FRACTAL AUDIO SYSTEMS

AX8 AMP MODELER + FX PROCESSOR

FIRMWARE RELEASE NOTES

VERSION 3.02 APRIL 29 2016

AX8 Firmware 3.02 is based on the Quantum 2.04, 3.00, 3.01, and 3.02 firmware updates for the Axe-Fx II. This is a major release and may change the sound of existing presets (specifically, the AMP block) although RESET SYSTEM PARAMETERS should not be necessary. We always suggest that you backup your AX8 using Fractal-Bot before a firmware update.

Quantum Updates:

- Re-matched Friedman BE and HBE amp models using a newer reference amp, as the original reference amp is an early model and has questionable QC.
- Added Friedman BE/HBE V2 models based on a Friedman BE/HBE with the "Voice" switch toggled left. The original models (based on the switch toggled right) have been renamed Friedman BE/HBE V1.
- Reduced popping when changing Amp block Preamp Bias.
- Fixed Drive block "Plus Dist" type defaulting to wrong clipping type.
- Improved Amp block output transformer modeling. New model more accurately simulates dynamic core losses and leakage inductance. The "Xfrmr Grind" knob controls the intensity of the effect. Higher values result in more high frequency response and a more "open" sound. Very high values can yield a raspy, spitty tone common in vintage and/or low wattage amps. Modern "big iron" amps tend to have low values. Note that the audibility is dependent upon how hard the virtual power amp is driven and is more noticeable as the MV is increased. Also note that the effect in real amps is highly dependent on the speaker. Some speaker/transformer combinations exhibit significant high frequency dynamic boost while other combinations yield almost none. As always use your ears as the final determinant.

  Note: The Transformer Grind parameter will be set to a default value and the Dynamic Presence parameter will be reset to 0.0 for any presets created with previous firmware.

- Improved triode plate modeling for cases when plate load is complex.
- Improved Ruby Rocket models frequency response accuracy vs. Drive knob. Existing presets should be reset by both deselecting and reselecting the amp model or by turning the Low Cut Freq parameter to 10.0.
- Extended the range of the Amp block Hi Cut Freq parameter to 400 Hz to 40 kHz. As this changes the preset storage format, existing presets will be automatically updated to use default values.
- Added "Dweezil's B-man" amp model based on a modified Fender Bassman as used by Dweezil Zappa.
- Fixed wrong default Tube Bias value in Recto1 and Recto2 amp models.

Additional Enhancements:

- Moved the "VU" page to the main menu, including a new CPU indicator. (To access this page quickly from the main footswitch screen, simply tap SHIFT followed by PAGE.)
- Greatly improved the performance/efficiency of modifiers.
- INPUT 1 PAD now defaults to "12dB" (when you perform RESET SYSTEM PARAMETERS).
- The AX8 now clears a CPU overload when you change scenes, so any disabled effects can be re-enabled if possible.
- Optimized MIDI input. (This change does not affect MIDI over USB.)
- Added Large Preset Display: The Global Parameter "DISPLAY LARGE PRESET" with the values "NO", "1 SEC", "2 SEC", "3 SEC", and "4 SEC" was added. When set to any value other than "NO" the Large Preset Name will display for the period of time specified every time the preset is changed by the user.
- Added the Preset Recall Display. Both SINGLE PRESET/BANK and STICKY PRESET/BANK now display a list of the 8 presets in the current selected bank. If the current selected bank contains the active preset, then the active preset is displayed in reverse video. When in STICKY PRESET/BANK mode, this screen is persistent.
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AX8 Specific Fixes

- Fixed EMPHASIS on the Pedal Compressors so it behaves like the same parameter in the Axe-FX.

