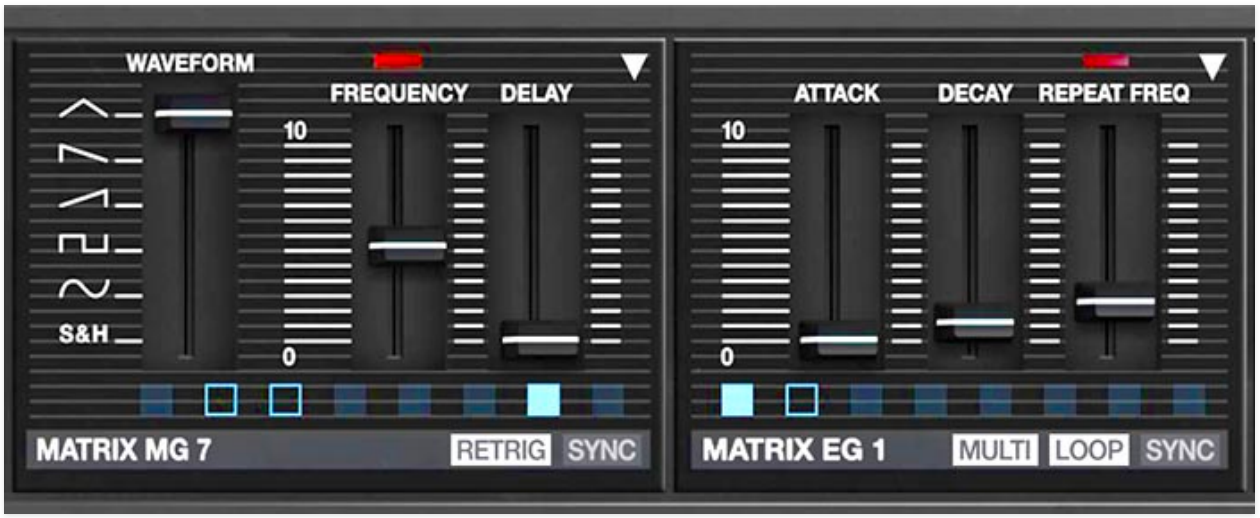
A Few Useful Matrix MG Applications

For **slow pads**, use a sine or triangle waveform at a low Frequency and a small Depth to filter cutoff or another suitable destination. Small movements often make a sustained sound feel more alive without drawing attention to the modulation itself.

For **rhythmic sounds**, try a square waveform with Sync enabled. Assign it to a destination that creates an audible contrast between the two modulation levels, then adjust Frequency to suit the tempo.

For **delayed vibrato**, route a sine-wave Matrix MG to oscillator pitch, keep the Depth subtle, and raise Delay. This lets the sound begin cleanly before pitch movement develops.

For **animated digital textures**, experiment with S&H and a modest amount of modulation applied to a suitable oscillator-shaping or filter destination. Start gently: large random changes can make individual notes lose their identity.



Matrix EG: Eight Additional Envelope Generators

The **Matrix EG** section sits beside Matrix MG and provides eight independently configurable envelope generators, also numbered 1 through 8. These are additional modulation envelopes, separate from the main VCF and VCA envelopes described in the Envelopes chapter.

Each Matrix EG can be routed through the Mod Matrix to shape a destination over time. This is especially useful when a parameter needs its own contour instead of following the sound's filter or amplitude envelope.

For example, a bright synthesizer pluck might use the VCA envelope for its overall volume, the VCF envelope for brightness, and Matrix EG 1 to add a short pitch or harmonic-shaping movement at the beginning of each note. Each contour can then be adjusted independently.

Selecting a Matrix EG

The eight small squares beneath the Matrix EG controls work the same way as those in the Matrix MG section. A generator becomes active and selectable when it has been assigned as a modulation source through the Mod Matrix.

- **Solid blue:** Active and currently selected.

• **Outlined blue:** Active and available, but not selected.

• **Unlit:** Not yet activated by a modulation routing.

Click a solid or outlined blue square to select that generator for editing. The label updates to show the chosen Matrix EG number, for example **MATRIX EG 1**. This lets one Matrix EG create a quick percussive accent while another provides a slower, evolving contour, without needing to change or reuse the main VCF and VCA envelopes.

Matrix EG Parameters

ATTACK: *(0–31)* Sets the time the envelope takes to rise through its initial attack stage. Low values produce a quick onset suited to plucks, percussion, and sharp accents. Higher settings produce a more gradual onset, useful for delayed brightness, pitch movement, and swelling textures.

DECAY: *(0–31)* Sets the time the envelope takes to fall from its peak after the Attack stage. Shorter Decay settings create brief modulation accents. Longer values allow the destination to return more gradually toward its resting setting.

REPEAT FREQ: *(0–25)* Sets the repetition rate for the selected Matrix EG when repeat or looping behavior is active. This allows a two-stage Attack/Decay shape to become a recurring modulation pattern rather than serving only as a single note-triggered contour.

MULTI: *(Off/On)* Selects the Matrix EG's multi-trigger behavior. This setting determines how its triggering responds in more elaborate playing situations, including overlapping notes.

LOOP: *(Off/On)* Enables repeating operation for the Matrix EG. With Loop engaged, the Attack/Decay contour can become a cycling modulation source, with Repeat Freq determining its repetition rate.

SYNC: *(Off/On)* Enables tempo-related synchronization for the selected Matrix EG's repeating movement. This is particularly useful when the repeated envelope should reinforce an arpeggio, sequencer pattern, or project rhythm.

A Matrix EG differs from an LFO-style Matrix MG in the kind of movement it creates. The Matrix MG begins with a repeating waveform. The Matrix EG begins with an Attack/Decay shape that can provide a one-time contour or, when its looping functions are used, a repeating pulse of modulation.

Creating an Independent Filter Accent

To add a second filter movement without changing the main VCF envelope:

1. Load a sound with a reasonably open filter and a sustained VCA envelope.
2. Open **MOD-MATRIX** and choose an unused modulation slot.
3. Set **SOURCE** to **Matrix EG 1**.
4. Choose the filter cutoff parameter as **DESTINATION**.
5. Leave **VIA** set to **None**.
6. Set a moderate positive **DEPTH**.
7. Click the newly active **Matrix EG 1** selection square.
8. Set **ATTACK** low and use a modest **DECAY** value.
9. Play repeated notes, then gradually increase Attack or Decay to hear how the additional contour changes the sound.

Because Matrix EG 1 operates independently of the main VCF envelope, you can change this accent without rewriting the original filter contour. Negative Depth can produce the opposite movement, creating a short dip rather than an opening sweep.

Using a Looping Matrix EG

A looping Attack/Decay envelope can produce movement that feels more like repeated swells than a conventional LFO.

1. Route **Matrix EG 2** to an audible destination, such as filter cutoff.
2. Select Matrix EG 2 using its active square.
3. Choose a moderate Attack and a shorter Decay.
4. Enable **LOOP**.
5. Adjust **REPEAT FREQ** to hear the repeating contour.
6. Enable **SYNC** when you want the movement to follow tempo.
7. Adjust the Mod Matrix Depth until the effect sits naturally within the patch.

Try a longer Attack for a rising pulse, or a short Attack and longer Decay for a series of falling accents. When a pattern becomes too obvious, lower Depth rather than removing the movement entirely.

Copying Matrix MG and Matrix EG Settings

Each Matrix MG and Matrix EG section includes a small white triangle at its upper-right corner. Clicking the triangle opens a menu for copying and

pasting the settings of the currently selected generator.

COPY TO MEMORY: Stores the currently selected Matrix MG or Matrix EG settings for reuse.

PASTE FROM MEMORY: Applies the stored settings to the currently selected generator. The command may be unavailable when no compatible settings have been copied.

To duplicate a generator's settings:

1. Select the active Matrix MG or Matrix EG whose settings you want to copy.
2. Click the section's white triangle.
3. Choose **Copy to Memory**.
4. Select the destination generator using its active square.
5. Click the white triangle again and choose **Paste from Memory**.
6. Make any adjustments needed for the new modulation assignment.

This is useful when you want two Matrix MGs to use related waveforms and timing but control different destinations, or when two Matrix EGs should begin from the same contour before being edited independently. Copying settings does not, by itself, establish a new Mod Matrix routing; the destination generator must first be activated through the matrix.



Motion-Touch

The Mod Matrix shares its upper-panel display area with **Motion-Touch**. Click **MOTION-TOUCH** above the modulation display to reveal four **Parameter Animator** assignments and four **Aftertouch** assignments. Click **MOD-MATRIX** to return to the eight modulation-routing slots.

Motion-Touch presents two related but distinct kinds of modulation. The first four sliders are driven by the Sequencer’s four Parameter Animator lanes; the remaining four are driven by incoming keyboard aftertouch. In both groups, you choose the modulation destination and set a positive or negative amount. The source for each lane, however, is fixed by its function.

Parameter Animator Assignments 1–4

The first four Motion-Touch sliders are labeled **PARAMETER ANIMATOR 1, 2, 3, and 4**. Each is tied directly to the correspondingly numbered Parameter Animator button in the Sequencer's Motion view. For example, the values programmed for **Sequencer Parameter Animator 1** control the modulation assigned to Motion-Touch Parameter Animator 1.

These four lanes have freely selectable destinations and bipolar modulation amounts. The Sequencer provides the changing values, while the Motion-Touch assignment determines which sound parameter those values affect and how strongly they affect it. You do not select a separate source for these lanes; each already receives its signal from its matching Sequencer Parameter Animator.

For example, assign Parameter Animator 1 to filter cutoff and Parameter Animator 2 to an oscillator-shaping parameter. Program different step values for the two animators in Motion view, and the resulting movements can give a repeating sequence its own changing tone and articulation.

Assigning a Parameter Animator

To create a sequencer-driven modulation assignment:

1. Click **MOTION-TOUCH** to display the eight modulation assignments.
2. Click the destination label above **PARAMETER ANIMATOR 1** and select a parameter, such as Filter Cutoff.
3. Adjust the assignment slider to establish the desired modulation amount and polarity.
4. Click **MOTION** at the lower-left corner of DW-8K to display the Sequencer.
5. Enable the Sequencer and turn on its **MOD** trigger.
6. Enable the **PARAMETER ANIMATOR** and select lane **1**.
7. Drag the step values to create the desired animation pattern.
8. Start Motion playback and play or hold a note to hear the results.

To animate a sustained sound without triggering sequenced notes, turn off the Sequencer's **NOTES** trigger while leaving **MOD** enabled.

The same procedure applies to Parameter Animators 2, 3, and 4. Each corresponds to its matching Motion-Touch assignment.

Aftertouch Assignments 1–4

The remaining four Motion-Touch sliders are labeled **AFTERTOUCH 1, 2, 3, and 4.** Unlike the Parameter Animator lanes, all four use **AFTERTOUCH** as their fixed modulation source. Each can be assigned to a different destination, with its own positive or negative modulation amount.

When a compatible keyboard or controller sends aftertouch data, that pressure signal drives whichever destinations have been assigned to these four lanes. For example, a single increase in pressure could open the filter through Aftertouch 1, increase vibrato through Aftertouch 2, and change an effect setting through Aftertouch 3. The fourth lane remains available for another independent destination.

The four Aftertouch lanes do not need a Sequencer pattern, and their sources cannot be switched to Parameter Animator signals within Motion-Touch. Their purpose is to make playing pressure an immediate, expressive control over the sound.

Exactly how pressure is distributed among held notes depends on the controller's capabilities and DW-8K's current keyboard or MPE mode. The **Performance Controls** chapter covers those distinctions.

Using Motion-Touch Musically

For a **pressure-sensitive lead**, start with a focused oscillator sound and assign aftertouch to filter cutoff or an appropriate modulation depth. Keep the initial patch relatively restrained, then let pressure supply the extra intensity.

For an animated sequence, choose a destination such as filter cutoff for Motion-Touch Parameter Animator 1, then use the Sequencer’s Parameter Animator 1 button to program the changes step by step. Try keeping most steps near the center and placing stronger values only on important rhythmic accents.

For a **layered pad**, combine a slowly moving Matrix MG with an Aftertouch assignment that adds a more obvious tonal change. The LFO-style motion keeps the sound alive, while pressure lets the player decide when the sound should open up.

MPE (MIDI Polyphonic Expression)

MPE, short for MIDI Polyphonic Expression, allows compatible MIDI controllers to apply expressive gestures independently to individual notes. Unlike

conventional pitch bend or channel aftertouch, which typically affect every sounding note together, MPE lets you bend, brighten, or otherwise reshape one note in a chord while the others remain unchanged.

For example, you could hold a sustained chord, increase the brightness of one note by pressing harder, and bend another note's pitch without affecting the rest. This brings an entirely new level of expression to polyphonic playing, making DW-8K respond more like an acoustic instrument than a conventional keyboard synthesizer.

To take advantage of MPE, you'll need a compatible controller, such as the Expressive E Osmose, ROLI Seaboard, LinnStrument, or another instrument capable of transmitting per-note expression data.



Enabling MPE

DW-8K integrates MPE directly into its Key Assign and Motion-Touch systems.

To enable and configure MPE:

1. Locate the **KEY ASSIGN** section at the upper-right corner of the DW-8K interface.
2. Click **MPE** to enable MPE operation.
3. Click **MOTION-TOUCH** above the synthesis controls to display the Motion-Touch assignments.
4. Notice that the four Aftertouch assignments have changed to **MPE-X**, **MPE-Y**, **MPE-Z**, and **MPE-VELOCITY**.
5. Click the destination label above any MPE slider to choose the parameter you want to control.

6. Adjust the slider to set the amount and direction of modulation.
7. Play your MPE controller and experiment with the assigned gestures.

The four Parameter Animator assignments remain available while MPE is enabled, allowing sequencer-driven modulation and expressive MPE control to work together.



MPE Modulation Controls

In MPE mode, the four rightmost Motion-Touch sliders become dedicated MPE assignments. Each has a fixed expression source, but its modulation destination and amount can be assigned independently.

MPE-X: Responds to the controller's per-note X dimension, typically associated with horizontal finger movement or pitch bend. Assign it to an oscillator pitch destination for expressive bends, or use another destination to create timbral changes controlled by lateral movement.

MPE-Y: Responds to the controller's per-note Y dimension, commonly associated with sliding or moving a finger along the playing surface. This is especially effective for controlling Filter Cutoff, Resonance, oscillator characteristics, or other parameters that benefit from continuous expressive movement.

MPE-Z: Responds to per-note pressure. Pressing harder on an individual note can increase modulation intensity without affecting other held notes. Try assigning MPE-Z to Filter Cutoff for pressure-sensitive brightness, or to a modulation amount for expressive vibrato.

MPE-Velocity: Responds to the velocity of each played note. Unlike X, Y, and Z, which can change continuously while a note is held, Velocity is captured when the note begins. It is particularly useful for controlling the initial brightness, intensity, or articulation of individual notes.

Each slider is bipolar, allowing positive or negative modulation amounts. This provides considerable flexibility when designing expressive responses. For example, increasing pressure might open the filter on one assignment while simultaneously reducing another parameter using a negative modulation amount.

The MPE sources are fixed to their respective expression dimensions. You select **what each gesture controls** by choosing its destination and setting the modulation amount.

Using MPE Musically

MPE becomes especially powerful when its assignments feel like natural extensions of your playing rather than additional controls you have to think about.

Try these approaches:

- **Expressive Pads:** Assign MPE-Z to Filter Cutoff so individual notes become brighter as you apply pressure. This lets you bring out selected notes within a chord without changing its overall volume or harmony.
- **Singing Leads:** Use MPE-X for pitch expression and MPE-Z to increase vibrato depth or filter brightness. The result can feel remarkably close to the phrasing of an acoustic solo instrument.
- **Dynamic Digital Keyboards:** Assign MPE-Velocity to Filter Cutoff or another timbral parameter to make harder strikes produce brighter or more pronounced attacks.
- **Evolving Textures:** Assign MPE-Y to a filter or oscillator parameter, allowing individual notes to change character as you move along the playing surface.
- **Independent Expression:** Combine MPE-Z and MPE-Y assignments so pressure controls brightness while finger movement introduces a different kind of tonal change.

Tip: Begin with just one or two MPE assignments. A carefully programmed pressure-to-filter relationship can make a sound feel considerably more expressive without requiring elaborate modulation. Add other dimensions once the basic response feels natural.

A Note on MPE Controllers

MPE controllers can differ in how they transmit and interpret expressive gestures. Some automatically associate horizontal movement with pitch bend, while others provide configurable mappings for pressure, slide, and other dimensions. Depending on your controller, you may need to adjust its pitch-bend range, expression settings, or the modulation amounts in DW-8K to achieve the desired response.

If a gesture produces too much or too little movement, begin by adjusting the corresponding Motion-Touch amount. If necessary, consult your controller's configuration software to refine its response. Remember that selecting MPE in **Key Assign** enables the instrument's MPE performance mode, while the **Motion-Touch assignments** determine how the individual expression dimensions influence the sound.

The most satisfying MPE patches generally respond to subtle gestures rather than requiring exaggerated movements. A gentle increase in pressure, a small slide, or a carefully controlled pitch bend can bring an otherwise familiar synthesizer sound to life.

DW-8K also provides additional MPE response controls in **Settings > MPE**. These include XYZ Smoothing, independent Amount adjustments for X, Y, and Z, and individual response Curve settings. Use these controls to fine-tune the instrument's response to your playing technique and controller before making extensive changes to individual modulation assignments. See the Settings chapter for details.

Building More Expressive Modulation Patches

Modulation is most useful when each assignment has a musical purpose. The following examples show how to combine the matrix, Matrix MG, Matrix EG, and performance controls without turning every available destination into a moving target.

A Pad With Two Independent Movements

1. Begin with a sustained pad and a moderate filter cutoff.
2. Route **Matrix MG 1** to filter cutoff with a small positive Depth.
3. Select a slow sine or triangle waveform for Matrix MG 1.
4. Route **Matrix MG 2** to a suitable oscillator pitch or shaping destination.
5. Choose a different, relatively slow Frequency for Matrix MG 2.

6. Reduce the second routing's Depth until the motion is felt more than heard.

7. Add a long VCA Release and modest effects processing if desired.

The two independent modulation speeds prevent the patch from repeating one obvious movement. A restrained result will usually sound more organic than a patch with both sources set to strong, identical sweeps.

Velocity-Controlled Filter Animation

1. Route **Matrix EG 1** to filter cutoff.

2. Set **VIA** to **Velocity**.

3. Use a short Attack and medium Decay on Matrix EG 1.

4. Set a moderate Depth.

5. Play the same note softly and firmly to compare the resulting filter movements.

The envelope supplies the shape, while velocity determines how strongly that shape is applied. This is useful for plucked keys, brass-like sounds, and other patches that should respond differently to light and forceful playing.

A Stepped Electronic Texture

1. Route **Matrix MG 3** to a suitable filter or oscillator-shaping destination.

2. Select **S&H** as its waveform.

3. Set Frequency in a low-to-middle range and use a modest Depth.

4. Enable Sync if you want the stepped movement tied to tempo.

5. Add a second, slower Matrix MG to a different destination.

The result can move between distinct timbral states while another source provides a more gradual underlying change. Start with low modulation amounts; large jumps may be better suited to effects than to a conventional musical patch.

From a Pluck to a Bloom

1. Give the main VCA envelope a quick attack and a moderately long release.

2. Route **Matrix EG 4** to a suitable filter or tonal destination.

3. Select Matrix EG 4, raise Attack, and set a longer Decay.

4. Set the matrix's modulation Depth so the destination changes gently over time.

5. Experiment with positive and negative Depth to hear how the contour changes direction.

The sound's volume can begin promptly while the extra modulation builds later. This is a useful way to make a bell, pluck, or digital keyboard tone develop after its initial transient rather than simply fading away.

One Performance Gesture with Several Changes

1. Set up a Matrix MG routing to oscillator pitch and choose **Mod Wheel** as Via.

2. Set up a second Matrix MG or Matrix EG routing to filter cutoff, also using **Mod Wheel** as Via.

3. Use conservative Depth settings for both routings.

4. Play a sustained note and gradually raise the Mod Wheel.

5. Balance the two effects until the sound becomes more expressive without losing its basic pitch or character.

A single wheel movement can introduce vibrato and extra tonal animation together. Using the same Via source across several slots is a straightforward way to create a small performance macro.

A Few Modulation Tips

Start With One Routing. A patch is easier to understand when you add one source and destination at a time. Confirm that the first assignment is doing what you want before creating another.

Watch the Selection Squares. Solid blue means that a Matrix MG or Matrix EG is selected for editing. Outlined blue means it has a routing and is available, but you're currently looking at another generator. An unlit square won't become active until its source is assigned through the Mod Matrix.

Keep Depth Under Control. Large amounts can be useful for special effects, but small values often produce the most musical movement, especially when several routings affect one destination.

Use Via to Keep Control in Your Hands. A modulation source can be active without being constantly prominent. Assign Mod Wheel, velocity, or

another suitable Via source when you want its intensity to respond to a performance gesture.

Separate Periodic Motion From Note-Shaped Motion. Matrix MG is a natural choice for repeating LFO-style movement. Matrix EG is useful when a parameter needs an Attack/Decay contour or a repeating envelope shape.

Use Motion-Touch for Expression and Rhythm. The four Aftertouch assignments are useful for playing dynamics, while the four Parameter Animator assignments provide a path into sequencer-driven modulation.

Save Before Experimenting Wildly. With eight modulation slots, eight Matrix MGs, eight Matrix EGs, and additional motion and performance controls, it's easy to build an elaborate patch. Save a version that works before adding the next brilliant idea.

The best modulation isn't necessarily the most complicated. Often, two carefully chosen routings can make a sound feel more responsive, more organic, and more interesting than a dozen settings moving at once.



Performance Controls

DW-8K's Performance Controls put the instrument's expressive possibilities directly under your hands. They determine how notes respond to pitch bend, modulation, tuning, octave changes, and glide, making it possible to play a sound rather than simply trigger it. The controls are especially useful for expressive leads, responsive basses, animated pads, and layered performances in which a small gesture can change the character of the entire sound.

The original Korg DW-8000 used a two-axis joystick. Moving it from side to side could bend pitch and, when enabled, sweep the filter cutoff; moving it vertically introduced oscillator or filter modulation. Cherry Audio preserves this performance philosophy with two separate onscreen levers, **Bend** and **Mod**, along with dedicated controls that determine how each responds. The familiar joystick ideas are still here, but with a layout that's easy to read and adjust.

Click **Keyboard** at the lower-left corner of DW-8K to display the virtual keyboard and its Performance Controls. The controls occupy the left side of the Keyboard view. The separate **Key Assign** section, at the upper-right

corner of the main synthesis panel, determines how voices are assigned when you play.



Pitch Bend Controls

The **Bend** lever provides direct, real-time pitch expression. The **Bend Amount** control establishes its available range, while **VCF Sweep** allows the same performance gesture to influence tone color as well as pitch.

BEND: Provides continuous pitch bending above or below the played note. Move the lever in either direction to bend the pitch, then return it to center to restore the original tuning. Pitch bend is particularly effective for lead phrasing, guitar-like inflections, bass slides, and dramatic pitch effects.

BEND AMOUNT: *(0–12 semitones)* Sets the maximum pitch change available from the Bend lever in either direction. At 0, no pitch bending is applied. A setting of 2 provides the familiar whole-step bend used by many keyboard and guitar-style performances. Higher values allow larger sweeps, up to one octave at 12.

VCF SWEEP: *(Off/On)* Enables filter-cutoff movement from the Bend lever in addition to pitch bending. With VCF Sweep enabled, moving the lever changes the brightness of the sound as well as its pitch. This can give brass and lead patches a more vocal, expressive character, especially when the filter is set low enough for the change to be audible.

On the original DW-8000, moving the joystick to one side darkened the filter and moving it to the other brightened it. DW-8K retains the separate VCF Sweep switch so this tonal movement can be included or excluded as desired.

LINK LAYERS: *(Off/On)* Provides a layer-linking option for the Mod control. When working with Upper and Lower together, it offers a way to match performance settings rather than adjusting each layer independently. This is particularly useful when two layered sounds should respond as one instrument.

Setting Up a Conventional Pitch Bend

To create a familiar two-semitone pitch bend:

1. Select a lead or bass preset and open **Keyboard** view.
2. Set **BEND AMOUNT** to **2**.
3. Leave **VCF SWEEP** off initially so the effect is easy to identify.
4. Play and hold a note.
5. Move the **Bend** lever in either direction to bend the note, then return it to center.
6. Enable **VCF SWEEP** and repeat the gesture to hear how filter movement changes the expression.

Tip: For natural lead playing, bend into important notes rather than moving the lever constantly. A well-placed bend near the end of a phrase can be more expressive than a continuous series of large pitch sweeps.



Modulation Controls

The **Mod** lever gives you real-time control over pitch or filter movement generated by DW-8K's main **Modulation Generator**. Unlike the Bend lever, which provides a direct pitch change, the Mod lever introduces periodic movement such as vibrato or a repeating filter sweep.

MOD: Controls the amount of modulation introduced during a performance. Move the lever to bring in the selected modulation effect, and reduce it again when you want the sound to become steadier. This is useful for adding vibrato after a note has begun or introducing movement selectively during a phrase.

MOD AMOUNT: *(0–10)* Adjusts the maximum modulation response available from the Mod lever. Lower values keep the gesture restrained, while higher values allow stronger modulation. The audible result also depends on the Modulation Generator's waveform, frequency, and destination amounts.

PITCH MOD: *(Off/On)* Enables pitch modulation controlled by the Mod lever. With a suitable Modulation Generator waveform and oscillator modulation amount, this creates manually introduced vibrato and related pitch effects. A slow modulation setting produces gentle movement; faster settings can create a more pronounced trill or special effect.

FILTER MOD: *(Off/On)* Enables filter modulation controlled by the Mod lever. Rather than directly pushing the filter cutoff up or down, this introduces the Modulation Generator's repeating movement into the filter. Use it for subtle tonal animation, cyclical wah-like effects, and more dramatic filter sweeps.

VCF Sweep and Filter Mod are not the same thing. VCF Sweep uses the Bend gesture to change filter brightness directly. Filter Mod uses the Mod lever to bring in a repeating filter modulation signal. The distinction makes the two controls useful for different types of expression.

Adding Vibrato by Hand

To introduce vibrato only when you want it:

1. Choose a sustained lead sound and open **Keyboard** view.
2. Select a smooth waveform in the main **Modulation Generator**, such as a sine-like or triangle-like shape.
3. Set a moderate modulation **FREQUENCY**.
4. Raise the Modulation Generator's **OSC AMOUNT** enough to establish an audible pitch-modulation response.
5. Turn on **PITCH MOD** in the Performance Controls.
6. Begin with **MOD AMOUNT** at a moderate setting.
7. Play and hold a note with the **Mod** lever at minimum.
8. Gradually move the lever to introduce vibrato, then reduce it again.
9. Refine **MOD AMOUNT**, **OSC AMOUNT**, and modulation Frequency until the gesture feels natural.

The goal is to keep the beginning of the note steady, then introduce movement as part of the phrase. This is particularly effective for singing lead lines, expressive brass, and solo synthesizer sounds.

Creating a Performed Filter Sweep

To use the Mod lever for rhythmic filter movement:

1. Select a sustained sound with enough upper harmonics for filter movement to be noticeable.
2. Set the filter **CUTOFF** to a moderately low position.
3. Choose a suitable waveform and rate in the **Modulation Generator**.
4. Raise its **VCF AMOUNT** to establish the desired modulation depth.

