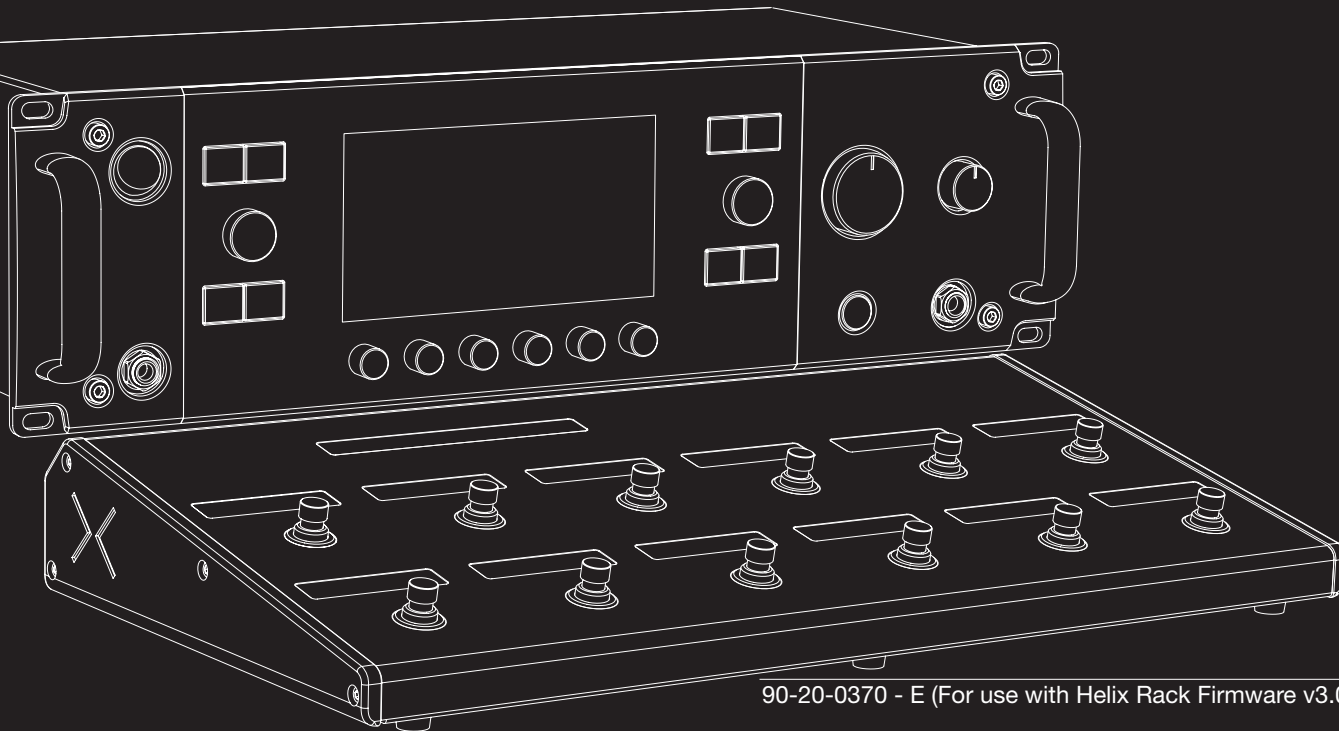




HELIX X RACK HELIX X CONTROL



3.0 OWNER'S MANUAL >

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**Supplier's Declaration of Conformity
47 CFR § 2.1077 Compliance Information**

Unique Identifiers: Line 6 Helix Rack, Line 6 Helix Control

Responsible Party - U.S. Contact Information:

Yamaha Guitar Group, Inc.
26580 Agoura Road
Calabasas, CA 91302-1921
(818) 575-3600
<https://line6.com/>

FCC Compliance Statement:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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Welcome to Helix

Thank you for purchasing Helix Rack, one of the most powerful and flexible audio processors ever created. We hope it helps drive your search for tonal bliss and spawns years of creativity, both on stage and in the studio.

As Helix Rack and Helix Control (purchased separately) are designed to be used together, this manual covers both.

What Have I Gotten Myself Into?

Although Helix may appear complicated at first glance, it's designed in such a way that once you learn a few basic concepts and shortcuts, you'll be able to construct both simple and complex tones at nearly the speed of thought, with very little menu diving required.

Although you're likely anxious to rip open the plastic and plug in, wait! At the very least, check out the *Helix Rack/Control Cheat Sheet* that came in the box, and keep it handy. Then read the "[Quick Start](#)" chapter of this manual, and we'll have you up and shredding in no time.



TIP: Be sure also to visit line6.com/videos, where we're always adding new video tutorials covering the latest Line 6 gear!

What's In the Box?

Helix Rack


- Line 6 Helix® Rack®
- *Helix Rack/Control Cheat Sheet* (read that one first!)
- AC power cable
- USB cable
- Warranty card

Helix Control

- 25-foot CAT-5 cable for communication with and power from Helix Rack
- Warranty card

Common Terminology

While reading this manual, you may encounter several unfamiliar terms. It's important to know what they mean. Don't worry—there's no math.

Home The Home screen is your primary workspace for creating and editing tones. If you ever get lost, press  to return to the Home screen.

Block *Blocks* are objects that represent various elements of a preset, such as amps, cabs, effects, splits, loopers, inputs, outputs, and impulse responses.

Path A *path* represents the signal flow of your tone. Helix has two separate paths, 1 and 2, each with its own input(s) and output(s). Paths can be serial (single) or parallel (dual). Path 1 can be routed into path 2 for more sophisticated tones.

Preset A *preset* is your tone. It consists of all blocks on the Home screen, footswitch assignments, controller assignments, and Command Center messages.

Setlist A *setlist* is a collection of presets. Helix has eight setlists containing 128 presets each.

Model Each processing block can accommodate one *model* (or, in some cases, two models). Helix has over 80 guitar and bass amps, over 40 cabs, and over 220 effects models.

Controller *Controllers* are used to adjust various parameters in real-time. For example, the expression pedal can be used to control wah, or the tone knob on a Variax guitar can be used to control amp gain and reverb depth.

Send/Return *Sends* and *Returns* are used to connect additional equipment to Helix for effects loops or to process multiple instruments simultaneously. Helix has four mono sends and returns, but adjacent pairs can be selected for stereo operation.

IR *IRs* (Impulse Responses) are mathematical functions representing the sonic measurements of audio systems (for Helix, speaker cabinet and microphone combinations). Helix can store up to 128 custom or third-party IRs at a time. See "[Impulse Response \(IR\)](#)"

Variax® Variax isn't just a great guitar, it also contains special electronics that recreate the sound of other specific guitars and instruments and allow for instant retuning of each string. Helix and Variax communicate with one another in unique and powerful ways. See "[What is Variax?](#)"

L6 LINK™ *L6 LINK* provides easy, single-cable, digital audio connectivity and remote control ability between Helix and Line 6 Powercab® active guitar speaker systems and DT-Series amplifiers. See "[L6 LINK - Powercab Plus and DT 25/50 Amp Options](#)"

FRFR *FRFR* (Full Range, Flat Response) speakers have the ability to amplify a modeler without adversely affecting its tone, ensuring great detail, a wide sweet spot, predictability, and consistency from studio to stage. You could almost think of FRFR monitors as very loud, gig-ready studio monitors.

DAW *DAW* (Digital Audio Workstation) refers to any computer (iPad or iPhone mobile devices) used for audio recording. The components of a DAW include an audio interface, audio recording software (such as Cubase®, Logic, GarageBand, Pro Tools®, etc.), and a monitoring system (amplifier & speakers or headphones). Helix functions as a high-performance USB 2.0 audio interface with all major DAW software - See [“USB Audio”](#)

Why does Helix sound [insert descriptor here]?

Like most guitarists, you're probably used to the sound and feel of real tube amps. So are we. Musicians instinctually understand that a roaring 4x12 cab pointing at the back of their knees sounds and feels totally different from a pair of plastic PA speakers (or even high-quality studio monitors) pointing at their face. Yet, some may blame their multieffects box for this disparity. Like any other device without built-in speakers, Helix is completely at the mercy of what you plug it into. Your playback system has a massive impact on the sound and feel of your tone, and if Helix appears to sound thin, tubby, boxy, harsh, dull, or some other less-than-ideal adjective, the first thing to scrutinize is your playback system.

There's also nothing wrong with bypassing the Helix cab or IR blocks and running it into a flat power amp and real wooden cab; digital magic will never convince anyone their 6 computer speakers are a wall o' stacks. Your tone is only as good as the weakest link in your chain, and understand that given identical playback systems, Helix amp modeling is designed to be virtually indistinguishable from the real thing.

HX Edit Application



Be sure to grab the free **HX Edit** application for Mac and PC—available for download at line6.com/software.

HX Edit is a full-featured editor and preset & IR librarian, and allows you to easily create & restore full Helix device backups, as well as update your device to the latest firmware (also see the next section). You can connect more than one Helix and/or HX device, and HX Edit will display an individual application window for each.

Preset Sharing with Helix/HX Devices & Helix Native Plugin

All Helix and HX hardware and software live within the same ecosystem. Using multiple windows within HX Edit and/or multiple instances of the Helix Native plugin, both blocks and entire presets can be freely dragged and dropped or copied and pasted between units, with some restrictions. Please see the HX Edit and Helix Native [Pilot's Guides](#) for specifics on preset compatibility.

Updating Helix Firmware

If your Helix device is still running a previous firmware version, it is highly recommended to update to the latest available version, which can be accomplished easily using the Line 6 HX Edit application!

! IMPORTANT! All presets saved and exported from earlier Helix 2.xx firmware versions are fully compatible with firmware version 3.0. **Please note, however, that presets saved and exported using Helix with firmware 3.0 will not be compatible with earlier firmware versions.** We highly recommend using HX Edit to back up your custom presets *before* updating to Helix firmware 3.0.

First, install the latest HX Edit software version on your Mac or PC (available at line6.com/software), connect Helix Rack to your computer's USB port, and HX Edit will check online and let you know if a newer firmware version is available. If so, HX Edit will then walk you through performing a full device backup and firmware update, all within minutes. Please see the [HX Edit Pilot's Guide](#) for full details.

Factory Presets

Helix Rack includes hundreds of factory presets to get you started, and we often tweak, replace, or otherwise update them with most firmware updates.

! IMPORTANT! Because we never want to overwrite your own custom presets, firmware updates **never** automatically make new factory presets visible; you need to load them manually. Restoring factory setlists and presets will completely overwrite your own, so **make sure they're backed up first**, using the backup function in HX Edit, as in the following steps.

Restoring Factory Presets

The following steps will overwrite and replace **all** presets within all your device's setlists with those included in the installed firmware version.

1. **Open HX Edit, and from the File menu, select “Create Backup” and follow the prompts to backup all your device's current presets and settings.**
2. **Turn off Helix Rack. While holding the Helix Rack unit's front panel Knobs 3 and 4 (the two middle knobs below the LCD display), power your device on.**
3. **Wait for “Will restore...” to appear and let go.**
4. **Optionally, if you have setlists that include custom presets you wish to restore, use the Restore From Backup feature within HX Edit to selectively restore the desired setlists (see the [HX Edit Pilot's Guide](#)).**

Marketplace

Be sure to visit the [Line 6 Marketplace online shop](#), where you'll find 3rd-party add-on assets that further enhance the functionality of Helix family devices and the Helix Native plugin! As of this writing, 3rd-party presets and IRs are available—check back often on Marketplace for product news and announcements.



You can access Marketplace directly using the free [HX Edit app](#), where you sign in to your Line 6 online account, then choose to **Get More Presets** or **Get More IRs** from the HX Edit menu. Once you've purchased premium Marketplace assets, they can be downloaded immediately, directly into your HX Edit Presets and/or IR Library, and ready to use on Helix Rack! Please see the latest [HX Edit Pilot's Guide](#) for details.






TIP: Registered owners of Line 6 Helix family devices are entitled to a generous discount toward the purchase of the **Helix Native plugin**! Note that all your Helix presets and IRs can be loaded directly into Helix Native—and vice-versa—making your stage and studio tasks easier than ever! Please visit the [Line 6 Online Shop](#).


Helix Rack Front Panel / Helix Control Top Panel



Helix Rack

- 1. Main Display** This large color LCD is your window into the power of Helix.
- 2. PRESET** Turn this knob to select a preset. Press the knob to open the Setlist menu—see [“Selecting Presets and Setlists”](#)
- 3. SAVE** Press this button to rename and save changes to a preset.
- 4.**  Press this button to dive a bit deeper into Helix, and you’ll find Command Center, Global EQ, Global Settings, and other menus.
- 5.**  If you ever get lost, press this button to return to the main Home screen.
- 6.**  Press this button once, or multiple times, to quickly jump to the tonestack parameters (Gain, Bass, Mid, Treble, etc.) of any Amp+Cab, Amp, and Preamp models in the current preset.
- 7. Joystick** Move the joystick to navigate the main display. On the Home screen, move the joystick to select a block. Press ACTION and move the joystick to move the selected block. Turn the joystick to change the selected block’s model. Press the joystick to open the model list. Press and turn the joystick to quickly scroll across the signal flow. Yeah, the joystick does a lot.
- 8. BYPASS** Press this button to turn the selected block on and off.



SHORTCUT: Press and hold BYPASS to turn Global EQ on ( icon appears in the upper right corner of the LCD) and off.

- 9. ACTION** Press this button to open the action panel for the selected block or screen. From the Home screen, the action panel lets you move, copy, paste, and clear blocks, as well as add any changes you’ve made to a block as a Favorite or save current settings as the model’s default. Other screens may have unique action panels; for example, the Global Settings action panel lets you reset all global settings at once.
- 10. <PAGE/PAGE>** If the selected block or item has more than one page of parameters, press < PAGE or PAGE > to view more parameters—see [page 16](#)
- 11. Knobs 1-6** Turn one of the six knobs below the main display to adjust the parameter’s value above; press the knob to reset the parameter’s value. If a rectangular button appears above a knob, press the knob to engage its function.



SHORTCUT: For most time-based parameters such as delay time or modulation speed, press the knob to toggle between setting the value in ms or Hz and note divisions (1/4-note, dotted 1/8-note, etc.).



SHORTCUT: Controllers can be assigned to most parameters. Press and hold a parameter’s knob to quickly jump to the [“Controller Assign”](#) page for that parameter.

12. VOLUME Turn this knob to control Helix’s main output volume.

13. PHONES Turn this knob to control volume from the PHONES output.

14. TAP/TUNER Press this button two or more times to set the Helix tempo. Press and hold to open the [“Tuner”](#).

15. PHONES Out (12Ω) Connect stereo headphones here; turn the top panel PHONES knob to adjust the volume.



NOTE: Helix provides plenty of gain for high impedance headphones. With lower impedance headphones, you may notice a bit of distortion if the PHONES knob is turned all the way up. This is normal.

16. Power Switch It’s alive!

17. GUITAR IN Connect your primary guitar or bass guitar here. This jack provides impedance selection and a switchable pad.

Helix Control

18. Main Display This 20-character LCD displays the current preset number and name. Press and hold Footswitch 12 (TAP) to engage the tuner display on both Helix Control and Helix Rack.

19. Scribble Strips The twelve LCD scribble strips tell each footswitch’s current assignment, so there are never any surprises during a show. If a particular footswitch has more than one block or item assigned, the scribble strip may read “MULTIPLE (X),” where X is the number of assignments. You can custom label scribble strips—see [“Customizing a Footswitch Label”](#)

20. Footswitches The capacitive, touch-sensitive footswitches have colored LED rings that inform you of you the assigned block or item’s current state. While in Stomp footswitch mode, touch (but don’t press) a footswitch to quickly select the assigned block or item. Touch the switch repeatedly to cycle through multiple assigned items—see [“Stomp Footswitch Mode”](#)



SHORTCUT: While in Stomp footswitch mode, touch (but don’t press) a footswitch for two seconds to assign that switch to the selected block. (Touch-to-select can optionally be turned off, and other footswitch settings customized—see [“Global Settings > Footswitches”](#))

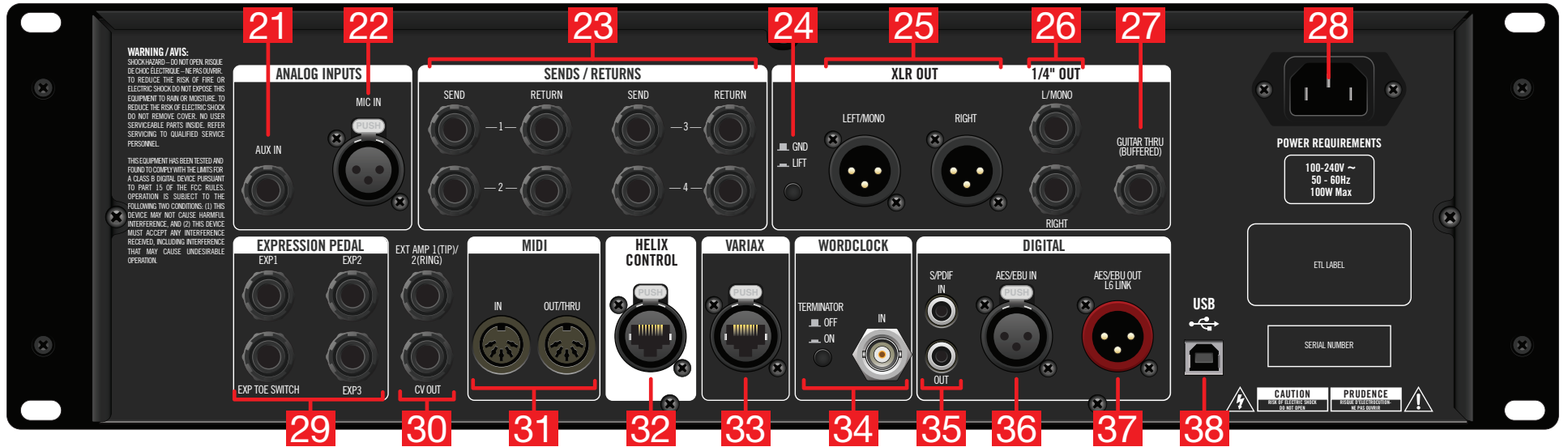


SHORTCUT: While in Stomp footswitch mode, touch and hold (but don’t press) two switches to swap the assignments between them (including any custom scribble strip names or LED colors).




SHORTCUT: Touch (but don’t press) TAP to display the tempo panel briefly. This lets you quickly fine-tune the current tempo without navigating to the Global Settings > MIDI/Tempo menu.

Helix Rack / Helix Control Back Panel




Helix Rack

- 21. AUX IN** (10k Ω) Connect a secondary, active-pickup equipped guitar or bass here.
- 22. MIC IN** Plug your microphone in here for processing your vocals or recording to your computer via USB. This XLR jack provides 48V phantom power for studio condenser mics and a variable low cut filter.
- 23. SENDS/RETURNS** 1-4 These 1/4" ins and outs can be used as FX loops for inserting external stompboxes into your tone or as additional inputs and outputs for connecting keyboards, drum machines, mixers, and other gear—see [“Send/Return”](#)
- 24. Ground Lift Switch** If you are experiencing hums and buzzes, press this button in to eliminate ground loops between your equipment.
- 25. XLR OUT** Use balanced XLR cables to connect to your studio gear or the house mixer, PA, or FRFR speaker(s) when playing live. When using a mono playback system, connect only the LEFT/MONO XLR jack.

 **IMPORTANT!** Never connect Helix's XLR outputs to a device whose XLR inputs have 48V phantom power enabled!

- 26. 1/4" OUT** Use unbalanced 1/4" TS cables to connect to your guitar amp, FRFR speaker(s), studio monitors, or other playback system. When using a single amp or speaker, connect only the LEFT/MONO 1/4" jack.
- 27. GUITAR THRU OUT** Passes the signal received at the front panel Guitar In with no A/D/A conversion.
- 28. AC In** Connect Helix to a grounded AC power outlet.
- 29. Expression 1/2/3/Toe Switch** Move a connected expression pedal to control volume, wah, or a combination of amp and/or effects parameters. (Optionally, expression pedals and a remote switch can be connected to Helix Control - see item #44).
- 30. EXT AMP 1/2, CV/Expression Out** Connect EXT AMP to your traditional guitar amp to switch its channels or turn its reverb on and off. Use a TRS cable for dual operation (1=tip, 2=ring). Connect CV OUT to the expression pedal input on stompboxes or CV (Control Voltage) input on vintage pedals or synths.
- 31. MIDI IN, OUT/THRU** Connect Helix to your MIDI gear for sending and receiving program changes, continuous controllers, and other MIDI messages.
- 32. HELIX CONTROL** Connect Helix Rack to Helix Control's HOST port via a CAT-5 or Ethercon cable.
- 33. VARIAX Input** This input provides power, digital audio, effects control, and instant recall between Helix and a Line 6 Variax guitar—see [“What is Variax?”](#)


- 34. WORDCLOCK IN** Receives a clock signal from an external audio interface or digital mixer, synchronizing the Helix digital output to your system. If Helix is the last device in your BNC wordclock chain, press the TERMINATOR switch in (ON).
- 35. S/PDIF IN/OUT** Digitally connect Helix to your studio equipment via S/PDIF (75-ohm RCA) cables.
- 36. AES/EBU IN** Digitally connect Helix to your studio equipment via AES/EBU (110 Ω XLR) cables.

 **NOTE:** S/PDIF and AES/EBU cannot be active at the same time—see [“Global Settings > Ins/Outs”](#) on page 65 for more information.

- 37. AES/EBU OUT, L6 LINK** L6 LINK provides easy digital audio and remote control connectivity between Helix and Line 6 Powercab Plus active guitar speaker systems and DT-Series amplifiers. Alternatively, digitally connect Helix to your studio equipment via an AES/EBU (110 Ω XLR) cable—see [“L6 LINK - Powercab Plus and DT 25/50 Amp Options”](#)
- 38. USB** Helix also functions as a high quality, multi-in/out, 24-bit/96kHz audio interface for Mac and Windows® computers, with DI, Re-amping and MIDI functionality built right in. Helix can also record to iPad or iPhone mobile devices (with optional Apple Camera Connection Kit). Use of a USB 2.0 or 3.0 port is required - Do not use an external USB hub—see [“USB Audio”](#)

Helix Control

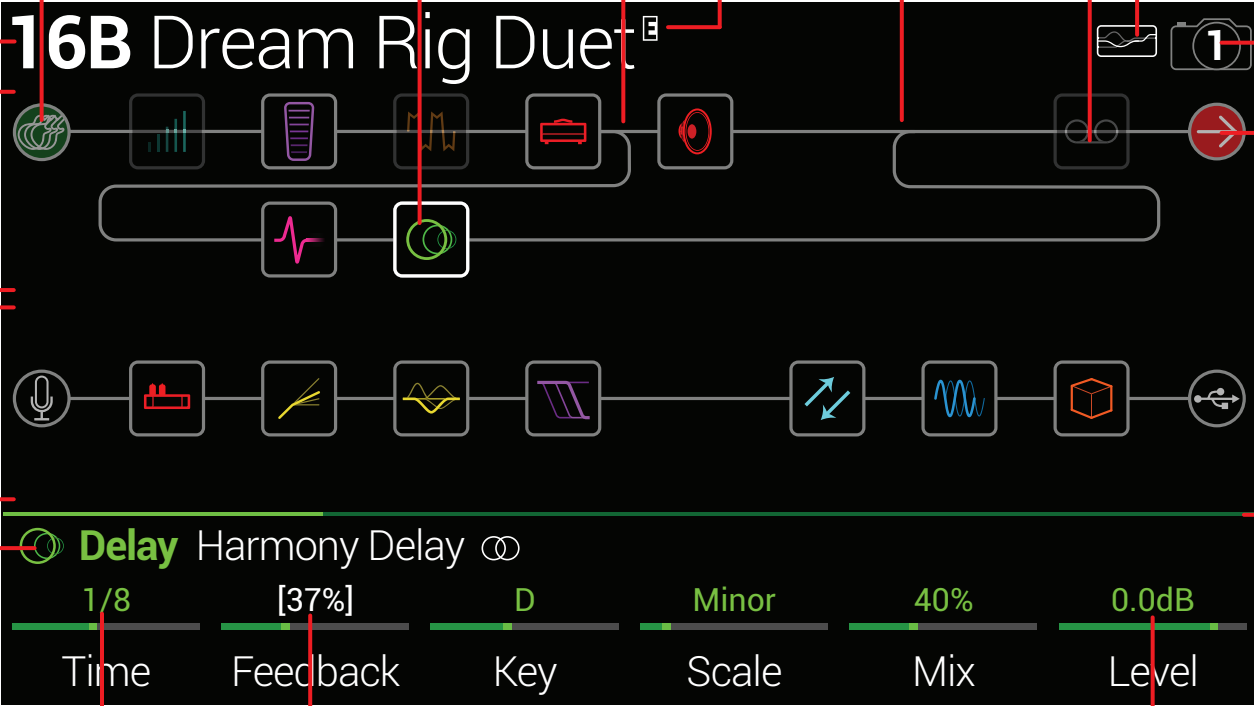
- 39. POWER Switch** If Helix Control is left switched on, you may switch both on and off from Helix Rack's power switch.
- 40. DC Cable Tie** Reserved for potential future use.
- 41. DC IN** Reserved for potential future use; for very long cable lengths, use a Line 6 DC-3 adapter (purchased separately).
- 42. HOST Port** Connect Helix Control to Helix Rack via a CAT-5 (included with Helix Control) or Ethercon cable.
- 43. USB** Reserved for potential future use.
- 44. Expression 1/2/3/Toe Switch** Move a connected expression pedal to control volume, wah, or a combination of amp and/or effects parameters.

 **NOTE:** Adding a Wah, Pitch Wham, or Poly Wham block automatically assigns its Position parameter to be controlled by EXP 1. Adding a Volume Pedal or Pan block automatically assigns its Position to be controlled by EXP 2.

Home Screen

90% of your daily tone building is accomplished from the Home screen.

Press  at any time to return to the main Home screen.



Select an input block and turn the joystick to set the input source. Each path can have one or two input blocks...

Input blocks turn green when a signal is present and bright red if the input clips.

Use the joystick or touch a switch top to select a block (outlined in white)

Split block (only visible when selected); move down to create a duplicate input block

"E" appears if the preset has been edited

Merge block (only visible when selected); move down to create a duplicate output block

Press BYPASS to turn block on and off (bypassed blocks appear dim)

Hold BYPASS to turn Global EQ on and off; Icon appears when Global EQ is on

Turn PRESET to select a preset

16B Dream Rig Duet

Press PRESET and then turn Knob 5 (Select Snapshot) to choose one of eight snapshots


PATH 1


Each of the two signal paths can be either parallel (A and B) or serial (A only)

PATH 2

Select an output block and turn the joystick to route the signal to back panel jacks, Path 2, or your computer via USB. Each path can have one or two output blocks...

Output blocks turn green when a signal is present and bright red if the output clips.

Turn the joystick to select a model; press the joystick to open the model list.  indicates a stereo model

Delay Harmony Delay 

1/8 [37%] D Minor 40% 0.0dB

Time Feedback Key Scale Mix Level

Press knob to toggle between note value and ms (or Hz)

Value appears white and in brackets if a controller or snapshot is assigned to it

Turn knobs 1-6 to adjust parameters for the selected block

Press knob to return Levels to unity (0.0dB) and Pans to center

Press <PAGE / PAGE> to view more parameters for the selected block. This scroll bar indicates which page of parameters is displayed—this block has three more pages of parameters

Quick Start

Connect Helix Rack and Helix Control

1. Using the CAT-5 cable (included with Helix Control), connect Helix Rack's HELIX CONTROL port to Helix Control's HOST port.

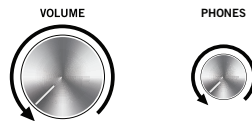
NOTE: Helix Control receives power from Helix Rack. Helix Control's DC IN jack may be required for very long CAT-5 cable runs. In such case, use only a Line 6 DC-3G power supply (purchased separately - see the [Line 6 Store](#)).

2. Turn on both Helix Rack and Helix Control.

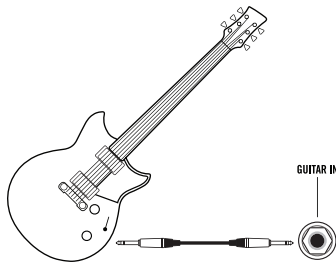
If Helix Control is left switched on, you may switch both on and off from Helix Rack's power switch.

