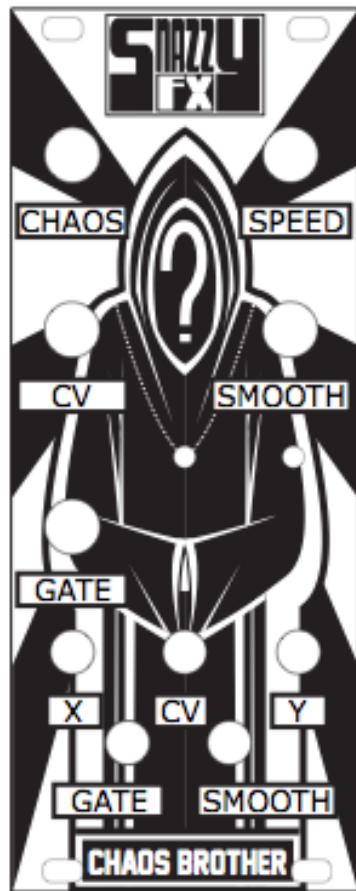


SNAZZY FX CHAOS BROTHER MANUAL

(rev1)



**congratulations on the
purchase of your new
SNAZZY FX
product!!!**

Installation:

The Snazzy FX CHAOS BROTHER requires +/-12V to operate. It is designed for use with the euro format modular synthesizer system (please see) http://www.doefer.de/a100_man/a100t_e.htm.

To install in your system, find space in your euro-rack synthesizer system, plug the 16pin power cable into the euro- rack style power distribution board, checking the polarity so the RED STRIPE stripe on the cable is oriented to the NEGATIVE12 volt supply line. (LOOK FOR TEXT WHICH SAYS NEG or -v or -12)

This is USUALLY at the bottom.

Please refer to your case manufacturers' specifications for location of the negative supply.

IF IN ANY DOUBT PLEASE CONTACT YOUR DEALER!

OR IF YOU REALLY MUST CONTACT ME AT 3AM....

CONTACT IS HELP@SNAZZYFX.COM

BUT REMEMBER..YOUR EURO DEALER IS THERE TO HELP YOU!

INFORMATION ABOUT THE MODULE

Chaos Brother

important note on module use:

X and Y outputs:

