



MULTI-EFFECTS PEDALBOARD

OWNER'S MANUAL



This manual is written for the FX8 Mark II but also applies to the original FX8 running firmware 3.0 or newer.



Inside Front Cover

Certificate of Conformity

Fractal Audio Systems, USA, hereby declares on its own responsibility that the following product:

FX8 Mark II Digital Multi-effects Pedalboard Processor

covered by this certificate and marked with CE label, conforms to following standards:

EN60065 (IEC 60065)	Safety requirement for mains operated electronic and related apparatus for household and similar use.
EN 55103-1	Product family standard for audio, video, audio-visual, and entertainment lighting control apparatus for professional use. Part 1: Emission.
EN 55103-2	Product family standard for audio, video, audio-visual, and entertainment lighting control apparatus for professional use. Part 2: Immunity.

with reference to regulations in following directives: 73/23/EEC, 89/336/EEC.

August 1 2016

Clifford Chase, President

Fractal Audio Systems

EMC/EMI

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 residential installations. 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. 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 to 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.

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Important Safety Instructions



WARNING: To reduce the risk of fire or electric shock, do not expose this appliance to rain or moisture.



CAUTION: To reduce the risk of fire or electric shock, do not remove screws. There are no user serviceable parts inside. Refer servicing to qualified service personnel.

1. Obey all warnings on the FX8 and in this User Guide.
2. Keep away from sources of heat such as ducts, registers or appliances that produce heat.
3. Connect only to a standard grounded AC outlet of 100–240V, 47–63 Hz.
4. Keep the power cord in good condition. Do not kink, bend, or pinch.
5. If the cord becomes damaged, discard and replace it.
6. If not using your FX8 for extended periods of time, disconnect from AC power.
7. Protect the unit from rain and excessive moisture.
8. Refer servicing to qualified personnel only.
9. Stop operation of the unit and obtain service if:
10. Liquids or excessive moisture enter the unit.
11. The unit operates incorrectly or performance is inconsistent or erratic.
12. The unit has been dropped and/or the enclosure damaged.
13. Prolonged exposure to high volume levels can cause hearing damage and/or loss. The use of hearing protection in high volume situations is recommended.

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THANK YOU

Thank you for purchasing the FX8! While even extremely critical players agree that Fractal Audio Systems' amp modeling technology stands shoulder-to-shoulder with tube amps, amps are still in widespread use. But even in a world where the model can be indistinguishable from the original, the simple fact remains that digital amp modeling may not be for everyone yet. We celebrate this fact, as evidenced by the fact that so many of our products are designed to work alongside traditional amps.

When it comes to effects processing, however, digital technology has a far greater foothold, having been in widespread use for decades. As the industry leader in the rack effects space, our own effects have been vetted and championed for years by some of the world's most demanding and discriminating players—celebrities and unsung heroes alike. Now, with the FX8, we've taken our effects technology out of the rack and onto the floor and added new features to create a product specifically for use alongside traditional guitar amps.

The FX8 offers over 130 different "Fractal-Quality" effects. You can build a virtual pedalboard with up to eight "blocks" from an inventory of classic and cutting-edge stompboxes and studio processors. These can be arranged in virtually any configuration. You can "dial it in" using basic settings, or go deeper with optional advanced parameters. Save the result to any of the 128 built-in pedalboard memory locations, each of which can be completely different. The unit also has two onboard relays to control your amp's switchable functions, plus two jacks for connecting expression pedals or footswitches. After building a preset, you can control the FX8 with traditional "tap dance" foot switching or via Fractal's widely acclaimed "Scenes" technology.

The FX8 is built tough to be road-worthy, featuring a steel chassis and our proprietary footswitches with no contacts to fail. Upgradeable firmware keep the unit open to future improvements and innovations—many of which are designed with input from customers like you.

Most importantly, the FX8 delivers uncompromising audio performance. The signal path produces pristine sound quality so there's no "tone suck" when you connect it between your cherished amp and guitar. The entire point of this unit was to finally deliver a "no compromises" high-powered effects pedalboard—exactly what so many of today's musician need.






So thank you again for choosing the FX8. We can't wait to hear what you will do with it.

Fractal Audio Systems

Revised August 2016

FX8 MARK II UPDATE

This manual covers two products: the original FX8 and the revised FX8 Mark II. All illustrations and text herein have been updated to refer specifically to the FX8 Mark II. The differences between the two versions are small, but each type of unit will require its own dedicated firmware version when we release updates, so it was important to distinguish them clearly from one another.

FX8 MARK II	FX8 ORIGINAL
LOGO <p>The Mark II states “FX8 MARK II Multi-Fx Pedalboard” in the silkscreen on the left top panel:</p> 	LOGO <p>The original reads “FX8 Multi-Fx Pedalboard” in this same area.</p> 
BOTTOM-UP FOOTSWITCH NUMBERING <p>The FX8 Mark II is numbered from the bottom:</p> 	TOP-DOWN FOOTSWITCH NUMBERING <p>The FX8 Mark II is numbered from the top:</p> 
<p>NOTE: Presets from firmware 3.03 or newer are interchangeable and should work as expected when loaded in to an FX8 original or FX8 Mark II. When the original FX8 loads a preset that was created/saved on a Mark II (or vice versa), the footswitch rows are swapped. So, for example, a DRIVE that was on footswitch 5 in the FX8 original will load on footswitch 1 in the FX8 Mark II. This keeps effects or other functions physically in the same locations so you don’t need to do any mental (or physical) re-mapping.</p>	
“F” SWITCH LABELS  <p>The three rightmost footswitches on the FX8 Mark II are labeled F1, F2, and F3. This reflects the fact that the functions of these footswitches are freely assignable.</p>	PRINTED FUNCTION LABELS <p>The three rightmost footswitches on the original FX8 are labeled “Scene” “Looper” and “Tempo”. This is despite the fact that these footswitches are in fact freely assignable as of firmware 2.0.</p>
MAX INSTRUMENT IN PAD: 18 dB <p>The instrument input pad offers a maximum setting of 18 dB on the FX8 Mark II. This may be better suited for guitars with extremely high output pickups, onboard preamps, or when using loud pedals in front of the FX8.</p>	MAX INSTRUMENT IN PAD: 12 dB <p>The instrument input pad offers a maximum setting of 12 dB on the original FX8. This should be fine in most cases though some players did ask us for more pad capabilities.</p>

1 : INTRODUCTION

The FX8 is an advanced multi-effects pedalboard processor, perfect for guitar, bass, and other instruments. It is built “like a tank” with a steel chassis and aircraft aluminum end panels. The unit features eleven quiet, durable, solid-state footswitches with no mechanical contacts to fail, plus 27 LEDs in three colors. The easy-to-use interface includes a bright display, six buttons, and five knobs.

The FX8 was designed first and foremost for the best possible sound quality, with converters that deliver pristine audio, ultra-low noise levels, and no “tone suck.” It uses a powerful processor to run the same high-quality effect algorithms that have made our Axe-Fx and AX8 processors so successful. Its Humbuster™ outputs help defeat ground hum (when used with Humbuster™ Cables). It also features upgradeable firmware so we can deliver updates with exciting new features.

We hope you find the FX8 easy to use and this manual easy to read. The most important sections are those which introduce the *concepts* behind how the unit works. If nothing else, be sure to review this section, plus [Section 2 : Hardware Overview](#), [Section 3 : Setup Guide](#), [Section 4 : The Relays](#) and [Section 6 : Creating Presets](#)

QUICK OVERVIEW

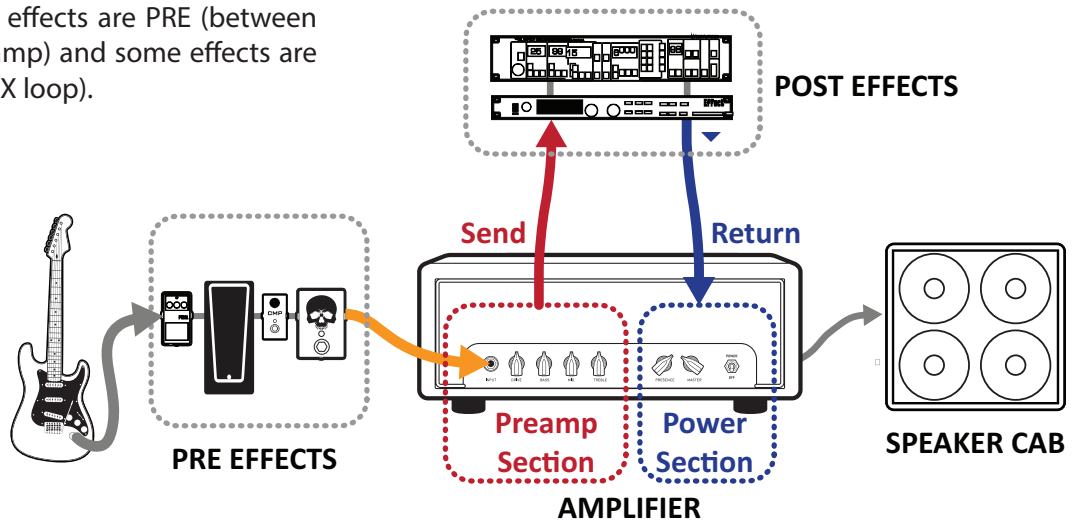
- The FX8 contains 128 different **presets** arranged in 16 lettered **banks**.
- Each preset is like a whole new pedalboard, with up to eight **effect blocks** (Wah, Drive, or Phaser, for instance).
- Most blocks offer **X/Y** switching for twice as many sounds from the same eight blocks.
- Each preset also contains eight **scenes**. Think of a scene as a preset within a preset. Scenes eliminate “tap dancing” by turning multiple effects on or off at a single tap. . . and much more!
- Two **TRS relays** can switch your amplifier and can be controlled by the onboard footswitches or programmed per-scene.
- ▶ The FX8 features buffered **true bypass** with analog relays to switch all processing completely out of the signal path.
- Setting levels is easy, with soft switches to increase headroom, plus automatic **unity gain**.
- Onboard jacks for two external **footswitches or expression pedals** make it easy to control sound functions.
- The FX8 has built in **global looper**, a **tuner**, and a dedicated **tap tempo footswitch**.
- **MIDI** and **USB** also provide powerful options for control, editing, and more.
- **FX8-EDIT**, a free software editor, makes it possible to edit presets, effects, and more when connected to a Mac or PC.
- And much more! Please take the time to familiarize yourself with this manual.
- Should you need any assistance with the FX8, please visit <http://www.fractalaudio.com>

KEY CONCEPTS

Musicians are not exactly famous for RTFM (“Reading Their Fancy Manuals”) but in the name of instant gratification, here are a few key concepts so that you “play now, read later” types can jump right in.

PRE/POST: THE OLD WAY...

Look over this diagram of a traditional rig, showing how some effects are PRE (between the guitar and the amp) and some effects are POST (in the amp’s FX loop).



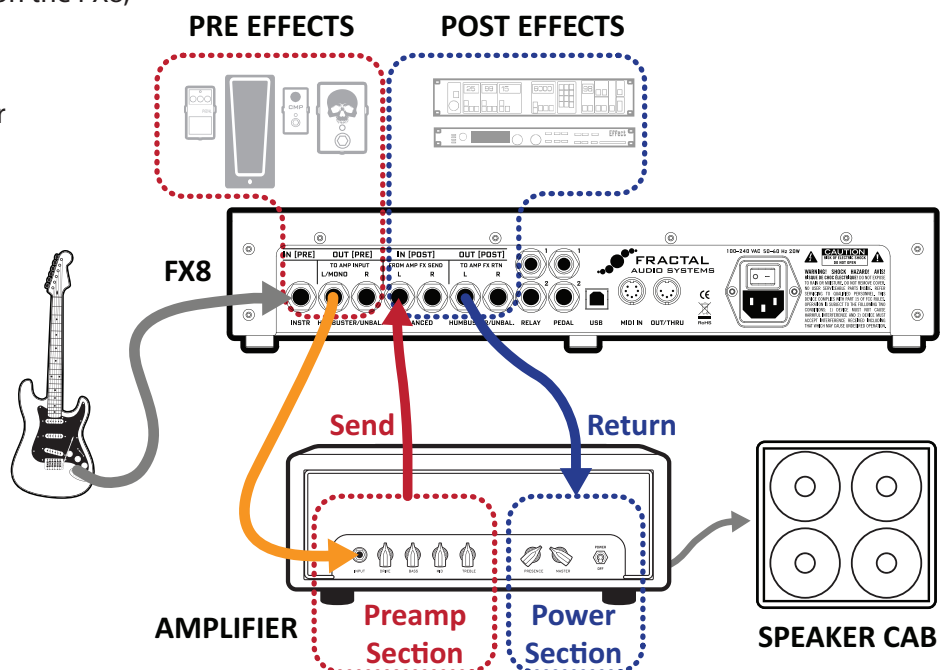
PRE/POST: THE FX8 WAY...

Here’s the same type of setup on the FX8, which plays the role of *both* PRE and POST effects.

Notice that this setup uses four different patch cables? That’s why people call it . . .

“The Four Cable Method.”

Whatever you call it, this is the most flexible way to use the FX8, offering you the ability to place effects in front of the amp or in its loop.



QUICK CONNECT GUIDE

Here is a simple overview of the cables you'll need to connect your FX8 in three different scenarios.

You can find fully detailed diagrams and descriptions for this subject in [Section 3 : Setup Guide](#).



Humbuster™ cables should ideally be used between FX8 OUTPUTS and your amplifier (see [page 4](#))

⚠ Important: Do NOT connect anything to the FX8 relays until you read [Section 4](#).

PRE

TO USE THE FX8 LIKE TRADITIONAL PEDALS BETWEEN GUITAR AND AMP...




Connect as follows:

- ▶ Guitar Output Jack  FX8 IN [PRE]
 - ▶ FX8 OUT [PRE] LEFT  (Humbuster™) -> Front input of your amp/modeler
- Presets A1 through B8 with eight PRE effects are perfect for this type of setup.

POST

TO USE THE FX8 IN YOUR AMP'S SEND/RETURN LOOP...





Connect as follows:

- ▶ Guitar Output Jack  Amp's main Guitar Input
 - ▶ Amp's FX Loop SEND  FX8 IN [POST] LEFT
 - ▶ FX8 OUT [POST] LEFT  (Humbuster™) -> Amp's FX Loop RETURN
- Presets C1 through D8 with eight POST effects are perfect for this type of setup.

PRE+ POST

TO USE BOTH PRE AND POST IN ONE RIG...

This is also known as the FOUR CABLE METHOD or "4CM." Connect as follows:

- ▶ Guitar Output Jack  FX8 IN [PRE]
 - ▶ FX8 OUT [PRE] LEFT  (Humbuster™) -> Front input of your amp/modeler
 - ▶ Amp's FX Loop SEND  FX8 IN [POST] LEFT
 - ▶ FX8 OUT [POST] LEFT  (Humbuster™) -> Amp's FX Loop RETURN.
- Presets E1 through G8 with both PRE and POST effects are perfect for this type of setup.

QUICK TIP

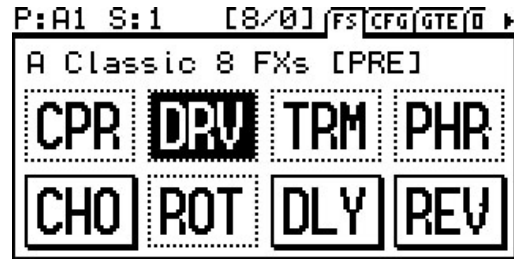
TO INSERT, CHANGE, or EDIT AN EFFECT, and STORE the preset...

- ▶ From the Footswitch page (main mode) **PAGE** to the CONFIG page.
- ▶ **NAV** to select the desired slot (1–8).
- ▶ Press **ENTER**.
- ▶ Turn **VALUE** until the desired effect is shown.
- ▶ Press **ENTER** to insert the effect. Press **EDIT** to access its parameters.
- ▶ To save any and all changes, press **STORE, ENTER, ENTER**.

THE FOOTSWITCH PAGE

Throughout this manual, we will refer to the main operating mode of the FX8 as “The Footswitch Page,” so called because you use this mode to assign effects to footswitches. The Footswitch Page is also displayed while you are using the FX8 during a performance.

The FX8 powers up to the Footswitch page, and eventually returns to it when you press **EXIT**. Other modes allow you to edit effects, tune your guitar, or set up system parameters.



A NOTE ON MONO & STEREO

If you are NOT planning on connecting the FX8 in stereo, there are a few things you should know. The FX8 comes pre-configured for stereo rigs but you can connect it to any mono rig with no issues.



If you are NOT running in stereo, you may find that certain settings produce slightly unexpected sounds. For example, panners become tremolos when one channel is missing. Stereo enhancers or certain types of modulation may not be apparent at all. Later you'll learn to dial in mono or stereo effects as desired. For now, just keep in mind the possibility that if something doesn't sound as expected, you may be playing a stereo effect into a mono rig.



You might be tempted to poke around on the SETUP: I/O: AUDIO menu and start changing things. We would suggest you read up on these parameters first ([The I/O Menu, p. 71](#)).

Meanwhile, please don't be surprised or think that something is wrong if your stereo ping-pong delay sounds more like a ping (with no pong) delay when connected to a mono rig!

HUMBUSTER CABLES

Standard 1/4" guitar cables are fine for all audio connections to and from the FX8, but there is a better option for connecting its **outputs** to your amp, modeler or other device. **Humbuster™ technology** on all FX8 outputs can significantly reduce unwanted noise due to the common problem of a ground loop. For this to work, you need to use a special Humbuster™ cable you can buy or make yourself.

A Humbuster™ cable has one **TRS** end (like a balanced cable) and one **TS** end (like a guitar cable). The TRS end connects to the FX8. The TS end connects to your amp.

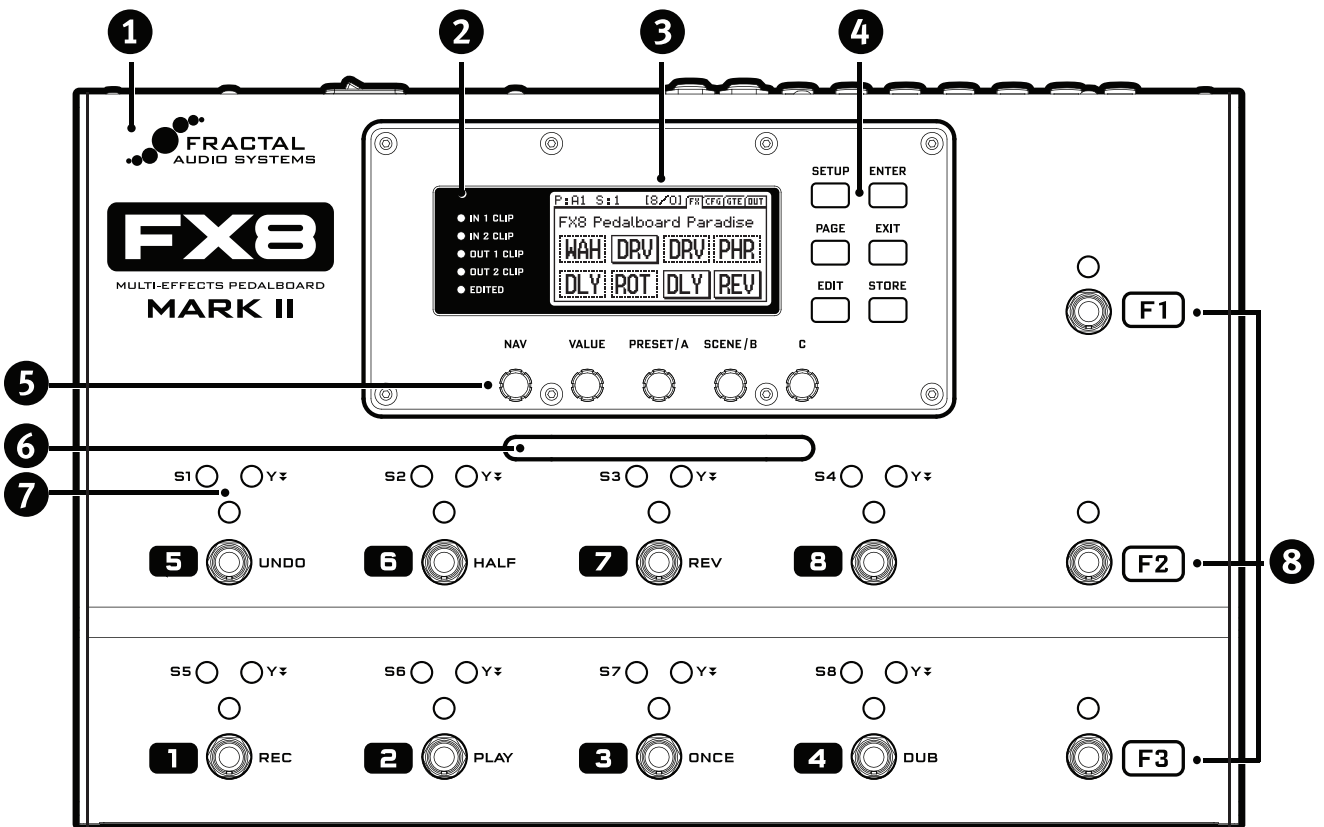
Humbuster™ cables are available from <http://www.fractalaudio.com/cables> or you can make your own by following the diagram below. Be sure to use high-quality connectors and shielded cable.



2 : HARDWARE OVERVIEW

Understanding the FX8 hardware will help you use it to full effect (pun intended). Here's a guide.

THE TOP PANEL

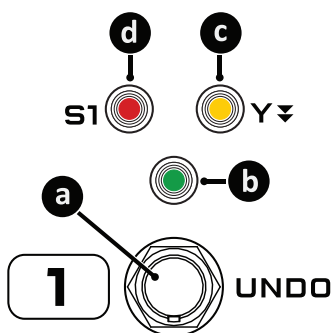


- 1 The FX8 is housed in a powder-coated **steel chassis** with an aircraft aluminum bezel and end-caps.
- 2 **STATUS LEDs** communicate important information:
 - **IN 1 CLIP** – This LED is lit when the signal at In [Pre] approaches clipping.
 - **IN 2 CLIP** – This LED is lit when the signal at In [Post] approaches clipping.
 - **OUT 1 CLIP** – This LED is lit when the signal sent to Out [Pre] approaches clipping.
 - **OUT 2 CLIP** – This LED is lit when the signal sent to Output [Post] approaches clipping.
 - **EDITED** – This LED is lit when any unsaved change has been made to the current preset.
- 3 The 160 × 80 pixel **LCD** is where all menu screens are displayed.

2 : HARDWARE OVERVIEW

- 4** Six **Buttons** provide access to various functions and menus:
- **SETUP** – Provides access to the SETUP menus (which you then select using footswitches).
 - **ENTER** – Executes commands, commits changes, accesses sub-menus, and more.
 - **PAGE** – Steps through menu pages, shown as “tabs.” TIP: Double-click to go back one page!
 - **EXIT** – Works as cancel, escape, and more.
 - **EDIT** – Opens the EDIT MENU for the currently selected effect.
 - **STORE** – Used to store the current preset to memory so it can be recalled in the future.
- 5** Five **KNOBS** (aka “Rotary Encoders”) offer different functions depending on which screen is shown in the display. Most screens show five (or fewer) knobs for easy 1:1 operation.
- **NAV** – On the Footswitch page, this navigates between the eight effect slots.
 - On the Config page (“CFG”) this selects from the eight FX slots and other functions.
 - In “knob” screens, it changes the value of the *first* on-screen knob.
 - In “menu” screens, it scrolls up and down through the menu.
 - **VALUE** – On the Footswitch page, this steps through the effects list for the current slot.
 - On the Config page (“CFG”) this changes a selected FX slot between series and parallel.
...OR, press **ENTER** and then turn **VALUE** to change the effect in the current slot.
 - In “knob” screens, it changes the value of the *second* on-screen knob.
 - In “menu” screens, it changes the highlighted parameter.
 - **A/PRESET** – On the Footswitch page, this steps through **PRESETS/BANKS**.
 - In “knob” screens, it changes the value of the *third* on-screen knob.
 - In “menu” screens, it changes the parameter labeled ‘A’.
 - **B/SCENE** – On the Footswitch page, this selects a **SCENE** in the current preset.
 - In “knob” screens, it changes the value of the *fourth* on-screen knob (if any).
 - In “menu” screens, it changes the parameter labeled ‘B’.
 - **C** – In “knob” screens, it changes the value of the *fifth* on-screen knob (if any).
 - In “menu” screens, it changes the parameter labeled ‘C’.
- 6** The **HANDLE** also serves as a GUARD to protect the knobs of the FX8 from being kicked and broken.
- 7** There are eight main **FOOTSWITCHES** corresponding to the eight effect slots. Each has three **LEDs**.

a. **FOOTSWITCH** – *Step on it!* Footswitches toggle effects, select scenes, and more. The FX8 utilizes our fast, quiet Solid State Switches (SSS™) with no mechanical contacts to fail.



b. **BYPASS LED** – The **green** LED above the footswitch shows whether the corresponding effect is ON or OFF.

c. **Y LED** – Many effects on the FX8 offer X/Y switching for two different sound settings from a single block. Assuming you are using the default settings for XY, Press and Hold ▼ the footswitch to toggle X/Y for the corresponding effect. The **amber** LED indicates that an effect has been switched to its Y setting. See [“X/Y Switching” on page 38](#) for more.

d. **SCENE LED** – Eight **red** LEDs labeled S1, S2, etc. indicate which Scene is loaded within the current preset. See [Section 7 : Scenes, on p. 41.](#)



LOOPER functions are also indicated on the footswitches. See [Section 12 : The Looper, on p. 63.](#)

- 8 The FX8 Mark II has three **Function Switches** (or simply “F-Switches”) labelled **F1**, **F2**, and **F3**. These can be mapped to a number of different functions and modes, allowing you to customize your FX8 to suit the needs of your own performance situations. For example, some players use **Tap Tempo**, others do not. Some use a **Looper**, other never will. You can learn more about Function Switches in [Section 5](#).

F1

By default, the **F1** footswitch is assigned the following functions.

- **SCENE** – Tap this footswitch once to enter **Single Scene Select Mode**. (The red LED will remain lit.) The next press of footswitch 1–8 will select a **Scene** within the current preset. For example, to select Scene 4, press **SCENE** and then #4. For more on Scenes, see [Section 7](#).
- **PRESET/BANK** – Press and hold ▼ to enter **Single Preset/Bank Select Mode**. Press the flashing **BANK UP** or **BANK DN** footswitches to change **Banks**, and use footswitches 1–8 to select a **Preset** within the bank shown (or tap **PRESET/BANK** again to cancel and return to The Footswitch page).

