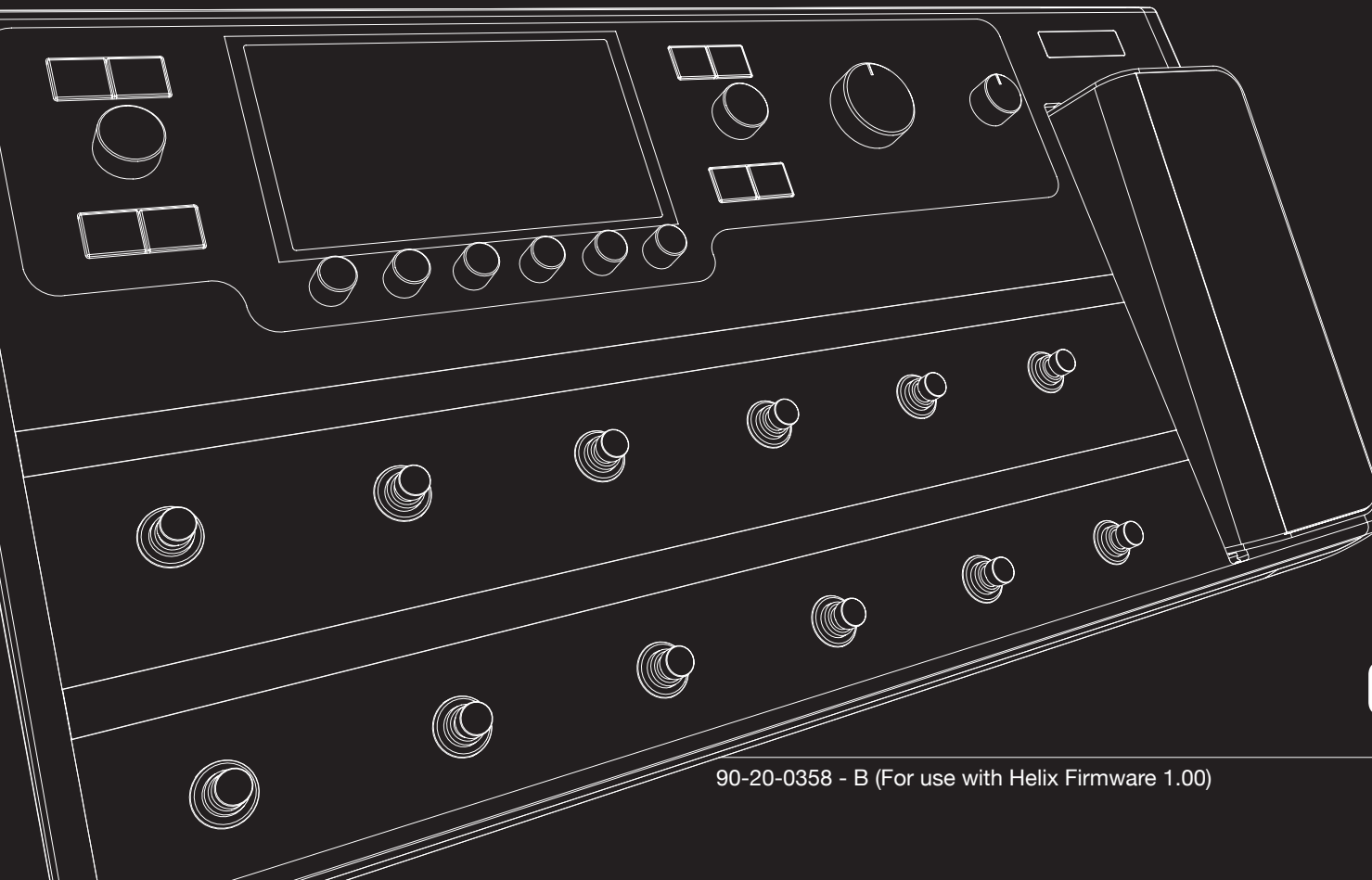# LINE 6

HELIX

OWNER'S MANUAL >

Important Safety Instructions

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT REMOVE SCREWS.
NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THE APPLIANCE TO RAIN OR MOISTURE.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.

- Increase the separation between the equipment and receiver.

- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

- Consult the dealer or an experienced radio/TV technician for help.

The lightning symbol within a triangle means "electrical caution!" It indicates the presence of information about operating voltage and potential risks of electrical shock.

The exclamation point within a triangle means "caution!" Please read the information next to all caution signs.

You should read these important safety instructions.
Keep these instructions in a safe place.

- Read these instructions.
- Keep these instructions.
- Heed all warnings.
- Follow all instructions.
- Do not use this apparatus near water.
- Clean only with dry cloth.
- Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- This apparatus shall be connected to a MAINS socket outlet with a protective earthing connection.
- Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- Only use attachments/accessories specified by the manufacturer.
- Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
- Unplug this apparatus during lightning storms or when unused for long periods of time.
- Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
- The apparatus shall not be exposed to dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on the apparatus.
- WARNING: To reduce the risk of fire or electric shock do not expose this apparatus to rain or moisture.
- The appliance coupler is used as the disconnect device, the disconnect device shall remain readily operable.
- Connect only to AC power outlets rated 100-240V~, 50-60Hz
- Prolonged listening at high volume levels may cause irreparable hearing loss and/or damage. Always be sure to practice "safe listening."
- Service is required when the apparatus has been damaged in any way, such as:
  - The power-supply cord or plug is damaged.
  - Liquid has been spilled or objects have fallen into the apparatus.
  - The unit has been exposed to rain or moisture.
  - The unit is dropped or the enclosure is damaged.
  - The unit does not operate normally or changes in performance in a significant way.
- This apparatus should only be used at temperatures between 0° and 50° C.

Contents

Welcome to Helix

Thank you for purchasing Helix, 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.

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 big color *Helix 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 to also visit line6.com/videos where we're always adding new video tutorials covering the latest Line 6 gear!

What's In the Box?

- Line 6 Helix
- Full-color *Helix Cheat Sheet* (read that one first!)
- USB flash drive containing the *Helix Owner's Manual* you're reading right now and more
- AC power cable
- USB cable
- Hex wrench for adjusting the resistance of the Helix expression pedal
- 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 includes 38 guitar amp models, 7 bass amp models, 30 cab models, 16 mic models, and 70 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 processing 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 between Helix and Line 6 StageSource® monitors and/or DT-Series amplifiers. See "L6 LINK Output"

FRFR *FRFR* (Full Range, Flat Response) speakers, such as Line 6 StageSource monitors, 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 (or iPad®) 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 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"

Top Panel

16B Dream Rig Duet

Delay Harmony Delay

1/8	[37%]	D	Minor	40%	0.0dB
Time	Feedback	Key	Scale	Mix	Level

SAVE

PRESET

BYPASS ACTION

VOLUME PHONES

EXP 1 EXP 2

◄ PAGE PAGE ►

HELIX

BANK ∧

Scream 808 Mystery Filter Ubiquitous Vibe Harmony Delay **MODE** HOLD TO EDIT

BANK ∨

| 16A None More Black | 16B Dream Rig Duet | 16C Jimi, Not Jimmy | 16D DAW Remote | TAP HOLD FOR TUNER |
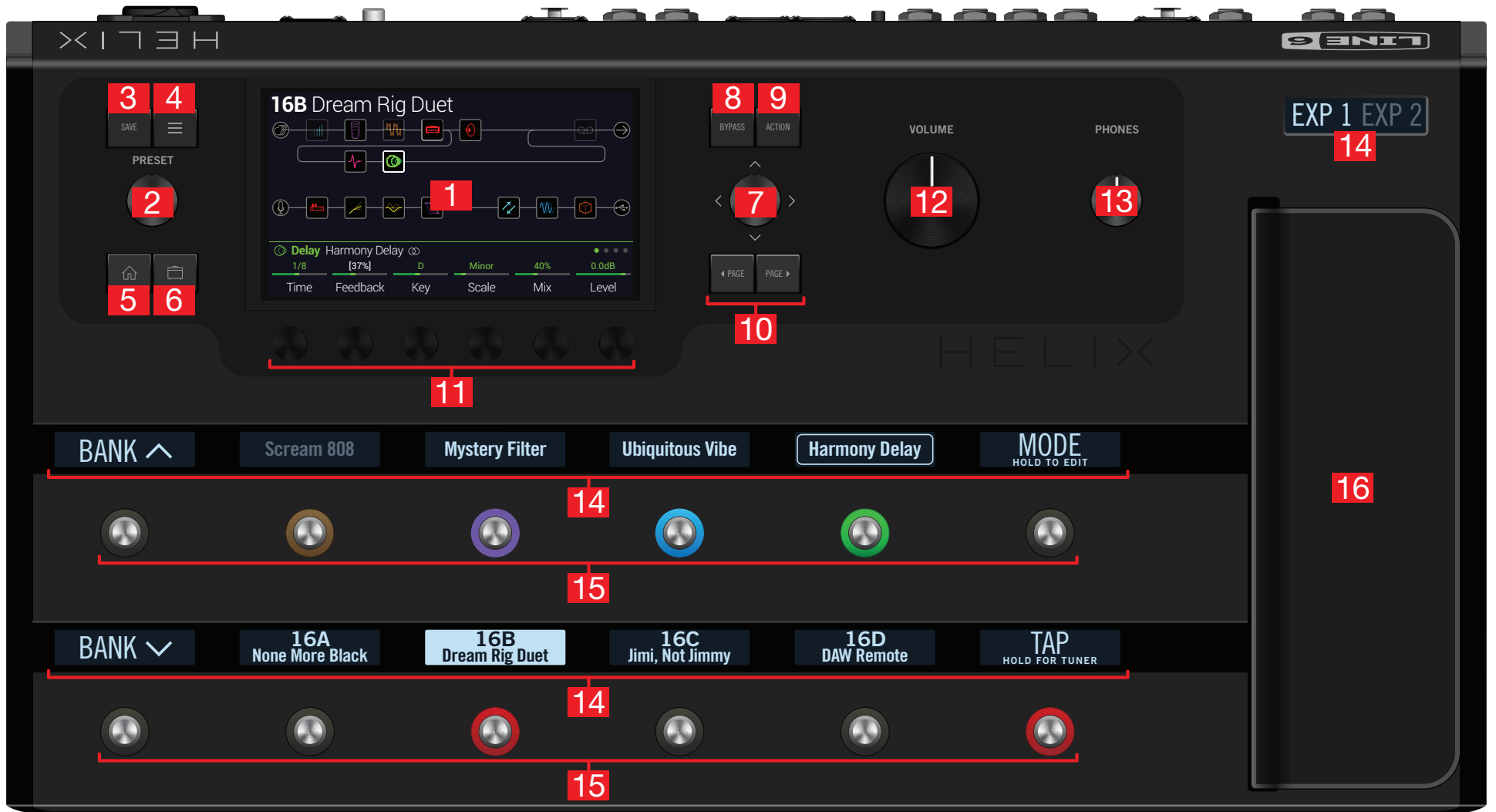
1. **Main Display** This large color LCD is your window into the power of Helix.

