Axe-Fx II Firmware Release Notes

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10.06

Added "Ruby Rocket" amp model based on a Paul Ruby Rocket.

Added "Class-A 20 DLX" amp model based on a Morgan AC20 Deluxe. This model was matched to the amp with the input tube switch in the EF86 position and the Normal/Brilliant switch in the Normal position. The Brilliant setting can be simulated by setting the LOW CUT FREQ parameter to approximately 250 Hz.

Added "Prince Tone Rev" amp model based on a 1966 Fender Princeton Reverb. The other Princeton models have been renamed "Prince Tone Twd" (Tweed) and "Prince Tone NR" (Non-Reverb) for clarity.

Added "Comet Concourse" amp model based on a Komet Concorde. This model was matched with the Response switch in the "Fast" position. To replicate the "Slow" position reduce the Input Trim to approximately 0.25.

Added "FAS Modern II" model. This is a tighter version of the popular FAS Modern model with a 5150-style bass boost in the tone stack.

Re-MIMIC'd Dizzy V4 channel 3 and 4 models due to complaints of excessive bass response.

Fixed incorrect capacitor value and wrong shelving filter field in all Recto models. Re-MIMIC'd models accordingly.

Fixed wrong shelving filter field in 5153 Blue and 5153 Red models.

Added five new cabinets from our "Producer Pack" series.

In Version 10 many of the factory cabinets were remixed so as to sound more "in the room". Some users, however, prefer the studio polished sound of the Version 9 cabinets. Therefore 14 cabinets from Version 9 have been added to the factory cabinets. These cabinets are indicated by "(V9)" in their names.

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10.05

Fixed audio glitching introduced with 10.04 when switching scenes, X/Y, etc.

Fixed Looper block Mix not being saved for global blocks.

Workaround for Axe-Edit crashing when selecting Cab block.

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10.04

Improved continuous controller (CC) response for presets with high CPU utilization.

Fixed type string in Cab block not initializing properly.

Fixed averaging time coefficient in Tone Match block computed incorrectly in Offline mode.

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10.03

Fixed parameter value display corruption in Global menu.

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10.02

Changed USA Pre Green and USA Pre Yellow amp models to have power amp sim active by default (Supply Sag nonzero).

Increased output level of Division 13 and Shiver Clean amp models based on customer feedback.

Added “Plexi 100W Nrml” model.

Removed pass-through of MIDI Clock messages as this causes excessive lag when using MFC-101 via the CAT-5 connection.

Fixed Amp block speaker impedance graph “shifting”.

Fixed sync message not sent to Axe-Edit when changing bypass state via front panel.

Fixed parameter text being overwritten when a Scene Select is received over MIDI.

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10.01

Added Mode parameter to Tone Match block. When sst to “Offline” the algorithm is optimized for non-real-time matching, i.e. matching a recording. When set to “Live” the algorithm is optimized for matching a live source such as an amp. Note that the Live mode can also be used for matching recordings and, in some cases, may achieve better results than Offline mode.

Fixed crashing due to bug in Looper block.

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10.00

NOTE: THIS IS A MAJOR FIRMWARE UPDATE, PARTICULARLY IN REGARDS TO AMPLIFIER MODELING. THIS FIRMWARE MAY, AND LIKELY WILL, CHANGE THE SOUND OF EXISTING PRESETS. YOU SHOULD AUDITION ALL YOUR PRESETS AFTER INSTALLATION AND CHECK FOR PROPER OPERATION AND TONE. AN AMP MODEL CAN BE RESET BY TEMPORARILY CHANGING THE AMP TYPE AND THEN CHANGING BACK TO THE DESIRED TYPE. THIS WILL LOAD THE MODEL WITH DEFAULT PARAMETERS.

WARNING!!! THE RESPONSE OF THIS FIRMWARE IS SIGNIFICANTLY MORE DYNAMIC THAN PREVIOUS VERSIONS. USE CAUTION WHEN AUDITIONING OLDER PRESETS AS THE INCREASED DYNAMIC RANGE CAN CAUSE CLIPPING OF THE AXE-FX OR CONNECTED EQUIPMENT AS WELL AS SPEAKER OR HEARING DAMAGE. FRACTAL AUDIO SYSTEMS, LLC ASSUMES NO RESPONSIBILITY FOR DAMAGE TO EQUIPMENT OR HEARING CAUSED BY USE OF THIS FIRMWRE AND ITS INTENDED EQUIPMENT.

Implemented “Multi-point Iterative Matching and Impedance Correction” technology (MIMIC™ P.A.F.) to amp models. MIMIC applies analytic signals to an amplifier and captures the fine nuances of each amp at various points in the circuit and corrects each model vs. its theoretical implementation. In some cases the difference can be substantial, in other cases the difference is minimal. This depends on the layout of the amp and the various parasitics involved. MIMIC has the advantage of applying these corrections at the appropriate location in the amp model rather than as just an output EQ so that the various controls of the model behave virtually identically to the actual. For example, the Modern modes of a Dual Rectifier are highly sensitive to Master Volume with the tone becoming thicker as the MV is increased. MIMIC preserves this behavior rather than just getting louder as the Master Volume is increased. The equalization correction portion of MIMIC processing can be turned off in the Advanced menu tab of the Amp block, if desired. Note that the nonlinear correction and other aspects of MIMIC are integral to a model and cannot be turned off. In many cases the equalization correction can be subtle and many not be immediately audible when switched on or off.

Updated numerous amp model details in light of MIMIC's identification of deviations between the models and actual amps.

Added 35 cabinet models from the first of our “producer packs”, created at Wellspring Sound and Mad Oak Studios. These models are custom blended IRs using multiple mics on the cabinet. Hand-tuned by the producer, these IRs are ready-to-go with little additional EQ required for mix-ready results. The first 30 of the IRs are guitar amp cabinets and the last five are bass amp cabs. The individual IRs from each mic will also be available as a separate download. Also added several artist IRs including two from James Santiago and one from John Petrucci of Dream Theater.

Increased the number of User Cabinet slots to 100 (plus one scratch-pad location). Note that the upper 50 are saved in a different area of memory and are not dumped or restored when doing a system dump/restore. A “Scratch-Pad” location has also been added. This dummy location can be used to receive cabinet data but is not saved to non-volatile memory. This allows auditioning IRs without overwriting any of the user slots.

Amp models now default to a starting Master Volume setting when selected. Also, the proper setting for non-MV amps is now a Master Volume setting of 10.0. Non-MV amps, therefore, will default to a value of 10.0 when selected. If more MV drive is desired for non-MV amps, the new MSTR VOL TRIM parameter in the

Advanced GUI page can be used to increase (or decrease) the Master Volume. The starting MV value for non-MV amps is roughly the "sweet spot" for the amp. This is the point where the power amp starts to contribute to the tone and feel of the amp. Decreasing the MV will typically cause the amp to get brighter and less compressed and increasing the MV will cause the amp to get more midrange focus and more compressed. As always, your ears should be your guide.

Tweaked power amp modeling slightly to increase even-order harmonics. This makes most models "sweeter".

Improved triode modeling removes "glare" from distortion yielding greater clarity and string separation. Note that the Triode Hardness parameter operates differently than before and also defaults to an appropriate value when the model type is selected. Existing presets are automatically updated upon recall.

Improved power tube modeling gives more punch and pop, especially to tones that rely on power amp distortion. Additionally this provides a more dynamic response, better touch sensitivity and improved pick attack.