F2

By default, the **F2** footswitch is assigned the following functions:

- **LOOPER** – Tap this footswitch once to enter Looper Mode. (The LED will remain lit.) In Looper Mode, the main footswitches operate the Looper functions shown to the right of each footswitch. To exit Looper Mode press this footswitch again. For more on the Looper, see [Section 12](#).
- **TRUE BYPASS** – Press and hold ▼ to engage True Bypass. A message will flash in the main display. During True Bypass, signals at **IN [PRE]** and **IN [POST]** are shunted via high quality analog relays to **OUT [PRE]** and **OUT [POST]** (respectively). With True Bypass engaged, there is no digital conversion of any kind. Tap again to disengage. For more on True Bypass, see [Section 8](#).
- **BANK UP** – When the FX8 is in Preset/Bank Select mode (see #8 above) this footswitch steps UP through the lettered banks.

F3

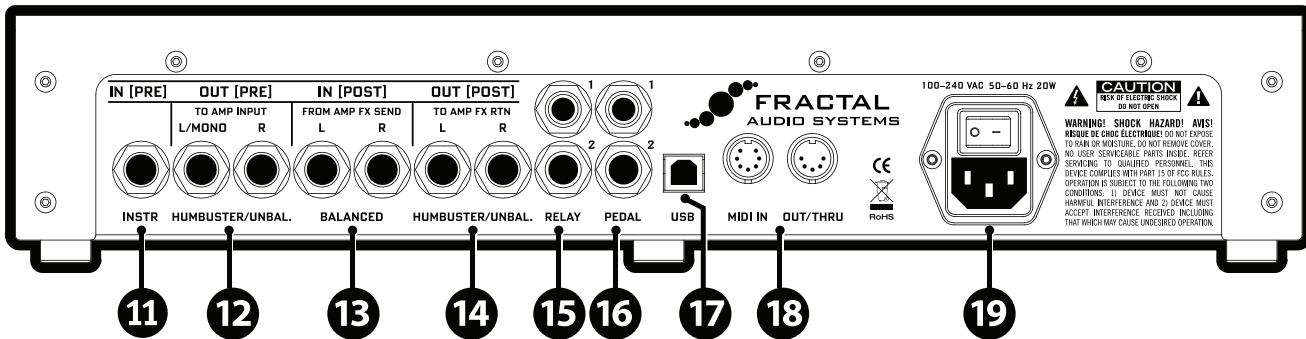
By default, the **F3** footswitch is assigned the following functions:

- **TEMPO** – Tap this footswitch to set the global tempo. The LED flashes to show the tempo. For more on Tempo, see [Section 11](#).
- **TUNER** – Press and hold ▼ the **TEMPO** footswitch to enter **Tuner Mode**. The LED will remain lit. Press the **TUNER** footswitch again to exit. For more on using the tuner, see [Section 13](#).
- **BANK DOWN** – When the FX8 is in Preset/Bank Select mode (see) this footswitch steps DOWN through the lettered banks.



The default functions for each F-Switch are labeled on the original FX8, which did not have assignable F-Switch functions (until firmware 2.0.) To prevent confusion, these labels were removed on the FX8 Mark II.

THE REAR PANEL



WARNING! Do NOT connect anything to the RELAY jacks until you read the WARNINGS in [Section 4](#).

11 IN [PRE] (INSTRUMENT IN) (Unbalanced 1/4" Jack)

Connect your guitar (or any instrument level source) using a regular guitar cable here. You can also connect the output of other guitar pedals or anything else that's designed to be used in front of an amp. This jack feeds signal only to effects designated as "PRE".

12 OUT [PRE] L/R (1/4" Tip-Ring-Sleeve Humbuster™ Jacks)

The output of effects designated as "PRE" appears at these jacks. You'll typically connect to the MAIN (GUITAR) INPUT of an amp, preamp, or modeler using Humbuster™ cables.

Humbuster™ Technology on all OUT [PRE] and OUT [POST] jacks can significantly reduce ground hum, common in guitar rigs. It requires a special cable you can make or buy. (See [p. 4](#) for details).

13 IN [POST] L/R – (Balanced 1/4" Tip-Ring-Sleeve Jacks)

Connect the FX LOOP SEND of your amplifier (or the output of your separate preamp) here to feed signal to any effects designated as "POST".

14 OUT [POST] L/R (1/4" Tip-Ring-Sleeve Humbuster™ Jacks)

The signal from effects designated as "POST" appears at these jacks. You'll typically connect to the EFFECTS LOOP RETURN of an amp (or the input(s) of a separate power amp) using Humbuster™ cables.

A NOTE ABOUT [PRE] AND [POST] I/O

The various input and output jacks of the FX8 are labeled [PRE] and [POST] because the FX8 has two fully independent effect chains. You place "PRE" effects between the guitar and amp like traditional stompboxes, and "POST" effects in the amp's FX loop. You can use either or both of these paths, and the next section covers how to create the setup that works best for you.

15 RELAY 1, RELAY 2 (1/4" Tip-Ring-Sleeve Jacks)

Two fully-independent TRS relays allow the FX8 to switch the channels or other functions of a connected amplifier or other device. The state of each relay can be changed manually (via a footswitch) or by a pre-programmed setting in a SCENE. See [Section 4](#) for details on the relays.

16 PEDAL 1, PEDAL 2 (1/4" Tip-Ring-Sleeve Jacks)

These jacks are used to connect up to two external expression pedals or switches to control various functions of the FX8. Use the PEDAL page in the I/O menu under SETUP to calibrate each connected pedal. For more on using these jacks, see [Connecting Pedals & Switches, p. 16](#).

17 USB – This provides the FX8 with two-way “MIDI-over-USB” capabilities.**18 The MIDI IN** port of the FX8 allows you to control various MIDI functions of the FX8 including preset and scene selection, effect bypass, X/Y changes, parameter changes, and more.

*The **MIDI** page of the I/O menu under **SETUP** is used to configure MIDI Channel and other options (see [I/O: MIDI Page, p. 73](#).)*

The **MIDI OUT/THRU** jack transmits Program Change, Control Change, and other MIDI data to connected devices (such as an Axe-Fx II or an amplifier with MIDI channel switching capabilities).

*MIDI data can be sent manually using the **MIDI Block**, which is inserted like an effect assigned to a footswitch (see [“The MIDI Footswitch Block” on page 48](#)) or programmed to be sent automatically when you select a **Scene**.*

19 Main Power Input and switch – Insert the supplied power cable and connect the other end to a grounded AC power receptacle. The FX8 has a universal power supply, which means it can be connected to power around the globe simply by changing the cable. The main power switch is built in to the receptacle.


We recommend switching the FX8 off when it will not be in use for an extended period of time.


2 : HARDWARE OVERVIEW

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3 : SETUP GUIDE

This section covers the basics of connecting your FX8 to other equipment.

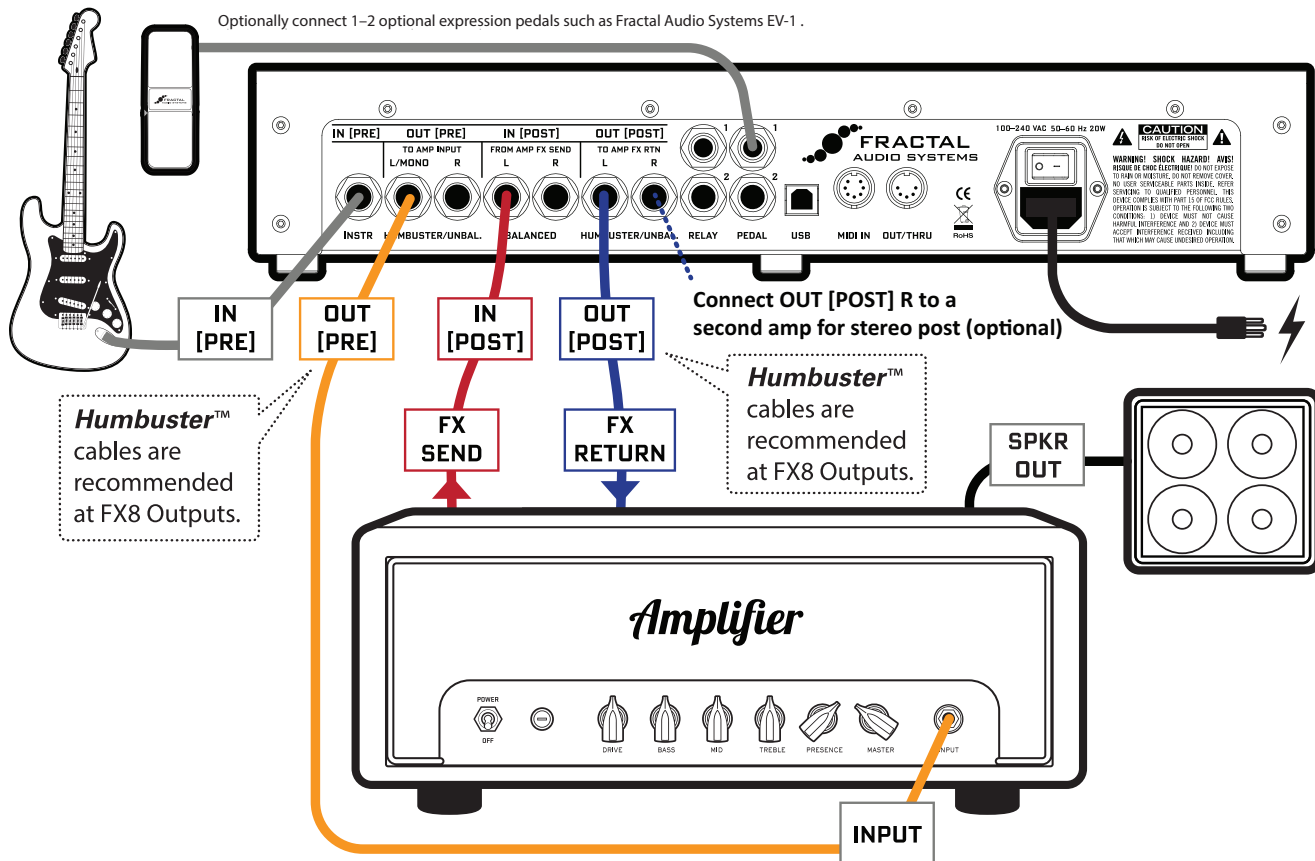
 **WARNING!** Before making connections, switch off ALL power and reduce volume on your amp to minimum.

 **WARNING!** Take extreme care NEVER to connect the SPEAKER outputs of any amplifier to the FX8 as this will seriously damage one or both units.

 **WARNING!** Do NOT connect anything to the RELAY jacks until you read and heed the WARNINGS in [Section 4](#)

SETUP FOR PRE+POST FX [4CM]

This is the most flexible FX8 setup, taking full advantage of the unit's capability for separate "PRE" and "POST" effect chains. Connecting in this manner is also known as the "Four Cable Method" or "4CM." Find factory presets for this type of setup in Banks C and D (plus other banks as well).



SIGNAL FLOW:

The GUITAR is connected to **IN [PRE]** on the FX8. Signal is processed by effects designated as "PRE" and then routed to **OUT [PRE] LEFT**, which is connected to the guitar **INPUT** of your amplifier. Your amp outputs signal to its rear-panel **FX SEND** jack. This is connected to **IN [POST] LEFT** on the FX8. The signal is now processed by effects designated as "POST" and routed to **OUT [POST] LEFT**, which is connected to your amplifier's **FX RETURN** jack. You could easily connect **OUT [POST] RIGHT** to the **FX RETURN** of a second amp for stereo (or connect **OUT [POST] LEFT** and **RIGHT** to the dual inputs of a stereo power amp). The amplifier's **SPEAKER** output is connected as usual to its speaker cabinet.

Humbuster™ cables help reduce ground loop hum. See ["Humbuster Cables" on page 4](#) for details.

A head is shown in the above diagram. A combo with an effects loop is equally suitable for this type of setup.

NOTE: For this setup, you'll probably want to make one global change.

Open the **GLOBAL** menu (press **SETUP** followed by **Footswitch 1**) and find the **SETTINGS** page.

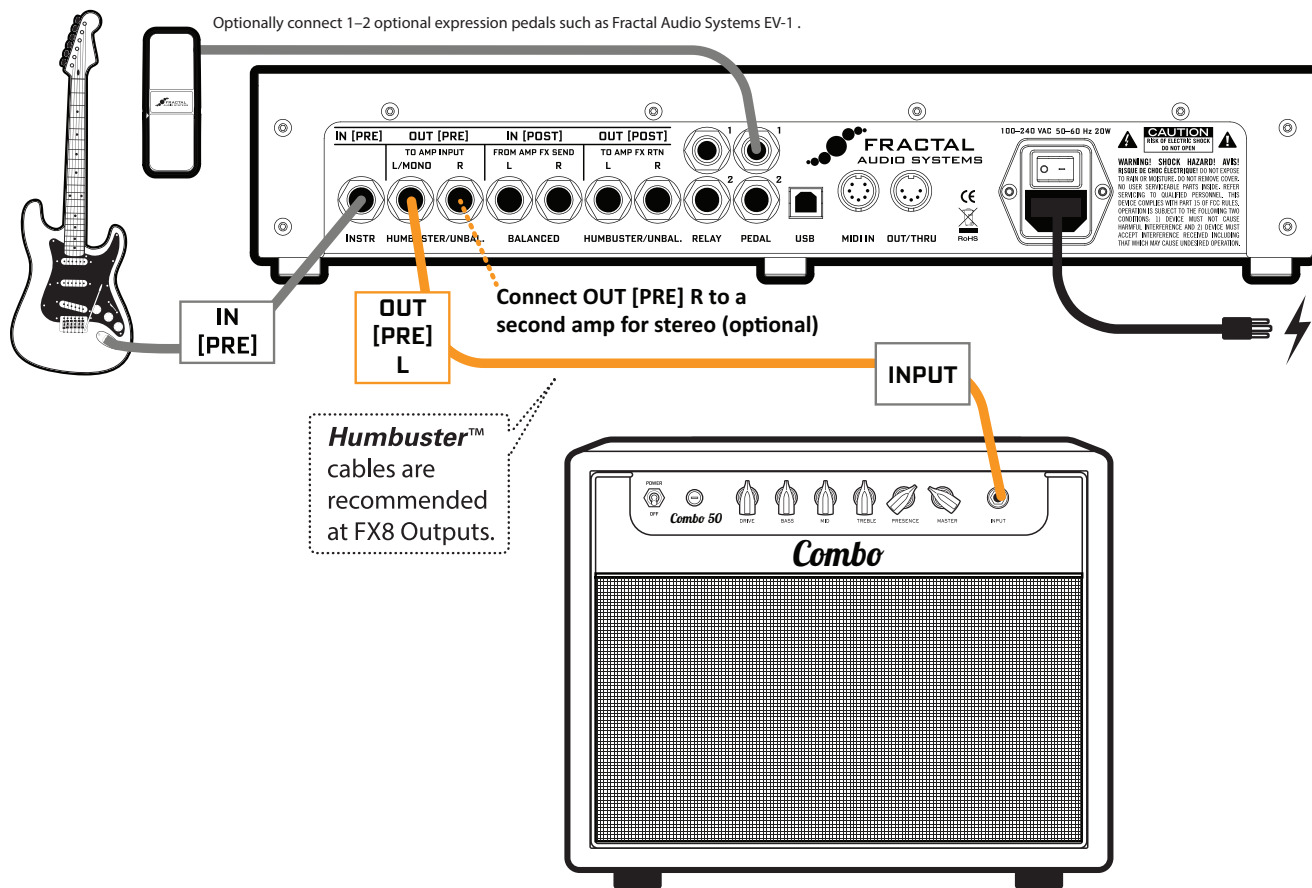
NAV to **GLOBAL LOOPER LOCATION** and then use **VALUE** to select "OUT POST".

Press **EXIT** twice to save and return to the Footswitch page.

SETUP FOR PRE EFFECTS ONLY [PRE]

Here the FX8 is used in a simple setup with PRE effects only (between guitar and amp) with presets presumably configured so all effects are PRE. This is exactly like using traditional guitar pedals—with the exception that there are no batteries or short cables to fail ;-)

Find factory presets for this type of setup in Banks A and B.



SIGNAL FLOW:

Here, signal flows out from the **GUITAR** to the **IN [PRE]** of the FX8. It is processed by the effects—all designated as “PRE”—and then routed to **OUT [PRE] LEFT**, which is connected via Humbuster™ cable to the guitar **INPUT** of your amplifier. (You could easily connect **OUT [PRE] Right** to the input of a second amp for stereo.)

A combo is shown, but a head with a separate speaker cabinet is equally suitable for this setup.

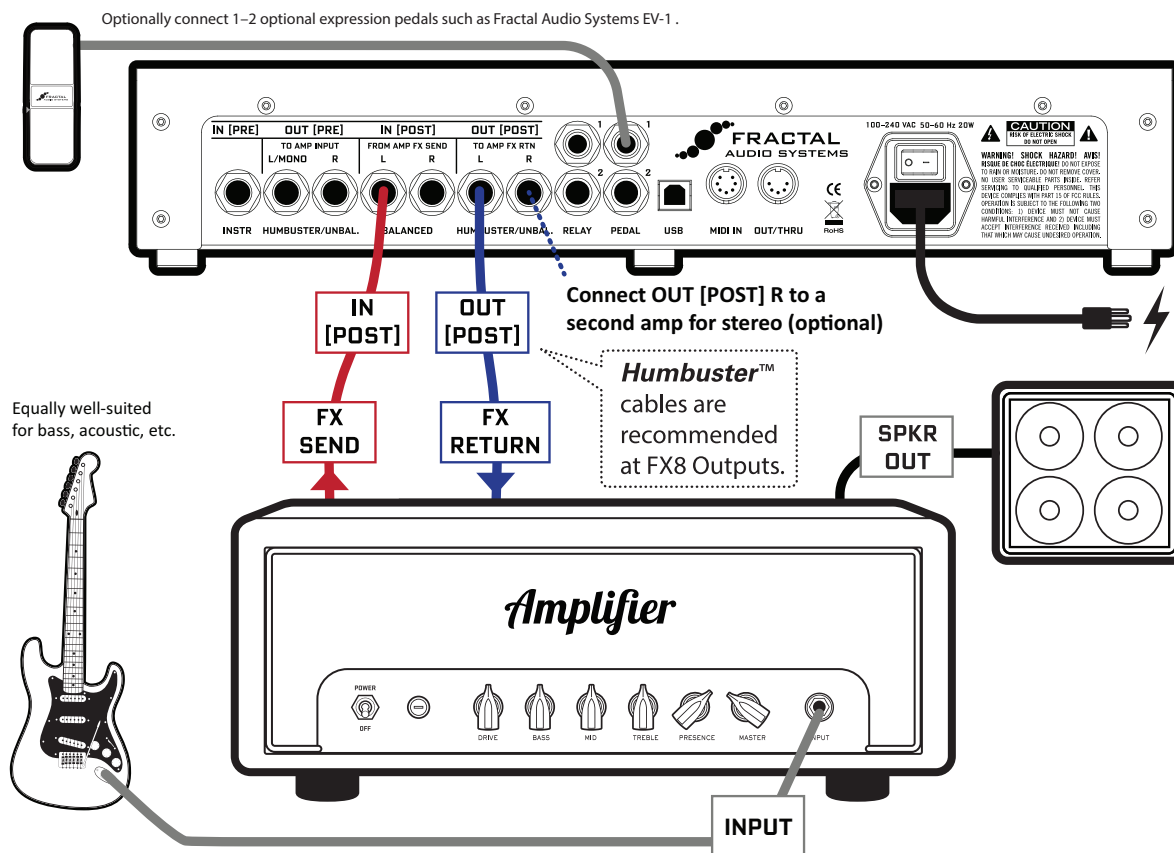
Humbuster™ cables help reduce ground loop hum. See [“Humbuster Cables” on page 4](#) for details.

The FX8 is connected to a grounded **AC outlet**.

This is also a great way to connect the FX8 to an Axe-Fx. Use the FX8 for PRE effects and the Axe-Fx for amp and cab sims, and POST effects. Add a MIDI cable and the FX8 can even select Axe-Fx presets.

SETUP FOR POST EFFECTS ONLY [POST]

Here the FX8 is used in the effects loop of an amp with presets presumably configured so all effects are POST. Find factory presets for this type of setup in Banks E and F.



SIGNAL FLOW:

Here, signal flows out from the **GUITAR** to the **Guitar INPUT** of your amplifier. Your amp's preamp outputs to its rear-panel **FX SEND** jack. This is connected to **IN [POST]** on the FX8. The signal is processed by the POST effects of the FX8 and routed to **OUT [POST] LEFT** which is connected to your amplifier's **FX RETURN**. You could easily connect **OUT [POST] RIGHT** to the **FX RETURN** of a second amp for stereo (or connect **OUT [POST] LEFT** and **RIGHT** to the dual inputs of a stereo power amp). The amplifier's **SPEAKER** output is connected to a speaker cabinet, as it normally would be. (If your amp is a combo, it has a built-in speaker.) Humbuster™ cables help reduce ground loop hum. See [“Humbuster Cables” on page 4](#) for details.

If you're interested in this setup, you should also know that the PRE/POST setup on [page 12](#) offers the ability to use True Bypass on the PRE chain only. This gives you the flexibility to have a POST ONLY setup and still switch in any desired PRE effects such as wah, whammy, or volume as needed. Learn more about True Bypass in section [Section 8](#).



IMPORTANT: For this setup, you'll need to make two global changes.

Open the **GLOBAL** menu (press **SETUP** followed by **Footswitch 1**) and find the **SETTINGS** page.

First, **NAV** to **GLOBAL DETECTOR** and then use **VALUE** to select “IN 2 [POST]”.

Next, **NAV** to **GLOBAL LOOPER LOCATION** and then use **VALUE** to select “OUT POST”.

Press **EXIT** twice to return to the Footswitch page.

CHECKING LEVELS

Setting proper levels through your entire signal path is critical.

Four front panel LEDs alert you when clipping occurs.

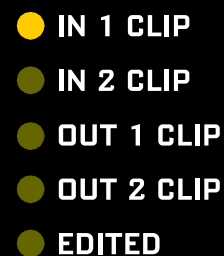
The FX8 comes ready-to-use for the typical guitar and amp. Chances are, you won't need to adjust levels. The most common issue will probably be a hot guitar clipping the instrument input ("IN1") You can check this by performing the following test:

- ▶ Wire up your rig as desired.
- ▶ Play your instrument. Choose your loudest pickup and set all the guitar controls to wide open. Play hard. Big open chords and low "chugs" will help push the levels.
- ▶ If none of the CLIP LEDs on the FX8 top panel light, you're all set!

IF IN 1 CLIPS...

This means your incoming guitar signal is too hot.. Adjusting is simple:

- ▶ Press **SETUP**, press footswitch **2** for the I/O menu and make sure you are on the **LEVELS** page.
- ▶ Increase the setting for **INPUT 1(PRE) PAD** from the default setting of 6.0 dB to 12.0 or 18.0 dB (12 dB max on the original FX8).
- ▶ Be aware that as you increase this PAD setting you *also* increase the noise floor, so set the pad to as small a value as possible.
- ▶ If IN1 still clips, you'll need to adjust levels at your guitar or somewhere else before the FX8.



● IN 1 CLIP
 ● IN 2 CLIP
 ● OUT 1 CLIP
 ● OUT 2 CLIP
 ● EDITED

IF INPUT 2 OR EITHER OUTPUT CLIPS...

See "[Advanced Level Parameters](#)" on [page 79](#), covering the various controls and settings used to solve clipping problems.

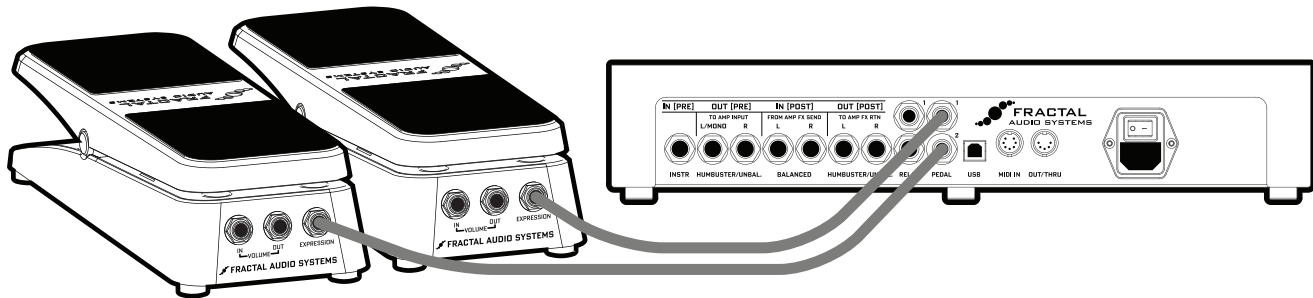
CONNECTING PEDALS & SWITCHES

Each of the two onboard PEDAL jacks of the FX8 allows you to connect one expression pedal or one external footswitch. You can use a connected pedal or switch to change effect parameters or to operate any of a long list of global functions and many factory presets are ready for one or even two pedals.



Learn to assign pedals and switches to sound parameters in [Section 10 : Modifiers](#).

Learn to assign pedals and switches to global functions in [Section 14 : Setup Menu](#).



The Fractal Audio Systems EV-1 Expression/Volume Pedal (sold separately) is ideal for the FX8.

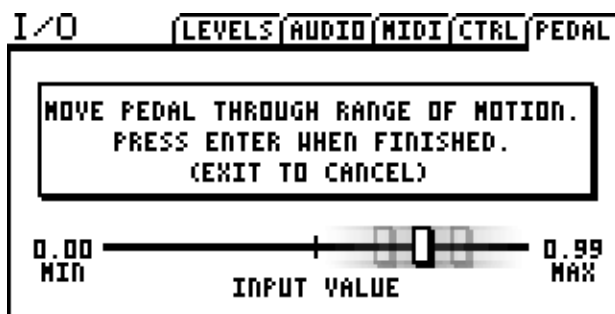
TO CONNECT & CALIBRATE AN EXPRESSION PEDAL...

Your expression pedal(s) should have a linear resistance taper, a max resistance of 10kΩ to 100kΩ, and must be used with Tip-Ring-Sleeve (TRS) cables. (If you are not familiar with TRS cables, see the FAQ on the next page.)

Calibration is required for the FX8 to recognize the full range of your particular expression pedal.

Connect your expression pedal to the PEDAL 1 or PEDAL 2 jack with a TRS cable, then follow these instructions to calibrate:

- ▶ Press the **SETUP** button, followed by the **#2 footswitch** to select the **I/O** menu.
- ▶ Press the **PAGE** button until you reach the PEDAL page.
- ▶ Ensure that the pedal TYPE is set to "CONTINUOUS".
- ▶ Navigate to the PEDAL # CAL function and press the **ENTER** button.
- ▶ Follow the on-screen instructions to perform calibration.



During calibration, you should see the "slider" move on-screen as you move the pedal. It does not need to reach "MAX", but a good quality pedal should demonstrate a wide range of motion.

