VERSION 9.02 public beta (2) | December 19, 2024

IMPORTANT: If updating from a firmware version prior to 9.0 you will need to upgrade to the current Dyna-Cab models which requires you to install two separate files:
1) the main firmware, and 2) a separate Dyna-Cab file. To install both files using automatic download, please use the version of Fractal-Bot that is built into the latest release of FM3-Edit. https://www.fractalaudio.com/fm3-edit

NOTE: FM3 Firmware 9.x and subsequent versions are a different size compared to 8.x and earlier versions.
Should you ever need to downgrade from 9.x or newer to 8.x or older, a special process is required. See this article:
https://support.fractalaudio.com/en-US/downgrade-fm3-firmware-from-90-newer-to-version-8-or-older-604543

NEW FEATURES & UPDATES

EFFECT BLOCK UPDATES

- Improved PI Fuzz model. The new model also allows changing the type and quantity of diodes used in the transistor feedback paths, adds a "Wicker" switch which removes the feedback capacitors and adds a "Tone" switch which allows bypassing the tone circuitry.
- Added **PI Fuzz – Triangle** model. This is based on a 1971 "Triangle" Big Muff PI. Thie model also includes the Tone Wicker mods.
- Added **PI Fuzz – Ram's Head** model. This is based on mid-70's "Ram's Head" Big Muff PI. The model also includes the Tone Wicker mods.
- Added **PI Fuzz – Russian** model. This is based on a Sovtek produced "Civil War" Big Muff PI. The model also includes the Tone Wicker mods.
- Added **Colortone Booster** model based on a Colorsound Power Booster (with added Master control).
- Added **Colortone OD** model based on a Colorsound Overdriver (with added Master control).
- Added **MOSFET Distortion** model based on an Ibanez MT10 Mostortion.
- Added **Super Fuzz** model based on a Univox Superfuzz. The model also features a tone control which allows varying the frequency of the notch. Use the Bias control to simulate the "Octave" control found on some clones.
- Added **Integral Pre** type to the Drive block. This is based on a TC Electronics Integrated Preamp
- Updated DS1 Distortion model to Second Edition specs.
- Improved Tube Drive 4-Knob model. If you are using this model in a preset a soft reset of the block is recommended to load the new default values.
- Improved Filter block **Touch-Wah** detector behavior.
- Improved **Sweep Delay** algorithm in Delay block. Added selectable filter type.
- Improved **Quad Diffusor** algorithm in Multitap Delay block. The new algorithm now has stereo output with adjustable spread and LFO controlled filters.
- Exposed "**Algorithm**" type in Multitap Delay block. This allows changing the underlying algorithm without changing the various parameters. This can be used to experiment with different algorithms without losing parameter settings as occurs when changing the Type.

FIXES

- Improved active sensing pedal controllers for auto-engage modifiers. Active sensing is more sensitive now.
- Corrected internal pedal jacks configured as switches being ignored due to active sensing update.
- Various general CPU use improvements.
- Fixed resistor mistakenly attached across drive pot on Plexi 2204 model.
- Fixed Phaser block LFO Reset now working properly for some types.
- Fixed wrong Miller capacitance value in Brit 800 models (probably not audible).
- Fixed CPU Limit warning remaining on-screen in some cases after resolved.
- Pedal inputs configured as switch inputs are no longer affected by activity sensing at startup.

RELEASE NOTES HISTORY

VERSION 9.01 | October 11, 2024

IMPORTANT: If updating from a firmware version prior to 9.0 you will need to upgrade to the current Dyna-Cab models which requires you to install two separate files:
1) the main firmware, and 2) a separate Dyna-Cab file. To install both files using automatic download, please use the version of Fractal-Bot that is built into the latest release of FM3-Edit. https://www.fractalaudio.com/fm3-edit

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NEW FEATURES & UPDATES

EFFECT BLOCK UPDATES

- **Filter Block Updates**
  Added a **Touch Wah** type to the Filter block. This is similar to the Envelope Filter but uses a different type of detector and voltage-to-frequency converter. This type can be used to create interesting touch-sensitive filter sounds. It can also be used to replicate the Korg A3 Touch Wah sound as follows:
  - Set Mode to MIX
  - Set Start Freq to maximum. Set Stop Frequency to minimum.
  - Start with a fairly high Attack Time, around 500ms.
  - Set Release Time to around 200ms.
  - Adjust Sensitivity to taste.

  Added the **Auto-Wah** type to the Filter block. This is based on the same "circuit" as the Envelope Filter but replaces the detector with an LFO.
  Added LFO Tempo control to the Filter block.

- Improved the Auto-Swell type in Volume block. Added Release time and Hysteresis controls to allow fine-tuning to playing style. Hysteresis controls how much extra the signal must fall below the threshold before the detector releases.
- Changed the Envelope Follower in the Megatap, Multitap, and Plex blocks to use the same algorithm as the improved Auto-Swell algorithm in the Volume block. The purpose of the Envelope Follower is to generate volume swells.
- Added Crossfade Time control to the Crystal Echoes type in Pitch Block.
- Improved pitch shifting.
- New **Sample/Hold Delay** Plex Delay type added.

OTHER UPDATES

- Added a **Send MIDI Clock** option.

- Added a **Receive MIDI Clock** option. This can be configured to receive MIDI beat clock messages or ignore them.
- Added activity sensing to internal pedals, FC pedals and external controllers. This stops Auto-Engage from activating an effect if the pedal/controller is not connected. This prevents, for example, a Wah being engaged if Auto-Engage is on but no pedal is connected (i.e., you left your expression pedal at home).
- Improved tuner. The new algorithm is faster and more accurate.
- Added selectable Tuner color theme.
- Added date and time to the version information returned to FM3-Edit. This obviates the need to manually select "Refresh After New Firmware" if updating from beta releases (requires updated FM3-Edit).
- Now when loading a preset that was created using a previous firmware version the preset number will be shown in inverted text on the large font home GUI. This indicates that the preset needs to be saved under the current firmware to update it for compatibility with "Gapless Changes – ALL". Presets created and saved with the currently running firmware also load faster in general.

FIXES
- Fixed LFO Phase not working for Vibe modes in the Phaser block.
- Corrected the VU meter display operation for Out2 on the routing grid view, zoom mode.

VERSION 9.0 | AUG 28, 2024

IMPORTANT: Firmware 9.00 features new Dyna-Cab models and requires you to install two separate files:
1) the main firmware, and 2) a separate Dyna-Cab file. To install both files, please use the version of Fractal-Bot that is built into the latest release of FM3-Edit. https://www.fractalaudio.com/fm3-edit

NOTE: FM3 Firmware 9.x and subsequent versions are a different size compared to 8.x and earlier versions.
Should you ever need to downgrade from 9.x or newer to 8.x or older, a special process is required. See this article:
https://support.fractalaudio.com/en-US/downgrade-fm3-firmware-from-90-newer-to-version-8-or-older-604543

NEW FEATURES & UPDATES

AMP MODELING UPDATES
- Improved preamp algorithms, especially for amps with multiple gain stages. Tones are "gutsier" and have a more dynamic response with more "pop". Also improves accuracy when input of Amp block is driven by a Drive pedal (whether real or virtual).
- New power amp algorithm. The new algorithm more accurately models bias excursion and duty cycle modulation. This results in a more complex tone with better, punchier feel.
- Improved cathode follower algorithm improves accuracy near onset of clipping. This results in warmer tones at edge-of-breakup and better cleanup when rolling off the volume knob (for amps that use a cathode follower). Due to the new algorithm the "Grid Clipping" parameter has been removed.
- Improved phase inverter modeling in Amp block. This yields more "weight" and a more open tone when driving the virtual power amp hard (i.e. non-MV amps or MV turned up high).
- Updated phase inverter parameters for many models.
- Updated Plexi 100W and 1959SLP models. A soft reset of the Amp is required to load new values.

- Remastered Vibrato Lux model.