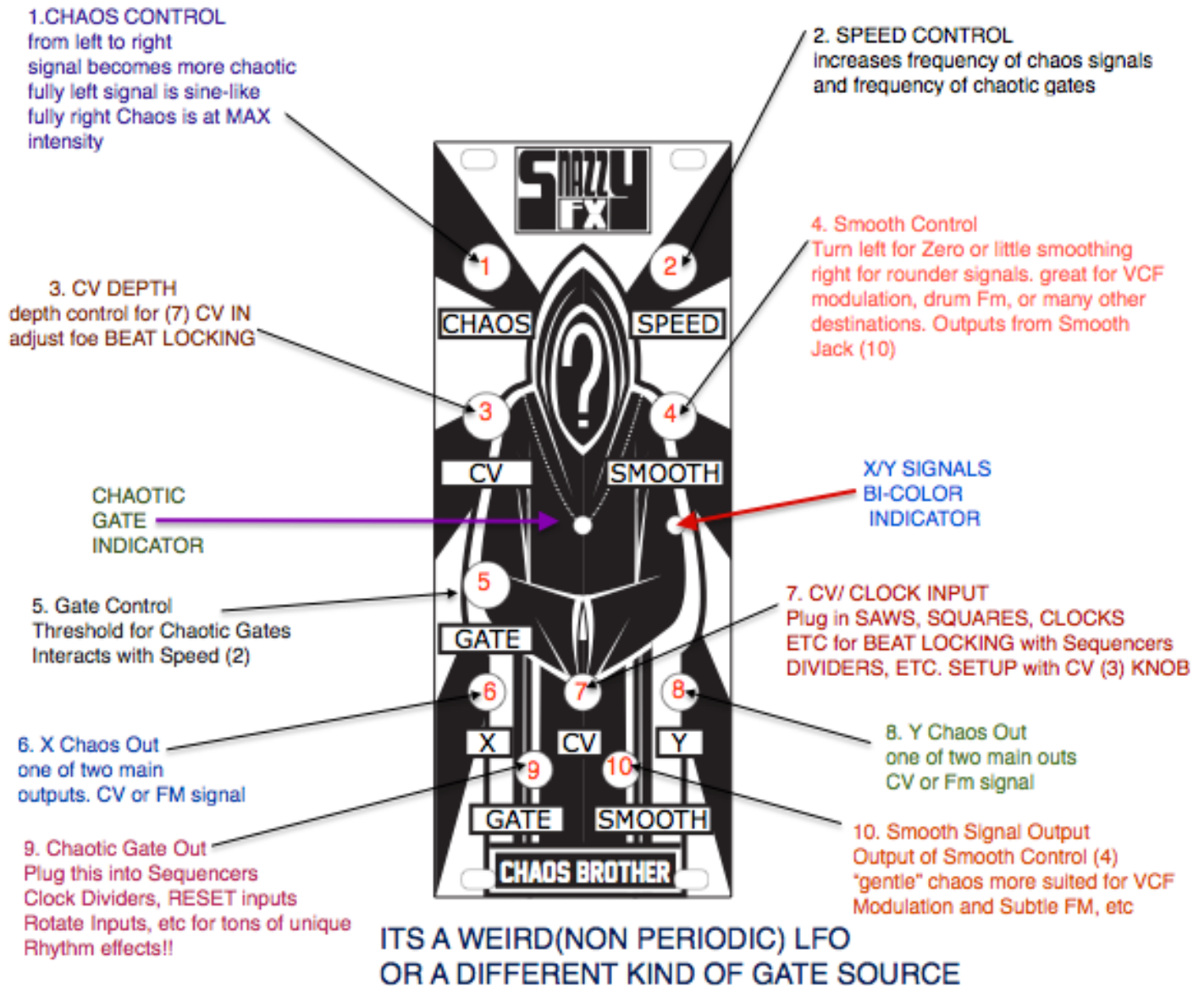
Just like on the DREAMBOAT, The X and Y outputs are outputs which are related but have different phase. Think of it as a pair of signals. In many cases you might just think of them as the A and B outputs. However if you are working with any modules which ASK for phase flipped outputs (for example a formant filter module with x and y inputs) then this X/Y pair of CV outputs is perfectly suited!

Please keep in mind that the Snazzy FX ARDCORE has many programs which work exceptionally well with the X and Y outputs of the Chaos Brother (as the Ardcore has two main CV inputs and often these CV INS work very well with slowly mutating signals as given by the CHAOS BROTHER.

unless otherwise specified main outputs throughout this manual will always be the X and Y outputs

SNAZZY FX

CHAOS BROTHER CONTROL SHEET



USE X/Y outs with X/Y mode on a scope
/phase meter to watch the attractor!
USE X/Y outs with any module with X/Y inputs!
Perfectly suited for Formant Filters, Ardcore CV inputs,
Or any other application where you want X/Y movement.

CHAOS BROTHER EXCELS AT MODIFYING/ PUSHING RHYTHM/SYNTH PATTERNS!

hook your master clock into CV IN. ADJUST CV DEPTH and GATE.
SEND CHAOTIC GATES BACK INTO SEQUENCER RESET, ROTATE, PATTERN, OFFSET,
etc for Organic shifting and slurring of beats or synth parts!! UNIQUE!

SECTION A

CONTROLS

1. chaos control

Intensity increases from left to right

all the way left there's no chaotic activity at x/y outputs--it's almost like a sine wave at far left.

As you turn to the right your signal becomes more and more chaotic.

**THINK OF THIS AS THE AMOUNT OF CHAOS IN THE OUTPUT.
ALL THE WAY LEFT EQUALS NO CHAOS...JUST A SINE LIKE SIGNAL.**

FOR BEST RESULTS, CHAOS SETTINGS 80-100% ARE WHERE YOU WOULD NORMALLY STAY BUT IT'S USEFUL TO TURN FROM LEFT TO RIGHT DURING LIVE PASSAGES OR TURN FARTHER TO THE LEFT WHEN YOU JUST WANT A PERIODIC SIGNAL, ETC.

