



Sierpinski Workbench - Version 2.0

Sierra Digital Audio - www.SierraDigitalAudio.com - October 2026 (in development)

Sierpinski Workbench is a computer control screen for the Fractal Audio Axe-Fx II, XL and XL+, and - as a beta - the Axe-Fx III, FM9 and FM3. It adds features the units themselves do not have (setlists, preset search, a scene matrix) and, for the Axe-Fx II, puts every front-panel function in one searchable, numbered list with step-by-step button instructions and, where possible, a MIDI control that does it for you.

Sierpinski Workbench was called Axe-Fx II Workbench (AxeFXIIControl) up to version 1.0. It is the desktop companion to the Sierpinski VST3 plugin.

Gen 3 Beta - Axe-Fx III, FM9 and FM3

Sierpinski Workbench works with the Axe-Fx III, FM9 and FM3 as a **beta**. That support is built from Fractal's published documents and has not yet been confirmed on these units - see **Axe-Fx III, FM9 and FM3 (beta)** below for what works and what doesn't yet.

Beta testers: **Appendix B - Gen 3 Beta Testing** lists what only a real unit can answer and how the built-in self-test makes the job quick.

Axe-Fx III, FM9 and FM3 (beta)

Choose the unit under **Model** in the connection panel (or press **Detect**, which tries all six models), then Connect. The status line shows the unit's name - Gen 3 units have no firmware query. Everything here comes from Fractal's documentation and is being confirmed by beta testers (Appendix B).

- **Connection.** The Axe-Fx III and FM9 work over USB or a USB-to-MIDI adapter; the FM3 needs the adapter. On the unit open SETUP > MIDI/Remote: MIDI channel = the Workbench's Channel box, program change on, no custom mapping, and **Send Realtime Sysex = ON**.
- **Presets.** The preset list starts empty. Reading all names takes a minute or two and changes nothing on the unit (Gen 3 reports each name directly). Only names are read - amp, cab and block types aren't available.
- **Scenes and blocks.** Scene buttons, block engage / bypass and channels work; a block's badge shows its channel (A-D), and right-click steps to the next channel. The unit sends no change messages, so the Workbench checks it about every 1.2 seconds - changes made on the unit appear within a few seconds.
- **Tuner and tempo.** Tuner on / off and tap tempo work over any connection; the tuner readout and the tempo light need 5-pin MIDI with Send Realtime Sysex = ON (these units don't send them over USB). The looper buttons work by SysEx.
- **First start.** The Workbench asks before loading preset 0, because these units can't report unsaved edits. For the same reason Test MIDI asks first and never runs on its own.
- **Not available yet / not documented.** The EDITED light, CPU use, firmware number, renaming presets and block parameters (Axe-Fx II only). The Scene Matrix, Settings guide and CC Map still describe the Axe-Fx II - the Gen 3 versions follow. CC Map functions send the Axe-Fx II's factory CC numbers; set matching numbers on the unit or in CC Map before using them.

Upgrading from AxeFXIIControl

The Sierpinski Workbench installer finds an existing AxeFXIIControl installation and offers two choices, both ticked:

- **Copy my setlists, notes, Foot Control settings and profiles, settings and preset list.** Setup copies them into the Sierpinski Workbench folder, with new file names (for example AxeFXIIControlSetlists.xml becomes SierpinskiWorkbenchSetlists.xml). A file that already exists in Sierpinski Workbench is never replaced.
- **Remove AxeFXIIControl after copying.** Recommended - both programs would want the same MIDI ports. Setup shows only the choices that apply - for example only **Remove AxeFXIIControl** if your files were already copied, or no page at all on a computer without AxeFXIIControl.

Nothing is moved or deleted: your AxeFXIIControl files stay in its folder (usually C:\Program Files\AxeFXIIControl) as a backup. Setup writes **SierpinskiWorkbenchMigration.txt** in the Sierpinski Workbench folder listing what it copied; the copy runs only once.

Which files to back up: everything Sierpinski Workbench keeps is in its program folder - SierpinskiWorkbenchSettings.config (settings and the preset list), SierpinskiWorkbenchSetlists.xml, setlistnotes.txt, SierpinskiWorkbenchFootController.xml and the FootProfiles folder. Copy them somewhere safe now and then.

Before you start - prerequisites on the Axe-Fx II

The Workbench changes presets with Bank Select + Program Change (as documented in the Owner's Manual). The Axe-Fx II only follows them when these system settings are right - check them once before connecting (they apply to every preset; no STORE needed):

- Press **I/O**, then **PAGE >** to the **MIDI** tab, and use NAV / VALUE to set:
- **MIDI CHANNEL** = 1 (the same as the Workbench's **Channel** box), or **OMNI** to respond on any channel.
- **PROG CHANGE** = **ON**.
- **MAPPING MODE** = **NONE**.
- **MIDI PC OFFSET** = **0** (or enter the same offset in the Workbench under Options).
- **SEND REALTIME SYSEX** = **ALL** (so the tuner and tempo LED work).

Axe-Edit and Fractal-Bot: whether they can stay open while the Workbench uses the same USB port depends on your computer (Appendix C). If you're not sure, close them before starting the Workbench, or start Axe-Edit from the Workbench's Axe-Edit button, which handles it for you.

Check after connecting - Test MIDI: press **Test MIDI** (next to Channel in the connection panel). It loads the next preset with a Program Change on the Workbench's channel and asks the unit which preset is loaded. If the unit didn't follow, it tries MIDI channels 1-16, sets the Channel box to the one the unit follows, and then loads your original preset again. If no channel works, PROG CHANGE, MAPPING MODE or MIDI PC OFFSET needs fixing (it says which to check). STORE unsaved edits first - the test changes presets for a few seconds.

On the **first connection** the Workbench runs this test by itself, silently (only when the preset has no unsaved edits - the EDITED light is off); you only see a message if the unit doesn't follow Program Change. After that, every Connect simply asks the unit for its MIDI channel and sets the Channel box to match - silent and without changing presets. A quick manual check: press **▲** and make sure the Axe-Fx II itself changes preset.

Then read your presets: press **Presets** in the menu and **Read All Presets** (or **Resync All** if a list already exists - this replaces every entry). If the unit doesn't change preset, the read stops after two presets and explains what to check; nothing wrong is saved.