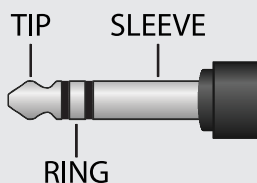
TO CONNECT & SET UP AN EXTERNAL FOOTSWITCH...

Footswitches are less versatile but sometimes all you need is an on-off stomp! Any type of external switch may be used—momentary or latching, make or break—as long as its contacts make and break the connection between tip and sleeve on a regular 1/4" guitar cable. (You do not need a TRS for a foot switch.)

Calibration is not necessary, but you do need to set the TYPE as desired:

- ▶ Press the **SETUP** button, followed by the **#2 footswitch** to select the **I/O** menu.
- ▶ Press the **PAGE** button until you reach the PEDAL page.
- ▶ Set your the pedal TYPE:
 - When a *latching* (aka *toggle*) switch is connected, set TYPE to "LATCHING".
 - When a *momentary* switch (such as a sustain pedal) is connected, you have two options:
 - ♦ Set TYPE to "MOMENTARY" and the FX8 will recognize alternate stomps as ON and OFF, creating a "virtual" latching footswitch.
 - ♦ Set TYPE to "CONTINUOUS" if you want the switch to turn on when you press, and off when you release it.

FAQ:

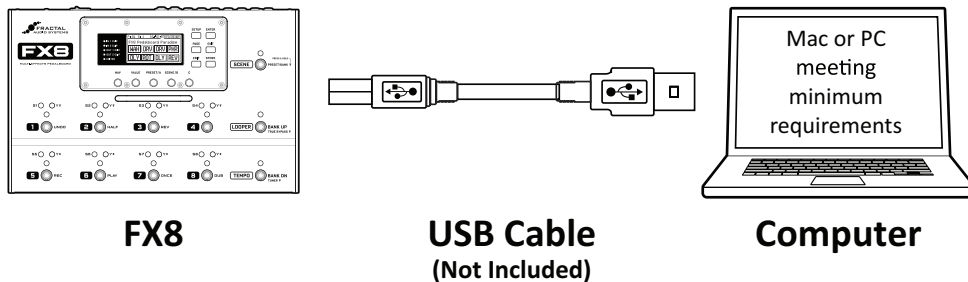


WHAT IS TRS? "TRS" stands for TIP-RING-SLEEVE and describes the configuration of a 1/4" endplug or jack with three connectors. Normal guitar cables are TS (Tip-Sleeve) since they lack the ring required for a third connection. Switching some amps requires only a tip-sleeve cable, and the FX8 works just fine in these cases, but as always, contact your amp manufacturer to be sure that the amp's switching is based on shorting the tip to the sleeve.

CONNECTING A COMPUTER

Connecting the FX8 to a computer via USB is completely optional, but it does provide some great benefits. Our free **utilities** provide a great platform for those who want to take their experience to the next level. USB is also the best way to install firmware updates and make or restore backups.

- ▶ The first step is to connect your FX8 and computer with a **USB cable** (not provided).
- ▶ No driver is required. The FX8 is plug and play.
- ▶ Install **Fractal-Bot™** for firmware updates, backups, and installing presets or banks you download or keep on your computer or memory stick.
- ▶ Install **FX8-Edit™** for a graphical way to work with FX8 presets.
- ▶ Find both programs at <http://www.fractalaudio.com>



Mac Minimum Requirements:

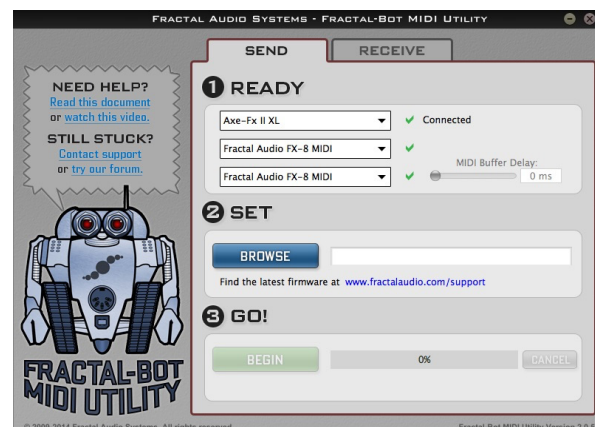
- OS X 10.6.8 or newer
- CPU: Intel Processor
- Memory: 512MB minimum
- USB 2.0 Support required

Windows Minimum Requirements:

- OS: WinXP (SP3), Vista (SP2), Win7 (SP1) Win8 x86 or x64 version are supported for all.
- CPU: Intel Core 2 @1.6 GHz or better, or AMD equivalent
- Memory: 1GB minimum
- USB 2.0 support required



FX8-EDIT



FRACTAL-BOT

4 : THE RELAYS



IMPORTANT! The relays of the FX8 are designed for use **ONLY** with amplifiers that use “short-to-sleeve” type switching. Do **NOT** connect the FX8 relays to the switch jacks of an amp that uses voltage differential switching or any other type of switching aside from short-to-sleeve, or serious damage can occur to both units. If you are not 100% sure, contact your amp manufacturer to determine whether your amp is compatible with short-to-sleeve switching. The FX8 relay jacks are compatible with TRS cables, TS cables, or TRS-to-dual-TS split cables. The relays are also fully isolated from the electrical ground of the FX8.

*This warning is stern, because the last thing we want is for anyone to damage their amp or FX8. In fact, short-to-sleeve relay switched amps are quite common, and your amp may be perfectly compatible. We need to require **you** however, to understand how your amp works and make the right choices about connecting it to the FX8 relay jacks.*

Your amp manufacturer should be able to help.

The FX8 features two **TRS (Tip-Ring-Sleeve) relays** that can be used to switch the channel or other functions of a connected amplifier or device. (Wondering what TRS is? See the FAQ on [page 17](#).)

CONTROLLING THE RELAYS...

You can control each relay with your choice of a footswitch or scene programming.

- ▶ To control a relay with a **footswitch**, you must assign a footswitch to that relay on the Footswitch page. To edit a relay switch, select it on the Footswitch page and press EDIT (or use FX8-Edit).
- ▶ You can also program any **scene** to control the relays. See [“To Set Relay States For a Scene...” on page 43](#).

Regardless of how an FX8 relay is controlled, it can be switched to any of the following states:

Setting	What's Connected?
OFF	Nothing.
TIP	Tip to Sleeve.
RING	Ring to Sleeve.
BOTH	Tip AND Ring to Sleeve.

FAQ: WHAT IS A RELAY? A relay is an electrically operated switch. It is activated or deactivated by a circuit (the FX8 in this case) to make or break a connection in a different circuit (your amp). The FX8 uses fast, quiet, high-quality relays. Each one contains two discrete switches and is able to make all of the connections shown in the table above.

RELAY MODE

You can set each of the FX8 relays to LATCHING or AUTO OFF modes. The vast majority of relay-controlled devices require a latching relay. Some amps (e.g. 5150, some Bogners, etc.) require a relay which connects momentarily and then disconnects to an off/open state automatically.

Mode	Action
Latching	The selected RELAY ON state remains connected and the switch LED remains ON as long as the switch is engaged. Nothing is connected when the switch is OFF.
Auto-Off	The selected RELAY ON state remains connected only for a moment when you press the footswitch. The relay then automatically turns OFF, as does the LED.

RELAY AUTO-TRIGGER

Auto-trigger causes an “Auto-Off” relay (see above) to execute its quick “make-then-break” routine *automatically* whenever a scene is loaded—including the default scene that loads when a preset is selected—or whenever you manually change X/Y or stomp the relay’s footswitch.

The true usefulness of this becomes apparent when you combine Auto-Trigger with X and Y.

Scene 1 might have a Relay Block set to X, TIP, AUTO-OFF, AUTO-TRIGGER, while **Scene 2** is set to Y, RING, AUTO-OFF, AUTO-TRIGGER.

By setting each Scene to X or Y, you’ll be able to control the channels of a connected amp which requires two different auto-trigger relays on Tip and Ring.

5 : FUNCTION SWITCHES

F-SWITCHES OVERVIEW

The FX8 features three assignable **Function Footswitches**, also known as “**F-Switches**”. (On the original FX8 the default functions are labeled on the unit.) Each F-Switch can be assigned TWO functions: one for when you TAP the switch and the other for when you **press and hold** it. Default settings are detailed below:

F1 SCENE TAP

SINGLE SCENE SELECT

- Use 1–8 to select a Scene
- After selecting a Scene, the FX8 returns to the **Footswitch Page** for your current preset.

F2

F1 SCENE PRESS & HOLD

SINGLE PRESET/BANK SELECT

- Use F2 and F3 to Select Banks
- Use 1–8 to Select a Preset
- After Selecting a Preset, the FX8 Returns to the **Footswitch Page** for your current Preset.

F2 LOOPER TAP

LOOPER CONTROL

- Enters Looper Control Mode
- Tap again to Exit.
- See Chapter X for more on the looper.

F2

F2 LOOPER PRESS & HOLD

TRUE BYPASS

- Engages True Bypass.
- The LED is lit while engaged.
- Tap again to un-bypass.

F3 TEMPO TAP

TAP TEMPO

- Used to set the FX8 Tempo.
- Displays the **Tempo** menu, where you can change various settings.
- This menu exits automatically.
- The LED shows the tempo.

F3

F3 TEMPO PRESS & HOLD

TUNER MODE

- Shows the FX8 Tuner.
- Tap this switch again to exit Tuner Mode.
- The LED blinks while engaged.

CUSTOMIZING F-SWITCHES

Over a dozen custom functions are available for the F-Switches. They're easy to change so you can put the perfect set of switchable modes at your feet. If you never use Tap Tempo, get rid of it! If your big boots keep accidentally holding when you only meant to tap, disable HOLD functions. Flexibility is power.

ASSIGNING FUNCTIONS...

You can assign two functions to each F-Switch: one for when you TAP the switch and one for when you press and HOLD it down.

- ▶ Press **SETUP**, select the **Global** Menu by pressing footswitch 1, and turn to the **FUNCTIONS** page.
- ▶ Select one of the available F-Switches using the **NAV** knob. Assign a function using the **VALUE** knob.
- ▶ Press EXIT two times when you're done.

AVAILABLE FUNCTIONS...

NONE – This disables the selected TAP or HOLD function for the selected F-switch.

SINGLE PRST/BANK

- Activates **Single Preset/Bank Select Mode**.
- The F-switch LED remains lit until you select a preset.
- The F2 and F3 switches step UP and DOWN through BANKS.
- Footswitches 1 through 8 select a PRESET in the currently selected bank.
- To exit this mode, select a preset or tap the F1 switch.
- Because this mode also requires F2 and F3, it can ONLY be assigned to the F1 switch.

STICKY PRST/BANK

- Activates **Sticky Preset/Bank Select Mode**.
- The F-switch LED blinks as you select any number of presets.
- The F2 and F3 switches step UP and DOWN through BANKS.
- Footswitches 1 through 8 select a PRESET in the currently selected bank.
- To exit this mode, tap the F1 switch.
- Because this mode also requires F2 and F3, it can ONLY be assigned to the F1 switch.

STICKY PRST +/-

- Activates **Sticky Preset "Plus/Minus" Mode**.
- The F-switch LED remains lit while you step up or down (in order) through presets.
- F2 becomes "Next Preset" and F3 becomes "Previous Preset."
- To exit this mode, tap the F1 switch.
- Because this mode also requires F2 and F3, it can ONLY be assigned to the F1 switch.

PRESET UP, PRESET DN

- Actually two different functions, these can be used to create one or two dedicated F-Switches to step up or down through your presets. In use, these are similar to the up/down switches from Sticky Preset +/- , except that they are always active without needing the F1 switch to turn this mode ON or OFF.

SINGLE SCENE

- Activates **Single Scene Select Mode**.
- The F-switch LED remains lit until you select a Scene.
- Footswitches 1 through 8 select a SCENE within the current preset.
- To exit this mode, select a Scene or tap the F1 switch.

STICKY SCENE

- Activates **Sticky Scene Select Mode**.
- The F-switch LED blinks as you select any number of scenes in the current preset.
- Footswitches 1 through 8 select a SCENE within the current preset.
- To exit this mode, stomp the F1 switch again.

TEMPO TAP

- Allows you to tap a tempo into the FX8 (see [Section 11](#)).
- Also briefly displays the Tempo Menu where you can set various options.
- This function cannot be assigned to HOLD.

TUNER - Activates the Tuner. The F-Switch LED blinks. To exit the tuner, tap the assigned F-Switch.

LOOPER - Activates Looper Mode (see [Section 12](#)).

TRUE BYPASS - Engages True Bypass (See [Section 8](#)).

SINGLE XY

- Activates **Single X/Y Select Mode**.
- The F-switch LED remains lit until you toggle one X/Y setting.
- Footswitches 1 through 8 toggle X/Y for the assigned blocks of the current preset.
- To exit this mode, toggle any X/Y setting or tap the assigned F-switch.

STICKY XY

- Activates **Sticky X/Y Select Mode**.
- The F-switch LED blinks as you toggle any number of block X/Y settings.
- Footswitches 1 through 8 toggle X/Y for the assigned blocks of the current preset.
- To exit this mode, tap the assigned F-switch.



IMPORTANT: If you assign an X/Y mode to any F-Switch, footswitches 1–8 will no longer use Press & Hold ▼ to toggle X/Y. However, their main Engage/Bypass function is then able to happen on the footswitch DOWN-STROKE instead of the UP. Learn more about [“X/Y Switching” on page 38](#).



If you set the “HOLD” function of any F-Switch to “NONE”, its TAP function switch will execute on the switch down-stroke instead of the up.

This is useful for switches assigned to PRESET UP and PRESET DN because you’ll often want to make this kind of change right on the downbeat.

SAMPLE F-SWITCH LAYOUTS

Rather than leave this page blank, we thought it might be interesting to include a few example layouts.

NOTE: These are borrowed from the AX8, and so they show the F1, F2, F3 labels instead of SCENE, LOOPER, TEMPO.

TAP	HOLD
F1 Single Preset	F1 ▼ NONE
F2 Single Scene	F2 ▼ NONE
F3 Tempo	F3 ▼ Tuner

No "Sticky Modes"

TAP	HOLD
F1 Single Preset	F1 ▼ Sticky Scene
F2 Single XY	F2 ▼ NONE
F3 Tempo	F3 ▼ Tuner

Here we're using an XY F-Switch. This disables X/Y press and hold, and all effects fire on the "down-stroke"

TAP	HOLD
F1 Single XY	F1 ▼ Single Preset
F2 Single Scene	F2 ▼ Sticky Scene
F3 Looper Control	F3 ▼ Tuner

Looper Control Mode & NO Tap Tempo.
Tempo can be programmed per-preset so you don't technically NEED it on the floor.

TAP	HOLD
F1 Single XY	F1 ▼ Tuner
F2 Preset +1	F2 ▼ NONE
F3 Preset -1	F3 ▼ NONE

Bare bones for a performance "on the rails."
Scene 1/2 Toggle was globally set to switch 4.

TAP	HOLD
F1 _____	F1 ▼ _____
F2 _____	F2 ▼ _____
F3 _____	F3 ▼ _____

Record your favorite setups here.

TAP	HOLD
F1 _____	F1 ▼ _____
F2 _____	F2 ▼ _____
F3 _____	F3 ▼ _____

6 : CREATING PRESETS

WHAT IS A PRESET?

The FX8 has 128 PRESETS arranged in sixteen BANKS (lettered A–P) with eight presets each. Think of each preset as a fully independent pedalboard with its own effects, settings, configuration, controllers, and more. You can create and store presets using the FX8 front panel or the optional FX8-Edit software. Every preset which can be edited or overwritten—there are no permanent "factory" presets. Some players will use a lot of presets—maybe even more than one per song. Others will use very few presets, maybe just one and only one for an entire gig. However you use presets, understanding them is key to unlocking the potential of the FX8.

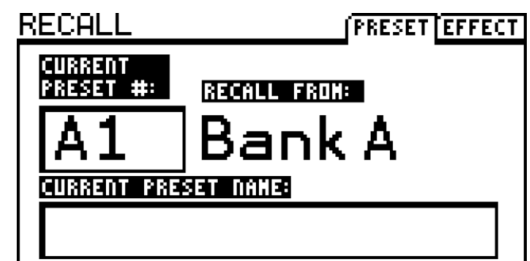
PRESET OVERVIEW

- ▶ A preset is built by inserting one or more **blocks** into the eight **slots** on the Config page.
- ▶ Every preset allows you to configure effects for **series** or **parallel**.
- ▶ Every preset has its own **assignments for Footswitches 1–8**, managed on the Footswitch page.
- ▶ Every preset allows you to specify how many effects are in the **PRE** chain, and how many are **POST**.
- ▶ A preset contains eight **Scenes** used for creating instant-access effect combinations (and much more).
- ▶ Every preset has its own settings for RELAY, MIDI, LOOPER, TEMPO, and more.
- ▶ Presets can be given names of up to 23 characters.

LOADING PRESETS

The Footswitch page display indicates the current Preset by bank and number (ex: A1, A2 ... B1, B2 ...).

- ▶ The **PRESET/A** knob can be used to change presets.
- ▶ You can also use a footswitch assigned to enter one of the Preset/Bank Select modes.
- ▶ Press and hold the **PRESET/BANK** footswitch to enter the RECALL: PRESET mode (shown at right).
 - Use **BANK UP** and **BANK DN** to select the desired bank, and **footswitches 1–8** to load the desired preset within that bank.
 - Tap **PRESET/BANK** again to cancel and return to the current preset on the Footswitch page.



QUICK TIP

The above assumes default settings. The three right-most footswitches are assignable. See [Section 5](#) to learn about assigning the function switches to suit your own needs.

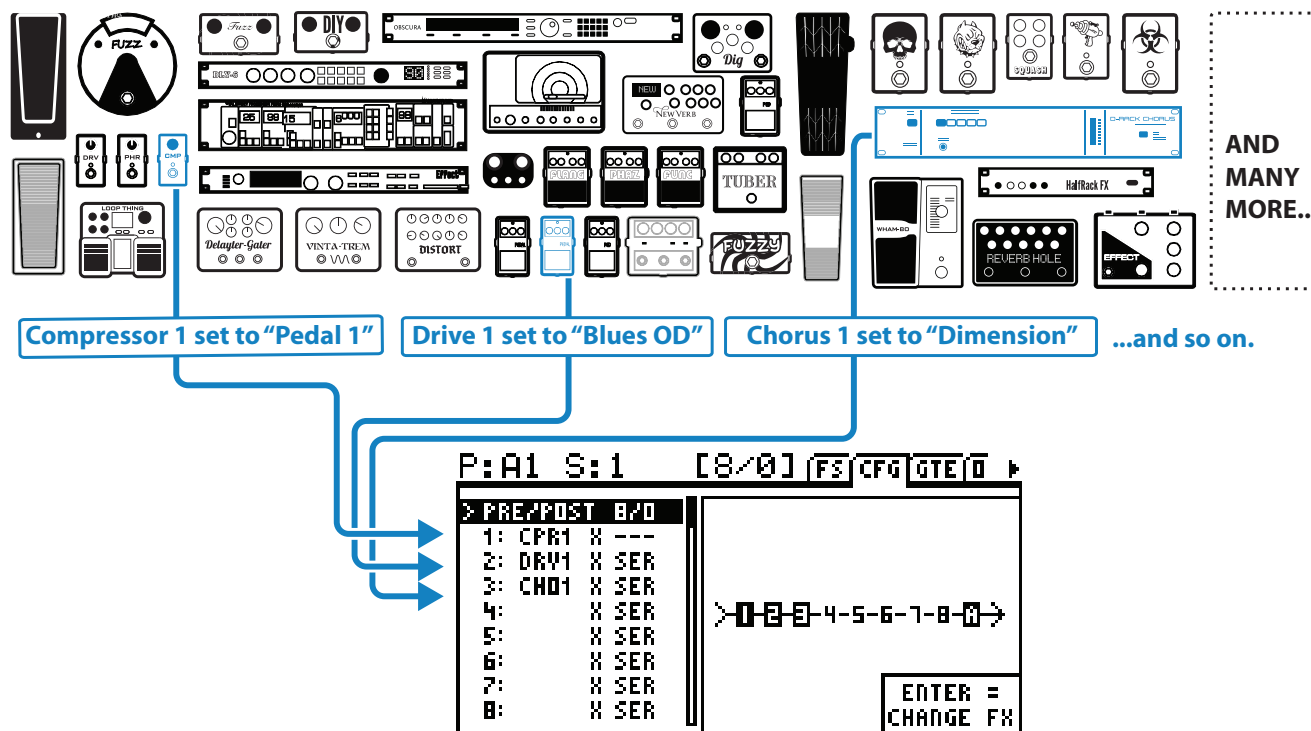
WHAT IS A BLOCK?

A block is a virtual effect. Each preset has eight "slots" on its Config page where you can insert up to eight **blocks**. Some blocks have a specific single function (e.g. "VOLUME 1") but most represent a general effect category (such as "DRIVE") with the ability to select a sub "TYPE" (such as Face Fuzz, Fat Rat, Treble Boost, etc.).

In the example below, a Compressor Block, a Drive Block, and a Chorus Block have been inserted into the slots on the CONFIG page of a sample preset. (You'll learn to insert effects on [page 30](#).)

The illustration shows a partial representation of the vast virtual "inventory" —your ultimate effects locker. Every preset has all the available FX—one or two of each type (the complete list appears on [page 31](#)).









So to build a preset, imagine that you have a huge locker full of pedals and processors. Think about which effects you might want on your "pedalboard du jour," and how you'd wire them up...











PRESET EXAMPLES

These examples show how blocks might be used to create a virtual pedalboard. Remember that many blocks also offer X/Y switching for two different sound settings from a single footswitch. For more information, see ["X/Y Switching" on page 38](#).









EXAMPLE 1:

COMPRESSOR 1 "Pedal 2"	WAH 1 "Cry Babe"	DRIVE 1 "Blues OD"	DRIVE 2 "Face Fuzz"
5 	6 	7 	8 
TREM/PAN 1 "Tremolo"	PHASER 1 "Script 90"	DELAY 1 "Mono Tape"	REVERB 1 "Medium Spring"
1 	2 	3 	4 

EXAMPLE 2:

GRAPHIC EQ "5-Band Passive"	DRIVE 1 "T808 Mod"	FLANGER 1 "Zero Flanger"	PITCH "Int. Harmony"
5 	6 	7 	8 
MULTIDELAY "Plex Shift"	DELAY 1 "Ping Pong"	REVERB 1 "Rec Studio A"	ENHANCER "Classic"
1 	2 	3 	4 

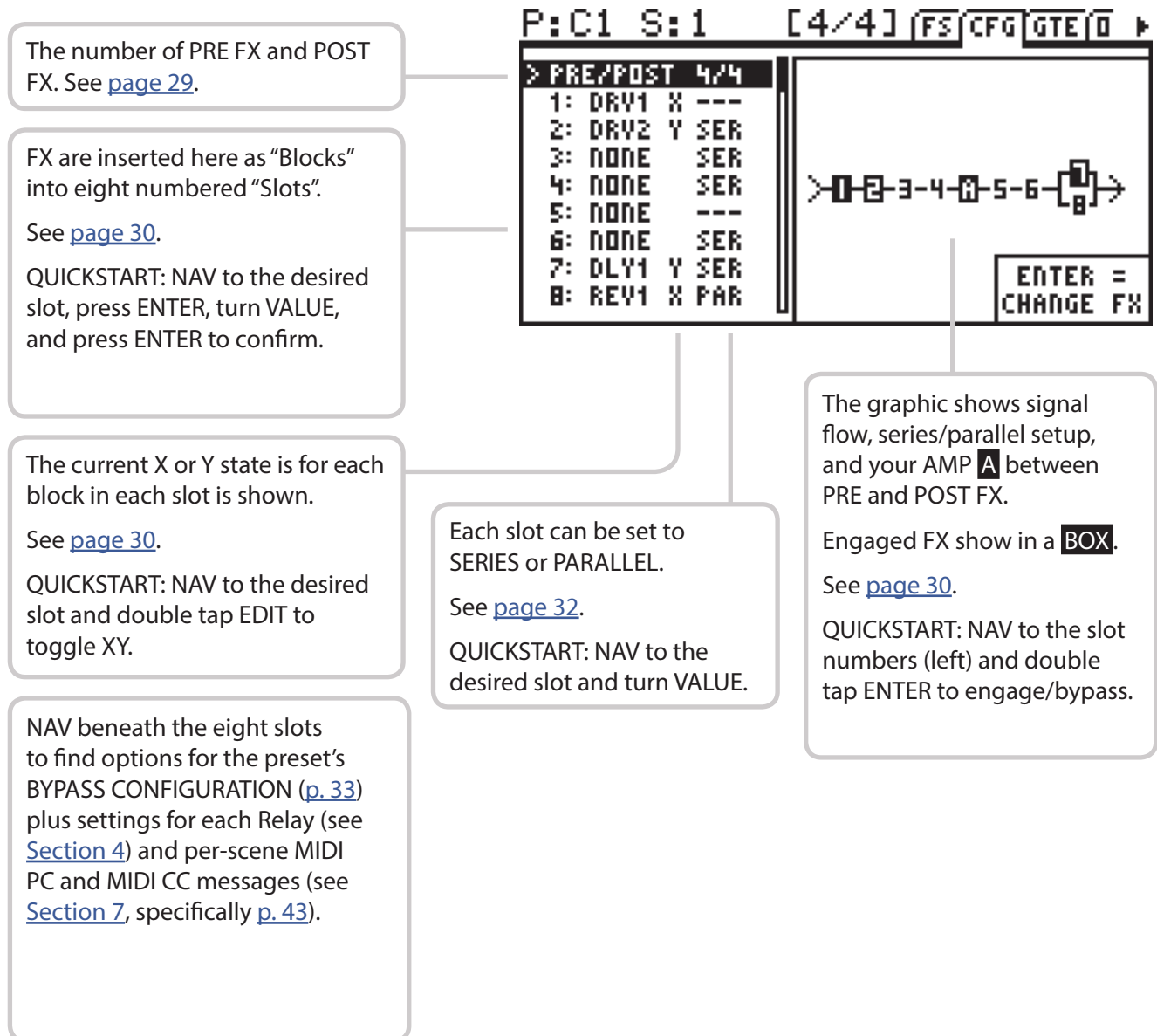
EXAMPLE 3:

DRIVE 1 "FET Boost"	CHORUS 1 "Dimension 1"	DELAY 1 "Digital Stereo"	REVERB 1 "Wide Hall"
5 	6 	7 	8 
SCENE 1 (Footswitch Block)	SCENE 2 (Footswitch Block)	SCENE 3 (Footswitch Block)	SCENE 4 (Footswitch Block)
1 	2 	3 	4 

THE CONFIGURATION PAGE

OVERVIEW

The Configuration page—aka "Config" page ("CFG") is the heart of the preset. It is used to build the signal chain of your preset, set up signal flow, and more. The annotated diagram below shows an overview of the different functional areas of the Config page.