Setting Proper Output Levels

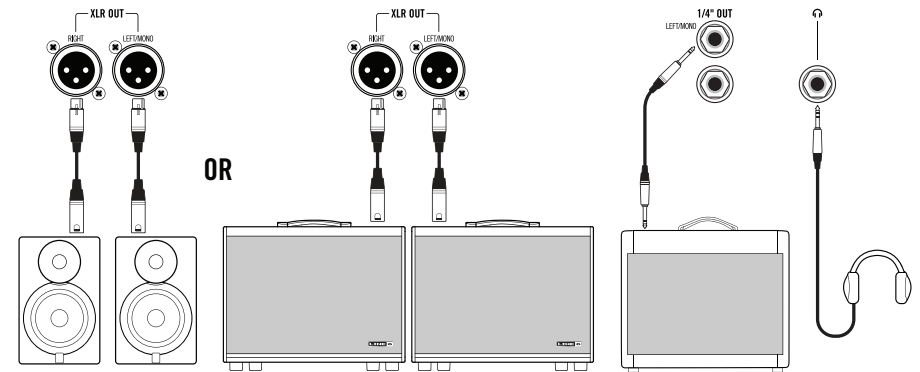
1. Make sure the VOLUME and PHONES knobs are turned down.




2. Connect a guitar to the Helix GUITAR IN jack.



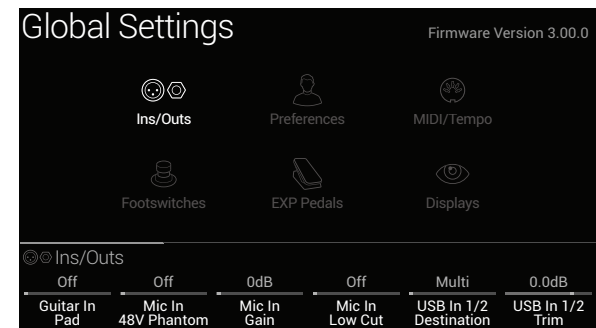
3. Connect the Helix outputs to your playback system.



The Helix device's 1/4" and XLR output levels must be set to match your playback system. If you're only using headphones, for now, skip to step 9.

4. Press  to open the Menu.
5. Press Knob 6 (Global Settings).

The Global Settings screen appears:



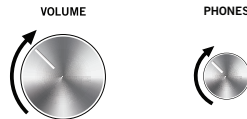
6. If necessary, move the joystick to select the Ins/Outs submenu.
7. Press PAGE > to select page 2.

8. Using Knobs 1 and 2 under the display, set levels according to the table below:

Output	Are you connecting to...?	Then do this:
1/4"	Guitar pedal or the front of a guitar amp	Set 1/4" Outputs to "Instrument"
	Powered speakers with unbalanced inputs or digital recorder	Set 1/4" Outputs to "Line"
XLR	Mic inputs on mixer or standalone mic preamps	Set XLR Outputs to "Mic"
	PA/FRFR speakers or studio monitors with balanced inputs	Set XLR Outputs to "Line"

9. Slowly turn up the VOLUME knob.

If you're listening on headphones, slowly turn up the PHONES knob.



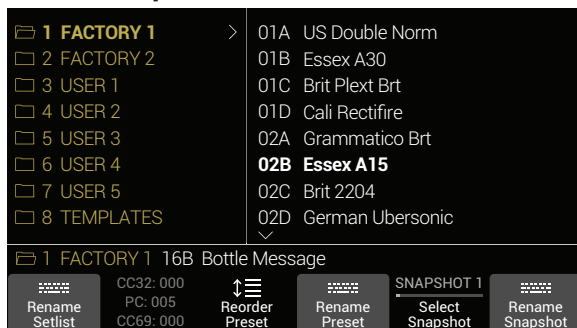
Selecting Presets and Setlists

1. Turn PRESET to select presets within the current setlist.

Helix stores eight setlists, each containing 32 banks of four presets (A, B, C, and D). As we promised, no math - that's a grand total of 1,024 preset locations. If that's not enough, your cover band should be asking for more money.

TIP: Use the free Line 6 [HX Edit](#) software to create, backup, and restore a virtually endless library of presets and setlists stored on your computer! Remember to also try the latest factory and artist presets included with the latest Helix firmware—see [page 5](#).

2. Press PRESET to open the Setlist menu:



Navigating the Setlist menu is straightforward:

Turn the joystick (or move it up and down) to select items in a list.

From the Setlist column, press the joystick (or move it right) to load its first preset.

From the Preset column, move the joystick left to go back to the Setlist column.

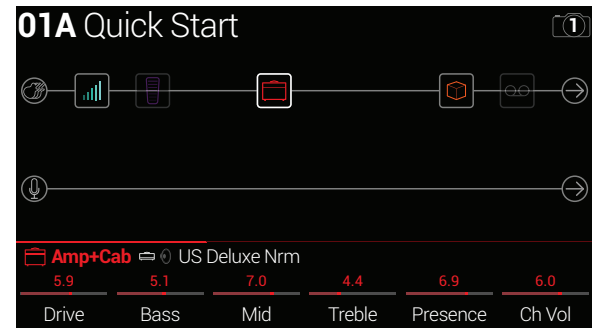
Turn Knob 3 (Reorder Preset) to move the selected preset up and down the list.

3. Use the joystick to select Setlist 8 TEMPLATES > Preset 01A Quick Start.

TIP: The dark text above Knob 2 displays the required MIDI messages for recalling the selected setlist, preset, and snapshot from external MIDI devices or software. In the illustration above, the FACTORY 1 setlist is recalled with a CC32 message of 000, the 02B Essex A15 preset is recalled with a PC (program change) message of 005, and SNAPSHOT 1 is recalled with a CC69 message of 000.

4. Press to return to the Home screen.

You should see something like this:

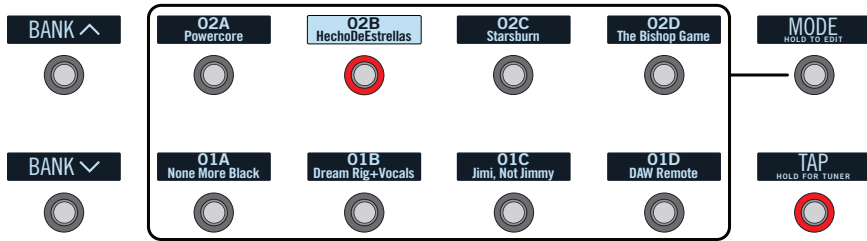


Preset Footswitch Mode

Preset mode is used to navigate presets in the current setlist.

1. If not already there, press FS6 (MODE) to select Preset mode.

The middle eight switches display two banks of presets, and the active preset appears with a red LED ring and white scribble strip:



2. Press BANK ^ or BANK v to choose the desired banks.

The banks' presets flash, indicating they're ready to load.

3. Press one of the eight preset switches to load the preset.

NOTE: Footswitch behavior can be customized. See [“Global Settings > Footswitches”](#)

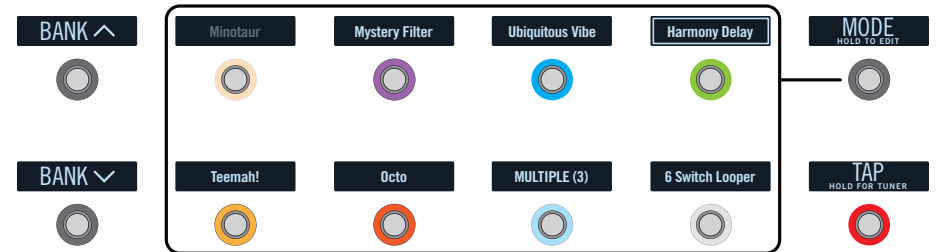
Stomp Footswitch Mode

While in Stomp mode, each of the middle eight footswitches (or left 10 switches if Global Settings > Footswitches > Stomp Mode Switches is set to “10 Switches”) can do a number of things:

- Toggle one or more blocks on and off
- Toggle between two values of one or more parameters
- Generate a MIDI, External Amp control, CV/Expression, or QWERTY Hotkey message
- All of the above, even simultaneously

If not already there, press FS6 (MODE) to select Stomp mode.

The middle eight footswitches display blocks' model names, parameter names, Command Center messages, and/or customized labels:



NOTE: If a switch is assigned to multiple blocks or items, its scribble strip reads “MULTIPLE (X),” where X is the number of assignments, and stepping on the switch turns them all on and off. If some blocks are on and some are bypassed, stepping on the switch toggles each block's bypass state.

NOTE: While in Stomp mode, stepping on BANK ^ or BANK v temporarily enters Preset mode. Once you've selected a preset, Helix returns to Stomp mode.

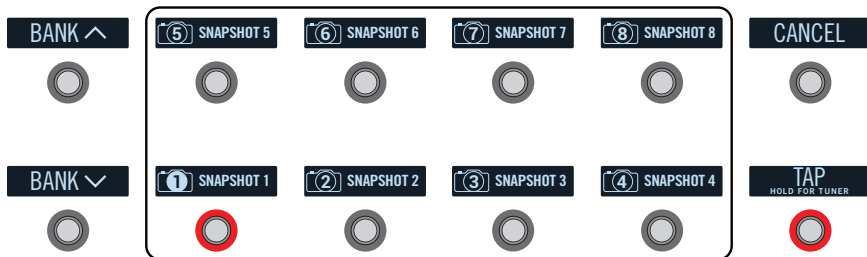
Snapshot Footswitch Mode

Similar to the snapshots feature in some high-end digital mixers, each of the Helix eight snapshots stores and recalls the state of certain elements in the current preset, including:

- **Block Bypass**—The bypass (on/off) state of all processing blocks (except Looper), independent of any footswitch assignments. See [“Using Snapshots”](#)
- **Parameter Control**—The values of any parameters assigned to controllers (up to 64 per preset). See [“Using Snapshots”](#)
- **Command Center**—The values of any instant MIDI CC, Bank/Prog, MMC, CV Out, HX Preset, HX Snapshot, and HX Looper commands, plus the state (dim or lit) of any CC Toggle, CV Toggle, and Ext Amp messages. See [“Command Center”](#)
- **Tempo**—The current system tempo, if [“Global Settings > MIDI/Tempo”](#) > Tempo Select is set to “Per Snapshot.” (By default, it’s set to “Per Preset”)

1. Press BANK ^ and BANK v simultaneously to enter Snapshot mode.

The middle eight switches flash, indicating a snapshot is ready to be selected.



2. Press one of the eight snapshot switches to select it.

NOTE: Snapshots are powerful enough to warrant their own chapter. See [“Snapshots”](#) for more information.

NOTE: If you don’t want Snapshot footswitches to disappear after selecting one, set [“Global Settings > Footswitches”](#) > Knob 4 (Snapshot Mode Switches) to “Manual Return.” In this case, Helix stays in Snapshot footswitch mode until you press FS6 (CANCEL).

Pedal Edit Mode

Most blocks can be edited without taking your hands off the guitar, including Amp, Effect, Cab, IR, Split, Mixer, Input, and Output Block parameters—even Variax String Level, Powercab Plus, and DT25/DT50 remote parameters! If you hate having to reach down and twist knobs, Pedal Edit mode will be your new best friend. Although Pedal Edit is not intended to replace proper controller assignment, in a pinch, it can also be used to tweak one parameter at a time during a performance.

1. Hold FS6 (MODE) for two seconds.

The preset’s processing blocks appear on the footswitches, flashing:

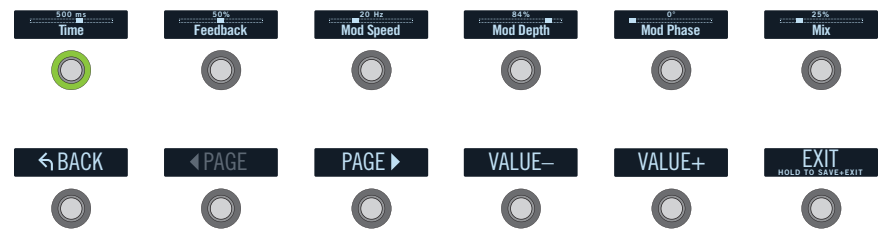


If the preset has more than ten processing blocks, you may not see the block you want. **Press FS6 (MORE...) one or more times until you do.**

NOTE: Selecting a block in Pedal Edit mode has no correlation to any footswitch assignment it may have.

2. Press the footswitch displaying the block you want to edit.

The block’s first page of parameters appear at FS1—FS6.



If the block has more than one page of parameters, **press FS8 (<PAGE) or FS9 (PAGE>) until you find the parameter.**

3. Press the footswitch displaying the parameter you want to adjust.

Press and hold a Time or Speed switch to toggle between setting the value in ms or Hz and note divisions (1/4-note, dotted 1/8-note, etc.).

4. Use the expression pedal to adjust the parameter.

For fine adjustment, press FS10 (VALUE-) and FS11 (VALUE+). Hold FS10 (VALUE-) or FS11 (VALUE +) for faster adjustments.

To select a different block, press FS7 (BACK).

5. When finished, press FS12 (EXIT).

If you want to save any changes made to the preset, hold FS12 (EXIT) for two seconds.

Selecting Blocks/Adjusting Parameters

Blocks are objects that represent various elements of a preset, such as amps, cabs, effects, splits, loopers, and even inputs and outputs.

1. From Stomp footswitch mode, briefly touch (but don't press) the footswitch assigned to the desired block.



The selected block appears with a white box on both the main LCD and the scribble strip:



If multiple blocks are assigned to a footswitch, its scribble strip reads "MULTIPLE (X)." Touch the top of the switch repeatedly until the desired block is selected.

NOTE: Repeatedly touching a "MULTIPLE (X)" switch may jump to completely different screens, depending on its assignments. For example, if a switch is assigned to an effect block, an effect parameter, and a Command Center MIDI message, repeated touches will cycle through all three items on the Home, Controller Assign, and Command Center screens, respectively. Basically, anything on the switch is only a touch away.

Alternatively, move the joystick to select a block.

SHORTCUT: Press  to quickly select the Amp+Cab, Amp, or Preamp block, and its tonestack parameters (Gain, Bass, Mid, Treble, etc.) appear. If a preset has more than one of these blocks, repeatedly press  to cycle through all tonestacks.

Optionally, press the joystick knob while turning to change its behavior to quickly selecting blocks (rather than selecting a block's model)—also see ["Global Settings > Preferences"](#).

2. Turn Knobs 1-6 below the screen.

Some blocks have more than one page of parameters, in which case a horizontal scrollbar appears above the parameters. For example, the red scrollbar above the Amp+Cab block's parameter inspector (see the following image) indicates that additional pages of parameters are available:



3. Press <PAGE/PAGE> to access more parameters (if available).

Bypassing a Block

If a footswitch is assigned to the block, press the switch.

Alternatively, select the block and press BYPASS to toggle the block on and off.

Bypassed blocks appear semitransparent and, if assigned to a footswitch, its LED ring dims and scribble strip label grays out:



NOTE: The switch's LED ring and scribble strip label reflect the color and bypass state of its most recently selected block or item, even if other blocks assigned to the same switch are enabled.



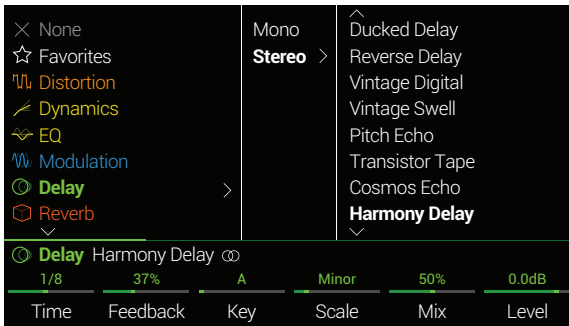
Choosing a Block's Model

To change an existing block's model, select the block and turn the joystick.

To create a new block, select an empty location and turn the joystick.

Selecting models within the same category can be very quick. However, as Helix has hundreds of items to choose from, using this method to, say, change a mono distortion block (beginning of the list) into a stereo FX Loop block (end of the list) is very slow. Instead, you should open the model list:

1. Press the joystick to open the model list:



Most model categories include subcategories. For example, effects generally have Mono, Stereo, and Legacy subcategories. Amp+Cab and Amp models have Guitar and Bass subcategories. Cab models have single and dual subcategories.

Turn the joystick (or move it up and down) to select items in a list.

Press the joystick (or move it right) to view a category or subcategory's contents.

Move the joystick left to go back one column.

IMPORTANT! If you encounter items in the list that are grayed out or unavailable, this means the current path (1 or 2) cannot accommodate that category, subcategory, or model. See [“Dynamic DSP”](#)

NOTE: The first category in the list, Favorites, is initially empty, awaiting you to add amp, cab, and/or effects models, including your own custom settings and assignments—see [“Adding a Block to Favorites”](#) on page 19.

2. Using the joystick, select the desired category, subcategory, and model.

NOTE: Amp+Cab and Cab > Dual blocks are special in that they represent two models within a single block. To change the amp model in an Amp+Cab block, press <PAGE> until the amp icon is white and turn the joystick. To change the cab model, press PAGE> until the cab icon is white and turn the joystick.



To change the first cab model in a Cab > Dual block, press <PAGE> until the left cab icon is white and turn the joystick. To change the second cab model, press PAGE> until the right cab icon is white and turn the joystick.



3. To close the model list, select an item in the far right column and press the joystick again (or press).

SHORTCUT: It is also possible to quickly access model subcategories without ever opening the model list...
From the Home screen with the desired block location selected, hold < PAGE > and press PAGE > to jump to the next subcategory.
Hold PAGE > and press < PAGE to jump to the previous subcategory, then turn the joystick to select models within that subcategory.

Choosing an Input

Move the joystick left to select an Input block and turn the joystick. To view a list of available inputs, press the joystick.

Normally you should select “Multi,” which includes three simultaneous inputs: Guitar, Aux, and Variax.



SHORTCUT: From any Input block, joystick left to jump to the Output block. From any Output block, joystick right to jump to the Input block. We call this the “Pac Man Shortcut.”

NOTE: Input blocks display signal present (green) and clipping (red) indication, as well as input metering (see [“Block Level Indicators and Meters”](#))

Choosing an Output

Move the joystick right to select an Output block and turn the joystick. To view a list of available outputs, press the joystick.

Normally you should select “Multi,” which includes four simultaneous pairs of outputs: 1/4", XLR, Digital, and USB 1/2.



If Path 1 doesn't have enough block locations or DSP to accommodate your tone, it can be routed to Path 2:

Select Path 1's output block and turn the joystick to select Path 2A.



Path 2's Input block displays an arrow, indicating it is being fed by Path 1.



If Path 2 has two input blocks, you may select either Path 2A or 2B or even split your signal further to both 2A and 2B. See ["2 into 1"](#) for an example.

NOTE: Output blocks display signal present (green) and clipping (red) indication, as well as output metering (see ["Block Level Indicators and Meters"](#))

Moving Blocks

1. Select any block (other than Input or Output) and press ACTION.

The block appears "picked up," and the action panel appears. The inspector's icon shows you the directions in which the block can be moved.



2. Move the joystick left or right to move the block.

Moving the joystick down moves the block to a new parallel B path. See ["Serial vs. Parallel Routing"](#) for details.

NOTE: A block on Path 1 cannot be moved to Path 2 (and vice versa). You can, however, copy and paste a block from one path to the other. See the next section. All output blocks display Knob 1 (Pan) and Knob 2 (Level), as well as output meters (see ["Block Level Indicators and Meters"](#))

3. Press ACTION again (or) to close the action panel.

Copying and Pasting a Block

Blocks from one path can be copied and then pasted into the same path, the other path, or a path in an entirely different preset.

1. Select the block you wish to copy and press ACTION.
2. Press Knob 1 (Copy Block).
3. Select the location you wish to paste the block—even in a different preset—and press ACTION.
4. Press Knob 2 (Paste Block).

NOTE: Inputs, Outputs, Splits, Merges, and Loopers can also be copied and pasted. However, if you, for example, try pasting the Looper into the Split block's location, Knob 2 (Paste Block) will be grayed out. Furthermore, if the destination path's DSP cannot accommodate the copied block, the header will briefly read "Cannot Paste—Path 1 [or 2] DSP full!" See ["Dynamic DSP"](#)



Clearing a Block

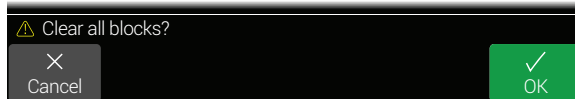
1. Select the block you wish to clear and press ACTION.
2. Press Knob 3 (Clear Block).

Clearing All Blocks

Clearing all blocks removes all processing blocks (including the Looper) and resets both Path 1 and 2 to serial. It does not affect Path 1A or Path 2A Input and Output blocks, nor does it affect the [“Command Center”](#)

1. Press ACTION.
2. Press Knob 4 (Clear All Blocks).

The following dialog appears:



3. Press Knob 6 (OK).

Adding a Block to Favorites

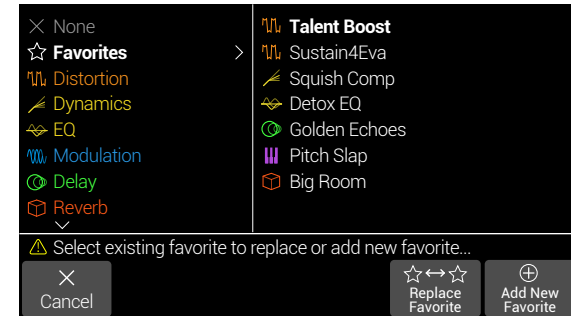
Once you’ve dialed in an amp or effects block exactly the way you like it, you can save its settings as a “Favorite” so the block can be added very quickly to other tones, complete with your stored parameter settings and custom bypass assignment (excluding any existing controller or snapshot assignments).

Favorites appear in the model menu’s “Favorites” category and can be renamed, reordered, and cleared. You can add up to 128 favorites.

NOTE: If you don’t want a favorite to be recalled with its bypass assignment, add the block to favorites *before* creating a custom bypass assignment.
Input, Output, Split, and Merge Mixer block types cannot be added as favorites.

1. Choose one of your preferred amps or effects and tweak it exactly how you like it, with or without footswitch and controller assignments.

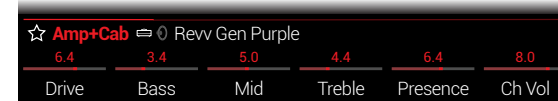
2. Press ACTION and then press Knob 6 (Add to Favorites). The Favorites list appears.



3. To replace an existing favorite, select the favorite you want to replace and press Knob 5 (Replace Favorite).*

To add a new favorite, select the location where you want to add it and press Knob 6 (Add New Favorite).

Once added, the model and its stored settings appear within the Inspector, now with the Favorites icon at its left, replacing its previous Category icon.



4. OPTIONAL: While the Favorites list is open, press ACTION.

- To reorder the selected favorite up or down the list, turn Reorder Favorite
- To rename the selected favorite, press Rename Favorite
- To clear the selected favorite, press Clear Favorite
- To clear all favorites, press Clear All Favorites. A dialog appears. Press OK to confirm.

To put your favorites to use... Within any preset, select an empty block and turn the joystick. All your perfectly-tweaked favorite amps and effects appear as your first options, without having to open the model list at all!

NOTE: If you replace and overwrite an existing favorite that is already in use within your presets, the presets remain unchanged.

However, if you want to “update” any preset to use the newly-edited favorite, select the existing favorite block with the preset and turn the joystick knob one click away and then back to effectively “reload” the updated favorite.

TIP: Using the HX Edit app, you can export your favorites to your computer as .fav files, allowing you to build a virtually limitless collection that can be imported back into your device’s Favorites library at any time—as well as shared between devices, or with other Helix/HX device and Helix Native owners! HX Edit also offers several features for easily managing your Favorites library.

Saving a Model's Default Settings

If you find yourself constantly re-tweaking your commonly-used models the same way, you can save a model's settings as its new defaults (excluding Input, Output, Split, or Merge Mixer blocks' settings) so the model shows up that way every time.

1. Choose any model and tweak it exactly how you like it.

Configure any of its parameters and bypass state. (Existing MIDI, bypass, snapshot, and controller assignments are *not* saved with the User Model Defaults.)

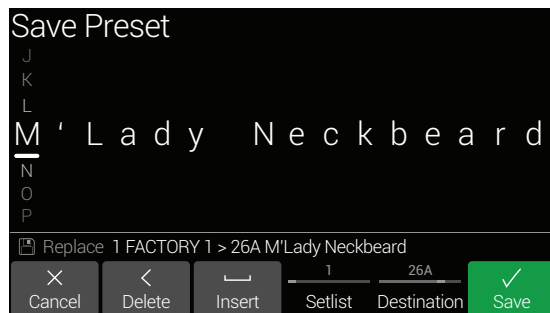
2. Press ACTION, press PAGE ▸ and then Knob 2 (User Default).

All your current parameter settings are now saved as the default for all future uses of the model. (Existing presets that include the model are not affected.)

NOTE: To return a model to factory defaults, press ACTION, press PAGE ▸, and then press Knob 1 (Factory Default). No current presets' model settings are changed—you'll see the factory defaults restored the next time you insert the model.

Saving/Naming a Preset

1. Press SAVE to open the Save Preset screen:



Move the joystick left or right to move the cursor.

Turn the joystick (or move it up/down) to change the selected character.

Press Knob 2 (Delete) to delete the selected character and shift all following characters to the left.

Press Knob 3 (Insert) to insert a space and shift all following characters to the right.



SHORTCUT: Press the joystick to cycle through A, a, 0, and [SPACE].

2. Turn Knob 4 (Setlist) and Knob 5 (Destination) to choose the Setlist and Preset location you wish to overwrite.

Any of Helix's 1,024 presets can be overwritten.

3. Press SAVE again or Knob 6 (Save).

Creating/Restoring Full Device Backups

Creating full backups of your Helix device's presets, IRs, Favorites, custom model defaults, and global settings are highly recommended to make sure your precious custom tones and configurations are never lost! Fortunately, the free Line 6 [HX Edit](https://www.line6.com/software) app makes it easy to create full backups and restore them anytime (available from [line6.com/software](https://www.line6.com/software)). Please refer to the [HX Edit Pilot's Guide](#) for steps on how to use its built-in Backup & Restore features.

Serial vs. Parallel Routing

For many guitar tones, a serial (one stereo path) signal flow is more than adequate. For example, our **8 TEMPLATES > 01A Quick Start** preset has a volume pedal, wah pedal, Amp+Cab, reverb, and looper, but there's still room for distortion, modulation, and delay blocks:



For more sophisticated tones, a parallel (two stereo paths) signal flow can be created. This lets one split the signal into two stereo paths, process them separately, and mix the two paths back together.

1. Select the Amp+Cab block and press ACTION to pick it up.

2. Move the joystick down.

The Amp+Cab block is moved to a newly created parallel path B (lower).



In the illustration above:

Our guitar signal goes into the Volume and Wah blocks.

The signal is split to path 1A (upper) and path 1B (lower).

Stereo path 1A (upper) is sent to the Reverb and Looper blocks and Stereo path 1B (lower) is sent to the Amp+Cab block.

Stereo paths 1A and 1B are merged together after the Looper block and sent to the Multi Output.

3. Press ACTION again to drop the Amp+Cab block.

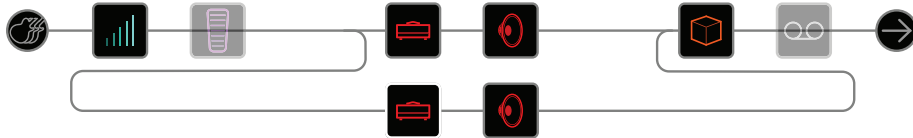
This preset probably doesn't sound ideal. A more appropriate tone may have paths 1A and 1B each with an Amp+Cab block, only to merge again before the Reverb...



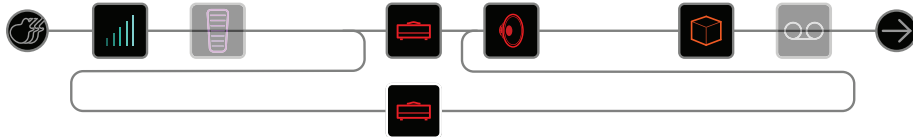
...or maybe a single Amp block splitting into two separate Cab blocks...



...or two separate Amp and two separate Cab blocks...



...or two separate Amp blocks merging into a Cab > Dual block.



Remember, this is only half of your tone. You still have Paths 2A and 2B to play with!

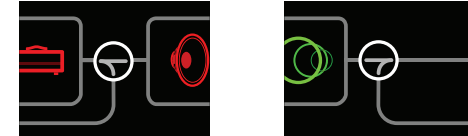
Removing Parallel Path B

To remove path B, simply clear any blocks on path B (lower) or move them all back up to path A (upper).

Moving Split & Merge Blocks for More Parallel Routings

1. Use the joystick to select the point where paths A and B split or merge.

“Split” and “Merge” blocks only appear when selected but can be adjusted and moved like any other processing block.



