



FIRMWARE RELEASE NOTES

ITEMS WITH THE PREFIX "FC" PERTAIN TO FOOT CONTROL FUNCTIONS OF THE FM3

VERSION 4.01

AUGUST 9, 2021

FEATURES AND FIXES

- 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 Comander parameters to Delay block.
- Added Comander 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.

RELEASE NOTES HISTORY

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.

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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.
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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.
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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.