

## Axe-Fx II Quantum Firmware Release Notes

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### 2.02

Fixed some parameters not being recalled correctly when using Global Blocks.

Refined preamp modeling. Harmonics value now defaults to zero. Increasing this value softens preamp distortion, if desired.

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### 2.01

Further improvement of preamp tube models based on measurements. The existing theoretical models, i.e. "Modern", "Vintage", etc., have been removed. There are now six extremely accurate preamp tube types: 12AX7A, ECC83, 7025, 12AX7B, ECC803 and EF86. Note that the EF86 type has been normalized to have roughly the same gain as the triode types.

Improved power tube saturation modeling. This yields warmer, "tubier" distortion. The PA Hardness parameter is automatically set for each power tube type but may be overridden if desired.

Improved tube interaction modeling. A new parameter, "Harmonics", controls the amount of interaction. Higher values yield softer distortion. The default value is set for each amp model but may be overridden.

Improved virtual output transformer saturation modeling.

Change "Thru" bypass mode so that effect input is muted. This prevents, for example, delays from creating echoes when engaged.

Added "Invert" mic type to Cabinet block. This inverts the signal allowing for interesting effects in conjunction with the delay parameter.

Fixed Reverse Delay being modulated slightly for long delay times.

Fixed Mr Z MZ-8 amp model sounding "off".

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### 2.00

Improved tube modeling. New algorithms uses more accurate plate current formulas based on actual measurements rather than theoretical values. This results in smoother, thicker distortion and better dynamic response.

Improved power supply modeling. New algorithms improve sag and feel. For convenience the virtual power supply voltage (B+) can now be monitored on the

PWR DYN tab of the amp block. When the Supply Sag control is selected the gain reduction meter will display the supply voltage in dB relative to the idle voltage.

Improved cathode bias algorithm for "Class-A" amp models (i.e. Class-A 30W, AC-20 Dlx, etc). In conjunction with this the Cathode Squish parameter has been repurposed as "Cathode Bias" and controls the value of a virtual cathode resistor. A value of 50% is "optimum" and biases the power tubes at true Class A operation (neglecting any bias shifting due to supply sag, screen droop, etc.). Values greater than 50% increase the resistance and therefore bias the power tubes "colder". Values less than 50% bias the tubes beyond Class A. In a real amp this would probably destroy the tubes but that limitation does not exist in our virtual amp. Most real amps of this type actually operate far below Class A and the default values for the models will reflect this. Note that the Power Tube Bias value should be set to 1.00 for these amp types (since that parameter controls the grid voltage and the grid voltage is at a maximum in these types of amps). Existing presets will be automatically updated with new default Cathode Bias and Power Tube Bias values.

Improved Phaser block CPU usage.

Added "Filter Slope" parameter to Cabinet block. This can be used to select between first-order (6 dB/octave) or second-order (12 dB/octave) filters for the Low Cut and High Cut filters.

Improved Plexi "Jump" models to account for interaction between Drive controls.

Renamed Plexi 50W High amp model to "Plexi 50W Hi 1" (see below).

Added "Plexi Hi 2" amp model which is similar to Plexi 50W Hi 1 except the second triode stage has a 0.68uF cathode bypass capacitor. The second bypass capacitor was added in the early 70's and gives a slightly brighter tone.

Added "Plexi 100W 1970" based on a 1970 Marshall 1959SLP 100. This particular amp has a darker, smoother sound than earlier Plexis.

Added "Ruby Rocket" amp model based on a Paul Ruby Rocket with the Bright switch in the down position. The existing model has been renamed "Ruby Rocket Brt" to reflect the state of the Bright switch being in the up position.

Added "AC-20 12AX7 B" amp model based on an AC-20 Deluxe with the rear switch set to 12AX7 and the Bass/Treble switch set to Bass. The existing models have been renamed AC-20 EF86 B, AC-20 EF86 T, and AC-20 12AX7 T.

Added "Spawn Nitrous 1" amp model based on the OD-1 mode of a Splawn Nitro with KT-88 power tubes.

Fixed Spawn Nitrous model broken by earlier firmware update. If you are using this model in your presets you should reset the model by deselecting and reselecting the amp type. This model has been renamed "Spawn Nitrous 2" to indicate that it is the OD-2 mode (see above).