CONFIGURE PRE AND POST

QUICK TIP

If you are not familiar with the concept of PRE and POST effects, see the diagrams on [page 2](#), or look for the relevant answers under "[Frequently Asked Questions](#)" on [page 81](#).

If you're using only PRE effects, set this to "8/0".

If you're using only POST effects, set this to "0/8".

The FX8 has independent PRE and POST effect chains. This makes it possible for the unit to be placed simultaneously between your guitar and your amp, and in your amp's effects loop.

TO EDIT THE PRE/POST CONFIGURATION:

- ▶ Press **PAGE** once from the Footswitch page to display the Config page.
- ▶ The PRE/POST setting for the current preset is shown as two numbers separated by a slash. Make changes with the **VALUE** knob. A setting of "8/0" positions all effects as PRE. "0/8" positions all effects as post. "4/4" provides 4 PRE effects and 4 POST effects. The table at right shows all options.

PRE/POST OPTIONS

8 Pre 0 Post

7 Pre 1 Post

6 Pre 2 Post

5 Pre 3 Post

4 Pre 4 Post

3 Pre 5 Post

2 Pre 6 Post

1 Pre 7 Post

0 Pre 8 Post

WORKING WITH BLOCKS ON THE CONFIG PAGE

TO INSERT OR CHANGE A BLOCK...

- ▶ On the Config page, turn **NAV** to select the desired slot.
 - The selected slot is always shown in **INVERSE**.
- ▶ Press **ENTER**.
- ▶ Turn **VALUE** until the desired effect block is shown.
- ▶ Press **ENTER** again to confirm.

TO REMOVE A BLOCK...

- ▶ On the Config page, turn the **NAV** knob to select the desired slot.
- ▶ Press **ENTER** and turn the **VALUE** until "NONE" is shown.
 - "NONE" is the only entry NOT listed alphabetically; it is at the beginning of the list.

TO SWAP A BLOCK...

- ▶ On the Config page, turn the **NAV** knob to select the first effect.
- ▶ Press **ENTER**.
- ▶ Turn the **NAV** knob to select the second slot.
- ▶ Press **ENTER** to swap the effects or press EXIT to cancel.

TO BYPASS OR ENGAGE A BLOCK...

- ▶ On the Config page, turn the **NAV** knob to select the desired block.
- ▶ Double-Tap **ENTER** to toggle the bypass state.
- ▶ Blocks that are bypassed show in the diagram as numbers: **1, 2, 3**
- ▶ Blocks that are engaged show in the diagram as solid rectangles with numbers in inverse: **1 2 3**
- ▶ You can also use a footswitch, if one is assigned to the desired block. See [p. 34](#)

TO TOGGLE X/Y FOR A BLOCK...

X and Y are like "channels", allowing two totally different settings per block. See X/Y on [p. 38](#). for more.

- ▶ On the Config page, turn the **NAV** knob to select the desired block.
- ▶ Double-Tap **EDIT**.

You can also toggle X/Y using footswitches. See p. [page 6](#) and [page 22](#).

FAQ: **WHY AM I GETTING A CPU LOAD WARNING?** As you add more blocks, or blocks that require more power, you may ultimately reach the limit of the FX8's CPU. When this happens, a warning prevents you from adding more blocks until you reduce the load by removing blocks or change block settings. Parameter changes that increase CPU load may also cause some blocks to become disabled. For more on CPU limits, see [page 39](#).

BLOCK INVENTORY

Here is an overview of every effect available to every preset.

Effect		Description	#
Chorus	CHO	Create classic mono and stereo modulation effects including vibrato.	2
Compressor	CMP	Control dynamics and add sustain.	2
Delay	DLY	Up to 8000 ms of delay, with types for analog, digital, tape, and more.	2
Drive	DRV	25+ types including boost, overdrive, distortion, fuzz, and many more.	2
Enhancer	ENH	Classic and Modern modes to create and control spatialization.	1
Filter	FLT	Includes Low Pass, High Pass, Band Pass, and many other types.	2
Flanger	FLG	Various types cover everything from subtle modulation to extreme jet.	2
Formant	FOR	Create dynamic vowel sounds with this multi-mode formant filter.	1
Gate/Expander	GTE	Useful for everything from subtle control to extreme effects.	2
Graphic EQ	GEQ	A variety of modes allow easy, flexible tone sculpting.	2
Megatap Delay	MGT	A special delay effect with group controls for time, pan, and level.	1
Multidelay	MTD	A variety of special delays including plex, diffusor, quad-tap, and more.	1
Tremolo/Panner	TRM	Creates classic trem, plus auto-pan or extreme psycho acoustic effects.	2
Parametric EQ	PEQ	The 5-band Parametric Equalizer allows precise control of tone.	2
Phaser	PHA	A variety of vintage and cutting edge phaser effects, including 'vibe.	2
Pitch Shifter	PIT	Includes detune, harmonizer (intelligent/custom), whammy, and more.	1
Reverb	REV	World-class recreations of vintage springs, rooms, halls, and more.	2
Ring Modulator	RNG	The extremely flexible ring modulator provides for a range of cool effects.	1
Rotary	ROT	Simulates a classic rotary speaker with multiple microphones.	2
Synth	SYN	3-Voice advanced Monophonic synthesizer.	1
Volume/Pan	VOL	Simple volume block also offers channel input/output tools.	2
Wahwah	WAH	The classic wah, with multiple types based on classic originals.	2

In addition to the blocks listed above, each preset also includes an **Input Noise Gate**, an **Output Mixer**, and a set of **Controllers** for parameter automation.

As of firmware 3.0, the Relays and MIDI functions are no longer "effect" blocks but "footswitch" blocks. See [Section 5](#) for more information.

CONFIGURE SERIES & PARALLEL

FX8 effects can be placed in either **series** or **parallel**.

To edit the series/parallel configuration for the current preset, select any of the numbered slots on the Config page and turn **VALUE** to select "SER" for series or "PAR" for parallel.

A graphic shows the current **layout**. The "A" block shows the position of your AMP between PRE and POST effects. Note that the first effect and the first POST effect are always series and cannot be changed.

Blocks that are bypassed show in the diagram as numbers: **1, 2, 3**

Blocks that are engaged show in the diagram as solid rectangles with numbers in inverse: **1 2 3**

PRE Effects Only (8/0), All Fx Series.



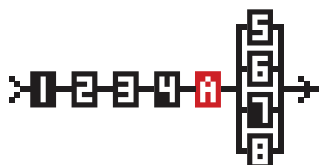
Effect 1: -- (First Effect)	Effect 5: SERIES
Effect 2: SERIES	Effect 6: SERIES
Effect 3: SERIES	Effect 7: SERIES
Effect 4: SERIES	Effect 8: SERIES

PRE and POST (4/4), Effect 8 in Parallel



Effect 1: -- (First Effect)	Effect 5: -- (auto series)
Effect 2: SERIES	Effect 6: SERIES
Effect 3: SERIES	Effect 7: SERIES
Effect 4: SERIES	Effect 8: PARALLEL

PRE and POST (4/4), FX 6,7,8 in Parallel

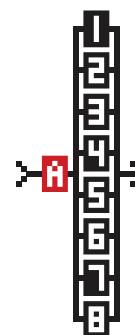


Effect 1: -- (First Effect)	Effect 5: -- (first POST)
Effect 2: SERIES	Effect 6: PARALLEL
Effect 3: SERIES	Effect 7: PARALLEL
Effect 4: SERIES	Effect 8: PARALLEL

POST Effects Only (0/8), All FX Parallel

(FX1 always series)

Effect 2: PARALLEL
Effect 3: PARALLEL
Effect 4: PARALLEL
Effect 5: PARALLEL
Effect 6: PARALLEL
Effect 7: PARALLEL
Effect 8: PARALLEL



FAQ: WHY RUN FX IN PARALLEL? If you, like most guitarists, have always strung pedals together in a straight line, you'll find the FX8 replicates this setup easily. But the freedom to route in parallel opens new options, both traditional and creative. How does it sound? An easy example to understand is Reverb and Delay in series and in parallel. In series, the dry sound and the delay sound BOTH pass through the reverb. In parallel, only the direct signal passes through the reverb so the delay echoes are heard dry—no reverb.



Effects in Series



Effects in Parallel

INTELLIGENT PARALLEL FX

On most devices, running effects in parallel means making changes to their settings for best results, but the FX8 handles this automatically with intelligent parallel effects.

The first concern is the MIX parameter, which determines the blend of dry and wet. For parallel effects, MIX should be **100% wet** so the dry signals don't "stack up," sound louder and upset the dry:wet ratio.



When you switch them to parallel, effects on the FX8 automatically change MIX to 100% WET.

To change how much of a parallel effect you hear, use the effect's **LEVEL** parameter.

LEVEL changes to -12 dB (equivalent to 25% mix) when you switch effects to parallel.

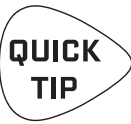
MIX and LEVEL change back to default settings when you switch from parallel to series.

The next concern is the BYPASS MODE parameter, which determines how signal is passed when an effect is switched off. If a parallel effect passes dry signal when bypassed, we have the same problem as if the MIX were set incorrectly: dry signals stack up and levels change.



When you switch them to parallel, effects on the FX8 automatically change BYPASS MODE so dry signal is MUTED when the effect is switched off.

BYPASS MODE changes to its default setting when you switch an effect from parallel to series.



Parallel routing is essential if your amp's effects loop works ONLY in parallel. Such amps have a direct connection from the preamp to the power amp for DRY, plus a second path through the send/return jacks for WET. If any dry passes through the FX8, you will have phase problems. Therefore, you will need to manually set MIX, LEVEL and BYPASS mode parameters so no dry signal passes through when the effect is engaged or bypassed.



The converters and signal path on the FX8 are of such high quality that a separate discrete analog path is not needed. If your amp has a switchable loop, set it to SERIES and enjoy the flexibility that the FX8 provides with no "tone suck."

CONFIGURE TRUE BYPASS

The Config page BYPASS parameter sets the current preset to one of three True Bypass types. You can bypass "PRE" only, "POST" only, or "ALL" (both PRE and POST).

CONFIGURE RELAYS AND MIDI



The Config page contains parameters to set up RELAYS and MIDI per scene.

Every scene of every preset can set the state of both relays, and can also trigger the transmission of a different MIDI Program Change and MIDI Control Change message via the **MIDI OUT** port of the FX8.

For more on using scenes to operate a RELAY, see ["To Set Relay States For a Scene..." on page 43](#).

For more on how to program a scene to send MIDI messages, please see

["To Set the MIDI Messages for a Scene..." on page 43](#)

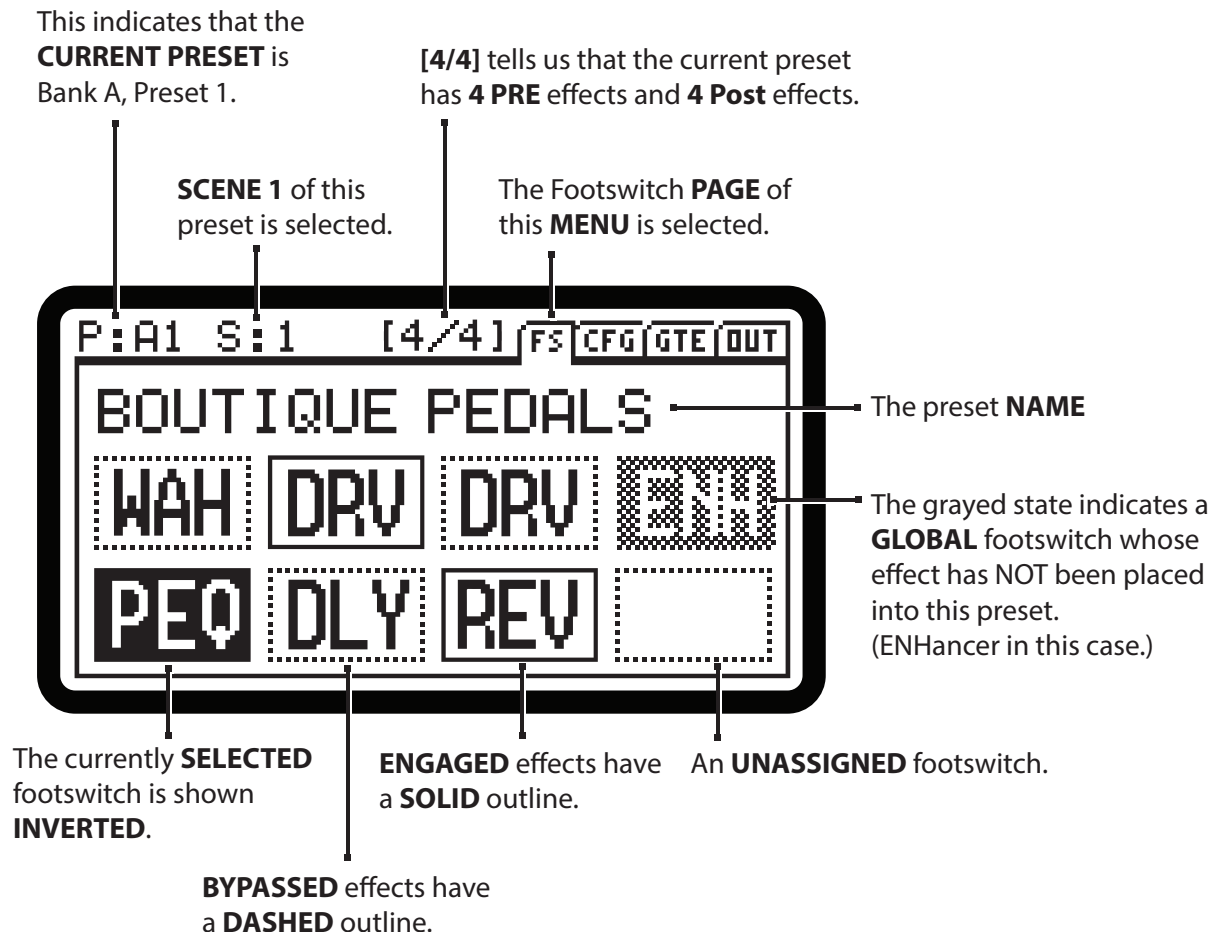
THE FOOTSWITCH PAGE

While playing or performing, you will generally use the FX8 on the Footswitch page ("FS") of its main menu. The Footswitch page is displayed when the FX8 is powered on, and the unit returns to it when you leave other modes or pages by pressing **EXIT**.

The eight numbered footswitches of the FX8 offer tremendous flexibility. As you learned in Chapter 1, the display shows what each of the footswitches is currently programmed to do, but that's just the beginning...

The footswitches can be assigned to:

1. **EFFECTS** that have *already* been placed into the preset using the **Config** page.
2. **GLOBAL FUNCTIONS** (including FX) using the **Global Footswitch page** ("GBL FS") under Setup : Global.
3. **FOOTSWITCH BLOCKS** — to select **Banks**, **Presets** or **Scenes**, operate **Relays** or send **MIDI** messages.



SETTING UP FOOTSWITCHES 1-8

PROGRAMMING A FOOTSWITCH...



Remember, footswitch assignments do not change which blocks are in the preset. If you think of the FX8 like a separate processor and controller, these assignments would represent only the controller portion, while the processor itself would be the Config page ([p. 28](#)).

- ▶ From the main **Footswitch** Page, turn **NAV** to select the desired footswitch (or just press the switch!)
- ▶ Turn the **VALUE** knob to scroll through the list of available things to control. If the footswitch is set (as it is by default) to "**PER-PRESET**" only those effects actually placed on the current grid are available. If the footswitch is set to "**GLOBAL**" (see below) then ALL effects will be available—but the switch will be disabled unless the block it is assigned to control is present in the current preset.
- ▶ Press **ENTER** to assign the effect or press **EXIT** to cancel.

ABOUT EFFECT AND FOOTSWITCH BLOCKS

As you scroll through the list of available things to control, you will also find various special options called "**Footswitch Blocks**":

- **Bank Up, Bank Down** – These can be quite useful if you do not have a "preset select mode" assigned to one of the function switches.
- **Scene 1-8** – Use these to select a given SCENE within the current preset.
- **Preset 1-8** – Use these to select a given PRESET within the current BANK.
- **Scene 1/2 Toggle** – Use this to toggle between Scenes 1 and 2. You get two scenes from one button!
- **Relay 1, Relay 2** – These control the designated relay. See [p. 49](#) for more on the Relay Footswitch Block.
- **MIDI 1, MIDI 2** – These allow the footswitch to send MIDI messages through the MIDI OUT port. See [p. 48](#) for more information on the MIDI Footswitch Block.
- **NONE** – This disables the footswitch.

Remember also that a footswitch assigned to an effect can also be used to **switch X/Y** for the block it controls. This is done either by PRESS & HOLD or in conjunction with one of the special X/Y modes that can be assigned to a function switch.

TO SET EACH FOOTSWITCH AS "PER-PRESET" OR "GLOBAL"...

Each individual footswitch can be set to either PER-PRESET or GLOBAL.

Per-Preset footswitches can be programmed to perform a different function in every preset.

Global footswitches do the same thing across all presets. To set a footswitch as Per-Preset or Global:

- ▶ Press **SETUP** (SHIFT+STORE) to show the SETUP menu. Tap footswitch **1** to select **GLOBAL**.
- ▶ Page to the **GLOBAL FOOTSWITCH** page ("GBL FS").
- ▶ Use **NAV** to select the desired footswitch and **VALUE** to set it to GLOBAL or PER-PRESET.
- ▶ Press **EXIT** twice when you're finished.



NOTE: RELAY and MIDI blocks are not available as Global footswitches.

Always re-check the assignment of a footswitch after you change it to Global or Per-Preset.

EDITING EFFECT BLOCKS

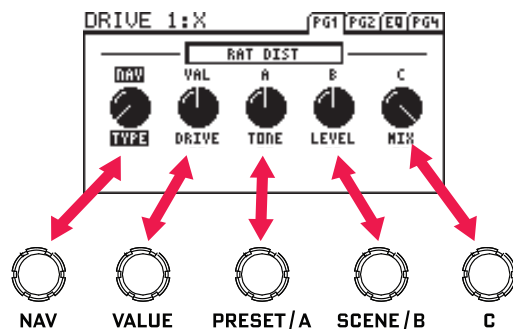
Blocks are fully programmable, allowing you to dial in every setting or “parameter” as desired. A block’s **edit menu** contains one or more **pages**, each with multiple **parameters** to control sound functions. Here’s a quick guide covering how to access and work with the different types of edit menu pages.

OPENING THE EDIT MENU

- ▶ First, make sure you’re on the Footswitch page. If not, press **EXIT** until you arrive there.
- ▶ Use the **NAV** knob to select the desired block.
 - You can also tap the block’s footswitch, but this will also toggle the effect ON or OFF.
- ▶ Press **EDIT** to display the edit menu.

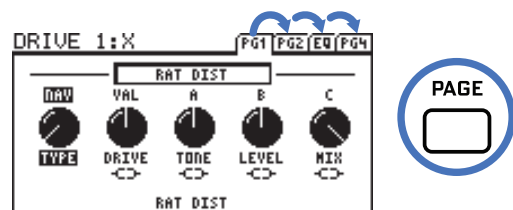
USING VIRTUAL KNOBS

- ▶ Most edit menu pages show five virtual knobs. To make changes, use the five physical knobs of the FX8.
- ▶ Above each on-screen knob is an indicator showing which of the five knobs to use: **NAV**, **VAL**, **A**, **B**, or **C**.
- ▶ You can hear all sound changes in real time.



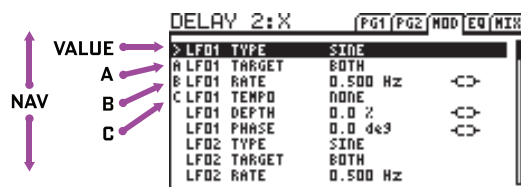
TURNING PAGES

- ▶ Most effect block edit menus have multiple pages.
- ▶ Use the **PAGE** button to page forward.
- ▶ Double-Click **PAGE** to step back.
- ▶ The last page “wraps” to the first.



USING TEXT MENUS

- ▶ Use the NAV knob to move up and down and the VALUE knob to edit the highlighted parameter.
- ▶ A, B, and C knobs are mapped dynamically, as indicated on-screen.
- ▶ Press **EXIT** at any time to leave editing and return to the Footswitch page.



QUICK TIP

- ▶ Press **EXIT** at any time to leave editing and return to the Footswitch page.
- ▶ Press **EDIT** repeatedly to step in sequence through the menus of every block in your preset.

SAVING CHANGES

After editing a preset, you will undoubtedly want to save the results.

Every preset in the FX8 can be modified. There are no permanent “factory” presets.

TO STORE A PRESET...

- ▶ Press **STORE** to show the STORE screen.
- ▶ Press **ENTER** to display “OVERWRITE PRESET?”
- ▶ Press **ENTER** again to confirm, or **EXIT** to cancel.
- ▶ The message “PRESET SAVED!” is shown when saving is complete.

TO CHANGE THE PRESET NAME OR LOCATION...

The FX8 has 128 preset memory locations grouped in sixteen lettered banks (A–P). Each bank contains eight presets. You can save any preset to any location at any time. You can edit the name of any preset while storing.

- ▶ Press **STORE** to show the STORE screen.
- ▶ Use the **NAV** knob to select LOCATION or NAME.
 - Turn the **VALUE** knob to move the cursor.
 - The **A** knob selects **upper case** letters.
 - The **B** knob selects **lower case** letters.
 - The **C** knob selects **numbers** and **symbols**.
 - The **NAV** knob moves the cursor position.
 - You can use up to 23 characters in a preset name.
- ▶ Press **ENTER** to Store, then press **ENTER** again to confirm.
- ▶ The message “PRESET SAVED!” is displayed and the new location (if any) is loaded.

PRESET SAVED: A7

TO RESET ANY BLOCK...

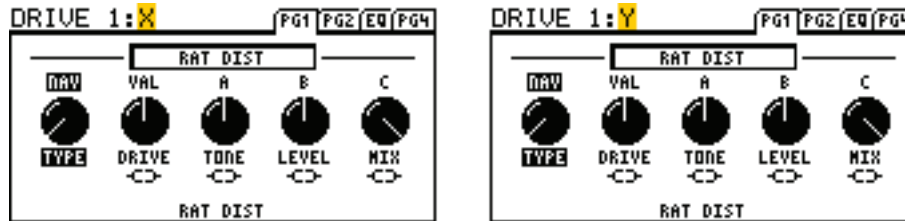
To reset an entire block to default settings, open its EDIT menu and then double-tap the **ENTER** button. A confirmation screen will appear. Press the **PAGE** button to reset or **EXIT** to cancel.

X/Y SWITCHING

In the same way that many amplifiers have two fully independent channels, so do many effects on the FX8. Each block with X/Y switching stores two sets of settings—an “X” set and a “Y” set. This makes it possible to switch between two different effect sounds while using only one block.

Sixteen block types support X/Y Switching. They are: Chorus, Compressor, Delay, Drive, Filter, Flanger, Gate/Expander, MIDI, Multitap Delay, Phaser, Pitch Shifter, Tremolo/Panner, Relay, Reverb, Rotary and Wah.

X or Y is indicated at the top of the block’s EDIT menu as shown below:



TO SWITCH X/Y...



To switch between X and Y, Press and hold ▼ the effect’s footswitch.

The amber “Y” LED lights when the Y state is selected. X/Y can also be switched via MIDI CC#. CC# assignments appear on the CTRL page of the I/O menu ([p. 74](#))

TO SET UP AN X/Y BLOCK...

- ▶ Open the desired block for editing. All blocks start with the X state selected.
- ▶ Dial in all parameters for X.
- ▶ Press and hold ▼ the effect’s footswitch to switch to Y.
- ▶ Dial in all parameters for Y.
- ▶ Save the preset by pressing **STORE, ENTER, ENTER**.



X/Y IS PER SCENE

The X/Y state of every X/Y block is saved in the current scene. See [Section 7](#) for more information on Scenes.

X AND Y SHARE THE SAME MODIFIERS

Modifiers allow you to control sound parameters in real-time (with an expression pedal or LFO for example.) It is important to understand that any modifier you place on X will also apply to Y. Blocks have only one set of modifiers shared across X and Y.

FAQ: WHY WOULD I USE X/Y? For a feature with just two letters in its name, the benefits of X/Y are immense. When you’ve already placed both DRIVE blocks but need a 3rd drive sound, use X/Y! When you have space for only one DELAY but want both wobbly TAPE ECHO and pristine STEREO DIGITAL DELAY, use X/Y! To go from “a touch of reverb” on rhythms to “spacious” during a solo, use X/Y! To access three settings instead of two for RELAY and MIDI blocks, use X/Y! When you consider that scenes can make the X/Y switch for you, it is even better!

PRESET CPU LIMITS

Each block you place in a preset contributes to the total CPU load. You can check the current load at any time by pressing UTILITY and switching to the STATUS page. A thermometer-like meter on the right side of the screen shows the CPU % usage (and provides a specific numeric readout above). Load is also displayed in the upper right corner of FX8-Edit.

As the load enters the high 90s the FX8 can become unstable or unresponsive, so there are safeguards to prevent this. First, you are stopped from inserting any block which might cause an overload by the message "INSUFFICIENT CPU". The FX8 assumes that a block will be used to its limits when making this determination.

If you are prevented from inserting an effect, you can make changes to reduce the current CPU load and try again. You might remove an effect that is less important. Adjusting certain parameters can also help. Here are a few of the common block parameters whose settings have a measurable effect on CPU usage:

- Reverb: **QUALITY** and **ECHO DENSITY** (Lower = less CPU, SPRING type = Lowest CPU)
- Phaser: **STAGES** (Lower = less CPU)
- Filter: **ORDER** and **Q** (Lower = less CPU)
- Multi-Delay: **TYPE** (Different types have different requirements)
- Setting **LOOPER POSITION** to "NO LOOPER"
- Modifiers also affect CPU usage.

AUTOMATIC BLOCK DISABLING

As a second safeguard, the FX8 may disable one or more blocks if load gets too high due to changes after a block has been inserted. Changing Reverb to HIGH QUALITY, for example, pushes CPU Usage up considerably. If the preset can't handle this, you will see an error message:



When this happens, you'll need to take steps to get back below the limit. The most likely solution will be to change back whatever setting you had just made, but it is also possible to remove or edit other blocks to address the issue.

Disabled blocks blink on the Footswitch page, and show as "DISABLED" in their EDIT menus (upper left).

CPU & USB

The FX8 dedicates a small percentage of CPU resources to USB processing. Large presets may run fine while USB is disconnected, but a USB connection may push them over the limit. In this case, try to reduce CPU load or avoid using these presets while USB is connected.