Amp block power supply modeling now models AC rectification and resulting supply ripple (if Pwr Supply Type is set to 'AC'). The power supply type can be selected between AC and DC with the Pwr Supply Type parameter. The line frequency can be selected with the AC Line Freq parameter. Note that high values of Sag along with low B+ Time Constant values can cause "ghost notes" when the supply type is AC (as in a real amp). Lower B+ Time Constant values will make the amp feel "faster" but too low can cause ghost notes.

Added Tube Type parameter to amp block. This allows selecting Tetrode (i.e. 6L6, KT66, etc.) or Pentode (i.e. EL34, 6BQ5, etc.) power tube types. The type defaults to the appropriate value when a model is chosen but may be overridden by the user.

Improved "Drive Stack" accuracy in Amp block. This allows for near exact control behavior for the Drive control over the full range of operation.

Added "Dynamic Presence" control to Amp block. This models the output transformer leakage inductance that results in a brightening of the tone when the power amp is pushed. This control is set to a default value when the model is selected corresponding to the real amp, if applicable. Increasing this value results in a brighter response as the virtual power amp is pushed. When playing softly or at lower gains, the influence of this control is lessened. Note that this only affects the power amp modeling and is dependent on the degree of power amp overdrive. This control can also be set negative to cause the tone to darken when playing hard. This control can also be used to help "dial in" the sweet spot of an amp model. As the MV is increased an amp becomes more liquid, compressed and easier to play. However, the highs may get overly compressed causing the amp to sound too dark. The Dynamic Presence control allows you to get the desired power amp drive and liquid feeling and then bring the highs back without affecting the rest of the spectrum.

Added "Dynamic Depth" control to Amp block. Analogous to the Dynamic Presence control, this increases or decreases low frequencies when the virtual amp is being pushed. While real amps don't display this behavior, it is a valuable tone-shaping tool.

Added "Character" and "Character Frequency" to Amp block. These two parameters control a powerful "inverse homomorphic filter". When playing softly this

dynamic filter has little effect on the sound. As the amount of distortion increases, the influence of the filter increases. The Character Frequency control sets the center frequency of the filter while the Character control sets how pronounced the effect is. For example, to darken the tone when playing harder, one might set the frequency to 10 kHz and the amount to -5. Setting the amount to +5 will make the tone brighter when playing hard. The amount defaults to zero whenever an amp type is selected.

Dynamic Presence, Dynamic Depth and the Character controls allow the user to craft the final tone in a very musical way without sounding artificial. With these controls the axiom "a little goes a long way" is applicable. For example, if you find the tone too harsh, reduce the Character Amount slightly. If you want a little more "girth", increase Dynamic Depth a bit. While these controls will cause the tone to deviate from perfect accuracy, they allow the user to make adjustments that would be very difficult to accomplish in an actual tube amp. Furthermore these adjustments can be used to reduce "flaws" in the actual amp's design, i.e. too much low end flub, etc. without adversely affecting the feel and naturalness of the tone.

Added "Thunk" control to amp block. This parameter allows adding "weight" to tones by simulating the very low-frequency interaction of a speaker cabinet with the guitar. Higher values simulate closer proximity of the guitar to the cabinet.

Added Bias Tremolo to Amp block. This is a true bias tremolo and works by varying the bias of the virtual power tubes. The tremolo action is therefore different than other types of tremolo and the amount of tremolo varies with a multitude of variables, most importantly the tremolo is "self-ducking" and decreases at higher signal amplitudes. Note particularly that bias tremolo is a somewhat crude tremolo circuit and it's interaction with the power amp depends on many things including damping, bias, etc. On some amps high values of bias trem depth can result in excessive crossover distortion. On other amps the amount of tremolo can vary greatly between loud and soft playing. All this, however, is part of the allure of bias tremolo as it results in a particularly "organic" sound. Control of the bias tremolo is afforded by the Trem Freq and Trem Depth parameters. A modifier can be attached to Trem Depth to facilitate engaging and disengaging the tremolo via footswitch or for other applications.

All Mesa Mark lead models have been reworked and renamed for clarity. The models and their respective settings are as follows:
USA LEAD: Pull Bright off, Mid Gain off.
USA LEAD BRT: Pull Bright on, Mid Gain off.
USA LEAD +: Pull Bright off, Mid Gain on.
USA LEAD BRT +: Pull Bright on, Mid Gain on.

Note that the models are modeled with the amp's Pull Shift knob disengaged. To replicate the function of the Pull Shift, set the Depth to zero. Also note that the gain of these models has been increased by about two as most people set the Drive knob higher than the setting used in the original models. You can fine-tune the gain using the Input Trim parameter in the Advanced menu. Also note that the Presence control (as in the actual amp) is neutral when set to 5.00 (noon). Turning the knob CCW decreases the amount of presence and vice-versa. By comparison, most amps are only able to increase presence and the control is neutral when set to zero.

All Recto models have been reworked. Note that the Orange Modern and Red Modern models have no negative feedback and therefore the Presence control is a Hi Cut

control. The operation of this control is reversed as compared to the actual amp. If the amp's Presence control is fully clockwise the corresponding setting of the model's Hi Cut control is fully ccw. Also note that the model's Hi Cut control has about twice the range of the actual amp so fully ccw on the amp is equal to about noon on the model. As noted in the paragraph on MIMIC, the Modern modes are highly sensitive to MV setting. Higher MV settings result in more midrange focus while lower MV settings produce a more scooped tone. It is recommended to experiment with the MV setting to achieve the desired tone while compensating for the level increase/decrease with the Level control.

Completely reworked 65 Bassguy model. This amp has a very peculiar feedback circuit that was not fully modeled before. The feedback is now fully modeled yielding the unique voice of this legendary amp. For best results it is recommended to reset the model by selecting another model and then reselecting the desired model.

Reworked Euro Blue and Red models based on a Bogner Ecstacy 20th Anniversary amplifier. For best results it is recommended to reset the model by selecting another model and then reselecting the desired model.

Fixed incorrect inter-stage coupling cap in Wrecker 1 model. Also increased maximum MV value slightly as this was a little low.

Completely reworked PVH 6160 model based on "Block Letter" EVH 5150. This model has been renamed "PVH 6160 Block".

Added "PVH 6160 II" model based on a Peavey 6505+.

Added "Solo 100 Clean" model based on the clean channel of a Soldano SLO100.

Added "USA Pre Green" and "USA Pre Yellow amp models based on Mesa Triaxis LD2 modes. Note that these were modeled with the Triaxis Presence control at maximum as this control is actually a hi-cut control. Also note that the mid control in the model has far more range than the preamp. At a value of 5.0 the responses will match but the amount of mid cut on the Axe-Fx is greater.

Added "CA3+ Clean" amp model based on channel 1 of a CAE 3+ SE preamp. All three channels are now modeled.

The ODS-100 models were redone and matched to a Dumble Overdrive Special, S/N 0213. This particular amp is a 100W "HRM" version. The lead channel was matched with the preamp bypass (PAB) engaged which bypasses the input tone stack. The lead channel was also modeled with the Drive control at approximately 7.0. The Input Trim parameter can be used to increase or decrease the drive. Note that the clean channel has a bright cap on the Master Volume. This causes the tone to get brighter as the MV is reduced and vice-versa.

Renamed FOX ODS to FOX ODS I (see below).

Added "FOX ODS II" model. This model is the same as the FOX ODS I model but with the "MID" switch off.

Added "BRIT JVM OD1 GN" AND "BRIT JVM OD2 GN" models based on the Green modes of a Marshall JVM410. The existing models have been renamed to "BRIT JVM OD1 OR" and "BRIT JVM OD2 OR" as they model the Orange modes. Note that the Red modes of this amp are simply boosted versions of the Orange modes and can be reproduced by engaging the Boost switch or increasing the Input Trim parameter.