5. Enable **FILTER MOD** in the Performance Controls.
6. Increase **MOD AMOUNT** gradually while holding a note or chord.
7. Adjust the Modulation Generator Frequency to move from a slow tonal pulse to a faster repeating sweep.

Tip: Begin with a moderate Filter Resonance setting. A little resonance makes filter movement easier to hear, but excessive resonance can draw attention away from the musical phrase.



Tuning and Octave Controls

The remaining controls in the Keyboard view provide quick access to global tuning, performance register, and glide. These are especially useful when playing alongside other instruments or changing the range of a sound without reprogramming its oscillators.

MASTER TUNE: *(Flat–Sharp; center = standard tuning)* Adjusts the instrument's overall tuning slightly flat or sharp. The center position represents normal tuning. Turn toward the flat symbol to lower the pitch or toward the sharp symbol to raise it. Use Master Tune to match another instrument, accommodate a recording that was made slightly above or below concert pitch, or introduce subtle detuning between separately recorded parts.

Master Tune is a fine adjustment, not a substitute for the oscillator Octave and Interval controls. Those establish musical register and harmonic relationships within the patch; Master Tune adjusts the tuning reference of the instrument as a whole.

OCTAVE: *(0, +1)* Selects the Keyboard view's octave transposition setting. **0** leaves the performance at its normal octave, while **+1** raises it by one octave. This is a quick way to move an entire part into a higher register

without editing the octave settings of the individual oscillators. For example, a lead sound programmed to sit comfortably in the middle of the keyboard can be shifted upward for a solo without changing its internal oscillator balance. Return to 0 when the original range is needed.



Glide Controls

Glide creates smooth or stepped pitch transitions between notes, allowing one pitch to travel toward the next rather than changing instantaneously. It's especially useful for expressive leads, sliding basses, and classic synthesizer effects.

DW-8k provides a **GLIDE** On/Off switch in the Performance Controls section of Keyboard view, along with a dedicated **Glide** section near the bottom center of the main synthesis panel.

The Performance Controls switch enables or disables Glide, while the main Glide section determines the speed and type of pitch transition. The two sections work together, so you can establish the desired Glide behavior in the main panel, then turn it on or off during a performance without changing those settings.

Performance Glide Switch

GLIDE: *(Off/On)* Enables or disables pitch glide during performance. When enabled, notes transition between pitches according to the **TIME** and **TYPE** settings in DW-8K's main Glide section. With Glide off, notes move immediately to their played pitches. Turning Glide on activates the previously selected Glide settings.

This makes the switch particularly useful for introducing a dramatic slide during a phrase, then returning to normal playing without readjusting the Glide parameters.



Main Glide Controls

TIME: Determines how long it takes the pitch to move from one note to the next.

Lower settings produce faster transitions, allowing notes to connect with a subtle sense of movement. Higher settings produce slower, more pronounced transitions, creating the familiar sliding or stepping effects associated with classic synthesizer performances.

The audible result also depends on the interval between notes. A short Glide Time may be barely noticeable between neighboring notes but considerably more apparent across an octave.

TYPE: *(Portamento/Glissando)* Selects whether the pitch transition is continuous or divided into discrete steps.

PORTAMENTO: Creates a smooth, continuous pitch transition between notes. Rather than jumping immediately to the destination pitch, the sound slides through the intervening frequencies. Portamento is especially useful for fluid monophonic leads, expressive bass lines, and vocal-like synthesizer phrases. Short Time settings produce subtle connections between notes, while longer settings create dramatic swoops and slides.

GLISSANDO: Creates a stepped pitch transition, moving through discrete musical pitches rather than sliding continuously. Instead of a smooth sweep, Glissando produces a series of rapid pitch changes as the sound travels toward the destination note. At longer Time settings, the individual steps become more noticeable, creating a cascading, staircase-like effect. Glissando is particularly effective for electronic sound effects, retro synthesizer leads, stepped bass transitions, and melodic gestures that resemble quickly running through the notes between two pitches.

Creating an Expressive Glide Lead

To add smooth pitch transitions to a lead sound:

1. Select a lead preset and choose **MONO** in the Key Assign section.
2. Enable **GLIDE** in the Performance Controls section of Keyboard view.
3. Locate the main **Glide** section near the bottom center of the synthesis panel.
4. Select **PORTAMENTO**.
5. Set **TIME** to a relatively low value.
6. Play a melodic line containing both small intervals and wider jumps.
7. Gradually increase Time until the pitch transitions become as pronounced as desired.
8. Switch to **GLISSANDO** and play the same phrase to hear how stepped transitions change its character.

Try playing overlapping notes to create connected melodic phrases, then experiment with wider intervals to hear the difference between the two Glide types more clearly.

Tip: Portamento is generally the more natural choice for expressive lead and bass playing, where smooth transitions contribute to the phrasing. Glissando produces a more distinctly electronic character, particularly when moving between notes separated by several semitones.

Creative Glide Techniques

Subtle Lead Expression: Use Portamento with a short Time setting to give a monophonic lead a slightly fluid quality without producing obvious pitch slides. This works especially well with gentle vibrato introduced using the Mod lever.

Classic Synth Bass Slides: Select Portamento with a moderate Time setting and play occasional octave jumps or wider intervals. The resulting slides can add character and movement to an otherwise straightforward bass line.

Stepped Electronic Runs: Select Glissando and increase Time until the individual pitch steps become clearly audible. Try alternating between notes several octaves apart for cascading, retro-style synthesizer effects.

Dramatic Pitch Sweeps: Use Portamento with a longer Time setting and play widely separated notes. Combine the resulting slides with Pitch Bend or filter modulation for more elaborate electronic textures.

Performance Tip: Once you've established a useful Glide Time and Type, leave those settings in place and use the **GLIDE** switch in Keyboard view to activate the effect only when needed. This gives you the freedom to alternate between normal articulation and expressive pitch transitions without interrupting your performance.



Key Assign and Voice Behavior

The **Key Assign** section at the upper-right corner of DW-8K determines how the instrument allocates voices in response to your playing. It contains buttons for **Mono**, **Poly**, **Unison**, **MPE**, and **Mode 2**, along with a **Detune** control and a voice-count display with up/down arrows.

The original DW-8000 provided two polyphonic and two unison voice-assignment modes. DW-8K expands on that architecture with additional voice capacity, MPE performance, and separate control over voice behavior.

MONO: Selects monophonic playing, in which the sound follows a single-note line rather than producing independent notes for a chord. Mono is a natural choice for basses, lead solos, and performances that rely heavily on pitch bend and glide.

POLY: Enables polyphonic playing, allowing multiple notes to sound together. Use Poly for chords, keyboard sounds, pads, string textures, and sequenced harmonic material.

UNISON: Stacks voices to create a thicker, more powerful sound. Unison is particularly useful for leads, basses, and large single-note textures. The

resulting sound can be substantially denser than an ordinary single-voice patch, so moderate output levels are advisable.

DETUNE: *(0-100%)* Adjusts the tuning spread associated with Unison. Low settings keep the stacked voices closely aligned for focused reinforcement. Higher settings produce more beating, width, and ensemble-like movement.

MODE 2: *(Off/On)* Selects an alternate voice-assignment behavior for the applicable Key Assign modes. On the original Korg DW-8000, Poly 2 reused a consistent set of voices during repeated notes, making it particularly useful for instrumental sounds and polyphonic portamento. Unison 2 provided single-trigger envelope behavior, allowing overlapping notes to change pitch without restarting the envelopes with every new key press.

These differences are especially worth exploring with repeated keyboard notes, sounds with long releases, and connected lead phrases. Try playing the same passage with Mode 2 enabled and disabled to hear how voice assignment and articulation influence the result.

VOICES: *(1-16)* Sets the number of synthesizer voices available for playing, using the up/down arrows beside the numerical display. Increasing the voice count allows more notes and overlapping envelope releases to sound simultaneously, which is particularly useful for sustained chords, pads, and layered textures. Lower settings can introduce more noticeable voice stealing when a passage exceeds the available polyphony, producing a tighter, more vintage-style response..

MPE: *(Off/On)* Enables MIDI Polyphonic Expression for performance with a compatible MPE controller. MPE allows independent expression for individual notes, including per-note pitch movement, timbral gestures, and pressure. When MPE is selected, the four rightmost **Motion-Touch** assignments change from conventional Aftertouch controls to **MPE-X**, **MPE-Y**, **MPE-Z**, and **MPE-Velocity**.

MPE setup and assignment are described in the **Modulation** chapter. The important distinction here is that Key Assign enables the MPE playing mode, while Motion-Touch establishes what its expression gestures control.

Choosing a Voice Setting

For ordinary chord playing, choose Poly and allow enough voices for the notes and their releases to overlap. Pads and sounds with long VCA Release settings often benefit from additional voices, because a note can continue sounding after its key has been released.

For a more focused monophonic lead, choose Mono, turn on Glide if desired, and use Bend for phrasing. For a thicker lead or bass, try Unison with a modest amount of Detune. Add more Detune only when the musical part benefits from additional movement.

Tip: If successive chords unexpectedly cut each other off, check the voice count before shortening the VCA Release. Sometimes the patch simply needs more available voices.



Master Volume and Limiter

Located at the upper-right corner of DW-8K's main synthesis panel, the Master Volume, Limiter, and stereo output meters provide control over the instrument's final output level. These controls are particularly important when combining layers, stacking Unison voices, or creating powerful sounds with extensive modulation and effects processing. Together, they help you maintain appropriate output levels while preserving the character and dynamics of your patches.

MASTER VOLUME: *(0–10)* Sets DW-8k's overall output level. Unlike the individual oscillator Level controls or the Upper and Lower layer output levels, Master Volume adjusts the final output of the instrument.

Use the oscillator Level controls to establish the balance of sound sources within a patch, the layer Level controls to balance the Upper and Lower layers, and Master Volume to set the overall listening level. This distinction becomes particularly important when working with Unison, layered presets, high filter resonance, and effects that can substantially increase the sound's level.

LIMITER: *(Off/On)* Enables DW-8K's built-in output limiter, which automatically controls excessive signal peaks and helps reduce the risk of digital clipping. A limiter reduces the level of signals that exceed its

operating threshold, making it particularly useful with heavily layered sounds, stacked Unison voices, aggressive filter resonance, high effects levels, and long overlapping envelope releases. When only occasional peaks require limiting, the effect can be relatively transparent. More substantial limiting, however, may alter the sound's dynamics and transient response.

For everyday sound design, leaving the Limiter enabled provides a useful safeguard when exploring unfamiliar presets or experimenting with extreme settings. However, it isn't a substitute for proper gain staging. If a patch consistently produces excessive levels, reduce the appropriate oscillator, layer, or effects levels rather than relying entirely on the Limiter.

OUTPUT METERS: The stereo LED meters beside the Limiter display the instrument's output level. Use them to monitor signal activity and identify potentially excessive levels, particularly when combining layers, increasing Unison density, or adding effects.

Tip: When programming a particularly powerful preset, try switching the Limiter off temporarily while monitoring the output meters and listening at a safe volume. This can help reveal whether the patch is generating excessive peaks that would be better controlled at the source. Once the levels are balanced, enable the Limiter for additional protection against unexpected transients.

Making Creative Use of Performance Controls

The Performance Controls become most rewarding when a few carefully chosen gestures work together. Each control can do something useful by itself, but combinations often make the patch feel more like a playable instrument.

Expressive Synth Brass

Begin with a harmonically rich brass-like patch. Set **BEND AMOUNT** to a modest interval, enable **VCF SWEEP**, and keep the filter cutoff slightly below its brightest setting. A small Bend gesture can now introduce both pitch inflection and a change in tone color. Add a short filter envelope attack for more pronounced articulation.

A Lead That Comes Alive After the Attack

Choose a sustained lead and enable **PITCH MOD**. Use the Modulation Generator to establish a gentle vibrato, but leave the Mod lever low when the note begins. Introduce vibrato only after the note has settled. Combine this with Bend Amount set to 2 for expressive entries and endings.

Animated Pads Without Constant Motion

Start with a warm, sustained pad. Enable **FILTER MOD**, choose a slow modulation rate, and keep **MOD AMOUNT**moderate. Instead of leaving the filter moving constantly, introduce modulation during held chords, then reduce it during transitions. This lets you add gentle movement while keeping the sound steady at other times.

Focused Unison Bass

Select **UNISON** and begin with a small amount of **DETUNE**. Keep the filter cutoff relatively low and the VCA Release controlled. Add a small Bend range for short slides between notes. If the sound becomes unfocused, reduce Detune before adding more filtering or compression.

Two-Layer Performance

Create a Dual preset with contrasting Upper and Lower sounds, such as a rounded pad and a brighter bell-like texture. Balance their layer outputs, then experiment with Bend, Mod, and the **LINK LAYERS** control to establish how the combined performance should respond. Use small gestures first; the contrast between two layers can make modest changes surprisingly dramatic.

Performance Programming Tips

When you're programming an expressive patch, it helps to think about three kinds of movement:

What should happen when I first play the note? Use velocity sensitivity and the VCF/VCA envelopes to determine the sound's initial attack, brightness, and level.

What should change while the note is held? Use the Bend and Mod levers, Aftertouch, MPE, and assigned modulation sources to introduce movement deliberately.

How should the sound move between notes? Use Mono or other suitable Key Assign settings, Glide, and Bend Amount to control the

transitions.



Digital Delay

One of the more distinctive features of the original Korg DW-8000 was its built-in programmable digital delay. Introduced in 1985, this delay went considerably beyond producing conventional echoes. By combining adjustable delay times, feedback, and internal modulation, it could create everything from subtle doubling and chorus to dramatic flanging, slapback echoes, and spacious repeating delays.

Cherry Audio DW-8K retains this versatile six-parameter design as an integral part of its synthesis architecture. Unlike the separate effects processors available in DW-8K's Effects view, the Digital Delay is permanently accessible on the main synthesis panel, making it easy to add depth, movement, and dimension without opening the Effects view or assigning an additional processor.

Cherry Audio also expands the original design with synchronization options and access to the delay parameters through the Mod Matrix. This makes it possible to animate delay times, introduce rhythmic changes, and create expressive effects that respond to modulation generators, envelopes, performance controls, and other modulation sources.

Digital Delay Controls

The Digital Delay section contains six sliders: Time, Factor, Feedback, Frequency, Intensity, and Level. Two additional buttons, Time Sync and Freq Sync, provide synchronization options.

Understanding the relationship between Time, Frequency, and Intensity is particularly important because these controls determine whether the delay

behaves like a conventional echo or a time-modulated effect such as chorus or flanging.

TIME: *(0–7.00)* Sets the basic delay time, determining the interval between the original signal and the delayed signal.

Lower settings produce extremely short delays suitable for flanging, chorus, and related effects. Higher settings create progressively longer delays that can be used for doubling, slapback, and repeating echoes.

The original DW-8000 divided the delay time into eight ranges, extending from approximately 2–4 milliseconds at the shortest setting to approximately 256–512 milliseconds at the longest. DW-8K retains the familiar Time and Factor programming arrangement.

FACTOR: *(0–15.00)* Provides fine adjustment of the delay time within the range established by Time. On the original DW-8000, Factor adjusted the delay time using a multiplier ranging from approximately 0.5 to 1.0. Think of Time as the coarse adjustment and Factor as the fine adjustment. Together, they provide considerably more control than a single delay-time parameter.

Factor is especially useful when programming short delay effects, where even a small timing adjustment can noticeably influence the sound. For example, when creating a flanger, changing Factor alters the spacing of the characteristic peaks and notches in the frequency response. With a doubling effect, it helps establish the separation between the original and delayed sounds.

FEEDBACK: *(0–15.00)* Determines how much of the delayed signal is fed back into the delay input to create additional repeats. At low settings, the delayed signal produces relatively few repetitions. Increasing Feedback allows the repeats to continue for longer, creating denser echoes and more pronounced resonant effects.

Feedback is useful for more than conventional echoes. With very short delay times, increasing Feedback can emphasize the sweeping, hollow, or metallic qualities associated with flanging. At higher settings, especially when combined with longer delay times, Feedback can produce sustained repeating textures and more dramatic delay effects.

FREQUENCY: *(0–31)* Controls the rate of the Digital Delay's internal low-frequency oscillator, which modulates the delay time.

This control is easily misunderstood because its name might suggest an audio-frequency adjustment. In fact, Frequency determines how quickly the delay time is modulated, rather than filtering the delayed signal. Lower

Frequency settings produce slower movement, making them useful for gentle chorus and sweeping flange effects. Higher settings introduce faster modulation, which can produce increasingly animated or unusual textures.

The audible result depends on the Intensity setting. If Intensity is set to zero, changing Frequency will not produce audible delay-time modulation.

INTENSITY: *(0–31)* Determines the depth of the delay-time modulation generated by the internal low-frequency oscillator. At zero, the delay time remains steady. Increasing Intensity causes the delay time to vary more dramatically according to the Frequency setting. This interaction is the key to producing chorus and flanging effects.

With short delay times, modest Intensity settings create gentle movement and thickening. Higher settings produce more pronounced sweeping and pitch variations. At longer delay times, modulation can introduce movement into the echoes themselves, making them less static and more animated.

LEVEL: *(0–15)* Adjusts the level of the delayed signal. Lower settings introduce a subtle delayed component beneath the original sound, while higher settings make the delay more prominent. For chorus and flanging, the balance between the original and delayed signals is especially important. The two signals interact to produce the characteristic thickening and frequency cancellations associated with these effects.

For conventional echoes, Level determines how clearly the repeats are heard in relation to the original note.

TIME SYNC: *(Off/On)* Enables tempo synchronization for the delay time. This is useful for creating rhythmic echoes that follow the tempo of a DAW project or DW-8K's internal tempo. With synchronization enabled, Time operates in a tempo-related context rather than solely as a freely adjusted delay time.

FREQ SYNC: *(Off/On)* Enables tempo synchronization for the internal delay modulation oscillator. This allows the repeating movement created by Frequency and Intensity to follow a musical clock, making it particularly useful for rhythmic chorus, flanging, and other time-modulated effects.

Time Sync and Freq Sync operate independently, allowing the delay repeats and the modulation movement to be synchronized as needed.

Understanding Time and Frequency

Although both Time and Frequency affect the delay, they perform fundamentally different jobs. Time determines how long the signal is delayed. Frequency determines how quickly that delay time changes. For

example, imagine setting a relatively short delay time with Feedback near zero.

With Intensity at zero, the delay remains fixed. Depending on the Time and Factor settings, the result might be subtle thickening, doubling, or a short echo. Now increase Intensity and use Frequency to introduce slow movement. The delay time begins changing continuously, producing the pitch and phase interactions associated with chorus or flanging. Increase Frequency and the movement becomes faster. Increase Intensity and the delay-time variation becomes more pronounced.

This relationship explains why the Digital Delay is capable of such a wide range of sounds despite having only six principal controls. It also makes the section particularly rewarding to experiment with. A small adjustment to Factor, Frequency, or Intensity can transform a conventional echo into something considerably more animated.

Creating Chorus Effects

Chorus is created by combining the original signal with a slightly delayed signal whose delay time changes continuously.

As the delay time moves, subtle pitch and phase differences develop between the two signals. These interactions produce the familiar impression of multiple instruments playing together.

DW-8K's Digital Delay is particularly well suited to creating this effect.

To create a gentle chorus:

1. Start with a sustained sound, such as a string or pad preset.
2. Set **TIME** to a short-to-moderate delay range, beginning around 2–3, and adjust **FACTOR** until the sound begins to thicken without producing an obvious echo.
3. Set **FEEDBACK** close to zero.
4. Set **FREQUENCY** to a relatively slow value, around 4–8.
5. Increase **INTENSITY** gradually, beginning around 3–7.
6. Raise **LEVEL** until the sound becomes fuller and more animated.

Listen for a gentle thickening rather than an obvious echo.

If the effect sounds too wobbly or exaggerated, reduce Intensity or Frequency. If it sounds too static, increase Intensity slightly.

Tip: Chorus often works best when the modulation is barely noticeable as a separate effect. A subtle amount can make DW-8K's digital waveforms sound richer and more organic, particularly when combined with small amounts of oscillator detuning.

Creating Flanging Effects

Flanging uses the same basic principle as chorus but generally employs shorter delay times and more pronounced interaction between the original and delayed signals.

These interactions create a series of peaks and notches in the frequency response. As the delay time changes, the peaks and notches move, producing the familiar sweeping, hollow, or jet-like character of a flanger.

Feedback can make the effect substantially more pronounced.

To create a sweeping flanger:

1. Select a harmonically rich sound, such as a sawtooth-based pad or sustained lead.
2. Set **TIME** near its minimum.
3. Use **FACTOR** to fine-tune the short delay time.
4. Set **FEEDBACK** to a moderate value, around 7–11.
5. Set **FREQUENCY** relatively low, around 2–6.
6. Increase **INTENSITY** to approximately 7–14.
7. Adjust **LEVEL** until the sweeping effect becomes clearly audible.

Experiment with Factor while holding a sustained note. Small changes can noticeably alter the character of the effect.

Increase Feedback for a sharper, more resonant sweep. Reduce it for a softer, more conventional flanging effect.

Tip: Bright digital waveforms such as SAW, CLAVI, and E GUITAR provide plenty of harmonic content for a flanger to work with. Filtering the sound slightly before applying the effect can help tame any excessive brightness.

Creating Doubling Effects

Doubling creates the impression that two instruments or performances are playing together.

Rather than producing a long, obvious echo, a relatively short delayed signal combines with the original to make it sound thicker and more substantial.

Unlike chorus, doubling generally requires little or no delay-time modulation.

To create a doubling effect:

1. Select a lead, brass, or keyboard sound.
2. Set **TIME** to a short or moderate delay range, beginning around 2–3.
3. Adjust **FACTOR** to establish the desired separation.
4. Keep **FEEDBACK** at zero or a very low setting.
5. Set **INTENSITY** to zero initially.
6. Raise **LEVEL** until the sound becomes noticeably fuller without producing an obvious rhythmic echo.
7. If desired, introduce a very small amount of Intensity for additional movement.

The key is finding a delay time that reinforces the original sound without making the second event sound like a separate note.

Tip: Doubling works especially well with monophonic leads. A small amount can make a single-oscillator patch sound considerably larger without requiring an additional oscillator or unison voices.

Creating Slapback Echoes

Slapback is a short, clearly audible echo that follows the original sound.

Originally associated with early tape echo techniques, it became a defining feature of rockabilly, early rock recordings, and many classic electronic music productions.

Slapback can add a sense of space and rhythmic emphasis without the density of a long repeating delay.

To create a slapback echo:

1. Select a plucked keyboard, bass, or lead sound.
2. Set **TIME** toward the middle or upper portion of its range, beginning around 4–5.
3. Adjust **FACTOR** until the delayed signal becomes a distinct, closely spaced echo.
4. Keep **FEEDBACK** low, around 0–4.

5. Set **INTENSITY** to zero for a stable delay time.
6. Raise **LEVEL** until the echo adds the desired rhythmic emphasis.

For a classic slapback sound, aim for one clearly audible repeat rather than a long series of echoes.

Tip: Try slapback with DW-8K's Autobend section. A short pitch movement at the beginning of each note, followed by a closely spaced echo, can produce lively, expressive synthesizer leads.

Creating Longer Echoes

At longer Time settings, the Digital Delay behaves more like a conventional echo processor.

Increasing Feedback produces repeating echoes that gradually fade away. This is useful for rhythmic leads, atmospheric pads, and sound effects.

To create a repeating echo:

1. Select a relatively short, percussive sound so individual echoes are easy to hear.
2. Set **TIME** toward the upper end of its range, around 6–7.
3. Adjust **FACTOR** to fine-tune the interval between repeats.
4. Set **FEEDBACK** to approximately 5–10.
5. Keep **INTENSITY** at zero initially.
6. Increase **LEVEL** until the repeats are clearly audible.
7. Introduce a small amount of Frequency and Intensity if you want the echoes to develop subtle pitch movement.

Higher Feedback settings produce longer repeating patterns, while lower settings create cleaner, more controlled echoes.

Enable Time Sync when you want the repeats to follow the tempo of a musical passage.

Tip: A repeating echo can make a simple monophonic phrase sound much more elaborate. Try playing a sparse lead line and allowing the repeats to fill the spaces between notes.

Modulating Digital Delay Parameters

One of Cherry Audio DW-8K's most powerful additions to the original delay architecture is the ability to modulate its parameters using the Mod Matrix.

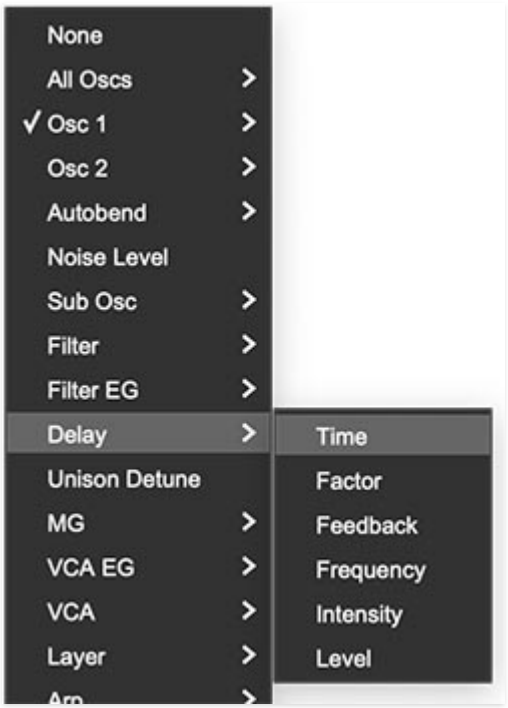
All six Digital Delay parameters are available as modulation destinations:

- Time
- Factor
- Feedback
- Frequency
- Intensity
- Level

This opens up possibilities that go well beyond the delay's built-in modulation oscillator.

For example, you can use a Matrix MG to sweep the delay time, keyboard pressure to increase feedback, or an envelope to change the delay's character over the course of each note.

The Mod Matrix provides eight routing slots, each with Source, Destination, Via, and bipolar Depth controls. This allows a wide variety of modulation sources to influence the delay.



Modulating Delay Time

Changing the delay time while a signal is being processed can produce pitch movement and other time-based effects. The exact result depends on how quickly the delay time changes, how much modulation is applied, and the current delay settings.

Slow, shallow modulation can create gentle movement and thickening. Faster or deeper modulation can produce more dramatic pitch sweeps and unusual digital textures.

To modulate Digital Delay Time using a Matrix MG:

1. Select **MOD-MATRIX** at the top of DW-8K's synthesis panel.
2. Choose an available modulation slot.
3. Set **SOURCE** to **Matrix MG 1**.
4. Set **DESTINATION** to **Delay > Time**.
5. Leave **VIA** set to **None** for an unscaled modulation connection.
6. Set a relatively small modulation **DEPTH**.
7. In the **Matrix MG** section, select the active MG 1 square.
8. Choose a smooth waveform and set a relatively slow Frequency.
9. Play a sustained note and gradually increase the modulation depth.

Listen for changes in the delay's pitch and movement as the modulation sweeps its Time setting. Try different Matrix MG waveforms to create more abrupt or stepped delay-time changes.

Tip: Delay-time modulation can produce dramatic pitch artifacts when applied aggressively. This can be musically useful, but small amounts generally work better for conventional chorus and flanging.

Creating Expressive Delay Accents

The Mod Matrix can also use keyboard and performance controls to change the delay's character while playing.

For example, assigning Aftertouch or MPE pressure to Feedback allows you to introduce additional repeats simply by pressing harder on a note.

