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1. **VHS** – tape/vhs emulation with pitch modulation and bandwidth reduction
  - a. *Wow* – random slower modulation
  - b. *Flut* – random faster crinkly modulation
  - c. *LPF* – low pass filter cutoff frequency
  - d. *HPF* – high pass filter cutoff frequency
  
2. **Vinyl** – emulates the sound of an old vinyl, with bitch bends, filtering, crackly static, and hiss
  - a. *RPM* – rate of the vinyl's modulation
  - b. *Dpth* – depth of the warping on the vinyl
  - c. *Age* – adjusts the amount of filtering and saturation
  - d. *Nois* – introduces static hiss and crackling pops
  
3. **Crusher** – aggressive filtered and crushed square wave/synthy voice
  - a. *Sen* – sensitivity of envelope filter
  - b. *Det* – detunes secondary voice
  - c. *Sub* – level of the third sub octave voice
  - d. *Res* – resonance of envelope filter – can get really loud and aggressive
  
4. **Delay** – low fidelity delay with sample rate reduction and random modulation
  - a. *Time* – delay time, tap tempo available
  - b. *Fbk* – feedback level
  - c. *SRte* – sample rate of delay, Counter clockwise is very lo fi
  - d. *Flut* – random flutter modulation amount
  
5. **Reverb** – warbly dusty sounding reverb with less than optimal reverberation smearing
  - a. *Dcy* – decay of reverb
  - b. *Mod* – amount of warble modulation
  - c. *Nois* – amount of hiss in the reverb signal
  - d. *LPF* – low pass filter cutoff frequency
  
6. **RngMod** – ring modulator with ability to randomize frequency
  - a. *Freq* – frequency of the ring modulator
  - b. *Fine* – fine tune the frequency of the ring modulator
  - c. *Rand* – probability of the Freq control to be randomized
  - d. *Rspd* – speed of the randomizer
  
7. **BitVrb** – reverb with digital sample rate reduction applied to the trails
  - a. *Dcy* – when fully CW, the reverb loop is frozen
  - b. *Diff* – diffusion of reverb taps, adjustable from discrete delay like taps, to smeared washy reverb
  - c. *Digi* – sample rate of reverb tail
  - d. *Amnt* – blend between normal reverb and the digitized crushed signal
  
8. **Synth** – samples a chunk of your sound and re imagines it as a synth like voice
  - a. *Sen* – sensitivity of the envelope triggered sampler
  - b. *Crsh* – amount of digital distortion/crushing applied to synth voice
  - c. *Filt* – filter cutoff frequency
  - d. *Atk* – attack, or time for the envelope filter tor each its max frequency

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## Pitch

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- Dual** – two voiced classic pitch shifter
  - Pit** – the action of this patch, CCW is no pitch shifting, CW is max pitch shifting. Try hooking an expression pedal up to this control
  - IntA** – interval of primary pitch shifter, from tape stop to octave up
  - IntB** – interval of secondary pitch shifter
  - VolB** – volume of secondary pitch shifter
- EnvGld** – hard playing vs soft playing will cause the audio to change pitch
  - Sen** – sets how hard you have to play to trigger pitch jump
  - P-1** – selects the pitch the signal will be when you play SOFT, quantized to semitones from -15 to +16 semitones
  - P-2** – selects the pitch the signal will be when you play HARD, quantized to semitones from -15 to +16 semitones
  - Port** – smooths out the transitions between the pitch jumps, portamento like effect
- Arpegg** – two step arpeggiator
  - Spd** – sets how hard you have to play to trigger pitch jump, tap tempo available
  - P-1** – selects the pitch of first step, quantized to semitones from -15 to +16 semitones
  - P-2** – selects the pitch of second step, quantized to semitones from -15 to +16 semitones
  - Port** – adds a portamento effect to the arpeggiation
- ArpFrz** – dual freezing delay buffers with pitch shifting, bouncing around from +1 to -1 octave
  - Spd** – speed of pitch arpeggiation
  - Oct+** – volume of the upper octave, turn fully CW to mut this step
  - Oct-** – volume of the lower octave, turn fully CW to mute this step
  - Frz** – turn past the halfway point to freeze the signal
- Organ** – simulates an organ soaked in the reverb of a cavernous cathedral
  - Oct+** – blends in an upper octave
  - Oct-** – blends in a lower octave
  - Rvrb** – reverb amount, turn fully CW to freeze the signal, creating an organ drone to play over
  - Vibr** – vibrato applied to organ
- Grains** – plays back a chunk of audio, or grain, at a faster or slower speed to create a unique style of pitch shifting
  - Size** – size of the grain to be sped up or slowed down
  - Frz** – non additive feedback loop, locks whatever is in delay buffer when fully CW
  - Pit** – pitch/speed of grain
  - Fbk** – additive feedback for ascending/cascading feedback shimmering
- Glass** – reversed reverb with pitch shifting
  - Dcy** – decay, when turned fully CW the reverb loop is locked
  - Pit** – pitch/ speed of reverb
  - Slice** – slice size that is reversed
  - Prom** – prominence of pitch shifter, sets how aggressive the regenerated pitch signal is
- Crystl** – dual reverse delays with individual playback speed/pitch control
  - Bal** – blend or balance between the two individual pitch voices\
  - P-1** – pitch of the first voice
  - P-2** – pitch of secondary voice
  - Fbk** – feedback/regeneration of pitch shifters