Axe-Fx II Firmware Release Notes

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18.01

NOTE: It is possible that the new Word Clock parameter (see below) will be set to SPDIF/AES IN after installation of this firmware. This will result in a "NO INPUT CLOCK!" message appearing on the screen. If so, set the Word Clock value to "Auto" in the I/O->Audio menu.

NOTE: The USB Return Level parameter will be unitialized after installation of this firmware. Set the desired USB Return Level via the I/O->Audio menu.

This firmware incorporates all-new amp modeling algorithms. With this update the Axe-Fx II now incorporates our "Generation 3 (G3) Amp Modeling Technology". G3 modeling improves upon our previous modeling with better touch sensitivity, better dynamics, better distortion texture (or "grain") with less fizz, more crunch and improved frequency response accuracy.

Not all amp models have been fully converted to take advantage of G3 modeling as of this release. Those that have been fully ported are indicated by "(G3)" after the model name on the Pre page of the Amp block. Those that have not been fully ported yet will still benefit from the improved algorithms.

The Rotary block has been completely revised. It is recommended to reset the block in any existing presets by double-clicking the Bypass button to load the default values. Also, the Rotary block now supports X/Y which simplifies slow/fast switching.

Added modifier capability to Compressor block Level control.

Replaced some of the factory IRs with UltraRes™ IRs from our upcoming Universal Noise Storage 2 Cabinet Pack. These IRs are the first IRs that we have captured using the "Mic + DI" technique which results in IRs with improved accuracy and clarity.

Added USB Return Level parameter to I/O->Audio menu. This parameter sets the level of the USB input sent to the main outputs.

Fixed Cabinet block room simulation collapsing to mono if Mode is mono and Preamp Type is not None.

Added "Word Clock" parameter to I/O->Audio menu. This selects the clock source for the A/D and D/A converters as follows:

> Auto: uses the internal clock if the input source is Analog or USB. Uses the recovered SPDIF/AES clock if the input is SPDIF/AES.
>
> SPDIF/AES IN: uses the recovered clock for all input sources. A valid 48 kHz data stream must be present at the AES or SPDIF input. If a valid stream is not detected the unit will fall back to the internal clock and display "NO INPUT CLOCK!". The SPDIF/AES select must be set to the

appropriate value, i.e. if the data stream is input to the XLR jack then SPDIF/AES SELECT must be set to AES.

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18.00

Internal release to support Axe-Fx II XL+ model.

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17.04

Improved power amp modeling. This results in better touch sensitivity, more explosive dynamics and improved low note clarity when the virtual power amp is driven hard.

Improved power amp cathode squish accuracy by accounting for dependency on bias point.

This version adds a new method of capturing User IRs: "Mic + DI" method. The method used to capture IRs is set in the Global menu. Mic Only is the traditional method and uses a single input into Input 2 Left as the response from which the IR is derived. Mic + DI uses both Input 2 Left and Input 2 Right. The mic response (i.e. preamp output) is input into Input 2 Left as usual while the output of a DI box (or DI output on an amp) is input into Input 2 Right. Both responses are captured and the response from the Right input is used to correct the response from the Left input. This accomplishes the same thing as using Reference Compensation in Cab-Lab but is done at capture time rather than during post-processing.

The advantage to the Mic + DI technique is that it allows almost any amp to be used. A flat, solid-state amplifier is not required. Any amp, whether solid-state or tube, with or without integrated preamp can be used. For example a tube guitar head can be used as the "power amp". You can even plug right into the front of the head (as opposed to using the power amp input or effects return), even if the head is set to heavy distortion. The unique capture technique of the Axe-Fx removes any distortion from the measurement and completely separates the amp response from the speaker response yielding a pure and accurate IR.

To use the Mic/Line + DI method do the following:

1. Connect the line output of your mic preamp to Input 2 Left.
2. Connect a DI box between the amplifier output and speaker input. Be sure to use a DI box that is specifically designed to work with speaker level signals and one that does not have any on-board cabinet emulation. You can also use the DI output of your amp if it has one as long as it is not a speaker emulated output.
3. Connect the output of the DI box to Input 2 Right.
4. Connect Output 2 Left of the Axe-Fx to the input of the amp.
5. Set the IR Capture Method in the Global menu to Mic + DI.
6. Set the Input 2 Mode in the I/O->Audio menu to Stereo.
7. Capture the IR as usual either using the front panel or Cab-Lab.

Suitable DI boxes include:

Suhr ISO Line Out Box
Pro Co DB1
Whirlwind Director
Whirlwind Direct2
ART ZDirect
Behringer Ultra-DI DI100
Behringer Ultra-G GI100 (with cab emulator off)
Behringer Ultra-DI DI600P

Superior results may be obtained using the line out of an attenuator with the attenuation turned off since the frequency response will typically have more low frequency extension than common DI boxes.

Some amps have DI or slave outputs that are simple resistive dividers and work great for this purpose. These include:
Mesa Boogie Mark IV/V
Mesa Rectifier Series

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17.03

Improved power amp screen grid and anode voltage dependence calculations. This results in more "open" tone and improved dynamic response especially when the virtual power amp is overdriven. This has necessitated changes to the default Cathode Squish value for the some models. Existing presets will have the Cathode Squish value updated automatically upon recall.

Added "65 Bassguy Bass" amp model. This is the bass channel of an AB165 Bassman. The existing "65 Bassguy" model has been renamed "65 Bassguy Nrml" to indicate that it is the normal channel.

Added "Vibra-King Fat" amp model.

List menus now wrap at limits when using up or down Nav buttons for easier access to parameters at the opposite end of the list.

Fixed Mr Z Hwy 66 model gain dropping if Drive set above 9.5.

Fixed wrong stage gain in Deluxe Verb amp model.

Fixed wrong triode plate voltage in 1987X models.

Fixed wrong B+ capacitor value in 1959SLP and Plexi 100W amp models.

Fixed wrong transformer matching value and wrong coupling capacitor value in Citrus Terrier model.

Fixed various errors in the Suhr Badger models. Re-MIMIC'd models accordingly. Note that these amps do not have Hi-Cut controls and the Hi-Cut control in the model is therefore non-functional.

Fixed wrong Tone pot value in Ruckus model in Drive block.

Fixed Hold in Ping-Pong Delay not working properly. Note that this fix will increase the level of the echoes in existing presets.

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17.02

Low Cut and High Cut have been extended to the Quad-Tap and Quad Tape types in the Multidelay block. These parameters control highpass and lowpass filters which filter the feedback from all the delay lines in contrast to the individual bandpass filters on each delay line. This allows quick and easy creation of bandlimited delays.

Added Drive parameter to Quad-Tap and Quad Tape types in Multidelay block.

The behavior of the Feedback parameters in the Quad-Tap and Quad Tape types in the Multidelay block has been improved. The feedback is no longer constrained to sum to 100%. Instead the total feedback is calculated and then normalized to 100% if the total exceeds 100%. This allows easier control of the feedback values.

Fixed VU Meter in Cab block not working when two instances of the Cab block are present.

Fixed excessive CPU use if modifier connected to certain parameters in Chorus and Flanger blocks.

Fixed Edited LED not lighting if Amp block Level changed from Utility menu's VU page.

Fixed wrong Hi Cut (Brilliance) pot value in Hot Kitty amp model.

Fixed wrong Low Cut frequency in Fox ODS II model. The two Fox models have been renamed "Fox ODS" and "Fox ODS Deep" respectively with the latter indicating that the Deep switch is activated. It should be noted that both models are modeled with the Preamp Bypass (PAB) active.

Fixed FAS Brootalz model using wrong feedback network.

Fixed using Air controls in Cab block along with Preamp models causes phase issues.

Fixed USB audio output level fluctuating during preset changes.

Fixed remote IR capture (Cab-Lab) brings up wrong page in Utility menu.

Added "Mr Z Hwy 66" amp model.

Added "Super 6G4" amp model.

Added "Concert 6G12" amp model.

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17.01

Internal build.

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17.00

Added preamp simulation to Cabinet block. The simulations recreate the sound of overdriven channel strips, preamps, tapes, etc. The Drive parameter controls the gain of the simulation. The Sat parameter controls the ratio of even/odd harmonics. The Preamp Mode parameter (on Page 2) allows selecting between Economy and High Quality modes. In High Quality mode oversampling is employed to prevent aliasing but this results in higher CPU usage.

Added “3 Band Console” types to Graphic EQ and Amp blocks.

Added “Fast RMS” detector type to Multiband Compressor.

Added “SDD Preamp”, “FET Preamp” and “Ruckus” types to Drive block.

Changed Cabinet Type parameter behavior so that the value wraps around at limits.