To create pressure-controlled delay feedback:

1. Select an available Mod Matrix slot.
2. Choose **Aftertouch** as the Source.
3. Set **Destination** to **Delay > Feedback**.

4. Set Via to None.
5. Adjust Depth to a moderate positive value.
6. Set the Digital Delay to a suitable echo time with relatively low Feedback.
7. Play and hold a note, then gradually apply pressure.

As pressure increases, the delay becomes more pronounced, allowing you to introduce longer echoes without taking your hands away from the keyboard. With an MPE-compatible controller, you can also experiment with pressure-related expression sources to control delay parameters, adding another dimension of real-time performance control.

Creating Rhythmic Delay Movement

The Parameter Animator can also be used to create repeating changes in delay parameters. For example, assign Parameter Animator 1 to Delay Level using Motion-Touch, then program a step pattern that alternates between low and high values. The result is a delay whose prominence changes rhythmically as the Sequencer advances.

You can also assign an Animator to Feedback for repeating changes in echo density, or to Frequency or Intensity for rhythmic variations in delay-time modulation. This approach is especially effective when the Sequencer's Notes trigger is disabled, allowing the Parameter Animator to reshape a sustained sound without retriggering notes.

Digital Delay Sound-Design Tips

Use the Delay as Part of the Patch. Because the Digital Delay is integrated into the main synthesis panel, it can become an essential part of a preset rather than simply providing finishing ambience. A short, modulated delay can dramatically change the apparent size and character of a sound.

Start With Time and Factor. Before introducing Feedback or modulation, establish the basic delay time. This makes it easier to understand whether you're creating thickening, doubling, slapback, or conventional echoes.

Use Frequency and Intensity Together. Frequency determines how quickly the delay time moves; Intensity determines how much it moves. Adjusting one without considering the other can make it difficult to predict the result.

Don't Overdo Feedback. High Feedback settings can be exciting, particularly with short delay times, but they can also dominate the original

sound. Begin with modest values and increase them only when the effect calls for additional resonance or repeats.

Try the Built-In Delay Before Adding Effects. DW-8K includes numerous additional delay, chorus, and modulation processors in its Effects view. However, the original-style Digital Delay may already provide the movement or dimension a patch needs.

Experiment With Mod Matrix Control. Routing an envelope, modulation generator, or performance controller to Time, Feedback, or Level can turn a conventional delay into an animated synthesis element.

The original DW-8000's Digital Delay was remarkably flexible for its time, and Cherry Audio's expanded implementation makes it even more useful. With careful adjustment of Time, Factor, Feedback, Frequency, and Intensity, the same six controls can produce subtle thickening, lush modulation, rhythmic echoes, and considerably more experimental effects.

Effects

DW-8K includes 25 individual studio-quality effects for the Effects panel: BBD Flanger, Compressor, Crush, DCO Chorus, Digital Delay, Digital Reverb, Distortion & EQ, Dual Delay, Dual Ensemble, Dual Phaser, Envelope Filter, Flanger & Chorus, Galactic Reverb, Lo-Fi, Lushverb, Panner, Pulser, Ring Modulator, Rotary Speaker, Sculpt, Seven Band EQ, Shimmer, Spring Reverb, Tape Echo, and Wide Phaser.

Three Effects Chains for Layered Sound Design
DW-8K provides three separate effects chains for enhancing, shaping, and polishing your sounds: one for **Layer 1**, one for **Layer 2**, and one **Global** chain for the final combined signal.

This gives you a much more flexible effects structure than simply placing one shared effect chain at the end of the instrument. Each layer can have its own processing first, then both layers can pass through shared Global effects for final polish.

The basic routing is:

Layer 1 sound engine → Layer 1 effects → Global effects
Layer 2 sound engine → Layer 2 effects → Global effects

Each effects chain includes five effect slots, so you can process the two layers independently before they reach the final Global chain. For example, Layer 1 might use chorus and reverb for a wide pad, while Layer 2 uses compression and delay for a more focused attack. The Global chain can then add final ambience, EQ, compression, limiting, or other processing that helps the whole preset feel unified.

Controls and Concepts:

• **Layer 1 Effects Chain** – Processes only the Layer 1 sound engine.

• **Layer 2 Effects Chain** – Processes only the Layer 2 sound engine.

• **Global Effects Chain** – Processes the combined output of both layers.

• **Five Slots Per Chain** – Each chain can host up to five Cherry Audio effects.

• **Effect Modulator** – Provides dedicated modulation for adding movement to effect parameters.

Tip: Use the layer effects to give each layer its own identity. Use the Global effects to make the finished patch feel connected, polished, and ready to sit in a mix.

How this Changes The Way You Design Patches
Instead of asking, “What effect should I put on the synth?” You should ask, “Which part of the synth deserves which effect treatment?” That’s a much more mix-friendly way to build patches, because you’re not forcing your entire sound through the same effects chain..

Tip: Start patches with no effects, then assign effects by role. Build the tone first. Then decide what needs movement, width, grit, or which should stay clean so the patch has definition.

Important Practical Note
Effects can change gain. They can also emphasize certain frequencies and create peaks. This is why DW-8K includes a limiter.

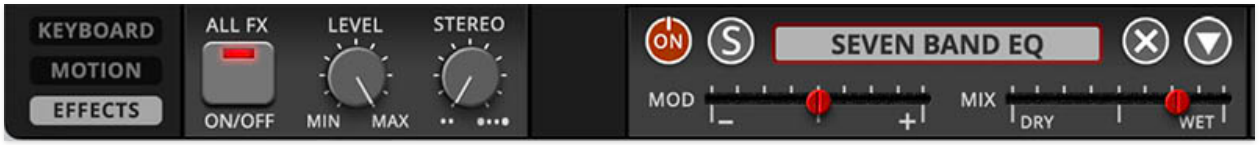


Tip: *The mini FX panel is always visible, but click the **Effects** tab at the lower left for the full parameter view and deeper editing. Alternatively double-click the effects "footer" (the part with the always-visible mod and mix controls) to toggle the view from mini to full.*

Quick Controls (Always Available)

Even if you’re in Keyboard View, the most essential FX controls are always within reach, sitting neatly under the chain:

- **All FX On/Off** – Instantly bypasses the entire chain.
- **Level** – Adjusts the overall level of the chain.
- **Stereo** – Widens (or narrows) the stereo field after processing.





The Effect Modulator

Sometimes you may want to modulate a delay time or a phaser sweep for extra movement or a bit of weirdness. Enter the **Effect Modulator**. It's a dedicated LFO just for the effects. Used subtly, the Effect Modulator can add motion and depth. Push it harder, and things can get more dramatic and unstable. Either way, it’s one of the quickest ways to make an effect feel more varied and animated.

Each effect has one specific parameter that is permanently tied, or “hard-wired,” to the Effect Modulator. In other words, you don’t assign modulation destinations manually. The destination is already chosen for you by the effect’s design.

To see which parameter is being modulated, look for the arrow labeled “**Mod**” on the effect’s panel. That graphic points from the affected control down toward the Effect Modulator, making it easy to spot the modulation target at a glance. If a control has that arrow, it’s the one the Effect Modulator will affect.

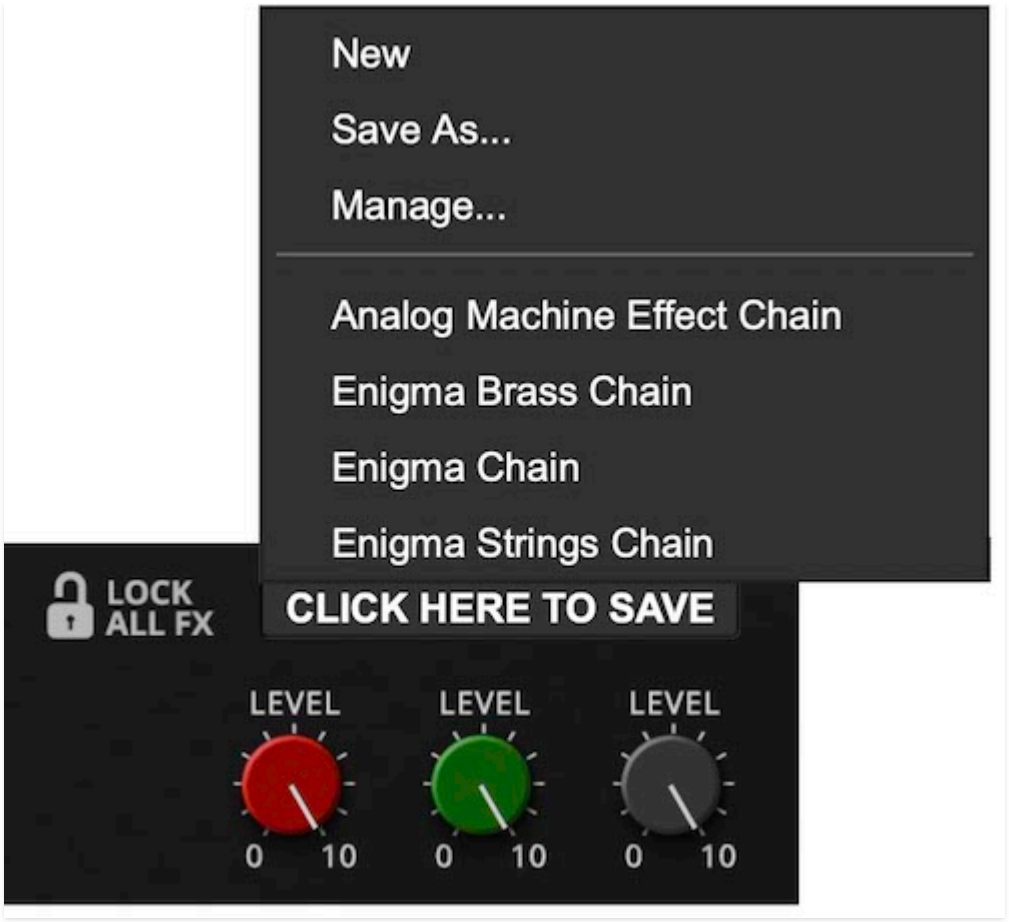
This means every effect has its own built-in modulation relationship. On one effect, the Effect Modulator might animate delay time. On another, it might sweep a tonal or spatial parameter. The exact target depends on the effect, but the visual cue is always the same: Follow the “Mod” arrow.



Effect modulator controls include:

- **Speed** – 0.01 Hz to 20 Hz, or tempo-syncable from 1/64T to 8 beats. LED above flashes in time.
- **Waveform** – Ramp, sawtooth, triangle, sine, square, or random.
- **Delay** – Fade-in time for modulation (0–5000 ms).
- **Sync** – Locks modulation speed to host tempo.
- **Mod Wheel** – Lets your MIDI Mod Wheel scale the modulation depth in real time.
- **Key Reset** – Restarts the waveform with each key press.





Managing Effects Chains

Building and wrangling effects and effect chains is straightforward. Use the Effects menu dropdown (the triangle) to save and move effects and chains.

- **Add an Effect** – In the Effects View, click the *Select Effect* dropdown to pick your effect, then tweak away.
- **Delete an Effect** – Click the “X” next to its name.
- **Save a Chain** – Display the Full Effects view → Use the *Click Here To Save* dropdown menu → Save As. Name it, reuse later.
- **Recall a Saved Chain** – Load from the same dropdown.
- **Solo an Effect** – Hit the “S” button; all others mute.
- **Reorder** – Drag the effect by its top “grip” edge to rearrange.
- **Numerical Edit** – Double-click a knob/slider, type a value, press Enter.
- **Duplicate an Effect** – Click the triangle dropdown → Duplicate (places a copy right next to it).
- **Align Effects** – Click the triangle dropdown → Align All Effects to automatically shift all effects to the left, closing any empty slots in

between.

- **Lock All FX** – Click the padlock icon to keep the current effects chain in place when switching presets. Any new preset you load will use your locked chain instead of its own, making it easy to carry your favorite effect setup from sound to sound.



Tips

- The **Effect Modulator + Mod Wheel** combo is excellent for live performance. Map it, and suddenly your phaser swoops in only when you push the wheel.
- Try saving a few **favorite chains** and re-using them across presets. Treat them like your personal pedalboards.
- Extreme stereo widening can be fun in headphones, but keep an ear on mono compatibility if you're making tracks.

The Effects

There are 25 effects in total to add potency to any sound. Whether you're after subtle polish, full-throttle grit, or spacey atmospheres, these effects add even more character to any patch.



Digital Delay

Delay pedals and tape echoes have been a keyboardist's sidekick for decades. The Digital Delay offers three classic flavors:

- **Digital** – Clean, pristine repeats.
- **Tape** – Warm, saturated echoes.
- **Ping Pong** – Echoes that bounce between left and right for stereo ambience.

Controls:

- **Delay Time** – Sets the gap between repeats (1 ms to 2000 ms). With Sync on, times follow the beat (1/64T to 8 bars). This can be controlled by the Effect Modulator.
- **Feedback** – Controls how many repeats you get. Low values = slapback echo; high values = infinite runaway.
- **Spread** – Adjusts the stereo width of the delayed signal.
- **Damp** – Softens repeats by filtering highs, making echoes darker and rounder.
- **Mod Rate / Mod Depth** – Adds modulation to delay time. Subtle settings = chorus shimmer; extreme = pitch warbles and glitching.

Tip: Try Digital mode with high feedback and a little modulation depth for a psychedelic wash that hovers on the edge of freak out.



Tape Echo

Few effects are as iconic as tape echo. Originally created with loops of magnetic tape and multiple playback heads, these machines defined the sound of countless dub records, psychedelic jams, and experimental soundscapes. the **Tape Echo** captures all that vintage character without the headaches of demagnetizing heads or replacing tape loops.

Controls:

- **Mode Selector** – Chooses which playback heads are active. Each mode offers different rhythmic subdivisions and textures, from simple single repeats to multi-head cascades.
- **Repeat Rate** – Sets the delay time. Lower values = slower, spaced-out repeats; higher values = rapid-fire echoes. With **Sync** engaged, rates lock to host tempo. Modulation can be applied here by the Effect modulator for even more vintage spaciness and psychedelic vibes.
- **Intensity** – Controls feedback (how much of the echo feeds back into itself). Low settings = quick fadeouts; higher values = dense, self-oscillating repeats and greater sonic mayhem.
- **Heads Indicators (1–3)** – Lights show which tape heads are active for the selected mode.

Tip:
For classic dub-style echo, select multiple heads with **Intensity** cranked high, then ride the **Repeat Rate** knob during playback for wild pitch sweeps. For more subtle use, stick to a single head and moderate intensity to add depth without overwhelming the mix.



Digital Reverb

Back in the ’70s, reverb meant spring tanks or giant plates welded into studio walls. Digital reverbs were exotic, studio-only beasts. The Digital Reverb gives you a compact, modern reverb with three classic models:

- **Room** – Tight, natural ambience.
- **Hall** – Expansive, lush decay.
- **Plate** – Smooth, metallic sheen.

Controls:

- **Predelay** – Time before the reverb kicks in (0–150 ms). Longer predelays create a sense of bigger space. This can be controlled by the Effect Modulator.
- **Decay** – Length of the reverb tail, from short and snappy to cavernous. Modulation target. This can be controlled by the Effect Modulator.
- **Highpass / Lowpass Filters** – Shape the tone of the reverb by trimming boomy lows or harsh highs.
- **Mod Routing Switch** – Chooses whether modulation affects Predelay or Decay.

Tip: Use a short Room reverb on Strings to glue them into a mix, or a long Plate on Brass for cinematic atmosphere.



Galactic Reverb

When you need more than a room, hall, or plate to launch your sound into the stratosphere, reach for **Galactic Reverb**. Designed for cavernous, cosmic spaces, it excels at ambient washes, cinematic swells, or simply making your synth sound like it has left the building (and maybe the planet).

Controls:

- **Predelay** – Sets the time before the reverb begins (0–150 ms). Short settings keep things tight; longer values create separation between the dry attack and the wash of reverb. This can be controlled by the Effect Modulator.
- **Decay Time** – Determines how long the reverb tail lingers. Dial it short for manageable ambience, or long for infinite, space-drifting sustain.
- **High Freq** – Adjusts the tonal brightness of the reverb by shaping the high-frequency response. Higher settings yield shimmering, airy tails; lower settings make the reverb darker.
- **Low Freq** – Sets how much low end is preserved in the reverb. Keep it up for a massive, bass-heavy wash, or pull it back to avoid muddiness.
- **Damp Amount** – Controls the damping of reflections over time. Higher values cause the reverb tail to lose brightness as it decays, simulating natural absorption in real spaces.

Tip:
For lush pads, combine a long **Decay Time** with a rolled-back **Low Freq** and moderate **Damp Amount** to create a deep but clear ambient space. On leads, try adding a touch of **Predelay** so the note speaks with presence before the reverb bloom takes over.



Spring Reverb

Spring reverb is one of the most distinctive ambience effects in music history. From surf guitar twang to vintage organs to early synths patched through amps, its metallic, splashy character has a charm all its own. The **Spring Reverb** recreates the sound of physical springs housed in tanks, complete with extra controls that let you shape it far beyond the originals.

Controls:

- **Drive** – Pushes the input signal into the springs. Higher settings increase saturation and grit, adding vintage bite to the reverb.
- **Predelay** – Sets the time gap before the reverb begins (0–150 ms). Useful for keeping the dry attack clear before the spring kicks in.
- **Decay** – Adjusts how long the spring vibrations last. Low values yield short, splashy bursts; higher settings give longer, ringing tails. This can be controlled by the Effect Modulator.
- **Highpass / Lowpass** – Filters that trim unwanted lows or highs from the reverb signal. Use them to tame muddiness or harsh metallic overtones.
- **Tension** – Simulates the tightness of the springs. Looser adds a wobblier, more boingy character. Tighter adds a more controlled, refined response.

Tip:
For vintage organ vibes, set **Decay** short and **Tension** loose to get that splashy, percussive spring burst. For a more modern twist, roll back the **Lowpass**, tighten the **Tension**, and add a touch of **Drive** for a darker, thicker ambience.



Distortion & EQ

Sometimes clean just won't cut it. Distortion adds grit, attitude, and warmth. The Distortion & EQ effect offers four modes:

- **Tube** – Smooth overdrive like a cranked guitar amp.
- **Fuzz** – Aggressive, buzzy saturation modeled after germanium fuzz pedals.
- **Sat** – Tape-style saturation for warmth and compression.

- **EQ** – A standalone 3-band equalizer without added drive.

Controls:

- **Drive** – Amount of gain/saturation (active in Tube, Fuzz, and Sat modes). This can be controlled by the Effect Modulator.
- **Level** – Output volume to balance the effect.
- **Bass** / **Middle** / **Treble** – ±15 dB gain for tone shaping.
- **Mid Band Frequency** – Selects which frequencies the Middle control boosts/cuts.
- **Modulation Target** – In Tube, Fuzz, and Sat modes, Drive is modulatable. In EQ mode, the Mid Band frequency can be modulated.

Tip: A touch of tape saturation can add body to pads without sounding distorted. Crank Fuzz on a Lead sound to make it snarl.



Dual Phaser

Phase shifters were everywhere in the ’70s, and the legendary Mu-Tron Bi-Phase set the standard. The Dual Phaser brings that same rich, sweeping character times two.

Each phaser has its own controls, but you can sync them together or let them run wild independently.

Controls (per phaser):

- **Speed** – Sweep rate (0.01 Hz–8 Hz, or tempo-synced from 1/64T to 8 beats).
- **Depth** – Intensity of the phasing effect.
- **Stages** – Number of filters in the phaser circuit. More stages = deeper, more pronounced sweeps.
  - Phaser 1: 4 or 8 stages.
  - Phaser 2: 6 or 12 stages.
- **Resonance** – Emphasizes the notches for sharper, more hollow tones.
- **Mix** – Balances between Phaser 1 and Phaser 2. This can be controlled by the Effect Modulator.
- **Sync** - the **Sync switch** determines whether the two phaser stages run free and independent or whether one is locked to (synchronized with) the other:
  - **Off** (unsynced):
    Each phaser has its own LFO running freely. This means they can drift in and out of alignment, creating evolving, swirling movement and complex stereo textures.
  - **On** (synced):
    The second phaser's sweep is locked to the first. Instead of moving independently, both phasers cycle together, so you get a more unified, rhythmic phase motion. This setting is tighter and more predictable, useful when you want a consistent pulse or groove.

Tip: Try syncing both phasers at different stage settings (e.g., 4 vs. 12) for complex, evolving sweeps.



Flanger & Chorus

These two modulation effects use short delays to create movement and depth. Flanging mixes dry and very short-delayed signals for a sweeping “jet plane” comb-filter sound. Chorus uses slightly longer delays to thicken tones, simulating multiple instruments playing together.

Flanger Controls:

- **Speed** – LFO rate of the sweep (0.01 Hz–8 Hz, or tempo-synced).

- **Depth** – Amount of sweep applied.
- **Delay** – Sets the base delay time (1–13 ms). Shorter = brighter notches.
- **Resonance** – Boosts the notches, producing the classic jet-flange effect.

Chorus Controls:

- **Speed** – LFO rate of the sweep (0.01 Hz–8 Hz, or tempo-synced).
- **Depth** – Amount of sweep applied.
- **Waveform** – Shape of the LFO (sine, triangle, saw, ramp). Each yields a different flavor of movement.

Shared Control:

- **Mix** – Balances Flanger and Chorus. This can be controlled by the Effect Modulator.

Tip: Use a slow, shallow chorus on Brass to add width without getting in the way, or crank up flanging on a lead synth for ’70s sci-fi vibe.



Envelope Filter

The Envelope Filter is a triggered modulation effect. Every time you play a key, it generates a filter sweep. Unlike a traditional envelope follower that reacts to signal volume, this one gives you consistent, predictable sweeps. Great for auto-wah effects, synth zaps, and funky textures.

Envelope Section:

- **Shape** – Pick an envelope contour (ramp, triangle, square, etc.). Shapes determine how the filter cutoff moves over time. Square acts more like an LFO.
- **PARA/POLY Switch**
  - **PARA (Paraphonic)-** One shared envelope and filter for all notes.
  - **POLY (Polyphonic)**- Each note triggers its own envelope and filter, enabling more detailed, note-specific modulation.

  Length – Duration of the envelope sweep. Short = snappy; long = slow evolving.
- **Envelope Amount** – Sets how far the filter cutoff moves in response to the envelope.

Filter Section:

- **Cutoff** – Base frequency of the filter. The envelope adds/subtracts from this point.
- **2-Pole / 4-Pole** – Choose slope steepness: 2-pole = smoother; 4-pole = sharper. This can be controlled by the Effect Modulator.
- **Resonance** – Boosts frequencies at the cutoff, making sweeps more dramatic.
- **Drive** – Adds gain before the filter for extra grit and presence.

Other Controls:

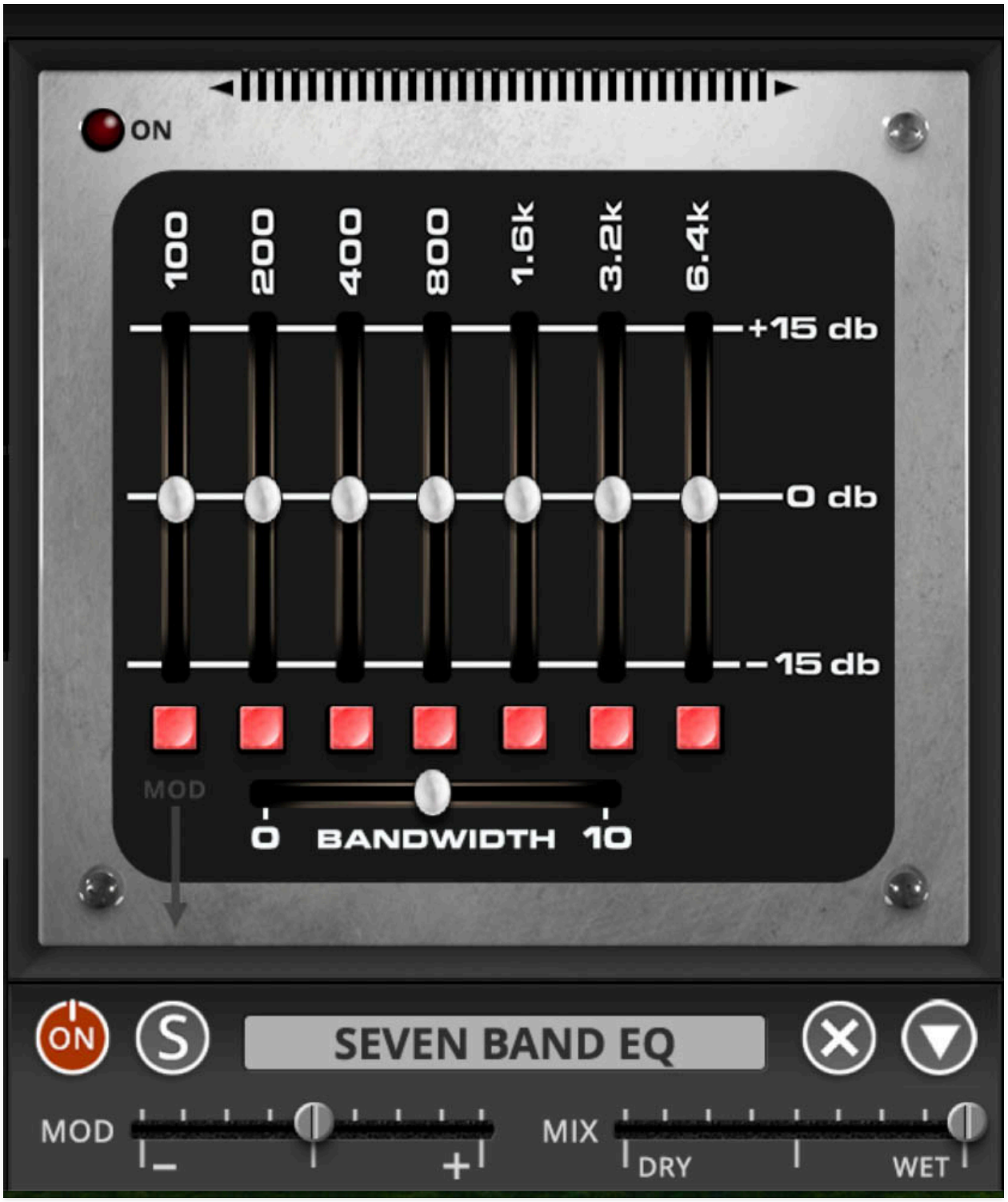
- **Gain (Trimmer)** – Balances the output level.
- **MOD Slider** – Adjusts how much modulation is applied.
- **MIX Slider** – Balances dry vs. processed.

Tip: Set a long ramp-up shape with high resonance on Strings for dramatic sweeps that evolve with each note, or go short and snappy for funky auto-wah leads.

Tip 2: Filters on Filters

You don’t have to trigger the Envelope Filter with an envelope at all. Just leave the sensitivity low and it becomes a fixed filter instead. This essentially gives you an extra paraphonic filter that you can apply to the sound. Stack it with the synth's built-in filters, and the multiple filters line up in series to carve out shifting bands of tone. This technique is an excellent way to shape

formant-like textures, focus a patch more narrowly, or travel to new sonic realms the synth never imagined.



Seven Band EQ

Equalization is one of the most fundamental tools in shaping sound, and the **Seven Band EQ** makes it straightforward and musical. Modeled after classic graphic equalizers, this effect lets you boost or cut seven key frequency

ranges to sculpt tone, tame problem areas, or bring out character in any sound.