- FX BYPASS support (SHIFT->EDIT) now works on the “LAYOUT” page of the main menu, and from *within* the edit menu of the LOOPER block.
- Previously un-configured MIDI PC SCENE no longer produces the wrong MIDI Channel Output.
- Fixed a bug preventing PROXIMITY from processing the RIGHT channel in a stereo CAB block.
- Removed the CAB block’s “MIC” parameter since it never worked (and microphones are now “baked in” to all pro-quality IRs anyway!)
- Added “PROXIMITY FX” (Enable/Disable) to the Advanced Menu in the CAB block to control whether the PROXIMITY parameter is active or not. When importing an Axe-Fx Cab block with “Mic” set to “NONE”, this parameter will be set to “disabled” and the PROXIMITY control will do nothing.
- Fixed a bug in INPUT DRIVE: Attaching a controller no longer causes crackling on some models (particularly the “JR BLUES” and “5153 50W BLUE”).
- Fixed a bug in INPUT DRIVE: Turning the INPUT DRIVE knob fully counterclockwise no longer causes oscillations in some models (particularly Angle Severe, Friedman BE/HBE models).
- CPU load no longer spikes 35% when placing a modifier on the REVERB TIME parameter.
- Fixed a crash bug, where a flood of incoming MIDI messages would crash the AX8
- Fixed a bug affecting the clipping algorithm of the “BRIT SILVER” amp model.
- Fixed a bug that allowed AMP models imported from the AxeFx to leave a controller attached to the OUTPUT LEVEL parameter modifier (not supported in the AX8). NOTE: the controller is now removed by the AMP block.
- Reduced audio dropouts when editing with AX8-Edit.

VERSION 2.02

This release is based on the modifications made to the AxeFX II Quantum V2.02, hence the jump in version numbers. This is a major release, and we strongly urge you to RESET YOUR SYSTEM PARAMETERS upon successful installation of this firmware.

- Improved tube modeling. New algorithms uses more accurate plate current formulas based on actual measurements rather than theoretical values. This results in smoother, thicker distortion and better dynamic response.
- Improved power supply modeling. New algorithms improve sag and feel. For convenience the virtual power supply voltage (B+) can now be monitored on the PWR DYN tab of the amp block. When the Supply Sag control is selected the gain reduction meter will display the supply voltage in dB relative to the idle voltage.
- Improved cathode bias algorithm for “Class-A” amp models (i.e. Class-A 30W, AC-20 Dlx, etc). In conjunction with this the Cathode Squish parameter has been repurposed as “Cathode Bias” and controls the value of a virtual cathode resistor. A value of 50% is “optimum” and biases the power tubes at true Class A operation (neglecting any bias shifting due to supply sag, screen droop, etc.). Values greater than 50% increase the resistance and therefore bias the power tubes “colder”. Values less than 50% bias the tubes beyond Class A. In a real amp this would probably destroy the tubes but that limitation does not exist in our virtual amp. Most real amps of this type actually operate far below Class A and the default values for the models will reflect this. Note that the Power Tube Bias value should be set to 1.00 for these amp types (since that parameter controls the grid voltage and the grid voltage is at a maximum in these types of amps). Existing presets will be automatically updated with new default Cathode Bias and Power Tube Bias values.
- Improved Phaser block CPU usage.
- Added “Filter Slope” parameter to Cabinet block. This can be used to select between first-order (6 dB/octave) or second-order (12 dB/octave) filters for the Low Cut and High Cut filters.
- Improved Plexi “Jump” models to account for interaction between Drive controls.
- Renamed Plexi 50W High amp model to “Plexi 50W Hi 1” (see below).
- Added “Plexi Hi 2” amp model which is similar to Plexi 50W Hi 1 except the second triode stage has a 0.68uF cathode bypass capacitor. The second bypass capacitor was added in the early 70’s and gives a slightly brighter tone.
- Added “Plexi 100W 1970” based on a 1970 Marshall 1959SLP 100. This particular amp has a darker, smoother sound than earlier Plexis.
- Added “Ruby Rocket” amp model based on a Paul Ruby Rocket with the Bright switch in the down position. The existing model has been renamed “Ruby Rocket Brt” to reflect the state of the Bright switch being in the up position.
- Added “AC-20 12AX7 B” amp model based on an AC-20 Deluxe with the rear switch set to 12AX7 and the Bass/Treble switch set to Bass. The existing models have been renamed AC-20 EF86 B, AC-20 EF86 T, and AC-20 12AX7 T.
- Added “Spawn Nitrous 1” amp model based on the OD-1 mode of a Splawn Nitro with KT-88 power tubes.
- Fixed Spawn Nitrous model broken by earlier firmware update. If you are using this model in your presets you should reset the model by deselecting and reselecting the amp type. This model has been renamed “Spawn Nitrous 2” to indicate that it is the OD-2 mode (see above).
- Fixed wrong default Negative Feedback value in all “Dizzy” models. Note that the Presence control in these models has more range than the actual amp as the amps have a limiting resistor that the models do not have. Turning the Presence all the way up on the real amps is equivalent to around 7-8 on the models.
- Fixed wrong Bass taper in Recto2 amp models. Previous taper was Log30A. Taper is now Log10A. Existing presets should be auditioned as the amount of bass will be less.
- Improved power tube saturation modeling. This yields warmer, “tubier” distortion. The PA Hardness parameter is automatically set for each power tube type but may be overridden if desired.
- Improved virtual output transformer saturation modeling.
- Change “Thru” bypass mode so that effect input is muted. This prevents, for example, delays from creating echoes when engaged.
- Added “Invert” mic type to Cabinet block. This inverts the signal allowing for interesting effects in conjunction with the delay parameter.
- Fixed Reverse Delay being modulated slightly for long delay times.
- Fixed Mr Z MZ-8 amp model sounding “off”.
- Added Bright Knob Control to all amp models.
- Fixed a bug where the hardware TREBLE knob did not correctly control the Treble on some amp models.
- GATE/EXP block now correctly stores and loads the Y parameters.
- Added access to the Balance Knob in the GATE/EXP block.
- Fixed a bug where attaching a controller to Volume Increment or Decrement could potentially corrupt a preset.
- Fixed Bypass Toggling when using Y on the Multi-Delay block.
- Fixed a bug on the Layout grid; placing a block no longer automatically connects to a previous empty block.
- Fixed a user reported bug: Dialing the AMP Block Drive parameter to zero quickly using the dedicated "DRIVE" knob would cause a loud oscillation on the Angle Severe amp models.
- Modified Scene Revert so selecting the current scene will revert to saved settings.
- Fixed a bug where the Looper Control did not like to be initially triggered by the F-switches