REMEMBER, THE CHAOS KNOB INTERACTS WITH THE SPEED KNOB, BUT THE CHAOS KNOB IS THE ONLY CONTROL WHICH DETERMINES THE **ONSET** OF CHAOS. THE CV INPUT CAN START, STOP, AND INFLUENCE THE INTENSITY OF THE CHAOS, BUT IF THE CHAOS KNOB IS NOT SET HIGH ENOUGH, NO AMOUNT OF SPEED OR CV WILL START THE CHAOS.

2. speed control

this control works in ***tandem*** with the chaos control

all the way left = lowest speed

all the way right is highest speed

it is important to remember that the speed of the chaos affects your chaotic gate outputs.

also keep in mind the speed control works in tandem with the CV INPUT and CV DEPTH CONTROL.

Usually you determine the amount of chaos you want to work with then set your speed control to control that signals INTENSITY.

Then (if **BEAT LOCKING** the CHAOS BROTHER to an outside TRACK, CLOCK, Song, Sequencer, etc you would turn up the CV control to get the desired results.

3. cv knob/cv in jack

The CV input looks for sharp waveforms (sawtooth square etc)
OR a clock (from your clock divider, sequencer, VCO/LFO, or software such as Silent Way) to push the attractor into restarting or changing shape.
The CV IN can also work with LOUD AUDIO such as Euro Level DAW signals (drums, guitars, etc)

<<The Silent Way ES-3 paired with LIVE or LOGIC is one such way to get euro level AUDIO into this CV INPUT>>

This CV input and knob are crucial when using the CHAOS BROTHER to create chaotic drum patterns/ or to chaotically vary/modulate/offset the timing of sequencers (which happens to be one of the most popular uses of the Chaos Brother as it can achieve very unique results)

THIS IS THE SECTION RESPONSIBLE for ALLOWING THE CHAOS BROTHER TO EBB AND FLOW WITH AN OUTSIDE CLOCK, LFO, ETC.

4. smooth control /smooth out jack

this knob and Jack are the "subtle "sections of the Chaos brother

you can use this output /knob to create a signal which is much softer and quieter than the signals coming out of the main X/Y outputs

The smooth control is at zero all the way at the left. I usually use the smooth knob somewhere between 10 to 40%

it excels at driving the cutoff or resonance cv input of any resonant filter, wave shaper CV input, PWM input, etc. It also works well with the VC MIXER Cv in or WS CV in of the **TIDAL WAVE**.

5. Gate Control / (threshold knob)

The chaos brother is really good at creating chaotic triggers.
what the heck is a chaotic gate you might ask?

Very simply put, chaotic triggers are pulses useful for clocking other modules, OFFSETTING OR RESETTING SEQUENCERS MASTER CLOCK, ROTATING clock dividers, TRIGGERING ENVELOPES, CHANGING PATTERNS ON SEQUENCERS NAD DRUM MACHINES, and many other functions related to TIME, and unlike regular triggers, chaotic triggers do not follow a PERIODIC or predictable pattern.

Think of it this way, A regular stream of triggers (from an LFO for example) will always pulse at the same point in the measure every time. If you drive a sequencer with triggers derived from an LFO, your beat will never change. CHAOTIC TRIGGERS on the other hand, very rarely follow any pattern for too long. HOWEVER they are useful because they can be constrained to create their pulses IN RELATION to a master clock.

So though the line of pulses may be UNPREDICTABLE, they can be encouraged to FALL WITHIN THE GRID.

The threshold control determines the frequency of the gates in relation to the a set value, while the SPEED control determines how fast the Chaotic Waves are moving. So always remember that the SPEED control will effect your Threshold value. In fact, one technique is to get the gates happening ALMOST as quickly as you like them, then fine tune with the SPEED knob.

if you turn chaos to 10 and the speed to 8 then plug the gate out into an ADSR or VCA... you will hear exactly what we are talking about.

adjust threshold knob (all the way to the left being maximum gates all the way to the right being zero gates)

for many patches the optimum way to set things up is to set the speed knob and threshold knob so that the chaotic gates happen once in a while. when set like this the intervals between the gates can be quite surprising.

HOW IS THIS USEFUL?

There are really two general ways of using the CHAOTIC TRIGGERS.

