bong

Operator's Manual

1. Plug it. Unplug it.

2. Don't strain.

Key map

36	C1	kick
37	C#1	rim
38	D1	snare 1
39	D#1	clap
40	E1	snare 2
41	F1	low tom
42	F#1	closed hat
43	G1	medium tom
44	G#1	pedal hat
45	A1	high tom
46	A#1	open hat
47	B1	cymbal
48	C2	shaker
49	C#2	shaker return

MIDI notes are received on all channels

General Use Notes

Small knobs trim velocity response

Hold [ctrl] while dragging to make fine adjustments

Apply flame lightly, allow ember to burn. Avoid torching the bowl.

Algorithms

Most instruments have several models.

kick	1 - 8
snare 1	1a/b, 2a/b, 3a/b, 4, brushed models 1 - 3 have two contours for the noise envelope
clap	-
snare 2	1a, 1b, 1c, 2 these four different models are enumerated by the oscillator count
tom	1, 2, 3, 4, 5, conga, laser
hat	noise, 4 osc a/b, 6 osc a/b, 8 osc a/b 4 osc a is half of 8 osc b 4 osc b is an emulation of the author's modified analog drum machine
shaker	1, tambourine
rim	1, 2, clave

The range of parameters can vary widely between them.

Noise Source

Timbres with noise can **vary** between a continuous noise source and one that is reset to a **seed** value on gate.