1. Getting connected

- Install the Fractal Audio Axe-Fx II USB driver (fractalaudio.com/support) and connect the unit by USB. A MIDI interface on the 5-pin MIDI IN / OUT jacks also works.

- Close Axe-Edit and Fractal-Bot unless your computer shares MIDI ports (Appendix C) - or use the Workbench's Axe-Edit button.
- In the connection bar choose **MIDI Out** and **MIDI In** (usually "AXE-FX II MIDI Out" / "AXE-FX II MIDI In"). The app picks them automatically the first time.
- Set **Channel** to the unit's MIDI channel (I/O > MIDI > MIDI CHANNEL, default 1), or press **Test MIDI** to find it.
- Press **Connect**. The app sends a SysEx handshake and shows the firmware version. If the model is wrong it tries the others automatically (or press **Detect**).
- If the Axe-Fx II is switched off (or still starting up), the Workbench keeps trying every second for 5 minutes - the connection panel shows the attempt count and time. Just switch the unit on. Connect shows **Stop** while it tries; after 5 minutes it tells you what to check. **Refresh** re-reads the MIDI devices and reopens the ports.
- With MIDI Out only (no MIDI In) the app still works one-way using MIDI CC and Program Change; names, block states, tuner and scene read-back need MIDI In.

2. Live Control (main window)

The main window has three panels: the MIDI connection (top left: MIDI Out, MIDI In, Model, Channel, Test MIDI, Refresh, Detect, Connect), the menu in two columns (bottom left: Presets, Setlists, Stage Monitor, Scene Matrix, Foot Control, Controllers, Settings, CC Map, Axe-Edit, MIDI Log, Options, Help, About, Buy Coffee) and live control (right). Hover over Refresh, Detect or Connect for a detailed hint.

- **Preset:** number, bank/PC and name. The **preset list** under the name holds every preset by number and name (names from the local preset list - "(not read)" until you read them); choosing one loads it, and you can click it and type a number to jump there. The **up / down arrows** at the top right step to the next / previous preset (also Page Down / Page Up). Presets are selected with Bank Select (CC#0) + Program Change, as documented in the Owner's Manual.
- **Scenes:** 8 buttons (F1-F8). The lit button follows scene changes made on the unit.
- **Blocks:** every block in the loaded preset. Click to engage / bypass, right-click to switch X / Y (the badge shows X or Y). Changes are not saved until you STORE the preset on the unit.
- **Tempo:** Tap, or type a BPM and Set Tempo. The red LED flashes with the unit's tempo.
- **Tuner:** on/off and a live readout (needs I/O > MIDI > SEND REALTIME SYSEX = ALL or TUNER).
- **Looper:** Rec, Play, Once, Dub, Rev, Half, Undo and On/Off, with status (the preset needs a Looper block).
- **Controllers** (menu): External Controllers 1-12 as faders in their own window, which can stay open while you play. They send CC 16-27 (factory). They act on parameters that have a modifier with EXTRN 1-12 as the source.
- **EDITED / CPU:** the unit's EDITED LED and CPU usage.
- **Presets** (first toolbar button): the local preset list - see section 4.
- **Foot Control:** Behringer FCB1010 / MFC-101 / any MIDI pedal - see section 7c.

3. Setlists, Songs and Sections

The Setlists window has three lists side by side (drag the dividers to resize): **1. Setlists**, **2. Songs** of the selected setlist, and **3. All presets** (the local preset list). Name a setlist first, then drag presets from list 3 into list 2. The full guide follows (also available from the Guide... button in the window).

How to read this guide

- Black text: works on your Axe-Fx II with Sierpinski Workbench.

- Green text: Sierpinski Workbench extras that even the Axe-Fx III's built-in setlists don't have. **[Sierpinski Workbench extra]**
- Dark red text: Axe-Fx III (and FM9 / FM3) features that do NOT exist on the Axe-Fx II - listed so you know what to expect if you've used a III. **[Axe-Fx III only]**

What setlists, songs and sections are

The Axe-Fx II has no setlist feature of its own - on the unit you only have presets and their 8 scenes. Fractal added Setlists & Songs to the Axe-Fx III with firmware 19.06. Sierpinski Workbench gives the Axe-Fx II the same idea, run from your computer:

- A SECTION is one sound in a song - Intro, Verse, Chorus, Solo... Each section loads a scene (1-8). It can also load a preset of its own, so a song can change presets part-way through.
- A SONG is a name, a preset, a list of sections, an optional tempo and your notes.
- A SETLIST is a list of songs in the order you play them. A song can be in a setlist more than once.

While you perform, the app sends the preset (Bank Select + Program Change), the section's scene and the song's tempo to the Axe-Fx II.

Quick start

1. Connect to the Axe-Fx II in the main window (MIDI Out, MIDI In, Connect).
2. Press Presets on the toolbar once and read your presets (10+ minutes) so the Workbench knows their names. This local list is separate from Axe-Edit - resync it after changing presets in Axe-Edit or on the unit.
3. Open Setlists. Press New Setlist and give it a name (e.g. "Friday at the Grange") - a named setlist is needed before you can drop presets into it.
4. Drag presets from list 3 (All presets) into list 2 (Songs). Select several with Ctrl / Shift to drag them at once. Each becomes a song with one section ("Main", Scene 1).
5. Double-click a song to name its sections (Verse = Scene 1, Chorus = Scene 2, Solo = Scene 4 ...), set a tempo and write notes.
6. Drag songs up and down in list 2 (or use Move Up / Move Down) to put them in playing order.
7. Press Notes... to write notes for the whole setlist (venue, start time, tunings) - saved in setlistnotes.txt.
8. Press Perform >> and play. Press Esc to go back.

Building a song (Add Song... / Edit...)

- Song name - any length, shown large in the Perform view. **[Sierpinski Workbench extra]**
- Preset - 0-767 on the XL / XL+ (0-383 on the Mark II). Try It loads it so you can hear it; Use Current Preset + Scene copies what is loaded on the unit.
- Set the tempo to - when ticked, the app sets the global tempo (30-250 BPM) every time the song loads. Works best when the preset's TEMPO TO USE is GLOBAL (TEMPO menu on the unit). **[Sierpinski Workbench extra]**
- Sections - as many as you like, each with a name, a scene and optionally its own preset (leave "Own preset" blank to use the song's preset). Try Scene plays the selected section.
- Notes - key, capo, tuning, lyric cues... shown under the section buttons while you perform. **[Sierpinski Workbench extra]**

The Axe-Fx III limits a song to 6 sections and names to 10 characters, with 128 songs in total; Sierpinski Workbench has no such limits. **[Sierpinski Workbench extra]**

Setlists

- New Setlist asks for a name; rename by clicking the selected name again or pressing F2 (or Rename). Each setlist needs its own name.