FX8-EDIT

Every function and parameter of the FX8 can be conveniently operated from the front panel of the unit. Another way to edit presets and parameters is to use FX8-Edit. If you are at all accustomed to working with audio software or plug-ins, you will probably enjoy FX8-Edit.

Here's a quick look at some of its features:

The screenshot shows the FX8-Edit software interface. At the top, there are tabs for Preset, Block, Tools, and Settings. The main display shows a preset named 'Vintage Meets Modern' with a 'Scene Select' grid (1-8) and 'Save' and 'Export' buttons. Below this is a grid of FX/Relays (1-8) with various effect icons like Wah, Comp, Drive, TremPan, Pitch, Delay, MultiDly, and Reverb. The bottom section is divided into 'BASIC' and 'ADVANCED' parameter controls, including knobs for Drive, Tone, Low Cut, High Cut, Clip Type, Slew Limit, Bias, Bass, Mid Freq, Mid, Treble, Bit Reduce, Sample Rate, Mix, and Level. A 'MIXER' section on the right includes 'Balance' and 'Bypass Mode' controls. Callouts point to various features: 'Open presets directly from the FX8 in just a few clicks.' (Import/Presets...), 'Edit names with your computer keyboard.' (Preset name field), 'Enjoy extra scene features like COPY/PASTE.' (Scene Select grid), 'Save presets to the FX8 or to your computer.' (Save/Export buttons), 'Dedicated tabs for FX, Looper, Controllers, MIDI and more' (FX/Relays tabs), 'Block Library stores and recalls effect settings.' (Blocks Library), 'View and edit dozens of parameters on a single screen.' (Parameter knobs), and 'Dedicated area for block MIX and LEVEL parameters.' (MIXER section).

FX8-Edit also includes a manager which allows you to reorganize presets in the unit. Find FX8-Edit at <http://www.fractalaudio.com>

7 : SCENES

OVERVIEW

Each of the 128 presets of the FX8 preset contains eight **scenes**. You don't need to create them—they're already there, ready and waiting to be used. We like to think of a scene as something like a "preset within a preset." Scenes aren't full presets though, they only control which effects are on, which effects are off, whether each effect is set to X or Y, and a few other settings.

The benefits of scenes are enormous. Selecting a scene allows you to recall with one tap what would otherwise require "tap dancing" on the footswitches. Scenes load instantly, they can easily be gapless/seamless, and they offer the easiest way to ensure perfect "spillover" of delay and reverb. That's just the beginning... Scenes are incredibly powerful and may become one of your favorite aspects of the FX8.

WHAT SCENES INCLUDE...



Each scene stores all of the following:

1. The ON/OFF state of every effect in the current preset
2. The X/Y state of every effect in the current preset
3. The state of each relay (unless it has been assigned to a footswitch)
4. The settings for OUTPUT LEVEL PRE and OUTPUT LEVEL POST. This is useful for creating a BOOST, or to normalize the level across scenes
5. The setting for two virtual "Scene Controller" knobs, which can in turn be assigned to control sound parameters. See ["Internal Controllers" on page 55](#).
6. One MIDI Program Change message (on any channel), sent to the MIDI OUT port of the FX8 when the scene is loaded.

WHAT SCENES *DO NOT* INCLUDE...

In short? Everything else. A scene **ONLY** contain the items listed above. If you change anything that is not part of the scene, the change will affect **ALL** scenes in the preset.

You cannot change which effects are placed in which slots, or tweak effect parameters per scene. You cannot change the pre/post setting, series/parallel settings, or noise gate settings per scene. You cannot change the preset NAME per scene. Scenes do not have names.

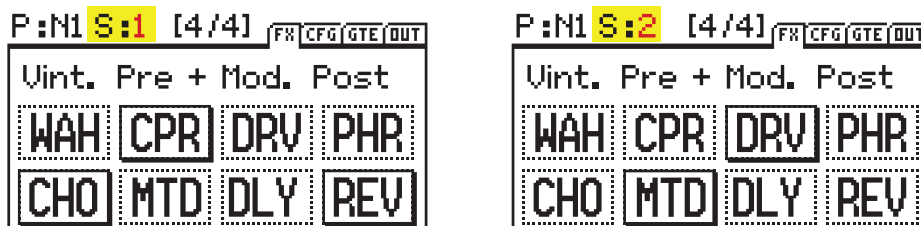
FAQ: WHY NOT JUST CHANGE PRESETS? Preset changes give you total flexibility. You can change anything and everything in every preset, but there are also drawbacks. Synchronizing multiple presets is tedious, it takes care to get levels and spillover just right, and while preset changes are fast, scene changes are even faster and can be seamless.

SELECTING SCENES

There are three ways to select a scene on the FX8:

1. **USE THE FOOTSWITCHES** – Tap **SCENE** once to enter Scene Select Mode. (The red LED will remain lit.) The next press of any footswitch 1–8 will select a scene within the current preset. For example, to select Scene 4, press **SCENE** and then #4.
2. **USE THE SCENE KNOB** – The dedicated **SCENE** knob changes the scene on the Footswitch page. (and other main menu pages: CFG, GATE, and OUT.)
3. **USE MIDI** – Incoming MIDI messages can be used to select scenes. By default, CC#34 is mapped to the **SCENE SELECT** function. Value of CC#34 determines which scene is loaded. 0 = Scene 1; 1 = Scene 2; 2 = Scene 3, etc.

The best way to tell which scene is loaded is to look at the scene LEDs. The number of the current scene is also shown in the Footswitch page display as highlighted below:



SETTING UP SCENES

Remember that you don't need to do anything special to "create" or "enable" scenes. Every preset has eight scenes built in and ready to use. Even if you don't plan on switching scenes during a performance, you'll always be using **Scene 1**, which is selected automatically when you load any new preset. (You cannot set a preset to load a different scene initially.)

Programming scenes is easy. Select the desired scene and use the footswitches as you normally would to turn effects ON/OFF or select X/Y states. Set any per-scene parameters such as RELAY, LEVELS, or MIDI. Repeat this for each scene in the preset and then **STORE** your changes.

Here are some step-by-step instructions for setting up scenes.

TO TURN EFFECTS ON OR OFF IN A SCENE...

The on/off state of every block in your preset can be programmed per scene as follows:

1. Load the desired preset and select the desired scene.
2. Use the footswitches to turn each effect on or off.

NOTE: All blocks in scenes 2-8 will be ON until you turn them off. Careful... this can make things loud!

TO SET EFFECT X/Y STATES IN A SCENE...

The X/Y state of every block in your preset can be programmed per scene as follows:

1. Load the desired preset and select the desired scene.
2. Press and hold ▼ each footswitch to select X or Y as desired.

TO SET RELAY STATES FOR A SCENE...

The state of each relay can be programmed per scene as follows:

1. Load the desired preset and select the desired scene.
2. Press **PAGE** from the Footswitch page to turn to the Configuration-screen ("CFG" tab).
3. Use **NAV** to select RELAY 1 or RELAY 2.
4. Use **VALUE** to select TIP-to-sleeve, RING-to-sleeve, or BOTH tip- and ring-to-sleeve.



NOTE: When a RELAY block is in your preset, that relay will be controlled **ONLY** by the block. Any relay settings on the Config page will be **ignored**. However, the scene itself can control the RELAY block in the same way a scene controls ON/OFF and X/Y for every block.

TO SET THE OUTPUT LEVELS FOR A SCENE:

The main output level for **OUT [PRE]** and **OUT [POST]** can be programmed into every scene.

1. Press PAGE from the Footswitch page to turn to the "OUT" page.
2. Select the desired scene.
3. **OUTPUT LEVEL PRE** and **OUTPUT LEVEL POST** can be set per scene.

Note: Changing scene output levels impacts unity gain.

TO SET THE MIDI MESSAGES FOR A SCENE...

The FX8 can send one **MIDI Program Change** ("PC") and one **Control Change** ("CC") message per scene. You can send different messages on different channels for each scene. Use this feature to change the channel of a MIDI-controlled amp, select presets on a connected Axe-FX, or control any other MIDI device.

1. Load the desired preset and select the desired scene.
2. Press **PAGE** from the Footswitch page to turn to the Configuration-screen ("CFG" tab).
3. Use **NAV** and **VALUE** to select and edit the desired parameters: **MIDI PC** and **MIDI CH** for a MIDI Program Change message, and **CC NUM**, **CC VAL**, and **CC CH** for a CC message.

Note: The **MIDI Footswitch block** can also be used to send MIDI data from a footswitch (and therefore a scene!)

It even supports XY for twice the MIDI messaging. See ["The MIDI Footswitch Block" on page 48](#)

TO SAVE CHANGES TO ONE OR MORE SCENES:

- Press STORE, ENTER, ENTER to save any and all changes to one or more scenes.

Always test ALL scenes in your preset—even those you think you might not use.

Ensure that there are no unpleasant volume jumps or other surprises in case of an accidental mis-step later.

SCENE REVERT

Scene changes are normally *retained* until you change the preset. With SCENE REVERT turned on, scene changes are discarded as soon as you change to a new scene.

Here is a comparison of how scene changes work in both modes:

SCENE REVERT OFF (default)

1. You load SCENE 1. DRIVE 1 is OFF.
2. You turn DRIVE 1 ON.
3. You change to SCENE 2.
4. You change BACK to SCENE 1.
5. Drive will be ON as you last left it.

SCENE REVERT ON

1. You load SCENE 1. DRIVE 1 is OFF.
2. You turn DRIVE 1 ON.
3. You change to SCENE 2.
4. You change BACK to SCENE 1.
5. Drive will be OFF as it was last saved.

TO ENABLE/DISABLE SCENE REVERT:

1. Press the **SETUP** button and press footswitch 2 to load the I/O menu.
2. Turn to the MIDI page.
3. Use the **NAV** knob to select "SCENE REVERT".
4. Use the **VALUE** knob to select "OFF" or "ON".
5. Press the EXIT button 2x to return to the Footswitch page.
(You never not need to STORE changes in SETUP.)

8 : TRUE BYPASS

OVERVIEW

Relay-based **buffered True Bypass** gives the FX8 a much sought-after capability in the world of effects processors. By physically switching A/D and D/A conversion out of the signal path, True Bypass gives you the opportunity to make comparisons, check gain settings, or just enjoy your amp in its bare-naked glory.

In True Bypass Mode, signal is routed directly from the INPUTS to the OUTPUTS with no DSP conversion or processing of any kind. Effect tails STOP. Pad, Headroom, and Level settings on all inputs and outputs are bypassed. NO control on the FX8 has any effect.

The relays are fast and quiet, and True Bypass can be used on stage with no nasty “pop” or “thump.”

TO ENGAGE TRUE BYPASS...

To engage True Bypass, press and hold ▼ the **TRUE BYPASS** footswitch (also the **LOOPER/BANK UP** footswitch). The display will flash “TRUE BYPASS ACTIVATED”.

To disengage True Bypass, tap the **TRUE BYPASS** switch. You don’t need to press and hold!



PRESET BYPASS CONFIGURATION

The FX8 has independent signal paths for PRE and POST effects, so there are independent PRE and POST options for the True Bypass function. As explained in [“Configure True Bypass” on page 33](#), you can set the True Bypass function individually for every preset to affect the inputs and outputs of the PRE chain, the POST chain, or both PRE and POST (“ALL”) inputs and outputs.

To edit the True Bypass configuration for the current preset, press **PAGE** from the Footswitch page to turn to the Configuration (“CFG”) page, then use the **NAV** and **VALUE** knobs to change the setting for BYPASS.

FAQ: **WHY WOULD I BYPASS ONLY PRE OR ONLY POST?**

There are many possible valid answers to this question. Some players are just intent on having NOTHING between their guitar and their amp when it isn’t necessary. Others might just want to test the signal path or make other comparisons.

AUTOMATIC TRUE BYPASS

Automatic True Bypass provides the option to engage **True Bypass** automatically when all effects in the PRE or POST chain have been bypassed or removed*. It works individually on each chain, so an Automatic True Bypass of the PRE chain does not also affect the POST chain (and vice versa).

This feature is either ON or OFF; you can't enable it for PRE and have it disabled on POST (and vice versa).

Automatic True Bypass defeats ALL DSP effects. Effect tails STOP. Pad, Headroom, and Level settings are bypassed. The buffered signal is routed directly from the INs to the OUTs.

*All effects are also considered "removed" if the PRE/POST configuration shows a "0".

WHEN AUTOMATIC TRUE BYPASS IS ON:

1. When all PRE effects are removed or bypassed—either manually, or by a SCENE—AUTO TRUE BYPASS will engage for the PRE chain.
2. When all POST effects are removed or bypassed—either manually, or by a SCENE—AUTO TRUE BYPASS will engage for the POST chain.

TO ENABLE/DISABLE AUTO TRUE BYPASS:

1. Press the **SETUP** button.
2. Press #3 to enter the GLOBAL menu.
3. Use the **NAV** and **VALUE** knobs to change AUTO TRUE BYPASS to "ON" or "OFF".

9 : BLOCKS GUIDE

UNDER CONSTRUCTION

The FX8 has over 20 different effect blocks with over 100 different types.

We're currently working on a universal Effect Parameters Guide for all Fractal Audio Systems products which will detail every parameter of every type for every block.

Until this is released, the Axe-Fx II manual has all of the information you will need to understand effect parameters in the FX8. Find it at www.fractalaudio.com/support.

The pages which follow cover several blocks which are unique to the FX8: the MIDI block and the RELAY block, plus a short section on **Common Parameters** found on the **MIX** page of every effect, the **Noise Gate**, and the **Output Section** of every preset.

THE MIDI FOOTSWITCH BLOCK

The MIDI block enables you to use the onboard footswitches to send MIDI data to the MIDI Out Port of the FX8. It sends your choice of any Program Change (PC) message and/or any Control Change (CC) message when turned ON, and your choice of messages when turned OFF.

This block differs from effect processing blocks in that it is inserted from the Footswitch page rather than the Config page. To edit it, select its footswitch using NAV (or stomp the switch) and then press EDIT.

The MIDI Block offers X/Y capability. The X and Y states can each have completely different settings.

MIDI BLOCK PARAMETERS

PROGRAM CHANGE – (ENABLE/DISABLE) determines whether a Program Change message will be sent.

PC# ON – Selects a program change number (0–127) to be sent when the block is turned ON.

PC# OFF – Selects a program change number (0–127) to be sent when the block is turned OFF.

MIDI CHANNEL – Selects a MIDI Channel (1–16) for both the ON and OFF Program Change messages.

IMPORTANT: When you load a preset, the FX8 also sends a corresponding MIDI Program Change message on its own MIDI Channel. (See the table on [page 89](#)). To control a connected amplifier or effect processor independently, please set that unit to a different MIDI channel according to the instructions provided by its manufacturer.

CONTROL CHANGE – (ENABLE/DISABLE) determines whether a Control Change message will be sent.

CC# – Selects a control change number (0–127) to be sent when the block is turned ON or OFF.

MIDI CHANNEL – Selects a MIDI Channel (1–16) for both the ON and OFF Program Change messages.

ON VALUE – Sets the data value for the CC message sent when the block is turned ON.

OFF VALUE – Sets the data value for the CC message sent when the block is turned OFF.

THE RELAY BLOCK



WARNING! Do NOT connect anything to the RELAY jacks until you read the WARNINGS in Section 4.

As detailed in [Section 4](#), two onboard TRS relays allow the FX8 to control switchable functions of a connected amp or other device. The Relay block lets you use a footswitch to manually (pedally?) operate a relay. The RELAY 1 block (RL1) operates relay 1, and the RELAY 2 block (RL2) operates relay 2.

This block differs from effect processing blocks in that it is inserted from the Footswitch page rather than the Config page. To edit it, select its footswitch using NAV (or stomp the switch) and then press EDIT.



NOTE: While a Relay block is present on the Footswitch page, Scene-level programming on the Config page is ignored. You can still program the relay per-scene, however, in exactly the same way you would program any other effect per-scene: change to the desired scene, set the relay block as desired using your foot, and store the preset.

RELAY BLOCK PARAMETERS

RELAY ON – This parameter allows you to specify the state of the relay when the block is switched on.

When the footswitch is ON, you can select whether the TIP, RING, or BOTH are shorted to the sleeve.

With X/Y, that's a total of three settings accessible from one footswitch (OFF, ON-X and ON-Y).

When the footswitch is off the relay is off. Nothing is connected. The LED is off.

Setting	What's Connected?
TIP	Tip to Sleeve.
RING	Ring to Sleeve.
BOTH	Tip AND Ring to Sleeve.

RELAY MODE — LATCHING mode (the default) causes the relay footswitch to work like a normal latching footswitch: each stomp toggles it on or off. Its state can also be set by a scene. The vast majority of relay-controlled devices require this type.

AUTO-OFF mode causes the relay to connect momentarily and then disconnect. Some amps (e.g. 5150, some Bogners, etc.) require this type of operation. When you stomp the switch, the LED will come on briefly while the switch is connected and then turn off.

AUTO TRIGGER — When the **MODE** is set to AUTO-OFF, the **AUTO TRIGGER** parameter is revealed. Auto-trigger causes the relay to “fire” (connect then disconnect) when engaged by a Scene—including the default scene which is loaded with the preset.

Used with X/Y, an Auto-Trigger Auto-Off relay can be used effectively for per-scene changes.

MIX PAGE COMMON PARAMETERS

Almost every block in the FX8 has a MIX page with parameters that determine how that block contributes to the preset. All mix pages use one or more of the following standard parameters. Different blocks have different mix page parameters because they require different approaches. You may need to change more than one parameter setting to achieve a desired result.

MIX – This self explanatory knob sets the balance of wet between dry and wet.

LEVEL – As you would expect, this controls set the overall level of the block.



If you're concerned about UNITY GAIN, see [page 83](#) for key info about adjusting MIX and LEVEL.

BALANCE – Every block outputs both left and right signals. **BALANCE** works like a PAN control, so as you adjust to the left or right, the opposite channel gets quieter. Both the wet and the dry are affected.

BYPASS MODE – Determines what happens when the block is bypassed. The different options are detailed below. Not every option is available in every block.

MUTE IN – When the block is bypassed, its inputs are muted, silencing the both wet and dry but allowing effect “tails” to ring out or “spill over”. Use this for time-based effects in parallel.

MUTE OUT – When the block is bypassed, all audio is totally silenced at the outputs. Effect tails are silenced immediately, but the input is still “listening” so tails may be heard when you engage the effect.

MUTE FX IN – When the block is bypassed, the inputs of its internal processor are muted, but the dry is unaffected. This allows effect “tails” to ring. LEVEL and BALANCE controls continue to operate when the block is bypassed. Use this for time-based effects in series when you want spillover.

MUTE FX OUT – When the block is bypassed, the outputs of its internal processor are pulled, but dry signal is totally unaffected. With this setting, signals can enter a reverb or delay before it is engaged.

MUTE – When the block is bypassed, both wet and dry are totally silenced.

THRU – When bypassed, the block is completely disengaged. None of its parameters have any effect on the sound; it behaves exactly as if it were never there in the first place.



The observant FX8 owner will notice that the BYPASS MODE parameter allows you to attach a MODIFIER. This modifier does not actually connect to the BYPASS MODE parameter! Instead, it controls the block's BYPASS SWITCH. When a modifier is attached to this switch, it becomes the ONLY way that you can bypass or engage the effect. The footswitch will no longer work.

INPUT GAIN – This parameter, available on reverb, pitch shift, and all three types of delay blocks, determines the amount of signal fed to the effect portion of the block. It has no effect on the dry signal. Within the block, this simulates the way an “Aux Send” would normally feed an effect routed in parallel.

GLOBAL MIX – This switch determines whether or not the MIX setting of the selected effect will be subject to an offset (+/- 50%) applied using the global EFFECTS MIX parameter found in the SETUP: GLOBAL menu.

This feature is provided so you can design presets with the built-in ability for one-touch mix compensation in playing environments that require more or less wet mix. It is offered on the following effect block types: Delay, Chorus, Feedback Return, Flanger, Formant, Megatap Delay, Multi-Delay, Phaser, Pitch, Quad Chorus, Resonator, Reverb, Ring Mod, Rotary, Vocoder, and Rotary.

THE NOISE GATE

Every FX8 preset includes a Noise Gate connected directly to **INPUT 1 [PRE]**. (If you're running POST ONLY, you'll need to use a GATE block instead.) To edit noise gate parameters, turn to the GTE page from the FX page of the main menu (aka the Footswitch page).

PARAMETERS

TYPE – The noisegate features a CLASSIC gate, and a variable INTELLIGENT type.

THRESH – The threshold control determines how quiet the signal must be for the gate to close. The threshold can also be adjusted globally using the **NOISEGATE OFFSET** parameter found on the SETTINGS page of the GLOBAL menu under SETUP. See [page 68](#).

RATIO – Ratio determines much quieter the signal will sound when the gate is closed. The ratio acts as a multiplier to reduce signals below the threshold by a factor of "x." At higher settings, the gate is like a hard clamp completely silencing noise. At lower settings, noise level is reduced but not cut off.

ATTACK – determines how long it takes for the gate to open. You'll typically want this set very low so the attack of your first notes can punch through naturally.

RELEASE – determines how long it takes for the gate to close. Higher values will make the noise gradually fade down when you stop playing.

LEVEL – Controls level at the output of the noise gate. Can be used to boost the overall preset input level.

INPUT IMPEDANCE

The **INPUT IMP** parameter appears on the GTE page, but is not part of the Noise Gate. Instead, it changes the analog circuitry of the IN [PRE] INSTR input jack to alter the way the FX8 interacts with your guitar. This recreates the way that some classic effects (e.g. Vibe) "load down" the pickups, causing a change in frequency response. The FX8 recreates this effect by switching various (real) resistors and a capacitor in and out of the signal path. Normally you will want to leave this on AUTO, but you may also select any of the available values manually. This setting is saved with the preset.

THE OUTPUT SECTION

Find these parameters on the OUT page of the main menu. LEVEL controls can be set differently in every scene of every preset, offering a great way to normalize or boost scenes.

PARAMETERS



OUTPUT LEVEL PRE – This controls the overall level of **OUT [PRE]** left and right.

OUTPUT LEVEL POST – This controls the overall level of **OUT [POST]** left and right.

OUTPUT BALANCE PRE – This controls the left-right balance for **OUT [PRE]**.

OUTPUT BALANCE POST – This controls the left-right balance for **OUT [POST]**.

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10 : MODIFIERS

OVERVIEW

Modifiers allow sound parameters to be remote-controlled or automated in real time. For example, you might use an expression pedal to operate a wah, whammy or volume, or use an LFO controller (Low Frequency Oscillator) to sweep a filter. MIDI can also control sound changes, as in the example of using a Control Change message (CC#) to toggle the HOLD switch of a delay.

Modifiers are easy to use, but also provide incredible depth of power for those who like to push limits.

CREATING A MODIFIER

The process of creating a modifier begins at the parameter you want to control. Parameters that can be controlled are marked with a special symbol (below, left). Look for it beneath a knob or to the right of a text parameter. If a modifier is already present, the symbol will have a line through it (below, right).




This symbol indicates a parameter which can have a modifier attached to it.



This symbol indicates a parameter with a modifier already attached to it.

TO CREATE A MODIFIER...

- ▶ Select any controllable parameter () (Just wiggle its knob or use the NAV knob to select it.)
- ▶ Press the **ENTER** button to show the MODIFIER screen.
- ▶ Select a **SOURCE** to control the parameter. ("EXT1" is PEDAL1 by default. We'll cover other SOURCES later).
- ▶ Set **MIN** and **MAX** to the lowest and highest values you want to hear.
- ▶ **STORE** the preset.

TO REMOVE A MODIFIER...

To remove a modifier, just change its **SOURCE** to "NONE" and store the preset.

MODIFIER EXAMPLE: WAH PEDAL

Below you will find a basic step-by-step tutorial on setting up the modifier for a wah pedal.

For this example, we assume:

- A Wahwah block is in your preset (see [page 30](#) for details on how to insert blocks).
- A calibrated **expression pedal** is connected to the **PEDAL 1** jack (see [page 16](#) for more on pedals).

Here are the steps:

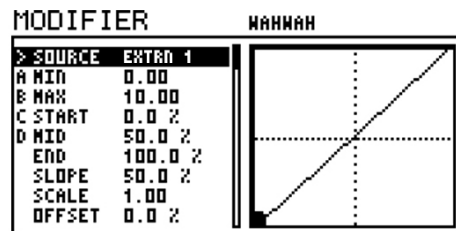
1. On the Footswitch page, **NAV** to your WAH block, then press **EDIT** to show the Wah **edit menu**. On PAGE 1, select the **CONTROL** parameter by slightly turning the **C** knob beneath the display. Notice the Modifier symbol beneath the on-screen knob?
2. Once the **CONTROL** parameter is selected, press **ENTER** to show the MODIFIER screen.
3. On the MODIFIER screen, use **VALUE** to change the **SOURCE** to External Controller 1 ("EXT 1"). Note: EXT 1 defaults to **PEDAL 1**. (It can be remapped; see "[External Controllers](#)" on [page 60](#))
4. Test. The wah should work when you move the pedal. You'll also see the dot move on the graph.
5. Store the preset by pressing **STORE, ENTER, ENTER**.



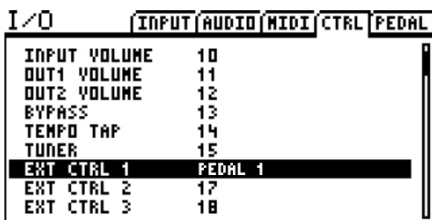
1 Wah control can be assigned a MODIFIER



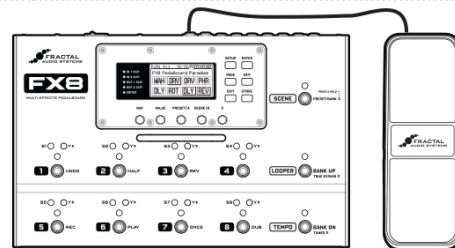
2 ENTER opens the MODIFIER screen.



3 The SOURCE is set to EXTERNAL 1



4 EXTERNAL 1 in the I/O menu is set to PEDAL 1



5 PEDAL 1 now controls the WAH

In this example, a wah is controlled by an expression pedal. A pedal can be used to control other parameters like whammy control, rotary speed, delay feedback, and many more.

There are also many different sources we could use instead of EXT1. Try an LFO for a modulating auto-wah, or an envelope for some funky Mu-Tron action. You could even use an external MIDI device like an iPad or a GuitarWing. If you're intrigued, dig deeper into the pages which follow...