NOTE: The new amp algorithms are more accurate than prior firmware releases. This creates various "artifacts" that real tube amps produce. These include low-frequency intermodulation distortion, "clutter", spitting and other non-ideal behaviors. These behaviors, however, are precisely what gives tube amps warmth, dynamics and character. They go hand-in-hand. Without these, amp modeling sounds sterile and uninteresting.

CAB BLOCK UPDATES
- Added two new Dyna-Cab types, **2x12 5153 Stealth** and **4x12 5153 Stealth.**
- Added "**1x12 Friedman**" speaker impedance curve to the Amp block.

EFFECT UPDATES

- **Drive Block Updates:**
    - Improved Drive block. Remastered most models as a result.
    - Drive block improvement; replaced fixed clip level value with data from the model itself.
    - Updated Timothy models to V4 spec.
    - Updated the Fat Rat model.
    - Fixed a problem that could occur while adjusting Drive level on the Rat model.
- New **Envelope Filter** type in the Filter block. This is based on the classic Mutron™ (aka "touch-wah", "auto-wah") effect. Default values match the original pedal but there are also some modern touches:
    - The start and stop frequencies are freely assignable.
      For "Down Mode" simply set Start higher than Stop.
    - The Sweep Shape knob controls the mapping of the detector to the filter frequency. A value of 0.0 is a linear mapping (like the original). Negative values yield anti-log behavior and positive values yield log behavior, allowing fine-tuning the response.
    - The detector source is selectable between the block input or any of the hardware inputs. This allows placing the filter after an Amp or Drive block but using the instrument input as the source.
    - A meter makes it easy to adjust sensitivity to match your guitar and playing dynamics.
- Added Kill-Dry option to the **Mega-Tap Delay** block. (See firmware 7 release notes for more on Kill Dry)
- Improved optical types in **Tremolo block**. Additionally, the LFO Type, Duty Cycle and Shape are now set to the most appropriate values when selecting the Tremolo Type but may then be changed freely.

FIXES

- Cabinet Dyna-Cab Mic position default values updated to match Axe FX III. Double-click on mic position; controls in FM3-Edit now successfully reset to default.
- Fixed pops/clicks that could occur when changing Preamp Type in Cabinet block.
- Fixed pops/clicks when using Stack/Hold in Plex Delay.
- Fixed pops/clicks when adjusting the Rat Distortion drive level.
- Fixed stand-in switch Tap functions not working in some cases.
- Fixed "4x12 Recto Straight" Dyna-Cab Ribbon mic.
- Fixed Delay effect Kill-Dry setting not taking effect at startup.
- Fixed an issue that could cause the bright switch to silence the Amp when gain was set too low.
- Corrected an issue where the effect block engaging banner message was not cleared.
- Fixed wrong Dyna-Cab type being loaded during preset recall in some cases.
- Fixed several FC related issues with Layout Links and Per Preset switches.
- Fixed wrong capacitor value in Band-Commander model.
- Fixed missing PI grid stopper resistor in Comet 60 and Comet Concourse models.

VERSION 8.0 | APRIL 29, 2024

GAPLESS PRESET/SCENE/CHANNEL SWITCHING

A new parameter **SETUP > Global Settings > Config > Gapless Changes** has three settings: Off, Channel & Scene, and "All" (Preset, Scene, Channel). Note that channel switching speed has been improved in general even with this setting turned off. For preset changes to use the new gapless switching, two conditions must be met:

1. Setup > Global Settings > Config > Spillover must be set to "ALL"
2. Your presets must be saved under firmware 8.x or newer. You can do this manually in any of the usual ways or use the automatic utility in: SETUP > Utilities > Preset > Upgrade All Presets.

IMPORTANT: Saving a preset under 8.x makes it incompatible with previous firmware versions!
Use Fractal-Bot to make a backup first in case you ever revert to an older firmware. Make backups!

NEW CYGNUS X-3 AMP MODELING

Cygnus X-3 is the latest amp modeling technology for Axe-Fx III, FM9, and FM3. It improves the sound, feel, and accuracy of the models, making them closer to their real world counterparts, with more rumble and bite and other nasty things that tube amps do.
- Nearly all amps have been "remastered" using new measurement techniques and analytical methods.
  - Existing presets are NOT altered. A hard or soft reset will load the updated values.
- Improved Preamp, Power Amp, and Output Transformer modeling.
- Updated various default values for most amp models for Power Tube Grid Bias (or Cathode Resistance, as applicable), Supply Sag, and Cathode Follower.
  - Fixed wrong Miller capacitance value in Deluxe Verb Vibrato, Double Verb Vibrato, Super Verb Vibrato and all Vibrato Verb models.
  - Fixed wrong FX loop recovery gain in Suhr Badger models.

NOTE: This is an update to the core amp algorithms and may change the sound of your presets. Use Fractal-Bot to make a backup first in case you ever revert to an older firmware.

Additional Amp Block Updates

- Updated all JS410 Lead models based on a current production JVM410HJS. The Crunch models were tested and did not require updating.
- Added "NFB Compensation" switch. This defaults to "On". Turning it off disables the negative feedback volume compensation at the output of the Amp block.
- Added Global MV control to JS410 amp models. Master Volume has been renamed Channel MV. These two master volume controls can be used to balance the tone into the power amp (as in the real amp). The Channel MV decreases the high frequencies as it is turned down whereas the Global MV is transparent.
- Improved triode algorithm.

NEW AMP MODELS:

- Class-A 30W Brilliant
- JS410 Lead Green
- Brit Silver
- Fryette D60 models
- Citrus RV50
- CA3+ Rhythm/Lead models
- Friedman BE/HBE models
- Recto1 and Recto2 models
- Brit 800 2203
- Brit 800 2204 Low

- 5153 100W Stealth
- USA JP IIC+
- USA MKV Green
- USA MK V Red

NEW DRIVE PEDAL MODELS
- "Nobelium OVD-1" Drive model based on a Nobels™ ODR-1. The BC (Bass Cut) switch is modeled via the Bass Response control. Set the Bass Response to 1.0 to duplicate the response of the pedal with the Bass Cut switch engaged. Set Bass Response to 5.0 to duplicate response with BC switch disengaged.
- Sunrise Splendor model based on a JHS™ Morning Glory. Existing model renamed "Sunrise Splendor Hi-Cut" to denote that the Hi-Cut switch is engaged.
- Gauss Drive model based on a Mesa™ Flux Drive.

IMPROVED TREMOLO BLOCK
• The optical tremolo algorithm has been completely rewritten.
• There are now three types of optical tremolo: Optical Trem 1: This type is based on optical pedal tremolos where depth controls the intensity of the LED. Optical Trem 2: This type is based on optical pedal tremolos where depth controls a "mixer" pot. This type has more "throb" than Optical Trem 1. Neon Trem: This type is based on the optical tremolo in classic "Blackface" amps which used a neon bulb to illuminate the LDR.
• The Tremolo type has been renamed "VCA Trem" and is based on a voltage-controlled amplifier topology.
• An LFO waveform monitor has been added for appropriate types.

OTHER NEW FEATURES AND IMPROVEMENTS
• Improved Stack/Hold in the Delay block:
• Improved transition between Stack/Hold states.
• In "Hold" mode, repeats are now infinite (or nearly, may degrade over many minutes/hours).
Note that if the Compander is enabled and/or Bit Reduction is in use the echoes will degrade. If you want infinite repeats, set "Compander" OFF and "Bit Reduction" to zero.
Note that the Mono Tape algorithm is inherently lossy (like a real tape) and echoes can still degrade over time.
• Added "Stack Feedback" and "Hold Feedback" parameters. This allows adjusting the decay time independently for the stack and hold modes.
• Updated Controller LFOs. The "Astable Beta" parameter for the LFOs has been renamed "Shape" and now controls the shape of the LFO for all types except Square and Random.
• Improved Tape Chorus algorithm. The Number Voices parameter has also been removed from the GUI as it is not applicable to this type.
• Improved Tape Delay algorithm. The LFO1 Target and LFO2 Target parameters have also been removed from the Modulation tab as they are not applicable.
• Changed Tuner mute logic so that only selected source is muted when Mute is set to INPUT.
• Improved Intelligent and Noise Reducer gate types in Input block. This eliminates the slight squeaking sound as the gate releases when using aggressive settings.
• New Startup Preset global parameter sets the preset when the FM3 is powered on.
• Added "2x12 USA C90 Open Back" speaker impedance curve.
• Added Modifier capability to High Cut parameter in Delay block.
• Added "Kill Dry" control to Delay, Multitap Delay, Pitch, Plex and Reverb blocks. When set to ON the dry signal is muted. This simplifies routing these blocks in parallel. When using these blocks in parallel the user can turn Kill Dry on and set the wet level using the Mix control, leaving the Level control at 0dB. This also has the advantage that the wet level is controlled by the global Reverb/Effects Mix, if desired.
• Improved optical types in Tremolo block. Additionally, the LFO Type, Duty Cycle and Shape are now set to the most appropriate values when selecting the Tremolo Type but may be overridden by the user.
FIXES
• Fixed random freezing during the Upgrade Presets process.