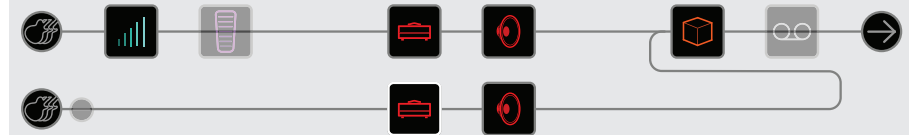
2. Press ACTION to pick up the Split or Merge block for moving.

Choose one of the following parallel routing options:

2 into 1

Move the Split block down to path B.

The Split block shifts left, and a duplicate Input block is created:

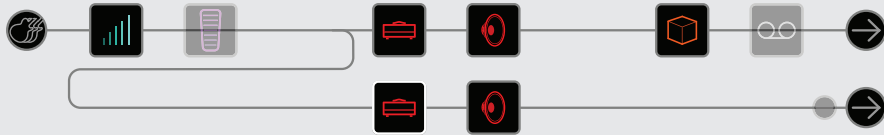


This new Input block can be assigned to a completely different input. This routing can be used for mixing a guitar and vocal or the models and magnetic pickups in a connected Variax guitar, each with their own processing blocks.

1 into 2

Move the Merge block down to path B.

The Merge block shifts right, and a duplicate Output block is created:



In this example, the Input block is split into paths A and B, each with its own Output block. Path A could be routed to the 1/4" outputs, while path B could be routed to the XLRs.

True Parallel

Move both the Split and the Merge blocks down to path B.

Duplicate Input and Output blocks are created:



In this routing, a guitar and vocal could be processed independently, each with its own input, stereo path, processing blocks, and outputs. Alternatively, two different band members could be processed independently.

Super Serial

A serial path has eight processing block locations. If that's not enough, you can use parallel path B to create one big "super serial" path.

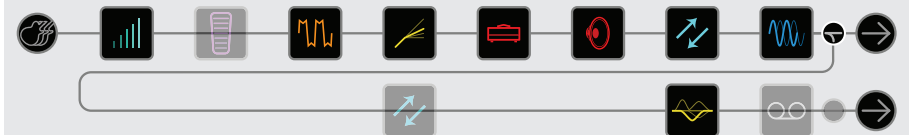
1. Move the Merge block down to path 1B.

A duplicate Output block is created.

2. Move the Split block all the way to the right, past the last processing block on path 1A.

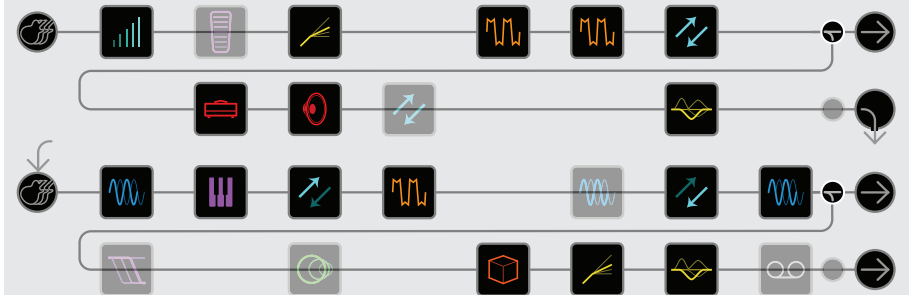
3. Select the Output block on path 1A and turn Knob 2 (Level) all the way down.

That way, you only hear Output 1B.



In the illustration above, our signal is processed by the eight blocks on path 1A and processed further by the three blocks on path 1B.

Of course, if this still isn't enough, you could always duplicate the above signal flow with path 2 and then route path 1B's output block to path 2A for one gigantic serial tone with up to 32 block locations (DSP permitting - See ["Dynamic DSP"](#)):



True Preset Spillover

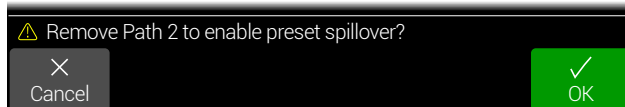
In powerful multieffects processors like Helix, switching to a different preset requires unloading DSP blocks for the current preset and then loading DSP blocks for the new one, resulting in a small audible gap. If you're willing to sacrifice one of Helix's two DSPs, you can achieve true preset spillover, complete with delay and reverb trails.

IMPORTANT! Unfortunately, Looper recording or playback will not currently spill over from one preset to another.

1. From the Home screen hold ACTION and press HOME.

Or, in ["Global Settings > Preferences"](#) set Preset Spillover to "On."

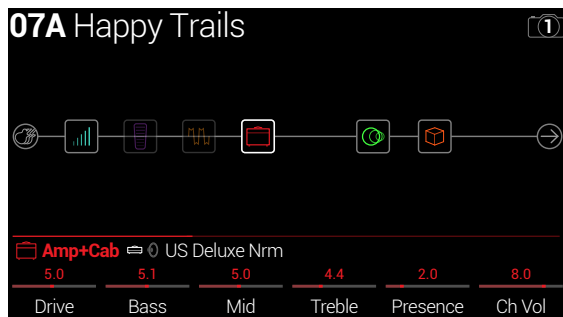
A dialog appears:



2. Press Knob 6 (OK)

3. Press HOME.

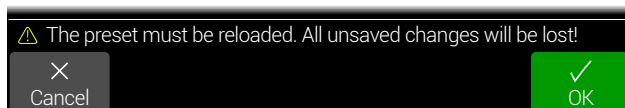
Path 2 has disappeared—what was previously "Path 1" of your current preset is now vertically centered on the Home screen.



4. To return to normal operation with two paths, first save your current preset, if you wish to retain your Path 1 changes, then hold ACTION and press HOME.

Or, set Preset Spillover to "Off" within ["Global Settings > Preferences"](#)

A dialog appears:



5. Press Knob 6 (OK).

Your device is returned to normal, two-path operation.

Tips for Using Preset Spillover

When Preset Spillover mode is active, you can still import and load any saved Helix preset. However, only the preset's Path 1 blocks, settings, and routing are loaded. Any existing Path 2 blocks, along with their settings and assignments, remain saved within the preset and are restored when you turn Preset Spillover Off. To follow are several tips and behaviors you'll want to be aware of when Preset Spillover is active:

- With Spillover On, Path 2 is hidden, and no audio is routed to it. Therefore, you'll want to ensure your presets' Path 1A and/or Path 1B Output blocks are **not** set to Path 2, or no signal will be heard.
- Some block types are limited to being used once per preset. This means that you'll want to avoid loading presets that already include these block types on Path 2 when you plan to turn Spillover is On. These items include:
 - One Looper block max. can be added per preset.
 - One instance of each of the Returns 1~4 can be added per preset, whether used within a mono or stereo Return block, FX Loop block, or within Input or Output blocks—also see ["Send/Return" on page 40](#).
 - One digital type Input block—Digital (S/PDIF or AES/EBU)—max. can be added per preset. Also, see ["Input" on page 26](#).
 - Any combination of up to 64 total controller assignments can be created within a preset. Therefore, it's unlikely you'll run out. But, if you want to max out your controller assignments, best to eliminate them from path 2 blocks.
- For preset changes—if preset A is still spilling over into preset B, switching to preset C will abruptly cut off preset A. That is, you'll only ever hear two presets (DSPs) at the same time.
- When a Delay block is set with Tempo Sync "On" (i.e., its Time parameter is set to note divisions), the trails will attempt to sync to the new preset's BPM on preset change. To keep delay trails' tempo consistent, avoid using Tempo sync for Delays, or set your ["Global Settings > MIDI/Tempo"](#) - Tempo Select to Global.
- Note that whether Spillover is On or Off, you can also store and recall multiple blocks' on/off states and parameter settings within your current preset with seamless switching using Snapshots! See ["Snapshots" on page 47](#).

Dynamic DSP

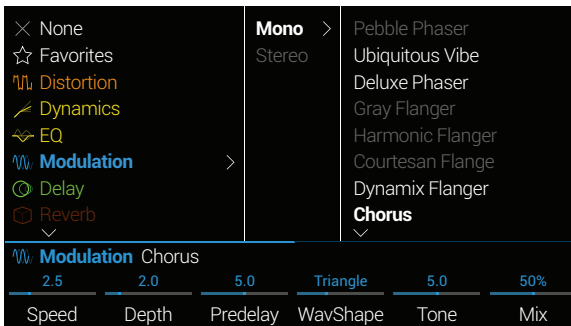
Like nearly all modern audio processors, the Helix engine is based on DSP (Digital Signal Processing). Some models require many times more DSP horsepower than others, so it makes logical sense that fewer of those models could exist in a tone. To work around this, some processors restrict you to one amp, one reverb, one delay, etc. With Helix, we feel it's important to let you keep adding whatever you want to your tone, even if you may eventually run out of DSP.

That said, there are some rules governing the number of certain types of blocks you can add to a preset:

Amp+Cab, Amp, or Preamp blocks	Any combination, up to four (two per path)
Cab blocks (includes Amp+Cab blocks)	Up to four (two per path; Cab > Dual blocks are considered two)
Impulse Response blocks	Up to four 1024-point IRs (two per path) or two 2048-point IRs (one per path)
Polyphonic (“Poly”) effects blocks	One per path. These effects include the Poly Sustain (Delay), Poly Detune (Modulation), and Poly Pitch, Wham, Capo and 12 String (Pitch/Synth).
Looper block	One

To see which models can be added to the current path, press the joystick to open the Model List.


Grayed-out items cannot be accommodated and are skipped over - See [“Selecting Blocks/Adjusting Parameters”](#):



Tips to Optimize DSP

- Each of Helix's two primary paths utilizes its own DSP. If all of your blocks are on paths 1A and 1B, you're only using half of the Helix device's horsepower! If you plan on creating tones with two or more amps and more than a handful of effects, expect to use both paths 1 and 2
- Some block types use much more DSP than others, such as Amps, IRs, Reverbs, and Poly effects models. EQ, Dynamics, Volume/Pan, and Send/Return blocks use relatively little
- Some models may use more DSP than others in the same category
- Instead of a parallel path with two Amp+Cab blocks or two separate Amps and Cabs, try adding a single Amp block followed by a single Cab > Dual block (mixing two different Cabs can provide some substantial variations)
- The stereo version of an effects block will use roughly twice as much DSP as a mono version of the same block. Likewise, the dual version of a cab block will use roughly twice as much DSP as the single version
- Some model categories have “Simple” blocks, which utilize less DSP than others
- Instead of toggling between two of the same amp or effects blocks (with different settings), use controllers or snapshots to instantly adjust parameters within a single block

Block Order and Stereo Imaging

Most of the Helix effects models have both mono and stereo versions. A stereo block displays  after its model name in the inspector. The stereo imaging—or how wide your tone appears with stereo speakers or headphones—is highly dependent on the type of blocks you add and in what order.

Keep the following things in mind when building tones:

- All Amp+Cab, Amp, Preamp, and Poly effects blocks are mono, so any stereo signal sent into these will be collapsed to mono. As such, it's a good idea to add only mono blocks before amps and preamps
- Adding a mono effects block will collapse any preceding stereo blocks on the same path to mono
- If you're only ever connecting Helix to the front of a single guitar amp or PA/FRFR speaker, there may be no need to use stereo models at all (except, of course, for models that are only offered as stereo!)
- Legacy effects models vary in behavior:
 - Legacy Distortion, Dynamics & Pitch/Synth effects are mono
 - Legacy Modulation & Delay effects vary in that some are mono, some stereo, and some mono-in/stereo-out, where adjusting the effect's Mix parameter can narrow the stereo image that is fed into them
 - Legacy Filter and Reverb effects are stereo

What is Variax?

[Line 6 Variax guitars](#) feature special electronics that model the sound of other specific guitars and instruments, as well as allow for instant retuning of each string. Helix and Variax work together in powerful and flexible ways. You can:

- Store Variax model, tuning, and/or volume and tone knob positions with a Helix preset or snapshot and recall them instantly
- Toggle between two Variax models and/or tunings via footswitch or MIDI CC
- Turn the Variax volume and/or tone knobs to control one or more Helix amp and effects parameters remotely. You could almost think of them as EXP 4 and EXP 5
- Split Variax modeled and magnetic signals, process them separately through independent signal paths, and either mix them together or route them to different Helix outputs
- Power the Variax modeling engine via a VDI (CAT-5 or Ethercon) cable, eliminating the need for the removable battery



Variax Workbench HD Application Support



Helix can also be used as the USB interface for the **Line 6 Workbench HD** editor/librarian software (v2.13, or later). Workbench HD is a free application for Mac and PC, available from line6.com/software. To use your James Tyler®, Shuriken™, or Standard Variax Standard with Workbench HD, you'll need to configure the following:

- Go to Helix [“Global Settings > MIDI/Tempo”](#) and set MIDI over USB to “On.”
- If using Workbench HD on Windows, you must install the Helix USB driver (v1.85 or later)—available from line6.com/software.
- It is recommended to update your Variax to the latest Variax HD firmware.



IMPORTANT! Variax Workbench HD uses MIDI channel 16. When connecting to Workbench HD via Helix's USB port, do not assign Helix or any of Helix's Command Center messages to MIDI channel 16 or Omni (which includes channel 16).

The Blocks

Input

Each preset can have up to four Input blocks (one or two per path).



- None** Disables (mutes) the input block. Only available on Path 2.
- Multi** Guitar, Aux, and Variax inputs are all active simultaneously. Normally, you should choose Multi.
- Guitar** Guitar in only.
- Aux** Aux in only. (10kΩ) input for an active-pickup equipped guitar or bass.)
- Variax** With a [James Tyler® Variax](#) (JTV), [Shuriken® Variax](#), or [Variax Standard](#) guitar, the “Variax” Input source receives the Model or Magnetic signal, depending on the guitar’s Model switch setting.

Variax Magnetics Receives only the Variax magnetic pickup signal.

Mic Mic in only.

Return 1, 2, 3, 4, 1/2, 3/4 Returns 1, 2, 3, and 4 can act as additional mono input blocks. Returns 1/2 and 3/4 can act as additional stereo input blocks for processing keyboards, drum machines, or even other modelers. If a Return or FX Loop processing block exists in the preset the utilized Return input will be non-selectable. See [“Send/Return”](#)

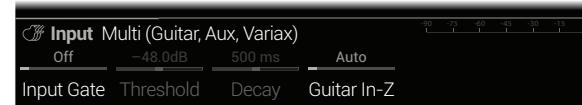
Digital (S/PDIF or AES/EBU) S/PDIF or AES/EBU digital in only. If a Variax input (or Multi input, which includes Variax) is in use on another Input block within the preset, the Digital (S/PDIF or AES/EBU) in will be non-selectable. Likewise, if Digital is in use on one Input block, Variax or Multi will be non-selectable on all other Input blocks.

USB 3/4, 5/6, 7/8 USB inputs 3/4, 5/6, and 7/8 can all be used for processing tracks from your Mac or Windows DAW software. See [“USB Audio”](#)

Helix also receives input from USB 1/2, but it’s dedicated to monitoring audio from your computer (or iPad or iPhone mobile device) and bypasses all processing blocks. As such, it’s not available as an input block source.

TIP: Input blocks include a built-in signal present/clip indicator—see [page 44](#)

All input blocks include a dedicated noise gate and a gain reduction meter (see [page 44](#)). Threshold and Decay parameters are grayed out unless the Input Gate parameter is turned on:



Input > Multi and Input > Guitar blocks have an additional Guitar In-Z parameter. Helix has an impedance circuit on its Guitar Input that affects tone and feel by loading your guitar’s pickups as they would by an effect pedal or amplifier. A lower value will typically result in some high frequency attenuation, lower gain, and an overall “softer” feel. A higher value provides full frequency response, higher gain, and an overall “tighter” feel. The “Auto” option allows the impedance to reflect the impedance of the first block on Path 1A—also see the Auto Impedance option on [“Global Settings > Preferences” on page 66](#)

Multi and Variax input blocks have additional pages for Variax parameters:

James Tyler Variax, Shuriken Variax, or Variax Standard

NOTE: All Input block - Variax parameters on pages 2 through 4 change functionality between Per Preset vs. Global following how you set the Variax Settings parameter (Knob 1 on page 2).

Page	Knob	Parameter	Description
	1	Variax Settings	Determines whether all Variax settings (pages 2~4) are applied per preset or globally.
	2	Variax Model	Selects the Variax model and pickup position setting. When set to “Don’t Force,” Helix respects the Variax current setting.
	3	Variax Volume Knob	Remotely sets the Variax volume knob setting. When set to “Don’t Force,” Helix respects the current Variax volume knob position.
2	4	Variax Tone Knob	Remotely sets the Variax tone knob setting. When set to “Don’t Force,” Helix respects the current Variax tone knob position.
	5	Variax Lock Control	When set to “Unlocked,” the Variax tone knob, volume knob, and toggle switch remain active. When locked, the Variax knobs and/or switches no longer control the guitar’s local functions. Turning the Variax model knob resets all to “Unlocked.”
	6	Variax Tuning	When set to “Don’t Force,” Helix respects the Variax guitar’s current tuning. When set to “Custom,” Helix engages any custom tuning on page 3.

Page	Knob	Parameter	Description
	1	Variax String 6	
	2	Variax String 5	
3	3	Variax String 4	Choose the number of half-steps, positive or negative, for which you want to raise or lower the pitch of the selected string. The note labels assume the guitar is tuned to standard pitch (E, A, D, G, B, E), with the A using a 440 Hz reference pitch.
	4	Variax String 3	
	5	Variax String 2	
	6	Variax String 1	

Page	Knob	Parameter	Description
	1	String Level 6	
	2	String Level 5	
4	3	String Level 4	Attenuate the volume levels individually per string, if desired.
	4	String Level 3	
	5	String Level 2	
	6	String Level 1	

Output

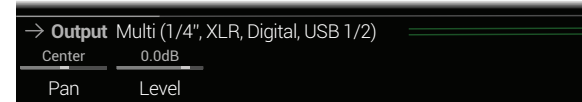
Each preset can have up to four Output blocks (one or two per path).



- Multi** 1/4", XLR, Digital, and USB 1/2 outputs are all active simultaneously. Normally, you should choose Multi.
- Path 2A, 2B, or 2A+B** These outputs only appear for Path 1 output blocks and route Path 1 into Path 2.
- 1/4"** 1/4" outs only.
- XLR** XLR outs only.
- Send 1/2, Send 3/4** Send 1/2 and 3/4 can act as additional output blocks.
- Digital S/PDIF, AES/EBU, L6 LINK** Choose the Digital Output type (S/PDIF or AES/EBU), Digital Output Level, and the desired Sample Rate in the ["Global Settings > Ins/Outs"](#). The Global Ins/Outs settings are not necessary for L6 LINK—also see ["L6 LINK - Powercab Plus and DT 25/50 Amp Options"](#) on page 27

USB 1/2, USB 3/4, USB 5/6 USB 1/2, 3/4, and 5/6 can act as additional output blocks for routing paths to your computer, or iPad or iPhone mobile devices (with optional Apple Camera Connection Kit). USB 7 and 8 are dedicated for re-amping and are not available as output block destinations. See ["USB Audio"](#) for details.

All output blocks display Knob 1 (Pan) and Knob 2 (Level), as well as output meters (see ["Block Level Indicators and Meters"](#) on page 44):



SHORTCUT: Press Knob 1 (Pan) to return Pan to center. Press Knob 2 (Level) to return Level to unity (0.0dB).



TIP: Use Knob 2 (Level) to set the path's overall level, which is important to ensure all of your presets maintain a consistent volume throughout your set.

L6 LINK - Powercab Plus and DT 25/50 Amp Options

Alternatively, the digital XLR connector can be used for L6 LINK output to the L6 LINK input of up to two Line 6 [Powercab Plus](#) active guitar speaker systems or [DT 25/50](#) amplifiers, with one or more of these receiving devices connected in series (use of a 110Ω XLR cable is recommended for all L6 LINK connections). When more than one Powercab Plus or DT 25/50 units are connected via L6 LINK, your stereo Helix signal is intelligently split, with the left channel going to the first unit and the right channel to the second. If you have one Powercab or DT connected, the Helix output is collapsed to mono and fed to the single unit. L6 LINK also sends remote control messages, providing customizable control over your connected devices right from Helix—globally or per preset!

The Output block - Powercab and DT 25/50 settings are available on pages 2~5 for any **Multi** or **Digital** output block type, allowing you to customize the desired options for your respective device(s) from Helix. (Please also refer to your Powercab Plus and DT 25/50 [Pilot's Guides](#).)



NOTE: Powercab Plus and DT 25/50 firmware v2.00 or later is required for L6 LINK functionality.

Output Block - Powercab Settings

Output Block - Powercab Plus Remote Settings			
Page	Knob	Parameter	Description
2	1	Powercab Remote	Determines the behavior for all page 2~3 settings sent to your connected Powercab Plus unit(s): Off - No Powercab Remote settings are sent. Preset - All Powercab Remote settings are stored with the current preset and sent upon the preset load. Global - All Powercab Remote settings are sent, with all settings remaining the same, regardless of the current Helix preset.
	2	Powercab Mode	Determines the Powercab mode: Flat, Speaker, or User IR. (Note that some page 2~3 Powercab settings will change reflecting the Mode selected here.)
	3	Flat Voicing	When in Flat Mode, determines its speaker Voicing type: FRFR, LF Flat, or LF Raw.
	4	Speaker Select	Determines which Powercab unit(s) you want to control: Powercab 1, Powercab 2, or both simultaneously (1+2 Link). Normally, you should leave this set to 1+2 Link, which edits both Powercabs simultaneously, to maintain phase coherence. Note that with Powercab 212 Plus, Powercab 1 targets the left speaker in each (or both) amp(s), and Powercab 2 targets the right speaker in each (or both) amp(s). You'll see the following Powercab page 2~3 settings reflect the option selected here.
	5	Speaker Type	When in Speaker Mode, determines the Powercab speaker model.
	6	Speaker DI mic	When in Speaker Mode, determines the Powercab mic model used on Powercab's XLR output(s).
3	1	Speaker Mic Dist	When in Speaker Mode, determines the Powercab mic distance, used on Powercab's XLR output(s): 1.0~12.0 inches,.
	2	Speaker User IR	When in User IR Mode, determines the Powercab User IR used: index 0~127.
	3	Speaker Low Cut	When in Speaker or User IR Mode, configures the Low Cut EQ applied, Off or 20Hz~500Hz.
	4	Speaker Hi Cut	When in Speaker or User IR Mode, configures the Hi Cut EQ applied: 500Hz~20kHz or Off.
	5	Speaker Level	When in Speaker or User IR Mode, configures the volume trim applied: -60dB~+6dB.
	6	Speaker Color	When in Speaker or User IR Mode, choose the LED ring color on any connected Powercab(s): Auto, color choice, or Off.

Output Block - DT25/50 Settings

Output Block - DT25/50 Remote Settings			
Page	Knob	Parameter	Description
4	1	DT 25/50 Remote	Determines the behavior for all page 4~5 settings sent to your connected DT 25/50 unit(s): Off - No DT Remote settings are sent. Preset - All DT Remote settings are stored with the current preset and sent upon preset load. Global - All DT Remote settings are sent, with all settings remaining the same regardless of the current Helix preset.
	2	DT Select	Determines which DT you want to control: DT 1, DT 2, or both simultaneously (1+2 Link). (Note that page 4~5 DT settings reflect the option selected here.)
	3	DT Channel	When set to A (Helix), the DT unit(s) switch to Chan. A and its preamp bypassed, allowing your Helix signal to be utilized. When set to B (DT Pre), the DT switches to Chan. B and its internal preamp are activated.
	4	DT Topology	Determines the negative feedback loop Topology: I-IV.
	5	DT Power Amp	Determines the tube Power Amp mode: Class A or Class AB.
	6	DT Tube Config	Determines the configuration of the DT power tubes: Triode or Pentode.
5	1	DT Reverb	Determines the On/Off state of the DT amp's on-board Reverb.
	2	DT Rev Mix	Determines the wet/dry Mix of the Reverb effect: 0~100%.
	3	DT 12AX7 Boost	(DT50 only) Determines the On/Off state of the DT amp's 12AX7 Boost. Available when the DT50 Low Volume Mode is Off.
	4	DT Feedback Cap	(DT50 only) Determines the DT feedback capacitor type: X (Tight) or Y (Smooth).
	5	DT B+ Voltage	(DT50 only) Determines the level of the DT phase inverter B+ Voltage: Low or High.



TIPS: Just like with any amp, cab, or effect parameter, Powercab and DT remote parameters can be quickly assigned to footswitches or snapshots.


When using the L6 LINK Out, often, the Helix Preamp models are a better choice than Amp or Amp+Cab models, allowing you to adjust the power amp and speaker cab options offered by the Powercab or DT units to taste.

Powercab Plus users can also utilize the IR and Reverb options available on the Powercab, thereby alleviating the need to add IR or Reverb blocks within their Helix presets!

It is possible to use Helix to control several parameters remotely on your DT-Series amp (channel select, power amp topology, reverb, etc.) via MIDI. Connect a 5-pin MIDI cable from Helix's MIDI Out to the DT amp's MIDI In and use the Helix ["Command Center"](#) to configure the desired MIDI commands for any preset.

Start by loading the TEMPLATES > DT25-DT50 Remote preset since it has several handy DT commands already mapped to Helix Control switches for you. You can customize this template and create your own sets of controls to add to your presets. Also see the [DT MIDI Implementation Guide](#) for a complete list of MIDI commands.

Effects

Many Helix effects blocks are offered in mono or stereo versions. Stereo effects display  after the model name. In addition, Helix includes selected effects from the classic Line 6 DL4™, DM4™, MM4™, and FM4™ stompboxes, as well as M13®, M9®, and M5® processors; these appear in the Legacy subcategory (also see ["Block Order and Stereo Imaging" on page 24](#)).



Select an effects block and turn the joystick to change its model.



TIP: The Favorites category that appears at the start of the Model menu is initially empty, awaiting you to add your preferred models to it—see [page 19](#).

Distortion Models

Model	Subcategories	Based On*
Kinky Boost	Mono, Stereo	Xotic® EP Booster
Deranged Master	Mono, Stereo	Dallas Rangemaster Treble Booster
Minotaur	Mono, Stereo	Klon® Centaur
Teemah!	Mono, Stereo	Paul Cochrane Timmy® Overdrive
Heir Apparent	Mono, Stereo	Analogman Prince of Tone
Tone Sovereign	Mono, Stereo	Analogman King of Tone

Distortion Models

Model	Subcategories	Based On*
Alpaca Rogue	Mono, Stereo	Way Huge® Red Llama (modded)
Compulsive Drive	Mono, Stereo	Fulltone® OCD
Dhyana Drive	Mono, Stereo	Hermida Zendrive
Horizon Drive	Mono, Stereo	Horizon Precision Drive
Valve Driver	Mono, Stereo	Chandler Tube Driver
Top Secret OD	Mono, Stereo	DOD® OD-250
Scream 808	Mono, Stereo	Ibanez® TS808 Tube Screamer®
Hedgehog D9	Mono, Stereo	MAXON® SD9 Sonic Distortion
Stupor OD	Mono, Stereo	BOSS® SD-1 Overdrive
Deez One Vintage	Mono, Stereo	BOSS DS-1 Distortion (Made-in-Japan)
Deez One Mod	Mono, Stereo	BOSS DS-1 Distortion (Keeley modded)
Vermin Dist	Mono, Stereo	Pro Co RAT
KWB	Mono, Stereo	Benadrian Kowloon Walled Bunny Distortion
Legendary Drive	Mono, Stereo	Carvin® VLD1 Legacy Drive (hi gain channel)
Swedish Chainsaw	Mono, Stereo	BOSS HM-2 Heavy Metal Distortion (MIJ)
Arbitrator Fuzz	Mono, Stereo	Arbiter® Fuzz Face®
Pocket Fuzz	Mono, Stereo	Jordan Boss Tone Fuzz
Bighorn Fuzz	Mono, Stereo	'73 Electro-Harmonix® Ram's Head Big Muff Pi
Triangle Fuzz	Mono, Stereo	Electro-Harmonix Big Muff Pi
Ballistic Fuzz	Mono, Stereo	Euthymia ICBM Fuzz
Industrial Fuzz	Mono, Stereo	Z.Vex Fuzz Factory
Tycoctavia Fuzz	Mono, Stereo	Tycobrahe® Octavia
Wringer Fuzz	Mono, Stereo	Garbage's modded BOSS FZ-2
Thrifter Fuzz	Mono, Stereo	Line 6 Original
Xenomorph Fuzz	Mono, Stereo	Subdecay Harmonic Antagonizer
Megaphone	Mono, Stereo	Megaphone
Bitcrusher	Mono, Stereo	Line 6 Original
Ampeg Scrambler	Mono, Stereo	Ampeg® Scrambler Bass Overdrive
ZeroAmp Bass DI	Mono, Stereo	Tech 21® SansAmp Bass Driver DI V1
Obsidian 7000	Mono, Stereo	Darkglass® Electronics Microtubes® B7K Ultra
Clawthorn Drive	Mono, Stereo	Wounded Paw Battering Ram

*See ["U.S. Registered Trademarks" on page 45](#). All product names used in this document are trademarks of their respective owners and neither Yamaha Guitar Group nor Line 6 are associated or affiliated with them. These trademarks appear solely to identify products whose tones and sounds were studied by Line 6 during sound model development.