Added “VIBRATO-LUX” model based on a 1963 Fender VibroLux.

Added “BRIT 800 MOD” amp model. This model is based on popular modified Marshall JCM800. These mods make the amp “heavier” and less strident.

Added “NUCLEAR-TONE” amp model based on a Swart Atomic Space Tone. As with the actual amp the bias tremolo is particularly effective.

Added “BLUDOJAI” amp models based on a Bludotone Ojai. Both clean and lead modes were modeled with preamp boost (PAB) engaged as the owner prefers this. To disengage PAB change the tonestack type to Skyline.

Renamed “SUPER TREM” model to “SUPREMO TREM” to avoid confusion with other models.

Removed Mid Freq parameters from Speaker tab of amp block. MIMIC renders these controls irrelevant and better results are obtained by using any of the EQ resources.

Fixed Hi Cut control in Amp block not working properly for some amp types.

Removed all Motor Drive processing in cab block if Motor Drive is set to zero. This is subtle but there was a tiny bit of coloration before even when the Motor Drive was off.

Removed redundant parameters from Amp block Advanced tab. Moved Amp Voicing to Advanced tab. Also removed grid excursion parameters. These parameters can still be accessed via Axe-Edit.

Changed outermost bands in all graphic EQs to shelving types.

Added Lowcut and Hicut parameters to Filter blocks. These are first-order filters that can be used alone or in conjunction with the higher-order filter. To use them alone set the Type to None. Setting the parameters to their minimum or maximum values, respectively, removes the filters from the signal path.

Improved Tone Match block accuracy, especially for low frequencies.

Added “Start Both” to Tone Match block. Pushing the UP button starts both channels of the acquisition engine simultaneously. This is useful when matching real-time sources like amps or other modelers since starting both acquisitions at the exact same time enhances accuracy. Note that both should be stopped at the same time as well by using the Enter button.

Improved mid-frequency accuracy of Rotary block.

New Looper feature "Trim" allows the user to trim the start and end points of the loop. Use Nav keys to select either Start or End and then turn the value wheel to adjust the trim. Modifiers can be attached to Start or End by hitting Enter when either one is selected. Also, this new page will show a playback indicator and drawing of the loop waveform.

New Looper parameter "Play Immediate" (on Page 2) determines if playback starts immediately after user presses "Record" to finish a recording. This allows flexibility to allow a user to record a loop and save it for later as opposed to always starting playback immediately (note that even if this parameter is set to

OFF, the user could still press "Play" to finish a recording and have it start playing immediately).

User can now press "Overdub" to finish a recording and it will immediately go into Play w/Overdub mode.

Modifiers can now be attached to Looper Play, Reverse, and Half parameters. These can be attached on Page 2. The state of the parameters is indicated but cannot be changed from this page, only from Page 1. NOTE: Modifiers are IGNORED if Record mode is ON. This prevents the user from having to de-attach and re-attach modifiers when recording new loops.

Improved all Drive models based on Tube Screamer circuit (Super OD, T808 OD, T808 OD Mod, Full OD, BB Pre, Eternal Love and Zen Master). Also reworked the Esoteric ACB, Esoteric RCB and Bender Fuzz models.

Improved preset switching latency.

Fixed FX Loop LVL 1 parameter getting corrupted during scene recalls.

When in the Type page of the Amp block, the A,B, and C Quick-Control knobs now control Drive, MV and Level, respectively. This allows for quicker auditioning of the various models.

Added LFO smoothing to Chorus and Flanger blocks when using discontinuous LFO waveforms (i.e. square, saw, etc.).

Added Fetch Backup Patch and Fetch Factory Patch functions to Utility menu. These functions can be used to recall individual presets from backup or factory memory.

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9.02

Fixed output levels not initializing properly in certain scenes under certain conditions.

Fixed popping between certain presets.

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9.01b

Fixed incorrect transformer match value in Wrecker 1 model.

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9.01a

Fixed GUI not being updated properly in Control menu under certain circumstances.

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9.01

Speaker Drive in Amp block now defaults to zero when changing model type.

Fixed sluggish GUI performance in Control menu.

Fixed loss of precision in FAS Crunch model (et al.) Drive control resulting in error accumulation (strange robot sounds) if control was set very low.

Fixed GUI not accurately reflecting Feedback values in Quad-Tap delay under certain circumstances.

Fixed incorrect parameter mapping to modifiers in Amp block Advanced menu.

Fixed wrong transformer LF value in CA3+ Lead model.

Fixed new parameters (i.e. Pick Attack) defaulting to incorrect value if preset using a Global Block.

Fixed scene states not sticking on preset save (before one had to recall a different preset then return to the preset after saving).

Fixed possible crash if previous preset had Input Z set to 22K + Cap.

Fixed thumping between certain preset changes and when switching between certain amp models.

Fixed MIDI Clock messages not being sent to MIDI Out/Thru.

Fixed FX Loop Main level affects volume even when bypassed.

Fixed FX Loop popping when switching in and out of bypass.

Tuned Pick Attack processor to reduce distortion at extreme settings.

Various changes to support Axe-Edit TNP.

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9.00

Added eight “scenes” to each preset. Each scene allows for different combinations of bypass states and X/Y state (if applicable) for the effects. For example, Scene 1 may have everything bypassed while Scene 2 has several effects engaged. Furthermore, Scene 3 may be identical to Scene 2 except that one or more blocks have a different X/Y state. Scenes allow the user to easily switch between various combinations of bypass and X/Y states within a given preset. Furthermore, switching scenes does not disturb the routing so spillover is unaffected. Additionally, each scene stores the output level independently allowing for different volumes between scenes. The output level for the FX Loop is also stored per scene.

Scenes can be manually selected when in the Layout or Recall menu using the ‘A’ Quick Control knob.

NOTE: spillover may be affected if switching between X/Y states if drastically different algorithms exist between the two states. For example, if one scene has a Digital Delay and the next scene uses a Tape Delay, spillover will probably not function correctly as these modes use different algorithms.

Scenes can be changed via MIDI CC (or via Program Change when using preset mapping). There are three CCs available for scene selection: Scene Select, Scene Increment and Scene Decrement. Scene Select allows directly selecting a desired scene via the CC Value. The scene selected is the CC Value plus 1. For example, to select Scene 2 the data value would be 1. Scene Increment and Decrement step through the eight scenes whenever a value greater than 63 on the configured CC is received, wrapping around at the limits. Additionally, mapping mode allows mapping a PC message to not only a preset but also a given scene.

NOTE: When changing scenes via MIDI CC the bypass and X/Y states can revert to the states present when the preset was saved by setting "SCENE REVERT ON CC" to ON in the I/O->MIDI menu. This allows engaging or bypassing various effects in a scene and then reverting to the original state. Changing the scene via Axe-Edit or the front panel does not revert (as then you would not be able to edit scenes without saving prior to changing scenes).

The Global Bypass continuous controller parameter has been replaced with the Scene Select continuous controller parameter since Scene Select can accomplish everything Global Bypass could ever do. Note that using Scene Select in place of Global Bypass will probably select Scene #8 (if the CC has values of 0 or 127). Existing presets will have all blocks engaged in the new scenes so the operation should be identical to Global Bypass.