- Fixed occasional squeal during preset changes when metronome volume is maximum.
- Fixed dropped audio could occur in Euro Uber model at certain combinations of Presence and Speaker Impedance.
- Fixed right channel volume reduced in Cabinet block when Preamp is active.
- Fixed attack behavior of Dynamicomp model to strong input signals. Default attack time also adjusted to match reference pedal.
- Fixed Scene MIDI GUI not updating correctly when changing scenes via front panel.
- Fixed Output 1 Configuration being overwritten by Output 2configuration.
- Fixed excessive delay from Pitch block at first use if the Shift and Detune amounts are both 0.0.
- Fixed crash in Synth effect under certain circumstances.
- Fixed Upgrade Presets not upgrading certain presets.
- Fixed incorrect setting in Dimension 1 Chorus type.
- Fixed preamp Vcc loss of precision.
- Fixed delay lines not being cleared correctly in certain circumstances in Multitap Delay block.
- Fixed Sum L+R Output Mode.
- Fixed dimmed display when in Zoom mode and saving a copy of a preset from FM3-Edit.
- Fixed incorrect Position and Distance default values for DynaCabs.
- Fixed muted output in Cab-Lab SW Live Mode.
- Fixed increased metronome volume.

VERSION 7.00, AUG 17, 2023

IMPORTANT: Firmware 7.00 is the first version to feature new DynaCab speaker cab simulation technology.
This update requires you to install two separate files: 1) the main firmware, and 2) a separate Dyna-Cab file.
To install both files automatically, please use Fractal-Bot (standalone) version 3.00.18 or newer, OR the version of Fractal-Bot that is built into the latest release of FM3-Edit, version 1.06.01, or newer.
https://www.fractalaudio.com/fm3-edit/
NEW AND IMPROVED FEATURES
Version 7 Introduces Dyna-Cab™ cabinet modeling.
- The Cabinet block now has two modes of operation: Legacy and Dyna-Cab. Legacy is the previous style of operation.
- Dyna-Cab cabinet modeling allows freely positioning the microphone. We took an approach of quality-over-quantity:
o Dyna-Cab IRs are 1024 samples.
o Mic positions are sampled at a fine spatial resolution.
o Four mic choices are available: Condenser, Ribbon and two Dynamic types.
o All IRs are time-aligned with each other. They have been processed using a new algorithm that ensures alignment without destroying phase information. You can mix-and-match IRs from different cabs/mics and they'll always be perfectly aligned.
- The Amp block now features "Auto Dyna-Cab Impedance". When set to ON the speaker impedance curve of the Amp block will follow the Cabinet Type in the first mixer slot of the associated Cabinet block. I.e., if the Cab Type in the first mixer slot of Cabinet is, say, 4x12 5153 and the Mode is Dyna-Cab then Amp's speaker impedance will automatically be set to 4x12 5153.
- Added Speaker Impedance Curves for "2x12 Class-A 30W Silver", "2x10 Heart Key" and "4x12 1960BV".
- Added "Treble Shift" control to Tone page of USA IIC+ models. This is an alias of the "Fat" control found on the Preamp page and performs the same function.
- Added "4 Band JMPRE-1" type to Graphic EQ block. Note that the upper two bands of this type have more boost/cut range than the version in the Amp block.
- Added "Revv Gen" amp models based on a Revv Generator 120. There are three models for each of the Purple, Red and Green channels corresponding to the three levels of the "Aggression" switch.
- Improved Amp block channel switching speed.
FIXES
- Fixed audio drop from the Compressor block when Ratio is set to 1.0.
- Fixed System Settings being reset after reboot under certain conditions.

- Fixed a filter issue affecting the Wah block.
- Fixed system lockup under certain conditions.
- Fixed Klon model making low level white noise when bias is exactly zero.
- Fixed side-chain filters not working in Gate block.
- FC: Edit Setlist page on the front panel will now refresh properly when inserting/deleting songs.

VERSION 6.02, APR 3, 2023

NEW AND IMPROVED FEATURES

New LARGE FONTS display mode for the main Presets/Scenes page of the Home menu makes the FM3 easier to read from a standing position. Turn Knob B ("Zoom") to switch between small and large modes.

In Large mode:

o   Turn the VALUE knob and then press ENTER to change the preset.

(Presets are shown in "preview" as dim text until you press ENTER.)

While previewing presets, NAV left/right = -1/+1 preset; down/up = -10/+10.

o   Once any preset is loaded, use NAV keys to change scenes.

Added "OD-One Overdrive" Drive model based on a Boss OD-1.

Added new Optical Sustainer, Analog Sustainer, and JFET Sustainer types to the Compressor block.

Improved Noise Gate in Input block:

Improved performance based on new algorithm developed for Gate block.

A Mode selection has been added allowing the user to select between "Easy" and "Advanced". In Easy mode the number of parameters is reduced simplifying the adjustment procedure for those who are unfamiliar with the finer details of gates/expanders for guitar noise reduction applications.

Improved Gate block:

Improved Downward Expander type. The "Hold Time" was removed as it is no longer needed. This type is now named "Classic Expander" as it based on classic analog downward expanders.

Added "Modern Expander" type. This uses a novel approach to the envelope detector resulting in improved ballistics compared to traditional analog expanders. A new "Knee Type" parameter allows selecting between hard-knee expansion and varying degrees of soft-knee expansion.

Improved Tuner:

Changed strobe tuner so that indicator rotation frequency is constant vs. error as a fraction of desired frequency, and improved the tuner's internal tracking filter.

Added zoom feature to Cab IR graph.

Adjusted the bypass design for blocks whose mix is "hard-coded" at 100%, (e.g. wah, EQ, etc.) The new feature smooths the transition when the effect is turned on or off.

Added "Oxbow Loadbox" and "Double Notes Loadbox" speaker impedance curves.

Added "Spread" control to Dual Delay and Tape types in Delay block as a modifiable master pan.

Added assignable third LFO to Delay block. This can be assigned to Level, Pan or Spread.

Improved Speaker Thump algorithm in Amp block.

FIXES

- FC: When editing switches from the front panel, the 'Mini-Display Label' setting of 'Custom' now allows access to the 'Custom Label' setting for all switch categories.
- FC: Removed some erroneous parameter options from some switch configurations when viewed from the front panel, such as for Effect->Chan Inc/Dec.
- Incorrect Bypass setting on Delay block when changing presets.

VERSION 6.01, JAN 27, 2023

NEW AND IMPROVED FEATURES

- Added 59 Bassguy RI Jumped Amp model.
- Added Paragon type to the Wah block based on a Tycobrahe Parapedal.
- Added Bosom Boost type to Drive block.
- Updated Compressor block so that times display actual value for the various pedal types.
- Improved the speed of preset changes depending on the Global Spillover setting. The speed improvement will be highest when Global Spillover is set to "Off".

FIXES

- Fixed corrupt audio as a result of attaching a modifier to a Drive block parameter when the type is Klone Chiron.
- Fixed tone generated from USA Rhythm 1 Amp type without input.
- Fixed Delay block delay lines being cleared when Spillover is set to "All".
- Fixed pops when changing channels on the Drive block.