Distortion Models

Model	Subcategories	Based On*
Tube Drive	Legacy	Chandler Tube Driver
Screamer	Legacy	Ibanez Tube Screamer
Overdrive	Legacy	DOD Overdrive/Preamp 250
Classic Dist	Legacy	ProCo RAT
Heavy Dist	Legacy	BOSS Metal Zone
Colordrive	Legacy	Colorsound® Overdriver
Buzz Saw	Legacy	Maestro® Fuzz Tone
Facial Fuzz	Legacy	Arbiter Fuzz Face
Jumbo Fuzz	Legacy	Vox® Tone Bender
Fuzz Pi	Legacy	Electro-Harmonix Big Muff Pi
Jet Fuzz	Legacy	Roland® Jet Phaser
L6 Drive	Legacy	Colorsound Overdriver (modded)
L6 Distortion	Legacy	Line 6 Original
Sub Oct Fuzz	Legacy	PAiA Roctave Divider
Octave Fuzz	Legacy	Tycobrahe Octavia

Dynamics Models

Model	Subcategories	Based On*
Deluxe Comp	Mono, Stereo	Line 6 Original
Red Squeeze	Mono, Stereo	MXR® Dyna Comp
Kinky Comp	Mono, Stereo	Xotic SP Compressor
Rochester Comp	Mono, Stereo	Ashly® CLX-52 (in conjunction w/ B. Sheehan)
LA Studio Comp	Mono, Stereo	Teletronix® LA-2A®
3-Band Comp	Mono, Stereo	Line 6 Original
Noise Gate	Mono, Stereo	Line 6 Original
Hard Gate	Mono, Stereo	Line 6 Original
Horizon Gate	Mono, Stereo	Horizon Precision Drive - Gate Circuit
Autoswell	Mono, Stereo	Line 6 Original

Dynamics Models

Model	Subcategories	Based On*
Tube Comp	Legacy	Teletronix LA-2A
Red Comp	Legacy	MXR Dyna Comp
Blue Comp	Legacy	BOSS CS-1
Blue Comp Treb	Legacy	BOSS CS-1 (Treble switch on)
Vetta Comp	Legacy	Line 6 Original
Vetta Juice	Legacy	Line 6 Original
Boost Comp	Legacy	MXR Micro Amp



TIP: Dynamics - Compressor and Gate models display a handy gain reduction meter — see [page 44](#).

EQ Models

Model	Subcategories	Based On*
Simple EQ	Mono, Stereo	Line 6 Original
Low and High Cut	Mono, Stereo	Line 6 Original
Low/High Shelf	Mono, Stereo	Line 6 Original
Parametric	Mono, Stereo	Line 6 Original
Tilt	Mono, Stereo	Line 6 Original
10 Band Graphic	Mono, Stereo	MXR 10-Band Graphic EQ
Cali Q Graphic	Mono, Stereo	MESA/Boogie® Mark IV Graphic EQ
Acoustic Sim	Mono, Stereo	Line 6 Original

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Modulation Models		
Model	Subcategories	Based On*
Optical Trem	Mono, Stereo	Fender® optical tremolo circuit
60s Bias Trem	Mono, Stereo	Vox AC-15 Tremolo
Tremolo/Autopan	Mono, Stereo	BOSS PN-2
Harmonic Tremolo	Mono, Stereo	Line 6 Original
Bleat Chop Trem	Mono, Stereo	Lightfoot Labs Goatkeeper
Script Mod Phase	Mono, Stereo	MXR Phase 90
Pebble Phaser	Mono, Stereo	Electro-Harmonix Small Stone
Ubiquitous Vibe	Mono, Stereo	Shin-ei Uni-Vibe®
Deluxe Phaser	Mono, Stereo	Line 6 Original
Gray Flanger	Mono, Stereo	MXR 117 Flanger
Harmonic Flanger	Mono, Stereo	A/DA Flanger
Courtesan Flange	Mono, Stereo	Electro-Harmonix Deluxe EM
Dynamix Flanger	Mono, Stereo	Line 6 Original
Chorus	Mono, Stereo	Line 6 Original
70s Chorus	Mono, Stereo	BOSS CE-1
PlastiChorus	Mono, Stereo	Modded Arion SCH-Z chorus
Trinity Chorus	Stereo	Dytronic® Tri-Stereo Chorus
Bubble Vibrato	Mono, Stereo	BOSS VB-2 Vibrato
Vibe Rotary	Stereo	Fender Vibratone
122 Rotary	Stereo	Leslie® 122
145 Rotary	Stereo	Leslie 145
Double Take	Mono, Stereo	Line 6 Original
Poly Detune†	Mono	Line 6 Original
AM Ring Mod	Mono, Stereo	Line 6 Original
Pitch Ring Mod	Stereo	Line 6 Original

Modulation Models		
Model	Subcategories	Based On*
Pattern Tremolo	Legacy	Line 6 Original
Panner	Legacy	Line 6 Original
Bias Tremolo	Legacy	1960 Vox AC-15 Tremolo
Opto Tremolo	Legacy	1964 Fender Deluxe Reverb®
Script Phase	Legacy	MXR Phase 90 (script logo version)
Panned Phaser	Legacy	Ibanez Flying Pan
Barberpole	Legacy	Line 6 Original
Dual Phaser	Legacy	Mu-Tron® Bi-Phase
U-Vibe	Legacy	Shin-ei Uni-Vibe
Phaser	Legacy	MXR Phase 90
Pitch Vibrato	Legacy	BOSS VB-2
Dimension	Legacy	Roland Dimension D
Analog Chorus	Legacy	BOSS CE-1
Tri Chorus	Legacy	Dytronic® Tri-Stereo Chorus
Analog Flanger	Legacy	MXR Flanger
Jet Flanger	Legacy	A/DA Flanger
AC Flanger	Legacy	MXR Flanger
80A Flanger	Legacy	A/DA Flanger
Frequency Shift	Legacy	Line 6 Original
Ring Modulator	Legacy	Line 6 Original
Rotary Drum	Legacy	Fender Vibratone
Rotary Drum/Horn	Legacy	Leslie 145

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†The Poly Detune model utilizes polyphonic pitch shifting and, therefore, is extremely DSP-intensive—possibly utilizing up to half of all DSP available for Path 1 or Path 2!

Delay Models		
Model	Subcategories	Based On*
Simple Delay	Mono, Stereo	Line 6 Original
Mod/Chorus Echo	Mono, Stereo	Line 6 Original
Dual Delay	Stereo	Line 6 Original
Multitap 4	Stereo	Line 6 Original
Multitap 6	Stereo	Line 6 Original
Ping Pong	Stereo	Line 6 Original
Sweep Echo	Mono, Stereo	Line 6 Original
Ducked Delay	Mono, Stereo	TC Electronic® 2290
Reverse Delay	Mono, Stereo	Line 6 Original
Vintage Digital	Mono, Stereo	Line 6 Original
Vintage Swell	Mono, Stereo	Line 6 Original
Pitch Echo	Mono, Stereo	Line 6 Original
Transistor Tape	Mono, Stereo	Maestro Echoplex EP-3
Cosmos Echo	Mono, Stereo	Roland RE-201 Space Echo
Harmony Delay	Stereo	Line 6 Original
Bucket Brigade	Mono, Stereo	BOSS DM-2
Adriatic Delay	Mono, Stereo	BOSS DM-2 w/ Adrian Mod
Adriatic Swell	Mono, Stereo	Line 6 Original
Elephant Man	Mono, Stereo	Electro-Harmonix Deluxe Memory Man
Multi Pass	Mono, Stereo	Line 6 Original
Poly Sustain †	Mono	Line 6 Original
Glitch Delay	Mono, Stereo	Line 6 Original
Ping Pong	Legacy	Line 6 Original
Dynamic	Legacy	TC Electronic 2290
Stereo	Legacy	Line 6 Original
Digital	Legacy	Line 6 Original
Dig w/Mod	Legacy	Line 6 Original
Reverse	Legacy	Line 6 Original
Lo Res	Legacy	Line 6 Original

Delay Models		
Model	Subcategories	Based On*
Tube Echo	Legacy	Maestro Echoplex EP-1
Tape Echo	Legacy	Maestro Echoplex EP-3
Sweep Echo	Legacy	Line 6 Original
Echo Platter	Legacy	Binson® EchoRec®
Analog Echo	Legacy	BOSS DM-2
Analog w/Mod	Legacy	Electro-Harmonix Deluxe Memory Man
Auto-Volume Echo	Legacy	Line 6 Original
Multi-Head	Legacy	Roland RE-101 Space Echo

Reverb Models		
Model	Subcategory	Based On*
Glitz	Mono, Stereo	Line 6 Original
Ganymede	Mono, Stereo	Line 6 Original
Searchlights	Mono, Stereo	Line 6 Original
Plateaux	Mono, Stereo	Line 6 Original
Double Tank	Mono, Stereo	Line 6 Original
Plate	Legacy	Line 6 Original
Room	Legacy	Line 6 Original
Chamber	Legacy	Line 6 Original
Hall	Legacy	Line 6 Original
Echo	Legacy	Line 6 Original
Tile	Legacy	Line 6 Original
Cave	Legacy	Line 6 Original
Ducking	Legacy	Line 6 Original
Octo	Legacy	Line 6 Original
'63 Spring	Legacy	Line 6 Original
Spring	Legacy	Line 6 Original
Particle Verb	Legacy	Line 6 Original

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† The Poly Sustain model utilizes polyphonic pitch shifting and, therefore, is extremely DSP-intensive—possibly utilizing up to half of all DSP available for Path 1 or Path 2!

Pitch/Synth Models

Model	Subcategories	Based On*
Pitch Wham	Mono, Stereo	Digitech Whammy®
Twin Harmony	Mono, Stereo	Eventide® H3000
Simple Pitch	Mono, Stereo	Line 6 Original
Dual Pitch	Mono, Stereo	Line 6 Original
3 OSC Synth	Stereo	Line 6 Original
Poly Pitch †	Mono	Line 6 Original
Poly Wham †	Mono	Line 6 Original
Poly Capo †	Mono	Line 6 Original
12 String †	Mono	Line 6 Original
3 Note Generator ‡	Mono, Stereo	Line 6 Original
4 OSC Generator ‡	Mono, Stereo	Line 6 Original
Bass Octaver	Legacy	EBS® OctaBass
Smart Harmony	Legacy	Eventide H3000
Octi Synth	Legacy	Line 6 Original
Synth O Matic	Legacy	Line 6 Original
Attack Synth	Legacy	Korg® X911 Guitar Synth
Synth String	Legacy	Roland GR700 Guitar Synth
Growler	Legacy	Line 6 Original

Filter Models

Model	Subcategories	Based On*
Mutant Filter	Mono, Stereo	Musitronics® Mu-Tron III
Mystery Filter	Mono, Stereo	Korg A3
Autofilter	Mono, Stereo	Line 6 Original
Asheville Pattn	Mono, Stereo	Moog® Moogerfooger® MF-105M MuRF Filter

Filter Models

Model	Subcategories	Based On*
Voice Box	Legacy	Line 6 Original
V Tron	Legacy	Musitronics Mu-Tron III
Q Filter	Legacy	Line 6 Original
Seeker	Legacy	Z Vex Seek Wah
Obi Wah	Legacy	Oberheim® voltage-controlled S&H filter
Tron Up	Legacy	Musitronics Mu-Tron III (up position)
Tron Down	Legacy	Musitronics Mu-Tron III (down position)
Throbber	Legacy	Electrix® Filter Factory
Slow Filter	Legacy	Line 6 Original
Spin Cycle	Legacy	Craig Anderton's Wah/Anti-Wah
Comet Trails	Legacy	Line 6 Original

Wah Models

Model	Subcategories	Based On*
UK Wah 846	Mono, Stereo	Vox V846
Teardrop 310	Mono, Stereo	Dunlop® Cry Baby® Fasel model 310
Fassel	Mono, Stereo	Dunlop Cry Baby Super
Weeper	Mono, Stereo	Arbiter Cry Baby
Chrome	Mono, Stereo	Vox V847
Chrome Custom	Mono, Stereo	Modded Vox V847
Throaty	Mono, Stereo	RMC® Real McCoy 1
Vetta Wah	Mono, Stereo	Line 6 Original
Colorful	Mono, Stereo	Colorsound Wah-fuzz
Conductor	Mono, Stereo	Maestro Boomerang

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† These indicated Pitch/Synth models utilize polyphonic pitch shifting and, therefore, are extremely DSP-intensive. Each one might take up half of all DSP available for Path 1 or Path 2!

‡ The 3 Note Generator and 4 OSC Generator models make sound without any instrument connected, therefore, their blocks are turned off by default. Be sure to first set your Helix volume to low, and press BYPASS to turn them on.

Volume/Pan Models		
Model	Subcategories	Based On*
Volume Pedal	Mono, Stereo	Line 6 Original
Gain	Mono, Stereo	Line 6 Original
Pan	Stereo	Line 6 Original
Stereo Width	Stereo	Line 6 Original
Stereo Imager	Stereo	Line 6 Original

Common FX Settings

Parameter	Description
Drive	Adjusts the amount of overdrive, distortion, or fuzz.
Bass	Adjusts the bass level.
Mid	Adjusts the midrange level.
Treble	Adjusts the treble level.
Speed	Adjusts the speed of the effect, with higher settings providing faster rates. Press the knob to toggle between Hz and note values. Choosing a Hz value provides a specific modulation speed in cycles per second; choosing a note value provides a time based on the current tempo. Not all Speed parameters can be synced to note values, as they may be non-linear and highly interactive. (Note that stepping on TAP once resets any LFO-based effects, such as tremolos and rotary speakers.)
Rate	Adjusts the rate of the effect, with higher settings providing faster rates. Press the knob to toggle between numeric and note values. Not all Rate parameters can be synced to note values, as they may be non-linear and highly interactive. (Note that stepping on TAP once resets any LFO-based effects, such as tremolos and rotary speakers.)
Time	Adjusts the delay/repeat time, with higher settings providing longer delays. Press the knob to toggle between ms and note values. Choosing a ms value provides a specific time in milliseconds; choosing a Note Division value provides a time based on the current tempo. With a note division value, this parameter's value is retained when changing models.
Depth	Adjusts the intensity of the modulation. Higher settings result in more extreme pitch bending, wobble, or throb, depending on the effect.
Feedback	Adjusts the amount of delayed signal fed back into the effect. Higher settings can provide more dramatic textures.
Decay	Sets the length of time the reverb effect sustains.

Parameter	Description
Predelay	Determines the time before the reverb effect is heard.
Scale	On stereo delays, the Scale offers control over the left & right channel repeats proportionately. The left channel repeats following the Time value, and the right channel repeats at a time that is the percentage of the left time. For example, if a delay's Time is set for 1 second and the Scale set to 75%, the left channel will repeat at 1 second and the right at 750 milliseconds (ms).
Spread	Spread differs slightly among stereo delay effects. For most delays, it adjusts how widely the repeats bounce left and right. For example, with the Ping Pong Delay, 0 is in the middle (mono), and 10 is full left-to-right panning for the repeats. For modulated stereo delays, Spread affects the LFOs' (low frequency oscillators) stereo modulation behavior. At 0, the LFOs are in sync. At 10, the two LFOs are 180 degrees out of sync, so that when one side is modulating up, the other side is modulating down.
Headroom	Some mod and delay pedals' internal signal paths exhibit a bit of grit, especially when placed after a high-gain amp block. Negative values increase the perceived amount of grit; positive values clean things up a bit. At 0dB, the model behaves like the original pedal.
Low Cut	Filters a portion of the block's bass and/or treble frequencies, which can help remove rumble and/or high-end harshness.
High Cut	
Mix	Blends the effected "wet" signal vs. the "dry" signal passed through the block. When set to 0%, the path bypasses the effect completely. When set to 100%, the entire path is fed through the effect, and no dry thru signal is heard.
Level	Adjusts the overall output level of the effects block. Be careful not to boost this parameter too high on multiple blocks, as digital clipping could occur (also see " Block Level Indicators and Meters "). You should typically leave this at 0.0dB for most blocks. Where the original pedal's level or volume knob behavior doesn't really apply to dB values, 0.0-10 may be used.
Trails	<i>Trails Off:</i> Any delay repeats or reverb decays are instantly muted when the block is bypassed. <i>Trails On:</i> Any delay repeats or reverb decays continue to decay naturally when the block is bypassed, or a different snapshot is selected.

Amp+Cab

Amp+Cab blocks are convenient in that when you select an Amp model, its matching Cab model is automatically loaded.



To change the amp model in an Amp+Cab block, press <PAGE until the amp icon is white and turn the joystick. To change the cab model, press PAGE> until the cab icon is white and turn the joystick.



The first page of Amp+Cab parameters is called the *tonestack*, and represents the knobs you would see on the real amp's panel:



SHORTCUT: Press to quickly select the Amp+Cab, Amp, or Preamp block and access its tonestack parameters (Gain, Bass, Mid, Treble, etc.). If a preset has more than one of these blocks, press repeatedly to cycle through all tonestacks.

Amp Models

Model	Subcategory	Based On*
WhoWatt 100	Guitar	Hiwatt® DR-103 Brill
Soup Pro	Guitar	Supro® S6616
Stone Age 185	Guitar	Gibson® EH-185
Voltage Queen	Guitar	Victoria Vintage Queen
Tweed Blues Nrm	Guitar	Fender Bassman® (normal channel)
Tweed Blues Brt	Guitar	Fender Bassman (bright channel)
Fullerton Nrm	Guitar	Fender 5C3 Tweed Deluxe (normal channel)
Fullerton Brt	Guitar	Fender 5C3 Tweed Deluxe (bright channel)
Fullerton Jump	Guitar	Fender 5C3 Tweed Deluxe (jumped channels)
Grammatico Nrm	Guitar	Grammatico LaGrange (normal channel)
Grammatico Brt	Guitar	Grammatico LaGrange (bright channel)

Amp Models

Model	Subcategory	Based On*
Grammatico Jump	Guitar	Grammatico LaGrange (jumped channels)
US Small Tweed	Guitar	Fender Champ®
US Princess	Guitar	Fender Princeton Reverb®
US Deluxe Nrm	Guitar	Fender Deluxe Reverb (normal channel)
US Deluxe Vib	Guitar	Fender Deluxe Reverb (vibrato channel)
US Double Nrm	Guitar	Fender Twin Reverb® (normal channel)
US Double Vib	Guitar	Fender Twin Reverb (vibrato channel)
Mail Order Twin	Guitar	Silvertone® 1484
Divided Duo	Guitar	÷13 JRT 9/15
Interstate Zed	Guitar	Dr Z® Route 66
Derailed Ingrid	Guitar	Trainwreck® Circuits Express
Jazz Rivet 120	Guitar	Roland JC-120 Jazz Chorus
Essex A15	Guitar	Vox AC-15
Essex A30	Guitar	Vox AC-30 with top boost
A30 Fawn Nrm	Guitar	Vox AC-30 Fawn (normal channel)
A30 Fawn Brt	Guitar	Vox AC-30 Fawn (bright channel)
Matchstick Ch1	Guitar	Matchless® DC30 (channel 1)
Matchstick Ch2	Guitar	Matchless DC30 (channel 2)
Matchstick Jump	Guitar	Matchless DC30 (jumped)
Mandarin 80	Guitar	Orange® OR80
Brit J45 Nrm	Guitar	Marshall® JTM-45 (normal channel)
Brit J45 Brt	Guitar	Marshall JTM-45 (bright channel)
Brit Trem Nrm	Guitar	Marshall JTM-50 (normal channel)
Brit Trem Brt	Guitar	Marshall JTM-50 (bright channel)
Brit Trem Jump	Guitar	Marshall JTM-50 (jumped)
Brit Plexi Nrm	Guitar	Marshall Super Lead 100 (normal channel)
Brit Plexi Brt	Guitar	Marshall Super Lead 100 (bright channel)
Brit Plexi Jump	Guitar	Marshall Super Lead 100 (jumped)
Brit P75 Nrm	Guitar	Park® 75 (normal channel)
Brit P75 Brt	Guitar	Park 75 (bright channel)

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Amp Models		
Model	Subcategory	Based On*
Brit 2204	Guitar	Marshall JCM-800
Placater Clean	Guitar	Friedman BE-100 (clean channel)
Placater Dirty	Guitar	Friedman BE-100 (BE/HBE channel)
Cartographer	Guitar	Ben Adrian Cartographer
German Mahadeva	Guitar	Bogner® Shiva
German Ubersonic	Guitar	Bogner Überschall®
Cali Texas Ch1	Guitar	MESA/Boogie Lone Star (clean channel)
Cali Texas Ch2	Guitar	MESA/Boogie Lone Star (drive channel)
Cali IV Rhythm 1	Guitar	MESA/Boogie Mark IV (channel I)
Cali IV Rhythm 2	Guitar	MESA/Boogie Mark IV (channel II)
Cali IV Lead	Guitar	MESA/Boogie Mark IV (lead channel)
Cali Rectifire	Guitar	MESA/Boogie Dual Rectifier®
Archetype Clean	Guitar	Paul Reed Smith® Archon® (clean channel)
Archetype Lead	Guitar	Paul Reed Smith Archon (lead channel)
ANGL Meteor	Guitar	ENGL® Fireball 100
Solo Lead Clean	Guitar	Soldano SLO-100 (clean channel)
Solo Lead Crunch	Guitar	Soldano SLO-100 (crunch channel)
Solo Lead OD	Guitar	Soldano SLO-100 (overdrive channel)
PV Panama	Guitar	Peavey® 5150®
Revv Gen Purple	Guitar	Revv® Generator 120 (purple/gain ch. 3)
Revv Gen Red	Guitar	Revv Generator 120 (red/high gain ch. 4)
Das Benzin Mega	Guitar	Diezel VH4 (mega channel)
Das Benzin Lead	Guitar	Diezel VH4 (lead channel)
Line 6 Elektrik	Guitar	Line 6 Original
Line 6 Doom	Guitar	Line 6 Original
Line 6 Epic	Guitar	Line 6 Original
Line 6 2204 Mod	Guitar	Line 6 Original
Line 6 Fatality	Guitar	Line 6 Original
Line 6 Litigator	Guitar	Line 6 Original
Line 6 Badonk	Guitar	Line 6 Original

Amp Models		
Model	Subcategory	Based On*
Ampeg B-15NF	Bass	Ampeg B-15NF Portaflex®
Ampeg SVT Nrm	Bass	Ampeg SVT® (normal channel)
Ampeg SVT Brt	Bass	Ampeg SVT (bright channel)
Ampeg SVT-4 PRO	Bass	Ampeg SVT-4 PRO
Woody Blue	Bass	Acoustic® 360
Agua 51	Bass	Aguilar® DB51
Cali Bass	Bass	MESA/Boogie M9 Carbine
Cali 400 Ch1	Bass	MESA/Boogie Bass 400+ (channel 1)
Cali 400 Ch2	Bass	MESA/Boogie Bass 400+ (channel 2)
G Cougar 800	Bass	Gallien-Krueger® GK 800RB
Del Sol 300	Bass	Sunn® Coliseum 300
Busy One Ch1	Bass	Pearce BC-1 preamp (channel 1)
Busy One Ch2	Bass	Pearce BC-1 preamp (channel 2)
Busy One Jump	Bass	Pearce BC-1 preamp (jumped)
Studio Tube Pre	Preamp > Mic	Requisite Y7 mic preamp

Tonestack and deeper amp parameters found on subsequent pages may differ depending on the amp model selected.

Common Amp Settings

Parameter	Description
Master	Adjusts the amount of power amp distortion. This parameter is highly interactive with all other power amp parameters—the lower the Master is set, the less effect the other controls will have.
Sag	Lower Sag values offer “tighter” responsiveness for metal and djent playing; higher values provide more touch dynamics & sustain for blues and classic rock riffs.
Hum	Controls how much heater hum and AC ripple interacts with your tone.
Ripple	At higher settings, things get freaky.
Bias	Changes the Bias of the power tubes. Lower values achieve a “colder” Class AB biasing. At maximum, the amp is operating in Class A.
Bias X	Determines how the power amp tubes’ voicing reacts when pushed hard. Set low for a tighter feel. Set high for more tube compression. This parameter is highly reactive with the Drive and Master settings.

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Amp

Amp blocks are identical to Amp+Cab blocks, except they contain no matched cab model.



Preamp

We've also included a complete set of Preamp versions of each Amp model, which provide the tone of just the preamp stage of the amp—recommended when feeding Helix into an external amplifier (either via 1/4" to your traditional amp or via L6 LINK to a Line 6 Powercab Plus, DT25, or DT50).



Preamp blocks require less DSP than a full Amp block.

Cab

There are two subcategories of Cab blocks—Single and Dual. Not surprisingly, dual Cabs take twice as much DSP as single Cabs.



To change the first cab model in a Cab > Dual block, press <PAGE until the left cab icon is white and turn the joystick. To change the second cab, press PAGE> until the right cab icon is white and turn the joystick.



Cab Models		
Model	Subcategories	Based On*
Soup Pro Ellipse	Single, Dual	1 x 6x9" Supro S6616
1x8 Small Tweed	Single, Dual	1x8" Fender Champ
1x10 US Princess	Single, Dual	1x10" Fender Princeton Reverb
1x12 Field Coil	Single, Dual	1x12" Gibson EH185
1x12 Fullerton	Single, Dual	1x12" Fender 5C3 Tweed Deluxe
1x12 Grammatico	Single, Dual	1x12" Grammatico LaGrange
1x12 US Deluxe	Single, Dual	1x12" Fender Deluxe Oxford
1x12 US Princess	Single, Dual	1x12" Fender Princeton Reverb
1x12 Celest 12H	Single, Dual	1x12" ÷13 JRT 9/15 G12 H30
1x12 Blue Bell	Single, Dual	1x12" Vox AC-15 Blue
1x12 Lead 80	Single, Dual	1x12" Bogner Shiva CL80
1x12 Cali IV	Single, Dual	1x12" MESA/Boogie Mk IV
1x12 Cali Ext	Single, Dual	1x12" MESA/Boogie EVM12L
2x12 Double C12N	Single, Dual	2x12" Fender Twin C12N
2x12 Mail C12Q	Single, Dual	2x12" Silvertone 1484
2x12 Interstate	Single, Dual	2x12" Dr Z Z Best V30
2x12 Jazz Rivet	Single, Dual	2x12" Roland JC-120
2x12 Silver Bell	Single, Dual	2x12" Vox AC-30TB Silver
2x12 Blue Bell	Single, Dual	2x12" Vox AC-30 Fawn Blue
2x12 Match H30	Single, Dual	1x12" Matchless DC-30 G12H30
2x12 Match G25	Single, Dual	1x12" Matchless DC-30 Greenback 25
4x10 Tweed P10R	Single, Dual	4x10" Fender Bassman P10R
4x12 WhoWatt 100	Single, Dual	4x12" Hiwatt AP Fane®
4x12 Mandarin EM	Single, Dual	4x12" Orange Eminence®
4x12 Greenback25	Single, Dual	4x12" Marshall Basketweave G12 M25
4x12 Greenback20	Single, Dual	4x12" Marshall Basketweave G12 M20
4x12 Blackback30	Single, Dual	4x12" Park 75 G12 H30
4x12 1960 T75	Single, Dual	4x12" Marshall 1960 AT75
4x12 Uber V30	Single, Dual	4x12" Bogner Uberkab V30
4x12 Uber T75	Single, Dual	4x12" Bogner Uberkab T75

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Cab Models		
Model	Subcategories	Based On*
4x12 Cali V30	Single, Dual	4x12" MESA/Boogie 4FB V30
4x12 XXL V30	Single, Dual	4x12" ENGL XXL V30
4x12 SoloLead EM	Single, Dual	4x12" Soldano
1x12 Del Sol	Single, Dual	1x12" Sunn Coliseum
1x15 Ampeg B-15	Single, Dual	1x15" Ampeg B-15
1x18 Del Sol	Single, Dual	1x18" Sunn Coliseum
1x18 Woody Blue	Single, Dual	1x18" Acoustic 360
2x15 Brute	Single, Dual	2x15" MESA/Boogie 2x15 EV
4x10 Ampeg HLF	Single, Dual	4x10" Ampeg SVT 410HLF
6x10 Cali Power	Single, Dual	6x10" MESA/Boogie Power House
8x10 Ampeg SVT E	Single, Dual	8x10" Ampeg SVT

Mic Models	
Model	Based On*
57 Dynamic	Shure® SM57
409 Dynamic	Sennheiser® MD 409
421 Dynamic	Sennheiser MD 421-U
30 Dynamic	Heil Sound® PR 30
20 Dynamic	Electro-Voice® RE20
121 Ribbon	Royer® R-121
160 Ribbon	Beyerdynamic® M 160
4038 Ribbon	Coles 4038
414 Cond	AKG® C414 TLII
84 Cond	Neumann® KM84
67 Cond	Neumann U67
87 Cond	Neumann U87
47 Cond	Neumann U47
112 Dynamic	AKG D112
12 Dynamic	AKG D12
7 Dynamic	Shure SM7

Cab Settings

Parameter	Description
Mic	Selects one of the 16 available mic models.
Distance	Sets the distance (1 inch to 12 inches) between the mic and the speaker grille.
Low Cut	Filters a portion of the cab's bass and/or treble frequencies, which can help remove rumble and/or high-end harshness.
High Cut	
EarlyReflec	Sets the amount of "early reflections." Higher values add more reflective room sound to your Amp tone.
Level	Adjusts the overall output level of the Cab.