The Flanger block has been completely rewritten. The new algorithms now model the behavior of classic bucket-brigade device (BBD) units (except they are true stereo). Any existing presets will need to be auditioned and possibly edited. The Depth parameter works somewhat differently now and sets the maximum delay time (up to 20 ms). When Auto Depth is not off the maximum delay is reduced as the rate is increased. There are now three Auto Depth values: Low, Medium and High. Turning Auto Depth to Off allows complete control over the delay time. The minimum time is set by the Delay parameter and the maximum time is set by the Depth. Several new Flanger types have been added which demonstrate the new algorithms.

The Chorus block has a new algorithm based on the BBD algorithm developed for the Flanger block. All the “Analog” chorus types now use this algorithm. Several new types have been added which demonstrate the new algorithms.

The EQ page of the Amp block now supports changing the EQ Type using the Up/Down Nav buttons. The type of EQ will be briefly displayed after it has been changed. The type is also briefly displayed when first switching to that page.

Added “DYN EQ” GUI page to Amp block. This page now holds the Dynamic Depth, Dynamic Presence, Character Amount (Char Amt, previously named “Character”) and Character Freq parameters as well as two new parameters: Character Type and Character Q. Character Type selects between a shelving behavior or a peaking behavior. The previous behavior was always shelving. Character Q controls the bandwidth of the response when the peaking behavior is chosen. The Character parameters now control a powerful dynamic equalizer that can be used to achieve tones and feel impossible with a real amplifier. Negative values of the Character Amount along with a peaking behavior result in midrange scoop where the scoop increases as you play harder. Positive values result in a midrange boost as you play harder. Experiment with the frequency, Q and amount to achieve interesting dynamic response.

Added VU meters to Utility menu. The meters show the relative loudness of the channels. These readouts can be used to help set preset levels to the same apparent volume. For convenience the level of the Amp blocks can be set from

this page. Also, the value of the Output Level knobs is displayed in this page for reference (note that this is only for reference and does not affect the VU meters as the measurement is prior to the Output Level potentiometers).

Added “1959SLP Jump” amp model.

Added “FAS Modern III” amp model. Similar to a Recto but with tighter bass and a cathode-biased power amp.

Added shortcut to Ref Solo in first page of Tone Match block. Pressing the Down button will toggle the Ref Solo value allowing one to switch between the reference sound and the local (user) sound with the press of a button.

The level of the USB input signal when NOT routed to the input (when Main Input Source is NOT set to USB) has been reduced by 6 dB to prevent clipping when playing along with tracks that have been mastered at very high levels (near 0 dBFS).

Improved Amp block power supply modeling by accounting for DC sag due to quiescent bias currents.

Changed name of “ODS-100 Lead” and “ODS-100 Lead Mid” to “ODS-100 HRM” and “ODS-100 HRM Mid” respectively to indicate that they are based on the “HRM” version of the ODS circuit. The names of the “ODS-100 Lead 2” and “ODS-100 Lead 3” models have been changed to “ODS-100 Ford 1” and “ODS-100 Ford 2” respectively to indicate that they are based on the “non-HRM” version of the ODS circuit.

Fixed minor math error in Amp block transformer matching calculations.

Fixed wrong CF Comp value in Solo 100 amp models.

All the ODS-100 models have been redone and re-MIMIC’d based on errors found in the models (wrong negative feedback values).

Added “ODS-100 Ford MD” model which is the same as ODS-100 Ford 1 but with the Mid switch engaged.

Added “Rumble HRM” tone stack type which is based on a plate-driven Plexi-style tone stack found in a Dumble “Hot Rubber Monkey” amplifier.

An exact solution has been implemented for the power amp feedback network in the “USA” amp models. As such all these amp models have been redone accordingly with the exception of the “USA Pre” amp models which use a more conventional power amp model. Any presets using these amp models should be reset either by deselecting then reselecting the amp model or by using the “Update Amps Default” in the Utility->Preset menu. Note: due to the unique topology of the feedback network in these amps the Depth control is non-functional.

A “Presence Shift” switch has been added to certain “USA” amp models (those based on amps with a “Pull Shift” on the Presence knob). This switch is found under the Presence control and replicates the behavior when the Presence knob is pulled out on these amps. Note that the behavior of this switch is authentic and may result in volume reduction when active since the negative feedback is increased which lowers the loop gain.

Replaced the two 4x12 “Kalthallen” cabs with two UltraRes samples from Cab Pack 7.

Fixed several wrong values in Fox ODS amp models.

Fixed wrong value on input plate network in PVH 6160 II model.

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16.04.1

Fixed setting Diffusion Time to maximum in Delay block causes crash.

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16.04

Fixed attaching modifier to Reverb Hold parameter uses excessive CPU.

Fixed setting Reverb Echo Density to less than '8' in High Quality mode causes ringing.

Fixed attaching modifier to Reverb Pre-Delay attaches to Input Gain instead.

Added 1959SLP Normal and Treble amp models based on a Marshall 100W "Super Lead Plexi" model no. 1959.

Added "Dizzy V4 Slvr" amp models which are based on the silver-faced version of a Diezel VH4. The existing models have been renamed "Dizzy V4 Blue" as they are based on a blue-faced version.

Tweaked the Large Hall reverb type slightly.

Added several new reverb types.

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16.03

Improved Reverb block. There are now two "Quality" options in the Reverb block: Normal and High. Normal quality CPU usage is similar to previous firmwares whilst still providing improved sound quality. High quality uses significantly more CPU but provides world-class reverberation algorithms. There are several new parameters associated with the new algorithms:

Early Diffusion: This sets the amount of diffusion in the early reflections. Higher values result in fuzzier and less distinct echoes. Lower values result in sharp, distinct reflections.

Early Diff Time: This scales the delay time of the early reflections diffusers. Adjust this control to suit the size and character of the simulated environment.

Early Decay: This parameter controls the decay rate of the early reflections. Higher values yield faster decay.

The Tail Delay parameter has been removed as it is not compatible with the new algorithms. The reverb tail is now automatically set to the appropriate delay.

In High Quality reverb mode an additional parameter is available: Late Input Mix. This parameter controls the mix between the (possibly diffused) input and the early reflections data input to the late reverb algorithm. Thus this parameter mixes the output of the diffuser and the early reflections prior to inputting that data to the late reverb generator. With the Late Input Mix at 0% the High Quality mode is identical to the Normal Quality mode. Values greater than 0% mix early reflections data into the late reverb using a proprietary decorrelation technique which eliminates any metallic qualities associated with the typical diffuser techniques used in other products.

Improved Reverb types based on the new algorithms. Several new types have been added.

Increased maximum Reverb Time to 100 seconds and added a Hold function. When Hold is activated the wet input to the block is muted and the Time is set to infinity. This can be used to achieve pad sounds and drone notes/chords.

Added stereo UltraRes™ capability to Cabinet block. To utilize this feature set the Mode parameter to "Stereo UltraRes". When in this mode non-UltraRes IRs are processes in normal resolution whereas UltraRes IRs are processed using the UltraRes engine.

Four of the factory cabinet IRs have been replaced with newly acquired UltraRes™ IRs. These are factory cabs 69-72 (Kalthallen V30 cabs). These IRs are available on the internet from Kalthallen's website. For reference the four cab filenames are:

028c-SM7-V30-4x12.wav"
029c-SM7-V30-4x12.wav"

030c-SM7-V30-4x12.wav"
031c-SM7-V30-4x12.wav"

Improved "Pedal Comp 2" compressor algorithm.

Fixed several errors in the Mr Z MZ-38 model.

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16.02

Improved Amp block output transformer modeling. New algorithm more accurately simulates effects of inter-winding capacitance and the resulting load on the virtual power tubes. This results in improved high frequency response. Tones have more "chime" without being harsh. This is especially noticeable for amps with low negative feedback or when the Presence is turned up high.

Added Slope parameter to SPKR page in Amp block. This parameter allows fine adjustment of the high-frequency impedance of the virtual voice coil (which affects the slope of the impedance curve). A speaker voice coil is "semi-inductive" due to eddy current losses in the motor. This presents an impedance to the power amp that isn't fully inductive nor fully resistive. The amount of resistive loss varies by brand and type. Reducing the Slope simulates a speaker that is less inductive, increasing Slope simulates a speaker that is more

inductive. Typical speakers range from 3.0 to 4.5 with the median being about 3.7. Lower values yield greater midrange while higher values are more scooped and sizzly.