VERSION 6.00, DEC 8, 2022

NEW AND IMPROVED FEATURES

- Optimizations to reduce CPU. This will vary depending on blocks used and settings.
- Added Klone Chiron model to the Drive block.
- Added Griddle Cake model based on Crowther Hot Cake to the Drive block. The "XLF" switch on the pedal can be replicated by turning the Bass Response knob fully CW.
- Added the following new Amp models:
o PVH 6160 Block Crunch
o Diamante Fire based on a Diamond Del Fuego
o Brit Studio 20 Amp model based on a Marshall SV20H
o Plexi 50W 6CA7 Jumped
- New "Cygnus X-2" amp modeling:
o Improved Amp block output transformer algorithm. New algorithm more accurately models B-H curve resulting in a clearer low end. New algorithm now also accounts for effect of speaker impedance on transformer response.
o Improved power tube modeling. This yields better dynamics, improved low frequency accuracy and more accurate interaction with output transformer.
o Improved cathode follower algorithm. Provides more accurate "cleanup" when volume is rolled off.
o Improved triode algorithm more accurately models plate bypass capacitors.
o Many amp models have been updated as a result of the aforementioned improvements.
o Various other improvements.
- Improved modeling accuracy for following Amp models:
o Plexi 50W Jumped
o Plexi 100W Jumped
o Brit JM45 Jumped
o 1987X Jumped
o 1959SLP Jumped
o Plexi 100W 1970
o Deluxe Tweed Jumped
o Two Stone J35 and J35 PAB
o Fox ODS and ODS Deep
o Nuclear Tone
o All Solo 88, 99 and 100 models
o All Bogfish models
o All Spawn Q-Rod models
o All Spawn Nitrous models
o All Vibrato Verb models
o All Deluxe Verb models
o All Double Verb models
o All Brit 800 models
o All Brit JVM models
o All Friedman BE/HBE V2 and V3
o Friedman Small Box
o Cornfed M50
- Drive block improvements. Drive block now incorporates the "Chase Transform Technique" for converting analog networks to equivalent digital filters. This improves accuracy in the high frequency region.

• New "Block Mixer" algorithm results in faster/quieter scene and channel changes.

• New Speaker Drive algorithm in Amp block. This new algorithm more accurately models the frequency dependent distortion of guitar loudspeakers. The default value (upon resetting the block) is 2.0 which gives roughly 1 dB of compression. Setting the value to 0.0 defeats the speaker drive modeling. Higher values give a smoother and more focused sound, rounding off the "sharp edges" and yielding greater compression.

• Added Speaker Thump to Amp block. This models the dynamic, nonlinear behavior of a guitar speaker. A value of 5.0 roughly corresponds to an amp running into a speaker rated at the same power as the amplifier, i.e., a 100W amplifier running into a 100W speaker. The reset value is a conservative 2.5 which represents, i.e., a 50W amp running into a 100W speaker. Note that the majority of the response is in the subsonic region and the effect is primarily tactile. Existing presets are not affected and the value will be zero.

• Improved Amp block output transformer modeling. This requires updated Transformer LF/HF values for the amp models. Existing presets are automatically updated to the new values upon recall.

• Changed "Drive" to "Gain" for Amp block preamp gain as this is more consistent with naming in real amps.

• Added "Overdrive Volume" parameter to Dumble-type amp models (ODS-100, Two Stone, etc.). This is sometimes labeled "Ratio" or "Lead Master". As the Master Volume on these amps often has a bright capacitor the Overdrive Volume control allows setting the Master Volume higher to counteract the bright cap and then lowering the power amp drive with the Volume.

• Added "Plate Suppressor Diodes" parameter. This value is set automatically when the amp model is chosen but the user can override the default setting. Most amps do not have suppressor diodes but some do (e.g., Trainwreck Express). These diodes (also called "snubber" or "flyback" diodes) prevent undershoot on the power tube plates due to inductive kick and reduce upper harmonics thereby reducing "fizz".

• Improved speaker impedance curve fitting algorithm. This results in more accurate and more "colorful" modeling as the previous algorithm tended to damp box resonances somewhat. All the speaker impedance curves have been updated using the new routine.

• Added speaker impedance curves:
o 4x12 Lerxst Omega
o 1x12 Deluxe Oxford
o 4x12 Hipower Pete T
o 4x12 Hipower Lindsey B
o 4x12 USA Semi-Open
o 2x12 Dizzy RV
o 4x12 London Town Tall
o G12T-75
o 2x12 Class-A Greenback
o 2x12 Two Stone 1265

• Added cross feedback parameters to Quad Parallel type in Multitap Delay block.

• Increased the range of the Level parameters in Multitap Delay to -100% to +100%.

• SPDIF output level will no longer be dependent on the volume knob.

FC FEATURES

• Added new Setlists/Songs feature, which can be used with the onboard switches and/or an FC Controller to access presets and scenes in custom order during live performance. A new Setup menu area provides full access from the front panel, with a corresponding new area of FM3-Edit which offering import/export and more. For additional details, please see the Setlists & Songs Mini-Manual, located at: https://www.fractalaudio.com/sss-manual

FIXES

• Fixed wrong coupling capacitor value in 1959SLP Treble, 1959SLP Jumped and 1987x Treble amp models.
• Fixed wrong resistor value in tone stack of Solo 88 Rhythm and Lead models. Probably not audible though.
• Fixed low frequency behavior of Recto2 models due to loss of precision.
• Fixed wrong treble pot taper in CA3+ models.
• Fixed wrong capacitor value in Friedman HBE V1 Fat model.
• Fixed wrong resistor value in AC-20 12AX7 models.

- Fixed wrong Depth knob taper in Archean models.
- Fixed scale not being set when first attaching a modifier to a LOG parameter.
- Fixed Bypass grayed out on Reverb EQ page.
- FC: Layout Link will no longer unduly trigger when exiting the Tuner.
- FC: Preset: Select in Bank switches now stop flashing when the preset is changed by any means other than an FC footswitch (editor, front panel, etc.)
- FC: Preset: Select in Bank switches now flash consistently when used with Bank: Select switches.
- FC: Preset: Toggle in Bank now consistently and correctly loads "Primary" preset after changing the bank.
- FC: Effect: Channel functions will now work correctly when Effect is set to Controllers.

VERSION 5.03, MAY 23, 2022

NEW AND IMPROVED FEATURES

- Added "Scene Ignore" to most blocks. When set to ON, Scene Ignore instructs the block to ignore scene changes. Scene Ignore is a per-channel parameter. This allows turning Scene Ignore to OFF on one or more channels which will then allow a scene change to set the block to a desired state if the block is on that channel.
- Added frequency and cents text to Tuner display.
- Improved Amp block transformer/speaker interaction modeling. The "Voice Coil Resistance" parameter has been repurposed/renamed "Speaker Impedance". The various parameters work as follows:
o   Transformer Matching: Sets the impedance ratio (square of the turns ratio) of the output transformer.
o   Speaker Impedance: Sets the relative nominal impedance of the speaker. To simulate connecting, e.g., a 4-ohm speaker to an 8-ohm output you would set Speaker Impedance to 0.5. Conversely to simulate connecting a 16-ohm speaker you would set it to 2.0.
- Update PI Bias Excursion parameters for many Amp models based on new measurement technique.
- Reduce Speaker LF resonance modification to a max of ~6dB.

FIXES

- Fixed all 59 Bassguy Amp models audio drop when Normal Drive is set to zero and Bright Drive is adjusted rapidly.
- Fixed crash in Plex Delay block when Master Time is zero.
- Fixed crash in Parametric EQ block graph when modifier update rate set to Medium or Fast.
- Per-Preset FC Settings pages will now scroll properly.
- Fixed bypass states not being recalled correctly if the previous preset has Scene Ignore set.
- Fixed incorrect audio levels across presets and scenes.
- Fixed Amp and Delay block mix parameters not saving properly.
- The STARTUP VIEW of the FM3 will now behave appropriately in all circumstances when an external FC-6 or FC-12 is present.
- Tuner mute function mode OUTPUT will now correctly silence tails.