Controls:

- **Frequency Bands (100, 200, 400, 800, 1.6k, 3.2k, 6.4k Hz)** – Each vertical slider boosts or cuts its band by up to ±15 dB. Push up to emphasize, pull down to reduce.
  - **100 Hz** – Sub-bass and low-end weight. This can be controlled by the Effect Modulator.
  - **200 Hz** – Warmth or muddiness.
  - **400 Hz** – Body and thickness (or boxiness if overdone).
  - **800 Hz** – Midrange punch.
  - **1.6 kHz** – Presence and edge.
  - **3.2 kHz** – Clarity and attack.
  - **6.4 kHz** – Brightness and air.
- **Bandwidth** – Adjusts how wide or narrow each band's effect is. Lower values = broader, smoother curves. Higher values = tighter, more surgical adjustments.

As with all other effects, the **Seven Band EQ** can be modulated, opening the door to rhythmic tone-shaping or evolving filter-like sweeps across multiple bands.

Tip: Use gentle boosts or cuts across a few bands for natural tone shaping. For example, trimming a little **200 Hz** mud while boosting **3.2 kHz** clarity on Brass. Or crank up **100 Hz** and **6.4 kHz** together to give synth basses thump and sparkle.



Ring Modulator

Ring modulation is the sound of science fiction ray guns, metallic clangs, and otherworldly textures. By multiplying your signal with an internal oscillator, it creates sum and difference frequencies that often sound inharmonic, robotic, or downright alien. The **Ring Modulator** gives you full control over how wild (or subtle) things get.

Controls:

- **Gain** – Adjusts the input level sent into the modulator. Higher gain means a stronger, more pronounced effect. This can be controlled by the Effect Modulator.
- **Range (High/Low)** – Switches the oscillator's frequency range. Low is better for tremolo-like modulation; High ventures into bell tones and metallic territory.
- **Freq** – Sets the frequency of the carrier oscillator. Lower settings = slow, throbbing tremolo. Higher = clangorous sidebands.
- **Wave** – Selects the oscillator's waveform: sine for smooth, or square for harsher, edgier modulation.
- **Rate** – Controls oscillator speed when in Low range (essentially tremolo rate). Syncs to tempo when **Sync** is enabled.
- **Amount** – Sets the depth of modulation, from subtle shimmer to total signal disintegration.
- **Drive** – Adds gain and harmonic grit after the modulation stage, thickening or dirtying up the output.

Tip: For classic sci-fi flying saucer tones, set **Range** to High, pick a sine wave, and crank **Freq** into the audio range. For more musical use, try Low range with Rate synced to tempo and it becomes a tempo-locked tremolo that adds groove without going completely alien.



Rotary Speaker

Few effects can transform a sound as completely as a rotary speaker. At slow speeds, it adds a rich swirl that can make pads, strings, and sustained chords feel wider, warmer, and more alive. Push it faster and the effect becomes more urgent, with pulsing lows, spinning highs, gritty cabinet color, and a Doppler shimmer that can edge into psychedelic territory. It can sound silky and spacious or rough and gritty.

That character comes from the interaction of two moving speaker elements inside the cabinet: a high-frequency horn and a low-frequency drum rotating at different speeds. As they sweep past the microphones, they continuously alter pitch, volume, tone, and stereo position. The Rotary Speaker effect models both rotor assemblies, along with their acceleration, cabinet character, microphone placement, and the small mechanical quirks that give a real rotary cabinet its unmistakable motion and depth.

Cabinet Type Controls:

Selects the rotary speaker cabinet model. Each cabinet has its own amplifier character, frequency response, and overall tonal balance.

- **122** – Models the warm, rounded character of a classic 122 rotary cabinet. This is the traditional choice for rich lows, smooth highs, and the familiar vintage rotary sound.
- **147** – Models a vintage 147 cabinet. Its basic character is similar to the 122, but its unbalanced input circuitry gives it a slightly different tonal response. It's a good choice when you want classic rotary movement with a subtly different edge and presence.
- **Custom** – Models a modified rotary cabinet fitted with higher-output drivers and amplification. It retains the broad character of the 122 and 147 models but sounds somewhat smoother, with more extended low- and high-frequency response.

Tip: Start with the 122 for warm pads, strings, and traditional organ-like textures. Try the 147 when a sound needs a little more midrange personality. Custom is especially useful for full-range synth patches that need deeper lows and clearer highs without losing the character of a rotary cabinet.

- **Diffuser** – Enables or disables the simulated diffuser fitted to the mouth of the rotating treble horn. With Diffuser enabled, the horn sounds smoother and less directional. Turning it off creates a brighter, more focused tone with a stronger sense of the horn sweeping past the microphones.
- Removing the diffuser became a popular real-world modification among players who wanted more upper-frequency bite and a more pronounced rotary effect.
- **Memphis** – Stops the bass rotor and holds it facing forward while leaving the treble horn free to rotate. This reduces low-frequency pulsing and Doppler movement while preserving the faster swirl of the horn.
- The result is a firmer, more stable bottom end, with most of the rotary movement concentrated in the mids and highs. It's especially useful on bass-heavy synth patches, where a fully rotating bass rotor can make the low end feel overly animated or unfocused.
- **Front Stop** – Forces the horn and bass rotor to settle in a forward-facing position whenever the rotary speed selector is moved to Stop. On a traditional cabinet, the rotors coast to a halt wherever inertia leaves them,

so the stopped sound may vary slightly each time. Front Stop makes the result consistent by placing both rotor openings in a predictable position.

Front Stop affects only the final resting position. It doesn't change the sound while the rotors are running in Chorale or Tremolo mode.

Horn Rotor Controls:

The Horn Rotor controls govern the rotating high-frequency horn.

- **Slow** – Sets the horn rotation speed in Chorale mode. Lower settings produce a gentle, gradual shimmer. Higher settings create more noticeable movement, even at the slow speed.
- **Fast** – Sets the horn rotation speed in Tremolo mode. Increasing it produces faster pitch movement and a more pronounced fluttering or swirling effect.
- **Accel** – Sets how long the horn takes to accelerate from Stop or Chorale speed to Tremolo speed. Lower settings reach the new speed quickly, while higher settings produce a slower, more dramatic ramp.
- **Decel** – Sets how long the horn takes to slow from Tremolo to Chorale or Stop. The horn assembly is relatively light, so it normally responds more quickly than the bass rotor. Separate acceleration and deceleration settings let you exaggerate or soften this mechanical behavior.

Bass Rotor Controls:

The Bass Rotor controls govern the rotating drum or baffle surrounding the cabinet's low-frequency speaker.

- **Slow** – Sets the bass rotor speed in Chorale mode.
- **Fast** – Sets the bass rotor speed in Tremolo mode.
- **Accel** – Sets how long the bass rotor takes to reach its faster speed.
- **Decel** – Sets how long the bass rotor takes to slow down.

Because the bass rotor represents a much heavier mechanical assembly, it normally accelerates and decelerates more slowly than the horn. Using different transition times for the two sections is an important part of the classic rotary-speaker sound. As the horn reaches speed first and the bass drum lumbers in behind it, the effect passes through shifting combinations of motion, pitch, and phase.

Microphones

The microphone controls determine how the virtual cabinet is captured. These settings can change the character of the effect almost as much as the rotor speeds themselves.

- **Spread** – Sets the stereo separation of the horn microphones. Low settings produce a narrow or nearly mono image. Higher settings move the microphones farther apart around the horn, creating a wider and more dramatic stereo sweep.
- Spread is the Rotary Speaker effect's hard-wired Effect Modulator destination. Positive modulation widens the image around the current setting, while negative modulation narrows it. Used subtly, this creates a gentle breathing motion in the stereo field. At higher amounts, the sound can swell from a focused center image into a broad, sweeping panorama.
- **Distance** – Sets how far the microphones are placed from the cabinet. Close settings produce stronger pulsing, sharper movement, and a more intense sense of the rotors passing the microphones. Greater distances smooth the motion and allow the cabinet tone to blend more naturally.
- **Bal** – Balances the microphone levels of the bass rotor and treble horn. Turn it toward the bass side for more low-frequency weight and throb, or toward the horn side for a brighter, more animated swirl.

Type

Selects dynamic or condenser microphones independently for the horn and bass rotor. Because the two rotor sections occupy very different frequency ranges, changing either microphone can significantly alter the cabinet's tonal balance.

- **Horn: Dynamic, Bass: Dynamic** – Uses dynamic microphones on both rotors. This produces a punchy, direct sound with strong highs and firm lows, similar to a common live-miking setup.
- **Horn: Condenser, Bass: Dynamic** – Uses a condenser microphone on the horn and a dynamic microphone on the bass rotor. The horn sounds smoother and less biting while retaining extended high-frequency detail, and the low end remains tight and punchy.
- **Horn: Dynamic, Bass: Condenser** – Uses a dynamic microphone on the horn and a condenser microphone on the bass rotor. This preserves the horn's direct, energetic character while extending the depth and fullness of the low frequencies.

- **Horn: Condenser, Bass: Condenser** – Uses condenser microphones on both rotors. This provides the broadest frequency response, with deeper lows and smoother, more extended highs. It generally produces the most polished and studio-like sound of the four combinations.

Tip: Dynamic microphones emphasize the physical pulse and bite of the effect, while condensers capture a broader, smoother frequency range. For gritty leads, start with Dynamic/Dynamic. For expansive pads and polished stereo textures, try Condenser/Condenser.

Placement

Selects whether the microphones are positioned near the closed front or open rear of the rotary cabinet.

Front – Places the microphones near the cabinet's closed front panel. This produces a mellower, woodier sound with softer highs and a stronger sense of the cabinet enclosure.

Back – Places the microphones near the open rear of the cabinet. This produces a brighter, more open sound with greater clarity and a more immediate sense of rotor movement.

Tip: Front placement works well when the rotary effect feels too bright or aggressive. Back placement helps darker patches cut through and makes fast Tremolo movement more clearly audible.

Rotary Speed Selector

- **Chorale** – Runs the horn and bass rotor at their respective Slow settings. Chorale is useful for gentle animation, wide pads, strings, and sustained sounds that need movement without an obvious pulsing effect.
- **Stop** – Allows both rotors to slow to a complete stop. The sound still passes through the selected cabinet and microphone model, but without rotational movement.
- **Tremolo** – Runs both rotors at their respective Fast settings. Despite the name, this produces far more than ordinary tremolo. The combination of changing volume, frequency response, stereo position, and Doppler pitch shift creates the characteristic fast rotary swirl.

Moving between Chorale, Stop, and Tremolo doesn't change the rotor speeds instantly. Each rotor transitions according to its own Accel and Decel settings, recreating the mismatched mechanical ramping of a physical cabinet.

Tip: For a spacious vintage pad, select Chorale, keep the rotor speeds near their center settings, use moderate Spread, and move the microphones slightly away from the cabinet.



Lushverb

If you want your sounds to swim in ambience, **Lushverb** is your go-to. As the name suggests, it’s built for wide, dreamy reverberation that can be subtle

and supportive or massive and enveloping. With tone-shaping filters and built-in modulation, it excels at everything from natural roominess to lavish, evolving textures.

Where **Galactic Reverb** reaches for infinite, cosmic expanses, **Lushverb** focuses on silky smoothness and animated depth. It's the kind of reverb that enhances synths, vocals, and pads by wrapping them in a glowing halo.

Cabinet Controls:

- **Predelay** – Time before the reverb kicks in. Short gives an immediate wash. Longer gives a clearer separation between dry sound and reverb bloom. This can be controlled by the Effect Modulator.
- **Early Reflections** – Shapes the very first echoes you hear when a sound bounces off walls. Low settings keep things tight and intimate, like you’re in a smaller space. Higher values push those reflections further forward, adding presence, punch, and a sense of real room before the tail blooms. Great for adding dimension without always using longer decay times.
- **Decay** – Sets the length of the reverb tail, from short ambience to cavernous sustain. Can be modulated. This can be controlled by the Effect Modulator.
- **Highpass / Lowpass** – Trim low-end rumble or high-end fizz in the reverb signal to keep mixes clean.
- **Damp** – Determines how much brightness is lost over time. Higher values give tails that darken as they fade.
- **Mod Rate / Mod Depth** – Add movement to the reverb tail by modulating its delay lines. Subtle settings = gentle shimmer; extreme settings create chorus-like animation.
- **Sync** – Locks modulation to host tempo for rhythmic effects.
- **Mod Switch (Predelay/Decay)** – Chooses whether modulation applies to the Predelay or Decay parameter.

Tip:
For ambient pads, set a long **Decay**, roll off some lows with the **Highpass**, and add a touch of **Mod Depth** for evolving atmospherics. For tighter mixes, use shorter **Predelay** and keep **Decay** moderate, adding just enough **Damp** to sit naturally under the dry sound.



Lo-Fi

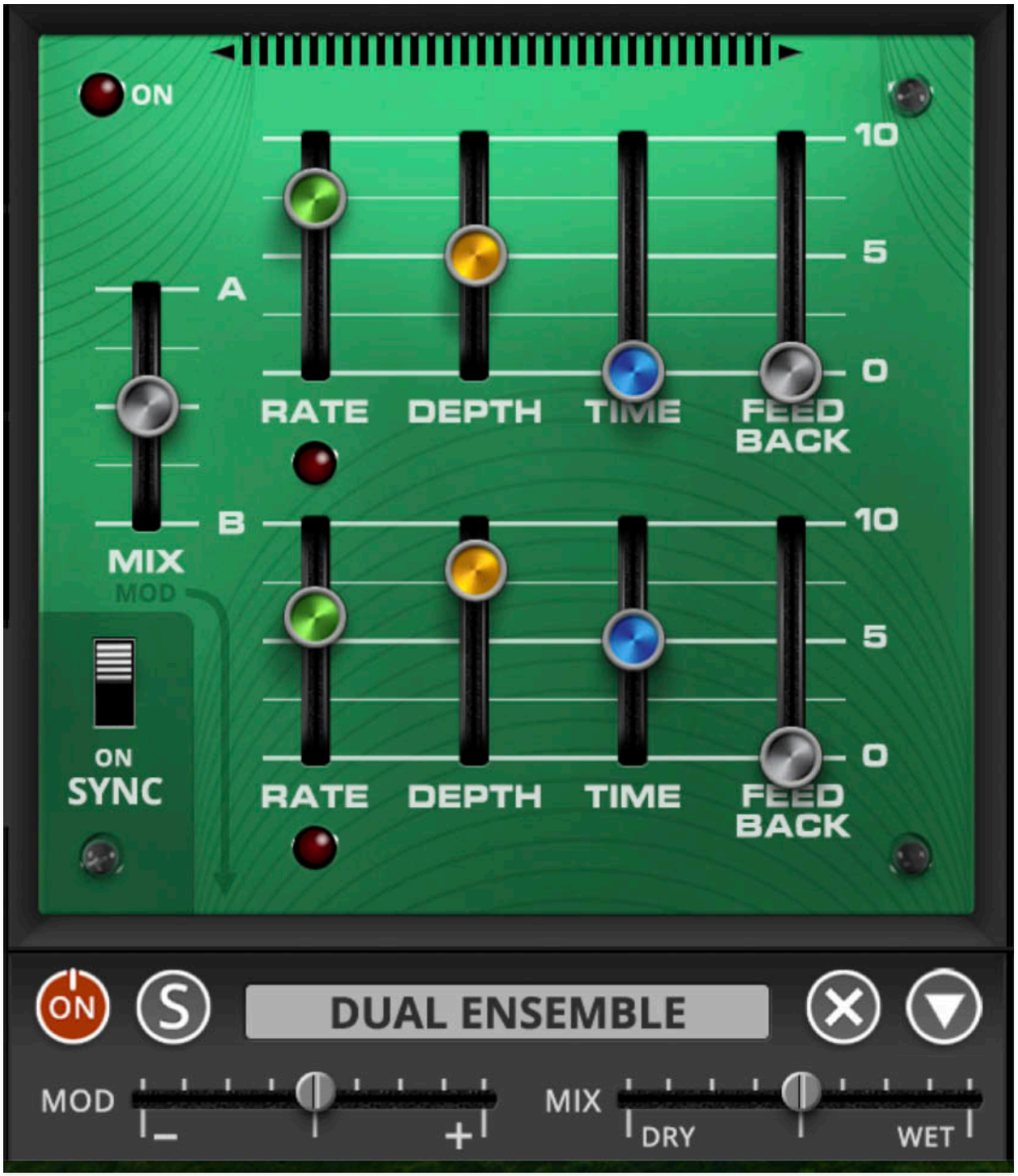
Sometimes perfection is the enemy of vibe. **Lo-Fi** is designed to rough up your sound with the kinds of imperfections that make old recordings feel warm and gritty. From dusty vinyl crackle to wobbly tape warble, this effect can take pristine synth tones and throw them straight into the basement of a 1970s record store.

Controls:

- **Vinyl** – Adds record-like crackle and pops. Higher settings = more frequent, louder artifacts.
- **Wow** – Simulates the slow pitch drift of a warped record or stretched tape.
- **Flutter** – Adds faster, jittery pitch variations, like a worn cassette transport.
- **Hiss** – Introduces broadband noise, reminiscent of tape or cheap electronics.
- **Hum** – Injects mains hum into the signal, with a switch for **50 Hz / 60 Hz** to match regional power noise flavors. This can be controlled by the Effect Modulator.
- **Random (center knob)** – Introduces unpredictable fluctuations across the effect parameters, enhancing the chaotic, analog feel.
- **Noise Gate** – To help keep the grit under control, Lo-Fi includes a **Gate**. Think of it as an automatic volume control. It lets your instrument through when you're playing, and slams the door shut when things go quiet, keeping hiss, hum, and crackle from hanging around between notes.
  - **Enable Button**: Switches the gate on and off.
  - **ATT (Attack)**: How quickly the gate opens when you play a note. A fast attack gives you sharp, immediate entrances; a slower attack eases the noise in more gently.
  - **REL (Release)**: How quickly the gate closes after the sound drops below the threshold. A short release cuts noise instantly. A longer release lets things fade more naturally.

  Gate Tip: When using long-decay sounds (especially with reverb or delay), you might hear "chatter," a sputtering, open-close-open stutter as the gate struggles to decide whether the tail is loud enough to keep. If that happens, try increasing the **Release** for smoother fades, or dial back your effect tails slightly. A touch of balance here makes the difference between vintage character and sounding like a broken speaker.

Lo-Fi Tip: For subtle retro flavor, add a touch of **Wow** and **Hiss** to synth pads. For full-on grit, crank **Vinyl** and **Hum** and let the **Random** knob do its thing. It's great for lo-fi hip-hop or downtempo textures that need a worn, nostalgic character.



Dual Ensemble

The lush, swirling sound of ensemble effects is a hallmark of vintage string machines and poly synths. The **Dual Ensemble** effect gives you two fully independent ensemble units for everything from subtle shimmer to deep, swirling motion.

Controls (for each Ensemble A & B):

- **Rate** – Sets the speed of the modulation (how fast the pitch/phase shifts). Slow adds gentle drift; fast adds warbly motion.
- **Depth** – Controls how far the pitch is detuned by the modulation. Low adds subtle thickening; high adds seasick wobble.
- **Time** – Adjusts the base delay time of the effect. Longer times = looser, more chorus-like feel; shorter times = tighter, phase-like coloration.
- **Feedback** – Feeds the delayed signal back into itself for resonance and more pronounced movement.

Shared Control:

- **Mix** – Balances between Ensemble A and Ensemble B. Use it to layer two different modulation speeds and depths for a rich, evolving chorus. This can be controlled by the Effect Modulator.

Tip: For classic string-machine shimmer, set both ensembles with slow **Rates** and low **Depths**, then balance them with the **Mix** slider. For a more psychedelic wash, give one ensemble a slow, deep drift and the other a faster, shallower variation. The interaction creates a lush, animated stereo field.

Note: If you're torn between **Dual Ensemble** and **Chorus/Flanger**, think of it this way: Ensemble excels at smooth, swirling textures with a vintage string-machine flavor, while Chorus/Flanger covers more dramatic sweeps, jet whooshes, and thicker doubling effects.



Dual Delay

Why settle for one echo when you can have two? The **Dual Delay** lets you run two independent delay lines side by side for everything from tight rhythmic interplay to wide, spacious echoes. Each delay has its own controls, and you can sync them to tempo, run them free, or send them bouncing across the stereo field in ping-pong mode.

Controls (per Delay Line 1 & 2):

- **Time** – Sets the delay length. With **Sync** engaged, times lock to tempo divisions; in **Free Run** they're adjustable in milliseconds.
- **Feedback** – Determines how many repeats occur. Low = quick slapback; high = long echoes or self-oscillation.
- **Damp** – Applies high-frequency damping to the repeats, making them darker and more natural as they fade.

Shared Controls:

- **Mix (1/2)** – Balances between Delay 1 and Delay 2. This can be controlled by the Effect Modulator.
- **Sync/Free Run Switch** – Toggles between tempo-synced and free-running time modes.
- **Spread** – Adjusts stereo spacing of the delays. Low = centered echoes; high = wide, panned echoes.
- **Ping-Pong** – Sends repeats alternating left and right for a classic stereo bounce.

Tip: For rhythmic complexity, set Delay 1 to dotted eighths and Delay 2 to quarters, then spread them wide for instant "U2-style" echo textures. For ambient sound design, keep both delays long, add plenty of **Damp**, and engage **Ping-Pong** for endless stereo wash.

Note: If you're wondering whether to reach for **Dual Delay** or **Digital Delay**, here's the difference: Digital Delay is quick and straightforward, with classic single-line flavors (digital, ping-pong). Dual Delay offers more flexibility, stereo interplay, and rhythmic layering. This is great when you want echoes to become part of the composition.



Compressor

Compression is a powerful tool for shaping the dynamics of your synths. It can make basses hit harder, leads sit firmly in a mix, and pads feel more even and controlled. The Compressor keeps things simple, with just the essential controls you need to add punch, presence, or smoothness to your patches. It operates with a fixed threshold of –12 dB and built-in auto makeup gain, ensuring consistent levels without extra balancing work, making it very plug-and-play. Dial in Attack and Release to taste, push the

Input until you like what you hear, and you’re good. There's no need to trouble with gain staging or threshold hunting.

Controls:

- **Ratio (slider at top)** – Sets how much the signal is reduced once it passes the threshold. Lower ratios (4:1) create gentle smoothing. Higher ratios (12:1, 20:1) give firm control.
- **Input** – Adjusts how much signal is pushed into the compressor. More input equals more compression.
- **Output** – Balances the overall level after compression so the processed signal matches or exceeds the bypassed sound.
- **Attack** – Controls how quickly the compressor reacts, measured in milliseconds (ms). Fast is tight and snappy; slow allows more of the transient bite through.
- **Release** – Sets how quickly the compressor recovers, measured in milliseconds (ms). Fast = punchier feel; slow = smoother, sustained leveling.
- **VU Meter** – Shows how much gain reduction is being applied, so you can see the effect as well as hear it.
- **Auto Makeup Gain** – One common side effect of compression is that the overall signal level can drop as peaks are reduced. Normally you’d compensate for this with an Output (or Makeup Gain) control, nudging the level back up by ear. The Compressor effect saves you that step by including built-in auto makeup gain that you can switch on or off. With it on, as you increase compression, it automatically boosts the signal so your processed sound stays roughly as loud as the uncompressed version. The benefit is that you can focus on shaping punch and dynamics without constantly juggling output levels, making the Compressor faster and more intuitive to use.

Compressor Specs:

- Input: -20dB to +20dB
- Output: -20dB to +20dB
- Attack: .1ms to 200ms
- Release: 5ms to 3000ms
- Detector HP: 100Hz

- Threshold: -12dB
- Soft Knee (-3dB below threshold)

Tip: For synth bass, use a medium **Attack** and fast **Release** to keep the low end solid without losing punch. On pads, slower **Attack** and **Release** settings even out the dynamics, giving you a warm, flowing texture that sits perfectly under leads and arpeggios.

Note: the Compressor is the one effects unit that does not utilize the Effect Modulator, and has no mapping applied to it.



BBD Flanger

Flanging is all about mixing a signal with a very short, modulated delay, creating swooshing comb-filter effects. The **BBD Flanger** nails the character of vintage bucket-brigade analog units, known for their warm, slightly gritty sound compared to pristine digital models. This makes it ideal for thickening synths, adding movement to pads, or creating the classic jet plane sweep.

Controls:

- **Speed** – Sets the LFO rate that modulates the delay time. Slow is good for gradual sweeps; fast is good for rapid, shimmering motion. This can be controlled by the Effect Modulator.
- **Intensity** – Adjusts how much the LFO affects the delay time. Subtle settings are good for gentle movement; higher is good for deeper sweeps.
- **Manual** – Manually offsets the flanger's delay time. Use it to set the starting point of the sweep or to park the flanger for static comb-filter tones.
- **Feedback** – Feeds part of the output back into the input. Low gives a smooth, subtle flange. High gives a resonant, metallic sweep with a signature jet-like sound.
- **Sync** – Locks the modulation rate to host tempo for time-synced sweeps.

Tip: For classic "jet whoosh" effects, set **Feedback** high, **Speed** slow, and **Intensity** deep. For subtler chorus-like thickening, keep **Intensity** low, **Manual** slightly offset, and a bit of **Feedback**.

Note: If you're deciding between **BBD Flanger** and **Flanger/Chorus**, here's the distinction: BBD Flanger delivers darker, warmer, more organic sweeps. This is perfect for vintage-style movement. Flanger/Chorus offers cleaner, brighter modulation and the flexibility to switch into chorus mode.



DCO Chorus

Inspired by the legendary stereo chorus of the Juno-60, the DCO Chorus adds rich, swirling movement to analog pads and is great for beefing up textures with that classic 80s spread. The Juno-60's original chorus gave its single-oscillator engine a depth and width that made it a hallmark of synthpop and electronic music.

Controls:

I – The first mode gives a rich chorus effect, adding width and shimmer. It's ideal for thickening pads, strings, and other sounds. This can be controlled by the Effect Modulator.

II – The second mode intensifies the chorus effect by increasing the modulation speed by 70%. It's great for lush textures, or anything where you want the synth to bloom.

I + II – Both modes engaged simultaneously. This third variation was a feature of the Juno-60 (pressing both buttons) and became a go-to trick for an unmistakably intense chorus. The modulation speed is faster, the depth shallower, and it uses a sine wave instead of a triangle wave.

Noise Level (knob) – Adds a subtle analog-style noise floor to the effect chain, helping the chorus feel less digital and more lived–in.

Tip: For a warm pad with some movement, set mode II, dial Noise Level low, and let the chorus breathe. Want your lead to spread? Use I + II, pull Noise Level up a bit, then stack a subtle delay behind it for full ’80s width.



Panner

The Panner effect brings life and movement to your patch in the stereo field. Use it to animate a wandering pad, give your lead a swirling stereo motion, or simply place layers dynamically across the stereo field. By controlling how your sound moves left-to-right, how wide the sway is, and how quickly it sweeps, you can turn a static sound into a living soundscape. To trigger the Panner, press a key on the keyboard. If you continue to hold down a key (or keys), pressing other keys won't retrigger the effect.

Controls:

Rate (Min → Max) – Sets the speed of the movement across the stereo field. Lower settings slow down the pan sweep; higher settings make the motion rapid and rhythmic. This can be controlled by the Effect Modulator.

Width (Min → Max) – Determines how far the sound moves from left to right. At minimum the motion is subtle; at maximum it spans the full stereo spectrum.

Offset (Left ↔ Right) – Lets you set the starting point or bias of the movement. Move towards “Left” to start or favor the left side; move towards “Right” to start/favor the right.