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Impulse Response (IR)

Impulse Responses are mathematical functions representing the sonic measurements of specific audio systems (for Helix, speaker cabinet and microphone combinations). Helix can load and store up to 128 custom or third-party IRs at a time.



TIP: You can get a free pack of IRs right now, available at line6.com/allure, or check out the ever-growing number of custom Helix presets and IR bundles on [Line 6 Marketplace](https://line6.com/marketplace).

IR Formats

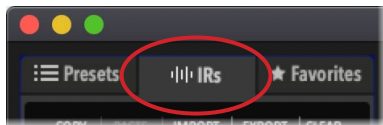
For all Helix family devices, as well as Helix Native plugin, the following IR file types are supported.

- **Helix Impulse Response (.hir)** - This is the proprietary Line 6 IR file format. All IRs purchased through the Line 6 Marketplace are of this file type—see [“Marketplace” on page 6](#).
- **WAV (.wav)** - Most IR producers and vendors typically offer IRs in the .wav format. It is possible to import a mono or stereo .wav file IR, regardless of its bit depth, length, or sample rate frequency. Upon import, IR .wav files are automatically converted to 48kHz sample rate, 32-bit, mono, and 2,048 sample length for Helix. You can use the HX Edit app’s Preferences to set the preferred behavior for importing Stereo WAV IRs (import the left or right channel data of the file, or a mix of both).

Loading IRs into Helix

Loading Impulse Response files into Helix requires connecting to the HX Edit application in your Mac or Windows computer. The HX Edit application is available as a free download from line6.com/software.

1. **Connect Helix to your computer via USB and open the HX Edit application.**
2. **Click the IRs tab.**



3. **Drag one or more IR files from the desktop or any Finder window directly into the HX Edit application’s IRs list (or use the HX Edit IR - Import command).**

The HX Edit app updates the Helix hardware’s IR list automatically. Helix can load and store up to 128 IRs at a time.

Loading an IR in an IR Block

Once you’ve imported IR files into Helix (see the previous section), you can then put them to use by adding one or more IR blocks into your tone. It is recommended to use an Amp block preceding an IR block (rather than an Amp+Cab type block).

1. **Move the joystick knob to select an empty block location just to the right of your Amp block on the signal path.**
 2. **Push the joystick knob and turn it to select the Impulse Response category.**
 3. **Push the joystick knob to select Mono, and push again to select 1024-sample IR.**
- NOTE:** You may optionally choose the higher fidelity 2048-sample IR (there is a max. limit of one 2048-sample IR block per path, or two 1024-sample IR blocks per path).
4. **Turn Knob 1 (IR Select) to choose the IR index (1~128) to utilize the preferred IR file within your IR library.**

Use Knobs 2~5 to fine tune-the IR settings to taste—see below.



TIP: Optionally, you can create a Snapshot assignment (see [“Using Snapshots” on page 48](#)) on the IR Select parameter, which then allows you to change between different IRs within the block per snapshot!

Impulse Response Settings

Knob	Parameter	Description
1	IR Select	Selects one of the 128 available IR locations. If a location contains an IR, the inspector header displays its name; otherwise, it reads “<EMPTY>.”
2	Low Cut	Filters a portion of the IR’s bass and/or treble frequencies, which can help remove rumble and/or high-end harshness.
3	High Cut	
4	Mix	Blends the IR signal with the dry signal passed through the IR block. When set to 0%, the path bypasses the IR completely. When set to 100%, the entire path is fed through the IR, and no dry signal is heard.
5	Level	Adjusts the overall output level of the IR block.

IR File Reference

Once an IR block is configured to utilize an IR index slot that includes an imported IR (.wav or .hir) file, and the preset then saved, the preset creates a “reference signature” to the imported IR from its file name. Likewise, if you save your IR block as a Favorite (see [“Adding a Block to Favorites” on page 19](#)) or set the IR block’s current settings as the User Model Defaults (see [“Saving a Model’s Default Settings” on page 20](#)), the IR block also creates a reference to the specific IR file within your IR library. Therefore, if you re-order IRs within the IR library list, your preset (or IR Favorite or User Model Default block) will still intelligently reference the originally associated IR file, even if it now resides in a different IR Library index location. This also makes it easy to share your presets with friends since they can then insert the same IR file in any slot within their Helix IR library, and the preset will find it. Please also refer to the [HX Edit Pilot’s Guide](#) for additional info regarding the use of IRs.

Send/Return

Each of the Helix four sends and returns can be used independently or used together as an FX loop.



FX loops let you dynamically insert your favorite external stompboxes (or rack effects) into any location in your tone.

NOTE: Each send and return pair can be set to instrument level (for inserting stompboxes) or line-level operation. See [“Global Settings > Ins/Outs”](#). Send/Return blocks also offer clip indicators for level management—see [“Block Level Indicators and Meters” on page 44](#).

NOTE: Each return can be used only once in a preset. For example, if you add a Return 1 block (or assign one of the input blocks to Return 1), Return 1/2, FX Loop 1, and FX Loop 1/2 items will all appear grayed out in the model list, as they also utilize Return 1.

Send Settings

Knob	Parameter	Description
1	Send	Adjusts the level sent to your external devices.
2	Dry Thru	Adjusts the signal’s level through the Send block, independent of the Knob 1 (Send) level. Normally, this should be set to 0.0dB.

Return Settings

Knob	Parameter	Description
1	Return	Adjusts the level received at the Return jack.
2	Mix	Blends the Return signal vs. the dry signal passed through the Return block. When set to 0%, the path bypasses the Return completely. When set to 100%, the entire signal is fed from the Return, and no dry thru signal is heard.

FX Loop Settings

Knob	Parameter	Description
1	Send	Adjusts the level sent to your external device.
2	Return	Adjusts the level received at the Return jack.
3	Mix	Blends the FX loop signal vs. the dry signal passed through the FX Loop block. When set to 0%, the path bypasses the FX loop completely. When set to 100%, the entire path is fed through the FX loop, and no dry thru signal is heard. (This means that if you don’t currently have your external gear connected to the Send & Return jacks, you won’t hear any output signal unless you bypass the FX Loop block!)
4	Trails	<i>Trails Off:</i> An external stompbox is instantly muted when the FX Loop block is bypassed. <i>Trails On:</i> An external delay or reverb stompbox continues to decay naturally when the FX Loop block is bypassed, or a different snapshot is selected.

Looper

Helix offers three different Looper types: the 1 Switch, 6 Switch, and Shuffling Looper. Many factory presets already include a Looper block, which is already assigned to a Stomp mode footswitch. A Looper block can exist anywhere on either Path 1 or Path 2—one Looper block per preset maximum.



Looper Models (Mono & Stereo)

Model	Based On*	Max. Loop Length	
		Half Speed	Full Speed
6 Switch Looper (Mono)	Line 6 Original	120 seconds	60 seconds
1 Switch Looper (Mono)	Line 6 Original	120 seconds	60 seconds
Shuffling Looper (Mono)	Line 6 Original	n/a	60 seconds
6 Switch Looper (Stereo)	Line 6 Original	60 seconds	30 seconds
1 Switch Looper (Stereo)	Line 6 Original	60 seconds	30 seconds
Shuffling Looper (Stereo)	Line 6 Original	n/a	30 seconds

IMPORTANT! You may change presets while looping, but loop playback will stop unless the preset you select includes the *same* type of looper block (same 6 Switch, 1 Switch, or Shuffle looper type, and same mono or stereo type).

TIP: The **Command Center - HX Looper** options allow you to customize your Stomp Mode footswitches further to easily trigger multiple looper functions for the 6 Switch or 1 Switch Loopers—see [“Command Center” on page 58](#).

You can also control the 6 Switch or 1 Switch Loopers via external MIDI—see [“MIDI” on page 74](#).

Looper Settings (6 Switch & 1 Switch Looper)

Knob	Parameter	Description
1	Playback	Adjusts looper playback level. You may find it useful to turn this down a bit so your live guitar can be slightly louder.
2	Overdub	<i>Relatively</i> sets the level of your loop while overdubbing. For example, if your Overdub Level is set to 90%, each time your loop repeats, its volume will be reduced by 10%, sounding quieter and quieter with each overdub pass.
3	Low Cut	Filters a portion of the loop’s bass and/or treble frequencies, which can improve the mix with your live guitar.
4	High Cut	

Using the 6 Switch Looper

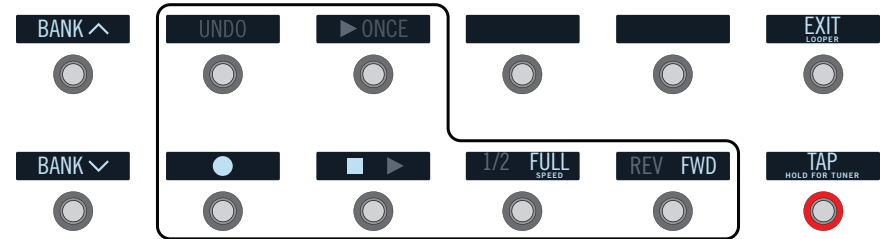
Once assigned, pressing the Stomp mode footswitch for a 6 Switch Looper activates its Looper Footswitch mode, where all its functions are conveniently laid out and labeled on the Helix Control footswitches.

1. **Add a 6 Switch Looper block to your preset and assign it to a footswitch in Stomp mode.**

See [“Quick Bypass Assign” on page 52](#).

2. **From Stomp mode, press the “6 Switch Looper” footswitch.**

Looper mode appears:



Switch	Description
●	Step on ● to start recording a loop. Step on ■ ► to end the loop and immediately start playback. Step on ● to overdub additional parts. Step on ■ ► again to stop playback.
UNDO	If you make a mistake on your last overdub, step on UNDO to erase it.
► ONCE	Step on ► ONCE to play the recorded loop once through.
1/2 FULL SPEED	Recording at full speed and then switching to 1/2 speed will also drop the loop down one octave. Recording at 1/2 speed will double your looping memory, and switching to full speed will cause the loop to play at double speed (up an octave).
REV FWD	Step on REV/FWD to hear your loop backward.

NOTE: If you press ● while loop playback is stopped, this will always record a new loop, and any previous recording will be discarded.

While in Looper mode, stepping on BANK ^ or BANK v temporarily enters Preset mode. Once you’ve selected a preset, Helix returns to Looper mode.

3. **To return to the previous mode, press FS6 (EXIT).**

Using the 1 Switch Looper

As its name implies, all functions for the **1 Switch Looper** are available from its assigned Stomp mode footswitch, described as follows.

1. Add a 1 Switch Looper block to your preset and assign it to a footswitch in Stomp mode.

See [“Quick Bypass Assign” on page 52](#).

2. Press the 1 Switch Looper switch.

The LED lights red, indicating the loop is recording.

3. Press the 1 Switch Looper switch again.

The LED lights green, indicating the loop is playing back.

4. Press the 1 Switch Looper switch again.

The LED lights amber, indicating the loop is in overdub mode. Subsequent presses of the switch toggle between play and overdub mode.

5. While the Looper is in play or overdub mode, press and hold the switch for 1 second.

The most recent recording is undone. Holding the switch again will redo the recording.

6. Quickly double-press the 1 Switch Looper switch.

Playback/recording stops, and the LED lights white, indicating a loop is in memory.

7. While Looper playback/recording is stopped, press and hold the switch for 1 second.

The most recent recording is deleted, and the LED lights dim white.

Using the Shuffling Looper

Part looper, part sampler, part performance instrument—the Shuffling Looper chops up your recorded loop, randomizes the slices, and gives you control over reordering, octave shifting, reversing, repeating, and more.

1. Add a Shuffling Looper block to your preset and assign it to a footswitch in Stomp mode.

See [“Quick Bypass Assign” on page 52](#).

2. Turn Knob 1 (Slices) to set the number of slices your loop will be chopped into.

3. Press the switch to begin recording.

The LED lights red, indicating the loop is recording.

4. When done recording your loop, press the switch.

The LED lights green, and the sliced loop sequence immediately plays.

5. During playback, adjust the following knobs (or assign them to controllers, like expression pedals):

- **Slices**—Determines the number of slices your loop will be chopped into
- **SeqLength**—Determines the number of steps in the sequence before it loops
- **Shuffle**—Determines the likelihood of slices shuffling/reordering
- **Octaves**—Determines the likelihood of slices playing back an octave higher or lower
- **Reverse**—Determines the likelihood of slices playing backward
- **Repeat**—Determines the likelihood of slices repeating
- **Smoothing**—Higher values apply smoothing between slices and can give a synth-pad type quality. Lower values maintain transients. Or, set it just high enough to avoid pops and clicks
- **Seq Drift**—Determines the likelihood of a slice changing after it has played
- **Playback**—Sets the playback level of the loop sequence
- **Low Cut and High Cut**—Adjust these to filter some of the bass or treble frequencies of the loop playback



TIP: To only use pitch and reverse effects on your loop, turn Shuffle down to 0% and set the Slices and SeqLength to the same value.

6. Want to change it up? While the loop is playing, press the switch to randomize its slice sequence.

7. Quickly double-press the Looper switch.

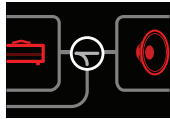
Playback/recording stops, and the LED lights white, indicating a loop is in memory. Press again to restart.

8. While the loop is playing or stopped, press and hold the switch.

The recording is deleted, and the LED lights dim white.

Split

A Split block appears any time a parallel path is created but is visible only when selected:



Helix has four different types of Split blocks: Y, A/B, Crossover, and Dynamic.

Y By default, the signal is fed to Paths A (upper) and B (lower) evenly. The individual Balance (pan) options offer control of the stereo balance sent to each path.

A/B The signal can be sent in different amounts to Paths A (upper) and B (lower).

Crossover Treble frequencies are sent to Path A (upper), and bass frequencies are sent to Path B (lower).

Dynamic Similar to a crossover, except the audio content exceeding the audio Threshold is sent to Path A, and the content below the audio Threshold is sent to Path B.

Split > Y Settings

Knob	Parameter	Description
1	Balance A	Adjusts the stereo balance (pan) of the signal sent to Path A (upper).
2	Balance B	Adjusts the stereo balance (pan) of the signal sent to Path B (lower).

Split > A/B Settings

Knob	Parameter	Description
1	Route To	Determines the amount of the signal sent to Path A vs. Path B. Press the knob to set to Even Split.

Split > Crossover Settings

Knob	Parameter	Description
1	Frequency	Any signal above this frequency is sent to Path A (upper); any signal below this frequency is sent to Path B (lower).
2	Reverse	When on, reverses the path assignments (any signal above the crossover frequency is sent to Path B, any signal below the crossover frequency is sent to Path A).

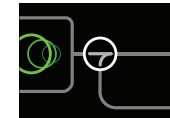
Split > Dynamic Settings

Knob	Parameter	Description
1	Threshold	Any signal below the Threshold volume level is routed to Path A; any signal above the Threshold is routed to Path B.
2	Attack	Determines how fast the signal is routed to Path B once reaching the Threshold.
2	Decay	Determines how fast the signal returns to Path A once falling below the Threshold.
2	Reverse	When on, reverses the path assignments (any signal above the Threshold value is sent to Path B, any signal below the Threshold value is sent to Path A).

NOTE: Much like any Effects type block, a Split block can be bypassed, as well as have a bypass assignment created for it. When bypassed, regardless of the Split type in use, the block sends both left and right signals to both paths equally.

Merge

A Merge > Mixer block appears any time a parallel path is created but is visible only when selected:



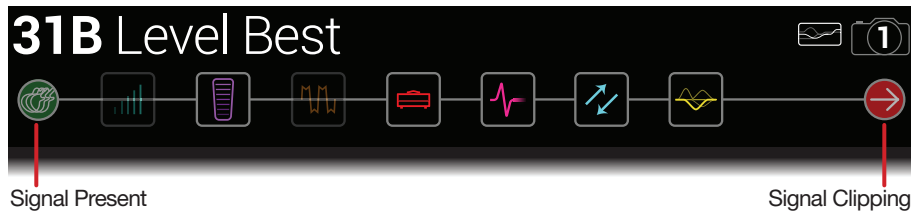
Knob	Parameter	Description
1	A Level	Adjusts the output level of Path A (upper).
2	A Pan	Adjusts the left/right stereo balance of Path A.
3	B Level	Adjusts the output level of Path B (lower).
4	B Pan	Adjusts the left/right stereo balance of Path B.
5	B Polarity	Inverts the polarity of Path B. Typically, this should be set to "Normal."
6	Level	Adjusts the overall output level of the Merge block.

Block Level Indicators and Meters

Helix includes real-time level indicators and metering for specific block types, which are very handy for visually checking and optimizing the gain staging throughout your tone's signal flow.

Signal Present and Clip Indicators

For path Input and Output blocks - These blocks display with a green fill to indicate a signal is present and a red fill if the signal is too hot. If clipping is indicated you should reduce the signal level before and/or at the red indicated Input/Output block

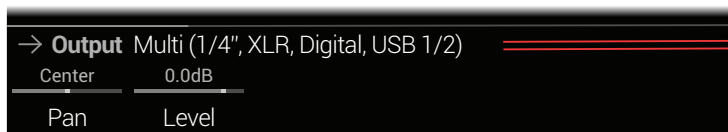
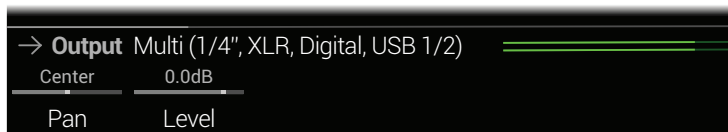


For Send/Return - Send, Return, and FX Loop blocks - Whenever the signal level at any of these block types is too hot, a red fill color is displayed as a clip indicator. If clipping is indicated, you should reduce the signal level preceding and/or at the red indicated Send/Return block.



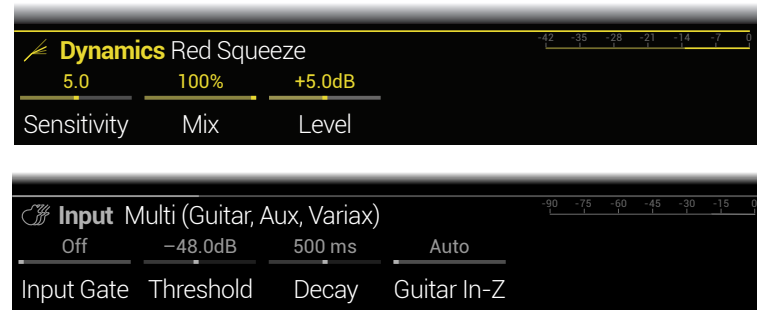
Level Meters

For Output, Send, or FX Loop type blocks - When one of these block types is selected within the Signal Flow, you'll see its meter appear within the lower Inspector portion of the Helix Home screen. The meter measures output level and is displayed green for normal signal levels. Whenever the signal is too hot, the meter is displayed red to alert you of clipping. A single meter bar is displayed for mono blocks, and a dual bar for stereo blocks.



Gain Reduction Meters

For all Dynamics - Compressor and Input block - Gate type blocks - A meter measures the dB amount of gain reduction being applied by the effect, providing a helpful indicator for adjusting your compression and gate parameters. A single gain reduction meter is displayed for mono and stereo Dynamics models, and a triple meter for the 3-Band Comp model (one for each frequency band).



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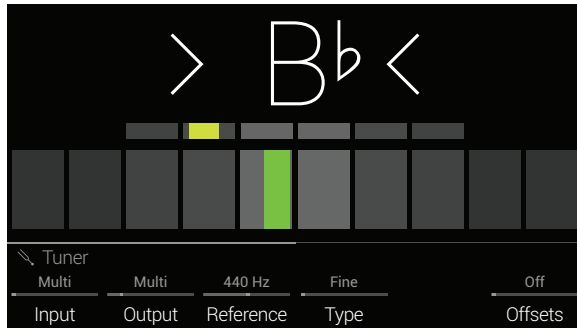
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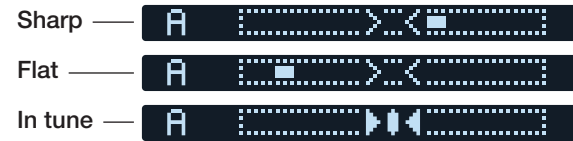
Tuner

Helix offers three Tuner types, Fine (shown below), Coarse, and Strobe, selectable from Knob 4 of the Tuner Settings—see the following table.

1. On Helix Rack, hold TAP/TUNER until the Tuner screen appears:



On Helix Control, hold the TAP footswitch until the Tuner screen appears:



2. Pluck an individual string on your guitar.

When a box left of the center is lit red or yellow, your string is flat. When a box right of center is lit red or yellow, your string is sharp. When one of the center boxes on the lower row is lit green, the top row of smaller bars can be used for greater precision. When both arrows are illuminated, your string is perfectly in tune.

3. To exit the Tuner, step on any footswitch (or press).

All tuner settings are global.

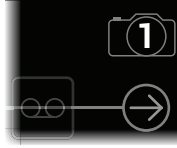
TIP: If you have a favorite pedal or rack tuner and wish to use it instead of Helix's tuner, connect Send 1, 2, 3, or 4 to your tuner's input and turn Knob 2 (Tuner Out) to select that Send. This way, every time you hold the TAP footswitch, Helix will automatically route the signal to your favorite tuner.

Tuner Settings

Page	Knob	Parameter	Description
1	1	Tuner In	Determines which input the tuner will listen to. Normally, you should choose "Multi," which listens to the Guitar, Aux, and Variax inputs simultaneously.
	2	Tuner Out	Determines the active output while the Tuner screen is active. If you prefer to hear nothing while tuning, choose "Mute." Normally, you should choose "Multi," which routes the input to 1/4", XLR, Digital, and USB 1/2.
	3	Reference	If you'd like to tune to a reference other than standard 440 Hz, select from 425 to 455 Hz.
	4	Type	Choose between three Tuner types: Fine (color-changing, needle tuner with fine-tuning bar, the default type), Coarse (color-changing needle tuner with no fine-tuning bar), or Strobe. The Tuner accurately tunes notes down to 21.83 Hz (low F) for 5-string basses.
2	6	Offsets	Enables the Tuner offsets displayed on Page 2.
	1	String 6 Offset	Some guitarists feel that tuning certain strings slightly sharp or flat in relation to concert tuning can improve intonation. String offsets calibrate the tuner so that these slightly out-of-tune pitches appear as in tune. String 6 is low E, and String 1 is high E. Tuning offsets won't be applied unless Knob 6 (Offsets) on Page 1 is turned on.
	2	String 5 Offset	
	3	String 4 Offset	
	4	String 3 Offset	
	5	String 2 Offset	
6	String 1 Offset		

Snapshots

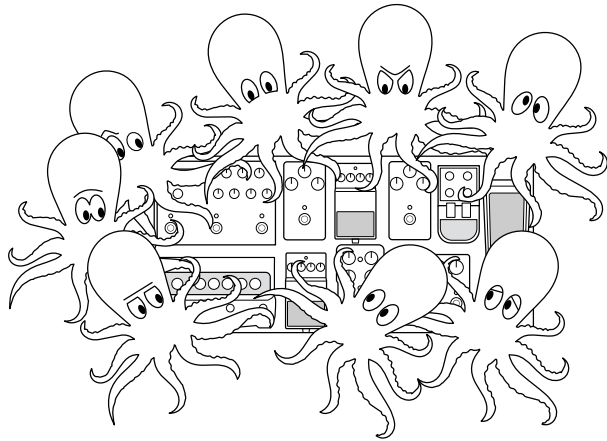
A camera icon appears in the upper right corner of the Helix device screen. Its number indicates the current snapshot.



What are Snapshots?

Snapshots are presets within a preset.

Imagine you have eight pet octopuses, all slithering around your amp and pedalboard. Instead of tap-dancing on your pedals (and accidentally stepping on a tentacle), you shout, “Okay, gang—here’s the verse... now!” Your octopuses switch some pedals on, switch other pedals off, and tweak all your amps and pedals’ knobs to make the best possible settings for your song’s verse, all seamlessly with spillover delay and reverb trails. Then you shout, “Ready for the chorus... now!” Your octopuses instantly tweak everything for your song’s chorus. That’s the power of snapshots.



The only thing your octopuses/snapshots *can’t* do is rearrange your pedalboard or swap out an effect or amp for a different one (unless both effect blocks exist in the same preset).

Each preset can have up to 64 parameters assigned to Snapshots; hence, eight octopuses with eight tentacles each. The octopuses can remember eight separate groups of on/off statuses and setting tweaks per preset; that is, Helix has eight snapshots per preset.

Each of the eight snapshots in Helix stores and recalls the state of certain elements in the current preset, including:

- **Block Bypass**—The bypass (on/off) state of all processing blocks (except Looper).

NOTE: The bypass state of blocks is automatically stored and recalled per snapshot. Optionally, you can exclude a block’s bypass state from being affected by snapshots—see “[Snapshot Block Bypass On/Off](#)” below.

- **Parameter Control**—The values of any parameters assigned to controllers (up to 64 per preset).
- **Command Center**—The values of any instant MIDI CC, Bank/Prog, MMC, CV Out, and HX Preset/Snapshot/Looper messages, plus the state (dim or lit) of any CC Toggle, CV Toggle, and Ext Amp messages. See “[Command Center](#)”
- **Tempo**—The current system tempo, if “[Global Settings > MIDI/Tempo](#)” > Tempo Select is set to “Per Snapshot.” (By default, it’s set to “Per Preset.”)

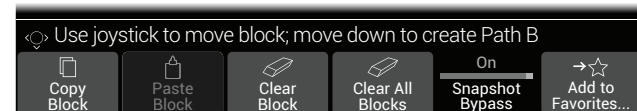
Depending on how you set them up, snapshots can act as **eight variations of the same tone, eight drastically different tones, or any combination thereof—all within the same preset.** A single preset’s snapshots may accommodate all the various tones required for a song in many cases.

IMPORTANT! Snapshots make it easy for multiple blocks assigned to the same footswitch to end up in unexpected states. For example, if FS2 toggles between Delay (ON) and Reverb (OFF) blocks, and a snapshot turns the Reverb on, FS2 will suddenly turn both blocks on and off together.

Snapshot Block Bypass On/Off

There may be situations where you *don’t* want snapshots to control a particular block’s bypass state; that is, you’d prefer to turn it on and off manually. For example, you may want manual control of a Boost block at any time without worrying whether a particular snapshot might turn it on or off.

1. **Within the Home screen, select a processing block within the signal flow and press ACTION.**
2. **Turn Knob 5 (Snapshot Bypass) to set the behavior for the block.**

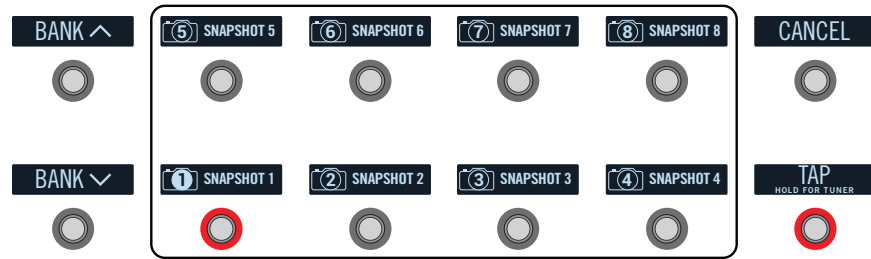


By default, all blocks are set to “On” to automatically control their bypass states via snapshots. Change to “Off” to disable snapshot control of the selected block’s bypass state.