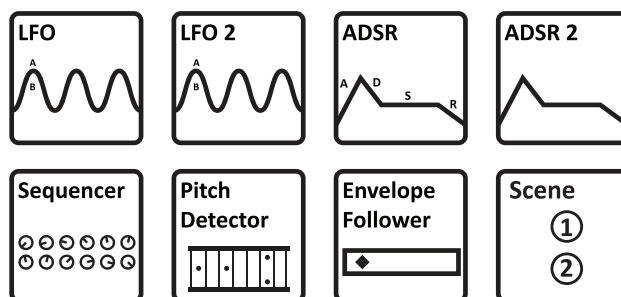
MODIFIER SOURCES OVERVIEW

Our previous example used EXT 1 assigned to the PEDAL 1 jack, but there are in fact over 20 different sources to use in your modifiers. We refer to these as **CONTROLLERS** because they are used to control a parameter. Some, like the built-in LFOs and Envelope Follower, are **internal** to the FX8, while others, like a connected expression pedal or MIDI message from some other device, are referred to as **external** controllers.

INTERNAL CONTROLLERS

Internal controllers are built in to the FX8. There are two **LFOs** (low frequency oscillators), two **ADSRs** envelope generators, a **Sequencer**, a **Pitch Detector**, an **Envelope Follower**, and two **Scene Controllers**.

Every preset has its own settings for each internal controller, found on the “MISC” page of the main menu (press **PAGE 4x** from the Footswitch page).

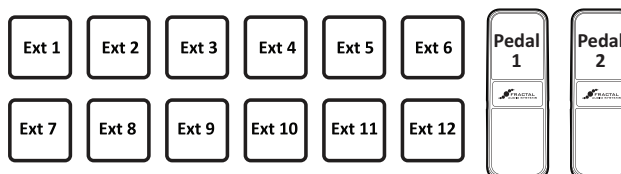


EXTERNAL CONTROLLERS

External controllers allow you to use a MIDI message (CC# 0–127) or the onboard PEDAL 1 or PEDAL 2 jacks as the **SOURCE** in a modifier.

For example, **EXTERNAL CONTROLLER 1** is assigned by default to the **PEDAL 1** jack.

Assignments for the external controllers are made on the CTRL page of the I/O menu under **SETUP**.



MODIFIER TIPS AND TRICKS

Here are some modifier tips and tricks.

- You can add up to 24 modifiers in any preset.
- The same modifier SOURCE can be used to control multiple parameters at once.
- All modifiers in a block will be shared across both the X and Y states.
- On the MODIFIER screen (with the graph):
 - Try Auto-Engage (“AUTOENG”) set to “SLOW SPD” to have your WAH (or other effect) turn on automatically when you push it forward and bypass again when you pull it back. No need for a toe switch!
 - Try a little “DAMPING” if you want sound changes to be slower or smoother.
- Modifiers do use some CPU power, so be careful not to overload your preset.
- You don’t need a VOLUME block or a modifier to control global volume with a pedal! Just open the CTRL page of the I/O menu and set your choice of 4 different volume controls to your choice of sources. (Don’t forget to re-assign EXT1 or EXT to “NONE” if you assign PEDAL 1 or PEDAL 2 to a volume control!)

ADVANCED MODIFIER PARAMETERS

The default modifier is perfectly linear and direct. You change the source, and the parameter follows precisely. But you can also tweak the relationship between source and target. Maybe you want to tune the taper of a wah. Maybe you want a volume pedal which gets *quieter* instead of louder as you rock it forward. Maybe you want an external footswitch to glide the rate of your chorus between slow and fast.

Fortunately, a full complement of additional controls allow you to dial in all of this and more. Here is an overview of the additional parameters you can use to create advanced modifiers:

MIN and **MAX** determine the range of sound changes. These can be very important parameters.

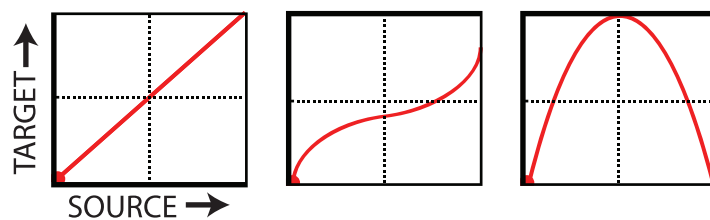
EXAMPLE: The modifier for a pedal controlling DELAY MIX has MIN at “20%” and MAX at “40%”.

The mix change will be limited to this range as we move the pedal, even though the parameter might normally go from 0% to 100%.

The **GRAPH** shows the relationship between the source (x-axis) and the parameter (y-axis). The dot on the graph shows changes in the source in real time.

The default modifier graph (first graph below) shows the direct (red line) relationship between the SOURCE and the target parameter. As the source increases, so does the value of the parameter.

START, **MID**, **END**, **SLOPE**, **SCALE**, and **OFFSET** are used to create custom curves, re-mapping the relationship between the source and the target. The second two graphs below show examples of the kinds of curves you can create. The pages which follow contain more on using these parameters.



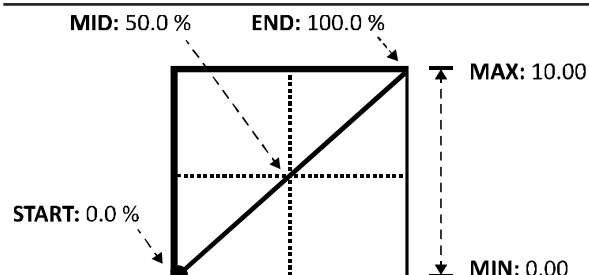
DAMPING causes parameter changes to be smoother and slower. At low settings, it adds just a little smoothing. Try a setting of 4–12 ms to “relax” a pedal or to ease the edges of a square LFO to eliminate clicks and pops. Higher settings cause sound changes to glide like honey.

AUTO-ENGAGE works with **OFF VALUE** to create effects which turn ON or OFF automatically whenever the source controller is moved. This is typically used with a WAH pedal so you don’t need a toe switch. (Follow the example on [page 54](#) and set AUTO-ENGAGE to “SLOW POS” to try it out!) Find additional information on **AUTO-ENGAGE** on [page 58](#).

PC RESET determines the value of a modifier’s external source when a preset first loads. This allows you to override the actual position of an external controller until it is moved/updated. Here’s how it works: even with a modifier applied, parameters always show a value which can be edited as usual. If **PC RST** is ON, this value will be used for the parameter until the source is updated.

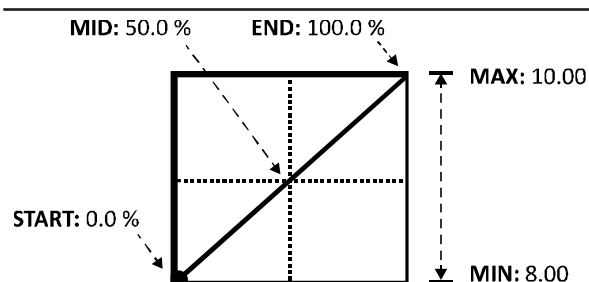
UNDERSTANDING MODIFIER MIN AND MAX

MIN and **MAX** set the range of a modifier. This lets fine-tune modifiers in musical way. In the example below, we're imagining a volume pedal whose range goes from zero to ten.



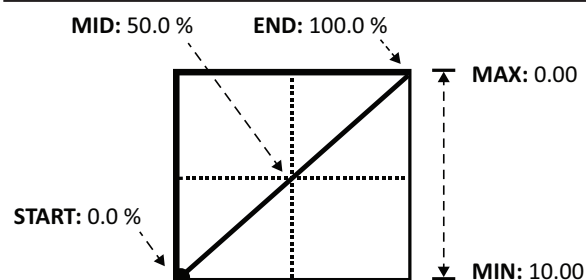
Here is your basic default vanilla volume pedal.

Our pedal's start (heel down position) has the volume at 0.00 or silent, and the pedal stop (toe down position) has the volume at 10.0 or all the way up.



Here's something different: with MIN increased to 8.00, the volume never goes below 8.00 in the heel position, then up to full on for toe down.

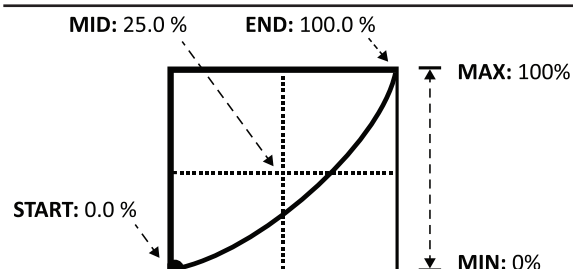
Maybe this could be used to bring the rhythm parts down and then up to full volume for the leads.



Here, MIN is at 10.0, the loudest setting, while MAX is at 0.0, or silent. This is a reverse volume pedal!

USE MID TO CREATE BASIC CURVES

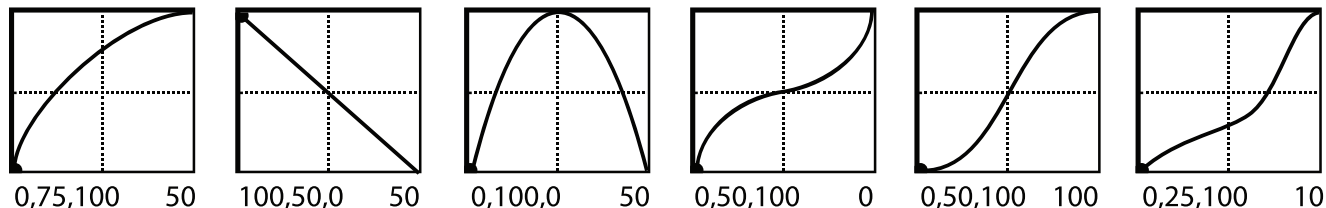
Let's imagine a modifier on the FEEDBACK of a delay to demonstrate changes to the mapping of the response. By now you should be familiar with the default curve, so let's skip right to the tweaked one:



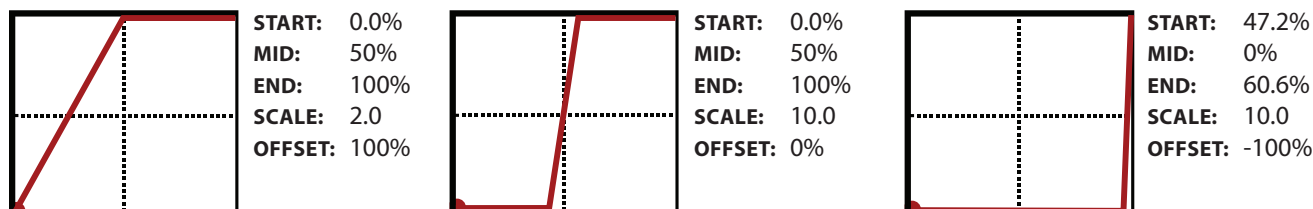
As we adjust "MID", the line becomes a curve. At 25%, we find a taper which means "when the pedal is halfway forward, the MIX will be only 25% between MIN and MAX. For this example, that means finer control of feedback in the low end of the range, and then a more rapid increase at the top.

ADVANCED MODIFIER CURVES AND SHAPES

You can also adjust **START**, **END**, and **SLOPE** (which introduces an “S” or “backwards S” shape). The numbers below each example show the settings for START, MID, END and SLOPE. With a bit of practice, you will learn to achieve desired modifier effects quickly. Try dialing in the shapes below.



SCALE and **OFFSET** also re-map modifier response. **SCALE** adds vertical exaggeration or compression, while **SHIFT** moves the entire curve up or down on the Y-axis. Areas outside the graph boundaries will be clipped and replaced by line segments. The examples below show some interesting possible applications. (Here, curves are shown in red because they overlap graph boundaries.)



AUTO-ENGAGE TURNS EFFECTS ON/OFF AUTOMATICALLY

Ever heard of a wah pedal with no toe-switch? It turns on automatically when you use it and then bypasses when you pull it all the way back. That’s the concept of “Auto-Engage.” Try it! You’ll quickly find that Auto Engage comfortably eliminates the need for expression pedal “toe” switches.

AUTO-ENGAGE brings a block out of bypass when the **SOURCE** for one of its modifiers triggers the effect. It is based on two parameters found on the MODIFIER screen:

AUTOENG – Determines whether or not the block containing a modifier will automatically engage or bypass based on the level of a modifier source. FAST, MEDIUM and SLOW determine how quickly the effect turns ON or OFF once auto-engage is triggered. Use SLOW settings to “relax” Auto Engage so your effect doesn’t snap on or off unexpectedly.

- The three POSITION (“POS”) options engage the effect when the controller value approaches the OFF VALUE.
- The three SPEED (“SPD”) options engage the effect when the controller is moved quickly.
- Set to OFF to disable Auto Engage.

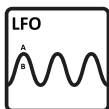
OFF VAL – Sets the threshold that SOURCE must approach for auto-engage to occur. When **OFF VALUE** is set below 50%, the effect is bypassed when the controller goes *below* the **OFF VALUE**. If **OFF VALUE** is set to 50% or higher, the effect is bypassed when the controller goes *above* than the **OFF VALUE**.

For “heel down = bypassed”, set to 5%. For “toe down = bypassed”, set to 95%.

INTERNAL CONTROLLERS

Each of the Internal controllers can be programmed per-preset for use as modifier sources. To access pages and parameters for these controllers, press **PAGE** four times from the Footswitch page. Notice that some parameters of these controllers can be modified themselves for truly interactive dynamics!

LF01 + LF02



An LFO, or Low Frequency Oscillator, generates control signals in the form of a variety of familiar wave shapes or random signals. Familiar examples of LFOs in action include the pulsing of a tremolo, the steady back and forth sweep of a phaser.

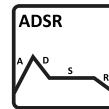
TYPE sets the waveform or shape. You can set a **RATE** or lock the LFO to the current **TEMPO**. You can vary the overall **DEPTH** and **DUTY**, or symmetry.

Each LFO outputs two signals, “A” and “B” and so appears twice in the list of sources. You can change the **OUT B PHASE**.

The **RUN** parameter starts and stops the LFO. This can be used to keep it from drifting over time.

QUANTIZE changes smooth waveforms into segmented ones. Try it on the “TRI” waveform for a “stepped” effect.

ADSR1 + ADSR2



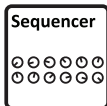
The two ADSR sources are “envelope generators” with **ATTACK**, **DECAY**, **SUSTAIN** and **RELEASE** parameters (thus “ADSR”). The ADSR is triggered whenever the signal level exceeds its **THRESHOLD**. The envelope has three self-explanatory **MODES** and can optionally be set to **RETRIGGER** every time the threshold is exceeded.

ENVELOPE FOLLOWER



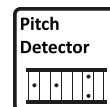
The Envelope Follower converts input levels to control signals, responding variably to your playing dynamics. The classic example is a touch-wah, where the frequency of the wah varies based on how hard you play. In comparison, the ADSR envelope *generator* always creates the same control signal, but only triggers when you play hard enough.

SEQUENCER



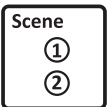
The step-sequencer generates control patterns by looping through “stages.” You set the **VALUE** for each stage, the **NUMBER** of stages, and the **RATE** or **TEMPO**. The **RUN** switch allows you to start or stop the sequence.

PITCH DETECTOR



The pitch detector analyze the pitch of your playing and outputs a low value for low notes and a high value for high notes.

SCENE CONTROLLERS



Scene controllers provide a powerful way to change certain sound settings from one scene to another. These two “virtual knobs” can be programmed individually for each SCENE in each preset. For example, you might assign SCENE CONTROLLER 1 to delay feedback, with a value of 10% in SCENE 1, 30% in SCENE 2, 5% in SCENE 3, and so on. SCENE CTRL 2 could meanwhile be used for something completely different. For more on Scenes, see [Section 7](#).

SELECTING A DETECTOR INPUT



ADSR, Envelope, and Pitch controllers (plus the tuner and several other functions) monitor only **IN [PRE]** by default. If your rig is POST ONLY, where input 1 is not used, please change the location of the GLOBAL DETECTOR to IN [POST]. Find it on the SETTINGS page of the GLOBAL menu under SETUP.

EXTERNAL CONTROLLERS

External Controllers are modifier sources controlled by MIDI or connected expression pedal(s).

Each External Controller has its own global assignment set on the CONTROLLERS page of the I/O menu. You can set any external controller to any MIDI CC, or to either of the onboard PEDAL jacks.

So, for example, “External 1” defaults to “PEDAL1”, but if you wanted a computer sequencer to operate your FX8 instead, you could change External 1 to “16” (MIDI CC 16) -- or any MIDI CC.

To assign a MIDI CC or PEDAL jack to an external controller:

- ▶ Press **SETUP**
- ▶ Press **footswitch 2** to select **I/O**
- ▶ Press **PAGE** to select the Controllers page (“CTRL”)
- ▶ Use **NAV** to select to whichever external controller you want to change (ex: “EXTERNAL 1”)
- ▶ Use **VALUE** to change the assignment. You can also select “NONE” to disable the selected controller.
- ▶ Press **EXIT** two times to return to the Footswitch page.

EXTERNAL CONTROLLER INITIAL VALUES

(Aka “Help! My volume pedal is missing and my presets are all silent!!”)

When the FX8 is powered on, it checks all connected pedals to set the value for any assigned external controllers. But what if a pedal is *missing*? The default for each controller is zero, so the missing pedal is assumed to be in the heel down position. External Controllers assigned to MIDI are likewise set to “0” until some MIDI data is received to change them. You can imagine how a missing or broken pedal (or MIDI controller) might therefore present a problem...

Never fear: the **EXTERNAL CONTROLLER INITIAL VALUE** parameters can change the startup value for an external controller to 100%. Now, when the FX8 is powered on, any parameters assigned to the missing controller will be all the way *up* instead of all the way down.

To change the initial value for an external controller:

- ▶ Press **SETUP**
- ▶ Press **footswitch 2** to select **I/O**
- ▶ Press **PAGE** to select the MIDI page
- ▶ Use **NAV** to select to whichever controller you want to change (ex: “EXT CTRL 1 INIT VAL”)
- ▶ Use **VALUE** to change the setting.
- ▶ Press **EXIT** two times to return to the Footswitch page.

11 : THE TEMPO

Tempo on the FX8 is used to synchronize effects or controllers to the beat of the music. Many effects have TEMPO parameters to set times or rates to rhythmic values. The FX8 flashes its current tempo on the LED above the TEMPO footswitch. You can change the tempo in several ways:

1. Tap the dedicated **TEMPO** footswitch three or more times.
2. Tap the **TEMPO** footswitch once and use the **NAV** knob to set the tempo (on-screen) as desired. You can also access this menu via the “MISC” page of the main menu (**PAGE** 4x from the **FS** page).
3. Load a preset with its own tempo (see Preset Tempo below).
4. Use an external MIDI device to transmit MIDI Clock to the MIDI IN of the FX8.
5. Use an external MIDI Device to transmit CC# pulses (the default is CC#14).

The tempo can be any whole number from 30 BPM (grave) to 250 BPM (prestissimo).

The FX8 does not transmit MIDI Clock.

TO SYNCHRONIZE A DELAY TO THE TEMPO...

The time of every delay in the FX8 can synchronize to the tempo. The most typical setting is that where the echo matches the tempo 1:1. Use the musical value of “1/4” (one quarter-note) for this.

- ▶ Navigate to the delay block and press **EDIT** to show its edit menu.
- ▶ Navigate to the **TEMPO** parameter (on **PG2**) and set it to “1/4”. Feel free to choose/explore other options. The 1/8th dot setting is also very useful and popular.
- ▶ Save the preset if desired.



Note that once **TEMPO** has been set, you will be unable to adjust **TIME** manually or with a modifier.

TO SYNCHRONIZE A TREMOLO OR OTHER RATE TO THE TEMPO...

Every RATE parameter in the FX8 can synchronize to the tempo. A typical value here might be 1/8th or 1/16th. Feel free to choose/explore other options.

- ▶ Navigate to the effect and press **EDIT** to show its edit menu.
- ▶ Find the **TEMPO** parameter and set it to “1/8”.
 - In the PAN/TREM block, **TEMPO** is on the **BASIC** page.
 - For CHORUS, PHASER, FLANGER and other modulation effects, find **TEMPO** on the **ADVANCED** page.
- ▶ Save the preset if desired.

Note that the rate you hear may be out of alignment with the tempo LED but still be correct.

PRESET TEMPO

Normally, the system tempo is global, which means it stays the same as you change presets, but in fact, any preset can have its own tempo which takes over the system tempo while that preset is loaded.

To give a preset its own built-in tempo:

1. Load the preset.
2. Tap once on the TEMPO footswitch.
3. Change **TEMPO TO USE** to "PRESET".
4. Set the tempo as desired using any method.
5. Save the preset.

Your new "Preset Tempo" will automatically take effect when the preset is loaded. The global tempo remains in the background and will be used again when you load a new preset with TEMPO TO USE set to "GLOBAL".

AUTO DELAY

When you set this parameter to "ON," any DELAY blocks that are bypassed will become active whenever a new tempo is tapped in. This allows you to set the tempo and engage your delay block(s) from a single footswitch.

THE METRONOME

The FX8 features a built-in metronome whose signal is mixed in at Output 1.

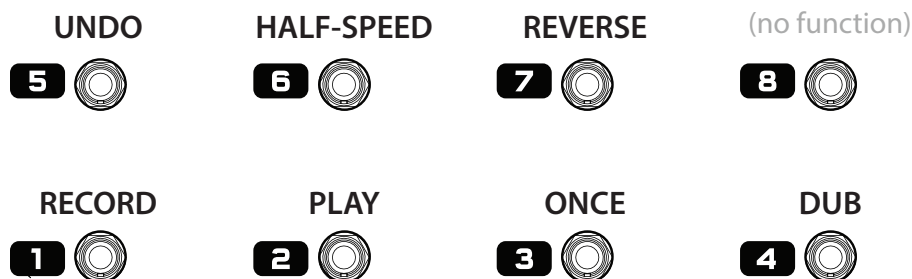
METRONOME – Turns the metronome on or off.

METRO LEVEL – Sets the level of the metronome from -20dB to +20dB.

12 : THE LOOPER

The FX8 has a global LOOPER with a maximum loop time of eight minutes in mono and four minutes in stereo (half that if optional UNDO is enabled). Press the **LOOPER** footswitch to enter Looper Mode.

Seven footswitches have dedicated looper functions as indicated on the top panel.



RECORD – When you press **RECORD**, the looper starts recording. Here's a tip that is not quite as obvious: you can press record again to stop recording and start playback. This makes it easy to set up a loop without looking at your feet to change switches. If the looper reaches its time limit, playback will start automatically.

PLAY – Starts and stops looper playback.

ONCE – When **ONCE** is toggled on, looper playback will stop automatically at the end of the loop. If playback is already stopped, **ONCE** will start playback, play through the loop, and then stop. You cannot go directly from **RECORD** to **ONCE**.

DUB – Press to overdub new material on top of an existing loop. Pressing **DUB** again stops recording but playback continues, so you can punch in and out at will. Please note that with each pass through the loop, existing layers will gradually fade. To change this, increase **DUB MIX** (on the looper's **MIX** page) to 100%. For a more rapidly decaying/evolving loop, set this to a lower value.

UNDO – This removes the most recently recorded overdub. You can only undo one layer, and it needs to be an overdub. (To throw away and re-do a first layer/take, just press RECORD again).

REV – Reverses the direction of the looper. Most other looper functions work while the direction is reversed, so you can overdub to record forward and backward audio in the same loop.

HALF – Slows the looper to half speed. For double speed playback, record at half speed and then switch to normal. You can even overdub to record audio at different speeds in the same loop!

FAQ: WHY IS IT CALLED A "GLOBAL" LOOPER? Unlike other Fractal Audio systems products, the FX8 does not require you to insert a Looper Block into every preset. The looper is in every preset, so playback or recording can easily continue across preset changes. Looper parameters such as Mix, Level, Mode, Location and others, are NOT global, so you can set these as desired per-preset.

LOOPER PARAMETERS

The following Looper parameters can be configured as desired for every FX8 Preset.

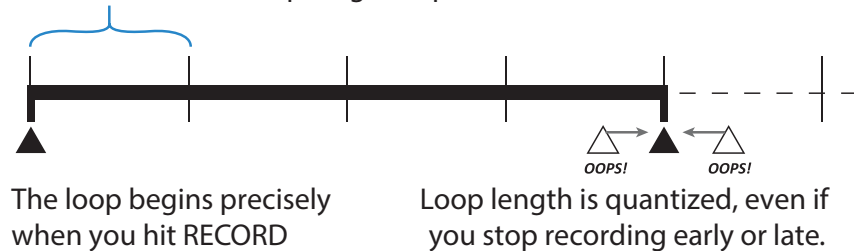
MODE – Selects the Looper mode, whether mono or stereo and with or without undo.

Whenever you change the mode, the looper memory will be entirely cleared.

- **MONO** – Recording/playback are in mono. Maximum loop length is 8 minutes. Undo is not possible.
- **STEREO** – Recording/playback are in stereo. Maximum loop length is 4 minutes. Undo is not possible.
- **MONO UNDO** – Recording/playback are in mono. Maximum loop length is 4 minutes. Undo works.
- **STEREO UNDO** – Recording/playback are in stereo. Maximum loop length is 2 minutes. Undo works.

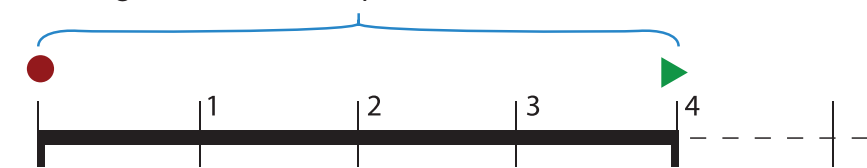
QUANTIZE – With **QUANTIZE** set to any value except “OFF”, loop length is forced to some number of beats (or subdivisions): 1/4 notes, 1/8th notes, or 1/16th notes—with respect to the tempo of the FX8. If you stop recording early or late, loop length is adjusted automatically to the nearest quantize “tick” mark.

QUANTIZE forces loop length to precise units (1/4, 1/8th or 1/16th)



RECORD BEATS – This sets the loop length to some number of **QUANTIZE** beats/subdivisions, causing recording to end and playback to begin automatically after a certain time. For example, if your **QUANTIZE** unit is set to “1/4” and record beats is set to “4” the loop length is automatically set to four quarter-notes.

RECORD BEATS stops recording and starts playback after the designated number of quantize units (**4 in this case**)



PLAY IMMEDIATELY – Turning this OFF disables automatic playback upon completion of recording.

THRESHOLD – The FX8 Looper can start recording automatically when the input exceeds a given level.

THRESH LEVEL – Sets the level that must be exceeded (at the input of the LOOPER) for recording to begin.

LOOPER TRIM PARAMETERS

The **START** and **END** controls on the **TRIM** page allow you to manually trim the length of the loop. This would most typically be used for extremely precise fine-tuning or creative effects.

Hidden feature: press **ENTER** with either trim control selected to add a modifier for realtime trim controls!

LOOPER MIX PARAMETERS

The Looper has a **MIX** page with **LEVEL**, **BALANCE**, and **BYPASS MODE** parameters.