The first way is just as a crazy sound effect sort of device. This is what you will get when you DONT plug anything into the CV JACK. For if there is no external CV or clock, there is nothing for the CHAOS BROTHER to WORK WITH, OR WORK AGAINST. The triggers will be interesting and certainly will still be different than regular streams of periodic pulses. BUT, they will be much harder to work into a grid.

However for many kinds of applications THIS IS JUST FINE!

For example, let's say that we are working with an ethereal or ambient track. Maybe there is a bed of DRONES (see the SNAZZY FX DRONEBANK) and a slow bass guitar. maybe an occasional STEAM sound (telephone game Noise output through a hi pass filter the Wow and Flutter module)

So in this type of track, (or in any NON GRID Oriented track) strange pulses triggering synth sounds or drums can work very well.

Simply set up a nice synth sound (maybe the Ardcore FM OSC (or any other vco) into the Tidal Wave VCF with resonance up quite high (or any other VCF) —a metallic sound softened by a very wet lowpass filter. Take that sound and either use the built in VCA of the Tidal wave with an external ADSR or use an external VCA and an external ADSR.

Now plug the SMOOTH output of the CHAOS BROTHER into the PITCH CV input of the VCO. Adjust the Speed, Chaos and SMOOTH knob on the CHAOS BROTHER as well as the PITCH KNOB

BEAT LOCKING PATCH IDEA #1

LETS SAY YOU HAVE A SEQUENCE YOU REALLY LIKE OF KICK/
SNARE/ AND HAT.

All these drums are driven by a master clock.

Well if you feed that master clock into the
CV IN of the CHAOS BROTHER, and then

set up a gate sequencer or clock divider
to FIRE A CONGA module, or a CLAP,

you can use the THRESHOLD and SPEED controls

to enable UNPREDICTABLE and ORGANIC triggers to “play” the DRUM in
relation to your master clock, hence play the drum in relation to your other drums,
and therefore end up with a “Live” sounding percussion part.

patch details:

<<you FIRE THE CONGA by taking the GATE output and plugging it into the
trigger input of the drum module Or you can take your chaotic triggers and feed
them into an envelope generator to Shape and process them...

PATCH IDEA #2

another way to do it is by using a clock divider in your system

(THE **4MS RCD** works well for this And there are a few
CLOCK DIVIDER SNAZZY FX ARDCORE patches too (to start, see A05 clock
divide which has a second trigger input for RESET, the extremely full featured
gate sequencer user Sketch-Tapped Out, etc)

Feed your patch's master clock to the clock divider. Now take an output of the
clock divider and plug it directly into your drum module trigger input OR into an
envelope gen first then into the drum module's input.

The fun part however is that in this patch we are going to use our Chaotic
triggers to CHANGE THE DIVISIONS each time a trigger is recived.

On the 4ms RCD this is as easy as plugging our chaotic triggers into the
ROTATE jack. This will keep the drums constantly changing.

There are many other ways to implement this idea but with different equipment.

PATCH IDEA #3 Beat Locked Pattern changes.

A very powerful way to use the BEAT LOCKED chaotic triggers is to set up a bunch of drum patterns on a step sequencer (fill it with as many as it has available. On the MFB SEQ-02 for example this would be 16 patterns.(in bank A)

Now the part which is really useful. Set up the sequencer to run from your master clock. Pick One Gate output of the sequencer. Now plug the BEAT LOCKED chaotic triggers into the PATTERN jack of the sequencer. Each time the sequencer receives the triggers, it will SWITCH the pattern. This can be extremely effective for making drum parts sound more human, OR for doing the exact opposite, making the drum playing sound completely robotic and strange. IT ALL DEPENDS ON HOW YOU PROGRAM the individual patterns. (one way to add realism is to make lots of similar patterns with tiny changes. As the sequencer moves through them, the changes wont be drastic but they will be UNPREDICTABLE.

SECTION B:

QUICK START/QUICK INFO:

my advice :

use the chaos brother anyway you can!!!

the CV IN jack/knob:

plug audio in!

plug CV into it!

plug gates into it!!

on

using:

THRESHOLD KNOB & GATE (out) JACK :

FIRST THINGS FIRST>>>>>for chaotic gates which are SYNCED TO YOUR SETUP, SYNCED TO YOUR SONG's MASTER CLOCK, MAKE SURE TO PLUG A CLOCK SIGNAL (OR A DIVISION OF YOUR SONGS CLOCK SIGNAL) INTO THE CV JACK OF THE CHAOS BROTHER!!!