Using Snapshots

1. Press BANK ^ and BANK v simultaneously to enter Snapshot footswitch mode.

The middle eight switches flash, indicating a snapshot is ready to be selected. The current snapshot's footswitch lights red, and its camera lens appears inverted.



2. Press one of the eight snapshot switches to select a different snapshot.

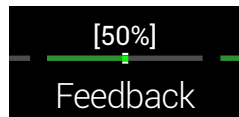
NOTE: If you don't want Snapshot footswitches to disappear after selecting one, set "[Global Settings > Footswitches](#)" > Knob 4 (Snapshot Mode Switches) to "Manual Return." In this case, Helix stays in Snapshot footswitch mode until you press FS6 (CANCEL).

Alternatively, **press the PRESETS knob and turn Knob 5 (Select Snapshot).**

NOTE: If you select a snapshot that hasn't yet been altered, it appears the same as the snapshot you came from. As soon as you alter a new snapshot (say, by enabling or bypassing an amp or effect block), the snapshot becomes "active" and remembers any changes.

3. Adjust the preset by doing one or more of the following:

- Turn several blocks on or off by pressing stomp mode footswitches and/or the BYPASS button
- Push-turn a few knobs to assign their parameters to the Snapshots controller automatically. The parameter's values appear white and in brackets to indicate it is assigned.

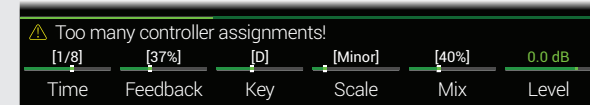


- On the Command Center page, adjust the Instant ⚡ messages' values or press a footswitch assigned to CC Toggle, CV Toggle, Ext Amp, Qwerty Hotkey, or HX Looper. These Command Center-assigned messages are sent when recalling a snapshot—see "[Command Center](#)"

SHORTCUT: Hold ACTION and press a parameter knob to quickly remove any controller assignment (including the Snapshots controller). The value appears in color, indicating no controller is assigned to it.

NOTE: You can also manually assign the Snapshots controller. From the "[Controller Assign](#)" page, select the desired block and parameter and turn Knob 2 (Controller) to select "Snapshot."

NOTE: Each preset can have up to 64 controller assignments, including parameters controlled by Snapshots. If you attempt to add a 65th, "Too many controller assignments!" appears in the header:



In this case, you must clear some controllers to free up assignments. See "[Clearing a Block's Controller Assignment\(s\)](#)" or "[Clearing All Controller Assignments](#)"

4. Switch back to the snapshot you started with.

Helix instantly and seamlessly returns to its previous state.

NOTE: If you've changed "[Global Settings > Preferences](#)" > Snapshot Edits to "Discard," you must save the preset before selecting a different snapshot; otherwise, any edits will be discarded!

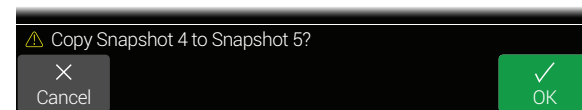
Copying/Pasting a Snapshot

Instead of creating a new snapshot from scratch, you may want to copy an existing one to another snapshot location and tweak just a few things. There are actually two ways to do this:

Quick Copy/Paste Snapshot from Footswitches

1. Press BANK ^ and BANK v simultaneously to enter Snapshot footswitch mode.
2. While touch-holding the footswitch for the snapshot you want to copy, briefly touch and release the footswitch for the snapshot you want to overwrite.

A dialog panel appears:



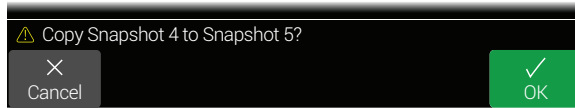
3. Press Knob 6 (OK).

NOTE: The "touch" behavior for footswitches can be disabled using the Stomp Select option in "[Global Settings > Footswitches](#)"

Copying/Pasting a Snapshot from the Front Panel

1. Press **PRESETS** to open the Setlist menu and turn **Knob 5 (Select Snapshot)** to select the snapshot you want to copy.
2. Press **ACTION** and then **Knob 1 (Copy Snapshot)**.
Helix returns to the Setlist menu.
3. Turn **Knob 5 (Select Snapshot)** to choose the snapshot you want to overwrite.
4. Press **ACTION** and then **Knob 2 (Paste Snapshot)**.

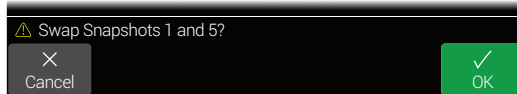
A dialog panel appears:



5. Press **Knob 6 (OK)**.

Swapping Snapshots

1. Touch (but don't press) the two snapshot switches you want to swap until the following dialog appears:



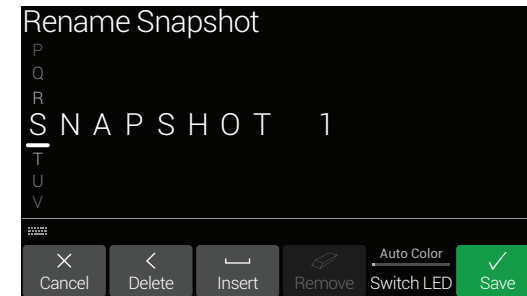
2. Press **Knob 6 (OK)**.

Customizing a Snapshot Footswitch Name and Color

Instead of having to remember the difference between “SNAPSHOT 1” and “SNAPSHOT 2,” it’s helpful to rename your snapshots something descriptive, such as “VERSE,” “BIG SOLO,” or “D. IGLOO.” It can also be helpful to customize the footswitch LED colors.

1. Press **PRESETS** to open the Setlist menu.
2. Press **Knob 6 (Rename Snapshot)**.

The Rename Snapshot screen appears:



Move the joystick left or right to move the cursor. Snapshot names are limited to 10 characters.

Turn the joystick (or move it up/down) to change the selected character.

Press **Knob 2 (Delete)** to delete the selected character and shift all following characters to the left.

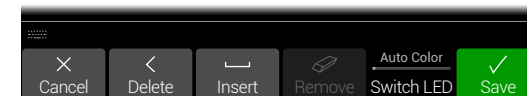
Press **Knob 3 (Insert)** to insert a space and shift all following characters to the right.



SHORTCUT: Press the joystick to cycle through A, a, 0, and [SPACE].

Press **Knob 4 (Remove)** to remove the custom name. Remove is grayed out until a custom name is applied.

3. To optionally change a footswitch’s LED color, turn **Knob 5 (Switch LED)** to select the desired color. The default “Auto Color” setting is red.



4. Press **Knob 6 (Save)**.

Snapshot names and LED colors are only retained if you save the preset.

Saving Snapshots

Press **SAVE** twice to save the preset.

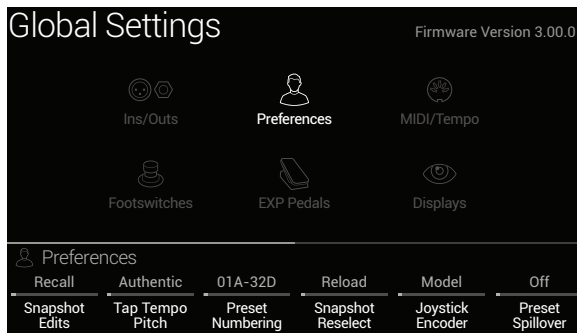
Saving a preset stores all of its 8 snapshots automatically.

NOTE: Selecting a preset recalls the Snapshot that was active when the preset was saved.

Determining Snapshot Edit Behavior

Say you're on Snapshot 2 (VERSE), and you change a few things—switch a delay block on, switch a mod block off, tweak an Amp's Gain parameter from your Variax Tone knob, etc. If you switch to Snapshot 4 (CHORUS) and then back to Snapshot 2 for the second verse, should Helix recall those changes or return Snapshot 2 to its state when the preset was last saved? There's no right answer, and Helix lets you choose.

1. Press **≡** and then **Knob 6 (Global Settings)**.
2. Move the joystick to select the **Preferences** submenu.



3. Turn **Knob 1 (Snapshot Edits)** to set snapshot edit behavior:

- **Recall**—Any snapshot edits are recalled when jumping from snapshot to snapshot and appear as you *last left them* (the default)
- **Discard**—Any snapshot edits are discarded when jumping from snapshot to snapshot, and appear as *the preset was last saved*. If you want to save changes made to a snapshot while Snapshot Edits is set to "Discard," **press SAVE twice before selecting another snapshot**

The camera icon on the home screen shows you the Snapshot Edits setting at a glance—When set to "Recall," the camera is gray; when set to "Discard," the camera is red.



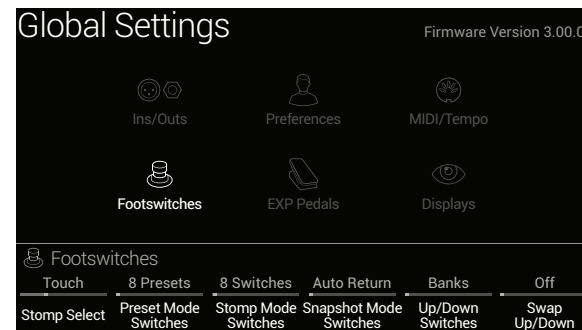
SHORTCUT: At any time, hold **BYPASS** and press **SAVE** to toggle this setting.

Snapshot Reselect

This additional "[Global Settings > Preferences](#)" > Snapshot Reselect parameter adds even more flexibility to the Snapshot footswitches. For example, say you're playing along on Snapshot 2 (VERSE), then you press the Snapshot 4 (CHORUS) to load it. What should happen if you press the Snapshot 4 footswitch again? With Snapshot Reselect set to the default "Reload," Snapshot 4 is simply reloaded again. But when set to "Toggle," it will now load the previously loaded snapshot (Snapshot 2, in this example)—and successive presses of the Snapshot 4 footswitch then continues to toggle between Snapshot 2 and Snapshot 4.

Arranging Preset, Snapshot, and Stomp Switches

1. Press **≡** and then **Knob 6 (Global Settings)**.
2. Move the joystick to select the **Footswitches** submenu.



3. Turn Knob 2 (Preset Mode Switches) to customize the middle eight switches:

- 8 Presets—Two banks of presets (the default)
- Preset/Stomp—One bank of presets on the top row, switches from stomp mode on the bottom row
- Stomp/Preset—Switches from stomp mode on the top row, one bank of presets on the bottom row
- Preset/Snap—One bank of presets on the top row, Snapshots 1-4 on the bottom row
- Snap/Preset—Snapshots 1-4 on the top row, one bank of presets on the bottom row
- Snap/Stomp—Snapshots 1-4 on the top row, switches from stomp mode on the bottom row (see image below)



- Stomp/Snap—Switches from stomp mode on the top row, Snapshots 1-4 on the bottom row
- 8 Snapshots—Snapshots 1-8

4. Turn Knob 5 (Up/Down Switches) to customize FS1 and FS7 on the far left.

Select Banks (Bank Queue), Presets, or Snapshots (see image above).

5. Turn Knob 6 (Swap Up/Down) to On to invert the FS1 and FS7 behaviors.

When set to On, FS7 selects the next snapshot (up), and FS1 the previous snapshot (down).

SHORTCUT: Touch (don't press) hold both FS1 and FS7 for two seconds to swap their ^/v behaviors.

Tips for Creative Snapshot Use

- The obvious use case for snapshots is designating them to specific sections of your song. For example, Snapshot 1 would be the Intro, Snapshot 2 would be Verse 1, Snapshot 3 might be the Chorus, and so on
- Turn any Delay, Reverb, and/or FX Loops blocks' Trails parameter to "On" for seamless spillover between snapshots
- "SNAPSHOT (X)" on the scribble strip isn't very descriptive. Don't forget to name your snapshots—See ["Customizing a Snapshot Footswitch Name and Color"](#)
- Worried that further tweaking might make your tone worse, not better? Snapshots are a great way to compare minor changes between tones without having to take your hands off the guitar.
- Want to switch channels on your external amp but don't want to waste a stomp footswitch on it? Command Center MIDI, CV, and Ext Amp Instant ⚡ messages are automatically transmitted when a Snapshot is recalled.
- Set different keys in Harmony Delay blocks or intervals in Pitch blocks per snapshot
- Set different Variax models (or tuning!) per snapshot
- Having difficulty maintaining consistent volume throughout a song? Set the Output block's Level parameter per snapshot
- In a preset that includes a Looper block, open Command Center and configure an Instant ⚡ command with the HX Looper - Play message assigned for Snapshot 7, and with the HX Looper - Stop message assigned for Snapshot 8. Now record a loop and you can toggle between Snapshot 7 and 8 to play and stop your loop (along with any other actions you might additionally set to happen on these two snapshots)

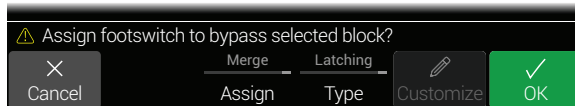
Bypass Assign

Quick Bypass Assign

1. From the Home screen, use the joystick to select the block you wish to assign to a footswitch.

Input, Output, and Merge blocks cannot be assigned to footswitches. Any Split block type *can* be assigned to a footswitch; when bypassed, the signal is split and routed equally to both Path A (upper) and Path B (lower).

2. Step on FS6 (MODE) to select Stomp mode (if not already there).
3. Touch and hold (but don't press) the desired footswitch until the following dialog appears:



If you want to replace any other blocks that may already be assigned to the footswitch, **turn Knob 3 (Assign) to “Replace.”** Otherwise, leave it set to “Merge,” which allows for multiple blocks to be assigned to the same switch.

If you want to change the way the switch behaves, **turn Knob 4 (Type) to “Momentary” or “Latching.”**

Momentary The block is bypassed (or enabled, if already bypassed) for as long as you hold the switch.

Latching The block is bypassed (or enabled, if already bypassed) every time you press the switch. This is the default.

4. Press Knob 6 (OK).

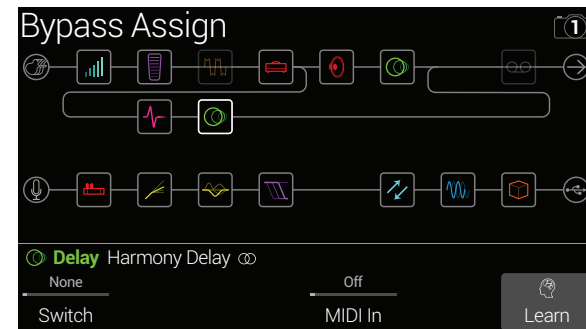
NOTE: This “touch” behavior for footswitches can be disabled using the Stomp Select option in [“Global Settings > Footswitches”](#)

Manual Bypass Assign

A Stomp mode footswitch is the most obvious method for turning blocks on and off. But, Helix can also engage or bypass a block automatically when moving an expression pedal or the Volume or Tone knob on a Variax guitar. For example, moving EXP 1 forward past the heel down position can enable a Wah or Poly Wham block, and returning EXP 1 to the heel position will bypass it again.

1. Press \equiv to open the Menu.
2. Press Knob 1 (Bypass Assign).

The Bypass Assign screen looks very similar to the Home screen:



3. Move the joystick to select the block you want to bypass.

Input, Output, and Merge blocks cannot be bypassed or bypass assigned. Any Processing or Split block type *can* be bypassed or bypass assigned; when a Split block is bypassed, the signal is split and routed equally to both Path A (upper) and Path B (lower).

4. Turn Knob 1 (Switch) to select the desired footswitch, expression pedal, or Variax knob. (Optionally, you can also use Knob 4 to control the block's bypass via MIDI—see step 5.)

None Removes the bypass assignment.

Footswitch 2~11 Stepping on the Stomp mode footswitch turns the block on and off. Selecting Footswitch 2-5 or 8-11 displays Knob 2 (Type). **Turn knob 2 to select “Momentary” or “Latching.”** When set to Momentary, the block is bypassed (or enabled, if already bypassed) for as long as you hold the switch. When set to Latching, the block is bypassed (or enabled, if already bypassed) every time you press the switch.

NOTE: Footswitch type (momentary or latching) is determined per footswitch, not per assignment.

EXP Toe You can also choose to assign a block's bypass to the EXP Toe Switch. However, its behavior is always "Latching."

NOTE: Adding a Volume Pedal, Pan, Wah, Pitch Wham, or Poly Wham block automatically assigns it to "EXP Toe."

EXP Pedal 1, 2, or 3 Moving the expression pedal automatically enables (or bypasses) the block.

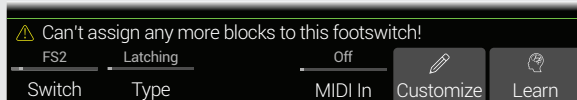
Selecting EXP Pedal 1, 2, or 3 displays Knob 2 (Position) and Knob 3 (Wait). Position determines at which point within the expression pedal's travel the block is enabled or bypassed. 0% is heel down; 99% is toe down. Wait determines how long Helix waits before bypassing the block; for example, you wouldn't want the wah to turn off every time you touched the heel down position in your big funk wah solo.

Variax Vol, Variax Tone Moving the Variax Volume or Tone knob automatically enables (or bypasses) the block.

Selecting Variax Vol or Variax Tone displays Knob 2 (Position) and Knob 3 (Wait). Position determines where in the knob's travel the block is enabled or bypassed. 0% is all the way down (counter-clockwise), and 99% is all the way up (clockwise). Wait determines how long Helix waits before bypassing the block.

NOTE: Footswitch 1 and 7 can be assigned at any time, but they only appear if the Stomp Mode Switches option is set to "10 switches" (see "[Global Settings > Footswitches](#)"). Otherwise, FS1 and FS7 appear as BANK ^ and BANK v.

NOTE: Each footswitch can have up to 8 assignments. If you attempt to add a ninth, a warning appears in the header:



TIP: To reverse bypass behavior, press BYPASS. In such case, the block will be bypassed when moving the expression pedal or Variax knob past the Position location. Since multiple blocks can be assigned to an expression pedal, moving the pedal can turn some blocks on and others off at different positions in the pedal's travel.

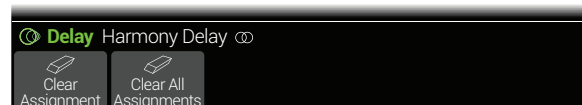
5. If desired, turn Knob 4 (MIDI In) to assign an incoming MIDI CC message to turn the block on and off.

Incoming CC values 0-63 turn the block off; values 64-127 turn the block on. Note that some MIDI CCs are reserved for global functions and cannot be selected—see "[MIDI](#)" on page 74.

SHORTCUT: Alternatively, press Knob 6 (Learn) and then send Helix a MIDI CC message. The incoming message is automatically selected. See "[Controller Assign](#)" for more info.

Clearing Bypass Assignment(s)

While in the Bypass Assign screen, press **ACTION** and then press **Knob 1** to clear the currently selected block's assignment(s). Or, press **Knob 2** to clear all the assignments from all blocks within the preset.



Customizing a Footswitch Label

1. From the Bypass Assign screen, use the joystick to select a block whose bypass is assigned to a footswitch and press Knob 5 (Customize).

The Customize screen appears:




Move the joystick left or right to move the cursor.

Turn the joystick (or move it up/down) to change the selected character.

Press Knob 2 (Delete) to delete the selected character and shift all following characters to the left.

Press Knob 3 (Insert) to insert a space and shift all following characters to the right.


 **SHORTCUT:** Press the joystick to cycle through A, a, 0, and [SPACE].


Press Knob 4 (Remove) to remove the custom label, after which the footswitch label displays its normal assignment. Remove is grayed out until a custom name is applied.

2. To customize the footswitch's LED color, turn Knob 5 (Switch LED) to select the desired color (or turn it off).

Normally, you should leave this set to "Auto Color."

3. Press Knob 6 (OK).

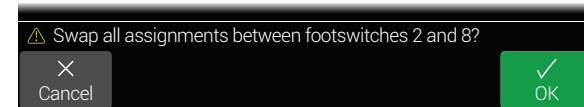
 **SHORTCUT:** Once any item has been assigned to a footswitch, touch and hold (but don't press) the footswitch, and a duplicate Customize button appears above Knob 5.

 **NOTE:** Footswitches can also be customized from the "Command Center" screen (or HX Edit application!).

Swapping Footswitches

If you want to change the location of Stomp mode footswitches (especially those with multiple items assigned or custom labels and LED ring colors), instead of manually reassigning everything, you can quickly swap all assignments between two footswitches.

1. Touch (but don't press) any two Stomp mode footswitches until the following dialog appears:



2. Press Knob 6 (OK).

 **NOTE:** This "touch" behavior for footswitches can be disabled using the Stomp Select option in "[Global Settings > Footswitches](#)".

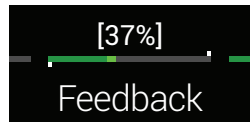
Tips for Creative Bypass Assignment

- If you assign a footswitch to more than one block or other item, "MULTIPLE (X)" isn't very descriptive. Don't forget to custom label it - See "[Customizing a Footswitch Label](#)".
- If you find yourself constantly toggling one switch off and another on, assign both blocks to the same footswitch, and while one is selected, press BYPASS. Now pressing the footswitch will toggle one off and the other on simultaneously. A footswitch can have up to simultaneous eight blocks assigned.
- Assign a Wah block to be engaged only when moving an expression pedal past 1%. Set the Wait time long enough so that natural foot movements don't turn the wah off every time you reach the heel-down position.
- Different blocks can be enabled or bypassed at different locations of an expression pedal or Variax knob's travel. Experiment with turning on multiple overdrive blocks—one at Position 5%, another at Position 30%, another at Position 70%, and so on.
- When using a footswitch to toggle between two Amp or Amp+Cab blocks, the amp models may sound notably different from one another (just like real amps!). Use an EQ block to make one Amp block sound a bit closer to the other Amp block and assign its bypass to the same footswitch.
- Assign a delay block with very high feedback to be turned on only when reaching the toe position of an expression pedal (or fully clockwise Variax knob). Squeals galore.

Controller Assign

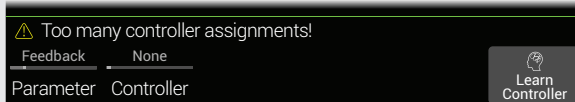
Helix provides a wide variety of tools for controlling your tone during a performance. The most obvious one is the built-in expression pedal (often assigned to wah or volume). But, you may also assign footswitches to toggle between two values of a given parameter or parameters, control a parameter from an external MIDI device, or the volume and tone knobs on a James Tyler Variax, Shuriken Variax, or Variax Standard guitar. You can even have parameters instantly change when selecting different snapshots within a preset.

If a controller has been assigned to a parameter, the value appears white and in brackets. White dots appear on the slider to indicate the controller's Minimum and Maximum range values (see next section for details).



NOTE: Adding a Wah, Pitch Wham, or Poly Wham block automatically assigns its Position parameter to be controlled by EXP 1. Adding a Volume Pedal or Pan block automatically assigns its Position to be controlled by EXP 2.

NOTE: Each preset can have up to 64 controller assignments. If you attempt to add a 65th, "Too many controller assignments!" appears in the header:



In this case, you must clear some controllers to free up assignments. See ["Clearing a Block's Controller Assignment\(s\)"](#) or ["Clearing All Controller Assignments"](#).

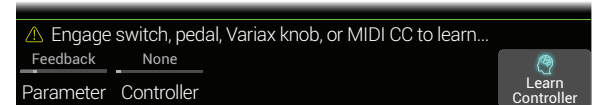
Quick Controller Assign

1. **From the Home screen, press and hold the knob for the parameter you wish to control.**

Helix jumps to the Controller Assign page and displays your parameter above Knob 1 (Parameter).

2. **Press Knob 6 (Learn Controller).**

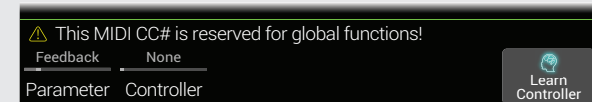
The button's brain icon glows blue, and the header reads, "Engage switch, pedal, Variax knob, or MIDI CC to learn...":



3. **Move the expression pedal, turn the Volume or Tone knob on a connected Variax, step on a Stomp mode footswitch, send a MIDI CC message from your keyboard, etc.**

The controller name appears above Knob 2 (Controller).

NOTE: Helix has reserved specific MIDI CC messages for global functions; these CCs cannot be used as controllers. If you attempt to learn a CC message reserved for global functions, the following dialog appears:



See ["MIDI!"](#) for more information.

4. **Press  to return to the Home screen.**

SHORTCUT: To assign a parameter to the Snapshots controller, it's even easier—just push and turn the parameter's knob. The value appears white and in brackets, indicating it's now assigned to a controller.

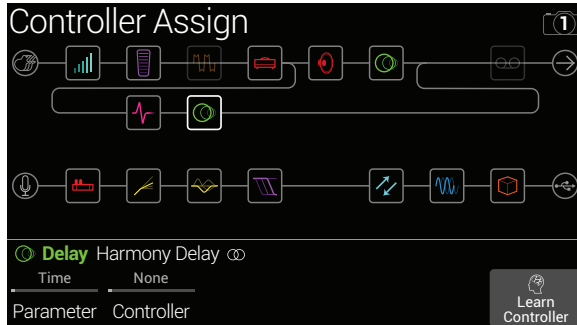
SHORTCUT: Hold BYPASS and press a parameter knob to quickly remove any controller assignment (including the Snapshots controller). The value appears without brackets, indicating no controller is assigned to it.

Manual Controller Assign

The Controller Assign screen is where you manually assign parameters to be adjusted in real-time by controllers.

1. Press **≡** to open the Menu.
2. Press **Knob 2 (Controller Assign)**.

The Controller Assign screen looks very similar to the Home screen:



3. Move the joystick to select the block containing the parameter to which you want to assign a controller.

The most recently accessed parameter appears above Knob 1 (Parameter).

NOTE: Amp+Cab and Cab > Dual blocks are special in that they represent two models within a single block. To assign controllers to the amp parameters in an Amp+Cab block, press <PAGE until the amp icon is white. To assign controllers to the cab parameters, press PAGE> until the cab icon is white.



To assign controllers to the first cab's parameters in a Cab > Dual block, press <PAGE until the left cab icon is white. To assign controllers to the second cab's parameters, press PAGE> until the right cab icon is white.



4. Turn **Knob 1 (Parameter)** to select the parameter you wish to control.
5. Turn **Knob 2 (Controller)** to select the desired controller.

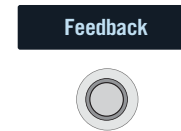
None Removes the controller assignment.

Exp Pedal 1, 2, or 3 The most common type of controller. Used to control volume, wah, Pitch Wham, etc.

Variax Vol, Variax Tone If you have a James Tyler Variax or Variax Standard guitar, its volume and tone knobs can be used to adjust a wide variety of Helix parameters.

Footswitch 1-5, 7-11 Stepping on a Stomp mode footswitch can toggle between a parameter's min and max values.

If a footswitch is assigned to one parameter only (no blocks, Command Center messages, or other parameters), the parameter name appears in the scribble strip:



Selecting Footswitch 1-5 or 7-11 will display Knob 3 (Type). **Turn knob 3 to select "Momentary" or "Latching."** Momentary means the value will change for as long as you hold the switch. Latching toggles between Min and Max values every time you press the switch. Footswitch type (momentary or latching) is determined *per footswitch*, not per assignment.

You can customize footswitches using the ["Command Center"](#) screen.


MIDI CC Selecting "MIDI CC" will display Knob 3 (MIDI CC#). **Turn Knob 3 to select the desired MIDI CC number.**

Snapshots Although all controller-assigned parameters are updated per snapshot, an additional "Snapshots" controller is available when other controllers are already used.

NOTE: Footswitch 1 and 7 can be assigned at any time, but they only appear if the Stomp Mode Switches option is set to "10 switches" (see ["Global Settings > Footswitches"](#)). Otherwise, FS1 and FS7 appear as BANK ^ and BANK v.

NOTE: Some CC#s cannot be selected, as they are reserved for the Helix global functions. See ["MIDI"](#) for more information.

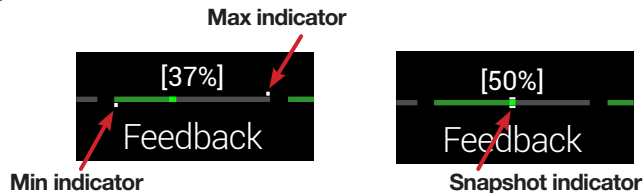
6. If desired, turn Knob 4 (Min Value) and Knob 5 (Max Value) to set the range you wish to control.

 **TIP:** To reverse controller behavior, swap the min and max values.

When you return to the Home screen, you'll see the assigned parameter appears with its value in brackets and in white text to indicate it includes a controller assignment.