- Duplicate (handy for a shorter version of a set) copies the songs and the setlist notes; Delete removes both.
- Notes... - a page of notes per setlist, stored in setlistnotes.txt (one [[Setlist name]] block per setlist; you can also open it in any text editor).
- Print... - the setlist in large type for the stage floor; Export... - a text file, or a CSV for a spreadsheet, to send to the band. **[Sierpinski Workbench extra]**
- Any number of setlists, and any number of songs in each. **[Sierpinski Workbench extra]**
- The Axe-Fx III has exactly four setlists of up to 32 songs, and one is marked "ACTIVE!" for the FC footswitches. **[Axe-Fx III only]**
- Songs: drag presets in from list 3 (or Add to Setlist / double-click a preset), Add Song..., Add Current, Edit (or double-click), Duplicate, Delete, drag to reorder or Move Up / Down. Load Song sends the selected song without entering Perform.
- Hold Ctrl while dropping presets ON a song to add them to that song as sections, each loading its own preset (like an Axe-Fx III section).
- Everything is saved at once in SierpinskiWorkbenchSetlists.xml in the program folder - copy that file to back up or move your setlists.

Performing (Perform >>)

- The screen shows the song name, preset name, tempo, the section buttons (the lit one is playing), your notes, and the next song.
- Mouse: click a section button, or << Song, < Section, Section >, Song >>, or click a song in the list on the right.
- Keyboard (big-key friendly, also works with a USB page-turner pedal or a programmable foot keyboard): **[Sierpinski Workbench extra]**
- Right arrow or Space = next section; Left arrow = previous section. **[Sierpinski Workbench extra]**
- Down arrow or Page Down = next song; Up arrow or Page Up = previous song. **[Sierpinski Workbench extra]**
- 1-8 = jump to section 1-8; Enter = reload the current song; Esc = back to editing. **[Sierpinski Workbench extra]**
- Pressing next section on the last section moves on to the next song.
- If you change scene on the Axe-Fx II itself (or with an MFC-101), the lit section button follows it when that scene belongs to the song. **[Sierpinski Workbench extra]**
- The computer is kept awake (no sleep, no screen saver) while Perform is on, and closing the window asks first. **[Sierpinski Workbench extra]**
- By foot: in the Foot Controller window, map FCB1010 (or MFC-101) switches to Next / Previous song, Next / Previous section or Section 1-8 - they step the same setlist even with the Setlists window closed. **[Sierpinski Workbench extra]**

Tips

- Leave I/O > MIDI > MAPPING MODE at NONE and MIDI PC OFFSET at 0 (or enter the same offset under Options).
- Set I/O > MIDI > IGNORE REDUNDANT PC to ON if you don't want a song to reload the preset (and lose tweaks) when the next song uses the same preset.
- Sections that only change scene are gapless with spillover; a section with a different preset is a preset change (use GLOBAL > CONFIG > SPILLOVER for tails).
- Bypass / X/Y changes you make during a song are not saved unless you STORE the preset on the unit.

Side by side: Axe-Fx III built-in setlists vs Axe-Fx II + Workbench

On the Axe-Fx III (firmware 19.06+, with an FC foot controller) the system is a three-tier hierarchy, edited in Axe-Edit III's Setlists/Songs editor or on the unit (SETUP: FC Setlists/Songs): **[Axe-Fx III only]**

- Songs - 128 in total. A song is a named slot (up to 10 characters) that acts as a container: it holds pointers, not audio. **[Axe-Fx III only]**
- Sections - 6 per song (e.g. Intro, Verse, Chorus, Solo). Each section points to any preset and any scene (or the DEFAULT scene). **[Axe-Fx III only]**
- Setlists - 4 in total, each holding up to 32 songs in any order. A song can be reused several times, or in different setlists for different bands. **[Axe-Fx III only]**

The Workbench uses the same three tiers on the Axe-Fx II:

- Songs - unlimited, names of any length, plus a tempo and notes per song. **[Sierpinski Workbench extra]**
- Sections - unlimited per song; each points to a scene and, optionally, its own preset (otherwise the song's preset). **[Sierpinski Workbench extra]**
- Setlists - unlimited, any number of songs, songs can repeat; plus setlist notes, print and export. **[Sierpinski Workbench extra]**

What the Axe-Fx II can't do (Axe-Fx III setlist features)

These are part of the Axe-Fx III's built-in Setlists & Songs and have no equivalent on the Axe-Fx II - Sierpinski Workbench can't add them because they live in the III's firmware and FC foot controllers: **[Axe-Fx III only]**

- Setlists stored inside the unit, so they work with no computer connected. **[Axe-Fx III only]**
- FC-6 / FC-12 footswitch functions SETLIST (select / toggle / inc-dec), SONG (select / toggle / inc-dec in set) and SECTION (select / toggle / inc-dec). **[Axe-Fx III only]**
- The FC's main display and mini-displays showing the current song and section names. **[Axe-Fx III only]**
- Editing setlists on the unit's front panel (SETUP: FC Setlists/Songs), and an "ACTIVE!" setlist chosen from the front panel or a footswitch. **[Axe-Fx III only]**
- Setlists and songs included in a Fractal-Bot SYSTEM backup, plus import / export in Axe-Edit III. **[Axe-Fx III only]**
- Named scenes, and a "DEFAULT" scene choice for a section (Axe-Fx II scenes are numbered 1-8 only). **[Axe-Fx III only]**
- An MFC-101 connected to the Axe-Fx II can't run setlists by itself. It can step Workbench songs only through the computer: set I/O > MIDI > USB ADAPTER MODE = ON and map its switches in the Foot Controller window (CC only). **[Axe-Fx III only]**

What Sierpinski Workbench adds (not on the Axe-Fx III either)

- Unlimited setlists, songs per setlist and sections per song; names of any length. **[Sierpinski Workbench extra]**
- A tempo and free-text notes per song. **[Sierpinski Workbench extra]**
- A full-screen Perform view on your computer or tablet, with keyboard control. **[Sierpinski Workbench extra]**
- Building songs by dragging presets from the local preset list (searchable by name, amp, cab, drive, blocks). **[Sierpinski Workbench extra]**
- Behringer FCB1010 (or any MIDI pedal) control of songs and sections through the Foot Controller window. **[Sierpinski Workbench extra]**

4. Presets - the local preset list

First start. The first time you start Sierpinski Workbench, as soon as it connects to your Axe-Fx II, it loads **preset 0** so the window starts at the beginning. When you have closed the version history window, it asks whether to read all your presets now. If the EDITED light is on, preset 0 is not loaded, so unsaved changes are never lost. Choose **Read All Presets** or **Not Now** - you can always read them later from the Presets window. This happens once.