THIS IS SO IMPORTANT AND IF THERE IS ANY TRICK YOU SHOULD LEARN WITH THIS MODULE, THIS IS IT!!!

SO TO REITERATE

WHEN USING THE CHAOS BROTHER TO ALTER, STUTTER, SMASH, OR MODIFY DRUM PATTERNS, RHYTHM SEQUENCES OR GRID BASED SYNTH PARTS,

ALWAYS PLUG YOUR MASTER CLOCK SIGNAL INTO THE CV INPUT!!! THEN USING THE CV KNOB YOU CAN DECIDE HOW MUCH THE CHAOS BROTHER IS LOCKED TO THAT CLOCK.

KEEP IN MIND...EVEN WHEN THE CHAOS BROTHER IS BEING FORCED TO “LOCK” TO YOUR TRACK, TO YOUR SONG, TO YOUR BEAT, IT WILL STILL SPIT OUT NON-PERIODIC CHAOTIC GATES. ITS JUST THAT THOSE NON-PERIODIC GATES (and THE CHAOTIC X/Y SIGNALS) WILL BE FORCED TO TRY TO FOLLOW THE CLOCK (or whatever else you stick into the CV INPUT)

THIS SETUP WORKS BEAUTIFULLY AND ALLOWS FOR SOME VERY UNIQUE EFFECTS, RHYTHMS, “hand-drum” playing, Organic sounding stutters, and various results that are too weird to describe.

For example, think about this. If you create a patch where the MASTER CLOCK is going through a clock divider. This clock divider is driving all your sequencers and drums. Then you take an out from this divider and feed it INTO THE CV INPUT OF THE CHAOS BROTHER. Well then if you take the CHAOS BROTHER’S GATE OUTPUT AND STICK IT INTO THE CLOCK DIVIDERS RESET INPUT or THE CLOCK DIVIDERS ROTATE INPUT and then adjust the threshold to taste, WHAMO!! you will get some very interesting things happening.

AND THAT RIGHT THERE, THAT FEEDBACK LOOP KIND OF PATCH, IS WHERE THE CHAOS BROTHER REALLY SHINES. Because the CV depth, threshold and speed controls cover a wide range, you can really dial in a lot of different effects for wildly different results.

And if you apply these kinds of effects to a hi-hat , or a drum with voltage controlled decay, etc, you can use the smooth, X and Y outputs to vary pitch, decay, etc, and then use the gate output to alter the structure or pattern or tempo, or what have you.

SO THE CHAOS BROTHER GATE OUT really is the most revolutionary feature of the Chaos Brother from a SYSTEM standpoint.

USE IT:

to drive sequencers

to RESET clock dividers
TO DRIVE CLOCK DIVIDERS (TO CREATE A SLOWER CHAOTIC CLOCK)
to trigger envelopes
or even as a square wave sound source (TURN THRESHOLD KNOB SO THE
LED IS RAPIDLY TURNING ON AND OFF)
OR MULTIPLY THE SIGNAL (USING THE 4MS SCM OR QCD) FOR AN AUDIO
RATE CHAOTIC SOUND SOURCE

USE IT....for adjustable organic rhythm spasms.....with the SNAZZY FX
ARDCORE running FAC DRUMS or any other drum player that needs a master
CLOCK.

the chaotic gate out IS EXCELLENT for ANYTHING related to DRUMS!

USE IT with a sequencer's RESET jack for infinite variations of your drum
pattern.

OR set up a KICK, HAT, SNARE, And TOM all coming from a master gate
sequencer OR a master clock divider. (4ms QCD or RCD)

Now once your beat is JUST RIGHT, connect the chaotic gate output to the
RESET INPUT or the PATTERN UP/DOWN jack, or any other jack your
sequencer or clock divider provides for VARYING the length, pattern, or tempo of
your drums. you can get as weird or as subtle as you want.

THE TRICK IS ALL IN HOW YOU SET THE THRESHOLD in RELATION TO
HOW YOU SET THE SPEED and THE CV DEPTH KNOB.

on the chaos knob:

learn to use it carefully/slowly

tiny knob movements (subtle changes) create big differences!!!

don't forget to hook up a scope in the x/y mode to see how your chaos knob is
affecting the attractor shape!!!! The Dave Jones euro scope is a great way to do
this.