See [“Mix Page Common Parameters” on page 50](#).

DUB MIX – Determines how existing layers fade when you DUB new layers. If you want old layers to NOT decay, set this to 100%, but be aware that adding additional layers in this way might cause clipping.

GLOBAL LOOPER LOCATION

In terms of signal flow, the Looper can be positioned in several different locations. It defaults to **IN PRE** — before any PRE effects. You can move the looper per preset, or globally.

TO CHANGE THE GLOBAL LOOPER LOCATION...

- ▶ Press the **SETUP** button. Press **Footswitch 1** to open the **GLOBAL** menu.
- ▶ Navigate to **LOOPER LOCATION**. Use the **VALUE** knob to select the desired setting:
 - **IN PRE** – (Default) The looper is positioned just after the **IN PRE** jack, before any PRE effects. *No effects are recorded, but any effects you turn on will be heard to process the looper.*
 - **OUT PRE** – The looper is positioned after PRE effects just before the **OUT PRE** jack. *PRE effects are recorded into the looper.*
 - **IN POST** – The looper is positioned before POST effects just after the **IN POST** jack. *PRE effects are recorded into the looper; POST effects are not.*
 - **OUT POST** – The looper is positioned after POST effects just before the **OUT POST** jack. *PRE and POST effects are recorded into the looper.*
 - **NO LOOPER** – The looper is disabled, resulting in a slight CPU usage decrease.

Note that any individual preset can override the global setting for **LOOPER LOCATION** (see below).



- ▶ If you disable the looper globally, you may wish to change the behavior of the **LOOPER/TRUE BYPASS** footswitch so a single quick tap engages or disengages True Bypass.
 - Press **SETUP**
 - Press Footswitch #1 to show the **GLOBAL** menu.
 - Navigate to **SHOW LOOPER/ENGAGE BYPASS**.
 - Use the **VALUE** knob to change TAP/HOLD to HOLD/TAP.

TO CHANGE THE LOOPER LOCATION FOR A SINGLE PRESET...

The Looper location can also be changed per-preset, overriding the global setting. The **LOCATION** parameter is on **PAGE2** of the Looper edit menu. It offers the same options as the global **LOOPER LOCATION** parameter (above). One additional option, "**GLOBAL**" causes the preset to use the GLOBAL setting for **LOOPER LOCATION**. Setting a particular preset to **NO LOOPER** leave slightly more CPU power for other effects.

LOOPER MIDI CONTROL

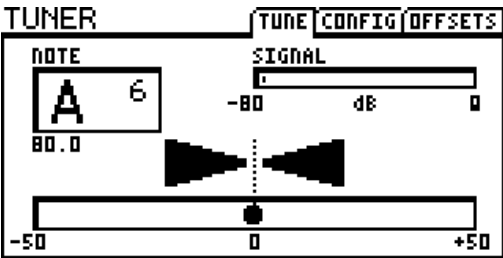
Every function of the FX8 Looper (plus a hidden “BYPASS” feature) can be remote controlled by MIDI CC messages or an external footswitch. Here is the full list of functions and default controllers. These settings can be changed on the CTRL page of the I/O menu under SETTINGS.

- Looper Record 28
- Looper Play 29
- Looper Once..... 30
- Looper Dub..... 31
- Looper Rev 32
- Looper Bypass 33
- Looper Half 120
- Looper Undo 121
- Metronome ON/OFF 122

13 : THE TUNER

The FX8 has a built-in TUNER—an essential tool for the performing or recording musician. The tuner is easy to use and has high-resolution automatic pitch detection, a calibration control, offsets for modified tuning schemes, and the option to mute audio while tuning. Press and hold ▼ the **TUNER** footswitch to show or hide the tuner menu.

If you don't have a footswitch assigned to control the Tuner, you can still access it through the "MISC" page of the main menu (Press **PAGE** 4x from the Footswitch page.



IMPORTANT: For a POST ONLY setup, you'll need to make a global change for the tuner to work.

- ▶ Open the **GLOBAL** menu (**SETUP** followed by **Footswitch 1**) to find the **SETTINGS** page.
- ▶ **NAV** to **GLOBAL DETECTOR** and then use **VALUE** to select "IN 2 [POST]".
- ▶ Press **EXIT** twice to save and return to the Footswitch page.

ADVANCED TUNER FUNCTIONS

The actual tuner is on the first page of the tuner menu.
The CONFIG and OFFSETS page provide options for advanced tuner functions.

CONFIGURATION PARAMETERS

PARAMETER	Description
CAL 430.0 – 450.0 Hz	Calibrates the tuner by setting the frequency of A4 (in the 8va above middle C).
MUTE OFF/INPUT/OUTPUT	Determines how the tuner mute works. <ul style="list-style-type: none">▪ OFF: No mute. All signal is passed as usual when the tuner is engaged.▪ OUTPUT: The signal is muted at the output. Tails for PRE FX are silenced.▪ INPUT: The signal is muted at the noise gate. Tails for PRE FX ring out.
USE OFFSETS OFF/ON	Determines whether the OFFSET settings (see below) are applied or ignored.

OFFSET PARAMETERS

PARAMETER	Description
E1, B2, G3, D4, A5, E6 +/-12.7 Hz	Offsets allow the tuner to be calibrated so individual notes diverge from standard concert tuning by a defined amount. Use this for example, for Buzz Feiten tuning.


14 : SETUP MENU

Access Setup Menus by pressing the SETUP button and making a choice with the footswitches. Changes take effect immediately without needing to be STORED. The settings for all Setup parameters are included in a backup of the FX8 "SYSTEM" created using Fractal-Bot.

THE GLOBAL MENU

The GLOBAL menu is accessed by tapping the SETUP button and then pressing footswitch 1.

GLOBAL: SETTINGS PAGE

 Reminder: You do not need to STORE settings in the SETUP menu. EXIT returns to the Footswitch page.

PARAMETER	Description																
REVERB MIX (+/- 50%)	Boosts or cuts the MIX for all REVERB blocks in all presets at once. Note that this offset is NOT reflected in the value shown for the actual reverb block MIX parameter. This feature is provided because certain performance spaces may require more or less reverb “across the board.”																
EFFECTS MIX (+/- 50%)	<div><p>Boosts or cuts the MIX of all blocks for which the GLOBAL MIX parameter is set to “ON.” This switch must be enabled on a per-block/per-preset basis and is available on the MIX page of the edit menu for these block types:</p><table><tr><td>Chorus</td><td>Megatap Delay</td><td>Quad Chorus</td><td>Rotary</td></tr><tr><td>Delay</td><td>Multi-Delay</td><td>Resonator</td><td>Vocoder</td></tr><tr><td>Flanger</td><td>Phaser</td><td>Reverb</td><td></td></tr><tr><td>Formant</td><td>Pitch</td><td>Ring Mod</td><td></td></tr></table></div> <p>This feature is provided because certain performance spaces may require more or less of certain effects “across the board.”</p>	Chorus	Megatap Delay	Quad Chorus	Rotary	Delay	Multi-Delay	Resonator	Vocoder	Flanger	Phaser	Reverb		Formant	Pitch	Ring Mod	
Chorus	Megatap Delay	Quad Chorus	Rotary														
Delay	Multi-Delay	Resonator	Vocoder														
Flanger	Phaser	Reverb															
Formant	Pitch	Ring Mod															
SPILLOVER (OFF/DELAY/REVERB/BOTH)	<p>Allows delay and reverb “tails” to ring out or spill over across preset changes. You can select whether DELAY, REVERB, or BOTH effects will spill over. Setting to OFF causes effect tails to be cleared upon preset change.</p> <p>See “Spillover” on page 80 for details on how to set presets/scenes/blocks for spillover.</p>																
AUTO TRUE BYPASS (ON/OFF)	Enables or disables Automatic True Bypass (see page 46).																
PRESS & HOLD INTERVAL (0.25 - 2.00 seconds)	Sets the duration that you need to continue holding for all “Press and Hold” functions. ▼																
TEMPO MENU AUTO EXIT (1-6)	Determines how long it takes to return to the Footswitch page after you tap the tempo footswitch. 1 is the shortest, 6 the longest.																

PARAMETER	Description
PRESS/HOLD FOR X/Y	Determines whether footswitches assigned to control effects will also toggle X/Y when you press and hold the switch. Enabling or disabling this feature also changes the way effect bypass switching works: with PRESS/HOLD disabled, effects bypass or engage on the footswitch <i>downstroke</i> . With PRESS/HOLD enabled, effects bypass or engage on the footswitch <i>upstroke</i> . Note that even with press and hold you can still switch X/Y using a dedicated “X/Y Switching Mode” assigned to one of the Function Switches (see Section 5), or using scenes (see Section 7).
LOOPER LOCATION	Determines the global default looper location (see page 65).
NOISEGATE OFFSET (+/- 40.00 dB)	Globally raises or lower the THRESHOLD of the Noise Gate. Note that if the THRESHOLD for a given preset is set to “OFF” the Global Offset will have no effect. See page 51 for more on the Noise Gate.
GLOBAL DETECTOR (IN 1 PRE, IN 2 POST)	Sets whether IN 1 [PRE] or IN 2 [POST] is used as the global detector for pitch and level functions (tuner, envelope, ADSR, Harmonizer, etc.). If your rig is POST ONLY, set this to IN 2 POST. Otherwise, don’t make changes.
DEFAULT SCENE (1-8)	Sets the default scene for ALL presets and is provided for those players who want SCENE 5, (bottom row, far left) to be selected by default.
DISPLAY LARGE PRESET (NO, 1, 2, 3, 4, ALWAYS)	Determines the time in seconds that the FX8 will show the name of a newly selected preset in large ltype on the display. If ALWAYS is selected, simply press EXIT once to return to the footswitch screen for editing.
BANK LIMIT (NO, WRAP, NO WRAP)	When Bank Limit is turned on, the footswitches will only select presets within a predetermined range of banks. If you set this value to “WRAP”, you can cycle through banks by pressing BANK UP/DOWN to eventually “wrap” back to where you began. With “NO WRAP”, the FX8 stops when it reaches the highest or lowest bank in your limit. BANK LOWER LIMIT and BANK UPPER LIMIT to set the range of banks. You can set these both to the same value to restrict the FX8 to a single bank.
BANK LOWER LIMIT, BANK UPPER LIMIT (A-P)	

GLOBAL: FUNCTION SWITCHES PAGE

The FX8 has three **FUNCTION FOOTSWITCHES** labeled SCENE, LOOPER and TEMPO. Each of these has two assignable functions: one for when you tap the switch, and one for when you press and hold. The **F-SWITCH** page allows you to set those functions by selecting from a menu of options detailed in [Section 5](#).

GLOBAL: FOOTSWITCH 1-8 PAGE

The **Global Footswitch 1-8 (GBL FS)** page allows you to set footswitches 1–8 each to GLOBAL or PRESET.

Global Footswitches will have the same function across every preset of the FX8.

Preset Footswitches may be assigned a different function in every preset.

For more on this subject, please see [“Setting Up Footswitches 1-8” on page 35](#).

GLOBAL: OUT PRE/OUT POST PAGES

Two separate pages each provide a 10-band global graphic EQ, plus a master GAIN adjustment control for **OUT PRE** and **OUT POST**. Use these to make global adjustments to the tone or level of ALL presets. This is convenient when you need to compensate for a different backline, or if a particular performance space seems overly bright or boomy. The master GAIN fader should be used with care as it impacts unity gain and signal-to-noise ratio, and can cause clipping.

☞ Reminder: You do not need to STORE settings in the SETUP menu. EXIT returns to the Footswitch page.

GLOBAL: CUSTOM SCALES PAGE

The Custom Scales ("**SCALES**") page of the GLOBAL menu is used to configure scales for the CUSTOM type found in the Pitch Shifter block.

☞ Reminder: You do not need to STORE settings in the SETUP menu. EXIT returns to the Footswitch page.


PARAMETER	Description
CUSTOM SCALE NUMBER (1–32)	Selects from among the 32 global custom scales available to edit using the 12 parameters which follow.
___ SHIFT (+/- 24)	These 12 parameters are used to set the shift amount for each of the 12 steps of the chromatic scale. Range is +/- 24 semitones (+/- two octaves). To set up a custom scale, select its number in the field above and then set each of the 12 pitch values as desired. Changes take effect immediately, with no need to STORE.

THE I/O MENU

The I/O menu is accessed by tapping the **SETUP** button and then pressing footswitch 2.

I/O: LEVELS PAGE


The LEVELS page of the I/O menu contains parameters that affect levels.

 Reminder: You do not need to STORE settings in the SETUP menu. **EXIT** returns to the Footswitch page.

PARAMETER	Description
INPUT 1 (PRE) PAD (0 db, 6dB, 12dB, 18 dB)	<p>Pads the signal from IN PRE (INSTRUMENT input) before it reaches the A/D converter. The pad is offset by a corresponding but opposite boost at the output of the converter, so “what you hear” remains the same at all settings.</p> <p>Run this at the lowest possible setting for your guitar, increasing padding if IN1 clipping occurs.</p> <p>The 18 dB pad option is offered only on the FX8 Mark II.</p>
OUTPUT 1 (PRE) HEADROOM (0 db, 6dB, 12dB)	<p>Sets the headroom on OUT PRE to 6, 12 or 18 dB.</p> <p>If the signal from your PRE fx gets too loud, unpleasant clipping will occur. The greater the headroom allows louder signals, but also increases the noise floor, meaning you will hear more hiss.</p> <p>The default setting for this parameter is 6 dB. This gives you the least headroom and the lowest noise floor. If you can’t reduce the output of your PRE effects to eliminate clipping at OUT 1, increase the headroom.</p> <p>The increased headroom is offset by a corresponding but opposite adjustment internally, so “what you hear” remains the same at all settings.</p>
POST LEVEL (+4.0 dBu, -10.0 dBV)	<p>POST LEVEL affects both IN 2 and OUT2.</p> <p>+4 dBu is the default. It is designed for use with professional audio equipment. It is unlikely you will ever need to change this setting.</p> <p>Use the -10 dBV setting if your downstream equipment cannot handle the hotter output of the +4 dBu setting.</p> <p>Your amp manufacturer or the product manual should indicate whether it operates at +4 dBu or -10 dBV. (Some amps may be switchable).</p>

I/O: AUDIO PAGE


The AUDIO page of the I/O menu contains parameters that affect audio routing.

 Reminder: You do not need to STORE settings in the SETUP menu. EXIT returns to the Footswitch page.

PARAMETER	Description
OUTPUT 1 (PRE) MODE (STEREO/ SUM L+R/ COPY L>R)	Determines how signals appear at the OUT [PRE] jacks. <ul style="list-style-type: none"> STEREO – OUT1 PRE outputs in stereo. Choose this option if you are connecting to two different amplifiers. The stereo setting also works for mono rigs, but you'll hear only half of the stereo image. SUM L+R – Collapses the entire signal to mono. Copy L>R – Replicates the left channel to the right, discarding the usual right channel signal. NOTE: To get the best results from any mono or stereo rig, pay close attention to how each effect works in mono or stereo.
OUTPUT 1 (PRE) PHASE (NORMAL/INVERT)	Determines whether signal at OUT [PRE] will be normal or phase-inverted relative to its state at the output of the last PRE effect. This lets you compensate for unwanted inversions elsewhere in the downstream signal chain. (This inverts BOTH the Left and Right channels.)
INPUT 2 (POST) MODE (LEFT ONLY/ L+R SUM/ STEREO)	This determines whether signal at IN [POST] (typically that from your amp's "FX Send") is processed in stereo or mono. <ul style="list-style-type: none"> LEFT ONLY – This is the usual setting for a mono rig (and also for the many rigs which are "Mono Pre, Stereo Post." With this setting, the FX Send of your amp is connected to the IN POST L jack only. L+R SUM – Here the signals at both IN PRE L+R jacks are summed to mono and then passed on to any POST effects in the FX8. STEREO - This is the setting to use when inputting different left and right signals to the POST effects of the FX8. One such scenario might be using two different heads for left and right. Another would be using another stereo effects processor in front of the FX8.
OUTPUT 2 (POST) MODE (STEREO/ SUM L+R/ COPY L>R)	This determines whether signal at OUT [POST] (typically the signal to your amp's "FX Return" or power amp) is processed in stereo or mono. <ul style="list-style-type: none"> STEREO – OUT2 POST outputs in stereo. Choose this option if you are connecting to a stereo power amp or the FX Return of two different amplifiers. The stereo setting also works for mono rigs, but you'll hear only half of the stereo image. SUM L+R – Collapses the entire signal to mono. Copy L>R – Replicates the left channel to the right, discarding the usual right channel signal.
OUTPUT 1 (PRE) PHASE (NORMAL/INVERT)	Determines whether signals at OUT [POST] will be normal or phase-inverted relative to its state at the output of the last POST effect. This lets you compensate for unwanted inversions elsewhere in the downstream signal chain. (This inverts BOTH the Left and Right channels.)

I/O: MIDI PAGE

The MIDI page of the I/O menu contains parameters that affect MIDI processing.

 Reminder: You do not need to STORE settings in the SETUP menu. EXIT returns to the Footswitch page.


PARAMETER	Description
MIDI CHANNEL 1–16, OMNI	Sets the channel on which the FX8 will receive MIDI messages. OMNI causes the unit to respond to incoming messages on ANY channel.
MIDI THRU OFF/ON	Turning this ON forwards MIDI data received at the MIDI IN port to the MIDI OUT port, where it is soft-merged with regular outbound MIDI.
PROG CHANGE ON/OFF	Determines whether the FX8 will process or ignore MIDI program change commands.
SCENE REVERT	<p>Selects between one of two behaviors for scene recall via MIDI:</p> <p>OFF (Default): Scene edits are retained across scene changes until a preset is loaded. If you tweak Scene 1, switch to Scene 2, then back to scene 1, your tweaks will still be intact.</p> <p>ON: Scene edits are lost when you change the scene without saving. If you tweak scene 1, switch to Scene 2, then back to Scene 1, Scene 1 will have reverted to its previously saved state. This makes scene changes feel more like traditional preset changes.</p> <p>For more on Scene Revert, see page 44.</p>
EXT CTRL # INIT VAL 0% OR 100%	<p>Specifies a value for each of the 12 External controllers when the FX8 is powered on. The Initial value is applied until anything is received from the external controller (an expression pedal, switch, or MIDI message).</p> <p>This feature has an important use. Let's say you find yourself without the expression pedal you normally use as "EXTERNAL 1". Now imagine that EXT1 is used to control a VOLUME block. Without the pedal connected, the FX8 assumes it is at 0%. Setting the EXT 1 INITIAL VALUE to 100% ensures that the volume defaults to all the way up instead of all the way down.</p>

I/O: CONTROLLERS PAGE [“CTRL”]

The CTRL page of the I/O menu allows you to map PEDALS or MIDI CC messages to various FX8 functions. CC messages can be sent by a MIDI controller or computer connected to the FX8 MIDI In jack, or via the USB connection of the FX8. Each of these settings is global.

In every case, the method for mapping a controller to one of these functions is the same:

1. Use the **NAV** knob to select the desired function.
2. Use the **VALUE** knob to assign a controller to the function: PEDAL1, PEDAL 2, MIDI CC (1-127), or NONE.

 Reminder: You do not need to STORE settings in the SETUP menu. EXIT returns to the Footswitch page.

PARAMETER	Description
IN 1 (PRE) VOLUME NONE/PEDAL.../0-127	Controls the volume at the IN PRE jack. Map a PEDAL here, for instance, if you want a global volume between the guitar and the first PRE effect.
OUT 1 (PRE) VOLUME NONE/PEDAL.../0-127	Controls the volume at the OUT PRE jack. Map a PEDAL here, for instance, if you want a global volume between your PRE fx and input of your amp.
IN 2 (POST) VOLUME NONE/PEDAL.../0-127	Controls the volume at the IN POST jack. This is perhaps the best and most common placement of a global volume pedal in a PRE/POST rig. Volume changes will not affect the amount of preamp gain/distortion, and when you pull the pedal back, the tails of any post effects will ring out.
OUT 2 (POST) VOLUME NONE/PEDAL.../0-127	Controls the volume at the OUT POST jack. Map a PEDAL here if you want a global MASTER volume which controls the final level of everything you hear.
TRUE BYPASS NONE/PEDAL.../0-127	Operates the True Bypass function remotely.
TEMPO TAP NONE/PEDAL.../0-127	Provides the ability to set tap the Tempo with an external controller. IMPORTANT: ANY value for the designated controller counts as a tap, so do not use a momentary switch or you will end up with double-time!
TUNER NONE/PEDAL.../0-127	Provides a way to enter or exit the TUNER function remotely.
EXT CTRL 1-12 NONE/PEDAL.../0-127	This is where you specify which incoming MIDI CC# should be assigned to each of the 12 External Controllers available as Modifier sources.
LOOPER REC, PLAY, ONCE, DUB, REV, BYPASS, HALF, UNDO	Most of the functions of the Looper block can also be remote controlled.

14 : SETUP MENU

PARAMETER	Description
SCENE SELECT, SCENE INCR, SCENE DECR	<p>These options allow selecting SCENES via MIDI CC#.</p> <p>For SCENE SELECT, the value of the Control Change message determines which scene is loaded. The easy rule is Scene number -1 = CC# Data Value. (Ex: Scene 1, Value 0).</p> <p>However, values greater than 7 continue to select scenes, in order. To determine the scene for values >7, add 1 and divide by 8. The REMAINDER is the scene that will be selected. Ex: $62+1 = 63$, $63 \div 8 = 7$ remainder 7, so 63 loads scene 7.</p> <p>SCENE INCR and DECR are triggered by CC# data values greater than 63.</p>
OUT POST VOL INCR, OUT POST VOL DECR NONE/PEDAL.../0-127	<p>These two options provide a convenient way to increase or decrease the OUT 2 (POST) VOLUME volume of the currently loaded scene in the current preset. Each time VOL INCR is triggered by a CC# value greater than 63, the level is increased by 1.0 dB and the preset is instantly saved. VOLUME DECR, works the same way, decreasing volume.</p> <p>IMPORTANT! Any other unsaved changes such as altered effects will also be stored if either VOLUME INCR or VOLUME DECR is triggered. WARNING! These functions are designed for use with momentary footswitches set up to send a CC# value of 127 for "ON" and 0 for "OFF". Do not use an expression pedal or you may change levels +/-20 dB with a single sweep!</p>
CHORUS 1 BYP through VOLUME/PAN BYP	<p>The BYPASS switch for every block in the FX8 can be remote controlled. The list of MIDI CC# defaults can be found on page 88. Some blocks may not have a default assignment but you can change any block at any time.</p>
CHORUS 1 XY through WAHWAH 2 XY	<p>Like the BYPASS switch (above) the XY toggle switch for every block can be remote controlled. The list of defaults is on page 88.</p>

I/O: PEDAL PAGES

The functions of the PEDAL page are detailed in ["Connecting Pedals & Switches" on page 16](#).

THE UTILITY MENU

The **UTILITY** menu is accessed by tapping the **SETUP** button and then pressing footswitch 3.

UTILITY: LCD PAGE

Provides a slider to adjust contrast/viewing angle for the built-in LCD display. Adjust using **VALUE**.

UTILITY: STATUS PAGE

Displays realtime audio meters for:

- IN 1 (PRE)
- IN 2 (POST) left and right
- OUT 2 (PRE) left and right
- OUT 2 (POST) left and right

The scale is -80 to 0 db. The clip LED will light at -6 dB.

To the right, CPU Utilization (CPU%) is shown on its own meter. The total CPU usage should not exceed about 90%. For more on this topic, see [“Preset CPU Limits” on page 39](#).

UTILITY: RESET PAGE

The RESET page provides a single function which sets all SYSTEM parameters (GLOBAL, I/O) back to their factory default values. **RESET SYSTEM PARAMETERS** is one of the first steps of troubleshooting. It never deletes or modifies your presets. Note: **Reset System Parameters** does NOT reset/delete “Global Scales”.

UTILITY: FIRMWARE PAGE

The FIRMWARE page indicates what firmware version the FX8 is running. Over time, you’ll likely upgrade the firmware of your FX8 to add new features and maybe even bug fixes. This is done using our free companion software, Fractal-Bot, which provides step-by-step instructions.

TEMPO, TUNER, AND CONTROLLERS SETUP PAGES

As of FX8 Firmware 3.0, the **Tempo**, **Tuner** and **Controllers** pages have been moved from the **SETUP** menu to the Miscellaneous ("**MISC**") page of the main menu.

To access these areas, press the **PAGE** button 4x from the Footswitch page, then make a selection using **NAV** and **ENTER**.

15 : ADDITIONAL TOPICS

GLOBAL VOLUME PEDAL SETUP

The FX8 makes it easy to set up a global volume pedal WITHOUT inserting a VOLUME block in your presets.

1 Connect and calibrate an expression pedal (such as the Fractal EV-1).

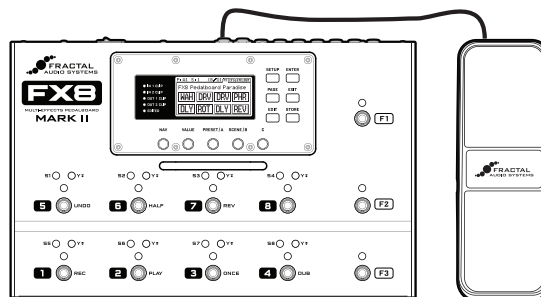
- ▶ **CONNECT** – Using a TRS cable, connect to either the **PEDAL 1** or **PEDAL 2** jack of the FX8.
- ▶ Open the **PEDAL** page of the I/O menu. (Press **SETUP**, press **Footswitch 2**, press **PAGE** to get to **PEDAL**).
- ▶ Select **PEDAL 1 CAL** or **PEDAL 2 CAL** (depending on where your pedal is connected).
- ▶ Press the **ENTER** button and follow the on-screen instructions to calibrate.

2 Select the volume function of your choice:

- ▶ Open the **CTRL** page of the I/O menu. (Press **SETUP**, press **Footswitch 2**, press **PAGE** to get to **CTRL**).
- ▶ At the top of the **CTRL** menu, **NAV** to the entry for the volume you want to control:
 - **IN 1 PRE VOLUME** – This is like adjusting your guitar’s volume. The level to all effects and your amp will be affected when you make changes.
 - **OUT 1 PRE VOLUME** – This places volume at the end of the PRE effects chain. The signal level into any PRE effects like **DRIVE** or **COMPRESSOR** is not affected, but the level into your preamp is affected.
 - **IN 2 POST VOLUME** – Here, the volume pedal presumably has no effect on any drive pedals or preamp gain, and since it comes before POST effects, their tails ring out when you pull the pedal back.
 - **OUT 2 POST VOLUME** – This controls the level of EVERYTHING you hear. Effects, amp, tails, etc.