Shape – Selects the modulation waveform used for panning (sine, triangle, saw, square). Different shapes give different character to the movement.

Smoothing (Hard ↔ Soft) – Controls how quickly the panning transitions occur: “Hard” gives abrupt jumps or sharp movement, “Soft” smoothens the glide between positions.

Mode Switch (Manual / ON / Trig Once / Trig ON) –

- **Manual**: Panning follows the Offset knob only – no automatic sweep.
- **ON:** Continuous automated panning according to Rate, Width, Shape, and Offset.
- **Trig Once**: On receiving a trigger event (i.e. pressing a key on the keyboard), the panning sweep runs once and then stops. In this mode, the Attack knob is active.
- **Trig ON**: On receiving trigger events, panning restarts automatically each time a key is pressed (if no other keys are currently held down). In this mode, the Attack knob is active.

Attack (Min → Max) – Active when Mode is set to Trig Once or Trig On. Sets how quickly the panning sweep begins after the trigger. Short values give an immediate sweep. Longer values ease in gradually.

SYNC (Off / On) – When ON, the Rate control syncs to the synth's own tempo setting (in standalone mode) or if used in a DAW, to the project tempo. When OFF, Rate is freely set in Hz.

Tip: For a slowly drifting stereo pad, set Width relatively high, Rate low (around 1 – 2), Shape to triangle, Mode to ON, and Smoothing to Soft. If you want a lead that jumps left-right on each note trigger, switch to Mode to Trig

Once, set Attack short, Width high, Rate moderate, and tie the trigger to your note-on event for dramatic stereo hops.



Pulser

The Pulser effect is a flexible 16-/32-step gate/sequencer built to inject rhythmic motion into sustained sounds or static patches. Think of it as a live, programmable tremolo, stutter or step-gate engine that sits on the end of

your signal chain and chops or paces your synth voice, turning pads, leads or drones into patterns that rhythmically pulsate with life.

Controls:

Attack (0-10) — Determines how hard the gate opens at each step. Lower values give sharp, abrupt cuts. Higher values soften the entrances so the gating effect is smoother and less choppy.

Sustain (0-10) — Sets how long the gate stays open during each active step. At maximum sustain, the silence holds for the length of the step.

Length (Min → Max) — Sets the number of active steps in the sequencer. In Single mode this runs from 2 –16 steps. In x32 mode the total length doubles (up to 32 steps).

Playback (Single / Dual / x32) —

- Single: Runs one sequencer of up to 16 steps.
- Dual: Enables two independent 16-step sequences running simultaneously (so you can layer or offset patterns).
- x32: Runs a single sequence of up to 32 steps (essentially the 16-step engine doubled).

Speed (Min → Max) — Controls the rate at which the sequence advances. Higher values make faster step changes; lower values slow things down for broad rhythmic movement. This can be controlled by the Effect Modulator.

Direction switch (▶ / ◀) — Determines playback direction: forward (▶) or reverse (◀). Reverse mode can yield unexpected textures, especially when gating sustained patches.

Sync (Off / On) — When ON, the Speed parameter locks to your host tempo or internal clock; when OFF, Speed is free-running.

16 Step Buttons — Each button corresponds to one step in the sequence. Clicking a button toggles the gate on that step (active) or off (muted). A lit button means the signal passes; unlit means the gate is closed for that step.

Tip:

For a dramatic stutter effect, set Length to approximately 8, Speed moderate (so each step aligns with a 16th-note), Attack low for crisp gate opens, Sustain around mid for choppy rhythm. Use the forward direction. On the other hand, for evolving drone motion, try Length = 16, Speed = slow, Attack = high, Sustain = long, Direction = reverse, and use Sync = Off so the pattern drifts free of the tempo grid.

Power Tip: Rhythmic Crossfire

For bonus chaos, switch one Pulser to Dual mode and the other to x32, and let the overlapping cycles drift naturally out of sync.



Wide Phaser

The Wide Phaser is a four-stage Phaser effect. It delivers the deep, liquid sweep that made phasing one of the defining effects of the 1970s, then spreads the movement across the stereo field. Instead of the entire sound rising and falling through the same phase cycle, the left and right channels sweep at offset positions. The result is broad, fluid motion that seems to roll around the sound rather than simply pass through it.

At restrained settings, it adds a silky shimmer and gentle animation to pads, strings, and sustained chords. Increase the Depth and the sound becomes more hollow, vocal, and dramatically psychedelic.

- **Sync** – Locks the phaser’s modulation rate to the current tempo. In the standalone version, it follows the synth's internal tempo. When used as a

plug-in, it follows the host DAW’s project tempo. Turn Sync off for a freely adjustable sweep.

- **Rate** – Sets the speed of the phaser sweep. Low settings create slow, spacious movement that flows across sustained sounds. Higher settings produce faster, more animated motion. When Sync is enabled, the knob selects rhythmic note divisions rather than a freely running speed.
- **Depth** – Sets how far the phaser sweeps through its range. Low settings add subtle width and tonal movement. Higher settings produce deeper notches, stronger coloration, and the full swirling character of the effect. Depth is the Wide Phaser’s hard-wired Effect Modulator destination. Subtle modulation can make the phaser gently breathe. More extreme settings create a deep, dramatic sweep.

Tip: For a wide vintage pad, set Rate slow, keep Depth around the middle of its range, and blend in enough wet signal to hear the stereo motion without washing out the original tone. For more psychedelic textures, increase Depth, slow the Rate, and use the Effect Modulator to make the sweep gradually expand and recede.

Rhythmic Tip: Enable Sync and try quarter-note or half-note sweeps on sustained chords. The stereo phase movement will rise and fall with the track instead of drifting freely, which can add a strong pulse without using another arpeggiator, gate, or tremolo. Note that changing the Rate while in Sync is on will result in a low-level thump as the phaser resets to match the new rate.



Shimmer

The new Shimmer effect brings reverb into more adventurous territory by introducing pitch-shifted tones into its evolving tail. A simple note can leave behind a halo of higher harmonies, while chords can dissolve into an harmonic wash that continues to change after the keys are released. It's especially effective with pads, slow leads, and atmospheric textures. A little Shimmer can also give relatively dry sounds an unexpected sense of space.

Unlike a basic reverb, Shimmer lets you control the pitch relationship of its reverberant voices, their diffusion and movement, and how strongly the processed sound develops over time. Used sparingly, it adds a soft harmonic sheen. With longer decays and more feedback, it can become a sound-design element in its own right.

Controls:

Size: Adjusts the perceived dimensions of the reverberant space. Smaller settings create a tighter, more contained response, while larger settings

suggest a more expansive environment. The control displays time in milliseconds.

Decay: Sets how long the reverb tail takes to fade. Shorter settings preserve clarity and articulation; longer settings create sustained, enveloping ambience. The value is displayed in seconds.

Shift: Sets the pitch-shift interval of the primary shimmer voice, displayed in semitones. For example, **+12 st** shifts the voice one octave above the original pitch. Try a smaller interval for a less conventional harmonic color.

Shimmer: Sets the contribution of the pitch-shifted shimmer component. Low values introduce a subtle halo; higher values make the added harmonic voices more prominent. The amount is displayed as a percentage.

Bloom: Adjusts how the shimmer develops at the start of the reverberant response. Short settings bring the effect forward more quickly; longer settings encourage a gentler swell. The value is displayed in milliseconds.

Diffusion: Controls how densely the reflections blend together. Lower settings make the individual reflections more apparent, while higher settings produce a smoother, more continuous wash. Displayed as a percentage.

Mod Rate: Controls the speed of the reverb's internal modulation, displayed in hertz when free-running. Gentle modulation keeps long tails from sounding static.

Mod Depth: Sets the strength of the internal pitch movement, displayed in cents. Small settings add subtle animation; stronger settings produce more noticeable pitch movement in the tail.

Feedback: Sets how much processed signal is recirculated, allowing the shimmer to build and linger. Higher values create denser, more persistent textures, but can also cause successive notes to accumulate. Displayed as a percentage.

Low Cut: Removes unwanted low frequencies from the reverberant sound. Raise this control to prevent bass notes and dense chords from clouding the mix. Its setting is displayed in hertz.

High Cut: Reduces high-frequency content in the reverberant sound. Lower settings create darker, silkier tails; higher settings retain more sparkle and air. Its setting is displayed in hertz or kilohertz.

Voice 2 (Off / Fifth / Oct Down / Detune): Selects an optional second pitch-treated voice. **Off** leaves the additional voice disabled; **Fifth** adds a fifth-based harmony; **Oct Down** adds a lower-octave component; and

Detune introduces a contrasting pitch variation. These choices are useful for changing the harmonic character without simply turning up Shimmer.

Stereo Wide: Expands the stereo presentation of the processed sound for a broader, more enveloping effect.

Mod Sync: Synchronizes the internal modulation rate with the instrument or host tempo, making its movement easier to coordinate with rhythmic material.

Tip: An Expansive Pad

Start with **Shift** at **+12 st**, moderate **Shimmer**, high **Diffusion**, and a relatively long **Decay**. Keep **Mod Depth** gentle and use **Low Cut** to prevent the lower notes from overwhelming the reverb. Try **Voice 2** set to **Fifth** for a richer harmonic cloud, then engage **Stereo Wide** if you want the tail to spread across the stereo field. Increase the effect slot's **Mix** gradually until the ambience supports the patch rather than swallowing it.

Tip: Shimmer Without the Fog

Shimmer doesn't have to be enormous. For bells, plucked keyboards, or melodic leads, use a shorter **Decay**, modest **Feedback**, and a restrained **Shimmer** amount. Keep the dry signal prominent with the effect slot's **Mix** control. You'll retain the attack and rhythmic definition while adding an airy harmonic trail behind each note.



Sculpt

The new Sculpt effect is a practical finishing tool for shaping, balancing, and cleaning up a patch. It combines input drive, output gain, independently switchable high-cut and low-cut filters, filter modulation, and a noise gate in one effect. That makes it useful both for subtle tonal polish and for more aggressive sound shaping, without needing to fill several effect slots with separate processors.

Sculpt is particularly valuable when a patch includes effects such as **Lo-Fi** or **DCO Chorus** that can introduce intentional hiss, hum, or other background noise. Place Sculpt after the noise-generating effect and use its gate to reduce that noise between notes. Its filters can also tidy up excessive lows or brittle highs, while **Input Drive** adds character when the sound needs a little more bite.

Controls:

Phase (180°): Reverses the signal's polarity. This can change how Sculpt's output combines with another version of the signal in a parallel or layered

setup. It doesn't create a time delay or a conventional stereo-widening effect.

Input Drive: Adjusts how hard the incoming signal is driven into Sculpt. Lower settings preserve a cleaner sound; higher settings can introduce more harmonic coloration and, if pushed, clipping. Increase gradually and listen for changes in tone as well as loudness.

Output Gain: Adjusts Sculpt's output level. Use it to compensate for changes in level caused by Input Drive, filtering, or other processing so that the effected and bypassed sounds can be compared at similar loudness.

Clip Indicator: Provides a visual warning of clipping. If the indicator is active more often than intended, reduce **Input Drive** or the level feeding Sculpt and recheck **Output Gain**.

Hi-Cut On: Enables the high-cut filter, which attenuates frequencies above the selected cutoff. Switching it off bypasses the associated high-cut controls.

Hi-Cut Freq: Sets the high-cut filter's cutoff frequency. The panel is marked from approximately **75 Hz to 24 kHz**. Lower settings soften bright or harsh material; higher settings preserve more treble and air.

Hi-Cut Res: *(0–10)* Adjusts resonance around the high-cut filter's cutoff. Lower values provide gentler tonal shaping, while higher values emphasize the cutoff region and make the effect more pronounced.

Lo-Cut On: Enables the low-cut filter, which attenuates frequencies below its cutoff. Switching it off bypasses the associated low-cut controls.

Lo-Cut Freq: Sets the low-cut filter's cutoff frequency. The panel is marked from approximately **15 Hz to 16 kHz**. Low settings can remove sub-bass rumble; higher settings thin the sound or produce more dramatic filtering.

Lo-Cut Res: *(0–10)* Adjusts resonance around the low-cut filter's cutoff. Raising it can emphasize the transition into the remaining low-frequency content, producing anything from subtle reinforcement to a more obvious resonant edge.

Shape: Selects the waveform used by Sculpt's filter modulator, including smoothly changing and more abrupt or stepped shapes. Use gentler shapes for drifting movement and sharper shapes for distinctly rhythmic filtering.

Amount: *(0–10)* Sets the depth of filter modulation. Lower settings produce subtle movement; higher settings sweep the selected filter cutoff more dramatically.

Rate: *(0–10)* Determines the speed of filter modulation. Slow settings create evolving tonal changes; faster settings introduce more rhythmic motion.

Hi / Lo / Both: Selects whether Sculpt's modulation acts on the high-cut filter, low-cut filter, or both. Modulating both can create an animated moving frequency window.

Sync On: Synchronizes the modulator's rate with the instrument or host tempo for rhythmically coordinated filter movement.

Gate (Off / On): Enables the noise gate. When enabled, the gate attenuates the signal when its level falls below the threshold, helping to suppress unwanted background noise between notes.

Closed Indicator: Shows when the gate is in its closed state. This is useful when adjusting the threshold and checking whether the gate is allowing quiet passages to pass.

Threshold: *(0–10)* Sets the signal level at which the gate opens and closes. Raise it enough to suppress unwanted noise when the instrument is silent, but not so high that quieter notes disappear.

Attack: *(0–10)* Adjusts how quickly the gate opens when the signal crosses the threshold. Lower settings preserve sharp transients; higher settings allow the sound to enter more gradually.

Release: *(0–10)* Adjusts how quickly the gate closes after the signal falls below the threshold. Short releases cut noise quickly; longer releases are generally smoother and help preserve natural fades.

Tip: Quiet the Vintage Character Between Notes

When using **Lo-Fi** or **DCO Chorus** for vintage character, place **Sculpt** after the effect that generates the noise. Turn on the **Gate**, then raise **Threshold** until the background hiss or hum is reduced during pauses. Keep **Attack** fairly quick so note entrances remain intact, and adjust **Release** so sustained notes don't end abruptly. If a later reverb or delay needs to ring out naturally, place it after Sculpt rather than gating the completed tail.

A gate can't separate noise from the musical signal while it's open. Sculpt is most effective here as a way to reduce unwanted noise *between* notes, not as a full-time hum-removal processor.

Tip: Polish a Busy Patch

Enable **Lo-Cut** and remove only as much unnecessary low-frequency energy as the patch allows. Next, use **Hi-Cut** to soften excessive brightness, keeping both filter resonance controls restrained. Compare the processed sound with

Sculpt bypassed at roughly equal loudness. Often, a small amount of filtering and careful **Output Gain** adjustment is all a patch needs to sit more comfortably alongside other instruments.

Tip: Put the Filters in Motion

Choose a smooth **Shape**, set **Rate** to a slow value, and introduce a little **Amount**. Select **Hi**, **Lo**, or **Both** according to the effect you want. With both filters active, the modulator can create shifting bands of emphasis and attenuation. Turn on **Sync** when you want that movement to relate to the track's tempo.



Crush

Crush brings out the rougher side of DW-8K's digital personality. Combining bit-depth reduction, sample-rate reduction, and flexible filtering, it can transform clean sounds into everything from gritty vintage textures to wonderfully mangled digital destruction.

Reduce **Bit Depth** to introduce the grainy distortion and quantization noise associated with early digital instruments and samplers. Lower **Sample Rate** for metallic overtones, aliasing, and increasingly unusual harmonic artifacts. Add a little of either to give a bass or lead some bite, or push both to turn an otherwise familiar patch into something altogether less civilized.

Crush also includes a versatile multimode filter with selectable pre- or post-processing, plus modulation controls for adding movement to the resulting textures. This makes it equally useful for subtle lo-fi coloration, rhythmic filtering, and more adventurous sound design.

Controls

ON: *(Off/On)* Enables or bypasses Crush. Toggle it while playing to compare the processed and unprocessed sounds. This is particularly helpful when making subtle adjustments, since a little bit reduction can go a long way.

INPUT DRIVE: Adjusts the signal level entering the crusher. Increasing Input Drive changes how the incoming waveform interacts with the bit-depth reduction process, influencing the resulting distortion and harmonic character. Try lowering Bit Depth, then adjusting Input Drive while playing a plucked or decaying sound. Listen to how the initial attack and quieter portions of the decay respond differently to the reduced resolution.

Sample Rate and Bit Depth

These two controls are at the heart of Crush. Although both deliberately reduce digital audio fidelity, they work in different ways and produce distinctly different sonic results.

SAMPLE RATE: *(48 kHz–200 Hz)* Determines how frequently the incoming audio signal is sampled by the effect. Reducing the rate introduces increasingly obvious digital artifacts as high-frequency components fold back into the audible spectrum. This phenomenon, known as *aliasing*, produces the buzzy, metallic, and sometimes inharmonic overtones characteristic of early digital sampling technology.

At higher rates, the effect can be relatively subtle. As the rate approaches its minimum, even simple waveforms can become radically transformed.

Try holding a bright, sustained note and gradually reducing Sample Rate. Listen for the appearance of additional metallic tones that shift and interact

with the original pitch. The results can be especially interesting with digital waveforms, bells, and evolving pads.

BIT DEPTH: *(64–2 bits)* Reduces the number of available amplitude levels used to represent the incoming signal. At higher settings, the sound retains much of its original smoothness and detail. As Bit Depth decreases, the waveform becomes increasingly coarse, introducing quantization distortion and a characteristic grainy, crunchy quality. At the minimum setting of 2 bits, only four amplitude levels remain, producing extreme distortion and dramatically altered timbres.

Bit Depth reduction is particularly effective on sounds with long, smooth decays. Try it on an electric piano, bell, or plucked synthesizer patch. As the note fades, the increasingly obvious quantization artifacts can produce a rough, sputtering tail reminiscent of early low-resolution digital instruments.

Tip: For vintage digital keyboard textures, try moderate Bit Depth reduction while keeping Sample Rate relatively high. This adds grit without introducing too many metallic artifacts. For more radical sounds, reduce both controls and experiment with the different interactions between quantization distortion and aliasing.

FX MOD ROUTING: *(SR/BD/Both)* Selects which crusher parameter responds to the effect's modulation signal.

- **SR:** Modulates Sample Rate, producing shifting aliasing artifacts and metallic movement.
- **BD:** Modulates Bit Depth, varying the amount of quantization distortion over time.
- **Both:** Modulates Sample Rate and Bit Depth together for more complex changes in texture.

Try assigning modulation to Sample Rate while sustaining a bright pad. The resulting harmonic movement can create animated textures that would be difficult to achieve using conventional filter modulation alone.

Filter

Crush includes a multimode filter that can operate either before or after the bit-depth and sample-rate reduction process. This is particularly useful because filtering the incoming signal produces different results from filtering the digital artifacts created by the bit crusher.

FILTER ROUTING: *(Pre/Post)* Determines where the filter is placed in the signal path.

Pre: Places the filter before the crusher, allowing you to shape the frequencies entering the bit-depth and sample-rate reduction stages. For example, reducing high frequencies before lowering Sample Rate can help tame the amount and character of the aliasing artifacts produced.

Post: Places the filter after the bit crusher, allowing you to shape the processed sound. This is useful for softening harsh digital overtones, emphasizing particular frequency regions, or creating more focused lo-fi textures.

FILTER TYPE: *(LP/BP/HP)* Selects the filter response.

- **LP (Lowpass):** Attenuates frequencies above the cutoff. Particularly useful for smoothing harsh digital artifacts and creating warm, vintage sampler textures.
- **BP (Bandpass):** Passes a selected range of frequencies around the cutoff while attenuating frequencies above and below it. Useful for emphasizing metallic resonances, nasal tones, and animated filter effects.
- **HP (Highpass):** Attenuates frequencies below the cutoff. Use it to remove excessive low-frequency energy or emphasize the thinner, brighter components of a crushed sound.

FILTER CUTOFF: *(20 Hz–24 kHz)* Sets the cutoff frequency in Lowpass and Highpass modes, or the center frequency in Bandpass mode. Its audible effect depends on the selected Filter Type and whether the filter is positioned before or after the crusher.

FILTER RES: *(0–100)* Adjusts the amount of resonance around the filter's cutoff frequency. Higher values produce a more pronounced peak, emphasizing selected frequencies and making filter movement more noticeable.

Tip: Try setting the filter to Post, selecting Bandpass, and increasing Resonance. Slowly sweep Cutoff while playing a bright, harmonically rich sound. The filter can isolate and emphasize unusual overtones created by the bit crusher, producing vocal-like textures and metallic resonances.

Filter Modulation

Crush also includes dedicated modulation controls for animating the filter cutoff. These allow you to introduce rhythmic pulses, smooth sweeps, and repeating tonal changes without programming additional modulation routings.

FILTER MOD: *(-100 to +100)* Sets the depth and polarity of modulation applied to Filter Cutoff. At the center position, no modulation is applied. Positive settings apply the selected modulation waveform in its normal direction, while negative settings invert its polarity.

For example, with a sawtooth waveform selected, changing the polarity reverses the direction of the sweep. This makes it easy to experiment with rising and falling filter movement.

MODULATION WAVEFORM: *(Triangle/Sawtooth/Square)* Selects the waveform used to modulate the filter.

- **Triangle:** Produces smooth, continuous movement as the cutoff rises and falls. Useful for gentle tonal animation and sweeping effects.
- **Sawtooth:** Produces a repeating sweep in a downward direction, followed by an abrupt return to the starting point. Particularly useful for rhythmic filter movement and repeating tonal accents.
- **Square:** Alternates between two cutoff positions, producing abrupt changes in tone. Excellent for rhythmic patterns, pulsing textures, and stepped filter effects.

MOD FREQ: *(0.1–8 Hz)* Determines the speed of the filter modulation. Lower settings produce slow, evolving movement, while higher settings create faster repeating changes.

With Sync disabled, modulation runs at a freely adjustable rate. With Sync enabled, the modulation rate follows tempo-related musical divisions.

SYNC: *(Off/On)* Synchronizes the modulation rate to the host DAW's tempo when DW-8K is running as a plug-in, or to the instrument's internal tempo in standalone operation. This is especially useful for rhythmic filter effects that need to stay in time with a sequence or musical arrangement.

Creating a Rhythmic Crushed Pad

Crush is particularly effective when its digital distortion and filter modulation work together. Here's a simple way to create a sustained sound with rhythmic changes in tone.

1. Start with a sustained pad containing plenty of upper harmonics.
2. Enable **CRUSH** and reduce **SAMPLE RATE** until metallic overtones begin to emerge.
3. Select **POST** for Filter Routing and **BP** for Filter Type.

4. Set **FILTER CUTOFF** to a frequency range that emphasizes an interesting part of the sound.
5. Select the **Square** modulation waveform.
6. Enable **SYNC** and set **MOD FREQ** to an eighth-note division.
7. Gradually increase **FILTER MOD** from its center position until the filter begins alternating between two distinct tonal characters.
8. Adjust **FILTER RES** to emphasize the movement, then experiment with Bit Depth and Input Drive to introduce additional grit.

The result is a pulsing, rhythmically animated texture that combines digital distortion with stepped filter movement.

Tip: For a subtler variation, reduce Filter Mod and use the Triangle waveform instead of Square. Slower modulation can add an evolving quality to a pad without making the rhythmic movement too obvious. For a more aggressive effect, increase Resonance and experiment with Sample Rate modulation to introduce additional metallic movement.



Motion Controls

Click **Motion** at the lower-left corner of the DW-8K panel to replace the virtual keyboard with the Motion view. Click **Keyboard** to return to the performance controls, or **Effects** to open the expanded effects view. The main synthesis panel remains accessible above, making it easy to adjust a sound while its notes and modulation are moving.

DW-8K combines an **Arpeggiator**, a **16-step polyphonic Sequencer**, and a **four-lane Parameter Animator**. Each serves a different musical purpose. The Arpeggiator rearranges played or sequenced notes into repeating figures. The Sequencer stores notes, chords, rests, ties, and patterns. The Parameter Animator changes assigned synthesis parameters from step to step, creating movement that can accompany the note sequence or work independently of it.

DW-8K's two-layer architecture provides additional possibilities. The Motion view includes separate Layer 1 and Layer 2 start controls as well as a main Start/Stop control, making it possible to work with motion in the context of layered sounds. The final result depends on the active layers and their Motion settings.

One important distinction sets DW-8K apart from instruments with fixed sequencer modulation targets: Parameter Animator 1–4 are freely assignable through Motion-Touch. The Sequencer supplies the changing step values, while the corresponding Motion-Touch assignment specifies the destination and modulation depth. This relationship is explained in detail later in the chapter.



Arpeggiator

The Arpeggiator turns played or sequenced notes into repeating patterns. Hold a chord and DW-8K reorganizes its notes according to the selected Pattern, Direction, Range, Speed, and groove settings. It can produce a straightforward rising arpeggio, an octave-leaping figure, or something considerably less predictable with Random and Chance.

On and Trigger

ON: *(Off/On)* Enables or disables the Arpeggiator. When enabled, the selected note source is processed according to the current Arpeggiator settings.

KEYS: Uses notes played on the virtual keyboard or an external MIDI controller. This is the traditional arpeggiator workflow: hold a chord and DW-8K reorganizes its notes into a repeating figure.

SEQ: Uses note and chord material supplied by the Sequencer. For example, a chord on one sequence step can become an arpeggiated figure instead of sounding as a single block chord. This provides a useful way to combine programmed harmony with more active note movement.

HOLD: *(Off/On)* Keeps the Arpeggiator's held-note pattern running after you release the keys. Play a different note or chord to update the held note set.

Hold is especially useful when you want both hands free for filter adjustments, performance controls, or effects changes.

Tip: Use KEYS when you want the Arpeggiator to respond directly to your playing. Choose SEQ when the Sequencer should supply the notes while the Arpeggiator determines how they move.

Pattern

The four Pattern buttons determine the basic ordering of the Arpeggiator's notes.

ARP: Plays a conventional arpeggio, arranging the available notes according to the selected Direction and Range. it's ideal for repeating bass lines, chord figures, and classic synth arpeggios.

LEAP: Creates a more widely spaced, octave-leaping figure rather than a straightforward play through the notes. Leap is particularly effective when the Range is set to 3 or 4.

ORDER: Plays notes in the order they were entered rather than sorting them by pitch. Enter a series of notes in a particular order, enable Hold, and use the Direction buttons to explore variations of the generated phrase.

RANDOM: Selects notes randomly from the available note set. The melodic ordering changes from cycle to cycle, making Random useful for generative textures, irregular phrases, and spacious sounds with delay or reverb.

Direction

The four Direction buttons determine how the selected Pattern travels through its note order.

UP: Moves from the lowest note toward the highest.

DOWN: Moves from the highest note toward the lowest. In Order mode, this reverses the entered note order.

DOWN/UP: Moves downward, then reverses and moves upward.

UP/DOWN: Moves upward, then reverses and moves downward.

The alternating directions create related but not always identical accents around their turning points. Try both when a pattern feels almost, but not quite, right.

Range

RANGE: *(1–4 octaves)* Determines how far the Arpeggiator extends the played notes across successive octaves. At 1, the pattern stays close to the notes you entered. Higher settings expand it into progressively wider figures.

A three-note chord can become a long cascading line at Range 4. For basses, Range 1 or 2 often gives a more focused result. For expansive leads and evolving textures, 3 or 4 may be exactly what the sound needs.