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. 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. 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, dots appear to the right of the item's name. ● ● ● ● Press < PAGE or PAGE > to view more parameters.

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 the Helix main output volume.

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

14. **Scribble Strips** The thirteen Helix 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"

15. **Footswitches** The capacitive, touch-sensitive footswitches have colored LED rings that tell you the current state of the assigned block or item. 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.

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

> **NOTE:** The "Touch-Select" feature can optionally be turned off, and other footswitch settings customized - See "Global Settings > Footswitches"

16. **Expression Pedal** Move the expression pedal to control volume, wah, or a combination of amp and/or effects parameters. Activate the hidden toe switch to toggle between EXP 1 and EXP 2. (The scribble strip above tells you which one is active.) If an external pedal is connected to the rear panel EXP 2 jack, the built-in pedal becomes EXP 1 only. See "Controller Assign"

> **NOTE:** Adding a Wah or Pitch Wham block automatically assigns it to EXP 1. Adding a Volume Pedal or Pan block automatically assigns it to EXP 2.

Back Panel
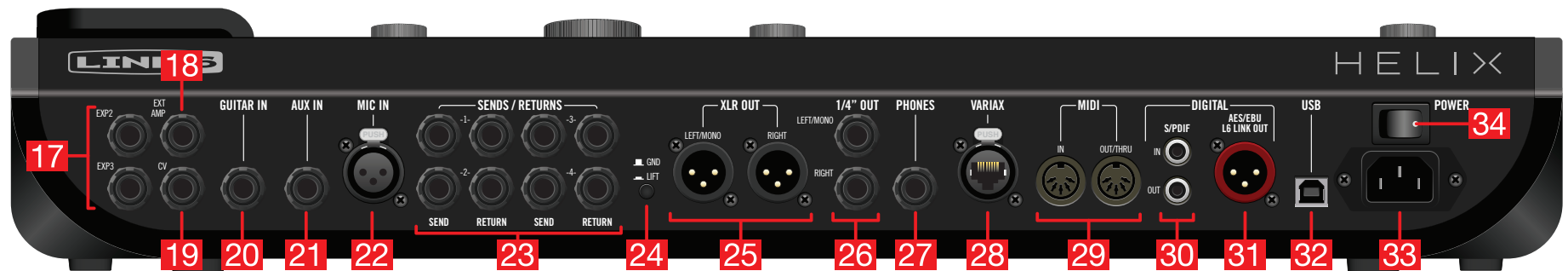
17. EXP 2 and 3 Two additional expression pedals can be connected to Helix and assigned to adjust a wide variety of parameters. See "Controller Assign"

18. EXT AMP 1/2 Connect 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).

19. CV/Expression Out Connect to the expression pedal input on stompboxes or CV (Control Voltage) input on vintage pedals or synths.

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

21. AUX IN (10MΩ) 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.

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

28. 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?"

29. MIDI IN, OUT/THRU Connect Helix to your MIDI gear for sending and receiving program changes, continuous controllers, and other MIDI messages.

30. S/PDIF IN/OUT Digitally connect Helix to your studio equipment via S/PDIF (75-ohm RCA) cables.
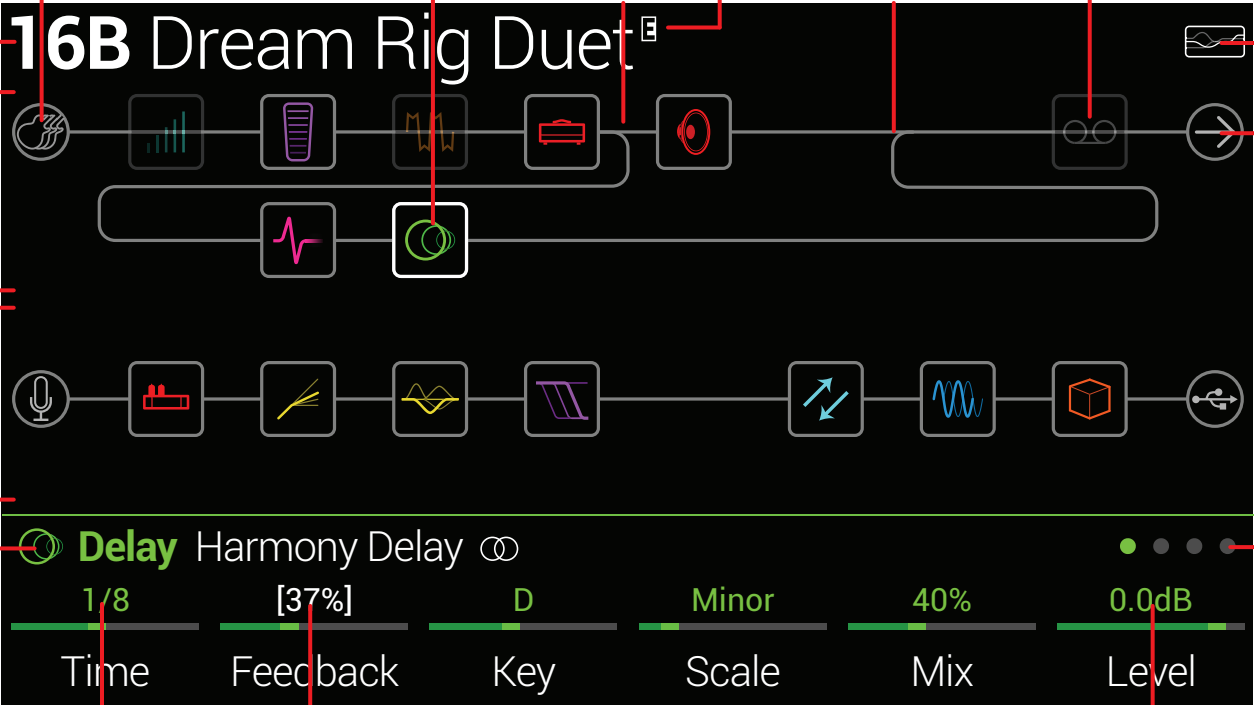
> **NOTE:** S/PDIF and AES/EBU cannot be active at the same time. See "Global Settings > Ins/Outs"

31. AES/EBU, L6 LINK L6 LINK provides easy digital audio connectivity between Helix and Line 6 StageSource monitors and/or DT-Series amplifiers. Alternatively, digitally connect Helix to your studio equipment via an AES/EBU (110Ω XLR) cable. See "L6 LINK Output"

32. 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 an Apple® iPad® (with optional Apple® camera kit). Use of a USB 2.0 or 3.0 port is required - Do not use an external USB hub. See "USB Audio"

33. AC In Connect Helix to a grounded AC power outlet.

34. POWER switch It's alive!

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

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

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

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

PATH 1 A B

PATH 2 A

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

Press <PAGE/PAGE> to view more parameters for the selected block. This block has four pages

16B Dream Rig Duet ᴱ

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 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

Quick Start

Setting Proper Output Levels

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

VOLUME   PHONES
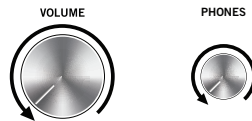
2. **Connect a guitar to the Helix GUITAR IN jack.**

GUITAR IN
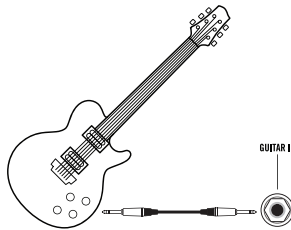
3. **Connect the Helix outputs to your playback system.**

XLR OUT   XLR OUT   1/4" OUT
RIGHT LEFT/MONO   RIGHT LEFT/MONO   LEFT/MONO

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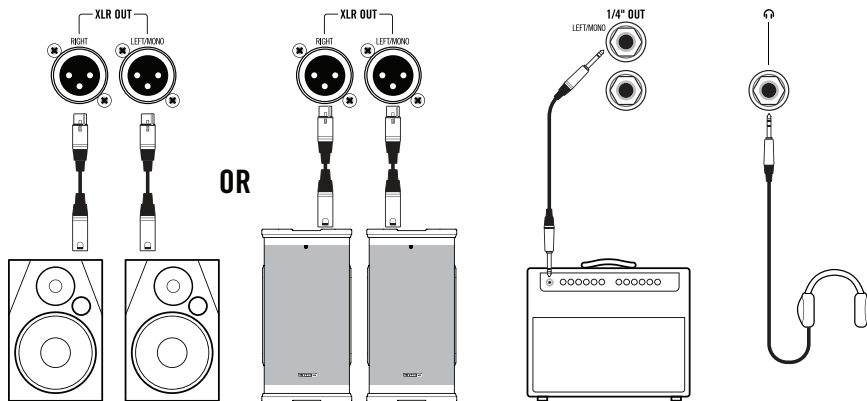
The Helix 1/4" and XLR output levels must be set to match your playback system. If you're only using headphones for now, skip to step 9.