VERSION 5.02, APR 4, 2022

NEW AND IMPROVED FEATURES
- Added "Scene Ignore" to most blocks. When set to ON, Scene Ignore instructs the block to ignore scene changes. Scene Ignore is a per-channel parameter. This allows turning Scene Ignore to OFF on one or more channels which will then allow a scene change to set the block to a desired state if the block is on that channel.
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- Tuner mute function mode OUTPUT will now correctly silence tails.

VERSION 5.02, APR 4, 2022

NEW AND IMPROVED FEATURES

- The Amp block now uses the latest CNFB amp modeling developed for Axe-Fx III providing improved accuracy, especially in the clipping and power supply sag behavior vs. frequency.
- Added new "Dual Detune Delay" type to Pitch block.
- Improvements to pitch detection algorithm to improve performance of Pitch, Synth, Ringmod, and Tuner.
- Improved latency from analog inputs to analog outputs.
- Added 59 Bassguy Normal, 5F8 Tweed Normal and 5F8 Tweed Jumped amp models.
- Added JMPRE-1 Output EQ type to Amp block. This type replicates the active EQ used in the JMP-1 preamp (see below).
- Added JMPre-1 Clean1/2 models. Note: The real amp has a fixed, passive tone stack with an active 4-band EQ. Therefore, the Bass/Mid/Treble controls when using Authentic Tone Controls are mapped to the Graphic EQ. The passive tone stack itself, however, is adjustable. With all controls at noon the tone stack is equivalent to the real amp's fixed tone stack. You can access these controls using the Ideal Tone Controls or via FM3-Edit.
- Updated JMPre-1 OD1/2 models. As with the Clean1/2 models the Bass/Mid/Treble controls now are mapped to the Graphic EQ when using Authentic Tone Controls.
- Updated default cathode follower values for Matchbox D-30 model.
- Rearranged order of pages in Amp block so that Input EQ and Output EQ are after Tone page.
- Renamed Speaker Impedance to Voice Coil Resistance.

FIXES

- Fixed negative gain for LOWSHELF2 and HIGHSHELF2 types in the filter block.
- Fixed Amp block headroom meter ballistics.
- Fixed Amp block Transformer Match control not working properly.
- Fixed Amp block low frequency digital distortion with some types.
- Fixed Synth block tracking not working properly across all frequencies.
- Fixed choppy behavior in Tuner.
- Allow changing a block out if it will lower the CPU usage, even if the new total usage exceeds the limit.
- Fixed Flanger block causing loud transient noise at startup in rare circumstances.
- Fixed Bludojai Lead model missing resistor between last preamp stage and power amp.
- Fixed some Amp models can NaN due to index out-of-bounds.
- Fixed the prolonged black screen during bootup in certain circumstances.

FOOT CONTROLLER

- Added 2nd Press to Preset: Select in Bank.

•   Combined "Smart Bypass" and "2nd Press = Previous Channel" into a single "2nd Press" parameter. The two choices are "Smart Bypass" which is a pre-existing feature, and "Previous Channel" which toggles to the previously selected channel instead.

•   Updated the switch ring LED to be dim instead of off for Function Effect: Select Channel when Smart Bypass is ON and the effect is in the preset but the effect is bypassed.

•   Added "Current" option to the display functions for Bank: Inc/Dec function.

•   Fixed stand-in switches not executing the tap function correctly when a hold function is assigned.

•   Fixed an issue when changing function to "Bypass" when the currently selected effect does not have a Bypass function (e.g., Mixer, Multiplex).

•   Fixed an issue when changing FC effect type from "MultiPlex" to an effect containing fewer channels.

•   Stand-in switches will now work correctly when assigned to a footswitch configured as a Per-Preset: Placeholder.

•   Per-preset pages will now draw correctly when testing footswitches.

VERSION 5.01, FEB 14, 2022

FIXES

•   Fixed lower audio output volume from the Amp block when Cathode Follower compression is greater than zero.
VERSION 5.00, FEB 10, 2022

NEW AND IMPROVED FEATURES

•   Improvement: The front panel now has various double-tap functions:

o   Double-tapping EDIT edits the previous block.

o   Double-tapping HOME enters the layout grid.

o   Double-tapping STORE prompts immediately.

o   In the Home or Layout menus, double-tapping the A-E push-knobs does the following:
         A enters the Amp 1 menu;
         B enters the Drive 1 menu (think "Boost")
         C enters the Cab 1 menu.
         D enters the Delay 1 menu.
         E enters the Reverb 1 menu (think "rEverb")

•   Improved Input block gate performance.

•   Integrated the newest "Cygnus X2" amp modeling from Axe-Fx III using the Chase Nonlinear Feedback (CNFB) technique for the solution of nonlinear ODEs. This provides improved accuracy, especially in the clipping and power supply sag behavior vs. frequency.

•   Improved CPU performance of the Reverb block.

•   New Amp model: "FAS Buttery"

•   New Drive Block Types: "Valve Screamer VS9" and "Maxoff 808" including a new diode SPICE model "1S1588T" This is the Toshiba version of the 1S1588 and is reportedly the diode used in the "best" TS-808s.

•   New "Types" within the Flanger, Plex Delay, and Multitap Delay blocks provide instant access to exciting effect settings without the need to adjust or understand advanced parameters. Special thanks to Leon Todd, Simeon Harris and Cooper Carter for some of the new effect type contributions.

•   New LFO in the filter section of the Plex Delay block allows creative modulation effects. See the Blocks Guide for details.

•   Push-knob functions in the Block Edit have been simplified to a single page.

•   New "Modern Gate" type in the Gate/Expander Block. This type is similar to the Classic Gate except the gate opens in a constant linear-in-dB manner. This naturally makes the attack slower as the gate first opens and can be used for both traditional gating and for special effects like audio swells.

•   New "S-Taper" option in the Volume Block allows new and improved "Auto-Swell" sounds.

•   New "Max Loop Time" parameter in the Looper block. This allows loop length to be set precisely in advance of recording.

•   New Diffuser Modulation in the Multitap Delay.

•   New 'MUTE' option for OUTPUT 1 MODE. This causes only processed audio to be muted. USB audio will still be routed to and heard, enabling certain applications when using a DAW with input monitoring.

•   Changed Looper behavior so that if recording and time reaches the maximum recording time the mode changes to that specified by Record 2nd Press (for the first pass of a new recording.)

•   Overhauled the Compressor Block in line with the latest Axe-Fx updates:

o   Improved Auto-Makeup gain behavior.

o   Added Input Level switch. When set to INSTRUMENT the detector is optimized for guitar-level signals, i.e., before an amp block. When set to LINE the detector is optimized for post-amp level signals.

o   The Pedal, Optical, Tube, Analog, JFET and Dynamicomp types have been completely redone resulting in improved performance. These types now inherently perform automatic makeup gain.

o   Auto Attack/Release has been removed from the Pedal and Dynamicomp types as it is no longer applicable.

o   Added Emphasis frequency to the sidechain.

o   NOTE: Due to all these changes the behavior and output volume of the Compressor block may be different. It is recommended to audition any presets using the Compressor block and adjust as required.

•   Added global Speaker Impedance Curve parameter to global Config menu. When set to DEFAULT, the speaker impedance curve used when selecting an amp model is the default curve for that amp model, otherwise it uses the selected curve. NOTE: this does not affect existing presets. The curve only changes when selecting a new amp model. Also added several new Impedance Curves; thank you to Dr. Bonkers Soundlab for these.

•   Added Damping control to Modifiers. The default, EXPONENTIAL, is the classic damping style where the modifier value has an exponential attack/decay. LINEAR selects a linear attack/decay.

•   Added Type control to ADSRs. The default, EXPONENTIAL, is an analog style where the ADSR has an exponential attack/decay. LINEAR selects a linear attack/decay.

•   Added High Mid control to the Drive block.

•   Added "RCB Boost" to Amp block Boost types.

•   Added Master Bias Excursion parameter to the amp block. See the Blocks Guide for details.