Fixed wrong default Negative Feedback value in all "Dizzy" models. Note that the Presence control in these models has more range than the actual amp as the amps have a limiting resistor that the models do not have. Turning the Presence all the way up on the real amps is equivalent to around 7-8 on the models.

Fixed wrong Bass taper in Recto2 amp models. Previous taper was Log30A. Taper is now Log10A. Existing presets should be auditioned as the amount of bass will be less.

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

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1.06

Improved screen grid modeling accuracy.

Added "Class-A 30W Brt" amp model based on the Bright channel of a non-Top Boost Vox AC30.

Added Scene indicator to Output and FX Loop GUI. The 'A' Quick Control knob can be used to select the desired scene while in the menu. This facilitates setting output levels in each scene.

Fixed wrong cathode follower default values in Class-A 15W TB, Class-A 30W TB, Hot Kitty and Matchbox D-30 amp models. Existing presets will be automatically updated with the new default values.\*

\*The range of the CF Ratio parameter has been expanded and all existing presets will have the parameter reset to default values. If you have changed the CF Ratio value in your presets you will need to re-enter the value.

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1.05

Fixed default Preamp Hardness being set to wrong value. Existing presets will be automatically updated to the new default value.

Fixed Backup System (XL and XL+ only feature) writing to wrong memory area and overwriting presets.

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1.04

Added "Solo 88 Clean" amp model based on the clean channel of a Soldano X-88. All channels are now represented.

Added "PVH 6160+ Rhy" amp model based on Channel 1 of a Peavey 6505+ with the Crunch switch depressed and Bright switch out. The existing PVH 6160 II Rhy model has been renamed "PVH 6160+ Rhy B". Likewise the existing PVH 6160 II Ld model has been renamed "PVH 6160+ Ld".

Improved triode saturation modeling based on new measurements. The new modeling results in more accurate saturation behavior which, in turn, results in smoother

overall distortion characteristics and more accurate harmonic content. Due to the new algorithm the default Preamp Hardness value is now 6.0. Existing presets are automatically updated upon recall.

Fixed thumping when switching between certain amp models.

Fixed Mixer block parameters not being recalled properly from Global Blocks.

Fixed wrong cathode cap value in CA3+ Clean amp model.

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### 1.03

Improved triode grid conduction model. This improves edge-of-breakup tones as it keeps the distortion on the edge of breakup more and improves high-gain tones as it tightens up the bass. Also improves feel and dynamic response.

Improved cathode follower model. This improves harmonic accuracy yielding less "glare", more detailed treble (more "chime") and more bite. The previous cathode follower model can be selected from the Global menu by choosing a Modeling Version other than 1.03.

Added "PVH 6160 II Rhy" amp model based on Channel 1 of a Peavey 6505+ with the Crunch and Bright switches depressed.

Fixed Dizzy and Herbie models tone stack topology. This doesn't result in a significant change in response unless the tone controls are set to extremes (i.e. bass to zero).

Fixed wrong default Preamp Bias value in CA3+ Lead amp model.

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### 1.02

Added "Deluxe Verb Nrm" amp model based on the Normal channel of a Fender Deluxe Reverb. The existing Deluxe Verb model has been renamed "Deluxe Verb Vib" to distinguish that it is modeled on the Vibrato channel.

Added "Double Verb Nrm" amp model based on the Normal channel of a Fender Twin Reverb. The existing Double Verb model has been renamed "Double Verb Vib" to distinguish that it is modeled on the Vibrato channel.

Added "Super Verb Nrm" amp model based on the Normal channel of a Fender Super Reverb. The existing Super Verb model has been renamed "Super Verb Vib" to distinguish that it is modeled on the Vibrato channel.

Added "Bludojai Ld 2" amp model based on a Bludotone Ojai with PAB off. The existing Bludojai Lead amp model has been renamed "Bludojai Ld 1" and is based on the Ojai with the PAB on.

Added "Double Verb SF" based on the Vibrato channel of a 1971 "Silverface" Fender Twin Reverb.

Added "Plexi 50W 6550" based on the High input of a 1972 50W Marshall "Plexi" with 6550 power tubes.

Added "FAS Hot Rod" amp model.