New power amp modeling with improved dynamic response. This new modeling features improved transformer/plate interaction modeling resulting in better feel and a punchier response. The Supply Sag parameter is more responsive as a result. Additionally, crossover and transformer hysteresis distortion modeling is improved resulting in more overtones when playing softly. This improves controlled feedback performance and yields a more aggressive tone at lower Power Tube Bias settings. The Global menu allows the choice of Version 9.xx, 8.xx or 7.xx modeling to suit individual tastes. Note that Version 9.xx is slightly quieter so don't be swayed by Fletcher-Munson effects when evaluating differences.

Greatly improved cathode follower modeling. The cathode follower modeling now varies the amount of distortion in addition to compression. This results in a more dynamic attack, improved feel and more "punch" and "thunk" (since this also creates low frequency energy into the power amp). The amount of cathode follower affect is controlled, as always, by the COMP parameter in the Amp block. Note that the higher the COMP value, the more effective distortion on sustained notes. Therefore as you increase COMP, you may want to decrease Drive. Also note that excessive values can result in pumping or blocking distortion. Note that the "cathode follower effect" occurs even in common cathode stages as well so even amps that don't have cathode followers may exhibit some cathode follower-like effect.

Added PICK ATTACK parameter to Amp block. This parameter controls a sophisticated dynamic range processor that operates on leading edge transients. Negative values reduce pick attack while positive values enhance it.

The Amp block Type parameter is now a dedicated page to facilitate selecting the desired type in light of the copious models available. Selection is afforded via the Value knob as well as the Navigation buttons. **The list can be sorted numerically or alphabetically with the type of sort being set in the Global menu.**

The BOOST switch is now a dedicated knob and also modifiable so it can be activated remotely.

The FAT and BRT switches in the Amp block menu now always display text. When the switch is active the text is highlighted.

The SAT switch function has been added to the Pre page in the Amp block menu under the COMP knob.

Set TMA block Resolution mode to High by default. Also set Reference Source to Input 2 by default.

Compressor block now has two Pedal types. "Pedal 1" is the same as before while "Pedal 2" uses a different algorithm which is smoother and pumps less.

Added Time Offset parameter to Delay block Mono Delay mode. This parameter allows adding up to 100ms of delay to the right wet signal which can be used for widening effects.

Added Badger 30 model based on 30W version of Suhr Badger. This model has been placed in the position formerly held by the Spawn Fastrod model (see below).

All three "gears" of the Splawn Quickrod have now been modeled. The Spawn Fastrod has been renamed "Spawn Q-Rod 3rd". "Spawn Q-Rod 1st" and "Spawn Q-Rod 2nd" models have been added. All three models now appear in order starting at position 101.

Added "Brit Silver" model based on a 100W Marshall Silver Jubilee.

Added "Spawn Nitrous" model based on a Splawn Nitro with KT-88 power tubes.

Added "FAS Crunch" amp model. This is our take on the ultimate British-sounding amp. More dynamic and open than a Plexi, but with more gain.

Added "Two Stone J-35" amp model based on a Two Rock Jet 35. The amp was modeled in the lead mode with the "Bypass" switch engaged. The Bypass switch bypasses the input tone stack to give a more focused lead sound.

Added "Fox ODS" amp model based on a Fuchs ODS-50.

Added "Hot Kitty" amp model based on a BadCat Hot Cat 30R.

Added "Band-Commander" amp model based on a 1968 Fender Band-Master.

Added "Super Verb" amp model based on a 1964 Fender Super Reverb.

Added "Vibrato-King" amp model based on a Fender Vibro-King.

Added "Gibtone Scout" amp model based on a Gibson GA17RVT "Scout".

Fixed several incorrect values in Wrecker 1 model.

Numerous MIDI enhancements to support Axe-Edit TNP.

Improved preset switching time and reduced display lag after switching presets.

Fixed incorrect bias value in Spawn Fastrod model.

Fixed unable to access certain parameters in Vocoder block.

Fixed wrong parameter mapping for LF/HF Mic Spacing in Rotary block.

Fixed modifiers do not always copy when copying an effect from a different preset.

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8.01

Fixed no sound at power-on if amp type is set to 59 Bassguy in preset.

Fixed Presence Freq parameter not being reset for Y parameter set in presets created with older firmware.

Fixed TMA block not loading properly under certain circumstances.

Fixed Level L in Dual Delay mapped to wrong parameter modifier.

Fixed “Magic 8-ball” in tuner getting stuck if no input for long period of time.

Added global Modeling Version parameter which allows one to select between Version 8 (default) or Version 7 modeling. This parameter is global and is in the Global menu. Note that the only change between Version 7 and Version 8 is the phase inverter modeling and, as such, the difference may be very subtle.

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8.00

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Improved phase inverter modeling provides “juicier” tone when PI is driven hard (MSTR set high).

Authentic Presence control modeling. The Presence control in the Amp block now behaves like the actual amp rather than an idealized version. The Presence Frequency parameter is now a frequency multiplier rather than an absolute frequency as the frequency of the presence circuit depends on the Presence control position. The Presence Frequency parameter works by scaling the value of the virtual presence circuit’s capacitor value. NOTE: Any presets created with earlier firmware versions will have the Presence Frequency parameter reset to 1.0. Setting the Pres/Depth Type parameter to Active or Active Pres will

override the authentic modeling and implement an ideal presence circuit with fixed center frequency.

Doubled resolution of internal amp matching data.

Added input matching data to many amp models. While this may not be audible in many cases, especially for higher gain amps, it does affect the feel.

When setting preset/IR name, character selection Quick Knobs now wrap around.

Added RESOLUTION parameter to Tone Matching block. In HIGH mode the resolution of the processing is doubled. Note that this doubles the CPU usage of the block. Presets created with earlier firmware are unaffected since the data has always been stored at high resolution.

Improved high-frequency matching performance in Tone Matching block.

New IMART (Intelligent Maximum-Likelihood Adaptive Real-Time) pitch detectors provide greatly improved pitch detection. Pitch detectors can now track complex chords. The Pitch Source parameter in the Pitch blocks has been changed to simply “Global” or “Local”. In either mode the tracking performance is the same, only the source of the pitch data is changed. The Pitch blocks benefit significantly from this improvement. Many presets that previously only worked with single notes now work with chords, even complex chords. Note, however, that intelligent pitch shifting is necessarily only single notes, by definition.

Reduced latency in Pitch block when performing negative shifts.

Improved Tuner as a result of improved pitch detection.

Improved CPU usage for most presets.

Added “Super Trem” amp model based on a Supro 1964T.

Added “Atomica Low” and “Atomica High” amp models based on Cameron Atomica.

Added “Deluxe Tweed” amp model based on a Fender 5E3 Deluxe. Note that this amp only has a single tone control. This is modeled by the Treble control in the Axe-Fx II. The Bass and Mid controls are functional and recreate the amp when set to noon. Also note that this amp suffers from extreme blocking distortion at or near maximum gain. This is common in very old designs. As it is virtually unplayable like this, the model uses a somewhat reduced level of grid conduction to lower the amount of blocking distortion and make the amp more playable at high Drive settings.

Changed “Solo 88 Rhythm” model so that bright switch is engaged by default.

Updated “Sure Weasel” model based on revised information. Model is now called “Suhr Badger”.

Added Log 20A and Log 5A taper options to Volume block.

Fixed bug in Reverb block causing incorrect settings for Hall types.

Fixed Drive block popping on bypass/engage.

Fixed Dynamics parameter in Amp block being set incorrectly for older presets.

Fixed Edited LED not lighting when resetting Amp block EQ via Enter button.

TMA block Reference Solo warning message now flashes in all menus.