Improved Compressor block by adding a new dynamics processing algorithm. The block has been renamed Comp/Dynmc in light of this. There are now four types of dynamics algorithms: Studio Compressor, Pedal Compressor 1, Pedal Compressor 2, and Dynamics. The Dynamics algorithm allows compression or expansion with a single control. When the Dynamics parameter is set to negative values the block compresses the signal, when set to positive values the block expands the signal.

Added "Fast RMS" Detector type to Studio Comp type in Compressor block. This detector type mimics the fast detectors in classic rack-mount compressors.

Added "Dynamics" control to amp block. This parameter controls a dynamics processor that can be used to alter the dynamic response of the amp algorithms. When set below zero the amp compresses resulting in a smoother, less dynamic sound. When set greater than zero the amp expands resulting in a punchier, crunchier and more dynamic sound. Note that extreme values can have undesirable side-effects such as pumping and clipping.

Added AC voltage control to Amp block. This parameter, called "AC Voltage (Variac)" in the Advanced menu sets the relative AC line voltage into the amp simulation implementing a virtual "Variac". Note that normally the volume would vary with the Variac setting in a real amp but the simulation compensates for the volume change by applying the inverse. This mitigates having to manually compensate using the Output Level.

Improved Noise Gate. The noise gate now features two types: "Classic" and "Intelligent". The Classic type is unchanged from previous firmwares and is a basic downward expander. The Intelligent type features faster and more stable gating along with a proprietary noise reduction algorithm.

Added ducking to Reverb block. The ducking works analogously to the ducking in the Delay block.

Added "Class-A 30W Hot" amp model based on a Vox AC30HW with the Hot/Cool switch in the Hot position.

Moved Spkr Drive parameter in Amp block to Advanced menu page.

Fixed Angle Severe models oscillating if Presence turned way down.

Fixed wrong Low Cut Freq in AC-20 Dlx Treb model.

Fixed several errors in the Citrus Terrier amp model.

Fixed Global menu Reverb Mix value display being overwritten.

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16.01

Improved Drive block algorithms for types based on the Tube Screamer.

Fixed thumping when switching amp types.

Fixed crackling when running two instances of the same amp.

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16.00

Improved Amp block cathode follower model. New model includes effects of grid resistance which results in more accurate clipping characteristics.

Improved Amp block virtual power tube model. Improved algorithm more accurately models plate current vs. grid voltage yielding a more accurate transfer function which results in more pleasing power amp distortion and improved feel.

Improved Amp block virtual power tube interaction with virtual output transformer. This yields improved low-frequency accuracy and feel. Furthermore this improves the output waveform accuracy resulting in much improved interaction with the cabinet block. IRs should now sound fuller and more resonant with more “thunk” and “knock”. The Low Res parameter in the Spkr tab can be used to increase or decrease the amount of knock.

Added Power Amp Hardness parameter to Amp block. This parameter controls the hardness of the virtual power tube grid clipping. Models default to “Medium” and any presets created with earlier firmware versions will be set to Medium upon recall.

Changed Layout grid navigation so that wraparound does not occur when using Left/Right nav buttons. Up/Down nav buttons will still wrap around allowing easy access to the beginning/end of the grid. Also, the previously highlighted block will be selected when moving into the grid from the Input or Output blocks using the Left/Right nav buttons.

Fixed attaching modifier to Crossover block XOVER FREQUENCY overwrites parameter value display in other blocks.

Fixed wrong default Presence value for USA Sub Blues amp model.

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15.07

Added Preset Decrement functionality to Pedals. This allows using one pedal to increment the preset and the other pedal to decrement.

Fixed attaching modifier to Noisegate Threshold causes overwrite of parameter text in other blocks.

Fixed Compressor, Gate, Graphic EQ, Parametric EQ and Pan/Tremolo blocks bypass mode not sticking for a scene if that scene is using a different X/Y mode than the other scenes.

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15.06

Fixed wrong frequency labels for “5 Band (Mark)” EQ type in Amp block.

Fixed Parametric EQ block band 4 selecting wrong filter type on presets created with certain firmware versions.

Fixed Clip LEDs not lighting under certain combinations of I/O settings.

Fixed reporting wrong version number to Axe-Edit.

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15.05

Fixed Master Q defaulting to 0.1 for older presets.

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15.04

Added “Lowhshelf 2” and “Highshelf 2” EQ types to Filter and Parametric EQ blocks (in the Parametric EQ block these are referred to as “Shelving 2” types). These types recreate the analog shelving filters found on classic mixing consoles. These filters are somewhat quirky and exhibit “overshoot” which gives them a certain musical quality. Set the Q between 0.5 and 0.707 to recreate those classic sounds or experiment with the Q for different amounts of overshoot. These filter types are great for getting that massive sound associated with passive equalization.

Added selectable filter types to bands 2 and 4 in the Parametric EQ block. These bands can now be set to Peaking, Shelving or Shelving 2 types (where Shelving 2 selects a Lowshelf 2 for band 2 and a Highshelf 2 for band 4).

Added various “Passive EQ” types to Graphic EQ and Amp blocks. These EQ types are modeled after classic analog EQs and specifically tuned for guitar amp equalization.

Added “Master Q” parameter to Graphic EQ block. This parameter adjusts the Q of all bands. A value of 1.0 sets the Q to the default value (typically one octave). Lower values increase the bandwidth and overlap of each band, higher values decrease the bandwidth.

Added runaway feedback protection to Tape Delay algorithm when Drive is set to zero.

Moved Noisegate and Main Output edit menus in Layout page. To enter these menus select the “In/Gate” or “Output” blocks in the layout grid and press Edit. The Layout grid now “wraps around” as well.

Added Modifier connectivity to Threshold and Ratio parameters in Noisegate.

Fixed 5153 Blue amp model causing lockups.

Added 256 more preset locations for Axe-Fx II XL models (768 total).

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15.03

Improved Amp block Dynamic Depth algorithm. The new algorithm uses the low-frequency speaker information from the speaker page to set the inverse-homomorphic filters resulting in a more musical control.

Improved Amp block cathode follower. New algorithm includes loading on previous triode plate and resulting effect on distortion characteristics.

Improved Reverb block. New early reflections algorithm results in more lifelike spatial immersion. Most Reverb types, however, have the Early Level set fairly low so this may not be readily apparent. Increasing Early Level will increase the relative amplitude of the early reflections.

Added Stereo Width control to Reverb block. This can be used to reduce the apparent stereo separation.

Added "Brit AFS100" amp models based on a Marshall AFD100SCE. Brit AFS100 1 is based on the #34/AFD switch in the #34 mode (LED off). Brit AFS100 2 is in the AFD mode (LED on).

Fixed various issues with Two Stone J35 amp models.

Fixed weird Depth knob behavior for amp models using the Dumble-style feedback network (even though these amps never have depth circuits).

Fixed Depth not working on FAS Brootalz model.

Fixed Update Amps Defaults function in Utility menu not properly updating inactive state.

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15.02

Fixed Amp block negative feedback normalization constant inverted for certain amp models (Presence control inoperative, excessive bass and treble).

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15.01

Fixed Update Amp Block functions in Utility menu only updating current state (i.e. 'X' or 'Y').

Amp block Sat Switch now has three settings: Off, On (Auth) and On (Ideal). On (Auth) replicates authentic saturation circuit behavior and will lower the volume out of the virtual preamp. On (Ideal) replicates the idealized behavior present in Version 14.xx and earlier firmware.

Improved Negative Feedback calculation accuracy by including virtual feedback of phase inverter.

Fixed wrong CF Comp and Neg Fdbk default values in Solo 100 amp models.

Fixed wrong Neg Fdbk default values in PVH 6160, PVH 6160 II and 5153 models.

Fixed wrong Presence network calculations in FAS Modern, FAS Modern II and Das Metall amp models.

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15.00

NOTE: This is a major firmware release which has the potential to alter the sounds of presets. The core amp modeling has been improved and most of the amp models have been adjusted accordingly. It is recommended that any existing presets have the amp block reset to ensure that the appropriate parameter values are loaded. This is achieved by deselecting the amp type and then reselecting it, i.e. if the amp type is Deluxe Verb the amp block would be reset by selecting a different model, e.g. Dirty Shirley, and then reselecting Deluxe Verb. This will reset various internal parameters and certain user parameters. Note that Master Volume, Presence and Depth, among others, are set to default values when selecting an amp model. See below for more information about Presence default values. It may be helpful to note the value of these parameters prior to resetting the block.

NOTE: Factory cabinets 119-132 have been replaced. Previously there were "V9" IRs in these locations which were factory IRs from Version 9 (and earlier) firmware. These IRs have been replaced with custom UltraRes™ IR mixes using data from our recent UltraRes IR capture sessions. If your presets use any of these factory cabinets then the sound of your presets will change (probably for the better).