4. **Press ☰ to open the Menu.**

5. **Press Knob 6 (Global Settings).**

The Global Settings screen appears:

Global Settings

Ins/Outs   MIDI/Tempo   Footswitches   Displays   Info

Ins/Outs   ● ● ●
Line   Line   Instrument Instrument Instrument Instrument
1/4"   XLR   Send/   Send/   Send/   Send/
Outputs   Outputs   Return 1   Return 2   Return 3   Return 4
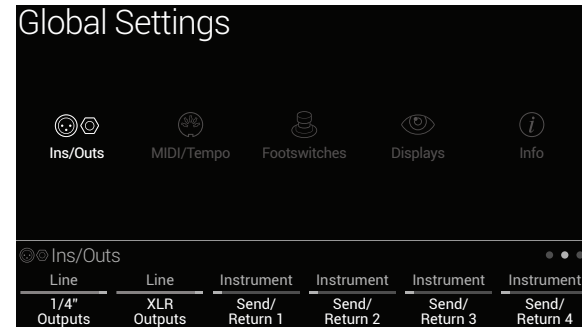
6. **If necessary, move the joystick left to select the Ins/Outs menu.**

7. **Press PAGE > to select ● ● ●.**

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	Set XLR Outputs to "Line"

9. **Slowly turn up the VOLUME knob.**

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

VOLUME   PHONES

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.

2. **Press PRESET to open the Setlist menu:**

    | 📁 1 FACTORY 1 > | 15A Team Zerokelvin |
    | 📁 2 FACTORY 2 | 15B Malthusian |
    | 📁 3 USER 1 | 15C Mezcal Head |
    | 📁 4 USER 2 | 15D Bears! |
    | 📁 5 USER 3 | 16A Jimi Not Jimmy |
    | 📁 6 USER 4 | **16B Pastor of Muppet** |
    | 📁 7 USER 5 | 16C No One Survives |
    | 📁 8 TEMPLATES | 16D Starsburn |

    📁 **1 FACTORY 1** 16B Pastor of Muppet

    ⌨ Rename Setlist   ⌨ Rename Preset   ↕≣ Reorder Preset

    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 6 (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.**

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

    You should see something like this:

    01A Quick Start

    📁 **Amp+Cab** 🔁 ⓘ US Deluxe Nrm   ● ● ●
    | 3.4 | 2.5 | 5.0 | 3.4 | 2.5 | 10 |
    | Drive | Bass | Mid | Treble | Presence | Ch Vol |
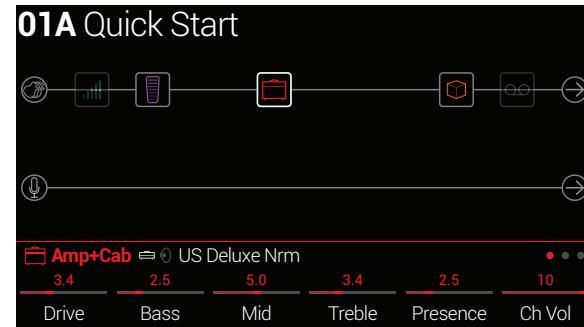
Preset Footswitch Mode

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:

    | BANK ⌃ | 02A Powercore | 02B HechoDeEstrellas | 02C Starsburn | 02D The Bishop Game | MODE HOLD TO EDIT |
    | BANK ⌄ | 01A None More Black | 01B Dream Rig+Vocals | 01C Jimi, Not Jimmy | 01D DAW Remote | TAP HOLD FOR TUNER |
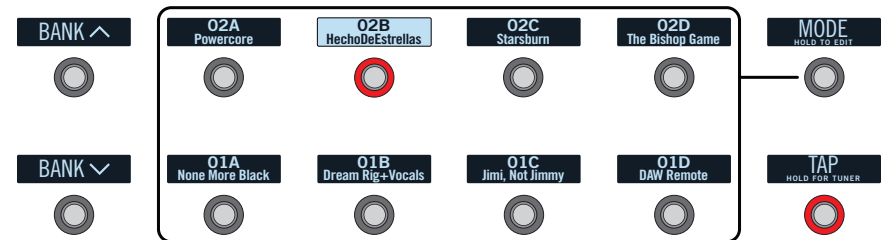
2. **Press BANK ⌃ or BANK ⌄ to choose the desired banks.**

    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, the middle eight footswitches 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, or CV/Expression 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 ⌄ temporarily enters Preset mode. Once you've selected a preset, Helix returns to Stomp mode.

Looper Footswitch Mode

A third footswitch mode—Looper mode—is only available if a Looper block has been assigned to a footswitch in Stomp mode. Nearly all factory presets in Helix have a Looper block assigned to a footswitch, but your custom presets may not.

Looper Type	Max. Loop Length (1/2 Speed)	Max. Loop Length (Full Speed)
Mono	120 seconds	60 seconds
Stereo	60 seconds	30 seconds

1. **From Stomp mode, press the footswitch labeled "Looper" (if available).**

   Looper mode appears:
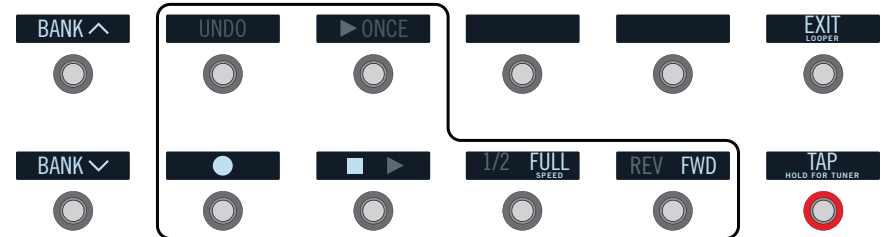
Switch	Description
⬤ / ■ ▶	Step on ⬤ to start recording a loop. Step on ■ ▶ to end the loop and immediately start playback. Step on ⬤ to overdub additional parts. Step on ■ ▶ again to stop playback.
UNDO	If you make a mistake on your last overdub, step on UNDO to erase it.
▶ ONCE	Step on ▶ ONCE to play 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 backwards.

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

> ⚠️ **IMPORTANT!** You may change presets while looping, but loop playback will stop unless the preset you select includes the same type of looper block (mono or stereo) on the same path (1 or 2) *and* is assigned to a footswitch.

> 📌 **NOTE:** While in Looper mode, stepping on BANK ⌃ or BANK ⌄ temporarily enters Preset mode. Once you've selected a preset, Helix returns to Looper mode.

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

Pedal Edit Mode

Most blocks can be edited without taking your hands off the guitar; 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:

Volume Pedal	Mystery Filter	WhoWatt 100	A/B	1x12 US Deluxe	MORE...
Minotaur	Ubiquitous Vibe	Octoverb	FX Loop 1/2	Adriatic Delay	EXIT HOLD TO SAVE+EXIT

   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.

Time	Feedback	Mod Speed	Mod Depth	Mod Phase	Mix
↩ BACK	◀ PAGE	PAGE ▶	VALUE–	VALUE+	EXIT HOLD TO SAVE+EXIT
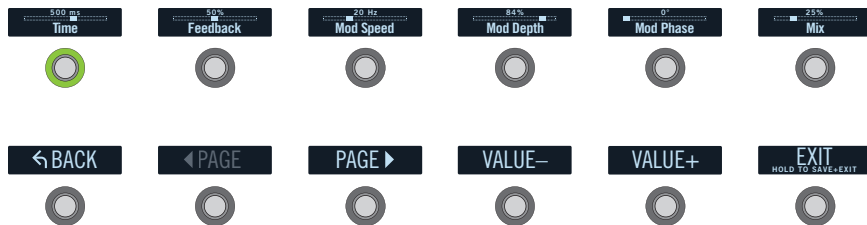
   If the block has more than one page of parameters, **press FS8 (<PAGE) or FS9 (PAGE>) until you find the parameter**.

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

4. **Use the expression pedal to adjust the parameter.**

   For fine adjustment, **press FS10 (VALUE–) and FS11 (VALUE+).**

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

5. **When finished, press FS12 (EXIT).**

   If you want to save any changes made while in Pedal Edit mode, **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:

   Harmony Delay

   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, press ▭ repeatedly to cycle through all tonestacks.

2. **Turn Knobs 1-6 below the screen.**

   Some blocks have more than one page of parameters, in which case dots on the right side of the inspector indicate the current page. For example, the dots below indicate that page 1 parameters are visible (the colored dot) and a total of four 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:

Harmony Delay

> 📌 *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.

MULTIPLE (3)

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:**

× None	Mono	Digital Delay
⌁ Distortion	**Stereo** >	Multitap 3
⟋ Dynamics		Multitap 6
⇜ EQ		Ping Pong
⩘ Modulation		Sweep Echo
◷ **Delay** >		Ducked Delay
⬡ Reverb		Transistor Tape
⫿ Pitch/Synth ⌄		**Harmony Delay** ⌄

◷ **Delay** Harmony Delay ∞   ● ● ● ●

1/8	[37%]	D	Minor	40%	0.0dB
Time	Feedback	Key	Scale	Mix	Level
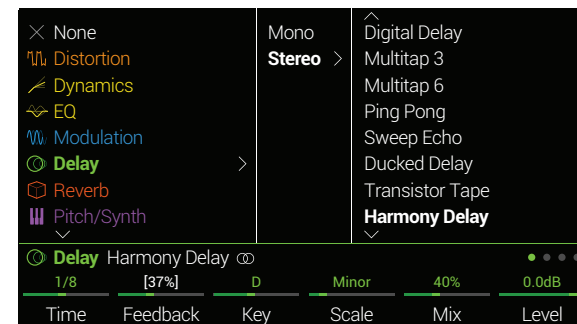
Most model categories include subcategories. For example, effects can generally be mono or stereo (stereo models display the ⦾ icon). Amp+Cab and Amp models have Guitar and Bass subcategories. Cab models have single and dual subcategories.

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"

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 ⌂).**

Choosing an Input

Move the joystick left to select an Input block and turn the joystick.

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

> 💡 **TIP:** To view a list of available inputs, press the joystick.

Choosing an Output

Move the joystick right to select an Output block and turn 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.

> 💡 **TIP:** To view a list of available outputs, press the joystick.