3 Change the value for the desired entry to **PEDAL 1** or **PEDAL 2**, depending on which jack you’re using.

YOU ARE FINISHED! Press EXIT to return to the Footswitch page and test the pedal.



The Fractal Audio Systems EV-1 expression/volume pedal is ideally suited for the FX8.

ADVANCED LEVEL PARAMETERS

Setting levels on the FX8 is easy, but to get the most from your unit you need to know what the various settings do and how they work. If you encounter clipping or want to ensure that you're getting the best signal-to-noise ratio, you should understand the various ways to set levels, pads, and headroom:

IF YOU ARE CLIPPING THE PRE CHAIN...

IN [PRE] PAD (Setup : I/O : LEVELS) – This should be set as low as possible to keep the noise floor low, but if you clip IN 1, you'll need to increase the pad. If the input still clips with a 12dB pad, you'll need to lower the level of your guitar or other upstream effects/device(s).

LEVEL of your PRE effects – If the LEVEL is too hot on one or more PRE effect blocks, OUT 1 will clip. Don't forget that the Noise Gate also has a LEVEL control.

OUTPUT LEVEL PRE (OUT page of the preset main menu... Page over from the Footswitch page) – Each Scene of every preset has its own master volume setting for OUT 1 (PRE). Adjust this to normalize scenes, but watch out for clipping at out 1 and be aware that this also affects unity gain.

OUTPUT 1 (PRE) HEADROOM (Setup: I/O: Levels) – This increases headroom on the output converter. Use this control only if you can't address clipping by adjusting the settings above. The default is 6dB. Try 12 dB before using 18 dB as a last resort, since higher settings also increase the noise floor.

OUT 1 GLOBAL EQ (Setup: Global: Out 1) – The Global EQ has the potential to boost signals to the point of clipping. Conversely this can also be a "quick fix" until you can adjust blocks/ or scenes as described above.

No other controls or settings on the FX8 address IN1/OUT1 clipping.

IF YOU ARE CLIPPING THE POST CHAIN...

SEND LEVEL of your amp's FX loop – Some amps have a knob or switch to vary send levels. Be sure to select the loudest channel on your amp when checking to see if this solves a possible problem of clipping at IN 2.

LEVEL of your POST effects – If the LEVEL is too hot on one or more POST effect blocks, OUT 2 will clip.

OUTPUT LEVEL POST (OUT page of the preset main menu... Page over from the Footswitch page) – Each Scene of every preset has its own master volume setting for OUT 2 (POST). Adjust this to normalize scenes, but watch out for clipping at Out 2 and be aware that this also affects unity gain.

POST LEVEL (Setup: I/O: Levels) – SETUP: I/O: POST LEVEL can be set to +4dbu or -10dbV. This setting affects BOTH IN2 (POST) and OUT 2 (POST). +4dbu is "professional" standard. This setting gives you greater headroom, which is why this control is mentioned at all in a discussion about clipping. The increased voltage is also better for long cable runs between the FX8 and other equipment. -10dbV is the "home" standard but may also be used for music equipment. If your connected amplifier operates at -10dbV, choose this setting.

OUT 2 GLOBAL EQ (Setup: Global: Out 2) – The Global EQ has the potential to boost signals to the point of clipping. Conversely this can also be a "quick fix" until you can adjust blocks/ or scenes as described above.

No other controls or settings on the FX8 address IN1/OUT1 clipping.

SPILLOVER

Spillover allows delay and reverb tails to ring out when an effect is bypassed or when you change scenes or presets. This section covers how to set up spillover in different scenarios.

WHEN MANUALLY BYPASSING OR CHANGING SCENES

This is easy and requires only one setting change. For tails to ring when an individual effect is bypassed by a scene change, simply change its **BYPASS MODE** to “MUTE FX IN.”

If an effect is set to parallel, use “MUTE IN” instead.

WHEN CHANGING PRESETS

Setting up spillover that works across different presets is a bit more involved. The first step is to set the SPILLOVER setting on the SETTINGS page of the GLOBAL menu ([page 68](#)) to determine whether Delays, Reverbs, or “BOTH” will spill over when you change presets. (“Delay” does not include Multi-Delay or Megatap blocks).

When you want spillover to happen between presets, you also need to ensure that the same delay or reverb blocks exist in each of them. These need to be the same block and the same INSTANCE (i.e. Delay 1 spills only through Delay 1 and Delay 2 spills only through Delay 2).

Ideally, the corresponding blocks in each preset should have the same settings as well. This is because the moment you change to a new preset, the parameter settings for its blocks “take over” processing the tails. If you change from a preset where delay has a time of 500 ms to one where the time is 100 ms, the tails will be “inserted” into the new effect and be heard as 100 ms echoes (with possible glitches if certain settings change). For spillover to work perfectly then, the pair(s) of blocks in both “starting” and “landing” presets must have essentially identical settings and be placed in similar routing architectures. You would hear quite a sudden difference in the tail, for instance, if a delay was placed after a clean amp in the first preset and in front of a heavily overdriven amp in the second.

Bypass states and **BYPASS MODE** settings must also be considered. Switching from a preset where delay or reverb is engaged to one where it is bypassed with a **BYPASS MODE** setting of “MUTE FX OUT” will prevent the tails from being heard. Switching to a preset where the block is bypassed with a setting of “MUTE FX IN” however, will cleverly allow the tails to ring while material you play after the preset change will be heard without the effect. See page ask for more on **BYPASS MODE**.

QUICK TIP For a simple spillover preset experiment, create a preset, then save an exact copy to a new location and test spillover. Then begin making changes as needed to settings outside of the blocks you want to spill over.

FREQUENTLY ASKED QUESTIONS

Here are the answers to some frequently asked questions about the FX8.

Fractal Audio Systems also offers help at support.fractalaudio.com

You can also find answers and meet others who use the FX8 at forum.fractalaudio.com

Q: One or more CLIP LEDs are lighting up.

A: Many factors affect levels and clipping in the FX8. See [“Advanced Level Parameters” on page 79](#).

Q: I can’t hear some of the effects.

A: Your PRE/POST set up may be incorrect. Please refer to the basic overview on [page 2](#), the setup diagrams in [Section 3](#) and [“Configure PRE And POST” on page 29](#)

Q: I can’t hear the Looper,

A: Check the LOOPER LOCATION on Page 2 of the Looper menu. It must not be set to NO LOOPER. If it is set to GLOBAL, check the GLOBAL LOOPER LOCATION (in the SETUP: GLOBAL menu) to ensure that it is not set to NO LOOPER. This may also be due to PRE/POST settings. If your rig uses only the PRE chain or only the POST chain, set LOOPER LOCATION accordingly.

Q: I’m hearing click and pops.

A: Excessive CPU usage may be to blame. Press UTILITY and change to the STATUS page. Is the CPU meter in the mid 90s or higher? If so, you’ve overloaded the current preset. Try removing one block or reviewing [“Preset CPU Limits” on page 39](#) for useful tips.

Q: One of my effects is totally not working!

A: When tweaking effect parameters causes excessive CPU usage, the FX8 will disable one effect block. This block will be quickly blink in the Footswitch page display. Reduce CPU load and the effect should automatically re-enable itself.

Q: My expression pedal isn’t working. What should I do?

A: Expression pedals need to be calibrated, mapped to a controller, and assigned to a parameter. See [“Connecting Pedals & Switches” on page 16](#) for a basic overview. Are you using a TRS cable? Is it connected to the right jack on the FX8? Is it actually an expression pedal? Did you set up a modifier according to the information in [Section 10](#)?

Q: My FX8 won’t start up correctly.

A: One problem that may cause this is a bad preset. To get around this issue, reboot the FX8, but as soon as the “Splash Screen” is displayed, press and hold **ENTER** to load an empty, initialized preset. If this solves your trouble, you’ll need to find and overwrite the problem preset, which may be as easy as pressing STORE, ENTER, ENTER after performing this special startup routine.

Q: How do I upgrade the firmware of my FX8?

A: Use Fractal-Bot, available from www.fractalaudio.com

Q: Where can I learn more about all these effect parameters?

A: We’re currently working on a universal **Effect Parameters Guide** for all Fractal Audio Systems products. Meanwhile, the Axe-Fx II manual has most of the answers you might need. Find it at www.fractalaudio.com/support.

Q: Why should I bother with PRE and POST?

A: Sonically speaking, the main reason to care about PRE vs. POST is that a given effect will sound different when placed BEFORE or AFTER your amp's preamp—the place where distortion occurs.

How does this difference sound? If you've ever switched the sequence of traditional DRIVE and WAH pedals, you've heard an excellent example. In the case of wah before overdrive, the resonant filter of the wah "excites" the overdrive in a cool way while still retaining a natural overall tone. When the wah follows distortion, you might hear a more dramatic filtered sweep—with heavy distortion it can get almost synth-like—which might be considered less "classic." It's not surprising then that Wah would traditionally be a run as a "PRE" effect between guitar and amp. The amp's distortion follows the wah effect. Many other effects fall in this same category.

A different example is found in overdrive with reverb and delay. In the natural world, reverb and echo occur because of open spaces around your guitar amp – like a club or concert hall. These effects would therefore NOT be heard before a distorted amp, but *after* it. Recording studios often add these kinds of effects at the console—after the mic has picked up the distorted sound from the guitar amp. If you wanted to simulate this natural sounding reverb or delay these effects would likely be run "POST." This is not to say that delay or reverb before distortion is a "no-no." Many "legendary" tones came from echo units in front of an amp—but this effect is very different from "POST" delay—not only tonally, but also in terms of dynamics.

The good news is that the FX8 allows you to experiment easily and find what combinations of pre- and post-effects work best for you. Creativity begins where tradition ends.

Q: My FX8 stopped working during or after a firmware update. How can I recover it?

A: The FX8 has a built in recovery routine. Power the unit off. Hold down the **SETUP** button, and then power the unit on. Hold the button for about 1 second beyond the power up, and then release. The unit will now allow you to install firmware using Fractal-Bot.

Q: Why do I hear a pop when changing X/Y on some DRIVE block types?

A: When you change X/Y on the FX8, the block may need to be completely reprogrammed for its new function. In some cases, this is sonically transparent. In other cases, this may mean changes inside the block which cause a small pop. When connected to a loud amplifier that has a lot of gain, this small pop will naturally be even louder. One possibility that makes this completely avoidable is to use two different drive blocks instead of one drive block with X/Y Switching.

UNITY GAIN FAQ

Q: What does “unity gain” mean?

A: Unity gain means that the level at a device’s output is the same as the level at its input, with no change in gain.

Q: Why do I care that the FX8 is designed for unity gain?

A: The FX8 makes it EASY to achieve unity gain. This can be important because amplifier tone, distortion amount, dynamics and noise are level dependent. With unity gain:

- The level of the signal from your guitar output can reach your amp input without being altered. Therefore, your guitar-amp interaction sounds and feels the same, offering a transparent playing experience while using the FX8.
- The level of your FX SEND can reach your FX return without being altered. The entire system can therefore perform optimally, without unpredictable changes to level, dynamics or noise when you engage True Bypass or bypass all post effects.

Q: How do I set up the FX8 for unity gain?

A: You don’t need to! Just set up according the basic instructions in [Section 3](#) of this manual. A default “empty” preset should have the same levels whether or not the FX8 is in True Bypass Mode.

Q: What might I do to inadvertently upset unity gain?

A: Many SETUP and EFFECT parameters change the gain level. Some of these are *intended* to change gain levels (how else is a boost supposed to work, after all?) Here is a short list of things to consider:

- The LEVEL parameter of every effect increases or decreases the overall level.
- Changing MIX on certain effects changes both dry and wet levels. This is to prevent signals from “stacking up” and causing clipping. You can compensate with your ears by turning effects on and off and comparing the level with True Bypass engaged.
- If you’re going to change a block’s **BYPASS MODE** from the default setting of THRU, it is best to check its levels when you engage/disengage the effect BEFORE you switch to something like MUTE FX IN.
- The level parameters on the **OUTPUT** page of the main mode menu increase or decrease overall levels.
- Incorrect settings on the I/O: AUDIO page can result in gain changes.
- The NOISE GATE has a level control.
- If your rig is MONO, every BALANCE or PAN control can affect levels.
- The Global Graphic EQs affect overall level.
- The I/O LEVEL page settings DO NOT affect unity gain. Each setting is compensated internally.
- See also [“Advanced Level Parameters” on page 79](#), which contains several tips about levels and gain.

Q: Any last words of advice?

A: Use the **TRUE BYPASS** switch as a way to make sure your presets and scenes are on track. In general, it is better to be in control of your levels than to be fixated on the “concept” of unity gain. Do what sounds best to you and learn as much as you can about your gear.

BACKING UP AND RESTORING



Backing up and restoring the FX8 is handled using Fractal-Bot, our free MIDI UTILITY. Find it at <http://www.fractalaudio.com/fractal-bot.php>

NOTES ON SENDING FILES TO THE FX8

You must use Fractal-Bot to transmit firmware, downloads, backups or other files to the FX8.

- Connect your FX8 to the computer with a USB Cable.
- Drivers are NOT required for the FX8.
- Fractal-Bot handles everything.
- It is not necessary to ready the FX8 in any way before transmitting a file to it.
- Please read the Release Notes included with every FX8 Firmware update.
- When the FX8 receives an individual preset, you must manually store it.
- When the FX8 receives ALL PRESETS or a SYSTEM file, it overwrites local data and settings without warning. Be certain you are sending the correct files, and consider making a fresh backup of current settings before transmitting anything to your FX8. IMPORTANT: You must always REBOOT the FX8 immediately after it receives a SYSTEM bank.

NOTES ON RECEIVING FILES FROM THE FX8

- Connect your FX8 to the computer with a USB Cable.
- Drivers are NOT required for the FX8.
- Fractal-Bot handles everything.
- It is not necessary to ready the FX8 in any way before requesting a file from it.
- It is advisable to make a note about the firmware version that was loaded in your FX8 at the time an important backup was made, as older Preset or System dumps may not work identically on newer firmware.

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16 : SPECIFICATIONS & DEFAULTS

INPUT PRE:

Connector:	1/4" phone jack, unbalanced.
Impedance:	1 Megohm (less if Input Impedance is active)
Max. Input Level:	+16 dBu (conditioned for guitar use)

INPUT POST:

Connector:	1/4" phone jack, balanced.
Impedance:	1 Megohm
Max. Input Level:	+20 dBu

A/D CONVERSION

Bit Depth:	24 bits
Sample Rate:	48 kHz
Dynamic Range:	> 110 dB
Frequency Response:	20 – 20kHz, +0 / -1 dB
Crosstalk:	< -60 dB over full bandwidth

ANALOG OUTPUTS

Connectors:	1/4" phone jack unbalanced (Humbuster™ hum-canceling type)
Impedance:	600 ohm
Max Output Level:	+20 dBu
Dynamic Range:	> 110 dB
Frequency Response:	20 – 20kHz, +0 / -1 dB
Crosstalk:	< -60 dB over full bandwidth

MIDI INTERFACE

Connectors (in and out/thru):	5-pin DIN
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PEDAL INTERFACE

Connector:	2 x 1/4" TRS phone jacks
Format:	Switch: Momentary or Latching; Pedal: 10–100kΩ max, linear taper expression type.

RELAY INTERFACE

Connector:	2 x 1/4" TRS phone jacks
Type:	Short tip-to-sleeve, ring-to-sleeve, tip-AND-ring-to-sleeve

USB INTERFACE:

Connector:	USB 2.0 Type B
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GENERAL

Finish:	Powder coated steel chassis with anodized aluminum faceplate
Display:	160x80 dot matrix graphic LCD
Dimensions:	16.35" x 3.96" x 10.00" (415.29mm x 100.6mm x 254mm)
Weight:	11.5 lbs. (5.2 kg)
Input Voltage:	100–240 VAC, 47 – 63 Hz (universal input)
Power Consumption:	<40 W

ENVIRONMENTAL

Operating Temperature:	32 to 122 °F (0 to 50 °C)
Storage Temperature:	-22 to 167 °F (-30 to 70 °C)
Humidity:	Max. 90% non-condensing

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

MIDI IMPLEMENTATION

Every function of the FX8 Looper (plus a hidden “BYPASS” feature) can be controlled by MIDI CC messages or an external footswitch. Find the complete list of controllable functions in a table on the next page.

Function		Tx	Rx	Remarks
Basic Channel	Default Changed	1 1-16	1 1-16	
Note Number	True Voice	X	X	
Velocity	Note ON Note OFF	X X	X X	
After Touch	Keys Channels	X X	X X	
Pitch Bend		X	X	
Control Change		O	O	The MIDI block of the FX8 can transmit CC and PC messages. No other CCs are transmitted. Receivable CCs are globally soft-assigned to functions via the I/O: CTRL menu. These include master volumes, True Bypass, Tap Tempo, Tuner, 12 “EXTERNAL” control nodes (assignable as modifiers to one or more parameters on a per-preset basis), all LOOPER functions, the BYPASS switch of every block instance DRIVE1, DRIVE2, CHORUS1, CHORUS2, etc.), and the X/Y switches of the block types that support this function (DRIVE 1 XY, DRIVE 2 XY, etc.).
Program Change	True Number Bank Select	O X	O X	The MIDI block of the FX8 can transmit CC and PC messages. With 128 presets onboard, the FX8 does not transmit or respond to bank select. Selecting a preset with a footswitch also transmits the corresponding MIDI PC.
System Exclusive	Fractal Audio Real-Time Non-Real-Time	O O X	O X X	SysEx is used extensively for FX8-Edit.
System Common	Song Position Song Select Tune Request	X X X	X X X	
System Real-Time	Clock Commands	X X	O X	FX8 Global Tempo syncs automatically to MIDI Beat Clock. FX8 does not transmit MIDI clock.
Auxiliary Messages	Local ON/OFF All Notes OFF Active Sense Reset	X X X X	X X X X	

FACTORY DEFAULT MIDI CC SETTINGS

The following text table lists the default MIDI CC# assignments for each of the available functions in the FX8. In addition to a MIDI CC, any item can be set to NONE, PEDAL 1 or PEDAL2. All such assignments are global.

In 1 Pre Volume 10	Chorus 1 Bypass 41	Rotary Bypass..... 86
Out 1 Pre Volume 11	Chorus 2 Bypass 42	Synth Bypass 88
In 2 Post Volume 9	Compressor 1 Bypass..... 43	Trem/Pan Bypass 90
Out 2 Post Volume 12	Compressor 2 Bypass..... 44	Tremolo 2 Bypass 91
Bypass..... 13	Crossover 1 Bypass..... 45	Volume/Pan Bypass 93
Tempo..... 14	Crossover 2 Bypass..... 46	Wahwah 1 Bypass..... 97
Tuner..... 15	Delay 1 Bypass..... 47	Wahwah 2 Bypass..... 98
External Control 1..... 16	Delay 2 Bypass..... 48	Chorus 1 X/Y..... 104
External Control 2..... 17	Drive 1 Bypass 49	Chorus 2 X/Y..... 105
External Control 3..... 18	Drive 2 Bypass 50	Delay 1 X/Y 106
External Control 4..... 19	Enhancer Bypass..... 51	Delay 2 X/Y 107
External Control 5..... 20	Filter 1 Bypass 52	Drive 1 X/Y..... 108
External Control 6..... 21	Filter 2 Bypass 53	Drive 2 X/Y..... 109
External Control 7..... 22	Flanger 1 Bypass 56	Filter 1 X/Y..... NONE
External Control 8..... 23	Flanger 2 Bypass 57	Filter 2 X/Y..... NONE
External Control 9..... 24	Formant 1 Bypass 58	Flanger 1 X/Y 110
External Control 10..... 25	Gate/Expander 1 Bypass..... 60	Flanger 2 X/Y 111
External Control 11..... 26	Graphic EQ 1 Bypass 62	Gate/Exp X/Y NONE
External Control 12..... 27	Graphic EQ 2 Bypass 63	Multitap X/Y
Looper Record 28	Megatap Delay Bypass 66	Phaser 1 X/Y 112
Looper Play..... 29	MIDI 1 NONE	Phaser 2 X/Y 113
Looper Once..... 30	MIDI 2 NONE	Pitch X/Y..... 114
Looper Dub..... 31	Multi-Delay Bypass..... 69	Relay 1 X/Y..... NONE
Looper Rev 32	Parametric EQ 1 Bypass 71	Relay 2 X/Y..... NONE
Looper Bypass 33	Parametric EQ 2 Bypass 72	Rotary X/Y..... 125
Looper Half..... 120	Phaser 1 Bypass..... 75	Reverb 1 X/Y..... 116
Looper Undo 121	Phaser 2 Bypass..... 76	Reverb 2 X/Y..... 117
Metronome..... 122	Pitch Bypass..... 77	Trem/Pan X/Y NONE
Scene Select 34	Relay 1 125	Wahwah 1 X/Y 118
Scene Increment..... 123	Relay 2 126	Wahwah 2 X/Y 119
Scene Decrement..... 124	Reverb 1 Bypass..... 83	
Out Post Vol Incr 35	Reverb 2 Bypass..... 84	
Out Post Vol Decr 36	Ring Modulator Bypass..... 85	

MIDI PROGRAM CHANGE NUMBERS

The following table lists MIDI Program Change message associated with each of the presets in the FX8.

PRESET TO PC

Each time you select a preset, the FX8 transmits a MIDI Program Change message on its own MIDI Channel as set in the MIDI page of the I/O menu under SETUP.

A1-----0	C1-----16	E1-----32	G1-----48	I1-----64	K1-----80	M1-----96	O1-----112
A2-----1	C2-----17	E2-----33	G2-----49	I2-----65	K2-----81	M2-----97	O2-----113
A3-----2	C3-----18	E3-----34	G3-----50	I3-----66	K3-----82	M3-----98	O3-----114
A4-----3	C4-----19	E4-----35	G4-----51	I4-----67	K4-----83	M4-----99	O4-----115
A5-----4	C5-----20	E5-----36	G5-----52	I5-----68	K5-----84	M5-----100	O5-----116
A6-----5	C6-----21	E6-----37	G6-----53	I6-----69	K6-----85	M6-----101	O6-----117
A7-----6	C7-----22	E7-----38	G7-----54	I7-----70	K7-----86	M7-----102	O7-----118
A8-----7	C8-----23	E8-----39	G8-----55	I8-----71	K8-----87	M8-----103	O8-----119
B1-----8	D1-----24	F1-----40	H1-----56	J1-----72	L1-----88	N1-----104	P1-----120
B2-----9	D2-----25	F2-----41	H2-----57	J2-----73	L2-----89	N2-----105	P2-----121
B3-----10	D3-----26	F3-----42	H3-----58	J3-----74	L3-----90	N3-----106	P3-----122
B4-----11	D4-----27	F4-----43	H4-----59	J4-----75	L4-----91	N4-----107	P4-----123
B5-----12	D5-----28	F5-----44	H5-----60	J5-----76	L5-----92	N5-----108	P5-----124
B6-----13	D6-----29	F6-----45	H6-----61	J6-----77	L6-----93	N6-----109	P6-----125
B7-----14	D7-----30	F7-----46	H7-----62	J7-----78	L7-----94	N7-----110	P7-----126
B8-----15	D8-----31	F8-----47	H8-----63	J8-----79	L8-----95	N8-----111	P8-----127

PC TO PRESET

When the FX8 receives a Program Change message on its own MIDI Channel as set in the MIDI page of the I/O menu under SETUP it loads the corresponding preset.

0-----A1	16-----C1	32-----E1	48-----G1	64-----I1	80-----K1	96-----M1	112-----O1
1-----A2	17-----C2	33-----E2	49-----G2	65-----I2	81-----K2	97-----M2	113-----O2
2-----A3	18-----C3	34-----E3	50-----G3	66-----I3	82-----K3	98-----M3	114-----O3
3-----A4	19-----C4	35-----E4	51-----G4	67-----I4	83-----K4	99-----M4	115-----O4
4-----A5	20-----C5	36-----E5	52-----G5	68-----I5	84-----K5	100-----M5	116-----O5
5-----A6	21-----C6	37-----E6	53-----G6	69-----I6	85-----K6	101-----M6	117-----O6
6-----A7	22-----C7	38-----E7	54-----G7	70-----I7	86-----K7	102-----M7	118-----O7
7-----A8	23-----C8	39-----E8	55-----G8	71-----I8	87-----K8	103-----M8	119-----O8
8-----B1	24-----D1	40-----F1	56-----H1	72-----J1	88-----L1	104-----N1	120-----P1
9-----B2	25-----D2	41-----F2	57-----H2	73-----J2	89-----L2	105-----N2	121-----P2
10-----B3	26-----D3	42-----F3	58-----H3	74-----J3	90-----L3	106-----N3	122-----P3
11-----B4	27-----D4	43-----F4	59-----H4	75-----J4	91-----L4	107-----N4	123-----P4
12-----B5	28-----D5	44-----F5	60-----H5	76-----J5	92-----L5	108-----N5	124-----P5
13-----B6	29-----D6	45-----F6	61-----H6	77-----J6	93-----L6	109-----N6	125-----P6
14-----B7	30-----D7	46-----F7	62-----H7	78-----J7	94-----L7	110-----N7	126-----P7
15-----B8	31-----D8	47-----F8	63-----H8	79-----J8	95-----L8	111-----N8	127-----P8

CC#34 TO SCENE

By default, MIDI continuous controller #34 selects SCENES. The value sent determines the scene.

0-----1	16-----1	32-----1	48-----1	64-----1	80-----1	96-----1	112-----1
1-----2	17-----2	33-----2	49-----2	65-----2	81-----2	97-----2	113-----2
2-----3	18-----3	34-----3	50-----3	66-----3	82-----3	98-----3	114-----3
3-----4	19-----4	35-----4	51-----4	67-----4	83-----4	99-----4	115-----4
4-----5	20-----5	36-----5	52-----5	68-----5	84-----5	100-----5	116-----5
5-----6	21-----6	37-----6	53-----6	69-----6	85-----6	101-----6	117-----6
6-----7	22-----7	38-----7	54-----7	70-----7	86-----7	102-----7	118-----7
7-----8	23-----8	39-----8	55-----8	71-----8	87-----8	103-----8	119-----8
8-----1	24-----1	40-----1	56-----1	72-----1	88-----1	104-----1	120-----1
9-----2	25-----2	41-----2	57-----2	73-----2	89-----2	105-----2	121-----2
10-----3	26-----3	42-----3	58-----3	74-----3	90-----3	106-----3	122-----3
11-----4	27-----4	43-----4	59-----4	75-----4	91-----4	107-----4	123-----4
12-----5	28-----5	44-----5	60-----5	76-----5	92-----5	108-----5	124-----5
13-----6	29-----6	45-----6	61-----6	77-----6	93-----6	109-----6	125-----6
14-----7	30-----7	46-----7	62-----7	78-----7	94-----7	110-----7	126-----7
15-----8	31-----8	47-----8	63-----8	79-----8	95-----8	111-----8	127-----8

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