Replaced factory cabinets 54-56 with selected UltraRes™ IRs from ML Sound Lab's "ML Brit 4x12" collection. If you enjoy these IRs you may purchase the entire collection from our online store.

Added "FAS Boost" Drive type. This is a cleanish boost great for boosting vintage amps like Plexis.

Added "Deluxe Mind Guy", "Mono BBD", "Stereo BBD" and "Lo-Fi Tape" types to Delay block.

Fixed unable to select Mixer X/Y state from Page 2 of edit menu.

Fixed wrong Drive pot wiring and default Preamp Bias value in Dizzy V4 Blue 3 and 4 amp models.\*

Fixed wrong default Preamp Comp value in all Dizzy V4 models.\*

Fixed wrong default power tube bias value in Mr Z MZ-8 model.\*

Fixed several errors in the Bogfish models.\*

Fixed wrong Drive pot value in Shiver Lead model.

Fixed System backup/restore not working correctly on Mark I/II models.

Fixed Fetch Backup Preset and Fetch Factory Preset not working properly on Mark I/II models.

Fixed Bit Reduction parameter not listed for Sweep Delay type.

\*Note: Existing presets using these amp models should be reset by deselecting and reselecting the desired amp model.

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1.01

Fixed sending IR to a scratchpad location does not update if using Cabinet 2.

Fixed several mistakes in Herbie models.

Fixed timeout when backing up system data if preset has high CPU usage.

Improved CPU usage.

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1.00

This is the initial release of our "Quantum" firmware. Quantum represents a milestone in amplifier modeling technology. Our new Real-Time SPICE (RTS) algorithms offer a degree of accuracy not found in any other product. Below are the significant changes/additions from the previous non-Quantum firmware.

Added "Dephase" control to Cabinet block. This parameter controls a sophisticated process that removes the "phasiness" from IRs and can yield a more "in the room" experience.

New RTS triode models. There are three new triode models based on our new algorithms: 12AX7A (default), ECC83 and 7025. The previous models are still available and may be selected with the Pre Tube Type parameter. Note that the models have all shifted and if you were using a model other than default previously you will need to adjust your preset to the desired model.

The "CF Comp" parameter has been renamed "Preamp Comp" to better explain its function.

Added new Preamp Compressor Type "Comp Type" parameter to amp block. There is a new menu page that contains Preamp Comp, Comp Type, Dynamics, Preamp Bias and Output Level (the last repeated from other menus for convenience). Preamp Comp Type selects between "Authentic", which accurately models the compression in a tube amp, and "Ideal" which is an idealized distorting compressor. The idealized type is more focused and has tighter bass whereas the authentic type is bolder and looser. High gain players may prefer the ideal type due to its tight character.

Added a new mode to the "Character" controls in the Amp block. A Char Type of "Dynamic" engages an exciting new mode of tone control. This can be used to fatten or scoop the tone as a function of picking strength. For example, set the Type to Dynamic, Char Freq to 450.0, Char Q to 0.7 and Char Amt to 4.0. This will cause the tone to get fatter and thicker as you play hard but without getting honky when playing soft.

Added four "JMPre-1" models based on a Marshall JMP-1 rack preamp. The existing "Brit Pre" model was not changed as it is used by several prominent "A-list" artists. Instead, four new models were added. The models with "BS" in the name indicate that the Bass Shift function is engaged. Note that the model defaults to the power amp simulation active. The power amp model is based on a typical Marshall 100W power amp of that era.

Added 512 more User Cab slots to XL and XL+ models.

Added 20 new Cabinet models (XL and XL+ versions only) from our Universal Noise Studios 4x12 cabinet pack. These IRs are specifically intended to be used in mixes "in the box". Mix two IRs from each cab for a myriad of sonic textures.

Fixed Dry Delay Shift parameter not working in Flanger block. The parameter has been renamed to Dry Delay and works differently (and more intuitively). The parameter now sets the delay time of the dry signal as a percentage of the maximum delay time of the wet signal. For classic thru-zero flanging this parameter should be set to 50%. For interesting new sounds experiment with lower or higher values. Note that this parameter has no effect if Through Zero is set to Off.

Fixed smallest LCD font having a smiley face for left bracket character.

