# virt iter legio

## _travelers guide
## _for twin planet oscillation

| 3 | 2 | 6 |
|---|---|---|
| algorithms | pm inputs | hp |

[ enc ] press  [ enc ] hold  › then  noon = 12 o'clock  tags = the panel drawing

three-algorithm stereo oscillator · stereo pm ins · chorus · the legio launch firmware

← back to the legio starsystem

orange = hold

### 01 what it is — vil_01

| | |
|---|---|
| an oscillator | three stereo algorithms · harm, sawx, bass · plus a vintage-style chorus |
| family | the same algorithms live in the arturia microfreak and the virt vereor plugin |
| out L R | stereo out, up to 16 V peak to peak |
| platform | the legio launch firmware · other firmwares |

### 02 pitch — vil_02 · enc

| | |
|---|---|
| enc [ pitch ] | turn = fine tune |
| [ enc ] + turn | push and turn = coarse tune |
| enc jack | 1 V/oct pitch, –2 V to +5 V |
| tuning | auto-calibrates at power-on · leave the pitch jack empty while it boots |

### 10 first flight — vil_10 · a clean start

1. power up with enc jack empty so it calibrates
2. out L + R to your mixer · s2 0 · s1 harm
3. 1 [ flavor ] and 2 [ tang ] fully left
4. tune with enc [ pitch ] · [ enc ] + turn for big jumps
5. sweep flavor, then tang · stop before the last sixth of tang
6. try sawx and bass · then add chorus with s2

### __fig.04 : the algorithm map — one switch, two knobs

| s1 | 1 flavor | 2 tang |
|---|---|---|
| harm (up) | partial spacing | rectify partials |
| sawx (mid) | modulus gain | stereo phase |
| bass (down) | cos saturation | two-stage fold |

### 03 harm — vil_03 · s1 up · fig.01

| | |
|---|---|
| what | additive sines with a touch of digital grit |
| 1 [ flavor ] | partial spacing · 0 = unison · max = octaves · between glides in frequency |
| 2 [ tang ] | rectifies each partial, like half a wavefolder |

### __fig.01 : harm flavor — where the partials sit




### 04 sawx — vil_04 · s1 mid

| | |
|---|---|
| what | a supersaw with "saw-mod" · ethereal to metallic |
| 1 [ flavor ] | gain into a modulus stage |
| 2 [ tang ] | how much stereo phase |

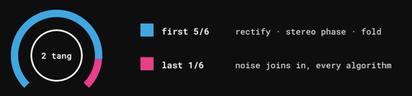
### 05 bass — vil_05 · s1 down

| | |
|---|---|
| what | quadrature modulation after electronotes #73, plus ne extras |
| 1 [ flavor ] | saturation of the cos oscillator |
| 2 [ tang ] | two-stage asymmetric wavefolder |

### 06 tang · top sixth — vil_06 · fig.02

| | |
|---|---|
| every algorithm | the last sixth of tang adds noise |
| harm | phase-modulated noise mixed in |
| sawx | pm from subsampled white noise |
| bass | noise between the fold stages, also pm on both oscillators |

### __fig.02 : tang — clean, then noisy




### 07 switches · jacks — vil_07 · s1 · s2

| | |
|---|---|
| s1 | [ harm ] up · [ sawx ] mid · [ bass ] down |
| s2 | [ II ] lots of chorus · [ I ] some · [ 0 ] off |
| trig sync | hard sync on a rising edge near +1.6 V |
| in pm L R | stereo phase mod · ac-coupled audio · L feeds R if alone |
| 1 2 jacks | cv for flavor and tang, 0 – 5 V |

### 08 four patches — vil_08 · from the manual

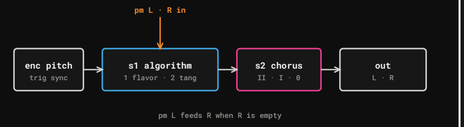
**drone** — any
out L + R straight to the mixer · move flavor and tang by hand or cv

**voice** — any
outs into two vcas · an envelope on both · pitch cv into enc · envelopes or lfos on flavor and tang

**phase mod** — any
mult the pitch cv to a second oscillator · its output through an attenuator into pm L

**mono** — any
just out L into one vca

### __fig.05 : signal path — as the manual describes it




### __fig.03 : the panel — numbers match the legend




| | |
|---|---|
| enc | pitch · turn fine · push + turn coarse |
| 1 | flavor · per algorithm · fig.04 |
| 2 | tang · per algorithm · top 1/6 noise |
| s1 | algorithm · harm · sawx · bass |
| s2 | chorus · II · I · 0 |
| trig | sync · hard sync · ~1.6 V |
| cv | pitch · 1 · 2 · pitch –2…+5 V · others … |
| in | pm L / R · phase mod · L feeds R |
| out | out L / R · stereo out |

### 09 specs — vil_09

| | |
|---|---|
| pitch cv | 1 V/oct · –2 V to +5 V |
| cv in | 0 – 5 V |
| sync | rising edge near +1.6 V |
| size | 6 hp · 0.9 in deep |
| power | 140 mA +12 V · 22 mA –12 V · no 5 V |

design homage to the house of x / powers of x data pages — designed by tom muller with jonathan hickman · panel drawing after the noise engineering legio overlay template
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