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7.00

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The dynamics processing of the amp block was totally rewritten for this release. A complex set of formulas was developed that completely describe the various voltages in a tube amp. Unlike other modelers that simply model an amps dynamics as a first-order compressor, the Axe-Fx II now accurately models the complex interaction of the power tubes with the surrounding circuitry including the power supply and screen voltage network. You may notice a difference in the feel of the various amp models. Please refer to the descriptions below to understand the operation of the various controls. Doing so will enable you to adjust the dynamics to your personal preferences.

Added compression modeling to amp block preamp section. A new parameter, “COMP”, controls the amount of compression. Most models default to zero as they do not have measureable compression. Other models have a non-zero default value which matches the amp’s preamp compression characteristics. The time constant of the dynamics can be set in the Advanced menu with the PREAMP DYN TIME parameter. Preamp compression can be used to emphasize pick attack which is useful for certain musical styles. Use caution when dialing extreme values as this can cause excessive pumping.

Improved preamp modeling. Harmonics now move more with input level which results in a more open and less congested tone.

The DYNAMICS control in the Amp block now allows negative values. Negative values cause dynamic range expansion while positive values work as before and cause dynamic range reduction. Use caution when dialing in extreme values as this can cause unwanted distortion.

Note that there are two dynamics controls for the power amp section. SUPPLY SAG controls how much the virtual power supply sags. This is a complex interaction between the master volume (MSTR), transformer matching (XFRMR MATCH) and screen network. Depending upon the amp you may even feel the screen voltage bounce if the screen network is underdamped (amps with chokes can often be underdamped). The screen network parameters are automatically set when the model is selected and cannot be altered by the user. DYNAMICS is an idealized dynamic range processor which controls the power amp response independently of the aforementioned parameters although it is still somewhat dependent on master volume. In general, the more heavily driven the power amp section, the more effect the SUPPLY SAG and DYNAMICS controls have.

Removed matching data from some of the amp models because the new algorithms make it unnecessary.

Added “Herbie” amp models based on a Diezel Herbert.

Added “Dizzy” amp models based on a Diezel VH4.

Added Friedman Dirty Shirley amp model.

Added “Division13 CJ” amp model based on Divided by 13 CJ11.

Added “Solo99 Rhythm” amp model based on Soldano X99 Crunch channel.

Added “Sure Weasel” amp model based on a Suhr Badger.

Added “Spawn Fastrod” amp model based on Splawn Quickrod.

Added “Prince Tone 2” based on a Fender AA964 Princeton. This particular amp is an early CBS “Silverface” but still using pre-CBS design and components.

Replaced the “Brit 800 Mod” model with “Brit Super” based on a Marshall AFD100.

Tweaked the gain in many amp models to compensate for new modeling and make more accurate.

Exposed the bias point of the last tube stage in the preamp modeling. This parameter, called PREAMP BIAS, sets the bias point of the last triode (cathode follower not counted). Depending on the bias points of the previous stages increasing or decreasing this value can alter both the harmonic content and the attack characteristics. Typically, if the previous stage has a negative bias then increasing this value will be more noticeable and vice-versa. This value is set to a default value for the model whenever the type is changed but can be overridden by the user.

Added six new cabinet models from the excellent Kalthallen collection. Please visit www.kalthallen.de to download more and please donate to the maker if you enjoy these.

Added Sample Rate Reduction to Drive block. This allows intentional aliasing which can be used for creative effects.

Improved Reverb block. The Reverb block has two new parameters: LF TIME and LF XOVER. LF TIME controls the decay time relative to mid-band. LF XOVER controls the crossover frequency to the low-frequency decay. Many real rooms have a longer low-frequency decay time relative to mid-band. These controls allow more natural reverb simulations. The Types in the Reverb block have been reworked due to the new algorithms. As such, for best results you should reset the Reverb block by deselecting and then reselecting the desired type.

Added “Vintage Tape” type to Chorus block. This type uses the tape delay algorithm used in the Delay block as the basis for the chorus effect. Note that this type sums the left and right block inputs into mono so use caution as stereo cancellation may occur.

Added tone control to Phaser block. This affects only the wet signal.

Added “Esoteric RCB” drive model based on Xotic RC Boost.

Added “Zen Master” drive model based on Hermida Zendrive.

Added RATIO parameter to Ping-Pong mode in Delay block. This allows altering the ratio between the left and right times to something other than the usual 50%.

Added REF SOLO parameter to Tone Matching block. When set to "ON" the reference source is sent directly to the block output. This allows easily switching between the reference source and the matched signal for comparison. It is recommended to connect an external controller (i.e. footswitch) to this for ease in switching between the signal sources. NOTE: when Ref Solo is active the Layout menu will flash a message so that you know when you are listening to the reference source.

Added STRIP ALL GLOBAL DATA function to Utility-Preset menu. This function removes all Global Block associations from a preset. This is useful when downloading presets created by others that use Global Blocks. Running the function will strip the Global Block links but retain the sound of the preset as the author intended as that data is embedded in the preset.

Added Global Block message to Recall menu. When a preset is loaded that contains Global Blocks, a message will appear indicating so. You can remove all links to Global Blocks by pressing Enter.

Preset name functionality in the Store menu has been changed as follows:
X: Insert a character at the current cursor position.
Y: Delete the character at the current cursor position.
A: Select an upper-case character.
B: Select a lower-case character.
C: Select a number.
D: Move the cursor.
< >: Move the cursor.
Value: Select any character from the character set.
This behavior is also extended to the IR Capture utility.

Improved Tuner Stability.

Fixed Tone Matching data not being copied properly when using Recall->Effect.

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6.02

Restored Triode Hardness parameter to Amp block. When resetting an amp, this value defaults to 0.0. To achieve the sound of 6.00 firmware, set this to 5.0. Note that all presets created prior to Version 6.02 will have this value set to 0.0. You may override this value by setting the desired value and then saving the preset.

Added Scale and Offset to Modifiers. The Scale parameter applies a "gain" to the modifier curve allowing the user to create steeper or shallower curves. The Offset parameter allows shifting the curve up or down.

Fixed bug in Looper where distortion could occur depending upon position of Looper in grid.

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6.01

NOTE: As a result of amp matching tests, the Transformer Match internal values have been reduced. This may be detectable as a slightly more open and less compressed tone. If you desire the slightly more compressed sound of Version 6.00, this can be obtained by increasing the Transformer Match to a value of 1.1.

Added 5153 Green, Blue and Red models based on EVH 5150 III.

Added filter on reference input of Tone Match block so as to minimize high-frequency errors during matching.

Changed Grid Modeling switch in amp block so that Off turns off ALL grid modeling including preamp tubes.

Re-matched Mr. Z 38 SR model as matching data was incorrectly captured.

Re-matched PVH 6160 model against an original “block letter” EVH 5150.

Added Low Frequency (LF) Mic Spacing parameter to Rotary block. Setting this to zero (default) simulates a single mic (mono) on the drum.

Add Drive parameter to Rotary block which controls the amount of drive into the new power amp simulation. Improved HF modeling in block.

Added “Classic” mode to Enhancer block which uses old Haas effect delay-based processing. The Type parameter selects between the new (Modern) and old (Classic) enhancer types.

Added “Eternal Love” type to Drive block. Based on a Lovepedal Eternity.

Added “Esoteric ACB” type to Drive block. Based on Xotic AC Boost.

Added “Emphasis” control to Compressor block Pedal mode. Since the Pedal mode does not have a side-chain, this allows for a similar function by pre-emphasizing the high frequencies prior to compression and then de-emphasizing them after.

Improved tuner stability.

Added support for Axe-Edit to remotely set an individual parameter to default values.

Fixed various bugs in Looper.

Fixed FX Loop state not being sent to MFC.