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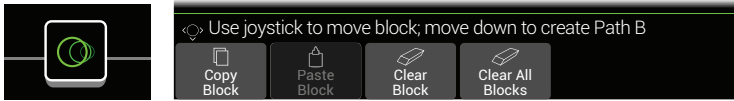
2. **Move the joystick left or right to move the block.**

   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 next section.

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"

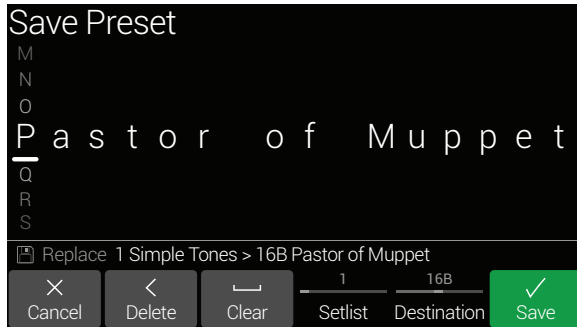1. **Press ACTION.**

2. **Press Knob 4 (Clear All Blocks).**

   The following dialog appears:
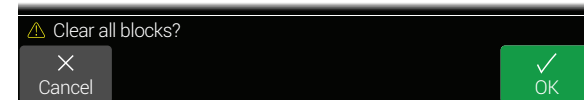
3. **Press Knob 6 (OK).**

Saving/Naming a Preset

1. **Press SAVE to open the Save Preset screen:**

   ## Save Preset

   M
   N
   O
   P a s t o r   o f   M u p p e t
   Q
   R
   S

   📄 Replace 1 Simple Tones > 16B Pastor of Muppet

   | ✕ Cancel | ‹ Delete | ⌴ Clear | 1 Setlist | 16B Destination | ✓ Save |

   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 (Clear) to clear the selected character.

   🚀 *SHORTCUT:* Press the joystick to cycle through A, a, and 0.

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

   Any of the Helix 1,024 presets can be overwritten.

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

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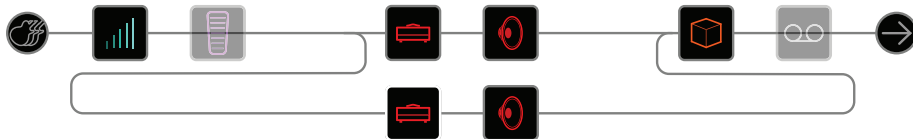
3. **Press ACTION again to drop the Amp+Cab block.**

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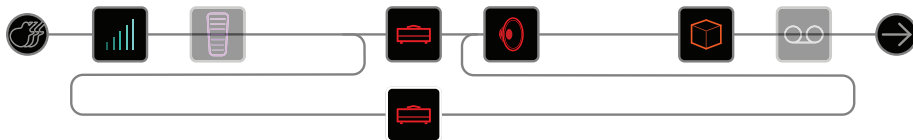
...or maybe a single Amp block splitting into two separate Cab blocks...

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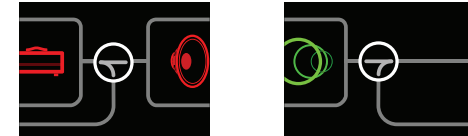
2. **Press ACTION to pick up the Split or Merge block for moving.**

   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.

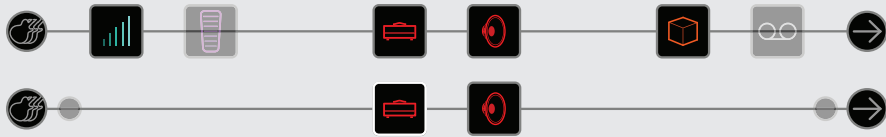The Merge block shifts right and a duplicate Output block is created:

In this example, the Input block is split to 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're only hearing Output 1B.
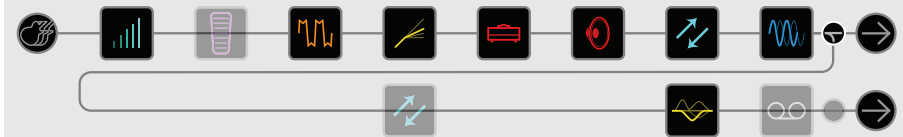
In the illustration above, our signal is processed by the eight blocks on path 1A and processed further by the three blocks on path 1B.

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"):
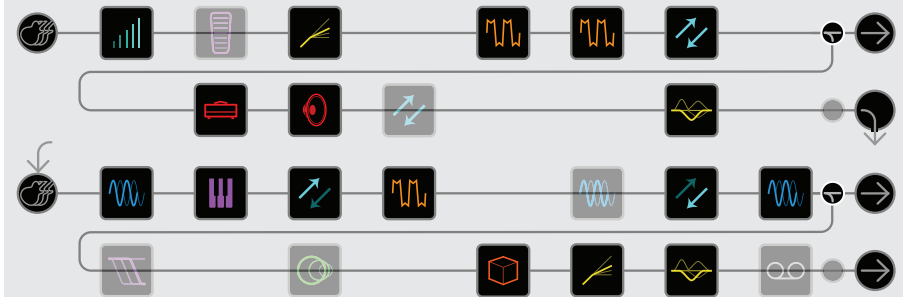
Dynamic DSP

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:

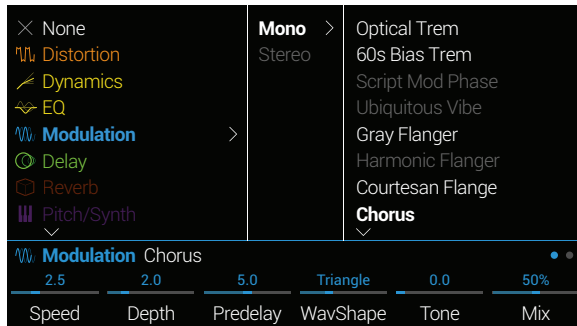|	
Amp+Cab, Amp, or Preamp blocks	Any combination, up to four (two per path)
Cab blocks (includes Amp+Cab blocks)	Up to four (two per path; Cab > Dual blocks are considered two)
Impulse Response blocks	Up to four 1024-point IRs (two per path) or two 2048-point IRs (one per path)
Looper block	One

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":

None	**Mono**	Optical Trem
Distortion	Stereo	60s Bias Trem
Dynamics		Script Mod Phase
EQ		Ubiquitous Vibe
Modulation		Gray Flanger
Delay		Harmonic Flanger
Reverb		Courtesan Flange
Pitch/Synth		**Chorus**

Modulation Chorus					
2.5	2.0	5.0	Triangle	0.0	50%
Speed	Depth	Predelay	WavShape	Tone	Mix

Tips to Optimize DSP

- Some block types use much more DSP than others, such as amps, cabs, IRs, and pitch shifters. Not surprisingly, the Amp+Cab block uses the most. EQ, Dynamics, Volume/Pan, and Send/Return blocks use relatively little
- Some models may use more DSP than others in the same category. This is especially true with amp models
- If you run out of DSP on Path 1, route it to Path 2 for more horsepower. If you plan on creating tones with two or more amps and more than a handful of effects, use both paths

- 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

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, and Preamp 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!)

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 and recall them instantly
- Turn the Variax volume and/or tone knobs to remotely control one or more Helix amp and effects parameters. 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

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. (10MΩ input - for an active-pickup equipped guitar or bass.)
Variax	With a James Tyler® Variax® (JTV) 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 JTV or Variax Standard's 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"
S/PDIF	S/PDIF digital in only. If a Variax input (or Multi input, which includes Variax) exists on another Input block within the preset, S/PDIF in will be non-selectable.
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 for monitoring audio from your computer (or iPad®) and bypasses all processing blocks. As such, it's not available as an input block source.

All input blocks have a dedicated noise gate. Threshold and Decay parameters are grayed out unless Knob 1 (Input Gate) is turned on:
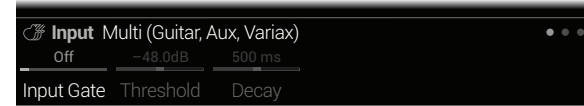
Multi and Variax input blocks have additional pages for Variax parameters:

James Tyler Variax or Variax Standard

Page	Knob	Parameter	Description
• • •	1	Variax Settings	Determines whether Variax settings 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's current setting.
	3	Variax Vol Knob	Remotely sets the Variax volume knob setting.
	4	Variax Tone Knob	Remotely sets the Variax tone knob setting.
	5	Lock Variax Controls	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 local functions on the guitar. Turning the Variax model knob resets all to "Unlocked."
	6	Variax Tuning	When set to "Don't Force," Helix respects the Variax current tuning. When set to "Custom," Helix engages any custom tuning on Page • • •.
• • •	1	Variax String 6	Choose the amount of half-steps, positive or negative, for which you want to raise or lower the pitch of the selected string. The note labels displayed assume the guitar is tuned to standard pitch (E, A, D, G, B, E), with the A using a 440 Hz reference pitch.
	2	Variax String 5	
	3	Variax String 4	
	4	Variax String 3	
	5	Variax String 2	
	6	Variax String 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 are used to 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	Only one digital output can be active at a time; choose S/PDIF or AES/EBU and the desired sample rate in the "Global Settings > Ins/Outs". The Global Ins/Outs settings are not necessary for L6 LINK - see "L6 LINK Output" for more info.
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® (with optional Apple® camera 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):
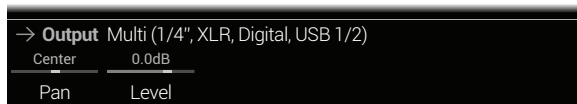
> 🚀 **SHORTCUT:** Press Knob 1 (Pan) to return Pan to center. Press Knob 2 (Level) to return Level to unity (0.0dB).

> 💡 **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 Output

Alternatively, the digital XLR connector can be used for L6 LINK output (use of a 110Ω XLR cable is recommended). L6 LINK provides easy digital audio connectivity between Helix and Line 6 StageSource speakers and/or DT-Series amplifiers. Two StageSource speakers or DT amps can also be connected in series via L6 LINK and your stereo Helix signal is intelligently split, with the left channel going to the first StageSource/DT and the right channel to the second. If you have one StageSource/DT connected, the Helix output is collapsed to mono and fed to the StageSource/DT.