For any footswitch, pedal, or Variax knob type controller assignment, you'll also see the Min and Max values indicated with white dots.

You'll see the white indicators above and below the slider's value for a snapshot assignment, as shown below.



Tips for Creative Controller Assignment

- If you assign a footswitch to more than one controller or other item, “MULTIPLE (X)” on the scribble strip isn't very descriptive. Don't forget to custom label it—See the following sections.
- By default, a parameter's Min and Max values will be pretty extreme. It pays to play pretty conservatively here, as subtle parameter adjustments go a long way
- To smoothly blend between the tone on parallel paths A and B, select a Split > A/B block and assign the Route To parameter to an expression pedal. By default, a heel-down position means the signal passes fully through Path A. Moving the pedal toward the toe-down position will gradually crossfade into Path B. Alternatively, assign a footswitch to control the Route To parameter, for instantly switching back and forth
- If you're looking for a gritty boost for a solo, instead of adding a Distortion block, try assigning a footswitch to increase both the Mid and Channel Volume parameters of an Amp+Cab, Amp, or Preamp block
- If you're looking for an ultra-clean boost, instead of adding a Volume/Pan > Gain block, try assigning a footswitch to increase the Level parameter of a Merge > Mixer or Output block
- If you have a favorite delay or reverb pedal, use an FX Loop block to insert it into your tone. Assign EXP 1, 2, or 3 to control the block's Mix parameter, which will smoothly blend the pedal into your tone
- For extreme psychedelic dub delay squeals, assign a footswitch to both increase a Delay's feedback and decrease its time
- Assign a footswitch to toggle between two Delay > Time parameter values, such as 1/4 and 1/8 dotted

- Assign the tone knob on your JTV Variax or Variax Standard guitar to a Pitch Wham block's Position parameter. Watch guitarists in the audience try to figure out how a knob on your guitar generates huge dive-bomb effects
- Assign multiple Amp+Cab parameters to a single switch. With enough assignments, you could almost treat the switch as an A/B amp channel switcher
- Assign Mic or IR Select to a footswitch. Set the two mic models or IRs as min and max values. Now you can instantly toggle between two mics or two IRs

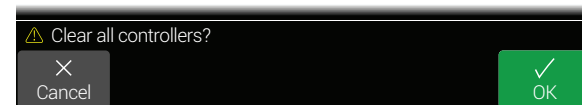
Clearing a Block's Controller Assignment(s)

1. From the Controller Assign screen, select the block whose controller assignments you want to clear and press ACTION.
2. Press Knob 1 (Clear Controllers).


Clearing All Controller Assignments

1. From the Controller Assign screen, press ACTION.
2. Press Knob 2 (Clear All Controllers).

The following dialog appears:




3. Press Knob 6 (OK).

 **IMPORTANT!** Clearing All Controller Assignments also removes the Wah and Volume assignments from EXP 1 and EXP 2. Use this function with caution!

Customizing a Controller Footswitch Label

As there's no room for a dedicated Customize button on the Controller Assign page, customizing scribble strips for footswitches only assigned to one or more controllers must be done from the “[Command Center](#)” page.

 **SHORTCUT:** Once any item has been assigned to a footswitch, touch and hold the footswitch (but don't press), and a Customize button appears above Knob 5.

Command Center

Helix Rack also just so happens to be a world-class master remote control for your entire touring or studio rig. Each of its Stomp mode footswitches and expression pedals can be used to send a variety of messages:

- Transmit MIDI, CV/Expression, or External Amp commands to your guitar amps, vintage pedals, synths, or even other modelers.
- Send QWERTY Hotkey messages, emulating a computer keyboard, to practically any software to control it from your device.
- Configure footswitches to expand your device's Stomp mode with additional control functions (see [“HX Preset, Snapshot, and Looper Commands” on page 60](#)).
- Up to six “Instant” ⚡ commands can be transmitted automatically when a Helix preset is recalled, for starting your DAW, triggering a MIDI-controlled lighting system, or switching presets on external gear.

All Command Center assignments are stored per preset, but they can be copied and pasted to other presets. See [“Copying and Pasting a Command”](#)

NOTE: The Value parameters of any instant MIDI CC, Bank/Prog, MMC, CV Out, and HX Looper messages, plus the state (dim or lit) of any CC Toggle, CV Toggle, and Ext Amp messages are automatically recalled when selecting a snapshot.

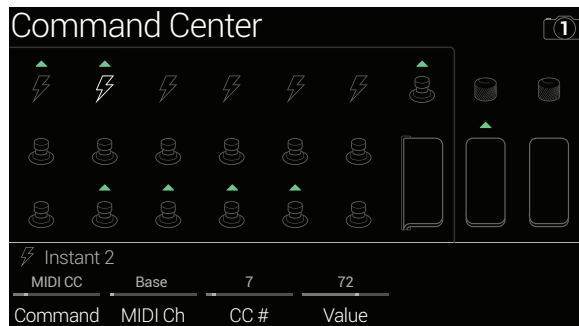
NOTE: By default, all MIDI-based Command Center messages are transmitted via MIDI and USB simultaneously. You can customize MIDI behaviors using the [“Global Settings > MIDI/Tempo”](#) options.

Assigning a Command

1. Press to open the Menu.

2. Press Knob 3 (Command Center).

Any switches, pedals, or instant locations with commands assigned appear with turquoise triangles above them:



3. Move the joystick to select the footswitch, pedal, Variax knob, or instant location you wish to use to send the command.

4. Turn Knob 1 (Command) to select the type of command you wish to transmit.

Not all command sources can send the same types of commands.

Select “None” to remove any command assignment.

5. Turn Knobs 2-5 to adjust the command's settings, which are determined by the type of command:

MIDI CC (Continuous Controller)		
Knob	Parameter	Description
2	MIDI Ch	Sets the CC message's MIDI channel (1-16). When set to “Base,” Helix follows the Global MIDI channel, which is set from the “Global Settings > MIDI/Tempo” page.
3	CC #	Sets the CC number (0-127).
4	Value [Min Value]	Sets the CC number's value (0-127). For EXP 1-3 and Variax Volume/Tone Knob, sets the minimum CC value controlled by the pedal or knob.
5	[Max Value]	For EXP 1-3 and Variax Volume/Tone Knob, sets the maximum CC value controlled by the pedal or knob.

CC Toggle			
Page	Knob	Parameter	Description
1	2	MIDI Ch	Sets the CC messages' MIDI channel (1-16). When set to “Base,” Helix follows the Global MIDI channel, which is set from the “Global Settings > MIDI/Tempo” page.
	3	CC #	Sets the CC number (0-127).
	4	Dim Value	Sets the CC number's value (0-127) when the footswitch ring is dim. For Footswitches 7 (MODE) and 12 (TAP), it appears as “Initial Val.”
5	5	Lit Value	Sets the CC number's value (0-127) when the footswitch ring is lit. For Footswitches 7 (MODE) and 12 (TAP), it appears as “Toggle Val.”
	2	1	Type

NOTE: For CC Toggle commands, one of two values is automatically transmitted upon preset recall, determined by the footswitch's state (dim or lit) when the preset was saved. **Subsequent presses of the footswitch toggle between the two states' CC values—Knob 4 (Dim Value) and Knob 5 (Lit Value).**

Bank/Prog		
Knob	Parameter	Description
2	MIDI Ch	Sets the Bank/Program message's MIDI channel (1-16). When set to "Base," Helix follows the Global MIDI channel, which is set from the " Global Settings > MIDI/Tempo " page.
3	Bank CC00	Sets the CC#00 (Bank MSB) value. Select "Off" if the receiving device shouldn't respond to Bank MSB.
4	Bank CC32	Sets the CC#32 (Bank LSB) value. Select "Off" if the receiving device shouldn't respond to Bank LSB.
5	Program	Sets the Program Change (PC) value. Select "Off" if you only want to send a Bank MSB and/or Bank LSB message.

Note On		
Knob	Parameter	Description
2	MIDI Ch	Sets the note's MIDI channel (1-16). When set to "Base," Helix follows the Global MIDI channel, which is set from the " Global Settings > MIDI/Tempo " page.
3	Note	Sets the MIDI note value (C-1 ~ G9). Middle C is C3.
4	Velocity	Sets the MIDI note's velocity (0-127).
5	Note Off	Determines whether the MIDI note sustains until pressing the switch again (Latching) or sustains only while the switch is held (Momentary).

MMC (MIDI Machine Control)		
Knob	Parameter	Description
2	Message	Determines the message type.

Ext Amp		
Knob	Parameter	Description
2	Select	Determines the Ext Amp connection [1 (Tip-to-sleeve), 2 (Ring-to-sleeve), or both] for switching an external amp's channel, reverb, or other functions. When assigned to an Instant command, there is also the option to choose "None," thereby allowing you to send a different (or None) message per snapshot.
3	Type	When assigned to a footswitch, determines whether the footswitch behavior is Latching (default) or Momentary.

! **IMPORTANT!** Connect EXT AMP 1/2 only to amplifiers that utilize "short-to-sleeve" footswitch inputs. Connecting to any other sort of input could cause permanent damage to both your amp and Helix! If you're not sure if your amp has short-to-sleeve inputs, contact the manufacturer.

! **IMPORTANT!** The Helix device's ability to control external amp channel and/or reverb switching has been tested with many popular amps and heads. Unfortunately, this does not guarantee compatibility with all products. Note that, depending on the channel switching jack's circuitry in the guitar amp used, the EXT Amp function may not operate as expected.

📌 NOTE: When an Ext Amp command is assigned to Instant 1-6, the connection determined by Knob 2 (Select) is made when the preset is loaded. When an Ext Amp command is assigned to a footswitch, the footswitch's current state (dim or lit) determines whether or not the External Amp connection is made when the preset is loaded; when dim, no connection is made; when lit, the connection determined by Knob 2 (Select) is made. Subsequent presses of the footswitch toggle the connection on (LED lit) and off (LED dark).

CV (Control Voltage) Out		
Knob	Parameter	Description
2	CV Value [CV Min Val]	Sets the CV value (1-100) appearing at the Helix device's CV/Expression jack. For EXP 1-3 and Variax Volume/Tone Knob, sets the minimum CV value controlled by the pedal or knob.
3	[CV Max Val]	For EXP 1-3 and Variax Volume/Tone Knob, sets the maximum CV value controlled by the pedal or knob.

CV (Control Voltage) Toggle		
Knob	Parameter	Description
2	Dim Value	Sets the CV value (0-100) when the footswitch ring is dim. For Footswitches 7 (MODE) and 12 (TAP), it appears as "Initial Val."
3	Lit Value	Sets the CV value (0-100) when the footswitch ring is lit. For Footswitches 7 (MODE) and 12 (TAP), it appears as "Toggle Val."
4	Type	When assigned to a footswitch, determines whether the footswitch behavior is Latching (default) or Momentary.

📌 NOTE: For CV Toggle commands, one of two CV values appears at the CV/Expression output, automatically transmitted upon preset recall, determined by the footswitch's state (dim or lit) when the preset was saved. **Subsequent presses of the footswitch toggle between the two states' CV values—Knob 2 (Dim Value) and Knob 3 (Lit Value).**

QWERTY Hotkey Commands


QWERTY hotkeys (computer keyboard shortcuts with or without modifiers, such as Shift, Control, Option/Alt, and Command) can also be sent to your Mac, PC, or iOS device via USB, allowing you to control virtually any DAWs, YouTube, Spotify, looping software, DJ software, media players, lighting software, and more!

QWERTY command assignments can be made to any footswitch any Instant ⚡ command, allowing them to be sent automatically from any preset or snapshot recall. To follow are steps to configure on Helix (but you'll likely find it faster and easier to configure Hotkey assignments using the HX Edit app).

1. From the Command Center page, select a footswitch or Instant command and turn Knob 1 (Command) to select “Hotkey.”
2. Turn Knobs 2~5 to select the desired key combination. If the keystroke doesn’t have modifiers, leave Knobs 2, 3, and 4 set to “None.”

Just like a standard computer keyboard, hotkeys won’t work unless the software or app you want to control is in focus.

QWERTY Hotkeys			
Page	Knob	Parameter	Description
1	2	Modifier 1	Set up to three key modifier(s) to be sent with the keystroke: Choose Shift, Alt, Ctrl, or Mac/PC (corresponds to the “Windows” key on Windows OS systems, and to the “Command” key on macOS systems).
	3	Modifier 2	
	4	Modifier 3	
	5	Keystroke	Sets the alpha, numeric, or other computer keyboard key value to be sent.
2	1	Type	Sets the footswitch type as either Momentary or Latching.

 **TIP:** To get you started, we’ve provided several “[Factory Presets](#)” within the Templates setlist pre-configured with hotkey commands to remotely control numerous popular DAW, multimedia, and productivity computer apps!

HX Preset, Snapshot, and Looper Commands

These “HX” commands allow you to configure Stomp mode switches for even greater control of your device’s internal functions. These commands are saved per preset.

 **NOTE:** Although Stomp mode switches can be assigned to multiple functions, to avoid unintended behavior, we strongly recommend the HX Preset, HX Snapshot, and HX Looper commands are assigned only to empty footswitches.

HX Preset

The HX Preset command allows you to configure a Stomp mode footswitch to immediately “jump to” any other preset within the current setlist.

1. From the Command Center page, select a footswitch and turn Knob 1 (Command) to “HX Preset.”

2. Turn Knob 2 (Preset) to “Next,” “Previous,” or choose a specific preset number (01A~32D).

HX Preset		
Knob	Parameter	Description
2	Preset	Sets the preset to be selected by the command: Next, Previous, or a preset’s number (01A~32D), which resides within the current setlist.

HX Snapshot


The HX Snapshot command allows you to configure a Stomp mode footswitch to recall any snapshot within the current preset immediately.

1. From the Command Center page, select a footswitch and turn Knob 1 (Command) to “HX Snapshot.”
2. Turn Knob 2 (Behavior) to either “Press/Release” or “Press/ Hold.”
3. Turn Knobs 3 and 4 to configure which snapshots are recalled per the “Press” and the “Release” (or “Hold”) of the footswitch.

HX Snapshot		
Knob	Parameter	Description
2	Behavior	Sets the footswitch’s behavior, allowing you to recall the desired snapshot index number, or Next or Previous snapshot, <i>independently</i> per each Press and Release or each Press and Hold of the footswitch. (Note that the assigned Stomp mode footswitch’s label and LED will only indicate the command assigned to the Press function.)
3	Press	Sets the snapshot to be recalled on the Press action of the footswitch.
4	Release/ Hold	Sets the snapshot to be recalled on the Release (or Hold, depending on your Knob 2 selection) of the footswitch.

HX Looper

For a preset that includes a Looper block, this command allows you to configure an Instant ⚡ or Stomp mode footswitch to trigger Looper functions (Play, Stop, Record, etc.).

 **NOTE:** A 6 Switch or 1 Switch Looper block must be present in your preset for HX Looper commands to function.

HX Looper - Instant Command Assignment:

1. In the Command Center window, select an Instant ⚡ command controller and turn knob 1 (Command) to HX Looper.
2. Turn knob 2 (Function) to choose the specific Looper function you wish to trigger.

The selected **Function** action is automatically stored and recalled per snapshot. This allows you to record a loop and, for example, configure an Instant command to automatically “Play” the Loop when loading one Snapshot and “Stop” when loading a different Snapshot (also see [“Using Snapshots”](#)).

HX Looper - Instant ⚡ Command		
Knob	Parameter	Description
2	Function	Sets the Looper action to be triggered: Play, Stop, Play/Stop, Rec, Overdub, Record/Overdub, Play Once, Reverse, Forward, Reverse/Forward, Half Speed, Full Speed, Toggle Speed, or Undo.

HX Looper - Footswitch Assignment:

1. In the Command Center window, select a footswitch and turn Knob 1 (Command) to HX Looper.
2. Turn Knob 2 (Behavior) to either “Press/Release” or “Press/Hold.”
3. Turn Knobs 3 and 4 to configure which Looper commands are sent per the “Press” and the “Release” (or “Hold”) of the footswitch.

The selected **Behavior**, **Press**, and **Release/Hold** actions are automatically stored and recalled per snapshot.

HX Looper - Footswitch		
Knob	Parameter	Description
2	Behavior	Sets the footswitch’s behavior, allowing you to send up to two different Looper commands, <i>independently</i> per each Press and Release or each Press and Hold of the footswitch. (Note that the assigned Stomp mode footswitch’s label and LED will only indicate the command assigned to the Press function.)
3	Press	Sets the Looper command to be sent on the Press action of the footswitch.
4	Release/Hold	Sets the Looper command to be sent on the Release (or Hold, depending on your Knob 2 selection) of the footswitch.

Note that the assigned, Stomp mode footswitch’s label and LED will only indicate the command assigned to the **Press** function.

Copying and Pasting a Command

1. Select the location containing the command you wish to copy and press ACTION.
2. Press Knob 1 (Copy Command).
3. Select the location to which you want to paste the command—even in a different preset—and press ACTION.
4. Press Knob 3 (Paste Command).

Copying and Pasting All Commands

Setting up the same or similar set of commands across multiple presets can quickly become tiresome. Fortunately, Helix lets you quickly copy and paste all commands to another preset.

1. From the Command Center page, press ACTION.
2. Press Knob 2 (Copy All Commands).
3. Select the preset to which you want to paste the commands and press ACTION.
4. Press Knob 3 (Paste All Commands).

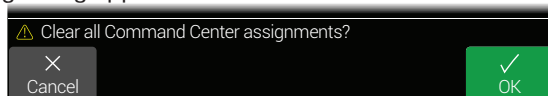
Clearing a Command

1. Select the location containing the command you want to clear and press ACTION.
2. Press Knob 4 (Clear Command).

Clearing All Commands

1. From the Command Center page, press ACTION.
2. Press Knob 5 (Clear All Commands).

The following dialog appears:



3. Press Knob 6 (OK).

Customizing a Command Footswitch Label & Color

1. From the Command Center screen, select Footswitch 1-5, 7-11, or Exp Toe with a command assigned and press Knob 6 (Customize).

The Customize screen appears:



Move the joystick left or right to move the cursor.

Turn the joystick (or move it up/down) to change the selected character.

Press Knob 2 (Delete) to delete the selected character and shift all following characters to the left.

Press Knob 3 (Insert) to insert a space and shift all following characters to the right.



SHORTCUT: Press the joystick to cycle through A, a, 0, and [SPACE].

Press Knob 4 (Remove) to remove the custom label, after which the footswitch displays its normal assignment. Remove is grayed out until a custom name is applied.

2. To customize the footswitch's LED color, turn Knob 5 (Switch LED) to select the desired color (or turn it off). Normally, you should leave this set to "Auto Color."
3. Press Knob 6 (Save).



NOTE: Footswitches can also be customized from the "Bypass Assign" screen (or HX Edit editor application!)

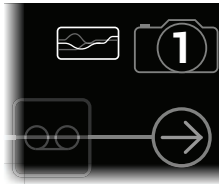
Command Center - The customize footswitch label option is not available if you have selected an HX Preset, HX Snapshot, or HX Looper type command.


Global EQ

The Helix Global EQ has three fully parametric bands plus variable low and high cut filters and is used for compensating for the wide disparity in acoustic environments on tour or when traveling from studio to studio. Global EQ is applied to all setlists and presets and can be heard from the 1/4" outputs, XLR outputs, or both.

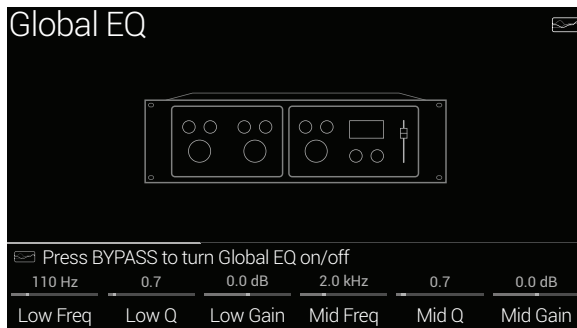
NOTE: Global EQ is never heard from Send, Digital, or USB outputs.

When Global EQ is active, the Home screen shows the Global EQ icon to the left of the snapshots icon:



1. Press  to open the Menu.
2. Press Knob 5 (Global EQ).

The Global EQ screen appears:



3. Press **BYPASS** to turn Global EQ on and off.

SHORTCUT: From the Home screen, press and hold **BYPASS** to turn Global EQ on and off without navigating to the Global EQ page.

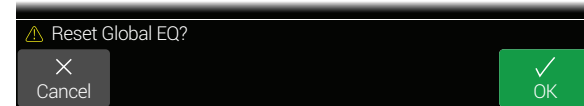
TIP: Press **PAGE>** to view page 3 of parameters and turn Knob 1 (Apply EQ) to apply the Global EQ to only the 1/4" outputs, only the XLR outputs, or both.

Resetting Global EQ

Resetting the Global EQ returns its settings to factory default (flat).

1. From the Global EQ screen, press **ACTION**.
2. Press Knob 1 (Reset Global EQ).

The following dialog appears:



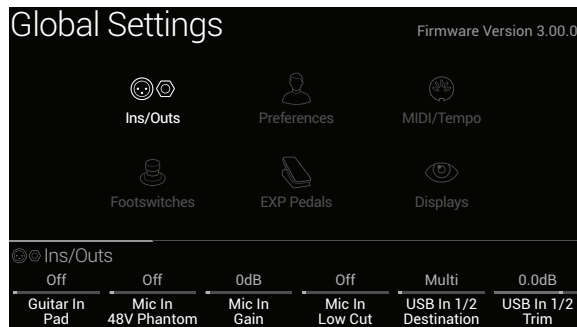
3. Press Knob 6 (OK).

Global Settings

The Global Settings menu contains additional parameters that apply to all setlists and presets, such as input and output levels, custom footswitch mode settings, etc. The upper right corner displays the Helix Rack device's current firmware version. Visit line6.com/support for information on the latest Helix firmware updates.

1. Press **≡** to open the Menu.
2. Press **Knob 6 (Global Settings)**.

The Global Settings screen appears:



3. Move the joystick to select one of the six submenus.

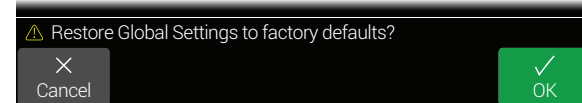
If necessary, press <PAGE/PAGE> to view more parameters.

Resetting All Global Settings

Resetting the Helix Global Settings returns them to factory default. Performing this reset does not affect any presets you may have created.

1. From any Global Settings submenu, press **ACTION**.
2. Press **Knob 1 (Factory Settings)**.

The following dialog appears:



3. Press **Knob 6 (OK)**.

TIP: Using the [HX Edit](#) app's Create & Restore Backup features, you can choose to include your device's global settings, along with Setlists, IRs, Favorites, and User Model Defaults!

Global Settings > Ins/Outs

Page	Knob	Parameter	Description
1	1	Guitar In Pad	If your guitar or bass has active or really loud pickups, you may want to turn this on. There's really no rule; use what sounds best.
	2	Mic In 48V Phantom	When on, Helix provides 48V from the XLR Mic In jack to power studio condenser microphones. <i>IMPORTANT!</i> Never connect the Helix device's XLR outputs to a device whose XLR inputs have 48V phantom power enabled!
	3	Mic In Gain	Sets the analog gain for the XLR Mic In jack.
	4	Mic In Low Cut	Sets the frequency of the Mic In's dedicated, variable low-cut filter. Turn fully counterclockwise (or push) to disable.
	5	USB In 1/2 Destination	If you like to jam along with iTunes, YouTube™, or your DAW, this setting determines from which of the Helix outputs your computer or iPad or iPhone mobile device's primary stereo audio stream will be heard. USB In 1/2 bypasses all Helix processing; USB 3/4, 5/6, and 7/8 can be selected as input blocks for processing DAW tracks or re-amping. Normally, you should choose "Multi," which sends USB In 1/2 directly to the 1/4", XLR, and Digital outputs. See "USB Audio"
	6	USB In 1/2 Trim	Sets the level of incoming audio from USB 1/2, which bypasses all Helix processing. Normally, this should be left at 0.0dB.
2	1	1/4" Outputs	Choose "Instrument" when connecting the Helix 1/4" outputs to stompboxes or the front of guitar amps; choose "Line" when connecting to mixers, studio monitors, or standalone recorders. When using a single amp or speaker, connect only the LEFT/MONO 1/4" jack.
	2	XLR Outputs	Choose "Mic" when connecting the Helix XLR outputs to standalone mic preamps or the XLR mic inputs on mixers; choose "Line" when connecting to studio monitors or the line inputs on mixers. When using a mono playback system, connect only the LEFT/MONO XLR jack.
	3	Send/Return 1	
	4	Send/Return 2	Choose "Instrument" when using a Send/Return pair as an FX loop for stompboxes; choose "Line" when using a Send/Return pair as an FX loop for line-level rack processors or as additional inputs and outputs for connecting keyboards, drum machines, mixers, and other gear.
	5	Send/Return 3	
	6	Send/Return 4	
3	1	Re-amp Src (USB 7)	USB out 7 and 8 are dedicated to recording a DI signal which can be used for re-amping; choose which two inputs will be sent dry (unprocessed) to your DAW. See "USB Audio"
	2	Re-amp Src (USB 8)	
	3	Volume Knob Controls	Determines which output(s) are affected when turning the top panel VOLUME knob. For example, you may want to control the level sent from the 1/4" outputs to your stage monitor without affecting the XLR level sent to the front-of-house mixer. Or you may want to disable the VOLUME knob altogether; in this case, set it to "Digital," at which point Helix's 1/4" and XLR outs will be at unity level.
	4	Headphones Monitor	Determines which signal(s) are heard from the PHONES output. Normally you would set this to Multi (1/4"+XLR+Digital+USB 1/2), but there may be a situation where you only want to hear what's sent from the 1/4" or XLR outs, particularly if they are fed different signals (or band members!)
	5	Digital Output	One digital output can be active at a time; choose S/PDIF or AES/EBU. Connecting an L6 LINK device to Helix automatically disables S/PDIF out. USB audio is not affected by this setting. Also see "Output" .
	6	Digital Out Level	Sets the S/PDIF and AES/EBU output levels. Normally, this should be left at 0.0dB.
4	1	Sample Rate	Determines the sample rate of the Helix S/PDIF and AES/EBU outputs; choose 44.1 kHz, 48 kHz (the default), 88.2 kHz, or 96 kHz. When connecting to another device's S/PDIF or AES/EBU input, make sure both units are set to the same sample rate. Note that this setting does not affect Helix USB audio sample rate operation.
	2	Clock Source	Determines whether the S/PDIF and AES/EBU outputs resolve to the Helix device's internal clock or an external clock generator connected to the Wordclock In. Make sure both units are set to the same sample rate.














Global Settings > Preferences

Page	Knob	Parameter	Description
1	1	Snapshot Edits	Determines whether or not any edits made to a snapshot (block on/off, parameter control, Command Center, tempo) are remembered when returning to that snapshot. When set to “Recall,” any snapshot edits are recalled when jumping from snapshot to snapshot, and appear as you last left them. When set to “Discard,” any snapshot edits are discarded when jumping from snapshot to snapshot, and appear as the preset was last saved. If you want to save changes made to a snapshot while Snapshot Edits is set to “Discard,” press SAVE twice before selecting another. The camera icon on the home screen shows you the Snapshot Edits setting at a glance—When set to “Recall,” the camera is gray; when set to “Discard,” the camera is red. At any time, hold BYPASS and press SAVE to toggle this setting. See “Determining Snapshot Edit Behavior”
	2	Tap Tempo Pitch	Determines how delay repeats behave when repeatedly pressing TAP. “Accurate” respects the natural pitch fluctuations inherent when changing a real delay pedal’s time knob; “Transparent” minimizes these artifacts.
	3	Preset Numbering	Determines whether each setlist’s presets appear as 32 banks of four (A B C D) or are numbered 000-127 (convenient when recalling presets via MIDI program change messages).
	4	Snapshot Reselect	Determines the behavior when pressing a Snapshot mode footswitch again after loading its assigned snapshot. “Reload” (the default) simply reloads the stored state of the footswitch’s assigned snapshot again. “Toggle Previous” toggles between loading the previously selected snapshot and the footswitch’s assigned snapshot.
	5	Joystick Encoder	Determines the joystick behavior when a block is selected within the Home screen - signal flow. For “Model” (the default), turning the joystick knob scrolls through available models for the selected block. For “Selection,” turning the joystick knob quickly navigates selecting blocks across the signal flow. <i>SHORTCUT:</i> Pressing while turning the joystick reverses the current joystick behavior.
	6	Preset Spillover	Please see “True Preset Spillover” on page 23. Determines whether Helix runs only Path 1 blocks with seamless delay and reverb spillover and minimal gap when switching presets (Spillover On) or runs both Path 1 and Path 2 blocks (Spillover Off, the default).
2	1	Auto Impedance	Determines how the Guitar In’s impedance circuit behaves when the Input block > Guitar In-Z is set to “Auto.” When set to “First Block” (the default), the impedance circuit reflects the first block’s impedance on Path 1A, regardless of whether it’s enabled or bypassed. When set to “First Enabled,” the impedance circuit reflects the impedance of the first enabled block on Path 1A.