Fixed exporting Tone Matches to cabinet IRs can sometimes lead to wrong IRs due to overflow.

Fixed feedback tap not being set correctly for Block 90 type in Phaser.

Fixed nasty bug where garbage data in Global Blocks could lead to preset corruption due to errant pointer.

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6.00

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Reworked power amp modeling based on new research. The power amp modeling has been totally rewritten based on "amp matching" studies. This includes improved output transformer saturation modeling.

Most amp models have been matched to their respective physical amps. Exceptions are those models which don't have a physical counterpart, i.e. FAS MODERN, etc. The matching data is integral to the amp block and is transparent to the user. This has increased the size of the firmware slightly and also uses the master DSP for part of the calculations which increases the CPU load associated with the amp block slightly.

Many amps have received a complete overhaul based on the matching studies. The most notable are the 65 Bassguy, Deluxe Verb, 1987x Normal and Treble, Hipower Normal and Treble, all USA models, all Recto models, Euro Blue, Red and Uber, ODS-100 Clean and Lead, and Mr Z 38 Sr.

Reworked most tone stacks based on amp matching results.

Reworked most drive tapers to match actual amp. Master Volume tapers, however, are uniform across all amp models as this prevents drastic jumps in volume when switching between amp types.

In general most knobs now behave exactly like the actual amp when possible. In a few instances there may be minor discrepancies between the knob position of the model and actual amp due to programming constraints and/or peculiarities of the actual amp (such as poor potentiometer tolerance). Due to variations in presence circuit topologies the taper of the Presence parameter, in particular, may vary between the model and the actual amp. In other words, a different setting on the model may be required to achieve the same response as the actual amp. In most cases however, the Drive, Treble, Mid, and Bass knobs will be accurate to within 10% of the actual amp.

The Recto models have been consolidated. There are now four Recto models: Recto Org Vntg, Recto Org Mdrn, Recto Red Vntg and Recto Red Mdrn. These models are based on a late-model Dual Rectifier and are matched to those four channels of the amp.

Since Recto Org Mdrn was already a model and is now redundant, it has been replaced with the "Supertweed" model ported from the original Axe-Fx.

Added two new USA models: USA Lead 1+, which is the same as Lead 1 with the Mid Gain switch on and USA Lead 2+, which is the same as Lead 2 with the Mid Gain switch on.

There are now two "Brit JVM" models: Brit JVM OD1 and Brit JMV OD2. The "Prince Tone" model has been moved and the OD1 model is in its place so that the models are located sequentially. Both models are based on the "Orange" modes of the

amplifier. The “Red” modes of the amplifier are equivalent to engaging the Boost switch (select Type and press Enter).

Added “Blankship Leeds” model. This model is based on a Blankenship Leeds which is a boutique version of an 18W Marshall. This particular amp is known for sounding “big” despite being relatively low power.

Added “Fat Switch” to amp block. When engaged, this switch, under the MID knob, shifts the center frequency of the tone stack down thereby “fattening” the tone.

Since the new output transformer modeling is improved, more effective and more important to the tone, this parameter, XFRMR DRIVE, has replaced the SPKR DRIVE parameter on the DYN (Dyanmics) page of the amp block. SPKR DRIVE has been moved to the SPKR page.

Added Definition control to Amp block. This parameter allows changing the fundamental character of the amp from vintage to modern or vice-versa. Positive values increase the amount of upper overtone saturation whilst negative values reinforce lower harmonics.

Added “Tone Matching” block. This block allows sampling a reference tone “fingerprint” and matching the user’s tone to that sound. Please see the accompanying documentation for more details.

Added IR Export feature to Tone Matching block. This allows converting the spectrum match data to an impulse response and saving as a user cabinet IR.

New and improved Looper. The Looper block now features a host of new features and improvements, including quantization, undo, half-speed, etc. Please refer to the updated User’s Manual for details.

Added Delay parameter to Cabinet block. This parameter allows delaying the signal up to 1ms. When running a stereo mode, or two cab blocks in parallel, delaying one cabinet relative to the other can achieve interesting comb filter effects. A common practice in studio recording is to use multiple mics on a speaker at different distances to intentionally introduce comb filtering.

Added third voice to Synth block. The first two Synth block voices now have a range of 40 – 4k Hz as this, in conjunction with the Shift parameter, allows tones over the usable audio spectrum. The third voice has a range of 20 – 20K Hz.

Changed Volume Increment/Decrement so that action only happens for a CC value greater than 63.

Improved tuner with strobe tuner accuracy and detection down to G0. Added “Magic 8-ball” display to tuner GUI. The 8-ball rotates clockwise if the note is sharp and vice-versa.

Added Metronome option to Output 1. Metronome is accessed via the Tempo menu.

Added mute options to Tuner. “OUTPUT” mutes the entire unit when entering the tuner display and is the same as prior behavior. “INPUT” mutes the input to the device only which allows any delays, reverbs, etc. to continue to sound.

Added Program Change sync when changing presets via front panel. This allows MFC and Axe-Edit to synchronize.

Quick Control knobs now function when naming presets and IRs. Knob A selects only upper-case letters, knob B only lower-case letters, and knob C only numbers. Knob D moves the cursor.

Improved knob acceleration logic allows adjusting parameters more easily.

Improved some filter efficiencies resulting in lower CPU usage for some blocks.

Changed amp block reset (double-click Bypass) so that type is not changed.

Improved IR Capture Utility so as to work even if FX Loop block is present.

Fixed "FILTER Q 4" in Resonator block mapped to wrong parameter.

Fixed attaching modifier to amp block INPUT TRIM parameter causes lag in other modifiers.

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5.07

Fixed incorrect range on TIME R in Delay block for Dual Delay mode.

Exposed PAN L and PAN R parameters in Volume block to modification.

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5.06

Changed LFOs to reset to zero phase when stopped with RUN modifier.

Changed “4x12 V30 ULTRA” in 5.05 to “4x12 30W ULTRA”.

Added remote bypass and mute via MIDI SysEx so Axe-Edit can bypass or mute unit during preset sync.

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5.05

Fixed system bank corruption upon sync with Axe-Edit.

Fixed Gate block not muting in bypass if Bypass Mode set to Mute.

Removed MUTE INPUT mode from Quad Chorus Bypass Modes.

Removed “4x12 METAL” cab per owner’s request. Replaced with “4x12 V30 ULTRA” which is a cab from the original Axe-Fx.

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5.04b

Changed remote patch dump protocol so that presets are synchronized with Global blocks.

Fixed Global Patches so that corruption does not occur if parameters were added in a firmware upgrade.

Improved power tube saturation modeling. This results in a smoother tone when the virtual power amp is driven hard.

Added Air Freq parameter to Cabinet block. This allows adjusting the cutoff frequency of the mixed signal.

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5.03

Fixed GUI stall on certain combinations of effects in a preset.

Disabled MIDI Thru and Adapter Mode during firmware updates.

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5.02

Decreased damping on Delay block Input.

Added HF Resonance control back into Amp block. This control is similar to the previous control but only changes the slope of the resonance. The default value is consistent with the typical “semi-inductance” of a speaker voice-coil. Varying this value will change the high-frequency load presented to the virtual power tubes.

Added “CALI LEGGY” amp model based on a Carvin Legacy I.

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5.01

Fixed random lockups due to Noise Filter illegal state.

Fixed Delay block click on Tempo change when followed by large amounts of gain.

Restored USB main outputs selectable.

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5.00

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WHILE THIS UPDATE HAS HAD A SIGNIFICANT AMOUNT OF CHANGES, HOWEVER, THE OVERALL SOUND OF YOUR PRESETS SHOULD NOT BE DRASTICALLY ALTERED. ONLY MINOR ADJUSTMENTS SHOULD BE REQUIRED.