Connecting an L6 LINK device to Helix automatically disables S/PDIF out and routes audio out the digital XLR connector - no adjustments of the Global Settings > Ins/Outs > Digital Audio or Sample Rate options are necessary.

> 💡 **TIP:** With an L6 LINK connection to a DT-Series amp, often the Helix Preamp models are a better choice than Amp or Amp+Cab models. Manually configure the analog power amp options on the DT amp for more sonic possibilities!

Effects

Many Helix effects blocks can be either mono or stereo. Stereo effects display ⓪⓪ after the model name.

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

Distortion Models

Model	Subcategories	Based On*
Minotaur	Mono, Stereo	Klon® Centaur
Compulsive Drive	Mono, Stereo	Fulltone® OCD
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
Vermin Dist	Mono, Stereo	Pro Co RAT
Arbitrator Fuzz	Mono, Stereo	Arbiter FuzzFace®
Triangle Fuzz	Mono, Stereo	Electro-Harmonix® Big Muff Pi®
Industrial Fuzz	Mono, Stereo	Z.Vex Fuzz Factory
Tycoctavia Fuzz	Mono, Stereo	Tycobrahe® Octavia
Megaphone	Mono, Stereo	Megaphone

Dynamics Models

Model	Subcategories	Based On*
Deluxe Comp	Mono, Stereo	Line 6 Original
Red Squeeze	Mono, Stereo	MXR® Dyna Comp
LA Studio Comp	Mono, Stereo	Teletronix® LA-2A®
Noise Gate	Mono, Stereo	Line 6 Original
Hard Gate	Mono, Stereo	Line 6 Original

EQ Models

Model	Subcategories	Based On*
Simple EQ	Mono, Stereo	Line 6 Original
Low Cut/High Cut	Mono, Stereo	Line 6 Original
Parametric	Mono, Stereo	Line 6 Original
10-Band Graphic	Mono, Stereo	MXR® 10-Band Graphic EQ

Modulation Models

Model	Subcategories	Based On*
Optical Trem	Mono, Stereo	Fender® optical tremolo circuit
60s Bias Trem	Mono, Stereo	Vox® AC-15 Tremolo
Script Mod Phase	Mono, Stereo	MXR® Phase 90
Ubiquitous Vibe	Mono, Stereo	Shin-ei Uni-Vibe®
Gray Flanger	Mono, Stereo	MXR® 117 Flanger
Harmonic Flanger	Mono, Stereo	A/DA Flanger
Courtesan Flange	Mono, Stereo	Electro-Harmonix Deluxe EM
Chorus	Mono, Stereo	Line 6 Original
70s Chorus	Mono, Stereo	BOSS® CE-1
Trinity Chorus	Stereo	DyTronics 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
AM Ring Mod	Mono, Stereo	Line 6 Original
Pitch Ring Mod	Stereo	Line 6 Original

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Delay Models

Model	Subcategories	Based On*
Simple Delay	Mono, Stereo	Line 6 Original
Mod Chorus Echo	Mono, 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
Transistor Tape	Mono, Stereo	Maestro® Echoplex EP-3
Harmony Delay	Stereo	Line 6 Original
Bucket Brigade	Mono, Stereo	BOSS® DM-2
Adriatic Delay	Mono, Stereo	BOSS® DM-2 w/ Adrian Mod
Elephant Man	Mono, Stereo	Electro-Harmonix® Deluxe Memory Man

Reverb Models

Model	Subcategory	Based On*
Plate	Stereo	Line 6 Original
Room	Stereo	Line 6 Original
Chamber	Stereo	Line 6 Original
Hall	Stereo	Line 6 Original
Echo	Stereo	Line 6 Original
Tile	Stereo	Line 6 Original
Cave	Stereo	Line 6 Original
Ducking	Stereo	Line 6 Original
Octo	Stereo	Line 6 Original
63 Spring	Stereo	Line 6 Original
Spring	Stereo	Line 6 Original
Particle Verb	Stereo	Line 6 Original

Pitch/Synth Models

Model	Subcategories	Based On*
Pitch Wham	Mono, Stereo	Digitech Whammy®
Twin Harmony	Mono, Stereo	Eventide® H3000
3 OSC Synth	Stereo	Line 6 Original

Filter Models

Model	Subcategories	Based On*
Mutant Filter	Mono, Stereo	Musitronics Mu-Tron® III
Mystery Filter	Mono, Stereo	Korg® A3

Wah Models

Model	Subcategories	Based On*
UK Wah 846	Mono, Stereo	Vox® V846
Teardrop 310	Mono, Stereo	Dunlop® Crybaby® 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

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

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.
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.
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.
Predelay	Determines the time before the reverb effect is heard.

Parameter	Description
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 / High Cut	Filters a portion of the block's bass and/or treble frequencies, which can help remove rumble and/or high-end harshness.
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. 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	*Trails Off:* Any delay repeats or reverb decays are instantly muted when the block is bypassed. *Trails On:* Any delay repeats or reverb decays continue to decay naturally when the block is bypassed.

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:

Amp+Cab Stone Age 185					
3.4	2.5	5.0	3.4	2.5	10
Drive	Bass	Mid	Treble	Presence	Ch Vol

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
Tweed Blues Nrm	Guitar	Fender® Bassman® (normal channel)
Tweed Blues Brt	Guitar	Fender® Bassman® (bright channel)
US Small Tweed	Guitar	Fender® Champ®
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
Jazz Rivet 120	Guitar	Roland® JC-120 Jazz Chorus
Essex A-15	Guitar	Vox® AC-15
Essex A-30	Guitar	Vox® AC-30 with top boost
A-30 Fawn Nrm	Guitar	Vox® AC-30 Fawn (normal channel)
A-30 Fawn Brt	Guitar	Vox® AC-30 Fawn (bright channel)
Mandarin 80	Guitar	Orange® OR80
Brit J-45 Nrm	Guitar	Marshall® JTM-45 (normal channel)
Brit J-45 Brt	Guitar	Marshall® JTM-45 (bright channel)
Brit Plexi Nrm	Guitar	Marshall® Super Lead 100 (normal channel)
Brit Plexi Brt	Guitar	Marshall® Super Lead 100 (bright channel)

Amp Models

Model	Subcategory	Based On*
Brit Plexi Jump	Guitar	Marshall® Super Lead 100 (jumped)
Brit P-75 Nrm	Guitar	Park® 75 (normal channel)
Brit P-75 Brt	Guitar	Park® 75 (bright channel)
Brit 2204	Guitar	Marshall® JCM-800
German Mahadeva	Guitar	Bogner® Shiva
German Ubersonic	Guitar	Bogner® Überschall®
Cali Rectifire	Guitar	MESA/Boogie® Dual Rectifier®
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®
Line 6 Elektrik	Guitar	Line 6 Original
Line 6 Doom	Guitar	Line 6 Original
Line 6 Epic	Guitar	Line 6 Original
Tuck n' Go	Bass	Ampeg® B-15NF Portaflex®
SV Beast Nrm	Bass	Ampeg® SVT® (normal channel)
SV Beast Brt	Bass	Ampeg® SVT® (bright channel)
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

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 a "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. At higher settings, things get freaky.
Ripple	
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.

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 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 🔊🔊 1x12 US`   `Cab 🔊🔊 1x12 Le`

Cab Models

Model	Subcategories	Based On*
Soup Pro Ellipse	Single, Dual	1 x 6x9" Supro® S6616
1x8 Small Tweed	Single, Dual	1x8" Fender® Champ
1x12 Field Coil	Single, Dual	1x12" Gibson® EH185
1x12 US Deluxe	Single, Dual	1x12" Fender® Deluxe Oxford
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
2x12 Double C12N	Single, Dual	2x12" Fender® Twin C12N
2x12 Mail C12Q	Single, Dual	2x12" Silvertone® 1484

Cab Models

Model	Subcategories	Based On*
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
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
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®
1x15 Tuck n' Go	Single, Dual	1x15" Ampeg® B-15
2x15 Brute	Single, Dual	2x15" MESA/Boogie® 2x15 EV
4x10 Rhino	Single, Dual	4x10" Ampeg® SVT® 410HLF
6x10 Cali Power	Single, Dual	6x10" MESA/Boogie® Power House
8x10 SV Beast	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

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

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.

Loading Custom IRs

Loading custom impulse responses requires connecting to the *Helix* application in your Mac® or Windows® computer. The *Helix* application is available as a free download from line6.com/software.

1. **Connect Helix to your computer via USB and open the *Helix* application.**

2. **Click the Impulses tab.**
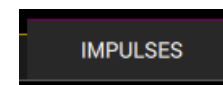
3. **Drag one or more IR files from the desktop or any Finder window directly into the *Helix* app's Impulses list.**

   The *Helix* app updates the Helix hardware's IR list automatically. Helix can load and store up to 128 IRs at a time. 48kHz, mono, .WAV type IRs are supported.

   NOTE: Helix utilizes mono IR files up to 2048 samples in length. Upon import, the IR Manager automatically shortens (or lengthens) all IR files to 2048 samples, but you may choose a less DSP-intensive, 1024-sample version from the Model list. Optionally, a stereo .WAV IR can be imported and the IR Manager will utilize only the left channel.

   IMPORTANT! IR blocks reference an IR number, not the actual IR file. For example, if you happen to replace or delete "IR 12" from the *Helix* application, it will affect any presets containing IR blocks with "IR 12" selected.

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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.

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 for instrument (for inserting stompboxes) or line-level operation. See "Global Settings > Ins/Outs"

> **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 level of the signal passed 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.
4	Trails	*Trails Off:* An external stompbox would be instantly muted when the FX Loop block is bypassed. *Trails On:* An external delay or reverb stompbox would continue to decay naturally when the FX Loop block is bypassed.

Looper

Helix can add one mono or stereo Looper block per preset.

