bitcrush legio

_travelers guide
_for degrading transmissions

2	3	6
switches · 3 ways	cv inputs	hp

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

digital distortion · pitch-tracking downsampler, bitcrusher and dither · optional dynamics restore

← back to the legio starsystem

= hold

01 what it is

bi_01

downsample	sample-rate reduction that can track pitch
bitcrush	from 15 bits down to 1.25
dither	re-quantisation noise, dither-style
in L R	audio in · L feeds R if alone
out L R	stereo out, up to 16 V peak to peak
platform	a legio firmware · other firmwares

02 rate

bi_02 · enc

[enc] turn	downsampling frequency
[enc] tap	bypasses every effect
enc jack	rate jack · −2 to +5 V · tracks 1 V/oct

10 first flight

bi_10 · the manual's tutorial

1. audio into in · out to the mixer
2. 1 [bits] full, 2 [dither] min
3. turn enc down to hear the rate fall
4. lower bits · add dither
5. try each env and lpf setting

03 bits · dither

bi_03 · knobs 1 + 2

1 [bits]	15 bits at max → 1.25 bits at min
2 [dither]	amount of re-quantisation noise

04 env · lpf

bi_04 · s1 · s2 · top → bottom

s1 env in	output scaled to match the input level
s1 env out	normalise before crushing, restore dynamics after
s1 env off	no dynamics change
s2 lpf off	filter bypassed
s2 lpf high	one stage at 2× the rate
s2 lpf low	two stages at the rate

__fig.01 : signal path

in → out



as the manual describes it

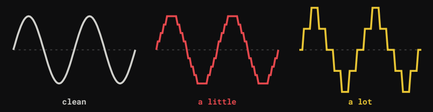
05 jacks

bi_05 · trig · cv · audio

trig bypass	toggles bypass (the manual calls it hit) · near +1.6 V
in L R	audio in · L feeds R if alone
out L R	up to 16 V peak to peak
cv	rate −2 to +5 V · bits + dither 0 – 5 V

__fig.02 : transfer

clean → heavy



08 patch ideas

bi_08 · the manual

harmonic crush — any
mult the oscillator's pitch cv to rate so the aliasing follows the note

loops + voices — env in · out · off
on dynamic material, each env setting changes the feel

rhythmic bypass — any
gates into hit flip the effect in and out

__fig.03 : the panel

numbers match the legend



- enc **rate** · downsampling frequency
- 1 **bits** · 15 bits at max → 1.25 bits at min
- 2 **dither** · amount of re-quantisation noise
- s1 **env** · in · out · off
- s2 **lpf** · off · high · low
- trig **bypass** · toggles bypass (the manual calls…
- cv **rate** · **1** · **2** · rate −2…+5 V · others 0–…
- in **in L / R** · L feeds R if alone
- out **out L / R** · stereo out

09 specs

bi_09

size	6 hp · 1.5 in deep
power	140 mA +12 V · 22 mA −12 V
cv in	0 – 5 V · rate −2 to +5 V
trig	rising edge near +1.6 V
boot LEDs	red / yellow