Changed USB outputs so that it is always Out 1 L/R and Input L/R rather than whatever is on digital outputs and Input L/R. The Digital Outputs are still selectable but the USB outputs are fixed.

Added Block Left and Block Right options to Sidechain Select in Compressor block.

Much improved grid modeling in Amp block preamp and power amp stages. New modeling very accurately replicates grid conduction and resulting bias excursion. This results in a more dynamic, thicker and bouncier tone. The power tube grid conduction parameters are exposed to the user in the GUI. The Bias Excursion parameter controls how much the grid voltage droops when the grids conduct. The Excursion Time and Recovery Time parameters control the time constants associated with the excursion.

Added dynamics processing to Amp block. A new tab, "DYN", in the amp block, allows adjusting various parameters of the dynamics processor along with several other parameters related to amp dynamics. The Dynamics parameter controls the amount of dynamics processing and models the interaction between the power amp, power supply and loudspeaker under high power-level conditions. The Dynamics Time parameter (ADV tab) controls the time constant of the associated processing. The Level parameter is duplicated on the DYN page for convenience.

Simplified Hi-Frequency Resonance controls in the Amp block. There is now a single HI FREQ control. The value of this parameter sets the "corner frequency" of the impedance rise due to voice-coil inductance (technically this is a "semi-inductance"). The actual impedance seen by the virtual power tubes is then internally calculated based on the transformer and power tube parameters. Typical guitar speakers have a corner frequency between 1 kHz and 2 kHz. This value is preset based on the model but the user can override the value as desired. Many speaker manufacturers publish impedance data for their drivers which can be used as a reference point. Lower values give more midrange emphasis. For convenience, the transformer low-cut and high-cut frequencies are now present on the SPKR page and their influence on the open-loop response is reflected in the impedance graph.

Added speaker motor modeling to Cabinet block. This models the effect of high power levels on the tone of the speaker. The Motor Drive parameter controls the relative drive level and, therefore, the intensity of the effect.

Improved Enhancer block. The new Enhancer uses multi-band techniques for a much more natural effect. Also, the effect is mono-compatible with no phasing problems when summing to mono. The effect both widens stereo signals and "stereoizes" mono signals. Low-cut and High-cut parameters allow control over the region of influence. Note that it is NOT recommended to use the Enhancer if just using one side of a stereo output as phasing effects may be encountered.

Improved noise gate. New gate uses dynamic filtering in addition to downward expansion.

Reworked nearly all amp models based on new "amp matching" algorithms.

Fixed B+ Time Constant in amp block not being transmitted to slave DSP.

Fixed Gate Bypass Mode knob bug.

Fixed look-ahead delay still running if Compressor block is bypassed.

Fixed lost data on MIDI Thru if sending large amounts of data to MIDI In.

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4.01

Fixed Treble Booster name corruption in Drive block.

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4.00

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NOTE: FACTORY BANKS HAVE BEEN REDONE TO REFLECT THE CHANGES AND IMPROVEMENTS. THE SYSEX FILES TO INSTALL THE BANKS ARE INCLUDED ALONG WITH THIS FIRMWARE.

Overhauled power amp modeling. Master Volume control is now usable over a larger range. Reduced harshness in many amp models. Most amps will sound more "open". Adjusting the MV in existing presets is recommended for optimum results.

Added "Grid Modeling" parameter to Amp block. Turning this to OFF bypasses the grid modeling in the power amp which can reduce subjectively undesirable distortion.

Added "FAS 6160" model. This model is based on the PVH 6160 model but more open and less fizzy than the original amp. Also, a virtual choke has replaced the resistor found on the original's power supply filter. This results in a bouncier feel.

Added Tape Echo algorithm to Delay and Multidelay blocks. This algorithm simulates a tape echo where modulation occurs due to tape speed variation. In the Delay block the algorithm is implemented as a two head monophonic tape "deck". The Time/Tempo parameters set the distance between the record and first playback head. The Ratio parameter sets the relative distance between the record and second playback head as a percentage of the first playback head. The Multidelay block is implemented as a monophonic deck with four independent heads. See the updated manual for full details.

Fixed TEMPO R parameter affecting left time in Dual Delay.

Added Dry Delay Shift for Thru-Zero mode of Flanger. This allows moving the thru-zero point from the center (default) to the edge or anywhere in between.

Exposed Advanced Whammy Start and Stop parameters to modifier control.

Increased output level for Octave Distortion model in Drive block.

Added support for all MIDI Voice Messages when MIDI Adapter Mode is on. This allows using the MIDI ports for keyboards and other devices other than foot controllers.

Fixed Recall Effect not working in certain instances.

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3.04

Fixed bug where presets greater than 131 not being properly received over MIDI.

****

3.03

Amp block now has high-res mode. In this mode the internal sampling rate is doubled so as to provide greater fidelity and resistance to aliasing. This mode is automatic and is selected whenever there is only amp block in the layout grid. Adding a second amp block will revert to normal resolution. Note that switching between presets with differing number of amp blocks may introduce an additional delay as a "soft reset" of the amp blocks must be done whenever changing the resolution.

Increased precision of many of the filters in the amp block. The new filters now have eight additional bits of mantissa precision which increases filter accuracy, especially at low frequencies.

Fixed popping and zipper noise in Amp block under certain Damping settings.

Fixed Modifier not being recalled along with effect when doing Recall Effect.

Added Global Block support via MIDI. This allows Axe-Edit to dump Global Blocks for off-board storage.

Fixed spurious interrupt causing lockups when USB is connected.

Fixed sections of audio being erased from Looper on preset changes.

Fixed Cabinet block IR corruption when running in Mono Hi-Res mode in certain scenarios. Improved warping algorithm so as to provide higher fidelity.

Added "Brit JVM" amp model. Based on the OD2 channel of a Marshall JVM.

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3.02

Fixed Store-to name box too small for long preset names.

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3.01

Added tempo averaging.

Fixed Cabinet block Proximity parameter affecting right channel when Mic Type is NONE and in one of the mono modes.

Fixed corruption of Amp block bass EQ when Tonestack Type is set to ACTIVE.

Fixed incorrect Damping value in Recto Org Modern model. Increased LF Res value also as typical cabinet used with this amp has significant LF resonance.

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3.00

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NOTE: FACTORY BANK A HAS BEEN REDONE TO REFLECT THE CHANGES AND IMPROVEMENTS. THE SYSEX FILE TO INSTALL THIS BANK IS INCLUDED ALONG WITH THIS FIRMWARE.

Added IR Capture feature. Please see the separate instructions for details on the use of this feature.

Greatly improved power amp modeling. New pentode model with adjustable hardness. Improved power supply modeling. Improved screen grid modeling and bias excursion modeling (more apparent “knock” on high-gain tones).

Added POWER TUBE HARDNESS parameter. This parameter adjusts how rapidly the power tubes enter saturation. Higher values give a slightly more aggressive distortion character. Lower values give a smoother breakup.

Added TRANSFORMER MATCH parameter. This is an extremely powerful parameter that sets the relative output transformer primary impedance which in turn controls how easily the power tubes are driven into clipping. The higher the Master Volume setting the more pronounced the effect of this parameter. Decreasing the matching causes the power tubes to clip later and therefore the phase inverter and grid clipping becomes more predominant. Increasing the matching causes the power tubes to clip sooner. At lower settings the speaker resonance will be more pronounced, at higher settings the speaker resonance will be less pronounced. For optimum results bring up the Master until the desired amount of power amp distortion is achieved, then adjust the matching until the character of the distortion is as desired. The various LF and HF resonance parameters interact strongly with this parameter so be sure to experiment with those as well when crafting your ideal tone. The value of this parameter is relative to the actual transformer matching which is set internally and not directly exposed. The value is reset to 1.0 whenever they amp type is selected.