NOTE: The amp modeling improvements have resulted in a significantly increased "sweet spot" for the Master Volume control. Previous advice to keep the Master Volume low for high-gain amp types no longer applies and, in fact, increasing the Master Volume can result in better tone (more bloom and swirl) and much better feel (due to power supply sag). Therefore most non-MV amps now default to a higher value than previously. This may result in louder preset volume which will necessitate reducing the Output Level to compensate.

Added Variable-Q EQ types to Graphic EQ, Filter and Amp blocks. Many "classic" graphic equalizers use variable-Q designs which may be more familiar to some users as opposed to constant-Q filters. In the Filter block this type is selected by choosing the "Peaking2" type. The Graphic EQ block now has four constant-Q modes and four variable-Q modes. The Amp block now has three constant-Q modes and three variable-Q modes.

Reduced amount of pre-trimming on IR capture data as this was causing errors when obtaining captures of items other than speakers (due to lack of leading silence).

Added screen warning when unit is bypassed.

Increased number of Scratchpad IR locations to four.

Added “Update Amps Defaults” and “Update Amps All Presets” functions to Utility menu. These two functions reset all advanced parameters in each amp block to default values. Tone controls and Drive levels are not reset. The first function updates the current preset, the second function updates all presets.

Added ability to bypass Mixer block in XL models. This also fixes an issue with Axe-Edit not reflecting the X/Y state of the block.

Added “MFC ECHO TO MIDI OUT” option for Axe-Fx II XL (I/O->MIDI). Turning this to On echoes all MIDI data from the MFC to MIDI Out. This can be used to send MIDI PC and CC messages to other equipment connected to MIDI Out.

Improved Amp block virtual power amp algorithm. The new algorithm improves realism and offers much more “punch” and a “crunchier” tone when overdriven.

Improved cathode bias modeling. This improves so-called “Class A” amps (e.g. Mr Z Maz 38, AC-20 Dlx, etc.).

Improved Amp block output transformer modeling by improving the accuracy of the flux density vs intensity curve (B-H curve) and resulting primary inductance. Because of this, the default Transformer Drive value for many amp models has been changed. Existing presets will be automatically updated to the new default value upon recall.

Improved Amp block feedback network accuracy especially for those amps that have depth networks. This causes the Presence and Depth controls to interact (as they would on a real amp) but yields greater realism.

Improved Amp block power supply accuracy. This provides more open, less compressed response. Because of this, the default Supply Sag for many amp models has changed. Existing presets will be automatically updated to the new default value upon recall.

Improved Amp block triode modeling. Models now incorporate reactive plate loading effects.

Improved Amp block Hi Cut control accuracy.

Changed Amp block so that Presence control is set to a default value when an amp model is selected. This is done because many amps, i.e. Double Verb, Deluxe Verb, et. al., have no presence control and the value should be set to zero for best accuracy. On the other hand some amps, i.e. Jr. Blues, 65 Bassman, et. al, have fixed presence networks. The Presence control will default to the appropriate value for these amps. For amps that do have a presence control the Presence parameter will default to a value that is deemed typical for the model.

Added Power Amp Bias parameter to Amp block. This parameter can be used to adjust the offset voltage of the virtual power amp (this should not be confused with the Power Tube Bias parameter which sets the quiescent operating current of the virtual power tubes). Power Amp Bias allows the user to vary the symmetry of the clipping of the virtual power amp. A value of zero produces nearly symmetrical clipping which will produce very little even harmonics. Higher values will produce increasingly asymmetrical clipping which increases the amount of even harmonics. Small amounts of even harmonics can make the power amp distortion sound “warmer” and more bell-like while higher amounts will give a “fuzzier” tone. Most amps have some amount of offset and the amp models will default to a typical value. Note that this parameter is only applicable for

push-pull power amp types. For single-ended power amps the Power Tube Bias parameter sets the symmetry (as always).

Added exact tone stack solutions for all amp models with treble roll-off networks, e.g. PVH 6160, Triptik, Tucana, 5153, etc.

Changed Amp block Sat Switch operation. Sat Switch now operates like actual amp. Note that this will cause a reduction in level when the switch is engaged (as in the real amp).

Added "Out Comp" (Output Compression) control to Amp block. This parameter controls a compressor specifically tailored to reducing the output dynamic range of the Amp block. Note that this compressor runs in the master DSP and if set to a non-zero value will increase CPU usage. The Out Comp parameter controls the amount of compression (compression ratio). In the Advanced menu the user can also adjust the compression threshold via the "Comp Thrshld" parameter, if desired. The bar graph at the bottom of the menu displays the amount of gain reduction.

Removed Amp block Thunk parameter. This processing operation is no longer deemed necessary due to the improved Amp block algorithms.

The Amp block Modeling Mode choices have been reduced to "Authentic", "Smooth", "Ideal" and "Ideal/Smooth". In "Smooth" mode Triode Hardness is set to minimum. In Ideal mode grid conduction is defeated. In Ideal/Smooth mode grid conduction is defeated and Triode Hardness is set to minimum.

Renamed "Mstr" control in Amp block to "Master Volume" to reduce confusion.

Renamed "Level" control in Amp block to "Output Level" to reduce confusion.

Renamed "Damping" control in Amp block to "Neg Fdbk" (Negative Feedback) as this is a more accurate term.

Added "CA Tucana 3" amp model based on the lead channel of a Carol-Ann Tucana 3.

Added "Jr Blues Fat" amp model. This is the same as the Jr Blues model but with the "Fat" switch engaged.

Corrected location of Amp block Hi Cut filter (for models with no negative feedback). Most of the time this will not be audible but for amps that rely on phase inverter overdrive (i.e. when Master Volume location is Post-PI) it may be more audible.

Corrected the Preamp Bias value for some of the Fender amp models. This parameter will automatically be set to default value for existing presets. If you have overridden the default value in your presets you will need to re-enter the desired value.

Because of Amp block feedback network improvements the 65 Bassguy amp model was completely reworked as this amp has a strange feedback topology. Existing presets using this model should be reset by selecting a different amp model and then reselecting the amp model.

Fixed wrong drive level into phase inverter in Plexi 50W and Plexi 100W amp models (likely not audible but done for correctness).

Fixed wrong source impedance for tone stack in Solo 100 amp models (likely not audible but done for correctness).

Fixed several mistakes in Mr Z MZ-38 amp model.

Fixed wrong Bright Cap value in AC-20 Dlx amp models. Existing presets using this model should be reset by selecting a different amp model and then reselecting the amp model.

Fixed several errors in the Herbie and Dizzy amp models. These models should be reset by deselecting then reselecting the model.

Fixed wrong Low Cut Frequency in 5153 Green amp model. Existing presets using this model should be reset by selecting a different amp model and then reselecting the amp model.

Fixed wrong coupling cap value in 1987X Treble and 1987X Jump amp models.

Fixed wrong Input Drive taper and inter-stage coupling cap value in 5153 Red amp model.

Fixed wrong gain value in Jr. Blues amp model.

Fixed Master Volume and Tone Stack location in wrong default positions in Citrus Terrier amp model. Existing presets using this model should be reset by selecting a different amp model and then reselecting the amp model.

Fixed Random LFO generating numbers out-of-range which can lead to erratic behavior.

Fixed unit crashing when unlinking global blocks for a preset that contains a Tone Match block.

Improved Flanger and Chorus blocks.

Various other fixes and improvements.

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14.03

Added message indicating when FPGA firmware is being programmed (previously would just sit on File Transfer in Progress).

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14.02

Fixed unit locking up when switching to presets with high CPU utilization.

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14.01

Improved Amp block X/Y switching time for presets with high CPU usage.

Improved Amp block power amp dynamic impedance modeling.

Fixed unable to set Modifier Min/Max on certain parameters whose values are either Off or On.

Fixed IR Capture reporting finished before conversion complete (for CabLab).

Fixed I/O->Pedal menu in XL models.

Fixed wrong summing junction configuration in Vibrato Lux model.

Fixed engaging Fat switch on FAS Bass model causes strange sound. Note that the FAS Bass model has an active tone stack so the Fat switch has no effect by design.

Fixed wrong Mid taper in Super Verb model.

Changed Band Commander model so that "V1" is installed thereby reducing drive level into phase inverter. The sound of the previous version of the model can be achieved by increasing Master Volume Trim to approximately 2.0.

Updated all "Blackface" models (models based on Fender AA763 and AB763 preamps) as these models neglected the fact that there are two capacitors between the final triode stage and the phase inverter. This change is likely inaudible but was done for correctness.

Added "Vibrato Verb AA" amp model based on an AA763 Fender VibroVerb.