•   Improved accuracy of Master Volume in Amp block for low settings.

•   Improved Amp block cathode follower algorithm. Algorithm now uses higher order solution of nonlinear ODE for more accurate low frequency response.

•   New option "ALL" for "Spillover" in SETUP: Global Settings: Config. In addition to Delay and Reverb, this includes Plex Delay, Multitap-Delay, and Ten-Tap Delay blocks, allowing spillover when switching presets. See your Owner's Manual for more on spillover.

•   Added "USB 3/4" to the input options of the Multiplexer block.

•   Added red indicator line to the "mini tuner."

•   Improved "Tape" preamp types in Cabinet block.

•   Improved accuracy of Drive block Drive control at low settings.

•   Improved Stack/Hold in Delay block so that "texture" is applied to audio when Stack/Hold is on.

•   New options in the I/O: AUDIO menu features allow greater routing flexibility of USB audio.

o   New "USB 1/2 Playback Destination" parameter allows computer audio from USB 1/2 to be sent to either Output 1 L+R (the default and previous behavior) or Output 2 L+R. This allows for the easy separation of processed guitar to Out 1 and default computer system audio to Output 2.

o   If you use only Output 2, you can now hear both processed guitar and USB audio by using the settings Output 2 Copy: OUTPUT 1 and USB 1/2 Playback Destination: OUTPUT 2.

o   New "OUTPUT 1" option for "USB 3/4 Playback Destination" allows routing USB 3/4 to Out 1.

o   (This gives FM3 the same "USB Output mapping" capabilities as Axe-Fx III and FM9.)

FOOT CONTROLLER CHANGES

•   Added "Bank Switch Limits" ENABLE/DISABLE to the FC Config menu. These allows the FM3 to ignore the limits set in bank switches, thereby allowing access to ALL BANKS by default.

•   Added "Scene Level + Save" to the "Utilities" functions.

•   Added a "Mini-LCD Invert Mode" option under the APPEARANCE section of the FC Controllers' Config page.

•   Added a "STARTUP VIEW" for the FM3 and external FCs to the FC Controllers' Device page.

•   Added an option for "2nd Press = Previous Bank" to Bank: Select function.

•   Added an option for "2nd Press = Previous Preset" to Preset: Select function.

•   Added an option for "2nd Press = Previous Channel" to Effect: Select Channel function.

- Added a "Current Channel" Mini-Display Label option to Effect: Chan Inc/Dec.
- Added a 1.5 second delay to functions that trigger a save of the preset to allow multiple actions before a single save.
- Fixed the mini-LCD display when "2nd Press = Previous Scene" is "ON."
- Fixed Bank limit calculations in some circumstances.
- Updated the switch ring LED to be dim instead of off for Function Effect: Select Channel when Smart Bypass is ON and the effect is in the preset but the effect is bypass.

FIXES
- Fixed the fan 'chirping' demonstrated on some units.
- Other small fixes based on those made on the Axe-Fx III.
- Fixed a crash when editing Bank and Effect Inc/Dec functions in certain circumstances.
- Fixed a potential crash in the Multitap block time is set very low.
- Fixed modifiers not working properly for some parameters (e.g., Plex Delay Rate parameter).
- Fixed KVB not being updated correctly.
- Fixed certain graphs disappearing after a banner display.
- Fixed Amp Band-Commander squeal at default settings.
- Fixed Compressor block auto-gain not working properly.
- Fixed Compressor block distorted audio on certain settings.
- Fixed Amp FAS Buttery crash.
- Fixed GUI not being redrawn when switching between a knob menu and a list menu.
- Fixed Blackglass 7K model as reference pedal was defective. Added "Grunt" and "Attack" knobs to GUI (Grunt switch on pedal is a selectable low cut so knob duplicates Low Cut control).
- Fixed Drive block can crash under rare circumstances when switching between certain models (from Blackglass 7K to diode-based model).

VERSION 4.01, AUG 9, 2021
Added Poweramp On/Off parameter to the Amp block. This removes Power Amp control from the "Supply Sag" parameter and makes it a separate independent control.
Added "Indicate Edited on Scene Change" to in Setup: General Settings: Config page.
This determines whether or not Scene changes cause the "EDITED" LED to light.
Added Compander parameters to Delay block.
Added Compander type to Compressor block. The Transients control adjusts the transient modification. Values less than zero soften the attack, value greater than zero emphasize the attack.
Added "Presets" Utilities page to upgrade Presets stored in flash to the currently installed firmware version. When executed, all presets stored in flash with an older version of the firmware will be upgraded to the currently installed firmware version and automatically re-saved to flash. This process can take up to 20 minutes but will speed up preset changes.
Improved Rotary block "Drive".
Updated Multiband Compressor block with changes made on AxeFx-III.
The Global Performance Controls from Amp 1 have a new layout with Drive, Master, and Level in one row. To see this change, you would need to perform Reset System Parameters
(NOTE: This action resets all system parameters and will also initialize Footswitch Layouts.)
Greatly reduced CPU requirements of the White and Pink noise oscillators in the Synth block.
Improved behavior of Synth block Shift control when attached to a modifier.
Increased gain range of Filter block and input EQ in Amp block to +/-20 dB.
Fixed FAS Brootalz model inadvertently referencing the Angle Severe presence network.
Fixed pop when switching channels on Input block when using different gate types.
Fixed Master Time not working in Plex block for Plex Detune and Plex Shift types.
Fixed NaN in Stereo Tri-Chorus if Delay Time and Rate are set to minimum.
FC Fixed: Built-in OMG15 corrections.
FC Fixed: The FC layout displayed above Home: Knob E will now update correctly.
FC Fixed: Mini-LCD displays will now display the correct information for Preset, Select in Bank functions when Display Offset is set to "1".

FC: Changed how Bank Switch Limits work. In the previous firmware version, a setting was added to enable whether or not bank limits are enforced or ignored. This required making a change to every switch in every layout when you wanted to turn limits on or off. This feature has been REMOVED and REPLACED with a new Global option found in Setup: FC…: Config. "Bank Switch Limits" can now be globally enabled or disabled via this new parameter.

VERSION 4.00, JUN 17 2021
CYGNUS AMP MODELING
Firmware 4.0 brings Cygnus Amp Modeling from the Axe-Fx III to the FM3. Cygnus uses new SpectrumTrack™ Technology to improve the response of amp models from clean to high gain, ensuring that the frequency response of the model matches the real amp at all levels of input excitation. It delivers truer and more dynamic voicing—especially for models with cascaded gain stages—plus exceptionally satisfying "chugs."

A new set of FM3 factory preset banks is now available on our web site. These are completely dialed in to showcase the latest and greatest features of the FM3 and Cygnus Amp Modeling. With these new banks installed, you won't need to worry about reset existing factory presets — simply install and enjoy. Please see the ReadMe file included with those presets for installation instructions.

To update your own presets for use with Cygnus, it is recommended that you reset the amp block for best results. The information contained in the following forum post may be helpful:
https://forum.fractalaudio.com/threads/everything-youve-always-wanted-to-know-about-reset-an-amp-iii-fm3.173317/