Timing and Groove

SYNC: *(Off/On)* Synchronizes the Arpeggiator to musical tempo. In standalone operation, it uses DW-8K's internal tempo. As a plug-in, synchronization follows the host DAW's tempo. With Sync disabled, Speed operates freely. With Sync enabled, Speed uses musical timing divisions.

SPEED: Sets how quickly the Arpeggiator moves between notes. Lower settings create deliberate patterns, while higher settings produce rapid streams. The indicator above Speed provides a visual reference to the running pulse.

SWING: Adds a long-short rhythmic feel by delaying alternating events. Begin with even timing, then increase Swing until the pattern settles into the desired groove.

CHANCE: *(30%–100%)* Sets the probability that a note event will play. At 100%, every event is eligible to sound. Lower settings introduce omissions, leaving gaps that can make a repeating pattern feel less mechanical.

FEEL: *(Pull to Push)* Shifts the overall timing feel behind or ahead of the beat. Move toward the negative side for a more relaxed feel, or toward the positive side to push the pattern forward. Unlike Swing, which changes the spacing of alternating events, Feel adjusts the overall rhythmic placement.

Tip: Start with a clear Pattern, Direction, Range, and Speed. Add Swing, Chance, and Feel one at a time so you can hear what each contributes. Chance and a moderate delay make excellent partners: the missing notes provide space, while the echoes help maintain continuity.

Arpeggiator Ideas

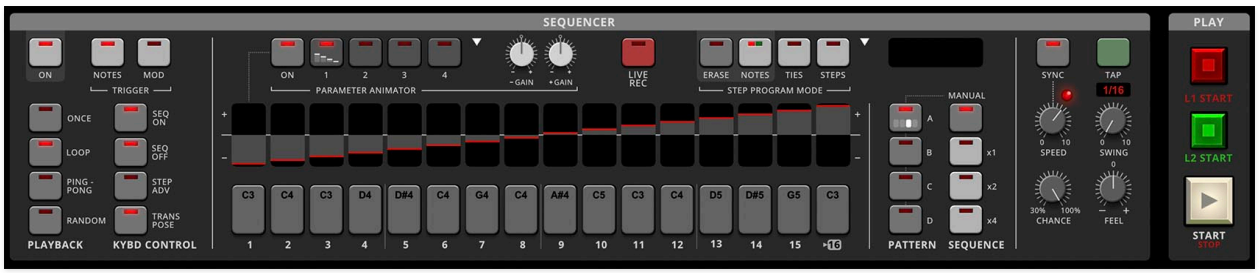
Classic Arpeggio. Select ARP, choose UP or UP/DOWN, set Range to 1 or 2, enable Sync, and select a suitable Speed. Add a touch of Swing if the result feels too rigid.

Cascading Digital Figure. Select LEAP with Range 3 or 4. Try a bright DW-style piano, bell, or clavinet waveform and add synchronized delay for added

movement.

Ordered Phrase. Select ORDER, play several notes in the desired sequence, then enable Hold. Change Direction to hear the entered phrase move forward, backward, or in alternating directions.

Generative Pattern. Select RANDOM, use a wider Range, and lower Chance slightly. Long reverb or delay can turn the changing note order into a slowly evolving texture.



Polyphonic Sequencer

The Sequencer stores up to 16 steps in each of four pattern memories, **A, B, C, and D**. A step can contain a single note, a chord, a rest, or a tie extending material from a previous step. Because it is polyphonic, DW-8K can sequence complete chords rather than just single-note melodies.

The sixteen lower step buttons display the stored musical events. The upper row contains the currently selected Parameter Animator values. Together they make it easy to see how the notes and their sound-shaping modulation line up in time.

Sequencer On and Trigger

ON: *(Off/On)* Enables the Sequencer.

NOTES: *(Off/On)* Determines whether the Sequencer triggers its stored notes and chords. Disable Notes to suppress the note sequence while retaining the ability to use Parameter Animation.

MOD: *(Off/On)* Enables the modulation side of the Sequencer's output. This allows step-based sound movement to accompany the notes or operate while the note-triggering function is turned off.

These controls make three useful combinations possible: Notes without parameter animation, animation without sequenced notes, or the two running together. For a sustained pad with rhythmic timbral movement,

disable Notes, enable Mod and the Parameter Animator, then play and hold the chord yourself.

Playback Modes

ONCE: Plays the pattern a single time and then stops. Useful for one-shot phrases, fills, and triggered transitions.

LOOP: Repeats the pattern continuously. This is the natural choice for most bass lines, repeating chords, and melodic sequences.

PING-PONG: Plays the active steps forward and then backward. It works well for symmetrical phrases, repeating chord changes, and modulation patterns that should reverse direction rather than jump directly from the final step to the first.

RANDOM: Selects steps in an unpredictable order. Combine it with a modest reduction in Chance for less repetitive melodies and evolving textures.

Keyboard Control

The Keyboard Control buttons determine how your playing interacts with the Sequencer.

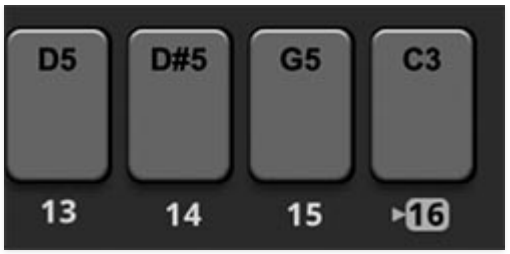
SEQ ON: Allows playing from the keyboard to start the Sequencer. Useful when the sequence should begin as part of your performance.

SEQ OFF: Prevents played keys from starting Sequencer playback, allowing Motion playback to be controlled separately.

STEP ADV: Advances the sequence by one step for each key press rather than progressing at a steady clocked rate. This makes it possible to articulate a stored pattern with the timing of a live performance.

TRANSPOSE: Uses keyboard notes to transpose the stored sequence during performance. Program a riff or chord figure once, then move it through different pitch centers without re-entering the notes.

Tip: Step Adv is particularly effective for irregular, expressive phrases. Try it with a sequence containing a few tied steps, then control the rate of advancement directly from the keyboard.



Step Buttons and Pattern Length

The sixteen lower buttons represent Steps 1–16. A step can display a note name or several note names when it contains a chord. Empty steps provide rests; tied steps sustain an earlier note or chord instead of triggering a new event.

The number beneath each step is also used to set the pattern's active length. Click the number beneath the desired final step. For example, click 8 for an eight-step pattern or 16 for the full sixteen steps. The final active step is indicated by its highlighted number.

Each of the four patterns may use a different length. This makes it possible to combine short and long phrases, or use odd lengths such as 5, 7, or 11 steps so the accents move against a conventional four-beat bar.

Live Record

LIVE REC: Records a performed note sequence into the selected pattern in real time. This is useful when the phrasing of a musical idea matters more than entering every note individually.

To record a phrase in real time:

1. Select Pattern A, B, C, or D.
2. Set the desired pattern length and Playback mode.
3. Enable Sync and choose a suitable Speed if the performance should follow musical tempo.
4. Click LIVE REC.
5. Play the notes or chords on DW-8K's keyboard or an external MIDI controller.
6. Disengage LIVE REC when recording is complete.
7. Play the pattern and refine it using the Step Program controls.

Tip: Establish the tempo and step length before recording. It's easier to play into a known phrase length than to discover afterward that your eight-note idea was being recorded into a six-step loop.



Step Program Mode

The **ERASE**, **NOTES**, **TIES**, and **STEPS** buttons offer different ways to enter and edit Sequencer data. These are editing modes, not the same as the NOTES and MOD Trigger switches at the left of the Sequencer.

Notes

NOTES: Selects note-entry mode for the lower Sequencer steps. A step can contain an individual note or a complete chord.

To enter a note or chord:

1. Click NOTES in the Step Program Mode section.
2. Select the step you want to edit.
3. Play a note or chord using the virtual keyboard or a connected MIDI controller.
4. Select another step and continue entering events.

Because the Sequencer accepts multiple notes on a step, a single pattern can contain block chords, changing voicings, and melodic notes together.

Erase

ERASE: Removes the note data from the selected step. Use it to clear an unwanted note or chord, create a rest, or simplify an overly busy phrase without resetting the entire pattern.

To erase a step:

1. Click **ERASE** in the Step Program Mode section.
2. Click the step containing the note or chord you want to remove.
3. Return to **NOTES** when you're ready to enter new material.

Ties

TIES: Extends the previous note or chord across one or more following steps. A tied step continues the earlier event rather than starting another note, making Ties useful for legato melodies, held chords, and syncopated bass patterns.

A tie belongs on the **following** step, not on the step where the original note begins.

To tie notes across several steps:

1. In NOTES mode, enter a note or chord on Step 1.
2. Select TIES.
3. Click Step 2 to extend the note from Step 1.
4. Click Steps 3 and 4 if you want the same note to continue for a longer duration.
5. Play the pattern and listen for the sustained event rather than repeated note attacks.

Tip: Think of a tie as a request to keep holding the previous note. The first tied step therefore needs a valid note or chord before it.

Steps

STEPS: Sets the number of active steps in the current pattern. The pattern doesn't have to use all sixteen positions.

To set the sequence length:

1. Select Pattern A, B, C, or D.
2. Click STEPS in the Step Program Mode section.
3. Click the step you want to use as the last active step.
4. Check the highlighted step number to confirm the new ending point.

You can also choose the last step by clicking its number beneath the step button. Shorter patterns are useful for tight riffs, while odd-numbered lengths can create interesting shifts when the pattern repeats against the song's meter.

Context-Sensitive Help Display

The small black display immediately to the right of the **Step Program Mode** buttons provides context-sensitive help for the Sequencer. **Hover the**

mouse over a Sequencer control to see a short explanation of its function. For example, hovering over **STEPS** displays **“SET THE SEQUENCE LENGTH IN STEPS.”**

This is a convenient reference when learning the various playback, editing, and pattern controls. It lets you check a control's purpose without leaving Motion view.

Patterns and Chaining

DW-8K provides four pattern memories, **A**, **B**, **C**, and **D**. Each can store its own musical content and active step length, with corresponding step-based animation data.

A useful approach is to reserve Pattern A for the main idea, B for a small variation, C for an alternate harmony or breakdown, and D for a fill or transition. The four patterns can be selected individually or combined into a longer sequence.

Manual and Sequence Multipliers

MANUAL: Plays the selected pattern. Use the A–D buttons to choose the pattern during performance.

x1: Chains the enabled patterns, playing each once before moving to the next.

x2: Plays each selected pattern twice before advancing.

x4: Plays each selected pattern four times before advancing.

These choices determine how much time each pattern has to establish itself. Try A and B with x4 when you want a main phrase to repeat several times before its variation appears. Use x1 for faster changes between complementary phrases.

Sequencer Timing and Groove

The Sequencer has its own timing controls, independent of those in the Arpeggiator.

SYNC: *(Off/On)* Locks the Sequencer to musical tempo. Standalone operation follows DW-8K's internal tempo; plug-in operation follows the DAW's tempo. When Sync is off, the Sequencer runs at a freely adjusted rate.

SPEED: Sets the rate at which the Sequencer advances. When Sync is on, the adjacent display presents musical note divisions, such as 1/8 or 1/16. With Sync off, the display shows a rate in hertz (Hz). Slower settings are

useful for spacious or evolving patterns; faster settings create compact rhythmic figures and stepped modulation.

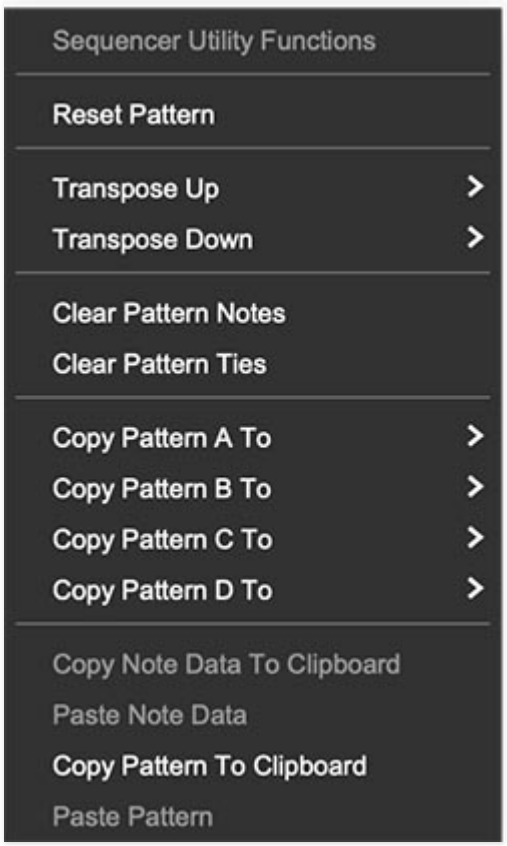
TAP: Provides a convenient way to enter the desired Sequencer rate by tapping a tempo instead of adjusting the Speed control manually. The nearby display shows the current rate or musical timing division, depending on the Sync setting.

SWING: Adds shuffle by changing the timing relationship between alternating sequence events.

CHANCE: *(30%–100%)* Sets the probability that programmed events will occur. At 100%, events play without probability-based omissions. Lower values introduce gaps and irregular accents while leaving the programmed pattern intact.

FEEL: *(Pull to Push)* Adjusts the overall placement of the sequence behind or ahead of the beat. Subtle adjustments can make a mechanical-sounding pattern feel more relaxed or more urgent.

Tip: Establish the musical phrase before adding groove. Use Swing for alternating long-short timing, Chance for occasional gaps, and Feel for the overall push or pull. If a pattern begins to lose its rhythmic identity, reduce one of these controls before rewriting the notes.



Sequencer Utility Functions

Click the small white triangle beside the **Step Program Mode** controls to open the **Sequencer Utility Functions** menu. This menu provides commands for resetting, transposing, clearing, copying, and pasting Sequencer data. It's particularly useful when building variations from an existing pattern or editing several steps at once.

The commands in this menu manage the musical sequence. The Parameter Animator has a separate utility menu for its animation data, so use the appropriate menu for the material you want to change.

Reset Pattern

RESET PATTERN: Resets the current Sequencer pattern so you can begin again with a clean musical sequence. Use this when you want to replace a phrase rather than edit it step by step. If you also need to reset Parameter Animator values, use the Animator's own reset commands.

Transpose Up and Transpose Down

TRANSPOSE UP: Opens a submenu of upward transposition choices for the stored notes in the current pattern.

TRANSPOSE DOWN: Opens a submenu of downward transposition choices.

These are useful for moving a riff, melodic sequence, or chord progression into another key or register without playing it again. They are also handy for creating a related variation: copy Pattern A to B, transpose the copy, then alternate between the two patterns.

Clear Pattern Notes and Clear Pattern Ties

CLEAR PATTERN NOTES: Removes stored note and chord events from the current pattern. Use it when you want to rebuild the pitches while leaving the pattern available for further editing. Note data and tie data can be managed separately.

CLEAR PATTERN TIES: Removes the ties in the current pattern while retaining its stored notes and chords. This quickly changes the articulation from sustained or legato events to more independent note attacks, without requiring you to re-enter the pitches.

Tip: If you're preparing a completely blank musical pattern, use the appropriate clearing commands for both note and tie information. If you only want sharper articulation, Clear Pattern Ties is usually the less destructive choice.

Copy Pattern A, B, C, or D To

COPY PATTERN A TO / COPY PATTERN B TO / COPY PATTERN C TO / COPY PATTERN D TO: Each command opens a submenu for copying the named source pattern to another pattern location. Choose the source in the command name, then the destination in the submenu.

This is one of the quickest ways to create a family of related sequences. A copied pattern can retain the original phrase's structure while you change only a few notes, ties, or its final step.

To create a pattern variation:

1. Program the primary phrase in Pattern A.
2. Open Sequencer Utility Functions.
3. Choose COPY PATTERN A TO and select Pattern B as the destination.
4. Select Pattern B.
5. Change one or two notes, remove a tie, or adjust its pattern length.
6. Switch between A and B manually or include both in a chained sequence.

Copy and Paste Note Data

COPY NOTE DATA TO CLIPBOARD: Copies the musical note or chord data from the selected step so it can be reused in another step.

PASTE NOTE DATA: Inserts the previously copied note or chord data at the selected destination step.

To duplicate the notes from one step:

1. Select a step containing the note or chord you want to reuse.
2. Choose COPY NOTE DATA TO CLIPBOARD.
3. Select the destination step.
4. Choose PASTE NOTE DATA.
5. Check the destination step and audition the result.

Copy and Paste an Entire Pattern

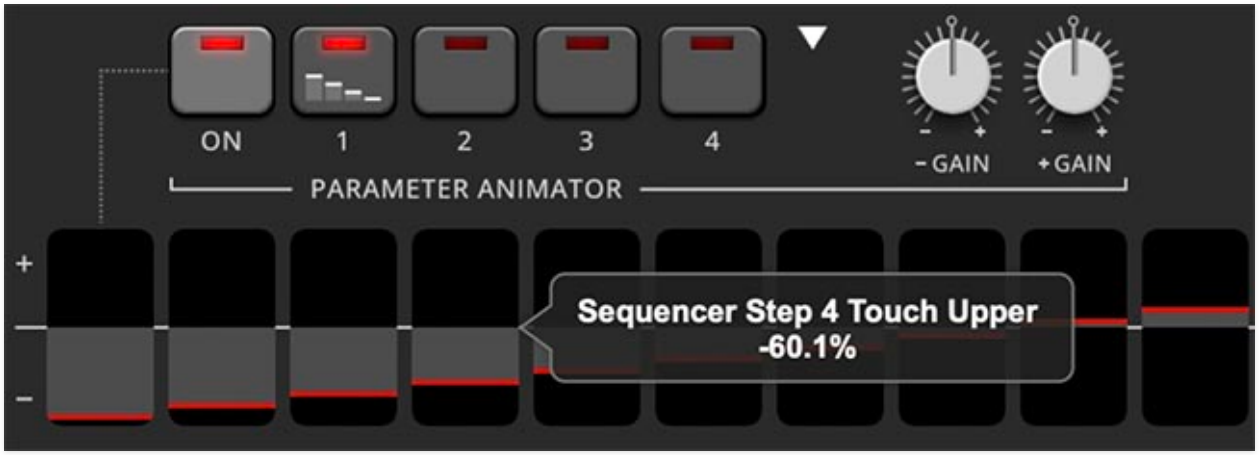
COPY PATTERN TO CLIPBOARD: Copies the current Sequencer pattern for reuse.

PASTE PATTERN: Pastes previously copied pattern data into the current pattern location. This provides a way to transfer a complete musical

sequence rather than one step at a time.

The distinction is straightforward: **Copy/Paste Note Data** works on an individual step; **Copy/Paste Pattern** works on a complete pattern. The Parameter Animator has separate copy and paste functions for modulation shapes.

Tip: Before using a paste command, make sure you've selected the intended destination. Pasting a complete pattern is a much bigger change than replacing one note.



Parameter Animator

The **Parameter Animator** turns the Sequencer into a four-lane, 16-step modulation system. Instead of determining which notes are played, each lane determines how a selected sound parameter changes from step to step.

The four lanes, numbered **1–4**, correspond directly to Parameter Animator 1–4 in the upper-panel Motion-Touch display. Each lane has its own step values, while Motion-Touch lets you select its modulation destination and amount independently. This makes it possible to give every lane a different musical role within a pattern.

For example, you might assign Animator 1 to Filter Cutoff, Animator 2 to Delay Level, Animator 3 to Autobend Intensity, and Animator 4 to VCA EG Slope. The Sequencer supplies the modulation values, and Motion-Touch specifies the destination and amount. This arrangement allows rhythmic motion and manual keyboard performance to work together without requiring every sound change to be tied to a note attack.

On and Lane Selection

ON: *(Off/On)* Enables the Parameter Animator. When disabled, the animation data can remain stored without contributing modulation.

1–4: Selects which of the four Parameter Animator lanes is currently shown for editing. Each lane contains its own sequence of step values, even though only one lane is displayed at a time.

A small step-pattern indicator appears on a lane button when that lane contains animation data. This helps you identify which lanes already have programmed movement.

Step Values and Gain Controls

The upper row of sixteen step areas shows the values for the selected Animator lane. The horizontal red line marks the value for each step. Moving it above the center produces positive modulation; moving it below the center produces negative modulation. The center line represents a neutral value.

- GAIN: Scales the negative portion of the Parameter Animator's movement.

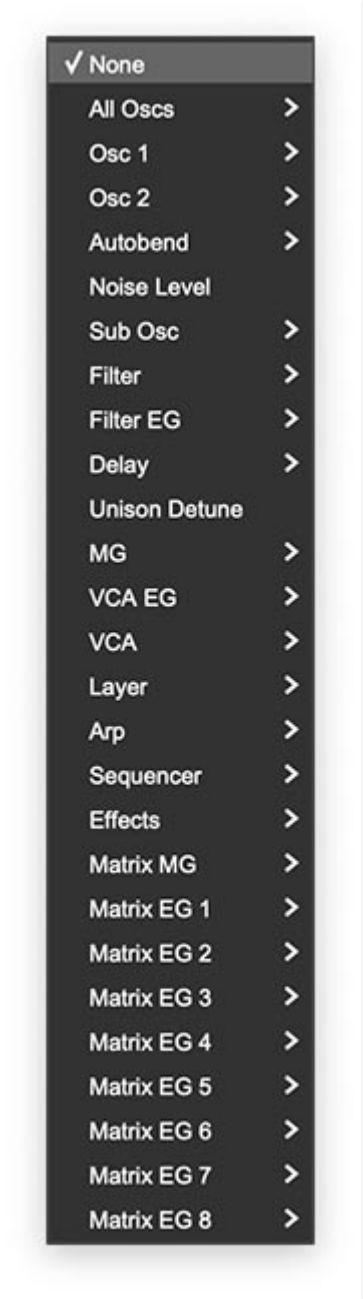
+ GAIN: Scales the positive portion independently.

These controls are useful because the same bipolar pattern doesn't always need equal movement in both directions. A filter may sound best when its cutoff opens considerably on positive steps but closes only slightly on negative steps, for example.

Editing an Animation

To edit Parameter Animator values:

1. Turn on the Sequencer and enable its **MOD** trigger.
2. Turn on the Parameter Animator and select lane **1**, **2**, **3**, or **4**.
3. Drag a step's red indicator vertically to change its value.
4. Move upward for positive modulation or downward for negative modulation.
5. Leave a step at the center line when no modulation offset is wanted.
6. Adjust **- GAIN** and **+ GAIN** to balance the overall movement.
7. Start playback and refine the individual steps while listening.



Assigning the Destination in Motion-Touch

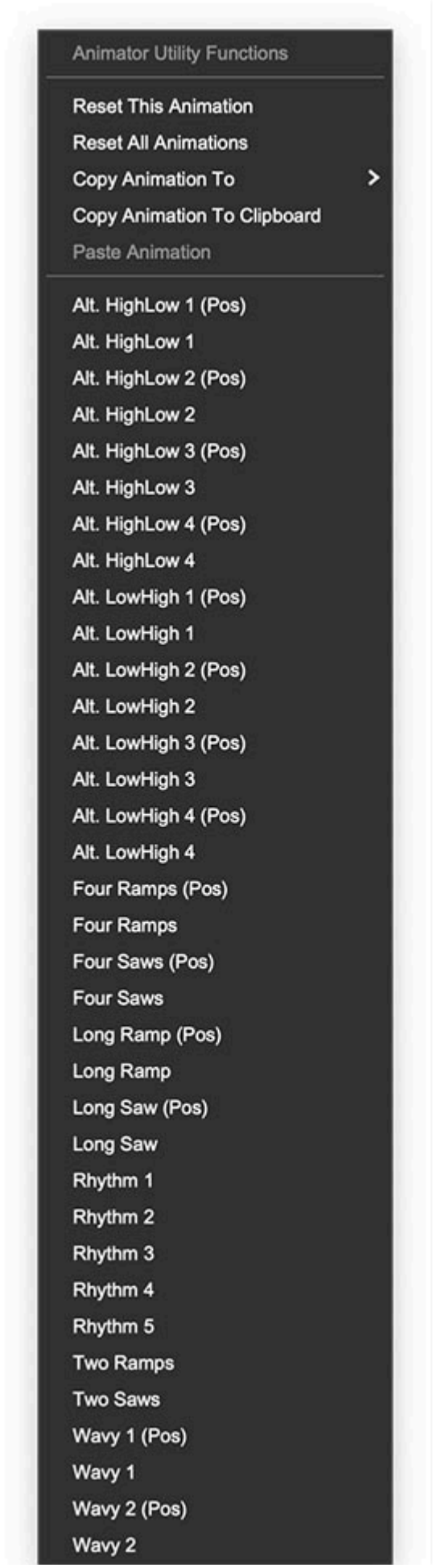
The Animator's step values won't create an audible change unless they are routed to a useful destination with an appropriate amount. The destination is selected in **Motion-Touch**, not with the Animator lane button itself.

To create rhythmic filter movement:

1. Click **MOTION-TOUCH** in the upper modulation display.
2. Locate **PARAMETER ANIMATOR 1**.
3. Select **Filter Cutoff** as its destination and set a modest modulation amount.

4. Return to Motion view and select Parameter Animator lane **1**.
5. Draw alternating positive and negative step values, or load an appropriate preset shape.
6. Enable the Sequencer's **MOD** trigger and Parameter Animator **ON** controls.
7. Start playback and adjust the step values and Motion-Touch amount until the movement complements the sound.

To hear only the timbral movement, turn off the Sequencer's **NOTES** trigger and hold a note or chord manually. The step sequence can then animate the sound without repeatedly retriggering the keys.


Animator Utility Functions
Reset This Animation
Reset All Animations
Copy Animation To
Copy Animation To Clipboard
Paste Animation
Alt. HighLow 1 (Pos)
Alt. HighLow 1
Alt. HighLow 2 (Pos)
Alt. HighLow 2
Alt. HighLow 3 (Pos)
Alt. HighLow 3
Alt. HighLow 4 (Pos)
Alt. HighLow 4
Alt. LowHigh 1 (Pos)
Alt. LowHigh 1
Alt. LowHigh 2 (Pos)
Alt. LowHigh 2
Alt. LowHigh 3 (Pos)
Alt. LowHigh 3
Alt. LowHigh 4 (Pos)
Alt. LowHigh 4
Four Ramps (Pos)
Four Ramps
Four Saws (Pos)
Four Saws
Long Ramp (Pos)
Long Ramp
Long Saw (Pos)
Long Saw
Rhythm 1
Rhythm 2
Rhythm 3
Rhythm 4
Rhythm 5
Two Ramps
Two Saws
Wavy 1 (Pos)
Wavy 1
Wavy 2 (Pos)
Wavy 2

Animator Utility Functions

Click the small white triangle beside the **Parameter Animator** controls to open the **Animator Utility Functions** menu. It contains commands for managing animation data, copying and pasting shapes, and loading an extensive collection of ready-made patterns.

This is a separate menu from Sequencer Utility Functions. The two menus are deliberately kept distinct because note-sequence operations and animation operations serve different purposes.

Reset and Copy Commands

RESET THIS ANIMATION: Resets the currently selected animation to its neutral state. Use it when you want to redraw one modulation pattern without rebuilding your note sequence.

RESET ALL ANIMATIONS: Resets the Animator's stored animation patterns. Use this when you want to clear the animated movement rather than the musical notes.

COPY ANIMATION TO: Opens a submenu of destinations for duplicating an existing animation. This is useful for developing variations of a rhythmic modulation shape without drawing it again.

COPY ANIMATION TO CLIPBOARD: Copies the current animation data so it can be reused through the corresponding paste command.

PASTE ANIMATION: Pastes previously copied animation data into the selected animation context.