Added "Vibrato Verb AB" amp model based on an AB763 Fender VibroVerb.

Added "AC-20 DLX 12AX7" amp model based on the Treble channel of a Morgan AC-20 Deluxe with the EF86/12AX7 switch in the 12AX7 position.

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14.00

NOTE: This is a major firmware release which normally indicates the potential to alter the sounds of presets. However, in this case it will likely not alter the sounds of your presets EXCEPT if a preset uses any of the Recto models as the tone stacks have been reworked for these models (see below).

Improved Looper as follows:

1. Improved handling of quantization. If recording is stopped early, the Looper will automatically continue recording until the next down beat rather than extend the length of the loop by adding silence. If recording is stopped late, the Looper will automatically start playback that far into the loop rather than waiting for the next downbeat. When play is stopped and re-started the Looper no longer waits for the Axe-FX II"s internal tempo downbeat. This makes it easier to resync up with an external tempo source when starting and stopping playback.
2. Improved handling of modifiers on Loop Start and Loop End parameters. Changing one of these values no longer alters the min/max of the other. So

for example an external controller could be assigned to both Start and End simultaneously to allow sweeping over a playback region.
3. Added the ability to pre-select Reverse before recording. When recording is finished the loop will automatically start playing back in Reverse.
4. Changed Quantize parameter to have 4 values: OFF, 1/4, 1/8, 1/16 to support quantizing to subdivisions of the quarter note.
5. Added new parameter "Record Beats". If set to a value > 0 and Quantize is turned it then the Looper will automatically record for the specified number of beats (unless stopped earlier by user).
6. Fixed a bug where using Undo and 1/2 speed could cause the unit to exceed maximum CPU.
7. Various internal efficiency improvements.

Added Global Noisegate Offset parameter. This parameter allows offsetting the Noisegate threshold for all presets. This can be used to increase or decrease the threshold to compensate for varying interference levels. Note that if the Threshold parameter in the preset is set to "Off" the Global Offset will have no effect. NOTE: This parameter will default to -40 dB after installation of the firmware. Be sure to set to the desired value. The default value is 0 dB and is set to that upon System Reset.

Improved Amp block triode model. New model more accurately replicates behavior when triode enters saturation. This results in a warmer and punchier tone with smoother distortion characteristics.

Improved tone stack accuracy at extreme knob settings (i.e. when Treble is near maximum) by accounting for impedance loading. In most cases this is barely audible but for certain tone stacks that are heavily loaded there may be a small change in tone, especially as the tone controls are set near their minimum or maximum values.

Improved power tube grid conduction modeling. This more accurate modeling improves dynamic response resulting in a more powerful tone and feel. This also improves post-PI Master Volume behavior.

Removed "Dynamics" control from Amp block. This control is no longer deemed necessary due to the improvements in the underlying modeling.

Renamed Amp block "Comp" knob "CF Comp" since this knob controls the amount of compression in the Cathode Follower (CF) modeling.

Added "Brit 800" tone stack type. This type is identical to a Plexi tone stack except for the load resistance. The default tone stack for the Brit 800 and Brit 800 Mod amp models is now set to this type.

Improved Recto models tone stack accuracy. The Recto models now use an exact digital replica of the unique tone control network used in those amps. Furthermore the Presence control now operates like the actual amp in all models (i.e. for those models where there is no negative feedback the Presence control is actually part of the tone stack). NOTE 1: The model may need to be reset by deselecting and reselecting the type in order to load the updated parameters. NOTE 2: If the power amp modeling is defeated the Presence control usually operates as a shelving filter with noon being neutral. For the Recto models where the Presence control is part of the tone stack this will not be the case. The Presence control will continue to act as it does when the power amp modeling is active since it is part of the preamp.

Due to the above, all Recto1 and Recto2 models have been re-MIMIC'd.

Added "Recto1 Org Mdrn" amp model based on the Orange channel of an original Dual Rectifier with the "Channel Cloning" switch set to "Org to Modern". NOTE: Unlike the actual amp the Presence knob is effective in this model (in the actual amp the Presence knob has very little effect). When set to zero the Presence matches the actual amp at zero. When set to about 1.0 it matches the actual amp at full.

Added "FAS Brootalz" amp model. This model brings teh brootalz.

Added "Angle Severe" amp models based on the Rough channel of an Engl Savage. Angle Severe 2 models the contour switch depressed.

Added "USA Pre Ld1 Red" amp model based on the Lead 1 Red mode of a Mesa Triaxis preamp with the TX-4 board.

Added "USA Pre Ld2 Red" amp model based on the Lead 2 Red mode of a Mesa Triaxis preamp.

Improved Spring Reverb models. To utilize the new models the Type must be reselected in order to load the new default parameters.

Fixed UltraRes indication bit not being set for Axe-Edit.

Fixed unit pushing MIDI data to USB even after USB has been disconnected resulting in hang.

Fixed Metronome silent when switched on via MIDI CC until Tempo menu entered.

Fixed wrong capacitor value in Dirty Shirley model.

Fixed wrong phase inverter gain in Double Verb model.

Fixed Boost/Pad only working for Output 2 if using FX Loop (was not working properly if using Output 2 Echo feature).

Various addition/fixes to support the Axe-Fx II XL.

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13.07

Fixed Global Tempo not sticking for presets created with prior firmware.

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13.06

Added remote monitoring of IR Capture state via MIDI (for CabLab use).

Added "Bright" control to Amp block. This high treble control is a shelving filter between the preamp and power amp and may be used to darken or brighten the output of the preamp. This control also accurately replicates the "Presence" control found in the Mesa Triaxis preamp when set to negative values

(the Presence control in the Triaxis is actually a high frequency cut shelving filter). Note: this is not to be confused with the “Bright Switch” which engages/disengages a capacitor across the drive pot.

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13.05

Fixed LFO2 Parameter List menu values colliding with parameters.

Fixed unit becomes unresponsive when receiving MIDI PC messages along with MIDI clock messages from OS-X.

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13.04

Fixed LFO-B incorrect in certain waveforms.

****

13.03

Added Quantize parameter to LFOs in Control section. When set to a value other than OFF the selected LFO waveform is quantized into a number of discrete steps, with the number being selected by the Quantize value. This can be used to create interesting rhythmic effects.

Added Model ID query to MIDI Sysex commands so that Axe-Edit can determine which model is connected.

Fixed bug in Rotary block causing phasing artifacts. Also fixed Mix defaulting to 50% (should be 100%).

Fixed exporting cab IR from IR Capture Utility menu results in corrupted data.

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13.02

Fixed Ring Mod Bypass mode not sticking on preset change.

Fixed engaging Fat switch on FAS Bass amp model causes distortion. Note that this amp uses an active tone stack and the Fat switch will have no effect.

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13.01

Fixed Multi-Delay Tempo values being corrupted.

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13.00 (includes 12.04 Beta)

Added support for Axe-Fx II "XL" model.

Added support for UltraRes™ speaker IR processing. UltraRes is a proprietary technique that enhances the spectral resolution of an IR without adding CPU burden or storage requirements. Full support of UltraRes requires the CabLab utility to convert .wav files to the required data format. NOTE: UltraRes IRs do not support size warping therefore the Spkr Size parameter is unavailable for UltraRes cabinets. In Normal Resolution mode size warping is possible.

Various enhancements to IR Capture Utility (Utility->IR CAP):

1. The utility now supports saving IRs as either standard IRs or UltraRes IRs. The default mode is UltraRes. The desired mode can be set in the Global menu.
2. The utility now automatically loads the captured IR into the Scratch-Pad location immediately after capture for ease of audition.
3. The Dump function now allows dumping either the formatted cabinet data or the raw IR data via an interactive menu. Raw IR data is 8K samples and can be imported to CabLab for mixing and/or conversion to cabinet files.
4. The utility now supports remote control via MIDI. This is intended for use with CabLab to automate the IR capture process.

Added UltraRes support to Tone Match block Export function. If the Global IR Capture Mode is set to UltraRes the exported Tone Match will be an UltraRes IR ONLY if the Tone Match Mode parameter is set to Live. Note that the Tone Match block itself does not support UltraRes processing and, therefore, the Tone Match must be exported to a user IR if UltraRes processing is desired.

Added Input Select to Cabinet block. This can be used, for example, to run two Cabinet blocks in parallel for stereo processing by setting one to Left and the other to Right.

Improved power amp modeling via improved modeling of the plate impedance of the power tubes. This gives tighter bass (less flub) and warmer highs when the virtual power amp is heavily driven (higher Master Volume settings). This also improves the feel and dramatically increases the "3-dimensionality" of the tone. The plate characteristics are adjustable via the new Dynamic Damping parameter. This parameter defaults to the appropriate value when an amp model or power tube type is selected.

