Herbs and Stones *Soft Memo* – overview

Soft memo is a stereo hybrid multi effect desktop unit.

It can send and receive audio signals through 1/4" jacks, control voltages by connecting 1/8" mini jacks and it is powered via a 9V 500mA center negative power supply.

General considerations:

The mini jacks that are inside a white circle are the cv inputs for the closest knob's function.

The minijacks that aren't inside a white circle are cv outputs (0-5V range).

When a CV or gate signal is patched into any input the function knobs acts as an attenuator for the incoming control voltage.

The panel is divided into four main modules:

A, fx, xy and B.

~ A and B channels:

A and B are two identical audio channels where the input signal goes through a preamp, then into the dual FX unit channel and out. There's a parallel analog CV controlled feedback path where the wet signal first goes through an analog VCA, then an analog resonant low pass filter and is mixed together at the FX input stage.

This means warm echoes, resonant reverb tails, infinite shimmering.

Channel A input is also normalled to an envelope follower (output e-f), its sensitivity can be adjusted via the channel gain and "feel" knob.

Controls:

* wet (+ cv input): amount of wet signal at the output
* dry (+ cv input): amount of dry signal at the output
* fb (+ cv input): amount of wet signal that goes into the feedback path
* freq (+ cv input): cutoff frequency of the resonant low pass filter in the feedback path
* res: resonance of the low pass filter in the feedback path
* gain (lightning symbol): 1x → 100x gain stage

~ fx:

The fx module is the main core of Soft Memo: There are 8 different digital effect programs (selected via the "+" and "-" buttons) and each of these programs has three parameters that can be manually adjusted and modulated via an external cv signal (1, 2, 3 knobs + cv ins).

At the bottom of the fx module there's the A → B buttons, if engaged they make channel B's audio input, wet and dry controls slave to channel A's: this makes it possible to split in the stereo realm a mono signal and have the same amount of wet and dry signal at the A and B outputs.

~ The fx programs:

1)	Twin Gorge	Dual Drifting Delay
2)	Faux Mirrors	Lo-Fi Reverse Time Processor
3)	Empty Shell	Shimmering Feedback Delay
4)	Fixed Thoughts	Double Pitched Freeze Reverb
5)	Grotto Divide	Stereo Crossfade Reverb
6)	Rival Choir	Freeform Stereo Chorus
7)	Mood Swings	Drifting Stereo Pitch Shifter
8)	Late Rings	Dual Stereo Ring Modulator + tempo offset

1) Twin Gorge

"dual drifting delay"

Parameters:

1. A time (1ms → 500ms)
2. B time (1ms → 500ms)
3. Drift (CCW: A time = B time, turning it CW A and B times gradually drift away from each other, in full CW position A and B times are completely independent)

2) Faux Mirrors

"lo-fi reverse time processor"

Parameters:

1. A buffer length
2. B buffer length
3. Scan rate (low → fast)

3) Empty Shell

"shimmering feedback delay"

Parameters:

1. Delay time (A+B)
2. -1/+1 pitch
3. Feedback (digital, in parallel to the two analog feedback paths)

4) Fixed Thoughts

"double pitched freeze reverb"

Parameters:

1. Reverb length (→ ∞)
2. A pitch + freeze rate
3. B pitch + freeze rate

5) Grotto Divide

"stereo crossfade reverb"

Parameters:

1. Predelay
2. A/B input crossfade
3. Reverb decay

6) Rival Choir

"freeform stereo chorus"

Parameters:

1. A chorus rate
2. B chorus rate
3. Depth

7) Mood Swings

"drifting stereo pitch shifter"

Parameters:

1. A pitch shift
2. B pitch shift
3. Drift (CCW: A pitch = B pitch, turning it CW A and B pitches gradually drift away from each other, in full CW position A and B pitches are completely independent)

8) Late Rings

"dual ring modulator w/ tempo offset"

Parameters:

1. A modulator frequency
2. B modulator frequency
3. Tempo offset (0 → 310ms)

The x and y modules are two independent voltage controlled LFOs, each with it's own distinct functions and charachter:

~ LFO x:

LFO x has five outputs: X1, X2, ÷2, ÷4 and ÷8, it can output different and morphing waveforms.

X1 and X2 are the main outputs, the ÷2, ÷4 and ÷8 outputs are the squarewave clock divisions of the LFO rate.

Controls:

* rate (+ cv input): controls the speed of the LFO
* phase (+ cv input): controls the phase shift of output X2 reatively to output X1 (CCW: same phase → CW 180 out of phase)
* shape (+ cv input): morphs between different waveforms: sine, triangle, square, sawtooth (rising at the X1 output and falling at the X2 output if the phase control is fully CW).
* r (reset trig / gate input): resets the waveform at its starting point

~ LFO y:

LFO y has two outputs: Y1 and Y2, they can output sinewaves and random stepped waveforms.

Controls:

* rate (+ cv input): controls the rate of LFO y when in free mode
* phase button (+ gate input): toggles between four different phase relations between the two outputs, 0°, 90°, 180°, 270°.
* mode button: toggles between four behaviours for LFO y:

    - free running (default, rate is set by its knob + cv input)
    - ÷2 LFO x rate
    - ÷4 LFO x rate
    - ÷8 LFO x rate

* shape button: toggles between sine and random stepped waveform output for Y1