ADDITIONAL FEATURES AND FIXES IN FIRMWARE 4.0
Added: UltraRes IR support and corresponding "IR Length" parameter in the Cab block.
Added: New Drive block modeling and types. This block is now in sync with Axe-Fx III.
Added: Output 2 now has both "Unity Gain" and "Line Level" modes, each with their own sub parameters. A short guide follows after these release notes.
Added: "USB Buffer Size" parameter. The USB buffer size determines the number of samples and thereby the latency between the FM3 and USB host. Lower settings result in better latency (recording and playback) but smaller sizes may not work well with all hosts. A good rule of thumb is to set the buffer to the smallest possible size, increasing if you encounter any USB audio performance issues. Find USB Buffer Size in the Digital I/O Configuration section of SETUP: I/O: Audio.
Added: Latest changes to the Reverb block from Axe-Fx III.
Added: Latest changes from the PEQ from the Axe-Fx III.
Added: Low and High Cut Slope parameters in the Cab block "Preamp" now extend to 24 dB.
FC Added: "Bank Access" parameter for Bank Inc/Dec footswitch functions. When set to "ALL" the settings for Bank Lower Limit and Bank Upper Limit are IGNORED. ALL is the new default, so if you wish to enable these limits for bank switches, you must set "Bank Access" to "LIMITED".
FC Added: FM3 + FC-12 ("OMG15") layouts are now built-in and loadable from the Reset page in FC Controllers/Onboard Switches.
Fixed: USB has been reworked to reduce issues experienced by some customers.
Fixed: Holding special troubleshooting keys (Home, Enter, etc.) now works correctly.
Fixed: Output 2 EQ only working when Output 2 block is in the grid.
Fixed: The PRESETS menu page now correctly displays the active preset.
Fixed: Pedal calibration will now work correctly for pedals set as "Tuner on Heel Down."
Fixed: Inserting Pitch block into a high CPU grid will not hang up the GUI.
Fixed: Vintage Tape Chorus Delay Time parameter can now exceed 19.85.
Fixed: Drive Low Cut parameter is now functional.
Fixed: Aligned Pitch block "Type" names with Axe-Fx III.
Fixed: Speaker LF response if LF Resonance and Q are set to low values.
Fixed: IRs in Cabinet picker page now displayed in correct color.
FC Fixed: Disconnected FCs stand-in switches will no longer trigger during start-up.
FC Fixed: Footswitches are now resistant to an issue that was causing freezing.
FC Fixed: Mini-LCDs issues experienced by some customers have been eliminated.

FC Fixed: Default FC Layouts are now loaded correctly by "Reset System Parameters".

FC Fixed: Footswitch preset functions will now honor the global "Default Scene" setting.

*   *   *

GUIDE TO FM3 OUTPUT 2 UNITY GAIN & LINE LEVEL OPERATION

Output 2 of the FM3 is now able to provide your choice of either unity gain or line level output. The following short guide will help you to make the required settings for either use case.

UNITY GAIN

To use FM3 Out 2 in unity gain applications, such as when connecting to a tube amp or certain pedals, confirm the following settings in the "Output 2 Configuration" section under SETUP: I/O: Audio

Output Type: Unity Gain

Boost/Pad: This optional setting may be increased to lower the noise floor. This can be useful, for example, when connecting to a "gainy" tube amp. Be careful however, as higher settings can cause clipping in the FM3. Watch the Status LEDs and reduce preset levels or turn this setting down if needed.

UNITY GAIN (continued)

Output 2 Copy: Typically, "None", but there are also applications for copying "IN 1" to OUT 2, such as when recording an analog DI at unity gain via Out 2 while also recording the processed signal via Out 1. Remember though that placing an OUT2 block on the grid will override any Output 2 Copy setting, passing instead whatever audio is sent to the block. Other settings such as Level, Boost/Pad, etc. are not affected by the presence of the OUT2 grid block.

Set Out 2 Mode and Phase as desired. See the FM3 Owner's Manual for additional details.

For Unity Gain applications, set the Out 2 top panel knob fully clockwise to the highest setting.

LINE LEVEL

To use FM3 Out 2 for Line Level applications — such as when connecting to FRFR guitar speakers, studio monitors, mixers, etc., confirm the following settings in the "Output 2 Configuration" section under SETUP: I/O: Audio

Output Type: Line Level

Output Level: -10dBV or +4dBu (most pro devices operate at +4)

Output 2 Copy: As desired: "None", or "Out 1" if you want Out 2 to reproduce the signal at Out 1 without needing an OUT2 grid block. You could use this, for example, when connecting to personal monitors via Out 2 while Out 1 is connected to a house PA. Remember though that placing an OUT 2 block on the grid will override the COPY OUT 2 setting, passing instead whatever audio is sent to the grid block. Other settings such as Output 2 Level (+4/-10) are not affected by the presence of the Out 2 block.

Set Out 2 Mode and Phase as desired. See the FM3 Owner's Manual for additional details.

For Line Level applications, set the Out 2 top panel knob as desired, starting fully counterclockwise and then increasing gradually until the desired output level is achieved.

VERSION 3.02, MAR 10, 2021

Added Per-Preset and Global Performance Pages. These provide a new means of intuitive hands-on control of FM3 sound parameters with no menu delving required.

(A PDF overview is included with the zip file containing this firmware release.)

Added "Downtune" and "Display Mode" parameters to the Tuner, and added the option "All" to Tuner Input Source so it can track both input 1 and/or input 2.

Added Setup: Global: Config "Output 1 EQ Type" and "Output 2 EQ Type" options for graphic or parametric, including the option to turn each EQ off.

Added "Footswitch Tuner Mode" (Setup: FC Controllers: Config) which uses the onboard LED rings on the FM3 to help you tune visually.

Added "Detector Type" (RMS or Peak) to the downward expander effect (Gate Block).

Added Diffusion Amount and Time parameters to Crystal Echoes effect (Pitch block).

Added Multitap Master Chorus rate and depth parameters.

Added LFO High Cut parameter and markers to ADSR graphs.

External Controller "Initial Values" can now be set to any value from 0 to 100%.

Improved the rate of communication with a connected FC controller (especially FC-12).

Improved how the FM3 remains connected to FM3-Edit after certain USB "sleep" activity.

The UI is now more responsive when a high CPU preset is loaded.

FC: Preset/Select in Bank switches will now flash after a bank change until you make a selection. This will not happen if your Bank switch is set to automatically load the FIRST or CURRENT preset in the new bank.

FC: You can now install the "OMG9" FC settings directly from the SETUP: FC Controllers: Reset page of the FM3, with no download required. The OMG9 Owner's Manual can be found at: http://www.fractalaudio.com/downloads/manuals/FM3/FM3-OMG9-Manual.pdf

FC Added: "2nd Press = Previous Scene" option to the Scene/Select function. When set to "ON" this allows you to press the footswitch for the current scene to return to the previous one.

Fixed: Overlapping text when "Prompt on Edited Preset Change" is enabled.

Fixed: Global Input and Output volumes now initialize correctly when an expression pedal is used. (These parameters are located on the "Setup: MIDI/Remote: Other" page.)

Fixed: UI now updates when you disable Tuner "Use Offsets" in FM3-Edit while tuning.

Fixed: "COPY SCENE" and "SWAP SCENE" now correctly copy or swap scene data in the Scene MIDI block and Control Switch "Per Scene" settings.

Fixed zippering that occurred in some circumstances when using an external MIDI modifier.

Fixed: Setting "Output 2 Copy" to anything other than "NONE" no longer overwrites the regular OUT2 signal.

Fixed: Auto-engage now works consistently with modifiers on the amp and delay blocks.

FC Fixed: the main LCD on a remote FC should now update correctly in all circumstances.

Fixed: Activating the tuner with "hold" on a TEMPO switch will no longer affect the tempo.

Fixed: the MIDI block UI now consistently displays the current scene.

Fixed: Multiband Compressor now works as expected.

Fixed: Global parameters under Midi/Remote now reset correctly to default values.

Fixed: User Cab should no longer be able to accidentally overwrite Factory Cab 1.

Fixed: Metronome OUT2 level should be correct in all cases.

VERSION 3.01, DEC 21, 2020

Fixed amp block's Cathode Follower Compression value not loading correctly for patches saved under firmware prior to version 2.0.

Added "59 Bassguy Jump" Amp type.

Fixed Scales menu in Global Settings not synchronizing with FM3-Edit.

Fixed audio artifact when changing channels and viewing the Tone page on the amp block in some circumstances.

VERSION 3.00, DEC 18, 2020

Amp modeling updated to match Axe-Fx III firmware 15.01.

Improved Power Amp Modeling. The new algorithm yields accurate dynamic frequency response which results in clearer bass and extended highs. More "chug", "thump" and "chime". NOTE: Existing presets should be auditioned. While the overall tone isn't significantly changed, the transient frequency response is enhanced which may alter the tonal perception.