Global Settings > MIDI/Tempo

Page	Knob	Parameter	Description
1	1	MIDI Base Channel	Sets the system base MIDI channel that Helix uses to receive and send MIDI communication via MIDI and USB. Note that MIDI messages assigned from the Command Center page can be set to any MIDI channel.
	2	MIDI Thru	When on, MIDI OUT also acts as a MIDI THRU; that is, it passes through any MIDI messages received at the MIDI IN jack.
	3	Receive MIDI Clock	Determines whether Helix responds to incoming MIDI clock received at its MIDI IN port, via USB, or whichever it senses first (“Auto”). If you don’t want Helix to respond to MIDI clock at all, set this to “Off.” The Helix Control’s TAP footswitch LED flashes blue to tempo when synchronized to incoming MIDI clock.
	4	Send MIDI Clock	Determines whether Helix transmits MIDI clock from its MIDI OUT port, via USB, or both. If you don’t want Helix to transmit MIDI clock at all, set this to “Off.”
	5	Tempo Select	The “Speed” or “Time” parameters of all tempo-based FX can be set to a note value that follows Tap Tempo or the tempo set with Knob 6 (Snapshot BPM/Preset BPM/Global BPM). Choose whether the Helix tempo is stored and recalled with each snapshot, recalled with each preset, or is applied globally across all presets and snapshots. <i>NOTE:</i> Helix does not respond to pressing TAP at tempi lower than 40.0 BPM to ensure that multiple fast tap entries are recognized properly. You may still manually select a tempo as low as 20.0 BPM using this Tempo Select setting.
	6	Snapshot BPM/Preset BPM/Global BPM	This is an alternative way to set the Helix tempo, instead of repeatedly stepping on the TAP footswitch. Depending on the Knob 5 (Tempo Select) setting, this value is saved per snapshot, per preset, or globally. The Helix device’s tempo has a resolution of 0.1 BPM (beats per minute). You can also quickly access this parameter at any time by briefly touching the TAP footswitch.
2	1	MIDI Over USB	When on, Helix receives and transmits MIDI data via USB in the same capacity as its MIDI jacks. (USB MIDI can be used with any computer to send and receive MIDI between Helix and DAW and MIDI software applications.)
	2	MIDI PC Receive	Determines whether or not Helix receives and responds to MIDI program change (PC) messages for recalling Helix presets.
	3	MIDI PC Send	Determines if Helix sends MIDI program change messages and to which MIDI outputs. Set to MIDI to send via MIDI 5-pin out only, USB to send via USB only, or MIDI+USB to send out both. If you don’t want Helix to transmit MIDI PC messages at all, set to “Off.”
	4	Duplicate PC Send	Determines whether Helix automatically sends matching MIDI program change (PC) messages when selecting presets. (Configure Knob 3, MIDI PC Send to determine which MIDI Outs the MIDI PC messages are transmitted.) A PC message is sent immediately when a preset is selected on Helix.

Global Settings > Footswitches

Knob	Parameter	Description
1	Stomp Select	By default, this option is set to “Touch,” which enables the footswitches’ capacitive touch features: While in Stomp FS mode, lightly touching a footswitch selects its assigned block for editing and offers a Quick Bypass Assign when touching and holding for two seconds, or offers a swap of assignments when touching and holding two assigned footswitches simultaneously for two seconds. If you don’t want this “touch” behavior (such as if you play barefoot!), set this to “Off.” Choosing “Press” changes the Stomp FS mode behavior so that when an assigned footswitch is pressed, it also selects the assigned block (in addition to toggling the block’s bypass). If you want all these behaviors enabled, select “Touch+Press.”
2	Preset Mode Switches	By default, Preset footswitch mode displays eight presets (four on each row). Choose from “8 Presets,” “Preset/Stomp” (one bank of presets on the top row, switches from stomp mode on the bottom row), “Stomp/Preset” (switches from stomp mode on the top row, one bank of presets on the bottom row), “Preset/Snap” (one bank of presets on the top row, Snapshots 1-4 on the bottom row), “Snap/Preset” (Snapshots 1-4 on the top row, one bank of presets on the bottom row), “Snap/Stomp” (Snapshots 1-4 on the top row, switches from stomp mode on the bottom row), “Stomp/Snap” (switches from stomp mode on the top row, Snapshots 1-4 on the bottom row), and “8 Snapshots” (Snapshots 1-8).
3	Stomp Mode Switches	When set to “10 switches,” FS1 (BANK ) and FS7 (BANK ) are re-purposed as additional Stomp switches. This is only for Stomp footswitch mode; while in Preset, Snapshot, or Looper footswitch modes, BANK  and BANK  are retained.
4	Snapshot Mode Switches	When set to “Auto Return,” Helix returns to the previous footswitch mode after selecting a snapshot. When set to “Manual Return,” Helix stays in Snapshot footswitch mode until you press FS6 (CANCEL).
5	Up/Down Switches	When set to “Presets” or “Snapshots,” FS1 (BANK ) and FS7 (BANK ) change to PRESET  or SNAPSHOT  , where pressing either switch instantly selects the next/previous preset or snapshot, without a bank queue. This is useful if you’ve programmed a fixed set list for your show and just want to increment through all your presets or snapshots. You can also cycle through all three switch types by pressing and holding both the  and  switches for two seconds. At any time, press and hold both FS1 and FS7 to cycle through BANK  , PRESET  , and SNAPSHOT  .
6	Swap Up/Down	When Stomp Mode Switches (see Knob 3 item above) is set to “8 Switches,” use the “On” setting here to reverse the direction of the FS1 and FS7 BANK, PRESET, or SNAPSHOT up/down actions. SHORTCUT: Touch (but don’t press) the Up and Down Stomp Mode FS1 and FS7 switches together for one second, and then press Knob 6.

Global Settings > EXP Pedals

Knob	Parameter	Description
1	EXP 1 Polarity	
2	EXP 2 Polarity	If your external expression pedal appears to work backward—for example, a Volume pedal block is loudest with the heel all the way down—set this to “Inverted.”
3	EXP 3 Polarity	
4	EXP 1 Pedal Position	
5	EXP 2 Pedal Position	Determines whether the Helix expression pedal positions are recalled per snapshot, per preset, or applied globally. If you want a Volume Pedal or Wah to maintain its position when switching presets, set this to “Global.”
6	EXP 3 Pedal Position	

Global Settings > Displays

Knob	Parameter	Description
1	LED Ring Brightness	Determines whether the Stomp mode footswitches' colored LED rings appear dim when bypassed or off when bypassed. When playing in bright sunlight, you may want to set this to "Off/Bright" to increase contrast.
2	Tap Tempo LED	If you'd prefer not to see the FS12 (TAP) red LED constantly flashing, you can turn it off.
3	Pedal Position Display	When set to "On," the Helix Control's top scribble strip LCD temporarily displays the expression pedal's position value (0-100%) when moving a connected expression pedal. When "Off," the top scribble strip remains displaying the current preset's title.
4	Tempo BPM Display	When set to "Temporary," the Helix Control's scribble strip above the TAP/TUNER footswitch temporarily displays the current tempo BPM value when tapped two or more times. When set to "Persistent," the tempo BPM value always remains displayed on this scribble strip, replacing the TAP label. SHORTCUT: To fine-tune the tempo, briefly touch the TAP/TUNER switch to temporarily display the Tempo edit parameters on the Helix unit's main LCD screen, then turn Knob 6 (BPM) to set the tempo value manually.

USB Audio

Helix functions as a USB 2.0, multiple-input/output, 24-bit - 96kHz, low-latency audio interface for Windows and Mac computers, as well as for iPad or iPhone mobile devices (with optional Apple Camera Connection Kit adapter), and is compatible with all major DAW software.

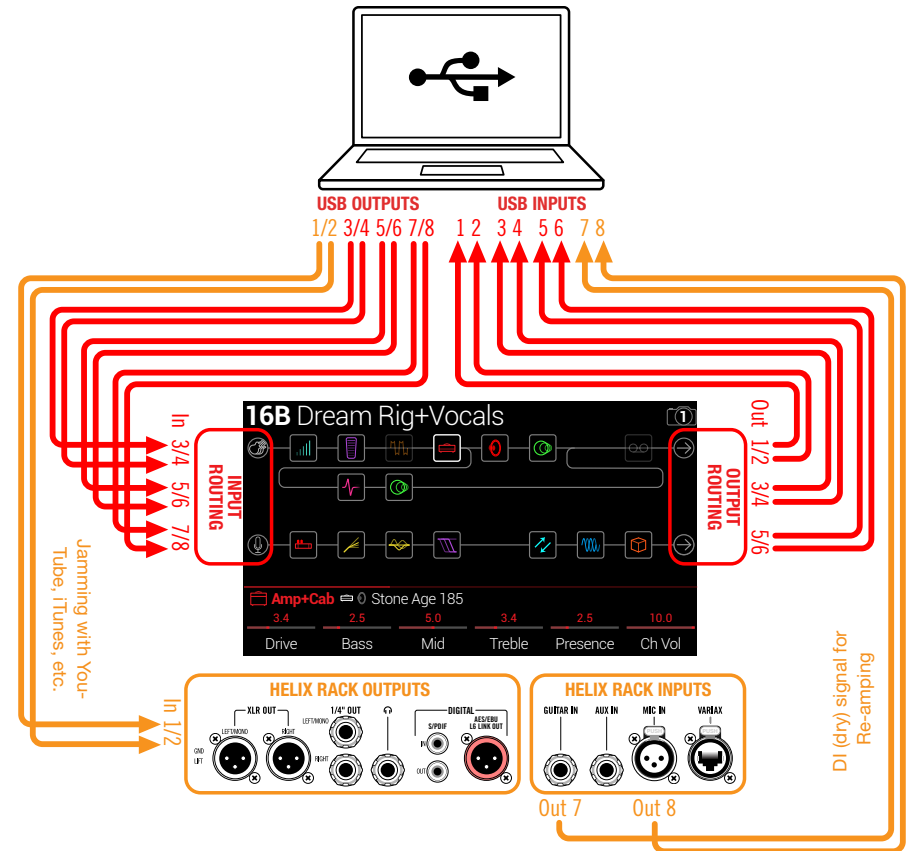
NOTE: For USB audio operation:

- For Windows computers, it is necessary to download and install the Line 6 Helix ASIO® driver (see [page 73](#)).
- For Mac computers, it is only necessary to download and install the Line 6 Mac Core Audio driver if you desire audio sample rate operation at rates other than 48kHz (see [page 73](#)).
- For iPad or iPhone mobile devices, there is no driver installation necessary.
- All drivers are available from line6.com/software. Please refer to Helix firmware *Release Notes* for driver support specific to the latest Windows and Mac operating systems.

With the Helix default “Multi” Input and Output block settings in use, you’ll automatically hear audio software playback on USB 1/2 routed directly to the Helix XLR, 1/4" and Phones outputs. This lets you jam along with the iTunes or YouTube apps or your DAW tracks without hearing them processed through a bunch of amps and effects.

If you set your DAW software track to record from Helix USB 1/2, you’ll capture your Helix-processed input signal in the DAW track - with zero-latency monitoring, since you are hearing your input from the Helix hardware outputs before it is routed through your software.

The additional Helix USB Inputs and Outputs are available within the Helix Input and Output blocks and within your DAW software track menus, which can be utilized for numerous routing configurations, all without patching extra cables - see the following examples.



Hardware Monitoring vs. DAW Software Monitoring

Use of the Helix default “Multi” settings for both the Input and Output blocks provides hardware monitoring, which allows you to hear your live input signal at all times, independent of your DAW software’s monitor settings. Hardware monitoring can be desirable since it allows you to hear your live guitar or mic input with Helix processing added and essentially “latency-free,” since the monitor signal is not routed through your DAW software.

In some DAW recording scenarios, it may be preferable to utilize your recording application’s “input monitoring” or “software monitoring” feature. This routes your live input signal through the armed recording track, thus allowing you to monitor the input effected by any plugins you may have inserted on the track. However, the one downside of DAW software monitoring is that your live input signal is delayed slightly due to being routed through the software and back to the Helix outputs, which is referred to as “latency.” Helix is designed to provide very low latency operation - see [“ASIO Driver Settings \(Windows only\)”](#) for info and settings.

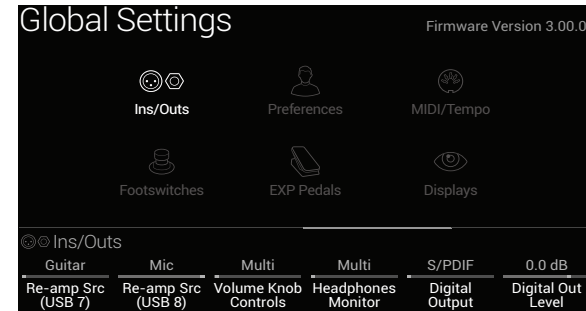
When a DAW track’s software monitoring is active, you’ll likely *not* want to hear the Helix hardware monitoring signal simultaneously. To achieve this, you can set the Helix Output block to USB Out 3/4 or 5/6. **These Output block options will route your Helix-processed, stereo signal out to your DAW software without also providing the Helix hardware monitoring to USB 1/2. You’ll then need to set your DAW track to receive from the same selected Helix USB Out to record the Helix-processed signal into the track. Or, you can optionally set the DAW track input to Helix USB 7 or USB 8 to record a dry DI signal—see the next section.**

NOTE: Keep the Helix Input block set to “Multi” and your DAW software’s main, Master output to Helix USB 1/2 also to hear playback of your full DAW mix.

DI Recording and Re-amplification

A common DAW recording technique is to record a dry DI (Direct Input) signal, such as the unprocessed signal from your guitar, Variax, or mic, along with your mic’ed or processed tone. This allows you to process the DI track later with plugins (such as the Line 6 [Helix Native plugin](#)) and/or “re-amplify” the DI track through an amp or other outboard gear. Helix has handy options built right in for recording DI tracks, as well as for easy re-amplification of DI tracks back through your own Helix tones, all without extra hardware or cabling!

Helix offers two special DI outputs, USB Outs 7 and 8, which appear as available options within your DAW software track input menus. These two dedicated USB Outs are tapped directly from the Helix input sources of your choice. To configure the Helix input source for each, go to Global Settings > Ins/Outs > Re-amp Src (USB 7) and Re-amp Src (USB 8), where you can select Guitar, Aux, Variax, Variax Mags, or Mic:

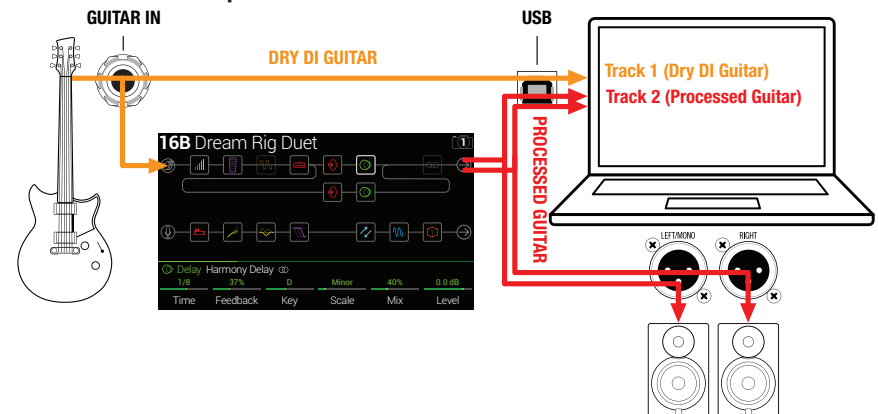


Recording a Dry DI Track

For this example, we’ll record guitar into two DAW tracks simultaneously, with one capturing the Helix-processed tone and the other the unprocessed DI guitar.

1. In the Helix Global Settings>Ins/Outs>Page 3 screen, set Re-amp Src (USB 7) to “Guitar” (as shown above).
2. Dial in your desired Helix tone, while keeping the Helix Input and Output blocks both set to the default “Multi” setting.
3. Create two new audio tracks in your DAW software project:
Create one mono track to record the dry DI guitar, and set the track’s input to Helix USB 7.

Create one stereo track to record your full, stereo Helix-processed tone and set the track’s input to Helix USB 1/2.



4. Set both tracks' outputs, as well as the DAW Master output, to Helix USB 1/2 to allow all tracks to play back through Helix.

NOTE: Setting the stereo track's output to Helix USB 1/2 allows you to hear your Helix-processed tone via the Helix hardware monitoring while recording. For this configuration, disable software monitoring on all DAW tracks.

5. Arm both these DAW audio tracks, hit the Record button and start laying down your guitar performance!

Now you have your Helix-processed track to hear with the project and a separate DI track with which you can further experiment at any time with DAW plugins and/or re-amping (see the next section).

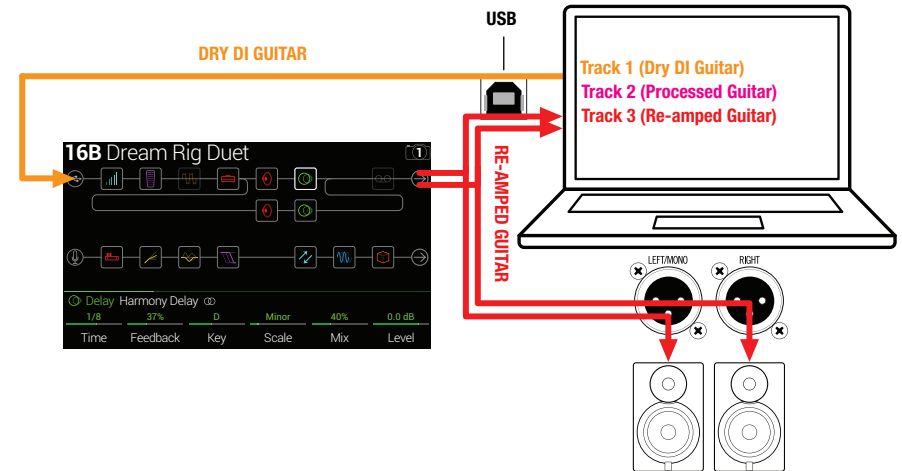
Re-amping Through Helix

If your DAW software provides options for routing individual audio tracks to outputs other than just the main Helix USB Out 1/2, then you can use these steps for re-amping a dry recorded DI track back through Helix.

1. In your DAW software, set the DI track's Output setting to a Helix stereo USB Out *other than* USB Out 1/2. For this example we'll use Helix USB Out 3/4.
2. Create a new stereo track in your DAW project and set this track's Input and Output both to USB 1/2 - Let's name this track "Re-amped." Arm the track for recording.

NOTE: In some DAW software, it may be necessary to also activate the software monitoring feature on this "re-amped" track to monitor the Helix-processed signal when playing back your project. See your software's documentation.

3. On Helix, select the Input block and set it to receive from the same USB stereo pair (USB In 3/4) and keep the Output block set to "Multi." Load your choice of amps and effects on the current Helix preset.



4. Now play your DAW project and you'll hear the DI track "re-amped" through your Helix! Adjust the DI track's volume slider to make sure the signal feeding into Helix is not too hot. Tweak your Helix amp & effects as desired while listening with the playback of your project mix.
5. Once you have your re-amplified guitar tone they way you like it, Solo both the DI and re-amped tracks, rewind to the start of the project and hit the DAW Record button, allowing it to capture the signal into the new re-amped track in real-time.

Allow the DI track to play to the end, stop recording, and you've created your new re-amped guitar track!

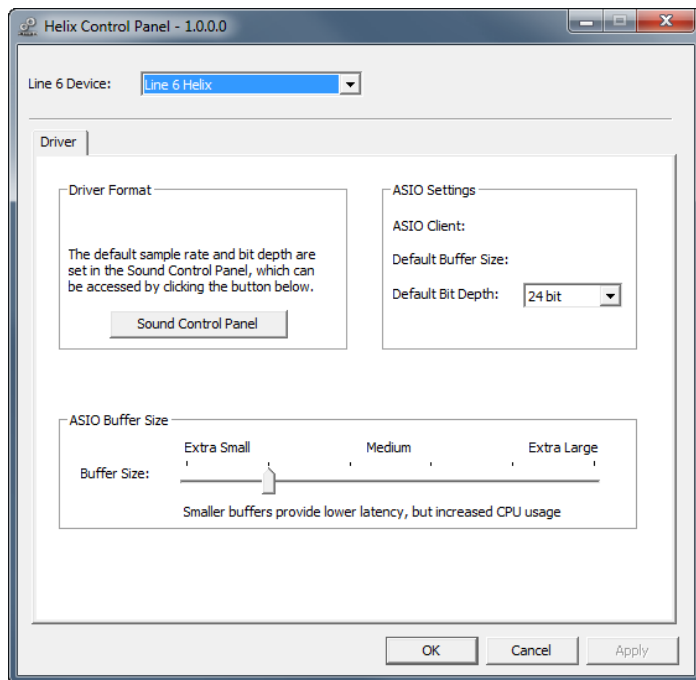
TIP: Note that you still have your original Guitar DI track, and you can repeat this process to create additional re-amped tracks with different Helix settings, add plugins, blend with your original guitar track, and more.

ASIO Driver Settings (Windows only)

When using Helix as an audio interface for Windows DAW applications, it is highly recommended to configure the software to utilize the “ASIO” Helix driver. The Line 6 ASIO driver offers the superior, low-latency audio performance required for DAW recording. This driver selection is typically found in your DAW software’s Preferences or Options dialog - see your software’s documentation.

NOTE: Download and install the latest Line 6 Helix ASIO driver from line6.com/software.

Once you’ve selected the ASIO Helix driver within your DAW software, you’ll also see a button in the same dialog for “ASIO Settings” (or with a similar title). Press this button to launch the Helix Control Panel, where you make the following Helix driver settings.



Sound Control Panel This button launches the Windows Sound Control Panel, which is where you can optionally configure Helix to be the audio playback device for multimedia applications (such as Windows Media Player, iTunes apps). These settings are not relevant for your DAW software since these applications utilize the standard Windows driver.

Default Bit Depth Select the Bit Depth at which Helix will operate for recording and playback with your DAW software. 24 bit or 32 bit are recommended for quality audio production.

ASIO Buffer Size Your goal is to achieve the lowest latency possible in your DAW software, but with glitch-free audio performance. Smaller buffer size results in lower latency. However, it also increases the demands on your computer, which can result in clicks, pops, or other audio artifacts. Start with a lower slider setting here. If you encounter audio performance issues, return to this panel and move this slider to the right incrementally to remedy the problem.

Click the Apply and OK buttons when your Helix Control Panel settings are complete to return to your DAW software. Please also refer to your DAW software’s documentation for more about its own specific audio device, buffer and project settings.

Core Audio Driver Settings (macOS)

To use Helix as an audio interface for Mac applications, it is unnecessary to install any additional driver. Helix will automatically utilize the Mac computer’s “Class Compliant” USB driver when connected to your USB port. Helix will then appear as a selectable Core Audio device within the Mac Utilities > Audio MIDI Setup panel and/or directly within your audio and multimedia applications. However, note that this Apple Class Compliant driver offers strictly 48kHz native sample rate operation. If you prefer to use a different native sample rate (or if your particular DAW application requires it), you can optionally download and install the Line 6 Mac Core Audio driver from line6.com/software. This Line 6 driver offers 44.1kHz, 48kHz, 88kHz, or 96kHz sample rate operation.

MIDI

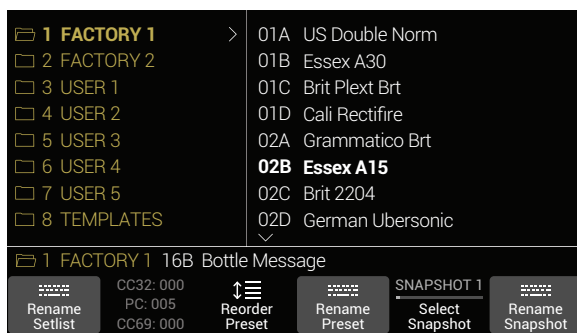
NOTE: Helix transmits and responds to MIDI messages over USB in the same manner as via its MIDI connectors. For USB MIDI operation on Windows computers, it is necessary to download and install the Line 6 Helix ASIO driver, available from line6.com/software. There is no driver installation necessary for an Apple Mac computer, or iPad or iPhone mobile devices.

MIDI Bank/Program Changes

Helix responds to traditional MIDI CC, and Program change messages from an external MIDI device (or from MIDI software via USB) and will recall setlists, presets, and/or snapshots accordingly.

Remotely Selecting a Setlist, Preset, and/or Snapshot

Press **PRESETS** to open the Setlist menu:



The dark text above Knob 2 displays the required MIDI messages for recalling the Helix device's setlists, presets, and/or snapshots from external MIDI devices or software. In the illustration above, the **FACTORY 1** setlist is recalled with a CC32 message of 000, the **02B Essex A15** preset is recalled with a PC (program change) message of 005, and **SNAPSHOT 1** is recalled with a CC69 message of 000.

NOTE: When navigating Presets from the Helix hardware (PRESETS encoder, preset footswitches, PRESET ^ / PRESET v, etc.), Helix automatically transmits a MIDI Program Change message corresponding to the selected preset. If you'd prefer Helix not automatically to transmit or receive PC messages, turn "[Global Settings > MIDI/Tempo](#)" > Knob 4 (MIDI PC Send/Receive) off.

MIDI Clock Send and Receive

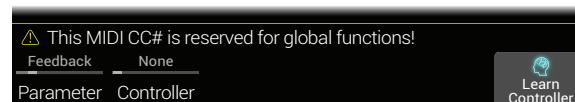
Helix can send and receive MIDI clock via its MIDI 5-pin in/out, as well as via USB. MIDI Clock options can be enabled and configured within the "[Global Settings > MIDI/Tempo](#)" options.

MIDI Clock Send: Transmit MIDI clock to synchronize the tempo of external pedals, rack gear, and software to the current Helix TAP Tempo rate.

MIDI Clock Receive: Synchronize the Helix time-based effects (such as delay and modulation) to incoming MIDI clock from external DAW software, drum machines, keyboard workstations, or other modelers. Note that the Helix Control's TAP footswitch will flash blue (instead of the default red) to indicate the incoming tempo rate when receiving MIDI clock.

MIDI CC

Helix has reserved specific MIDI CC messages for global functions; these CCs cannot be used as controllers. If you attempt to learn a CC message reserved for global functions (see "[Controller Assign](#)"), the following dialog appears:



MIDI CC#	Value	Function
Pedal and Footswitch Assignments		
1	0-127	Emulates EXP 1 Pedal
2	0-127	Emulates EXP 2 Pedal
3	0-127	Emulates EXP 3 Pedal
49	0-127	Emulates Stomp footswitch mode's FS1
50	0-127	Emulates Stomp footswitch mode's FS2
51	0-127	Emulates Stomp footswitch mode's FS3
52	0-127	Emulates Stomp footswitch mode's FS4
53	0-127	Emulates Stomp footswitch mode's FS5
54	0-127	Emulates Stomp footswitch mode's FS7
55	0-127	Emulates Stomp footswitch mode's FS8
56	0-127	Emulates Stomp footswitch mode's FS9
57	0-127	Emulates Stomp footswitch mode's FS10
58	0-127	Emulates Stomp footswitch mode's FS11
59	0-127	Emulates EXP Toe switch

MIDI CC#	Value	Function
Looper Controls		
60	0-63: Overdub; 64-127: Record	Looper Record/Overdub switch (FS8)
61	0-63: Stop; 64-127: Play	Looper Play/Stop switch (FS9)
62	64-127	Looper Play Once switch (FS3)
63	64-127	Looper Undo/Redo switch (FS2)
65	0-63: Forward; 64-127: Reverse	Looper Forward/Reverse switch (FS11)
66	0-63: Full; 64-127: Half	Looper Full/Half Speed switch (FS10)
67	0-63: Off; 64-127: On	Looper block on/off (if available); also enters/exits Looper footswitch mode
Additional Controls		
0	0-7	Bank MSB
32	0-7	Bank LSB—Setlist select
64	64-127	Tap Tempo
68	0-127	Tuner screen on/off
69	0-7	Snapshot 1-8 select
	8	Next snapshot select
	9	Previous snapshot select
70	0-127	
71	0-127	
72	0-127	
73	0-127	Additional global MIDI commands (reserved for future use)
74	0-127	
75	0-127	
76	0-127	
128	0-63: Oh; 64-127: Nooo	