The Looper can exist anywhere on either Path 1 or Path 2. Also see

Looper Settings

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	*Relatively* 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	

Split

A Split block appears any time a parallel path is created, but is visible only when selected:
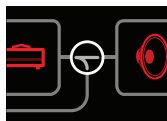
Helix has three different types of Split blocks:

Y	Both the left and right sides of the signal are sent evenly to Paths A (upper) and B (lower). By default, a Split > Y appears any time a parallel path is created. There are no settings to adjust.
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).

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).

Merge

A Merge > Mixer block appears any time a parallel path is created, but is visible only when selected:
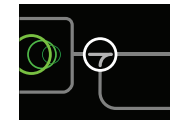
Knob	Parameter	Description
1	A Level	Adjusts the output level of Path A (upper).
2	A Pan	Adjusts the left/right stereo balance of Path A.
3	B Level	Adjusts the output level of Path B (lower).
4	B Pan	Adjusts the left/right stereo balance of Path B.
5	B Polarity	Inverts the polarity of Path B. Typically, this should be set to "Normal."
6	Level	Adjusts the overall output level of the Merge block.

Tuner

1. Hold the TAP footswitch until the Tuner screen appears:

Tuner Settings
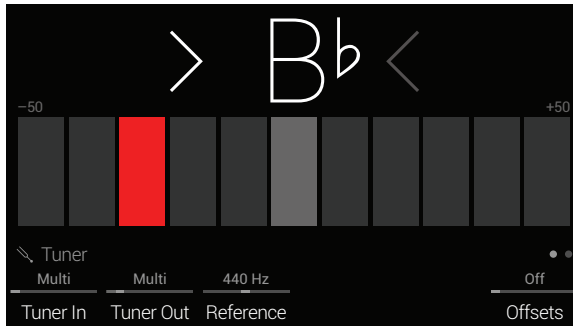
2. Pluck an individual string on your guitar.

When a box left of center is lit red, your string is flat. When a box right of center is lit red, your string is sharp. When the center box is lit green and both arrows are illuminated, your string is in tune.

3. To exit the Tuner, step on any footswitch.

All tuner settings are global.

> 💡 **TIP:** If you have a favorite pedal or rack tuner and wish to use it instead of the Helix 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.

| Page	Knob	Parameter	Description
● ●	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.
	6	Offsets	Enables the Tuner offsets displayed on Page ● ●.
● ●	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 ● ● is turned on.
	2	String 5 Offset	
	3	String 4 Offset	
	4	String 3 Offset	
	5	String 2 Offset	
	6	String 1 Offset	

Footswitch Assign

Quick Footswitch Assign

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

   Input, Output, Split > Y, and Merge blocks cannot be assigned to footswitches. Split > A/B or Split > Crossover blocks *can* be assigned to a footswitch; when bypassed, they behave exactly like Split > Y.

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:**
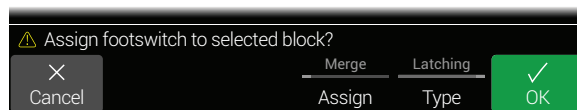
   If you want to replace any other blocks that may already be assigned to the footswitch, **turn Knob 4 (Assign) to "Replace."** Otherwise, leave it set to "Merge," which allows for multiple blocks to be assigned to the same switch.

   If you want to change the way the switch behaves, **turn Knob 5 (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).**

Manual Footswitch Assign

The Footswitch Assign screen is where you manually assign blocks to (and un-assign blocks from) Stomp mode footswitches.

1. **Press ☰ to open the Menu.**

2. **Press Knob 1 (Footswitch Assign).**

   The Footswitch Assign screen looks very similar to the Home screen:
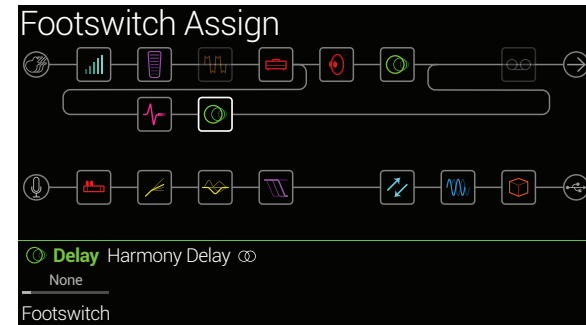
3. **Move the joystick to select the block you want to assign to a footswitch.**

   Input, Output, Split > Y, and Merge blocks cannot be assigned to footswitches. Split > A/B or Split > Crossover blocks *can* be assigned to a footswitch; when bypassed, they behave exactly like Split > Y.

4. **Turn Knob 1 (Footswitch) to select footswitch 1, 2, 3, 4, 5, 7, 8, 9, 10, 11, or Exp Toe.**

   > 📌 *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 ∨.

   > 📌 *NOTE:* Adding a Volume Pedal, Pan, Wah, or Pitch Wham block automatically assigns it to "Exp Toe".

   > 📌 *NOTE:* Each footswitch can have up to 8 assignments. If you attempt to add a ninth, "Can't assign any more blocks to this footswitch!" appears in the header:
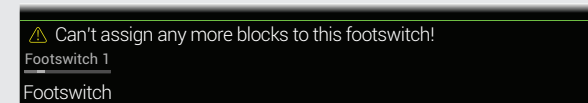
   Selecting any footswitch (other than Exp Toe) displays Knob 2 (Type):
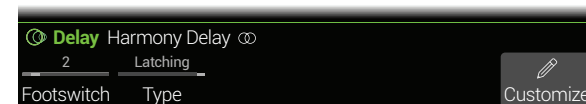
5. **Turn Knob 2 (Type) to select "Momentary" or "Latching."**

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.

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

Customizing a Footswitch Label

1. **From the Footswitch Assign screen, select Footswitch 1-5, 7-11, or Exp Toe and press Knob 6 (Customize).**
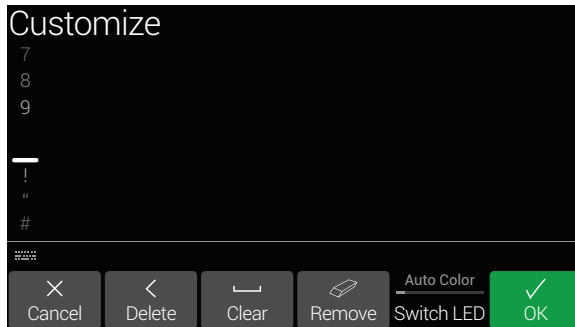
The Customize screen appears:

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 (Clear) to clear the selected character.

> 🚀 **SHORTCUT:** Press the joystick to cycle through A, a, and 0.

Press Knob 4 (Remove) to remove the custom label, after which the footswitch label displays its normal assignment.

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

> 📌 **NOTE:** Footswitches can also be customized from the "Command Center" screen.

Customizing a Footswitch Color

1. **From the Customize screen, turn Knob 5 (Switch LED) to select the desired color (or turn it off).**

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

2. **Press Knob 1 (Cancel) or ⌂ to exit.**

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 even from the volume and tone knobs on a James Tyler Variax or Variax Standard guitar.

If a controller has been assigned to a parameter, the value appears white and in brackets:

> **[37%]**
>
> **Feedback**
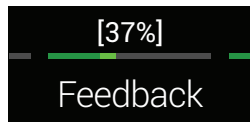
> 📌 **NOTE:** Adding a Wah or Pitch Wham block automatically assigns it to be controlled by EXP 1. Adding a Volume Pedal or Pan block automatically assigns it to be controlled by EXP 2.

> 📌 **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:

> ⚠ Too many controller assignments!
> Feedback   None
> Parameter   Controller   Learn Controller

Quick Controller Assign

1. **From the Home screen, press and hold the knob for two seconds 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 "Move/use controller to learn...":

> ⚠ Move/use controller to learn...
> Feedback   None
> Parameter   Controller   Learn Controller
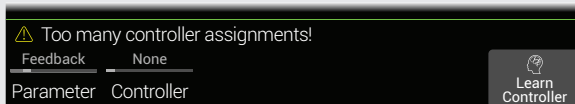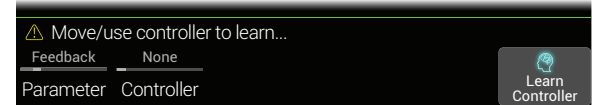
3. **Move the expression pedal, turn the Volume or Tone knob on a connected Variax, step on a Stomp mode footswitch, send a MIDI CC message from your keyboard, etc.**

   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:
>
> ⚠ This MIDI CC# is reserved for global functions!
> Feedback   None
> Parameter   Controller   Learn Controller
>
> See "MIDI" for more information.
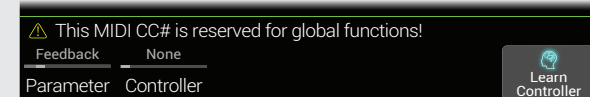
4. **Press ⌂ to return to the Home screen.**

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:

> **Controller Assign**
>
> ⓘ **Delay** Harmony Delay ⓘ
> Time   None
> Parameter   Controller   Learn Controller
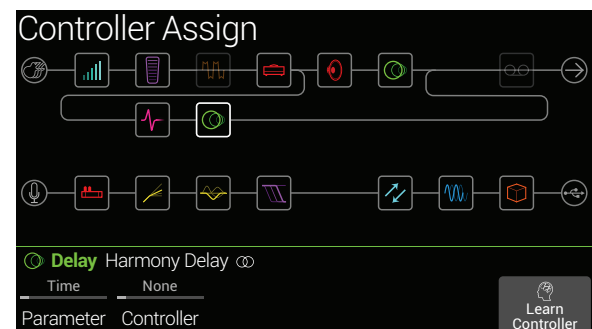
3. **Move the joystick to select the block containing the parameter to which you want to assign a controller.**

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.**
>
> ● ●   ● ●
>
> np+Cab 🔊 🎛 Stor   np+Cab 🔊 🎛 1x12
>
> **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.**
>
> ● ●   ● ●
>
> Cab 🎛🎛 1x12 US   Cab 🎛🎛 1x12 Le

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 parameters in Helix.

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:

<div align="center">

Feedback

◯

</div>

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.

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

> 📌 *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 ⋁.

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

> 📌 *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**.