Bong Hit Break

plexiglass expansion panel
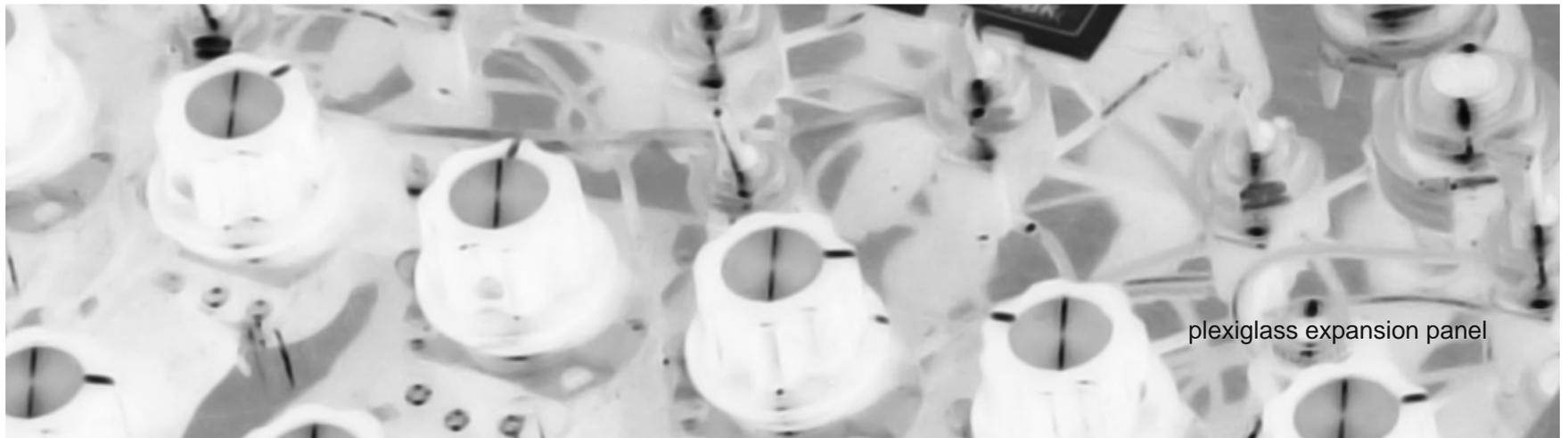
see the GUI

(original size at 150%)
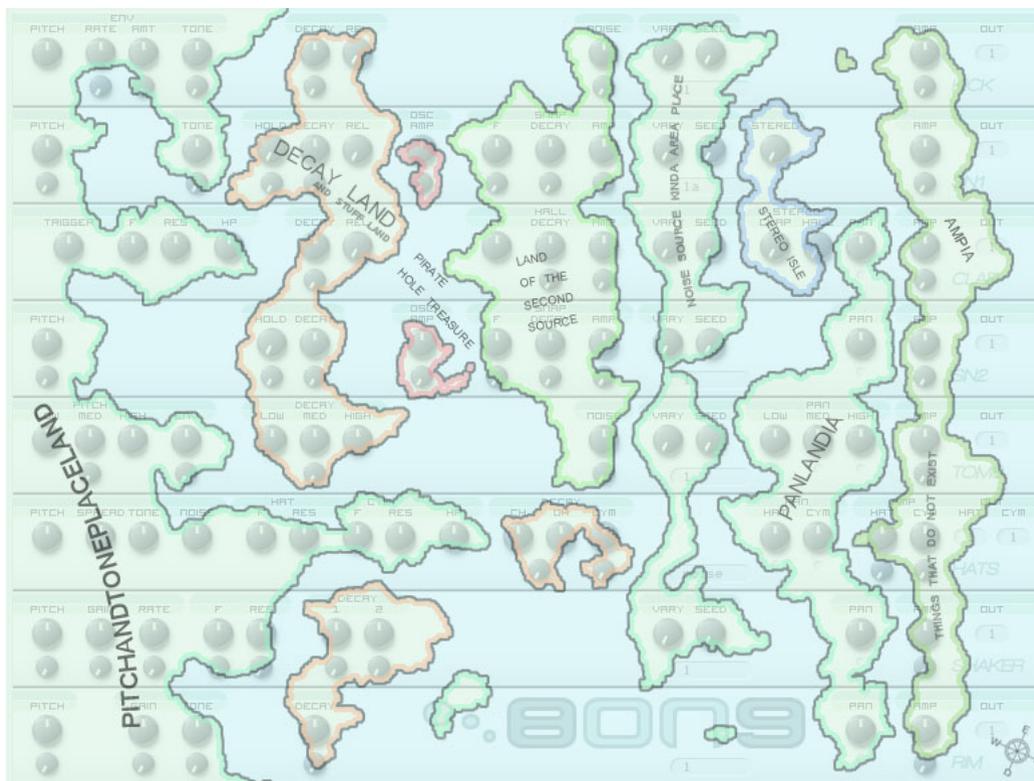
map it

Section II:

Section II:

Send me a pound

The last two snare 1 models and the hat oscillators use similar methods to create inharmonic spectra. I suppose this is the finest point of patching as different pitch and tone settings can result in a variety of timbres. The hat oscillators "snap to" integer wavelengths, so that adjusting them slightly may result in some frequencies changing and others staying the same. Often if there is some phasing or other unwanted characteristic to the sound it can be removed with a slight adjustment of the pitch or spread. Everything is basically real simple.

Where I was Going With This

One day I was dreaming about smoking out of a bong and I said, "I know, I'll make a drum vst and call it bong".

I actually don't have one, though I used to have a bubbler I made out of one of those vinegar bottles. Back in the 1990's I added a dozen potentiometers and separate outs to a dr110. You can't smoke out of it, but that would be a cool modification too. One of the mods for the hihat oscillator pitch made this really exotic timbre totally pitched by one of the oscillators. You'd have had to have been there.

Where I was going with this.

Release

   Kick, snare 1 and clap have a release parameter alongside the decay. The higher the value, the faster the decay after the key is released, so it works in the opposite way to the release stage on an envelope.

Kick

   The pitch envelope is especially kind of different sometimes. The rate is short and affects only a few cycles or so, the amount acts more like a tone control for the attack.

Snare 1

   Algorithms 1a/b and 2a/b are similar, 3a/b is similar with lots of bass. Algorithm 4 generates an inharmonic spectra with a fixed sine for the fundamental. The hold parameter affects the attack of the brushed snare model for those into that sort of thing.

Clap

   Various machines are characteristic in their clap trigger timing. The 808 and 110 are often close to even (about 10-11ms between triggers), 909s usually have a longer 2nd trigger and shorter 3rd. In terms of emulation, the trigger param fades 808 to 909 to 110.

Snare 2

   The first three models use one oscillator for the tone, the fourth uses two, and the pitch control fades between them. The first two selections use digital white noise, the last two use an emulation of an analog noise generator.

Toms

   The laser model has a wide range for the pitch envelope amount and can easily be pushed above nyquist, where it will alias. If this is bothering you, have another BHB.

Hats

   The tone parameter is a mix control between the groups of oscillators with a limited range, fading from harmonically dense to sparser timbres, resulting in more emphatic tone. Model 4 osc a uses the same frequencies as oscillators in 8 osc b.

   Many of the classic machines had oscillators or noise but not both. Try fixing the tone then adding a small amount of noise to animate the timbre. Pedal can also be produced by triggering a closed and open hat at the same time. Pedal simply doubles the closed decay time.

   Awesome trivia: The specially designed special filter for the hihats is oversampled thirteen times.

   Post processing hint: I noted that many analog hats had a slight peak of a few decibels around 13kHz in addition to the filter peak.

Shaker

   Pitch, gain and rate are "granular" parameters that shape the noise before it is filtered. With the velocity trimmers, the algorithm is more similar to physical modeling methods than analog drum machines. Happy shaker patching.

Rim

   The claves emulation here is a bit sneaky as it adds a second oscillator to the conventional analog exponentially decaying sine claves. The volume and pitch of this oscillator are set with the gain and tone parameters.

That's Fine Right There

   As the instruments are inspired by the sounds of classic electronic percussion, the center position of a parameter is often at the value we are used to hearing. Once you have some familiarity with the timbral range of each of the models, the first adjustments you make are probably the only ones you'll need if it's already sounding about right. It's a built in feature to do that.

Weed

   Bong is released overtly in support of the people at your local branch of NORML.