Added selectable power tube types for Amp block. Available types are: EL34, EL84, 6L6, 6V6, KT66, KT88, 6550, 6973, 6AQ5 and 300B (triode). Also available are an ideal tetrode and ideal pentode. The power tube type defaults to the appropriate type when the amp type is selected but may be overridden by the user. The power tube type presets the Dynamic Damping parameter as well as several internal parameters.

Added Preamp Sag parameter to Advanced menu in Amp block. This parameter allows turning the preamp sag modeling on or off. Turning it off replicates the behavior of separate preamp and power amp. Turning it on replicates the behavior of an integrated tube head or combo amp.

Changed Amp block Dynamic Depth behavior so that frequency of action is set by the Depth Freq parameter rather than fixed.

Duplicated Input Trim parameter on Amp block Pre page for those amp models where there is not a second Drive control. This parameter can still be found on the Advanced page.

Added IR dump capability to Tone Match block. The result of the match is dumped to USB. The length of the IR is 1024 points in Offline mode and 8192 points in Real-time mode. This data can then be imported into CabLab for subsequent processing.

Exposed Delay block Feedback parameters to modification.

Inverted all square wave LFOs so as to be consistent with other LFO types in that LFOs reach maximum in first half of cycle (where applicable).

Added protection against runaway feedback in Multi-Delay block.

Improved tempo learning so that tapping a tempo repeatedly in Delay block doesn't cause pitch fluctuation.

Added remote mute capability so Axe-Edit Preset Manager can mute while doing bulk preset rearrangement.

Added "USA Bass 400" amp models based on a Mesa Bass 400. "The USA Bass 400 2" version has the Bass Shift on.

Added "Citrus Bass 200" amp model based on an Orange AD200B.

Added "FAS Bass" amp model.

Added "Tremolo Lux" amp model based on a Fender AA763 Tremolux.

Added "Null" microphone type to Cabinet block. This type has no coloration but allows the Proximity effect to be employed.

Fixed Multi-Delay total feedback can exceed 100% causing instability.

Fixed delay time in Multi-Delay Ten-Tap mode not updating when changing tempo.

Fixed Delay block Sweep type Feedback Left modifier referencing Master Feedback instead of Feedback Left.

Fixed Input Gain not working in Resonator block.

Changed default Depth value on "PVH 6160" models to 5.00 as most people set this control to noon on the actual amps.

Fixed incorrect default Comp value in 59 Bassguy.

Fixed incorrect default Comp value in 5153 models.

Fixed incorrect default Comp value in Dirty Shirley model.

Fixed Car Roamer amp model incorrect default power tube bias.

Fixed wrong Miller capacitance value in Deluxe Verb model.

Fixed wrong default Power Tube Bias value in Citrus Terrier model.

Fixed wrong default Damping value for Super Verb model.

Fixed wrong gain structure in PVH 6160 models.

Fixed Update All Presets function unlinks global blocks.

Fixed dumping effect to MIDI (for Axe-Edit) generates an invalid checksum if the effect references a global preset greater than 7.

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12.03

NOTE: Feedback values in the Delay and Multi-Delay blocks now range from -100% to 100%. Presets created with prior versions of firmware will be automatically adjusted UNLESS they use a global Delay or Multi-Delay block. Therefore any global Delay or Multi-Delay blocks will need to be manually edited to restore the feedback parameters to desired values.

NOTE: Due to the changes in the feedback values described above retrieving individual Delay or Multi-Delay blocks from other presets via Recall->Effect can cause incorrect values to be loaded. To avoid this it is recommended to update all presets. This can be accomplished using the Update All Presets function in the Utility->Preset menu. This will recall then save each preset, formatting the data using the latest preset protocol.

Changed “Copy Out1 to Out2” option to “Output 2 Echo”. Choices are “None”, “Output 1”, and “Input 1”. This allows echoing the main input to Output 2 for reamping use (thereby bypassing the Noise Gate). Note that the echo feature will not function when an FX Loop block is present in a preset as the FX Loop has priority.

Added Bright and Sat switches to Advanced menu in Amp block. This allows connecting a Modifier to these switches for various uses, i.e. engaging via a foot controller.

Added Dump feature to IR Capture utility. After an IR has been captured pressing this button will dump a full, unprocessed, 8K sample IR to the USB port.

Greatly improved “cathode squish modeling” for cathode biased power amp models. This improves the feel for affected amp types, i.e. Class-A, Mr Z, etc. Two new parameters have been added which allow the user to alter the pertinent variables: Cathode Squish and Squish Time. Cathode Squish sets the amount of bias shift due to cathode voltage rise and Squish Time sets the time constant of the cathode network. These parameters are set to default values upon selection of an amp type. Setting Cathode Squish to zero defeats the cathode squish modeling.

Preamp modeling now uses screen voltage from power amp in calculations rather than operating independently. This improves feel as preamp voltage will drop with power amp sag. The effect is more noticeable as Supply Sag is increased. Note that preamp sag has a long time constant and, as such, the initial pick

attack is relatively unaffected while sustained sounds undergo compression. This results in a “chewier” sensation.

Improved single-ended power amp modeling.

Added “Mr Z MZ-8” amp model based on a Dr. Z MAZ-8.

Added “Car Roamer” amp model based on a Carr Rambler.

Added “USA Sub Blues” amp model based on a Mesa Subway Blues.

Added "Wrecker Lvrpool" amp model based on a Trainwreck Liverpool.

Added “Citrus Terrier” amp model based on an Orange Tiny Terror. Note that the actual amp has no tone stack and a single tone control. The tone control is actually a high cut control in the power amp and is therefore replicated by the Hi Cut parameter. The Hi Cut set fully CCW is equivalent to the amp’s tone knob fully CW. The model uses a neutral tone stack. Set T/M/B to noon for authentic sounds or adjust to taste.

Added “Citrus A30” amp models based on an Orange AD30HTC.

Added “Div/13 FT37” amp models based on a Divided by 13 FTR 37. The “Lo” model has the Gain Boost off, whilst the “Hi” model has it on.

Added “Matchbox D-30” amp model based on a Matchless DC-30.

Added “FAS Class-A” amp model which is a “Blackface” preamp into a cathode-biased 6L6 power amp with no negative feedback. This was a happy accident when originally modeling the Carr Rambler in the beta version of this release. Several mistakes were made in the model prior to MIMIC’ing the amp but the model was so well liked that we decided to make it into its own custom amp model.

Improved 5150-based models by refining sat switch circuit behavior. In a 5150-based amp the hard clipping is done by a tube stage prior to the cathode follower. As such this stage is subject to power supply sag. Normal hard clipping “sat” circuits are implemented with diodes and not subject to supply sag. This results in these amp models having a “squishier” feel (see preamp compression above).

Added Key parameter to Pitch block Custom Shifter. This applies to both scales and transposes the scales to the desired key. For example, if a Custom Scale is configured such that its root is A and you want to play in the key of G you would simply set Key to ‘G’. Internally the Axe-Fx II assumes all Custom Scales have a root of A so setting Key to ‘A’ will do no transposition. Existing presets may need to have the Key reset to ‘A’ to perform as intended.

Added a Barber Pole Phaser type to the Phaser block. This mode creates a phaser that appears to always move in the same direction. Note that the Freq and Tempo parameters are not used in this mode. Also note that Mix should be set to 100% for normal operation whereas 50% is typical in the other modes. This effect works best at slow rates and when placed near the end of a signal chain.

Added Start Phase parameter to Tremolo/Panner block. This parameter selects the starting LFO phase when engaging the block.

Added “Dimension” parameter to Chorus block. This engages a processing algorithm that simulates the Roland SDD-320 Dimension D chorus unit. This parameter has four settings:

Off: algorithm is disengaged.
Low: A neutral version of the Dimension D with no frequency coloration.
Med: Classic Dimension D processing buttons 1-3.
High: Classic Dimension D processing button 4.

Added “Dimension” type to Chorus block based on a Roland Dimension D. This type utilizes the “Dimension Mode” parameter described above. Note that the Dimension D had fixed rate and depth for each of the four modes. In modes 1 and 2 the rate is 0.25 Hz. In modes 3 & 4 the rate is 0.5 Hz. The Axe-Fx II does not set the rate and depth giving vastly more flexibility. Set the Rate as described for classic Dimension D sound or adjust to taste. Adjust Depth as desired.

Added “Mono” tracking mode to Pitch block Fixed and Whammy types. The Pitch Track parameter now selects “Off”, “Poly”, and “Mono”. Poly tracking works best for shifting chords and/or lower amounts of shift. Mono tracking works best for shifting single notes and/or larger shift amounts.

