

## AXE-FX III FIRMWARE 12.00 PHASER UPDATE

The Frequency parameter on the Basic page has been replaced by a "Manual" knob. It functions similar to the Flanger's Manual control. To manually control the phasing set Depth to zero. The sensitivity of the Manual control is inversely proportional to Depth and the Manual control is disabled when Depth is at maximum.

The Depth control mixes the LFO and Manual controls. When Depth is at minimum the phase shifter frequency is controlled entirely by Manual. When Depth is at maximum the frequency is controlled solely by the LFO.

There are now separate Minimum Frequency and Maximum Frequency parameters. These set the minimum and maximum frequency when the Depth is at maximum and Manual is at minimum. These are updated when the type is changed.

There are four "VCR Types" (Voltage Controlled Resistor). LINEAR is a simple linear mapping of LFO voltage to frequency. EXPONENTIAL gives an exponential response which can be more "musical" because the notches will move more linearly with the logarithm of frequency. JFET simulates the response of a Junction Field Effect Transistor when used as a variable resistor (as is commonly done in phaser pedals). PHOTOCCELL simulates the response of a CdS photocell.

The "Exponent" parameter controls the exponent for the EXPONENTIAL type. A value of 1.0 is "ideal" and results in the notches sweeping linearly with  $\log(\text{frequency})$ . Higher values cause the frequency to dwell at higher frequencies and then decrease rapidly towards the lower frequencies. Lower values cause the frequency to dwell at lower frequencies.

The VCR Bias parameter controls the bias point of the virtual VCR. A value of zero biases the VCR optimally. Negative values result in the VCR entering cutoff (infinite resistance).

When using the PHOTOCCELL VCR Type the attack and release times of the photocell can be configured using the Photocell Attack and Photocell Release parameters. Typical photocells used in phasers have an attack time of 5 ms and a release time of 35 ms but there is a bit of variation between photocell types. Shorter release times result in a "lumpier" response.

The Feedback Point parameter now allows setting the feedback to any point in the phase shifter chain. A value of '0' indicates prior to the beginning of the phase shifter chain. A value of '1' indicates into the first stage and so on. Both positive and negative values of feedback are allowed. When adding feedback experiment with the Mix value. Increasing the Mix can achieve rich, hybrid vibrato/phase sounds.

Up to 12 phase shift stages are allowed in multiples of two stages. As the number of stages is increased more notches occur in the spectrum. Experiment with the Minimum and Maximum Frequency values to move the notches in the spectrum.

Most of the models are configured for mono operation with the LFO Phase set to 0.0. This is suitable for use before an Amp block. Placing the Phaser block after the Amp and Cab blocks allows for stereo phasing. Use the LFO Phase parameter to vary the phase of the right channel LFO in relation to the left.

The Barberpole algorithm has also been completely reworked yielding more convincing "infinite phasing".

NOTE: Due to the comprehensive nature of the changes any existing presets will have the Phaser block reset to default values for the selected type. This can change the sound of existing presets that use the Phaser block and those presets should be auditioned and adjusted accordingly.