- The user is no longer restricted from inserting blocks that create CPU overload. Unit now continues disabling the highest load effects.
- Fixed a bug that produced unpredictable behavior when pressing <ENTER> on an empty block on the layout grid.
- Fixed Crash bug using AX8-Edit: placing shunt in upper left corner, and then editing Input Gate.

NOTE: This firmware represents a significant update in the amp modeling and the amp models themselves. Many models have been redone. Although care was taken to ensure as much compatibility with existing presets as possible, your presets may be altered.

V1.01

V1.01 is a maintenance release, and contains the following BUG fixes:

- Added FAS Boost to the DRIVE Block.
- Fixed Modifiers on the PAGE3 of the WAH Block.
- FXLOOP Block correctly restores it state on Preset and Scene change.
- Metronome in the TEMPO now works.
- Controllers no longer cause an audible pop or click.
- Scene Changes made on the LAYOUT GRID, such as Effect BYPASS, are now correctly saved to the preset.
- Replacing a CPU intensive block with a less intensive block (such as a SHUNT) is no longer blocked by the unit.
- Global Controllers Volume Increment and Decrement now work
- *Fixed a bug where setting Tap Tempo to the "SCENE" function switch disabled the "LOOPER" and "TEMPO" LEDs.*
- *Fixed a bug where setting Tap Tempo to the "LOOPER" function switch disabled the "TEMPO" LED.*
- Single TAP TEMPO will now timeout correctly and return you the main screen
- Compressor Side Chain now works correctly.
- Both channels of the stereo CABINET block now output the same level.
- Attaching a controller to the DRIVE parameter of the AMP block no longer causes a +25% increase in CPU utilization.
- PHASER LFO phase now works correctly

NOTE: Version 1.01 was the first update. 1.0 was the initial release, so there is nothing prior to the notes above.