Delay and Multi-Delay blocks feedback parameters now have a range of -100% to 100%. This allows interesting effects via out-of-phase feedback.

Fixed certain amp models popping when switching to/from using X/Y.

Fixed wrong input variable lowpass frequency on Brit Brown model.

Fixed wrong MIMIC data assigned to Citrus RV50 model.

Fixed user cab names not updating when exporting Tone Match or capturing IRs.

Added protection against invalid Modifier data. This can help prevent crashes due to bad preset data.

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12.02

Fixed system dump data corrupted.

****

12.01

Fixed Presence control not working for certain amp types.

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12.00

Added two “Scene Controllers”. These controllers have a constant value that is programmable per scene. The controllers are accessed via the Control->Scene menu. These controllers can be used to control a parameter such that it has a

different value in each scene. For example, Scene Controller 1 might have a Scene 1 value of 10% and a Scene 2 value of 20%. This controller can be attached to Reverb Mix, for example, which would give a higher Reverb mix in the second scene compared to the first scene.

Improved diode models in Drive block. This affects Drive types that use the GE Diode, SI Diode and new LED Clip Types.

Added LED Clip Type to Drive block (see above).

Added "FAS LED-Drive" Drive model.

Added "Tube Drv 4-Knob" Drive model based on a "4-knob" Butler Tube Driver. The existing "Tube Driver" model has been renamed "Tube Drv 3-Knob".

Improved Amp block power supply current draw modeling which improves "feel".

Improved Amp block phase-inverter-to-power-tube-grid interaction modeling which improves transient response resulting in faster attack. This also improves the clarity of notes especially when using heavily overdriven power amp settings.

Added Global "Modeling Version" parameter to select between Version 11.xx or Version 12.xx power amp modeling.

The Amp block "Grid Modeling" parameter has been renamed and repurposed. The new name is "Modeling Mode" and offers the following choices:

1. Authentic – Replicates a tube amplifier with the utmost accuracy.
2. Grid Cond Off – Turns off grid conduction modeling in the power amp simulation. This reduces blocking distortion.
3. Smooth – Sets Triode Hardness to the minimum value essentially creating an ideal preamp and turns off grid conduction modeling in the power amp. This removes most of the "nasty" distortion that tube amps create.
4. Ideal – Removes most of the "warts" from the modeling which includes grid conduction, output transformer distortion, bias shifting and AC power supply modeling. Supply sag, screen voltage effects and crossover distortion are still modeled.
5. Ideal/Smooth – Same as #3 but also sets Triode Hardness to its lowest value. This is in essence an ideal preamp plus an ideal power amp.

The audibility of these settings is dependent upon the particular amp model and various parameters. The use of these modes in conjunction with other parameters can yield idealized tones not achievable with real tube amps.

The first two choices duplicate the previous behavior of the deprecated "Grid Modeling" parameter so no changes are required to existing presets.

Note that when "Ideal" is chosen the global Modeling Version parameter is irrelevant.

Added "5F1 Tweed" amp model based on a Fender Champ. This particular amp exhibits a unique breakup characteristic due to its single-ended design and simple circuit.

Added "Wrecker 2" amp model based on a Trainwreck Express.

Added “Two Stone J35 2” amp model based on a Two Rock Jet 35 with the Preamp Bypass switch off. The existing “Two Stone J-35” model has been renamed “Two Stone J35 1”.

Added “Wrecker 2” and “Skyline Deep” tone-stack types to Amp block. Skyline Deep is the Skyline tone-stack with the Deep switch engaged.

Added “ODS-100 Lead 3” amp model based off a non-HRM Dumble with the Preamp Bypass switch off.

Changed the Amp block Overdrive knob now defaults to 7.5 when selecting an amp model that uses this knob as this is a more typical value.

Added Level control to Enhancer block Classic mode.

Tremolo block now resets LFO when bypassed so that LFO starts at 90 degrees when effect is engaged.

Added Scene indication to main Layout page.

Fixed Delay block Ping-Pong type mix level twice what it should be.

Fixed activating Hold in Delay block causes swelling in echos.

Fixed Reverb clicking for Room, Catherdral and Studio types when size is greater than 85.

Fixed Pitch block Arpeggiator where certain scale degrees would sound the root instead of the desired harmony.

Fixed corrupted user cabinet data can cause erratic behavior.

Fixed corrupted MIDI streams can cause crash.

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11.05

Fixed ODS-100 Lead 2 model crashing if Input Drive above 7.00.

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11.04

Added speed (SPD) vs. position (POS) options to Modifier Auto-Engage parameters. The SPD options engage the effect when the controller changes more than 5% in any 20 ms interval (as before). The POS options engage the effect when the controller value is 5% greater than or less than the Off Value (depending upon whether the Off Value is less than or greater than 50% respectively). For example, setting the Auto-Engage to SLOW SPD will bypass the effect when the controller value is less than, say, 5% (default). To engage the effect the controller (foot pedal) must be moved more than 5% in a 20 ms interval. This requires that the pedal be moved somewhat rapidly and prevents the effect from engaging erroneously if the pedal droops. Setting the Auto-Engage to SPD POS

will bypass the effect in the same manner but the effect will engage when the controller exceeds 10% (5% + 5%) regardless of the rate of change.

Added “Recto1 Org Nrml” amp model based on the “Normal” mode of an original two-channel Mesa Dual Rectifier.

Added “Recto1 Red Mdrn” amp model based on the “Modern” mode of an original two-channel Mesa Dual Rectifier.

Added “ODS-100 Lead 2” amp model. This is a “non-HRM” version of the ODS-100 Lead.

Added “Bogfish Strato” and “Bogfish Brown” amp models based on a Bogner Fish preamp.

Renamed all existing Recto models to “Recto2...” to differentiate between original two-channel models and newer three-channel models.

Improved Room reverb algorithm.

Fixed SYSEX_SET_DEFAULTS message not working properly (incorrectly changing X/Y state to X regardless of previous state).

Fixed errant pointer causing problems with Global Blocks.

Fixed problem editing IR names in TMA export and IR Capture Utility.

Fixed wrong presence frequency in “Hipower” amp models.

Fixed Arpeggiator indexing wrong notes when using Custom scale.

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11.03

Fixed reporting wrong firmware revision to Axe-Edit.

Fixed certain amp models referencing wrong MIMIC data structures.

Fixed Amp block Master Volume capacitor value (MV CAP) not sticking.

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11.02

Added Overdrive control to TX Star Lead model. Fixed wrong cutoff frequency.

Fixed wrong tone-stack type in Jazz 120 model. Added correct “Jazz 120” tone-stack type to available selections.

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11.01

Fixed incorrect graphic EQ frequencies in Amp block when set to 8-band.

Fixed Looper block not reporting Bypass Mode to Axe-Edit.

Fixed Amp block Triode Hardness not loading proper value for model but defaulting to 5.00.

Fixed Noisegate Threshold not being loaded if a Global Block.

Fixed incorrect input gain in USA IIC+ models.

Fixed presets with a large number of blocks can cause unit to crash when Axe-Edit queries states (MIDI buffer overrun).

Removed resync delay when doing a scene change so that MFC will register states immediately.

Changed Auto-Engage behavior so that effects engage when a controller changes more than 5% in any 20 ms interval. Effects disengage when the controller is above or below the OFF VAL, as before. This is similar to previous behavior but resolves issues with slow MIDI controllers that did not send data fast enough to trip the movement detector.

Exposed “MV Cap” parameter in Amp block. This parameter sets the value of the bright cap across the Master Volume pot and is located in the Advanced menu.

Added “1987X Jump” amp model which is a “jumpered” version.

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11.00

Finalized MIDI sysex commands for Axe-Edit 3.0 support.

Improved pre-amp algorithms.

Improved cathode follower algorithm. There are three parameters exposed for the cathode follower algorithm: Cathode Comp (which is also the COMP knob), Cathode Time and Cathode Ratio. Cathode Comp sets the amount of compression. Cathode Time sets the attack time of the compressor. Cathode Ratio sets the maximum amount of compression with lower values giving more compression.

Improved power amp algorithms. New algorithms yields smoother highs and more open sound.

Added EQ Type parameter to Amp block. This allows selecting between an 8-band, 7-band or 5-band EQ. The 7-band and 8-band types emulate popular graphic EQ pedals. The 5-band type emulates the response of the on-board EQ in the Mesa Boogie Mark series amplifiers. Note that 5- and 7-band types are non-constant-Q designs whereas the other types are constant-Q designs. When selecting amp models based on Mesa amps the type automatically changes to 5-band.