Demo Setlist. When the first full read finishes, a Demo Setlist with five songs is created (only if you have no setlists yet). On an XL / XL+ that still has its factory presets it uses five classic factory sounds; otherwise it uses the first five presets on your unit that have blocks. Edit it, replace it or delete it - once deleted it stays deleted.

The **Presets** button stores your Axe-Fx II preset names (plus Amp 1, Amp 2, Cab 1, Drive 1 and the blocks used) on this computer, so the Workbench can show, search and drag presets instantly without asking the unit each time. The list is saved in SierpinskiWorkbenchSettings.config.

Factory presets to start with: a new installation already contains the 384 presets the Axe-Fx II XL / XL+ ships with (0-383, marked "factory default" in the Last read column). Your unit is probably different, so the Presets window says so - press **Resync All** to read your own presets.

This local list is separate from Axe-Edit. It is a snapshot: if you change presets later in Axe-Edit or on the Axe-Fx II front panel, it can get out of sync. Resync it whenever you have made changes. Presets the Workbench loads while you play are checked and updated automatically.

- **First time:** if the list is empty, the Presets button explains the list and offers **Read All Presets** (10+ minutes - the unit can only report on the loaded preset, so each one is loaded and read). STORE unsaved edits first; Output 1 is muted while reading.
- **After that** the Presets window opens with the list and a banner showing when it was last read. Search (all words must match), double-click to load a preset, or Add as Songs to a setlist.
- **Resync All** re-reads everything; **Resync Selected** re-reads only the highlighted presets (seconds); **Resync Range** re-reads a From-To range.
- **Cancel** stops after the current preset and asks whether to keep the presets read so far (merged with the saved list - read presets replace saved ones with the same number) or disregard them.

5. Scene Matrix

All 8 scenes of the current preset against every block. **Read Scenes** visits each scene and returns to the one you were on. Click a cell to go to that scene and engage/bypass the block; right-click to switch X/Y. Then STORE the preset on the unit (STORE, ENTER, ENTER).

6. Settings - every Axe-Fx II function

The **Settings** window lists the Axe-Fx II functions described in the Owner's Manual, numbered in order of how often players need them. Type in the search box (words or a number) or pick a category. Open an entry to see the front-panel button steps and, where there is one, a MIDI control (CC, Program Change or SysEx) that does it from the computer. Functions marked "-" can only be set on the front panel (most I/O and GLOBAL settings). The full list is at the end of this guide.

7. CC Map, MIDI Log and Options

CC Map: the CC number the app sends for each assignable function, starting at the factory defaults (Owner's Manual 16.19). If you changed any on the unit's I/O > CTRL page, change them here too. **Read Block CCs From Unit** copies the bypass and X/Y CCs of the blocks in the loaded preset. Test buttons send 127 or 0.

MIDI Log shows every message sent and received. **Options:** send scenes/bypass/X-Y as SysEx (recommended) or always as CC; the unit's MIDI PC OFFSET; the SysEx reply timeout; auto-connect; version history at startup. Settings are saved in SierpinskiWorkbenchSettings.config.

7b. Using Axe-Edit

The **Axe-Edit** toolbar button starts Fractal Audio's editor (a separate program, in its own window). The button is named after the editor for your unit: **Axe-Edit** for the Axe-Fx II, XL and XL+ and **Axe-Edit III**, **FM9-Edit** or **FM3-Edit** for the Axe-Fx III, FM9 and FM3. What happens next depends on how the Workbench reaches the unit:

- **On the unit's own USB port, shared** (Windows 11 with Windows MIDI Services - the Workbench checks each time it opens the port): both stay connected. The editor shows **Communications paused** for a few seconds whenever the Workbench changes the preset, then resumes by itself (click it only if it stays paused). While the editor is open the Workbench stops checking the unit every 2.5 seconds (the connection panel says so), because constant checks would keep the editor paused. It reads the current preset instead whenever you **click back into the Workbench window** from another program, or press **Refresh**. When the editor closes, the Workbench follows the unit continuously again. To take turns instead, untick **Keep the Workbench connected while the editor runs** in Options.
- **On the unit's own USB port, one program per port** (Windows 10, or Windows 11 without Windows MIDI Services): the Workbench disconnects and closes its ports first, greys out its live controls while the editor is open, and when the editor closes it reopens the same ports, reconnects and re-reads the current preset (if auto-connect is off, press Connect).
- **On a USB-to-MIDI adapter** wired to the unit's MIDI IN and OUT jacks: the editor uses the unit's USB port and the Workbench stays connected, so both run side by side. Changes made in the editor appear in the Workbench within a few seconds.

Appendix C explains port sharing in detail. The Workbench tells the unit's USB port and an adapter apart from the MIDI port name. If it guesses wrong (an unusual adapter, or a renamed port), choose the connection under **Options**. An explanation is shown before the editor starts; tick **Don't show this message again** to skip it (turn it back on under Options). The first time, the Workbench looks for the editor under Program Files > Fractal Audio, or asks where it is; each editor's location is kept separately under Options. STORE your edits in the editor, and if you renamed or changed presets, use **Presets > Resync Selected** (or Resync Range) to update the local preset list.

7c. Foot Control (Behringer FCB1010, MFC-101, any MIDI pedal)

Connect the pedal's MIDI OUT to a USB-MIDI interface on the computer, open **Foot Control** and tick that interface under **MIDI inputs** (you can tick several). For an MFC-101 or a pedal plugged into the Axe-Fx II, tick **Also listen to the Axe-Fx II's MIDI In** and set I/O > MIDI > USB ADAPTER MODE = ON (CC only - use numbers the unit doesn't use itself, e.g. 2, 3, 4, 9).