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 "Customizing a Command Footswitch Label"

- By default, a parameter's Min and Max values will be pretty extreme. It pays to play pretty conservative 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:
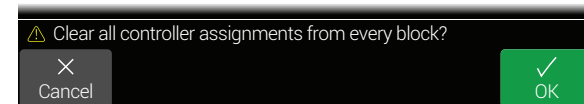
3. **Press Knob 6 (OK).**

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

Command Center

Helix 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 MIDI, CV/expression, or External Amp commands to your guitar amps, vintage pedals, synths, or even other modelers. In addition, 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"
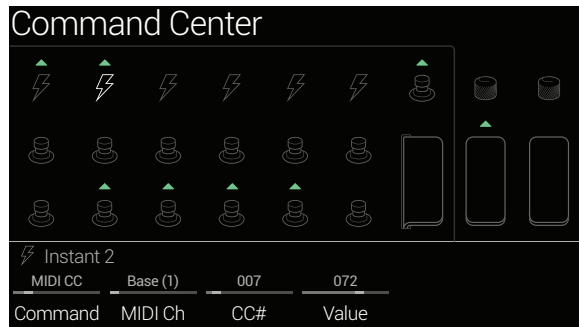
> 📌 **NOTE:** All MIDI-based Command Center messages are transmitted via MIDI and USB simultaneously.

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		
Knob	Parameter	Description
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), appears as "Initial Val."
5	Lit Value	Sets the CC number's value (0-127) when the footswitch ring is lit. For Footswitches 7 (MODE) and 12 (TAP), appears as "Toggle Val."

> 📌 **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.

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.

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 Helix'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), 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), appears as "Toggle Val."

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 4 (Dim Value) and Knob 5 (Lit Value).

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.**
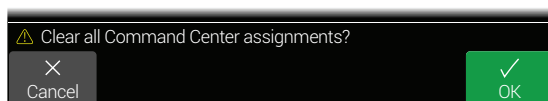
4. **Press Knob 3 (Paste All Commands).**

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

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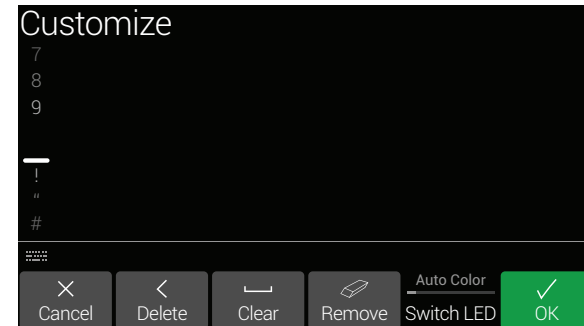
   The Customize screen appears:

   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 (Clear) to clear the selected character.

   🚀 **SHORTCUT:** Press the joystick to cycle through A, a, and 0.

   Press Knob 4 (Remove) to remove the custom label, after which the foot-switch displays its normal assignment.

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

   📌 **NOTE:** Footswitches can also be customized from the "Footswitch Assign" screen.

Customizing a Command Footswitch Color

1. **From the Customize screen, turn Knob 5 (Switch LED) to select the desired color (or turn it off).**

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

2. **Press Knob 1 (Cancel) or ⌂ to exit.**

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 in the upper right corner:
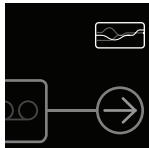
1. **Press ☰ to open the Menu.**

2. **Press Knob 5 (Global EQ).**
   The Global EQ screen appears:
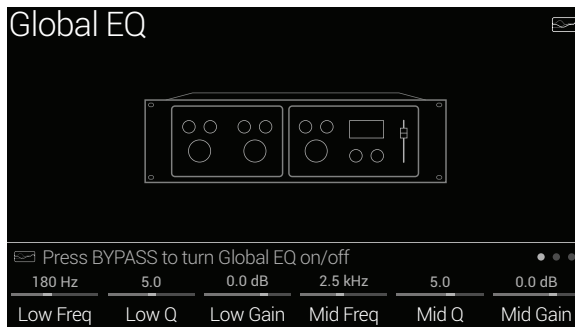
3. **Press BYPASS to turn Global EQ on and off.**

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

> 💡 **TIP:** Press PAGE> to view ● ● ● and turn Knob 1 (Apply EQ) to set whether Global EQ is applied 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:
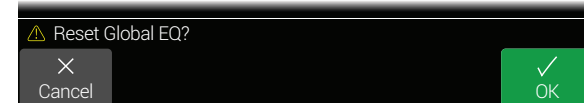
3. **Press Knob 6 (OK).**

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.

1. **Press ☰ to open the Menu.**

2. **Press Knob 6 (Global Settings).**

   The Global Settings screen appears:
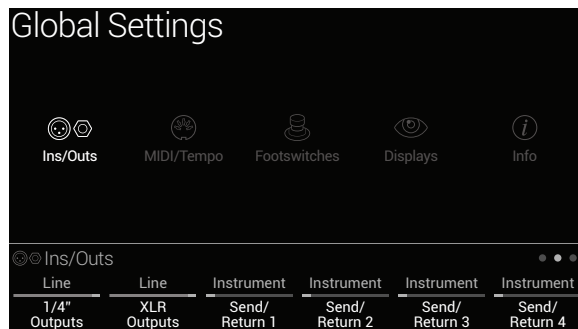
3. **Move the joystick left or right to select one of the five sub-menus.**

   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 page, press ACTION.**

2. **Press Knob 1 (Factory Settings).**

   The following dialog appears:
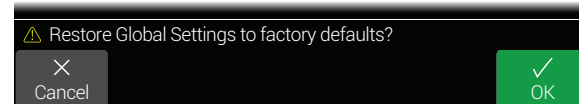
3. **Press Knob 6 (OK).**

Global Settings > Ins/Outs ☺◎

Page	Knob	Parameter	Description
	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	Guitar In Impedance	Helix includes 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 overall "tighter" feel. When set to "Auto", the Guitar Input's impedance is dynamically set to match the first amp or FX model on Path 1A.
● ● ●	3	Mic In 48V Phantom	When on, Helix provides 48V from the XLR Mic In jack to power studio condenser microphones.
	4	Mic In Gain	Sets analog gain for the XLR Mic In jack.
	5	Mic In Low Cut	Sets the frequency of the Mic In's dedicated, variable low-cut filter. Turn fully counterclockwise (or push) to disable.
	6	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® 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"
	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	
	1	Re-amp Src (USB 7)	USB out 7 and 8 are dedicated for recording a DI signal which can be used for re-amping; choose which two inputs will be sent dry (un-processed) 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.
● ● ●	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 being 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	Sample Rate	Determines the sample rate of the Helix S/PDIF and AES/EBU outputs; choose 44.1 kHz (the default), 48 kHz, 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.

Global Settings > MIDI/Tempo ✸

Knob	Parameter	Description
1	MIDI Base Channel	Sets the system base MIDI channel that Helix uses for both receiving and sending 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	MIDI Over USB	When on, Helix receives and transmits MIDI data via USB in the same capacity as its MIDI jacks.
4	PC Send/Receive	Determines whether or not Helix automatically sends MIDI program change (PC) messages when selecting presets. This setting does not affect any MIDI commands manually assigned from the Command Center page. Also determines whether or not Helix responds to program changes.
5	Tempo	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 (Preset BPM/ Global BPM). Choose whether the Helix tempo is stored and recalled with each preset or is applied globally across all presets.
6	Preset BPM/ Global BPM	This is an alternative way to set the Helix tempo, as opposed to stepping repeatedly on the TAP footswitch. Depending on the Knob 5 (Tempo) setting, this value is saved either per preset or globally. The Helix 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.

Global Settings > Footswitches ⊝

Knob	Parameter	Description
1	Touch Select	If you don't want Helix to automatically select assigned blocks or items when you touch a switch top, or engage Quick Footswitch Assign when you touch a switch top for 2 seconds, set this to "Off." If you play barefoot, you might want to turn this off as well.
2	Preset Mode Switches	By default, Preset footswitch mode displays two rows/banks of presets. If you'd rather see one bank of presets and four Stomp mode switches at once, set this to "Upper Row" (presets on the top with switches from Stomp mode appearing below) or "Lower Row" (presets on the bottom with switches from Stomp mode appearing above, similar to POD® HD500X).
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 or Looper footswitch modes, BANK ⋀ and BANK ⋁ are retained.
4	Up/Down Switches	When set to "Presets," FS1 (BANK ⋀) and FS7 (BANK ⋁) change to PRESET ⋀ and PRESET ⋁, where pressing either switch instantly selects the next/ previous preset, 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 tones. You can also quickly change this setting at any time by pressing and holding both the ⋀ and ⋁ switches for two seconds.

Global Settings > Displays ◉

| Knob	Parameter	Description
1	LED Ring Brightness	Determines whether the Stomp mode switches' colored LED rings appear dim when bypassed, or off when bypassed.
2	Tap Tempo LED	If you'd prefer to not see the FS12 (TAP) red LED constantly flashing, you can turn it off.
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).

Global Settings > Info ⓘ

The Global Settings > Info page displays the Helix current firmware version. Visit line6com/support for information on the latest Helix firmware updates.

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® (with optional Apple® camera kit adapter), and is compatible with all major DAW software.

> 📌 **NOTE:** For USB audio 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 needed for Mac® or iPad® devices.