Added Proximity Frequency to Cabinet block. This allows tuning the frequency range over which the proximity effect occurs.

Added “Jumpered” models of the Plexi 50W, Plexi 100W, Hipower and Brit JM45 amp models. These models have both Treble and Normal drive controls and emulate “jumpering the inputs” on a 4-hole amp.

Changed mix law for Delay block. The dry signal now stays constant at unity until Mix reaches 50% then decreases linearly to zero. Conversely the wet signal starts at zero and then increases linearly to unity when Mix reaches 50%. This eliminates having to compensate for decreased dry signal when increasing the mix.

Noise Gate now supports Global Block functionality. This can be used, for example, as a global Noise Gate for all presets or for only high-gain presets, etc. As with all Global Blocks, double-click FX BYP to enter the Global Block menu.

Added Level parameter to Noise Gate. This allows sending a lower or higher level into the effects grid which can be used to compensate for guitars with varying output.

Improved preset switching speed, in some cases drastically improved.

Added some “Easter Egg” amp models.

Note: support for presets created with firmware versions prior to 6.00 is no longer supported. If updating from 5.xx firmware or earlier please update to 10.12 first, update all presets and then install 11.00.

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10.13

Fixed Tape Chorus not working properly if Drive non-zero.

Fixed Amp block Cut switch engaged on Y channel when recalling presets created with previous firmware.

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10.12

Numerous enhancements to support Axe-Edit 3.0.

Added Type parameter to Graphic EQ block. This allows selecting between a 10-band, 8-band, 7-band or 5-band EQ. The 7-band and 8-band types emulate popular graphic EQ pedals. The 5-band type emulates the response of the on-board EQ in the Mesa Boogie Mark series amplifiers. Note that 5- and 7-band types are non-constant-Q designs whereas the other types are constant-Q designs.

Pressing Enter while in the first page of the Graphic EQ menu now resets all visible sliders to zero.

Added Tilt EQ type to Filter block. The Tilt EQ is a slope filter that allows broad adjustment of the tone using just two parameters: Frequency and Gain. The Gain parameter sets the maximum gain of the filter relative to the center frequency. For example, a gain of 10 dB would set the maximum gain to 10 dB.

The gain at the center frequency would be 0 dB and the minimum gain would be -10 dB, therefore a total of 20 dB of EQ would be applied.

Added “Cut” switch to Amp block. When active this reduces the amount of low frequencies into the amp simulation. This can be used to achieve a “tighter” tone or to reduce low-end “flub”. This is similar to increasing the Low Cut frequency but still retains some low end so it doesn’t get thin.

Smoothed control input to Wah block to remove “grit”.

Fixed Amp block Depth Freq parameter not doing anything for Corncob M50, PVH 6160, PVH 6160 II, and Fryette D60 models.

Added “Euro Blue Mdrn” and “Euro Red Mdrn” amp models based on the Bogner Ecstacy. These are the same as the Euro Blue and Euro Red models except that the Structure switch is set to ‘M’ (Modern).

Fixed Bright cap value for Dirty Shirley. The parameter previously defaulted to 10pF (not really a mistake as this amp has no bright switch but a value of 10 pF doesn’t do anything). It now defaults to 1000 pF.

Fixed wrong phase inverter tail resistor value in Wrecker 1 model.

Fixed Looper getting out of sync when stopped and restarted in Undo mode.

Fixed Global Blocks showing as used even when they are not.

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10.11

Added Modifier connectivity to Level and Pan parameters in Pitch block Octave Divider.

Fixed Two Stone J-35 amp model not showing Overdrive control.

Fixed Corncob M50 amp model not showing Overdrive control.

Fixed TripTik Classic amp model. MIMIC data was taken with an EQ in the preset which distorted the data.

Fixed wrong Treble pot taper in TripTik Clean amp model.

Improved accuracy of Depth control on Corncob M50, PVH 6160, PVH 6160 II, and Fryette D60 models.

Fixed incorrect stage gain in ODS-100 model. Re-MIMIC’d accordingly.

Added “ODS-100 LD Mid” amp model which is based on the Dumble ODS-100 lead channel with the “Mid” switch engaged (this switch is sometimes labeled “Deep”).

Added “VX485” Wah model based on a Vox V845.

Improved Tempo averaging by averaging time between taps rather than calculated tempos.

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10.10

Fixed Level parameters not modifiable in Custom Shift mode of Pitch block.

Improved Reverb algorithm. This new algorithm has a smoother tail response and a more natural sound. A new reverb type, "Studio", has been added which models classic digital studio reverb units.

Increased maximum modulation depth of Reverb block. This results in more intense modulation effects at high Depth settings.

Improved WahWah block. Improved transfer function yields more authentic and fatter tone. The Wah block now features selectable models of actual wah pedals. The "Taper" parameter selects the sweep response. The "Fat" parameter modifies the "pedestal" of the transfer function which can be used to fatten the response. These parameters are set to default values when a model is selected. Currently available models are:
FAS Standard – Equivalent to the "Bandpass" setting in earlier firmware.
Clyde – Based on an original Vox Clyde McCoy wah.
Cry Babe – Based on a Dunlop Cry Baby.
VX846 – Based on a Vox V846-HW handwired wah.
Color-Tone – Based on a Colorsound wah.
Funk – Modeled after the "Shaft" sound.
Mortal – Based on a Morley wah/wolume pedal.

Note: existing presets that use the WahWah block should be reset by selecting or reselecting the desired wah model.

The Amp block now differentiates amps that have both Input Drive and Overdrive controls, i.e. Mesa Mark series, Dumble, etc. When a model is selected for amps of this type, the menu shows both controls. For other types the menu shows only the Input Drive control (which was formerly called simply "Drive"). The Overdrive control defaults to noon when amps with this control are selected. As such, any presets based on these amps may need to be updated as this control was not present previously and the amount of drive may differ now. Note that these two controls are applied to the appropriate point in the circuit for the amp being modeled, i.e. for Dumble-style amps the Overdrive is prior to the last triode stage, in Mesa Mark amps the Overdrive is applied prior to the third triode.

The Boost control has been added to the Advanced tab of the Amp block menu as this control position is used for the Drive control for certain models (see above).

Transformer distortion modeling is now independent of transformer match value. Before the amount of distortion was also dependent on the match value making adjustment more difficult.

Added Classic mode of Carol-Ann TripTik amp model. The previous model has been renamed "TripTik Modern".

Added TripTik Clean amp model based on Carol-Ann TripTik clean channel.

Added two custom “Thordendal” amp models built to Fredirik Thordendal’s specifications.

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10.09

Reset USB input buffer upon detection of lack of input stream to mitigate poor OS-X clock adaptation (as buffer can be skewed significantly off-center at certain times due to clock drift).

Added USB buffer size select in I/O->Audio menu. Set this to lower values for less latency, set to higher values if experiencing distorted audio. Low values generally work fine with Windows machines. OS-X computers usually need higher values due to poor clock adaptation. You should stop USB audio streaming when changing this value so as to allow the buffer to reset properly. Streaming can be stopped by closing the application sending data to the Axe-Fx or by disconnecting the USB cable.

USB buffer level monitoring added to Utility->Status menu. The “USB” bar graph displays the amount of data in the USB FIFO buffer. Ideally the bar should be at around 50%. If the bar sinks all the way to the bottom or goes all the way to the top then the buffer may under/overflow and the USB buffer size should be increased. The number of buffer errors that have occurred since the last buffer reset is indicated above the bar graph.

NOTE: The new OS-X driver must be downloaded from our website and installed to ensure proper USB audio operation on Apple computers.

Fixed exported Tone Match data derived prior to any processing, i.e. before Smoothing and Amount.

Fixed exported Tone Match data not being imported into Cab block if no name entered.

Added Configuration data query function to support Axe-Edit and FractalBot. This allows remote devices to query Display Offset and other pertinent data.

Added “Trip-Tik” amp model based on a Carol-Ann TripTik.

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10.08

Fixed USB audio in Windows not working in 10.07.

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10.07

Internal release.

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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 “Gradual” 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

NOTE: THIS FIRMWARE MAY 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.

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

NOTE: THIS FIRMWARE MAY 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.

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.

****

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

NOTE: THIS FIRMWARE MAY 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.

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

NOTE: THIS VERSION WILL LIKELY CHANGE THE SOUND OF EXISTING PRESETS. THERE HAVE BEEN NUMEROUS CHANGES AND IMPROVEMENTS. 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: 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

NOTE: THIS VERSION WILL LIKELY CHANGE THE SOUND OF EXISTING PRESETS. THERE HAVE BEEN NUMEROUS CHANGES AND IMPROVEMENTS. 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: 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.