- **Two lists: Setlist navigation** (setlist view on / off, tuner on / off, next / previous song and section, section 1-8, jump to song 1-16, reload, setlist overview, cursor, Go) and **Axe management** (tuner, tap tempo, global bypass, scenes, presets, volumes, External Controllers 1-12, looper, every block's engage / bypass and X / Y - the same functions as the CC Map). Every function can have **two triggers**, e.g. a footswitch and a keyboard key.
- **MIDI Learn**: choose **Learn from** (any ticked input or one device), press **Learn** on a function and step on the switch. Learn records the device, the channel, and the message - Program Change, **Bank + Program Change** (when the pedal sends Bank Select first), Note, or CC. For CC switches it detects momentary (press / release) or latching switches; for expression pedals move the pedal fully heel to toe and it measures the range. Tick **Learn next** to set up a whole pedal board in one pass; Esc stops.
- **Trigger from any input**: off (default) = the trigger only works from the device it was learned from, so two pedals can use the same numbers.
- **Long press** (momentary CC switches): hold for 0.6 s to run a second function, e.g. tap tempo normally, tuner when held. **Pedal range** and **Invert** adjust expression pedals.
- **Conflicts** show in red: the same control used for two functions, or a CC on the Axe's MIDI In that the Axe itself also uses. Rows flash when their switch fires; **Test** runs a function, **Clear** / **Clear All** remove

assignments.

- **Pass unmapped messages through** forwards anything you haven't assigned to the Axe-Fx II, so the pedal can still drive the Axe directly. **Save / Load Profile** keeps a setup per pedal board (FootProfiles folder); **templates** give a starting point. A pedal interface that is plugged in later is opened automatically. Song and section stepping works even with the Setlists window closed.
- **Backup without a computer:** the **FCB1010 Direct-Wiring Guide** explains plugging the FCB1010 straight into the Axe-Fx II, using your CC numbers.

7d. Stage Monitor

Stage Monitor (menu) needs a setlist with at least one song - without one it tells you to create it first. It opens a big, full-screen display on a second monitor or TV, readable from about 10 feet, plus a control window on the laptop. It shows the setlist, song, section (coloured by type: verse blue, chorus green, solo red, bridge purple, intro / outro teal), what's next, the preset and scene, the song's **stage banner** (e.g. DROP D - set it in Edit Song), the song notes (lyrics or chord cues), the set timer or clock, and a bottom strip with the tuner (while the Axe-Fx II's tuner is on) or the tempo light, block tiles and looper. Red bars warn if the connection drops or a preset doesn't load; a message typed in the control window appears in an amber bar.

- **Setlist view:** map a footswitch to **Setlist view on / off** (first in Foot Control's Setlist navigation list) - the monitor shows the setlist name and every song with its preset number and name (plus any section presets) in big type, until you press it again. Key: L.
- **Lost in the set?** Map Foot Control switches to **Setlist overview with cursor**, **Setlist cursor up / down** and **Go**. The overview lists the songs in big rows (current in blue, cursor outlined, played ticked, skipped marked); moving the cursor changes nothing until you press Go. **Jump to song #** loads a song by its number. It closes by itself after a few seconds.
- **Screens:** connect the monitor or TV and set Windows to Extend (Win+P). Pick the screen in the control window (**Identify Screens** shows a number on each). With one screen the monitor opens as a preview window.
- **TVs:** use the TV's PC or Game mode (no cropping, no delay on the tempo light), set the **TV safe margin** if the edges are cut off, keep **Burn-in protection** on for OLED TVs, and turn off the TV's eco auto power-off. Windows may switch its sound output to the TV over HDMI - this doesn't affect the Axe-Fx II.
- **Size:** about 1 inch of letter height per 10 feet is the minimum. A 24" screen suits 6-8 feet, a 32" TV or monitor is the sweet spot for 10 feet. Use **Text size** and the **Test pattern** (walk to your playing position and check every line).
- **Keys on the monitor:** L = setlist view, S = overview, Up / Down = cursor, Enter = Go, Esc = close. Move the mouse to show a **Close** button at the top right. The computer is kept awake while the monitor is open.

8. About the SysEx

The Owner's Manual documents Program Change, Bank Select, the CC assignments and the SysEx ID (00 01 74). The SysEx functions used for two-way control (preset name, scene, block states, tempo, tuner and so on) are community-documented on the Fractal Audio wiki ("MIDI SysEx", Axe-Fx II section) rather than in the manual. Back up your unit with Fractal-Bot before experimenting with the raw SysEx tool.

9. Troubleshooting

- **Blocks panel empty while connected:** it says why - an empty preset (no blocks), or no reply from the unit (check MIDI In, then Refresh; the MIDI Log shows what was sent and received).
- **No MIDI devices / "could not open":** install the Axe-Fx II driver, close Axe-Edit and Fractal-Bot, press Refresh.
- **Connected but presets don't change:** check the channel (Ch) and I/O > MIDI > PROG CHANGE = ON, MAPPING MODE = NONE and MIDI PC OFFSET (set the same offset in Options).

- **CC functions do nothing:** the CC number on I/O > CTRL must match the CC Map.
- **No tuner / tempo LED:** set I/O > MIDI > SEND REALTIME SYSEX to ALL.
- See also the Troubleshooting category in the Settings window.

Appendix A - Settings function list

Every Axe-Fx II function in the Settings window, in the same order. MIDI = Yes means the Workbench can do it for you.