Tip: Keep a rhythmic shape you like and change the Motion-Touch destination instead of redrawing the pattern. The same animation might produce filter accents, delay throws, or subtle variations in an envelope parameter.

Preset Animation Shapes

The menu provides ready-made shapes that can be loaded into the selected Animator lane. Each is a starting point: you can edit its steps, adjust Gain, or apply it to a different destination through Motion-Touch.

ALT. HIGHLOW 1–4: Produces alternating high and low step values in several variations. Use these for bright/dark filter accents, pulse-like changes in level, and rhythmic contrasts.

ALT. LOWHIGH 1–4: Provides related alternating patterns beginning from the opposite value relationship. These are especially useful when the first step should feel like a pickup, dip, or contrasting accent.

TWO RAMPS, FOUR RAMPS, LONG RAMP: Creates one or more rising modulation contours across the pattern. Ramps are useful for progressive filter opening, gradual increases in effect intensity, or repeating build-and-reset gestures.

TWO SAWS, FOUR SAWS, LONG SAW: Creates repeated saw-like contours with abrupt returns. These can produce more pronounced cyclic movement, especially when the destination is filter cutoff or another continuously variable parameter.

WAVY 1 AND WAVY 2: Provides smoother rising and falling patterns. Use these when a pad or sustained sound needs more graceful changes than a hard alternating sequence.

RHYTHM 1–5: Provides preprogrammed rhythmic patterns with varied accents. These are useful when you want a musical starting point without entering every step individually.

(POS) VARIATIONS: Many presets appear in both a standard version and a version ending in **(Pos)**. The positive-only version uses values above the neutral center, while the corresponding standard version can include both positive and negative movement. Positive-only shapes are useful when you want to add movement in one direction without pulling the destination below its base setting.

To load and customize an animation shape:

1. Select the desired Animator lane.
2. Open the Animator Utility Functions menu.
3. Choose a preset, such as Wavy 1, Four Ramps, or Rhythm 3.
4. Assign the corresponding Motion-Touch destination if it hasn't been assigned already.
5. Start Motion playback and listen to the result.
6. Adjust individual steps and the positive/negative Gain controls to suit the patch.

Tip: Start with a modest modulation amount in Motion-Touch. An otherwise useful shape may sound excessive when applied at full depth to Filter Cutoff, pitch-related controls, or an effect parameter.



Play Controls and Layers

The **Play** section at the far right contains dedicated **L1 START** and **L2 START** controls, together with a main **START/STOP** button. These reflect DW-8K's dual-layer architecture and provide immediate access to Motion playback from the two layers and the overall transport.

L1 START: Starts Motion playback associated with Layer 1.

L2 START: Starts Motion playback associated with Layer 2.

START/STOP: Starts or stops Motion playback using the main transport control.

The Arpeggiator and Sequencer still respond according to their individual On, Trigger, Playback, and Keyboard Control settings. When experimenting with a dual-layer preset, pay attention to which layer is selected and which layer's motion is running.

Putting Motion to Work

Creating a Basic Step Sequence

To program a repeating bass or lead phrase:

1. Select a relatively simple preset and open Motion view.
2. Turn the Sequencer on and enable NOTES.

3. Choose Pattern A and LOOP playback.
4. Set an eight-step pattern length.
5. Enable Sync and select a suitable Speed; leave Swing and Feel near neutral and Chance at 100%.
6. Select NOTES in Step Program Mode and enter a series of notes on the first eight steps.
7. Leave one or two steps empty to create rhythmic space.
8. Start playback and listen to the phrase.
9. Add Ties where notes should sustain longer, then adjust Swing, Chance, or Feel if needed.

Creating a Pattern Variation

To extend a phrase using two patterns:

1. Program the main idea in Pattern A.
2. Open Sequencer Utility Functions and choose COPY PATTERN A TO > Pattern B.
3. Select Pattern B and change a few notes, ties, or the final step.
4. Enable Patterns A and B for chaining.
5. Choose x1, x2, or x4 according to how many times each should repeat before advancing.

A good variation often requires very little change. Altering the final two notes or the length of Pattern B can make a repeated phrase feel much less predictable.

Creating a Sequenced Chord Progression

To program rhythmic chord changes:

1. Choose a warm pad or organ-like patch.
2. Enable the Sequencer and select LOOP.
3. Use NOTES mode to place a chord on selected steps.
4. Add Ties on following steps where a chord should sustain.
5. Leave occasional rests or shorter notes for contrast.
6. Adjust the VCA envelope and effects so that chord changes remain clear.

Try copying the pattern to B, changing one chord, then chaining A and B. You can build a longer harmonic phrase without recording sixteen different chords.

Creating a Modulation-Only Sequence

To animate a held pad without retriggering its notes:

1. Open Motion-Touch and assign Parameter Animator 1 to Filter Cutoff.
2. Set a moderate modulation amount.
3. Open Motion view and select Animator lane 1.
4. Load Wavy 1 or Long Ramp from Animator Utility Functions.
5. Turn the Sequencer on, enable MOD, and turn Parameter Animator ON.
6. Disable the Sequencer's NOTES trigger.
7. Start playback, then hold a chord manually.
8. Adjust Gain and the individual steps until the pad evolves naturally.

This is a particularly effective way to add motion without making the sound busy. The notes remain stable while the timbre changes underneath them.

Combining the Sequencer and Arpeggiator

To arpeggiate programmed chords:

1. Program several chords in the Sequencer.
2. Set the Arpeggiator Trigger to SEQ.
3. Turn the Arpeggiator on and select ARP or LEAP.
4. Choose a Direction and Range.
5. Start Motion playback and adjust the independent Arpeggiator and Sequencer speeds as needed.

The Sequencer establishes when the harmony changes, while the Arpeggiator creates movement within the available notes. This can produce intricate figures from relatively simple chord data.

Using Animator Presets for Rhythmic Accents

To add repeating accents to a sequence:

1. Turn both the Sequencer and Parameter Animator on.
2. Select Parameter Animator lane 2.
3. Assign its Motion-Touch destination to an appropriate effect or timbral control.
4. Load Alt. HighLow 2 or Rhythm 2 from the Animator menu.
5. Start playback with NOTES and MOD enabled.
6. Adjust - GAIN, + GAIN, and the Motion-Touch amount until the accents support the phrase.

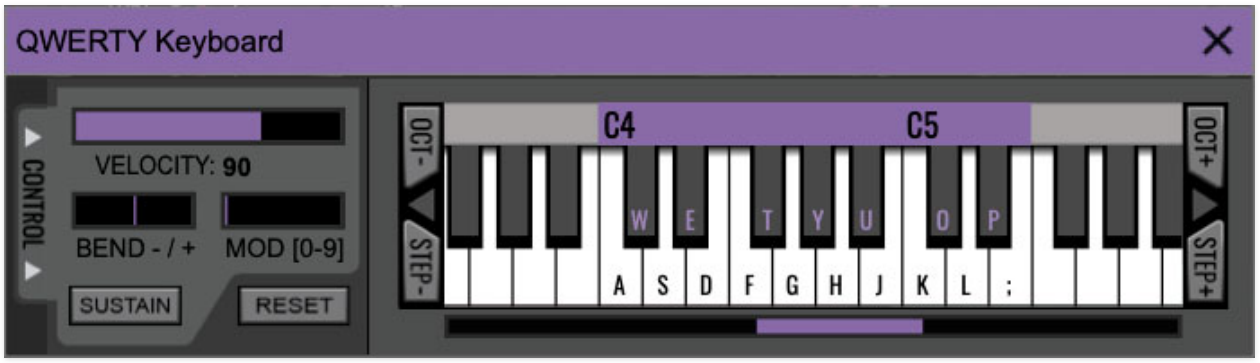
Try disabling NOTES afterward and holding a sustained sound. The same pattern can serve as a standalone modulation sequence.

Keeping Motion Musical

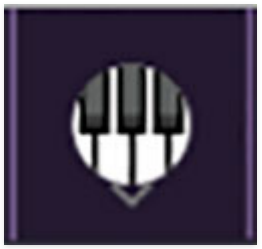
DW-8K provides enough Motion controls to fill a considerable amount of musical space, but not every patch needs every feature at once. If a sequence becomes crowded, disable the Arpeggiator and listen to the note pattern alone. Then disable Mod and decide whether the notes still make sense. Shorten the VCA Release if events blur together, reduce the Arpeggiator Range if the pitches spread too far, or simplify an Animator pattern when its changes distract from the phrase.

A held chord with one thoughtfully animated destination can sound larger and more expressive than an elaborate sequence with every option enabled. Start with a clear musical idea, introduce one source of movement at a time, and let the rest of the instrument provide the color

QWERTY Musical Typing Keyboard (MTK)



If you don't have a MIDI keyboard attached to your computer, the standard QWERTY computer keyboard can be used to play notes - we're pretty sure you've got one of those! We'll refer to this as the "MTK." Following is a list of MTK keyboard modifiers and functions:



Opening and Closing the MTK - click the the circular keyboard icon in the top toolbar. To close the MTK, click the keyboard icon in the top toolbar, or click the *X* in the top right corner.

Play Notes- To trigger notes, simply press the corresponding computer keyboard key or mouse click the onscreen keys.

Adjust Currently Visible MTK Range- Slide the purple scroll bar horizontally to adjust the currently visible keyboard range.

Adjust Overall Visible Keyboard Range- Clicking and dragging the right edge of the MTK window allows the overall size of the window to be adjusted. This lets you view more or less of the onscreen keyboard. Note that the MTK window's borders cannot exceed the overall outside dimensions of the UI.

Shift Range Up/Down Octave- Click the *Oct-* and *Oct+* buttons at the top left and right of the onscreen MTK. The current range is displayed above the

keyboard.

Shift Range Up/Down Semitone- Click the *Step-* and *Step+* buttons at the bottom left and right of the onscreen MTK. The current range is displayed above the keyboard.

Hide/View Controllers- Clicking *Control* at the far left hides and displays velocity, bender, mod, and sustain control parameters. Hiding the control view makes more space available for the keyboard.

Set Note Velocity- Move the purple *Velocity* bar to adjust the output velocity of notes.

Pitch Bend- To pitch a note or notes, press the + or - computer keyboard keys while playing a note. Bend depth is determined by the *Bend Amount control* at the left of DW-8K UI in Keyboard view. Notes can also be pitchbent by clicking the mouse in the *Bend* area.

Mod Wheel- To add mod wheel modulation, press the number keys from *0-9* (above the character keys) while playing a note. The modulation amount will vary from none (*0*) to full modulation (*9*). Note that modulation will "stick" at the selected number; to disable modulation, click the *0* key. Mod can also be engaged by clicking the mouse in the mod bar area.

Sustain- The *Sustain* button mimics the functionality of a standard sustain pedal. Click the [TAB] key to engage sustain, or [SHIFT]+[TAB] to lock it. The *Sustain* button can also be engaged by mouse clicking it.

Reset- Initializes all MTK parameters including keyboard range and control parameters.

MIDI Controllers Setup and The MIDI Tab

Assigning internal and external hardware controls adds a whole new dimension of control and musicality to patches, and it's really easy to do. The MIDI Tab is where all controller assignments can be viewed and tweaked. First we'll show how to assign an external hardware controller to an on-screen control, then we'll go over all parameters in the MIDI Tab.

Basic External Hardware Control Assignment

MIDI Learn makes it easy to assign the knobs, sliders, and buttons of an external MIDI controller to DW-8K's onscreen controls. Once assigned, you can adjust synthesizer parameters directly from your hardware, making sound design and performance more immediate and expressive.

For example, you might assign a hardware slider to Filter Cutoff, allowing you to open and close the filter while playing without reaching for the mouse.

To assign a hardware slider to Filter Cutoff:

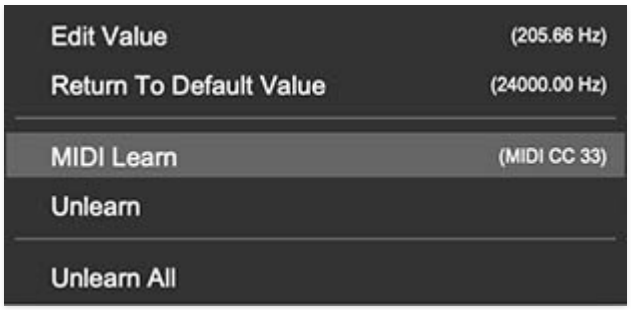
1. Locate the **CUTOFF** slider in DW-8K's Voltage Controlled Filter section.
2. Right-click the slider and select **MIDI Learn**.
3. A transparent purple overlay appears, indicating that the control is waiting for a MIDI assignment.
4. Move the desired slider or knob on your MIDI controller.
5. DW-8K recognizes the incoming MIDI message and assigns it to the Cutoff parameter. The purple overlay disappears when the assignment is complete.
6. Move the hardware control again to confirm that it adjusts Filter Cutoff.

If you change your mind before completing the assignment, right-click and select **Stop Learning** to cancel.

To remove an existing assignment, right-click the onscreen control and select **Unlearn**.

This basic procedure works with most of DW-8K's assignable parameters. Once a controller is mapped, its movements can also be recorded and played back as MIDI controller data in a compatible DAW, provided the DAW is configured to route that data to the instrument.

Tip: Filter Cutoff is an excellent first MIDI Learn assignment because its effect is immediately audible. Try assigning Filter Resonance to a second hardware control so you can adjust both parameters together during a performance.





The MIDI Tab

This is command central for all MIDI controller assignments. Here you'll be able to see information about all currently assigned controllers and adjust control ranges.



To view or hide the MIDI Tab, click the *MIDI* button in the top toolbar.



MIDI Learn button- This is almost exactly the same as enabling MIDI learn mode by right-clicking a control. Click the *MIDI Learn* button to enter learn mode (all controls turn purple). Unlike right-clicking on specific sliders, where DW-8K automatically exits controller assignment mode, *MIDI Learn* "stays on" to enable assignment of multiple hardware controls. This is handy for quickly assigning a bunch of knobs, sliders, or the buttons of a grid-style controller.

To assign multiple controls, click *MIDI Learn*, click an on-screen control, move the desired hardware control, continue clicking and assigning on-screen controllers until all desired controls are assigned, then click *Stop Learning* to exit learn mode.

Remember that a single hardware knob/slider/button isn't limited to controlling just one parameter - a single hardware controller can simultaneously operate as many controls as you'd like. Combined with the MIDI Tab's controller range and inversion controls explained below, this can be a very powerful and customizable way to control parameters.

NEW MAPPING TYPE: *(Global/Preset)* Determines whether newly created MIDI controller assignments apply globally or are saved with the current preset.

With **Global** selected, new assignments remain available when different presets are loaded. This is useful for controls you want to operate

consistently, such as Filter Cutoff, Master Volume, or performance parameters.

With **Preset** selected, new assignments are associated with the current sound. This allows different presets to have their own MIDI controller configurations, which is especially useful when particular sounds require customized performance controls.

PRESET: *(Off/On)* Determines whether an individual MIDI assignment is global or stored with the current preset. With Preset off, the assignment is global and remains available across sounds. With Preset on, the assignment is associated with the current preset.

Unlike New Mapping Type, which establishes the default behavior for new assignments, the Preset switch allows you to change the scope of an existing assignment.

Tip: Use Global mappings for hardware controls you want to work consistently across your preset library. Use Preset mappings for specialized assignments, such as a hardware slider that controls Delay Feedback in one sound but Filter Cutoff in another.

MIDI Tab Columns
Name- Displays the name of the parameter being controlled.

Type- There are five possible types of controller automation in DW-8K:

- **NOTE:** Uses incoming MIDI note messages as control assignments. This allows a MIDI keyboard key, pad, or other note-transmitting control to trigger an assignable DW-8K parameter.
- **CC (MIDI Continuous Controller):** Uses standard MIDI Continuous Controller messages, numbered 0–127. These are commonly transmitted by hardware knobs, sliders, pedals, and other performance controls. MIDI CC assignments provide continuous or switched parameter control, depending on the destination.
- **MMC (MIDI Machine Control):** Uses MIDI Machine Control messages, originally developed for controlling recording and playback equipment. These may be useful with MIDI control surfaces equipped with dedicated transport-style buttons, where supported by the instrument.
- **PRESSURE:** Allows incoming MIDI aftertouch data to control an assigned parameter. Many MIDI keyboards transmit channel pressure, which provides a single pressure value for the entire MIDI channel. This can be

used to introduce vibrato, open the filter, or change another parameter by applying additional pressure to held keys.

Some controllers also support polyphonic aftertouch, which provides independent pressure information for individual notes. DW-8K also supports MIDI Polyphonic Expression (MPE), allowing additional per-note expression through compatible controllers. These capabilities are explained in the **Modulation** chapter.

- **KEY:** Assigns a key on the computer's QWERTY keyboard to control an onscreen parameter.

VALUE: Displays the incoming MIDI message or control value associated with an assignment. For example, a CC mapping displays its controller number, while a Note mapping displays the assigned note. Click the value to open the available selection menu.

MIN: Sets the minimum destination value produced by the assigned controller.

MAX: Sets the maximum destination value produced by the assigned controller.

Together, Min and Max determine the range through which the assigned parameter can move. They can also be set in reverse order to invert the controller's response.

CURVE: Adjusts how the destination parameter responds as the incoming controller value changes. Depending on the selected curve, parameter movement can be linear or weighted toward one end of the controller's travel. This is useful for tailoring controller sensitivity to particular sounds and performance gestures.

Limiting and Inverting MIDI Control Ranges

The Min and Max controls offer more flexibility than simply assigning a hardware knob or slider to the full range of a synthesizer parameter.

For example, suppose you want a hardware slider to control Filter Cutoff, but only across a narrow range that sounds good with a particular preset. Adjust Min and Max to limit the slider's movement to that range. The full travel of the hardware slider will then produce more precise adjustments within the selected limits.

You can also **invert a MIDI assignment** by setting Min higher than Max. In this configuration, increasing the hardware controller value decreases the

assigned parameter instead of increasing it.

This becomes especially useful when a single hardware control operates several parameters simultaneously.

For example, assign one hardware slider to both Filter Cutoff and Resonance. Configure the mappings so moving the slider upward increases Cutoff while reducing Resonance. A single performance gesture can now produce two complementary changes in the sound.

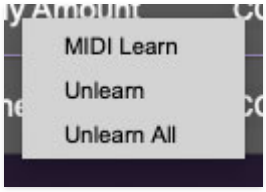
By combining independent Min, Max, and Curve settings for each assignment, you can create expressive combinations that would otherwise require adjusting several controls at once.

MIDI Tab Column Configuration Right-Click Menu



Right-clicking anywhere in the top row (*Name*, *Type*, *Value*, etc.) displays the column configuration menu. Checking/unchecking these allows hiding and display of each column. This has no effect on assignments.

MIDI Tab Parameters Right-Click



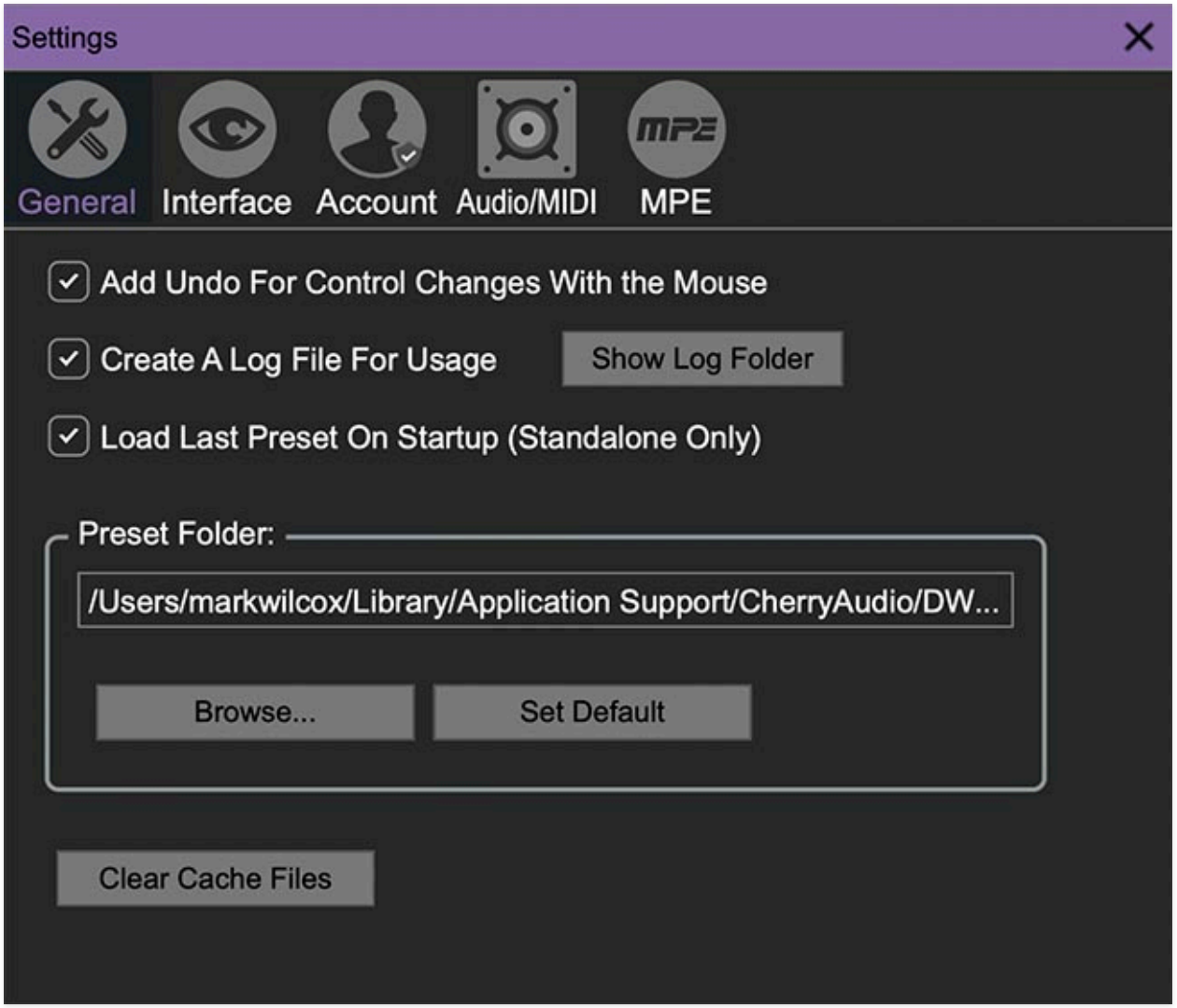
MIDI Tab Parameter Right-Click Menu

Right-click an assignment in the MIDI Tab to open a menu containing the following commands:

MIDI LEARN: Reassigns the selected parameter to a different incoming MIDI control. Move the desired hardware control to establish the new assignment.

UNLEARN: Removes the selected MIDI assignment. The synthesizer parameter itself remains available for normal onscreen adjustment and future MIDI assignments.

UNLEARN ALL: Removes multiple MIDI controller assignments after displaying a confirmation warning. Use this command when you want to clear an existing controller configuration and begin again.



Settings

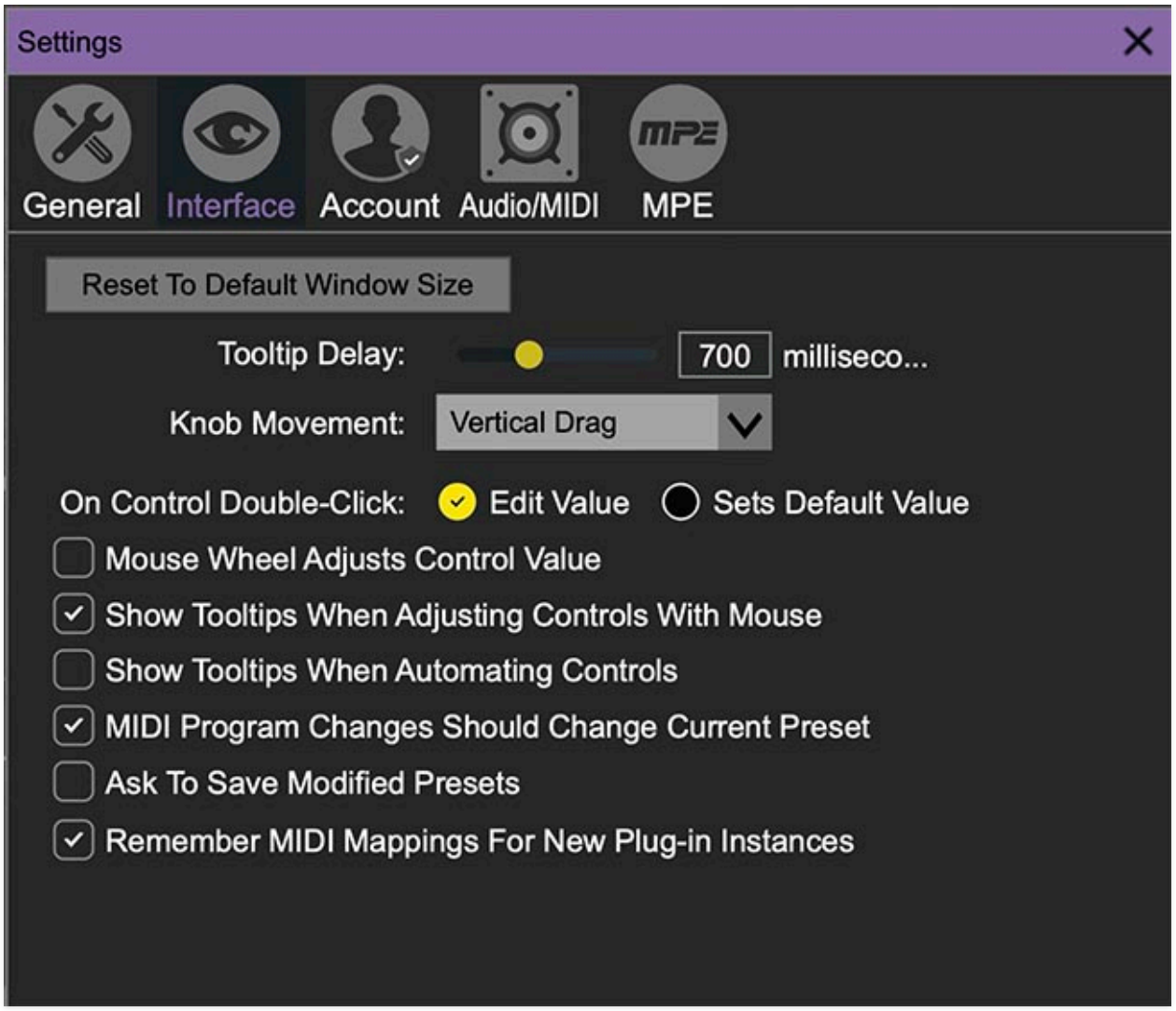
Click the **Settings** gear icon to open a window containing several tabs for configuring DW-8K's preferences and operating options. Most of these settings require only occasional attention, allowing you to configure the instrument to suit your setup and preferred workflow. The controls you'll use most often for sound design and performance remain conveniently accessible on the main panel, right where they belong.

General



- **Add Undo For Control Changes With The Mouse**- Enabling this allows undo of knob, switch, and button adjustments. You'll want this on if you want the ability to undo all aspects of patch editing and programming.
- **Load Last Preset On Startup (Standalone Only)**- Automatically loads the last preset used when DW-8K standalone version is started.