Added AMP VOICING parameter. This parameter voices the amp to a variety of tonal styles. Voicings take the guesswork out of mix engineering by automatically crafting the tone like a professional engineer would. Choose "Neutral" for the raw amp sound. Choose one of the other voicings to rapidly achieve a mix-ready tone.

Improved speaker load modeling. Now incorporates magnetic eddy current losses.

Added speaker impedance graph to the Amp block and moved all related parameters to that page. This graph allows you to visualize the resulting speaker impedance curve and how the various parameters affect the impedance. Note that the power amp frequency response will not equal the speaker impedance if the Damping is greater than 0. This is because negative feedback flattens the response curve.

Added quick reset to amp block graphic EQ. Pressing Enter while in the EQ menu resets all bands to zero.

Added mid-frequency resonance to Amp block. While most speakers don't have a mid-frequency resonance, this parameter allows you to fine-tune the edge-of-breakup profile enabling you to achieve "hyper-realistic" tones.

Added "TX STAR" amp model. This model is based on the lead channel of a Mesa Lonestar.

Added "FAS WRECK" model. This model is based on the original WRECKER 1 model from the Axe-Fx Ultra.

Added "PRINCE TONE" model. Based on a single-ended Fender Princeton model 5F2-A.

Reworked "MR Z 38 SR" model. If you are using this model it is highly recommended that you reset the model by selecting another model and then reselecting the "MR Z 38 SR" model.

Reworked "BRIT JM45" model. Model is now based on Channel 1 (the bright channel).

All amp models have been reworked to some extent. The models listed above received major rework.

Reprocessed most Redwirez cabinet IRs to reduce excessive low end.

Reworked all mic models and added Proximity parameter to allow the user to adjust the desired proximity effect.

Improved Spring Reverb modeling.

Added Drive parameter to Spring Reverb modes.

Added LOWCUT parameter to Pitch block.

Added 6 dB/octave slope to Delay block EQ.

Changed preset recall "wraparound" so that recall stops at the wrap point briefly. Continuing to increase or decrease the value will then result in the preset wrapping around after a brief period.

Improved Output Level knob tapers.

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2.00c

Fixed crashing under rare circumstances when loading presets created with certain versions of Axe-Edit.

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2.00b

Fixed slight corruption in tuner indicator.

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2.00a

Fixed level bug in Jr. Blues model.

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2.00

NOTE: THIS VERSION WILL LIKELY CHANGE THE SOUND OF EXISTING PRESETS. THERE HAVE BEEN NUMEROUS CHANGES AND IMPROVEMENTS TO THE AMP MODELING. YOU SHOULD AUDITION ALL YOUR PRESETS AFTER INSTALLATION AND CHECK FOR PROPER OPERATION AND TONE. AN AMP MODEL CAN BE RESET BY TEMPORARILY CHANGING THE AMP TYPE AND THEN CHANGING BACK TO THE DESIRED TYPE. THIS WILL LOAD THE MODEL WITH DEFAULT PARAMETERS.

NOTE: ALTHOUGH THE AXE-FX II WILL AUTOMATICALLY REBOOT UPON UPDATING THE FIRMWARE IT IS RECOMMENDED TO POWER CYCLE THE UNIT AFTER INSTALLING THIS FIRMWARE.

NOTE: DUE TO THE LARGE NUMBER OF CHANGES IN THIS FIRMWARE YOU MAY NEED TO RESET YOUR SYSTEM PARAMETERS. IF YOU EXPERIENCE STRANGE PRESET BEHAVIOR AFTER INSTALLING THIS PRESET WE RECOMMEND PERFORMING A PARAMETER RESET VIA THE UTILITY MENU.

Added “Triode Hardness” parameter to amp block. This parameter controls how sharply the triodes enter saturation and can be used to simulate softer or harder tubes. The default value is 5.0 and is set to this value whenever the type is changed. The effect of this is subtle and most apparent at edge of breakup. Lower values give softer saturation, higher values give a more aggressive breakup.

NOTE: Existing presets should be checked as this value may load to a value of other than 5.0 depeding upon what version of firmware was originally used to create the preset. All factory presets have been reworked as the factory presets will load to 0.0.

Exposed the second-to-last triode plate frequency: Triode1 Plate Freq. This parameter sets the cutoff frequency of the plate impedance for the next-to-last triode in the chain. Many amps have a capacitor across this triode's plate resistor. This capacitor is used to smooth the response and reduce noise. You can adjust the amount of capacitance, and the resulting frequency, using this parameter. The last triode plate capacitor is also exposed: Triode2 Plate Freq.

Reworked most amp models. Corrected various mistakes and updated Miller capacitance values based on recent research.

Added SOLO X99 LEAD model. Based on the lead channel of a Soldano X99 preamp.

Added RECTO ORG MDRN model. Based on the Modern channel of a new Dual Rectifier with the voicing in the Modern position.

Added Cabinet Size warping. This allows the user to change the relative size of the speaker. Note: feature only available in Mono modes.

Reverted Output Level tapers to original taper.

Reduced power-off pop. For maximum suppresion of output transients at power-down turn the Output Level controls full CCW before turning power off.

Added Low Rate Mult parameter to Rotary block. This parameter adjusts the rate of the virtual LF drum relative to the HF rotor.

Added Time Const. Parameters to Rotary block. These parameters control how fast the respective rates change in response to changes in the rate.

Added Input Select to Volume block.

Exposed Mixer block Output Mode parameter to Modification.

Improved GUI performance. Screen draws are now faster which should reduce sluggishness at high CPU usage. Added knob highlights for kicks.

Fixed bypass state not being saved properly when switching between X/Y and then changing state.

Fixed Looper block not reporting controllers correctly to MFC-101.

Fixed Pitch block using same custom scale degrees for both X and Y.

Fixed MIDI processing not handling running status properly.

Fixed CPU usage increasing if USB not initialized.

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1.05

Fixed X/Y copy not working in Reverb.

Increased sequencer steps to 32.

Added Hicut to Quadchorus.

Added Bypass Mode to Volume block.

Added FAS Brown and Big Hair models.

Exposed Drive block Bit Reduction parameter to Modification.

Exposed Delay block Bit Reduction parameter to Modification.

Exposed Delay block Drive parameter to Modification.

Exposed Crossover Freq parameter to Modification.

Patch recall now wraps at boundaries.

Quick Control knobs now work in Global EQ menu.

Fixed crashing on certain GUI messages (X/Y, etc.).

Changed Output Level knobs so that volume goes to zero and eliminated "beating".

Fixed noise in USB audio when using OS-X aggregate device and changing presets via MIDI.

Fixed some Bypass Mode Modifiers not correctly mapped.

Fixed pop when X/Y switching between regular and reverse delay types.

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1.04

Fixed Output 2 Configuration not working.

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1.03

Fixed Reverb "Y" not recalling properly

Changed X/Y so that switching by MIDI preserves bypass state

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1.02

Fixed popping when switching between certain amp models.

Fixed X/Y not working properly in Cabinet block.

Improved Rotary block.

Added X/Y copy feature. To copy all parameters from “X” to “Y” double-click “Y”. Likewise double-click “X” to copy from “Y”.

Added Tube Pre model.

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1.01

Initial production release.