#	Function	Category	Front panel	MIDI
1	Load (recall) a preset	Presets & Scenes	RECALL > PRESET	Yes
2	Select a scene (1-8)	Presets & Scenes	RECALL (Quick Control A)	Yes
3	Save (store) the current preset	Presets & Scenes	STORE	-
4	Engage / bypass a block	Performance	LAYOUT > EDIT (grid) + FX BYP	Yes
5	Switch a block between X and Y	Performance	Block EDIT menu + X / Y buttons	Yes
6	Tuner on / off	Tuner & Tempo	TUNER	Yes
7	Tap tempo / set the tempo	Tuner & Tempo	TEMPO	Yes
8	Global bypass (the whole unit)	Performance	BYPASS button	Yes
9	Output volume levels (front panel knobs)	Inputs & Outputs	OUTPUT LEVEL 1 / 2 knobs	Yes
10	Set input levels	Inputs & Outputs	I/O > INPUT	-
11	Edit a block's parameters	Editing & Grid	LAYOUT > EDIT, then EDIT	-
12	Edit presets in Axe-Edit	Editing & Grid	(computer) Axe-Edit	Yes
13	Control songs, scenes and pedals with a Behringer FCB1010 (or MFC-101)	MIDI & Remote Control	(Sierpinski Workbench) Foot Control	Yes
14	Wire an FCB1010 straight to the Axe-Fx II (backup, no computer)	MIDI & Remote Control	MIDI IN + I/O > MIDI / CTRL	Yes
15	Stage Monitor - big display on a second screen or TV	Performance	(Sierpinski Workbench) Stage Monitor	Yes
16	Show / load presets from the app's Setlists	Performance	(Sierpinski Workbench)	Yes
17	Set the MIDI channel	MIDI & Remote Control	I/O > MIDI > MIDI CHANNEL	Yes
18	Assign a MIDI CC (or pedal) to a function - with LEARN	MIDI & Remote Control	I/O > CTRL	Yes
19	Program change on / off	MIDI & Remote Control	I/O > MIDI > PROG CHANGE	-
20	Ignore redundant program change	MIDI & Remote Control	I/O > MIDI > IGNORE REDUNDANT PC	-
21	Scene revert (MIDI scene behavior)	MIDI & Remote Control	I/O > MIDI > SCENE REVERT	-
22	Custom program change mapping (PC -> preset + scene)	MIDI & Remote Control	I/O > MIDI > MAPPING MODE / MAP FROM / MAP TO	Yes
23	MIDI PC offset	MIDI & Remote Control	I/O > MIDI > MIDI PC OFFSET	-
24	Display offset (number presets from 001)	MIDI & Remote Control	I/O > MIDI > DISPLAY OFFSET	-
25	Send realtime SysEx (tuner / tempo to controllers)	MIDI & Remote Control	I/O > MIDI > SEND REALTIME SYSEX	-
26	External controller initial values	MIDI & Remote Control	I/O > MIDI > EXT CTRL # INIT VAL	Yes
27	USB adapter mode (MIDI through to the computer)	MIDI & Remote Control	I/O > MIDI > USB ADAPTER MODE	-
28	MFC-101 port and MIDI echo	MIDI & Remote Control	I/O > MIDI > MFC PORT / MFC ECHO TO MIDI OUT	-
29	Use External Controllers (pedal / CC modifiers)	MIDI & Remote Control	I/O > CTRL > EXT CTRL 1-12	Yes
30	Create a modifier (pedal, LFO, envelope ...)	Editing & Grid	Block EDIT menu > parameter + ENTER	Yes
31	Insert, change or remove a block	Editing & Grid	LAYOUT > EDIT (grid)	Yes
32	Insert shunts and connector cables	Editing & Grid	LAYOUT > EDIT (grid)	-
33	Move blocks, rows or columns	Editing & Grid	LAYOUT > MOVE	-
34	Rename the current preset	Presets & Scenes	STORE > NAME	Yes
35	Save a preset to a new location	Presets & Scenes	STORE > LOCATION	-
36	Swap two presets	Presets & Scenes	STORE > SWAP	-
37	Set up a scene (bypass, X/Y, level)	Presets & Scenes	LAYOUT (Quick Control A) + FX BYP / X / Y	Yes
38	Output mixer and preset level	Editing & Grid	LAYOUT > OUT (or the OUTPUT column)	Yes
39	Input noise gate	Editing & Grid	LAYOUT > IN/GATE column	-

#	Function	Category	Front panel	MIDI
40	Input impedance	Editing & Grid	LAYOUT > IN/GATE > INPUT Z	-
41	Copy X to Y (or Y to X)	Editing & Grid	Block EDIT menu, double-tap X or Y	-
42	Reset a block to its defaults	Editing & Grid	Block EDIT menu, double-tap BYPASS	-
43	Recall an effect from another preset	Editing & Grid	RECALL > EFFECT	-
44	Save / load / link a Global Block	Editing & Grid	Block EDIT menu, double-tap FX BYP	-
45	Quick Control knobs A-D	Editing & Grid	QUICK CONTROL A, B, C, D	-
46	X / Y Quick-Jump keys	Editing & Grid	I/O > X/Y (QUICK-JUMP)	-
47	Amp block shortcuts (CUT, FAT, BRIGHT, reset EQ)	Editing & Grid	AMP EDIT menu	-
48	Read the current preset name / number / scene	Presets & Scenes	RECALL	Yes
49	Edited (unsaved changes) LED	Presets & Scenes	STATUS LEDs > EDITED	Yes
50	Output 1 / Output 2 mode (stereo / mono)	Inputs & Outputs	I/O > AUDIO > OUTPUT 1 MODE / OUTPUT 2 MODE	-
51	Main input source (analog / USB / digital)	Inputs & Outputs	I/O > AUDIO > MAIN INPUT SOURCE	-
52	Front or rear input (INPUT 1 LEFT SELECT)	Inputs & Outputs	I/O > AUDIO > INPUT 1 LEFT SELECT	-
53	Input 1 / Input 2 mode	Inputs & Outputs	I/O > AUDIO > INPUT 1 MODE / INPUT 2 MODE	-
54	Output boost / pad (converter level)	Inputs & Outputs	I/O > AUDIO > OUTPUT 1/2 BOOST/PAD	-
55	Output phase invert	Inputs & Outputs	I/O > AUDIO > OUTPUT 1/2 PHASE	-
56	Output 2 echo (copy Out 1 or dry input to Out 2)	Inputs & Outputs	I/O > AUDIO > OUTPUT 2 ECHO	-
57	Digital I/O: S/PDIF or AES and its source	Inputs & Outputs	I/O > AUDIO > SPDIF/AES SELECT / SOURCE	-
58	Word clock	Inputs & Outputs	I/O > AUDIO > WORD CLOCK	-
59	USB audio: output source, buffer, return level	Inputs & Outputs	I/O > AUDIO	-
60	Global input / output volume over MIDI	Inputs & Outputs	I/O > CTRL > INPUT VOLUME / OUT 1 VOLUME / OUT 2 VOLUME	Yes
61	Power amp modeling on / off	Global Settings	GLOBAL > CONFIG > POWER AMP MODELING	-
62	Cabinet modeling on / off	Global Settings	GLOBAL > CONFIG > CABINET MODELING	-
63	Spillover (delay / reverb tails across presets)	Global Settings	GLOBAL > CONFIG > SPILLOVER	-
64	Global amp gain, reverb mix, effects mix, gate offset	Global Settings	GLOBAL > CONFIG	-
65	Global output EQ and gain (OUT1 / OUT2)	Global Settings	GLOBAL > OUT1 / OUT2	-
66	Default modeling version (XL/XL+)	Global Settings	GLOBAL > CONFIG > DEFAULT MODELING VERSION	-
67	Custom scales (pitch shifter)	Global Settings	GLOBAL > SCALES	-
68	Tap tempo averaging (2 or 10 taps)	Tuner & Tempo	GLOBAL > CONFIG > TAP TEMPO	-
69	Tempo to use (preset or global)	Tuner & Tempo	TEMPO menu > TEMPO TO USE	Yes
70	Auto delay (tap engages delays)	Tuner & Tempo	TEMPO menu > AUTO DELAY	-
71	Metronome	Tuner & Tempo	TEMPO menu > METRONOME / METRO LEVEL	Yes
72	Tuner calibration, mute and offsets	Tuner & Tempo	TUNER > CONFIG / OFFSET	Yes
73	Looper: record, play, overdub	Looper	Looper block / I/O > CTRL	Yes
74	Looper mode (mono / stereo / undo)	Looper	Looper EDIT > MODE	-
75	Set up and calibrate an expression pedal (PEDAL jack)	MIDI & Remote Control	I/O > PEDAL	-
76	Set up a wah pedal	MIDI & Remote Control	WAH block CONTROL + modifier	Yes
77	Step through presets with a footswitch	MIDI & Remote Control	I/O > PEDAL > PRESET INCR	Yes
78	Back up and restore the unit (Fractal-Bot)	Utilities & Maintenance	(computer) Fractal-Bot	-
79	Onboard system backup / restore	Utilities & Maintenance	UTILITY > PRESET > BACKUP SYSTEM / RESTORE SYSTEM	-
80	Firmware update	Utilities & Maintenance	UTILITY > FIRMWARE	Yes