- **Create a Log File for Usage:** *(Off/On)* Enables the creation of a diagnostic log containing information about DW-8K's operation. Log files can be helpful when troubleshooting technical problems, particularly if Cherry Audio Support requests additional information.
- **Show Log Folder:** Opens the folder containing DW-8K's diagnostic log files.
- **Preset Folder-** Displays the current location of DW-8K's sound presets. This can be changed by clicking and typing in the field.
  - **Browse...** - Displays the current location of preset folder in the file manager.
  - **Set Default-** Sets the current displayed *Preset Folder* path as the default location
- **Clear Cache Files-** Removes temporary application files, including diagnostic logs, temporary sound data, and cached images. This can be useful when troubleshooting certain application or display problems.

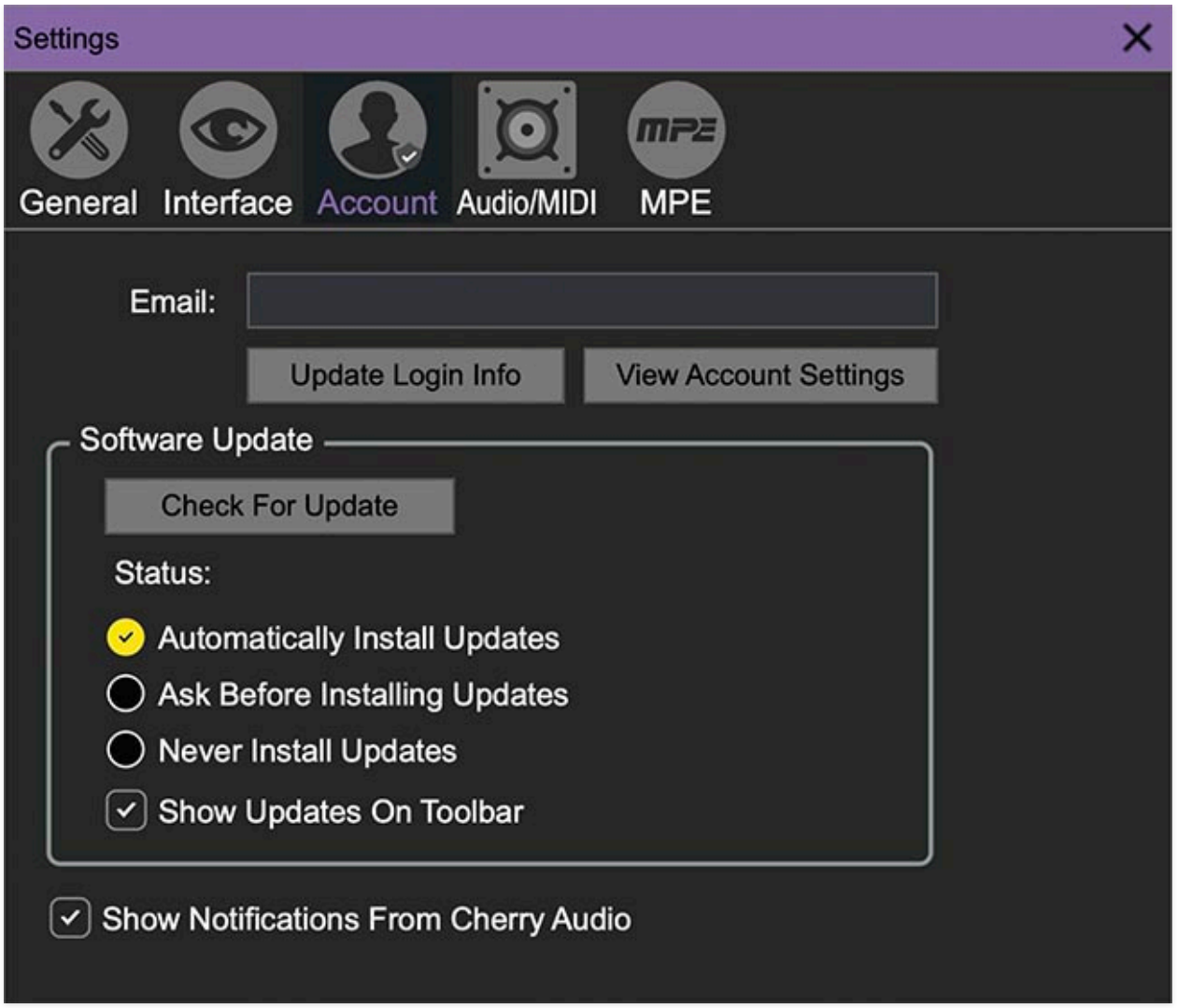


Interface

Allows customization of DW-8K's user interface settings.

- **Reset To Default Window Size-** Resets the DW-8K workspace to default size. Use this to reset the window size if the window somehow becomes too large for your display and can't be resized.
- **Tooltip Delay-** Determines how long the mouse pointer must remain over an onscreen control before its tooltip appears. Shorter settings display information more quickly, while longer settings reduce the frequency of tooltips appearing during ordinary editing.
- **Knob Movement-** Determines how mouse movements adjust DW-8K's rotary controls. The available options are Vertical Drag, Horizontal Drag, and Rotary Drag. Choose the method that feels most natural for your mouse or trackpad.

- **On Control Double-Click**- Defines what happens when the mouse is double-clicked on a control. If *Edit Value* is selected, an exact number can be entered by typing the number and hitting [ENTER] or [RETURN]. If *Sets Default Value* is selected, double-clicking a control resets it to its default value.
- **Mouse Wheel Adjusts Control Value-** Enabling this lets you adjust knob, slider, and switch values by moving the mouse wheel. This works great with a standard mouse wheel, but you'll want to disable it if you're using an Apple Magic Mouse (which will move the control AND scroll the window).
- **Show Tooltips When Adjusting Controls With Mouse-** Displays parameter tooltips/values when the mouse is hovered over a control or as a control is moved with mouse button down.
- **Show Tooltips When Automating Controls**- Enabling this causes control tooltip flags to show when automation data is being received.
- **MIDI Program Changes Should Change Current Preset-** Allows MIDI program change messages to change DW-8K patches.
- **Ask To Save Modified Presets-** This opens a dialog window asking if you'd like to save changes if a patch has been edited and a new patch is selected. If you're the type that likes to click through presets and tweak a control here and there, it can be annoying to have a window pop-up asking if you'd like to save every time you switch presets - if you're that person, keep this off.
- **Remember MIDI Mappings For New Plug-in Instances**- *(Off/On)* When enabled, DW-8K retains global MIDI controller assignments for use with newly opened plug-in instances. This is particularly useful if you regularly use the same hardware controller and want familiar assignments available without having to recreate them each time.



Account

Settings for your personal login information and account.

- **Email**- Displays the email address of the current login.
- **Update Login Info**- Clicking this opens the same email and password login screen you'll see when initially launching DW-8K and allows changes to be made.

View Account Settings- This opens your personal account page on the Cherry Audio Store website containing information about your Cherry Audio products purchased and more.

Software Update

Cherry Audio periodically releases software updates containing improvements, bug fixes, and other changes. The Software Update section

lets you check for available updates and choose how DW-8K handles their installation.

Check for Update: Checks whether a newer version of DW-8K is available.

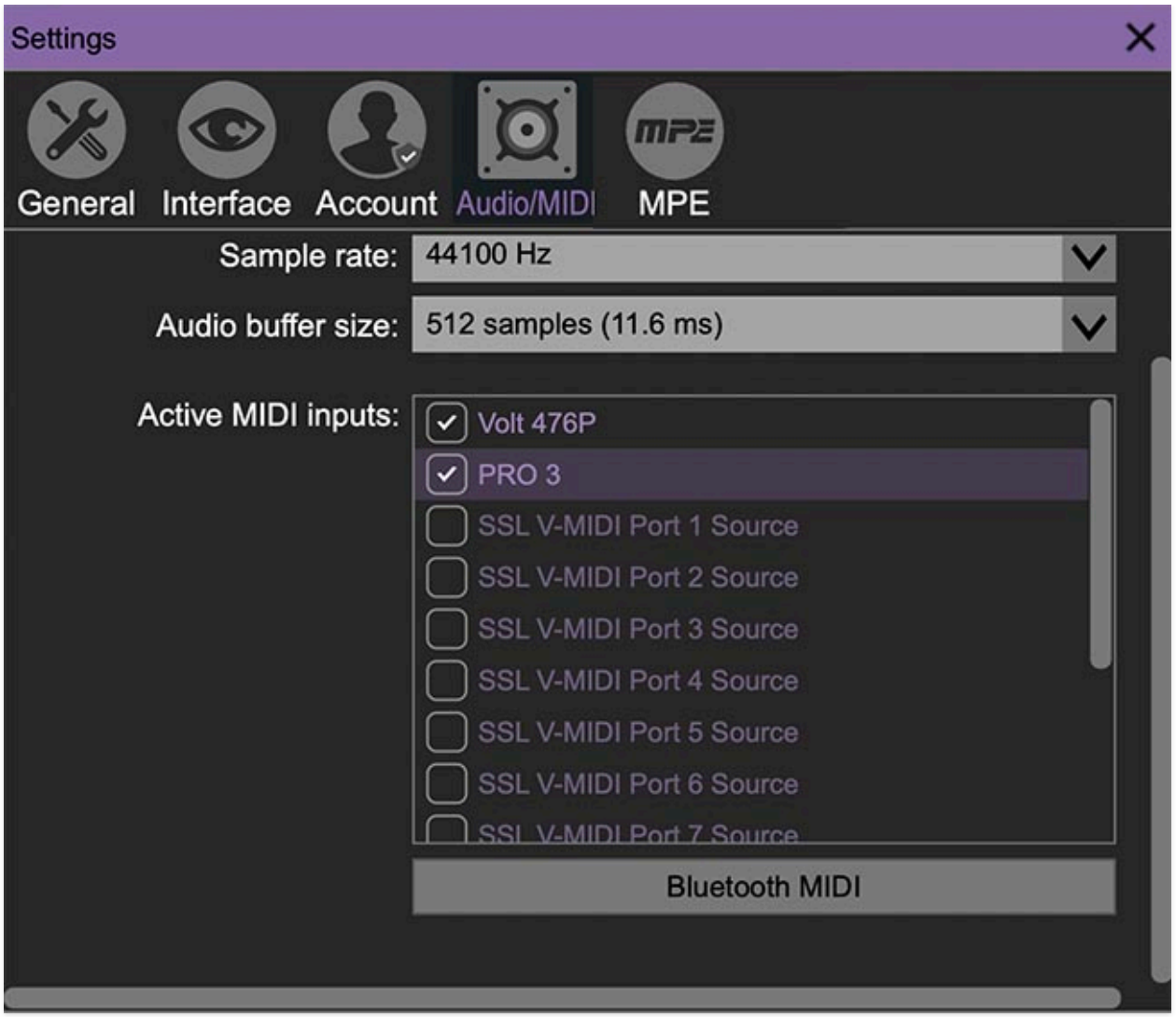
Status: Determines how software updates are handled. Choose one of the following options:

- **Automatically Install Updates:** Allows DW-8K to download and install available software updates automatically.
- **Ask Before Installing updates:** Notifies you when an update is available and requests your approval before installation.
- **Never Install Updates:** Disables automatic installation of software updates. You can still check for updates manually.

Show Updates in Toolbar: *(Off/On)* Displays an update notification in DW-8K's toolbar when a newer software version is available.

Tip: If you rely on DW-8K for live performances or important recording projects, consider selecting Ask Before Installing Updates. This gives you an opportunity to install and test new versions at a convenient time rather than introducing software changes immediately before a performance or session.

Show Notifications from Cherry Audio: *(Off/On)* Enables or disables in-app notifications from Cherry Audio, including product announcements and promotional messages..



Audio/MIDI

The Audio/MIDI tab configures the audio output and MIDI input devices used by DW-8K when running as a standalone instrument. **This tab is only available in the standalone version of DW-8K.** When DW-8K runs as a plug-in, audio and MIDI device settings are managed by the host DAW.

OUTPUT: Selects the audio output device used by DW-8K. This can be your computer's built-in audio output or a connected audio interface. A dedicated audio interface may provide lower latency, additional connection options, and more flexible monitoring. For the best results, select an appropriate device and configure its audio settings to suit your computer and performance requirements.

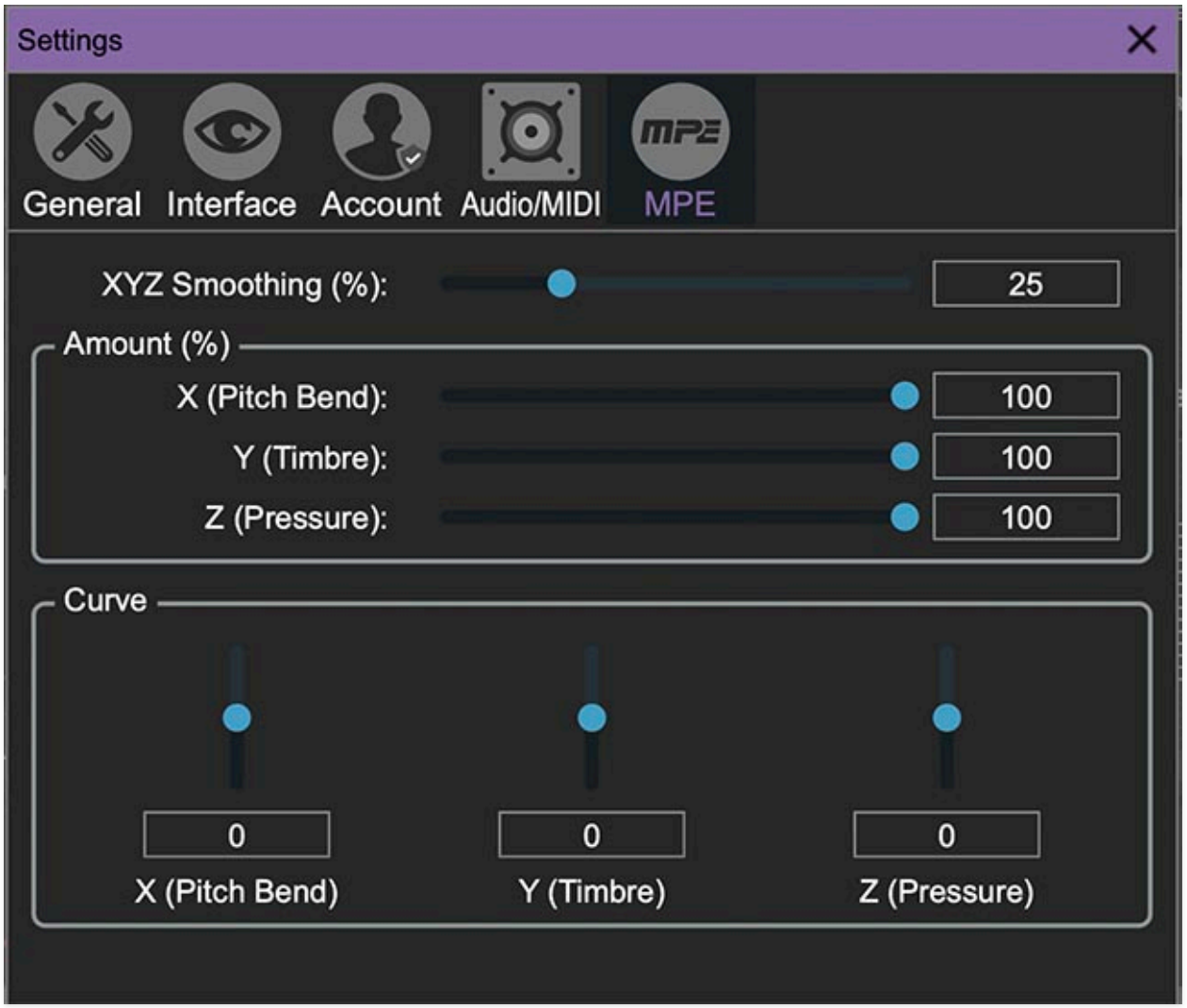
SAMPLE RATE: Sets the audio sample rate used by the standalone application. Common settings include 44.1 kHz and 48 kHz, with additional options depending on the selected audio device. Higher sample rates can increase processing requirements, so choose a setting appropriate for your

system. For most musical applications, 44.1 kHz or 48 kHz provides a practical starting point.

AUDIO BUFFER SIZE: Determines the amount of audio data processed in each buffer, affecting the balance between responsiveness and processing stability. Smaller buffer sizes reduce the delay between playing a note and hearing the result, but place greater demands on the computer and audio system. Larger buffers increase latency while providing more time for audio processing. If you experience clicks, crackles, or interruptions, try increasing the buffer size. If the instrument feels sluggish when playing from a MIDI keyboard, try reducing it.

ACTIVE MIDI INPUTS: Displays the MIDI input devices available to DW-8K, including keyboards, pad controllers, control surfaces, and other MIDI hardware. Check the box beside each device you want DW-8K to receive MIDI data from. Multiple devices can be enabled simultaneously. If an unwanted device is sending MIDI messages that interfere with normal playing, disable it in this list.

BLUETOOTH MIDI: Provides access to Bluetooth MIDI connectivity for compatible wireless MIDI controllers, where supported by the operating system. Use this option to establish or manage a Bluetooth MIDI connection before selecting the device as an active MIDI input.



MPE

The MPE tab provides settings for fine-tuning DW-8K's response to MIDI Polyphonic Expression (MPE) controllers. These controls let you adjust the sensitivity, smoothing, and response curves of the three primary MPE expression dimensions: **X (Pitch Bend)**, **Y (Timbre)**, and **Z (Pressure)**.

MPE allows compatible controllers to apply expressive gestures independently to individual notes, making it possible to bend pitches, change timbre, or introduce modulation to one note without affecting other notes being played. These settings determine how DW-8K responds to incoming MPE expression data. The actual destinations controlled by MPE gestures are assigned separately in the Motion-Touch section or through the Mod Matrix.

- **XYZ Smoothing (%):** Adjusts the amount of smoothing applied to incoming MPE expression data. Higher settings produce smoother, more gradual changes, helping reduce abrupt transitions or unwanted fluctuations in pitch, timbre, and pressure. Lower settings provide a more

immediate response to controller gestures. A moderate setting is generally a good starting point, particularly with highly sensitive MPE controllers.

- **Amount (%):** Sets the overall response amount for each of the three MPE expression dimensions. Each dimension can be adjusted independently:
  - **X (Pitch Bend):** Scales the response to per-note pitch-bend gestures, typically produced by horizontal finger movement.
  - **Y (Timbre):** Scales the response to timbral expression, often controlled by sliding a finger along the playing surface.
  - **Z (Pressure):** Scales the response to per-note pressure, allowing changes in finger pressure to influence assigned sound parameters.

  At 100%, each dimension operates at its full configured response amount. Lower settings reduce its sensitivity, making it easier to achieve subtle, controlled expression.
- **Curve:** Adjusts the response characteristics of the X, Y, and Z dimensions independently. Rather than changing the overall amount of expression, these controls shape how incoming gestures are translated into parameter changes. This allows you to tailor the instrument's response to your playing technique and the characteristics of your MPE controller. Experiment with different Curve settings to find a response that feels natural, particularly when controlling expressive parameters such as pitch, filter cutoff, or modulation intensity. Click-and-drag within a square to adjust the Curve, or double-click in the area to reset it to linear.

Tip: If your MPE controller feels overly sensitive, try reducing the Amount for the affected dimension before increasing XYZ Smoothing. Amount controls the strength of the response, while Smoothing affects how quickly changes are reflected. Adjusting the two independently can help you achieve more natural, precise expression.

To use MPE, enable **MPE** in DW-8K's Key Assign section. The four Aftertouch assignments in the Motion-Touch display then become **MPE-X, MPE-Y, MPE-Z, and MPE-Velocity**, allowing you to assign individual expression dimensions to modulation destinations. These assignments are explained in greater detail in the Modulation chapter.

Importing DW-8000 Programs

The original Korg DW-8000 has left behind an impressive collection of legacy sounds. Factory programs, user patches, and third-party libraries continue to circulate decades after the instrument was introduced in 1985. Many of these sounds have been preserved as MIDI System Exclusive (SysEx) files or backup data on cassette tape, allowing them to be enjoyed on modern software instruments.

Cherry Audio DW-8K can import compatible SysEx programs from the original DW-8000, bringing vintage sounds into its expanded synthesis environment. An imported patch can be enjoyed for its original character, then enhanced with DW-8K's additional waveform shaping, filter models, independent synth layers, modulation, sequencing, and effects.

This chapter explains what original DW-8000 SysEx files contain, how to import compatible programs, and how to take advantage of DW-8K's expanded capabilities when working with legacy sounds.

Understanding DW-8000 SysEx Data

SysEx, short for **System Exclusive**, is a category of MIDI message used to exchange manufacturer-specific information between musical instruments and compatible software. Unlike ordinary MIDI notes or controller messages, SysEx can carry the parameter settings that define a synthesizer program.

The original DW-8000 stores **64 sound programs**, arranged in eight banks of eight and numbered **11 through 88**. Each program defines a single synthesizer sound. These programs can be transmitted from the original hardware using Korg-specific MIDI SysEx messages.

A DW-8000 single-program SysEx data dump contains **51 bytes of sound-parameter data** within its MIDI message. These describe the settings of its original synthesis system, including the two digital waveform oscillators, Autobend, noise level, filter, VCF and VCA envelopes, modulation generator, digital delay, and related voice settings.

Importantly, SysEx files don't contain recordings of the sounds or copies of the oscillator waveforms themselves. Instead, the data describes how a compatible synthesizer should configure its controls to recreate the sound.

That distinction is part of what makes legacy programs so useful. Once imported into DW-8K, the sound can be edited using the instrument's

synthesis controls rather than being treated as an unchangeable audio sample.

Single Programs and Collections

A SysEx file with a **.syx** extension may contain one DW-8000 program message or a collection of program messages. A complete collection representing all 64 memory locations is often described as a bank or library. The original hardware's MIDI data-transfer procedure uses individual program messages, repeated as necessary to collect all 64 sounds.

Consequently, a library may consist of multiple SysEx messages bundled into one file. Whether DW-8K accepts a particular multi-program file depends on its format and the software importer.

Not every old DW-8000 library file is necessarily a standard MIDI SysEx file. Some collections originated as cassette backups or were saved in proprietary librarian formats. Those files may require conversion before they can be imported into DW-8K. Merely changing a filename extension does not convert the underlying information.

Importing Original DW-8000 Sounds

Importing compatible DW-8000 program data allows classic sound settings to become a starting point for programming in DW-8K. The software interprets the original hardware's parameters and uses the corresponding DW-8K controls to reconstruct the program.

Importing a SysEx File

A compatible **.syx** file contains the MIDI messages used to describe one or more original DW-8000 programs. Before importing, identify whether the file contains a single sound, a collection of individual programs, or data saved in a separate librarian format.

- To import a DW-8000 SysEx file, drag and drop a compatible .syx file anywhere onto the DW-8K interface.
- If the file contains valid DW-8000 program data, the instrument recognizes it and translates the sound into its native preset structure. Depending on the file, you may be importing a single program or an entire bank.
- Once imported, the sounds appear in the Preset Browser, where they can be loaded, played, edited, saved, favorited, and organized like any other

DW-8K preset.

The original DW-8000 identifies its programs by numerical memory locations rather than embedded names. A program dump therefore doesn't contain the familiar descriptive patch names you may see in third-party librarian collections. If the imported sound doesn't have a useful name, give it one of your own.

Tip: Start with a known single-program .syx file before trying a large vintage library. It makes format problems easier to identify and gives you a clear reference sound for comparison.

Importing Original DW-8000 Cassette WAV Data

The original DW-8000 could backup and load program memory using an ordinary audio cassette recorder. The synth converted its program data into an audio signal that could be recorded to tape, then decoded that signal when the recording was played back.

DW-8K can import compatible DW-8000 cassette-data recordings that have been transferred to WAV audio files, allowing original hardware backups and archived sound libraries to be recovered directly in the software instrument.

The recording must be an uncompressed *.wav file. DW-8K accepts mono or stereo files at any sample rate.

To import a cassette-data backup, simply drag the WAV file onto the DW-8K interface. DW-8K analyzes the recording and, if the data is successfully decoded, imports the stored DW-8000 programs. If the recording is incomplete, damaged, or can’t be decoded reliably, an error message is displayed.

What an Imported Program Contains

A legacy program provides settings for the features that existed on the original DW-8000. These include its two digital oscillators, their waveforms and tuning relationships, the noise source, filter and envelope settings, modulation generator, and built-in digital delay.

DW-8K interprets these settings using its own synthesis engine. A legacy program does not contain a complete modern DW-8K preset. In particular, the original DW-8000 did not store Upper and Lower layers, keyboard splits, an eight-slot Mod Matrix, Matrix MG and Matrix EG assignments, Motion-

Touch destinations, MPE settings, modern effects chains, or DW-8K's step-sequencer and Parameter Animator data.

The original hardware did include an arpeggiator with an Assignable performance mode, which Korg described as functioning like a 64-note sequencer. However, this should not be confused with the independent multi-pattern sequencer provided by DW-8K.

For this reason, an imported program is best thought of as a starting configuration based on the original synthesis controls, rather than a complete modern DW-8K performance preset.

Once imported, the sound can be saved in DW-8K's native preset format, allowing you to preserve any additional sound-design features you choose to introduce.

Why an Imported Sound May Differ

Even when the parameter settings are translated correctly, an imported program may not sound absolutely identical to the original hardware.

Cherry Audio recreates the characteristic DW waveforms using a high-precision additive synthesis process rather than replaying the original 8-bit ROM samples. The software also offers expanded filter and oscillator options, different performance capabilities, and additional processing.

To hear a sound as close as practical to its original design, start with the **DW** filter model, keep additional oscillator Fold and Drive shaping restrained, avoid adding the Analog Sub Oscillator unless desired, and begin with the original-style Digital Delay rather than a modern effects chain.

From there, compare the filter and envelope settings by ear. This makes it easier to appreciate the original patch before introducing new features.

Working With Imported Legacy Sounds

Imported programs are more than historical curiosities. They offer ready-made examples of the DW-8000's unusual digital waveforms and subtractive synthesis approach, and they can provide excellent foundations for new sounds.

Add a Second Layer: Combine an original-style brass, string, or electric keyboard program with a contrasting sound on DW-8K's other layer. Use

Whole, Dual, or Split as needed to build a more elaborate performance preset.

Explore the Filter Models: Start with the DW filter for a vintage reference, then try PS or MS to give the same oscillator and envelope settings a different character.

Reshape the Oscillators: Experiment with Phase, Fold, and Drive to extend a familiar waveform into more harmonically adventurous territory. Small adjustments can be surprisingly effective.

Introduce New Modulation: Use the Mod Matrix, Matrix MGs, Matrix EGs, or Motion-Touch assignments to animate a sound that was originally programmed with relatively modest modulation options.

Add Motion: Create a sequenced phrase or use the four Parameter Animator lanes to introduce rhythmic changes in cutoff, delay level, or other selected destinations.

Refine the Effects: Keep the original Digital Delay for a classic starting point, then try a separate chorus, reverb, or other effect in DW-8K's Effects view when the sound needs additional space or texture.

Make It Expressive: Assign Aftertouch or MPE gestures to selected destinations so an older program responds to modern performance techniques.

Tip: Before making major changes to an imported sound, save an original version as a DW-8K preset. Then save your modified version separately. This makes it easy to compare your updated sound with the original programming idea, which is often where the magic started.

Imported DW-8000 programs provide a fascinating connection to the instrument's history, but their real value is what you can do with them today. Whether you preserve their original character or transform them into entirely new sounds, DW-8K gives these vintage programs plenty of room to grow.