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 YouTube™, iTunes®, or your DAW tracks without hearing them through a bunch of amps and effects.
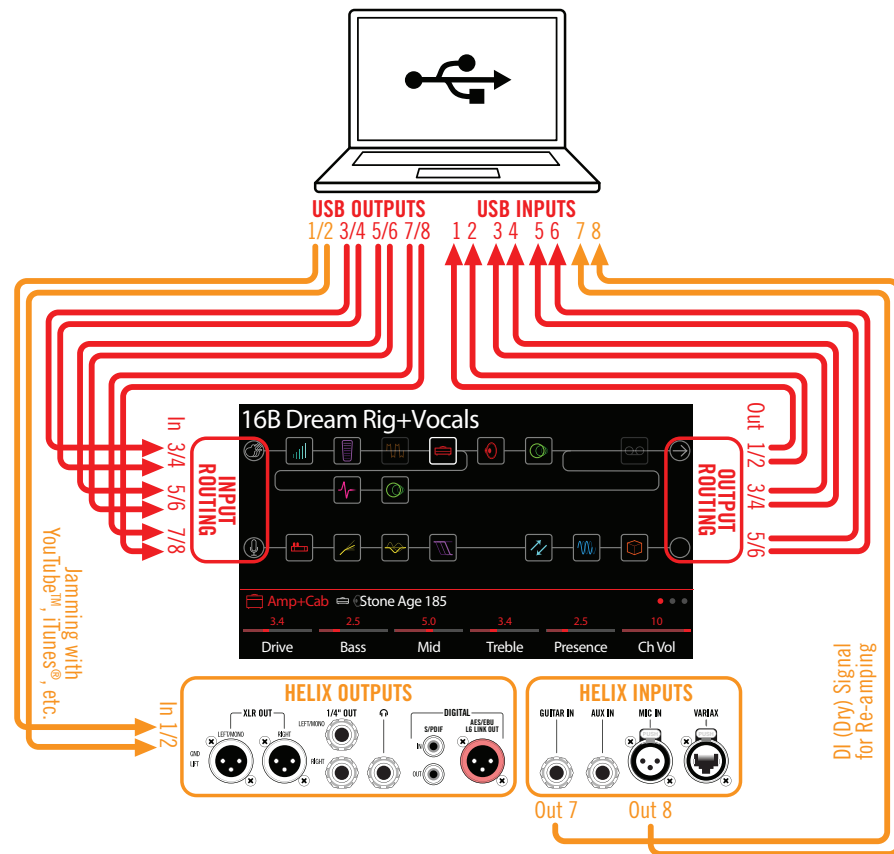
If you set your DAW software track to record from Helix USB 1/2, you'll capture your Helix-processed input signal in the DAW track - with zero-latency monitoring, since you are hearing your input from the Helix hardware outputs before it is routed through your software.

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, which routes your live input signal through the armed recording track, thus allowing you to monitor the input effected by any plug-ins you may have inserted on the track. The one downside of DAW software monitoring, however, is that your live input signal will be 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 simultaneously hear the Helix hardware monitoring signal. 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 to also 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 plug-ins (such as the Line 6 POD® Farm Plug-In), 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.
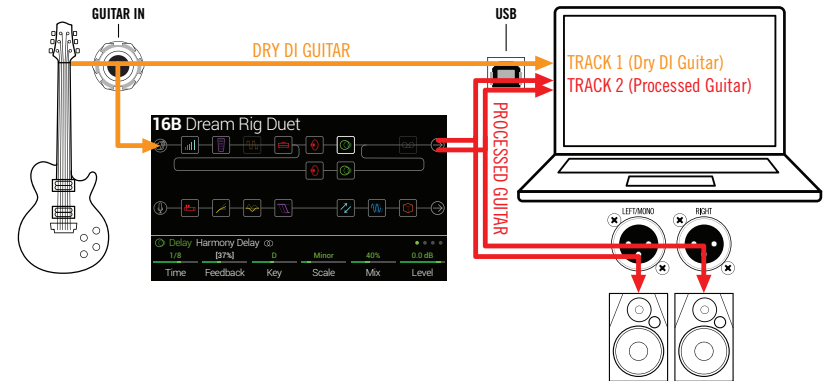
4. Set both tracks' outputs, as well as the DAW Master output, to Helix USB 1/2 to allow all tracks to play back through Helix.

   > 📌 **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 plug-ins 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.**

USB

DRY DI GUITAR

TRACK 1 (Dry DI Guitar)
TRACK 2 (Processed Guitar)
TRACK 3 (Re-amped Guitar)

RE-AMPED GUITAR

16B Dream Rig Duet

○ Delay Harmony Delay ∞
1/8   [37%]   D   Minor   40%   0.0 dB
Time   Feedback   Key   Scale   Mix   Level

LEFT/MONO   RIGHT
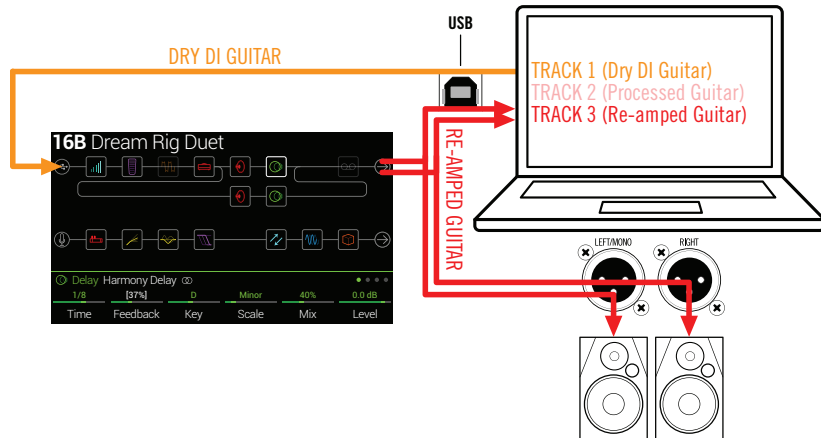
4. **Now play your DAW project and you'll hear the DI track "re-amped" through your Helix! Adjust the DI track's volume slider to make sure the signal feeding into Helix is not too hot. Tweak your Helix amp & effects as desired while listening with the playback of your project mix.**

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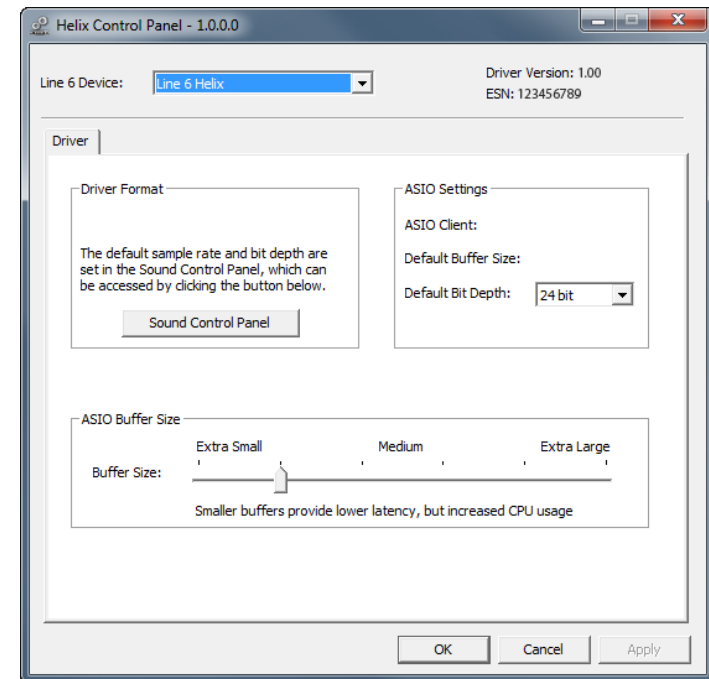
> **TIP:** Note that you still have your original Guitar DI track, and you can repeat this process to create additional re-amped tracks with different Helix settings, add plug-ins, blend with your original guitar track and more.

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 the ASIO® Helix driver has been selected in 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, which is where you make the following Helix driver settings.

Helix Control Panel - 1.0.0.0

Line 6 Device: Line 6 Helix   Driver Version: 1.00
                                       ESN: 123456789

Driver

Driver Format
The default sample rate and bit depth are set in the Sound Control Panel, which can be accessed by clicking the button below.

Sound Control Panel

ASIO Settings
ASIO Client:
Default Buffer Size:
Default Bit Depth: 24 bit

ASIO Buffer Size
              Extra Small   Medium   Extra Large
Buffer Size:

Smaller buffers provide lower latency, but increased CPU usage

OK   Cancel   Apply

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 multi-media applications (such as Windows® Media Player, iTunes®, etc.) 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, also increases the demands on your computer, which can result in clicks, pops or other audio artifacts. Start with a lower slider setting here and, if you encounter audio performance issues, come back 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.

MIDI

MIDI Bank/Program Changes

Helix responds to traditional MIDI Bank and Program change messages from an external MIDI controller device (or from MIDI software via USB) and will recall the Setlist and/or preset accordingly:

Loading a Setlist Remotely

From your MIDI controller device, send a Bank Change CC32 (LSB) message with a value of 0 (for Setlist 1), 1 (for Setlist 2), etc., followed by a Program Change message (Value 0-127 for Preset 01A—32D) for the desired preset within the setlist.

Loading a Preset Within the Current Setlist

From your MIDI controller device, send a Program Change message (Value 0-127 for Preset 01A - 32D) for the desired preset within the current setlist.

NOTE: When navigating Presets from the Helix hardware (PRESETS encoder, preset footswitches, PRESET ⋀ / PRESET ⋁, etc.), Helix automatically transmits a MIDI Program Change message corresponding to the selected preset.

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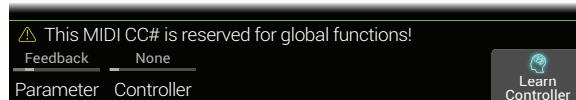
MIDI CC#	Value	Function
		Pedal and Footswitch Assignments
1	0-127	Emulates EXP 1 Pedal
2	0-127	Emulates EXP 2 Pedal
3	0-127	Emulates EXP 3 Pedal
49	0-127	Emulates FS1 (Stomp footswitch mode only)
50	0-127	Emulates FS2 (Stomp footswitch mode only)
51	0-127	Emulates FS3 (Stomp footswitch mode only)
52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

⚠ This MIDI CC# is reserved for global functions!

Feedback   None

Parameter   Controller

Learn Controller

MIDI CC#	Value	Function
		Additional Controls
0	0-7	Bank MSB
32	0-7	Bank LSB—Setlist select
64	64-127	Tap Tempo
68	0-63: Off; 64-127: On	Tuner screen on/off
69	0-127	
70	0-127	
71	0-127	
72	0-127	Additional global MIDI commands (reserved for future use)
73	0-127	
74	0-127	
75	0-127	
76	0-127	