#	Function	Category	Front panel	MIDI
81	Failsafe firmware recovery (XL/XL+)	Troubleshooting	Power on holding both PAGE buttons	-
82	CPU usage / status meters	Utilities & Maintenance	UTILITY > STATUS	Yes
83	VU meter / balance preset levels	Utilities & Maintenance	UTILITY > VU	-
84	LCD contrast	Utilities & Maintenance	UTILITY > LCD	-
85	Reset system parameters to factory defaults	Utilities & Maintenance	UTILITY > RESET	-
86	Preset utilities (strip globals, amp defaults, erase)	Utilities & Maintenance	UTILITY > PRESET	-
87	Load user cab IRs	Utilities & Maintenance	CAB EDIT > CAB (user slot) + SysEx	Yes
88	IR capture / tone matching	Utilities & Maintenance	UTILITY > IR CAPTURE; TONE MATCH block	-
89	Read the unit's firmware version	Utilities & Maintenance	UTILITY > FIRMWARE	Yes
90	Send a raw SysEx message (advanced)	Utilities & Maintenance	(Sierpinski Workbench)	Yes
91	Unit froze or behaves erratically (safe boot)	Troubleshooting	Power on holding RECALL	-
92	A preset makes no sound	Troubleshooting	LAYOUT grid / I/O	Yes
93	OUT CLIP LEDs light / distortion on clean presets	Troubleshooting	LAYOUT > OUT, GLOBAL > OUT1/OUT2, I/O > AUDIO	-
94	Presets suddenly sound harsh / bright	Troubleshooting	GLOBAL > CONFIG	-
95	FX BYP doesn't toggle a block	Troubleshooting	Block EDIT > BYPASS MODE	Yes
96	Can't hear the guitar while playing computer audio	Troubleshooting	I/O > AUDIO > MAIN INPUT SOURCE	-
97	Ground hum	Troubleshooting	Rear panel	-
98	The local preset list - find, load, resync (Presets)	Presets & Scenes	(Sierpinski Workbench)	Yes
99	Match the app's CC numbers to the unit (CC Map)	MIDI & Remote Control	I/O > CTRL / (Sierpinski Workbench)	Yes

Appendix B - Gen 3 Beta Testing

Fractal documents the Axe-Fx III's MIDI commands, but some things can only be answered by a real unit. Until testers have confirmed every row below, Axe-Fx III, FM9 and FM3 support stays marked **beta**.

What only a real unit can answer

Item	What Sierpinski assumes	How a tester checks it
FM3 and FM9 model IDs	Fractal's "Axe-Fx III MIDI for Third-Party Devices" (rev 1.4) documents only the Axe-Fx III (model 0x10). Sierpinski assumes FM3 = 0x11 and FM9 = 0x12.	The self-test reports the model byte the unit answers with.
FM3 and FM9 answer the Axe-Fx III commands	Assumed to work the same way: bypass (0x0A), channel (0x0B), scene (0x0C), preset and scene names (0x0D, 0x0E), looper (0x0F), tap tempo (0x10), tuner (0x11), status dump (0x13) and tempo (0x14).	The self-test sends each command and records the reply (or that none came).
Scene numbering	The document doesn't say whether scenes count 0-7 or 1-8. Sierpinski assumes 0-7 (0 = scene 1).	Select scene 1 from the Workbench - the unit must show scene 1, not scene 2.
Safe timing	How fast preset names can be read and how often the unit can be polled (Sierpinski polls Gen 3 about every 1.2 seconds) without missed replies - especially over 5-pin MIDI with a foot controller on the same line.	Read all preset names; the self-test times each reply and counts any that went missing.
Tuner and tempo push on the FM units	With Send Realtime Sysex = ON (SETUP > MIDI/Remote) the Axe-Fx III streams tuner note / string / cents and a tempo downbeat - over 5-pin MIDI OUT only, not USB. The FM3 and FM9 manuals list the same setting; the message format is assumed to be the same.	Turn the tuner on and play a string over 5-pin: the Workbench's tuner bar should move and the tempo light flash.
Tuner string order and note names	The document gives the string as 0-5 with 0 = low E, and the note as 0-11 without saying which note 0 is. Sierpinski assumes the same note numbering as the Axe-Fx II.	Play the low E string with the tuner on: the self-test asks which string you played.
Block names on the FM units	Block IDs come from the Axe-Fx III list in Fractal's document. The FM units have fewer blocks; the IDs they report are assumed to use the same numbers.	Compare the block names the Workbench shows with the unit's grid.