Improved output transformer modeling in Amp block. For typical values of Transformer Drive the difference is subtle but mathematically more accurate adding a pleasing low-end growl and improving "tightness" _in high-gain sounds. For high values of Transformer Drive the difference is more pronounced. If you have increased Transformer Drive on your presets above the default value then you should audition your presets.

Fixed Depth control not working on some amp models.

Fixed erratic flashing of Tempo LED.

Fixed random flashing of front panel LEDs.

Added "Tuner on Heel Down" to MIDI/Remote/Other. When the value of the specified controller goes below 5%, the tuner will be displayed automatically. Typically, you would set this to the same CC# or pedal used for volume control so the tuner will come on automatically when the volume pedal is pulled back.

Fixed issue with modifiers on the Amp block causing audio artifacts and drop outs.

Fixed imported Tone Matches not working correctly.

Fixed crashing with some imported Axe-Fx III presets.

Fixed issue causing audio drop out when changing the input gate type.

FC: Fixed an issue causing "*CFG ERR*" to be displayed in some footswitch configurations.

VERSION 2.00, DEC 08, 2020

Fixed USB audio issues that were affecting some customers.

Updated Amp block, now in sync with Axe-Fx III v14 (282 models including new "Archean").

Updated Chorus and Compressor blocks, now in sync with Axe-Fx III v14.

"Swap Scenes" is now available on the Tools page of the Layout menu.

Reduced the overall latency of all analog I/O.

FC Pedals can now be selected for global Input/Output Volumes (in Setup:MIDI/Remote:Other).

Output "Volume Increment" functions now work as specified.

FC: The first FC will now display the tuner when the FM3 is in the Tuner menu.

Display brightness is now applied correctly on power up.

Fixed incorrect default scene on Patch recall from FM3-Edit.

Fixed an occasional crash caused by an "illegal" modifier.

Fixed crashes related to importing Axe-Fx III presets via FM3-Edit.

Fixed Bypass button issue in hardware GUI and FM3-Edit.

Fixed bugs reported during public beta.

VERSION 1.06, SEP 09, 2020

- Fixed Pitch block Mix overriding custom settings.
- Fixed Pitch block Custom Scale number not displaying correctly.
- Fixes and improvements related to USB audio artifacts and buffering.
- Third party MIDI "STATUS DUMP" command will now return the correct data.
- Fixed some Presets freezing on startup.
- Corrected default Negative Feedback for Deluxe Verb models.
- Fixed PC Mapping not always loading designated scene.
- MIDI Looper CC commands will now function properly after a power cycle.
- Fix Contour parameter not working in Drive block for Shred Distortion type.
- Align Plex block with Axe-Fx III.
- Input 1 Source setting will no longer affect Input 2.
- Improved modifier performance for external controllers (Wah "zippering").
- Improved performance of modifiers attached to Amp and Delay blocks.
- FC: FC-6 and FM3 will now wrap Views correctly within Layout 9 (the "Master Layout Menu").
- Scene Revert will now take effect for scene changes via MIDI CC messages.
- Removed "Diffusion" parameters from the Delay blocks due to CPU constraints.

VERSION 1.05, JUL 01, 2020

- Minor Amp block optimizations.
- Improved how Amp block and Delay block values are synchronized with FM3-Edit.
- Fixed Pitch block mix overriding custom settings.
- Eliminated scenes/presets "blip" while FM3-Edit is open (requires FM3-Edit 1.01.05 rc2).
- Improved fan control relies on actual CPU temperature vs. ambient temperature.
- Preset 000 will no longer occasionally be blank on startup.
- Default Scene will now be loaded correctly on preset change.
- MIDI clock synchronization with DAWs should now result in a consistent tempo.
- Fixed stability issues when 5-pin MIDI communications are active.
- MIDI/Remote channel changes should now operate as expected using CC messages.
- FC: Prevent stand-in switch from switching the view when Hold Function Mode is SWITCH UP.
- Additional improvements related to stability and performance.

VERSION 1.04, JUN 05, 2020

FM3 Firmware 1.04 requires FM3-Edit version 1.01.04 or newer.

- CPU Performance improvements across all presets.
- Added new amp types: Matchbox D-30 EF86, FAS Express, Triple Crest 2, Triple Crest 3, PVH 6160+ Crunch Bright, PVH 6160+ Clean Bright.
- Block Updates (Find details in the Fractal Audio Systems Block Guide):

- Gate: Improved Downward Expander; Tremolo: Added Optical type; PEQ: Added Slope controls; Plex Delay: Added Stack/Hold, Reverb: Added Dispersion.
- Improved power tube modeling yields smoother overdrive especially for semi-clean and edge-of-distortion tones.
- Improved FM3-Edit preset switching time when certain blocks are present.
- Improved USB audio performance and stability, reduced recording latency.
- Clarified polarity options under I/O: Pedal: Switch Settings.
- Improved how the position of pedals is detected after startup.
- Fixed "banner messages" on the Tools page of the layout menu.
- Parameter values now update when changed via a modifier.
- FM3-Edit now honors the global setting for "Default Scene".
- Fixed "Astable" LFO type.
- Fixed audio drop in Shred Distortion type.
- Fixed MIDI clock sync issues.
- Scratchpads now properly initialize on boot.
- Added "OUTPUT 2" as an option for "USB 3,4 Record Source".
- LEDs and Display will no longer flicker when FM3 is powered off with USB connected.
- Fixed Copy/Paste Block and Channel errors for the Amp and Delay blocks.
- Added ECONOMY mode to the Reverb (from Axe-Fx III v12.08). Pre-existing presets will default to this new setting, which produces excellent results at considerably reduced CPU.
- FC: LED rings for Looper functions will now be OFF if the Looper is not in the preset.
- FC: "LOOPER BLOCK NOT FOUND IN THIS PRESET" message now shown when appropriate.
- FC: The "Advanced" switch page is no longer blank after the FC banner has been displayed.
- FC: The Tuner now exits in all cases after using "Reveal Hold".
- FC: Loading Factory Default Layouts now correctly initializes Layout Link Views.
- FC: Fixed stand in switches sometimes not responding to the first press.
- FC: Fixed the Tuner display when activated from an FM3 footswitch.
- FC: Stand in switches now honor the Hold Function Mode "SWITCH UP" setting.

VERSION 1.03, APR 07, 2020
- Fixed an issue that was causing instability in some cases.

VERSION 1.02, MAR 31, 2020
- Added support for FM3-Edit Scene Manager.
- Fix interaction of Global Scales with the FM3-Edit.
- USB "DI" recording levels corrected.
- Looper "Undo" now works as it does on the Axe-Fx III.
- Preset storing is now faster.
- Knob D on the HOME screen now changes the "FC View" within the current layout of the FM3.
- When Tuner is assigned as a hold function, you can now exit the Tuner with a single tap.
- The following blocks have been updated with changes from their counterparts on the Axe-Fx-III: Chorus, Compressor, Drive, Enhancer, Filter, Flanger, Formant, Gate, Graphic EQ, Input, Send, Return, Looper, Megatap, Phaser. The features and CPU usage of these blocks may have changed, and any presets that contain them should be checked.
- Output2 Global EQ feature added to SETUP: Global Settings.
- When using the "Output 2 Copy" feature (in SETUP: I/O) the options "INPUT 1" and "OUTPUT 1" now produce increased level at Out 2 to better match the level at Out 1 without.
- FC: Stand-in switches now help prevent false triggering if no switch is plugged in.
- FC: Display now shows looper "Record 2nd Press" function (OVERDUB, PLAY, or STOP).
- FC: Tap tempo now works across all Views.
- FC: "View" functions are now available when creating per-preset switches.
- FC: Tap tempo now works when using a stand-in switch.
- FC: "View Inc" and "View Dec" mini-LCD now works when when "Destination #" is selected.
- FC: The MLM and certain View functions now work as intended on a connected FC-6.

- FC: The main LCD will now display the correct first preset in the bank if the Global Setting for "Display Offset" is set to '1.'

VERSION 1.01, FEB 13, 2020
- Small changes to some amp types.

VERSION 1.0, FEB 11, 2020
- This is the first public release. See the FM3 Owner's Manual for details.