Making the testers' job easy - the Gen 3 self-test

A tester runs the self-test once per unit. It takes about a minute and asks a few yes / no questions about what the unit's display shows:

1. Use a preset you don't mind changing, and **STORE** any edits first - the test switches scenes and toggles a block, then puts them back.
2. Connect the unit by 5-pin MIDI (MIDI IN and OUT) and set **SETUP > MIDI/Remote > Send Realtime Sysex = ON**. Close the Fractal editor if you use USB for it.
3. In Sierpinski Workbench choose the Model (Axe-Fx III, FM9 or FM3 - or press Detect), Connect, open **MIDI Log** and press **Gen 3 Self-Test**, then **Start Test**.
4. Follow the prompts. The test tries all three Gen 3 model bytes, changes to scene 1 and back, lists the preset's blocks, toggles one block's bypass and another's channel and puts them back, reads ten preset names and the eight scene names, checks tempo and looper, then turns the tuner on for 8 seconds while you play a string.
5. Press **Save Report**. It writes a short text file (unit model, firmware as shown on the unit, every command and its reply, timings).
6. Email the report to Sierra Digital Audio (Contact page on sierradigitalaudio.com) with your unit model and firmware version. Two minutes, and no SysEx knowledge needed.

Also known from Fractal's document: Gen 3 has no firmware query and no **EDITED** flag, so the status line shows the unit's name, and "protect unsaved edits" works on the Axe-Fx II only. Tuner readout and tempo light need 5-pin MIDI; over USB the tuner only switches on and off.

Appendix C - Windows 10 and Windows 11 MIDI Notes

Whether two programs - say Sierpinski Workbench and your Fractal editor - can use the same MIDI port at the same time is decided by Windows, not by Sierpinski or Fractal. Windows changed this recently, so the answer depends on your computer.

One program per port (Windows 10, and Windows 11 without Windows MIDI Services)

Windows' standard USB MIDI driver lets only one program open a MIDI port at a time; a second program gets an error. The Workbench then says the port **is in use by another program** and keeps trying while auto-connect is on. This applies to the unit's USB MIDI port and to each port of a USB-to-MIDI adapter.

Shared ports (Windows 11 with Windows MIDI Services)

Microsoft has rebuilt MIDI in Windows 11 as **Windows MIDI Services**. With it, every MIDI port is **multi-client**: several programs can open the same port, whatever driver the device uses. Existing programs - the Workbench, Sierpinski VST3, the Fractal editors, your DAW - get this automatically.

- It arrives through **Windows Update** on Windows 11 24H2 and 25H2, switched on in phases (the rollout began early in 2026); a PC with Windows Update turned off may not get it.
- There is no switch to turn it on. Microsoft warns against forcing it with third-party tools or developer "service" builds - that can leave a PC without working MIDI.
- **Our recommendation:** Windows 11 25H2 with Windows Update on. The Workbench works without it too.
- Known side effect: a MIDI device plugged in after a MIDI program has started may not work. Switch on and plug in your unit and MIDI interfaces before starting the Workbench, or restart it.

Is it on my PC?

- **Quick look:** press Win+R, type services.msc, and look for **Windows MIDI Service**.
- **Definite answer:** Microsoft's checker **midicheckservice** (linked from aka.ms/midi, "MIDI Feature Enablement Checker"). Download the x64 version, unzip it, close your MIDI programs, open Windows Terminal (right-click Start > Terminal) and run it there. It is unsigned - choose More info > Run anyway if Windows asks.
- **Practical test:** with Axe-Edit connected over USB, connect the Workbench on the same USB port. If both connect, your PC shares ports.

The Fractal editors pause themselves

Fractal editors have a **Communications paused - click to resume** state, provided so you can use a foot controller or the front panel without the editor's heavy traffic causing audio gaps. In our tests (Axe-Edit with an Axe-Fx II XL+ on Windows 11 25H2) Axe-Edit also **pauses itself whenever the preset changes and Axe-Edit didn't change it** - from the front panel, an MFC-101, or the Workbench. Window focus has nothing to do with it. It is a short pause: once the outside activity stops, the editor reads the unit again and **resumes by itself** after a few seconds - click it only if it stays paused. What keeps an editor paused is **constant** checking from another program: regular preset or scene requests every few seconds never let it settle. Editing then works normally, with no errors on either side. The Workbench's background status checks don't cause a pause - only preset changes do. On a shared port the editor also sees every reply the unit sends to the Workbench - and a preset or scene reply it didn't ask for makes it pause. So while the editor is open on a shared port, the Workbench only asks for CPU use and the EDITED light, and re-reads the preset only when you press Refresh. With a USB-to-MIDI adapter the replies come back on the adapter, so the Workbench keeps following the unit every 2.5 seconds and when you click back into its window. Whether Axe-Edit III, FM9-Edit and FM3-Edit pause in the same situations is being confirmed by beta testers.

How Sierpinski works with the Fractal editors

Connection	Sierpinski Workbench	Sierpinski VST3
USB-to-MIDI adapter for Sierpinski, USB for the editor (recommended)	Both run together on every computer. The Axe-Edit button just starts the editor; the Workbench stays connected.	Both run together on every computer. The editor still pauses when the plugin changes the preset.
Unit's USB port, one program per port (no Windows MIDI Services)	Take turns: the Axe-Edit button closes the Workbench's ports, starts the editor, and reconnects when it closes.	Take turns: press Release, use the editor, close it, press Reconnect.
Unit's USB port, shared (Windows MIDI Services)	Both stay connected (the default - the Workbench checks whether the port can be shared each time it opens it). While the editor is open the Workbench reads the preset only when you click back into its window or press Refresh; the editor pauses briefly then (and when you change the preset in the Workbench) and resumes by itself. To take turns instead, untick the sharing option in Options.	Both can stay connected. A preset change from the plugin pauses the editor briefly; it resumes by itself.
The FM3	Always a USB-to-MIDI adapter (it has no USB MIDI).	Always a USB-to-MIDI adapter.

Whatever your computer: **don't read all your presets while editing in the Fractal editor** - on the Axe-Fx II that read loads every preset in turn - and if you also use Sierpinski VST3, keep the unit's ports disabled in your DAW.