WHEN THE CHAOS KNOB IS ALL THE WAY TO THE LEFT, the Chaos Brother is putting out a NON-CHAOTIC SIGNAL. As you turn the Chaos knob farther and farther to the right, the signal will become chaotic. And as you increase the Speed knob in relation to the Chaos Knob, the gates will increase, and the changes will get higher in frequency.

on the speed knob :

speed knob can be used in time with your music to change the overall modulation

keep it low for more mellow modulation

or fast for more manic directions

also if you're trying to get chaotic gates that happen only once in a while in a useful/ weird way get your threshold as close as you can get it then adjust your speed knob to fine-tune

smooth out/smooth knob:

don't forget about the smooth out /smooth knob !!!you can use it for softer rounder CV

and if it's too smooth you can always offset or amplify it with an external module

try it especially with **filter cutoff** or **LINEAR VCO INPUTS** for a tiny vibrato effect

and with the smooth knob all the way to the left (no smoothing) it becomes another INTENSE chaos output.

The chaos brother, just like the other snazzy fx modules can be used so many ways....from the background to the center of your track!!

with so many different outs and the ability to lock to your sequence or even the ability to clock your sequence or drum beat, it provides an unlimited pallet of weird changes. The phase and textural differences between x and y outs PLUS the softer signal of the smooth out give you three very different BUT STILL CONNECTED levels of CV to use for different colors/ sounds

from simulated robotic bongo players to weird vco pitch shifts and metallic whale singing with resonant filters the chaos brother really can be used in every patch you make.

and it doesn't always have to be full on! use it just a little... either via depth controls or linear inputs

apply like you might apply an LFO
are use it like you might use a melody line

try it out!
it's been made to be stretchable
to give you more degrees of freedom in your music

section C patch ideas:

patch idea A:

A fun experiment with the chaos brother is to set a filter to maximum resonance/ driving the filter into self oscillation

then connect the X out of the Chaos brother into the input of the filter and the smooth output into the cutoff CV input.

start with smooth at zero

this provides a unique way to hear the chaos brothers movements in a very simple patch.

start with speed at zero

patch idea B:

create a rhythmic sequence with your Modular

make sure that some elements of the sequence have external control

The 4ms RCD or SCM modules are a good example of this. The Pamela's workout module also can be modulated by an external input as can the Renè

once your sequence is set up take one of the gate outputs from the sequence

patch it directly into the CV input of the chaos brother

turn CV knob up to about 50 to 60%

set chaos to 100%
adjust speed knob to taste

then take the gate output of the chaos brother and patch it into either the CV input of your sequencer or the CV in of a clock divider

using the threshold control and CV knob you can set the chaos brother to create rhythmic offsets ...

or when using with a few dividers and sequencers, you could set up some very elaborate. "organic" patterns

try using the Gate out of the dreamboat to drive one divider/ sequencer and the gate out of the chaos brother to drive another all the while driving both modules CV inputs with gate outs from respective dividers or sequencers.

please see snazzyfx YouTube channel 4 examples of this technique

(channel is SNAZELLE)

AUDIO patch:

Though at times it can be hard to hear without the proper speaker the Chaos brother , like the dreamboat , can be used as an audio source .

in the case of the chaos brother connect The X output jack to your mixer. then in order to hear the signal make sure to turn chaos to 90 to 100% and turn speed 80-100 %.

you should hear a very low rumbling sound

one fun patch is to take this low rumble /put it through a distortion or a processor like the Harvestman Malgorithm or the ARDCORE bit crusher program, then feed it into a VCA. (or use the built in VCA on the tidal wave)

now take the gate out of the chaos brother and patch it into an envelope. take the output of the envelope and patch it into your VCA.

now you are gating the low rumbling sound with the chaotic gates.

you can expand on this further by multing the rumble chaos signal into an envelope follower (The snazzyfx wow and flutter module has a built in envelope follower.... simply plug in your signal into the wows input then use the "env out" jack as a new CV source!

have the envelope follower cv control the cut off of a filter!

crazy patch-AUDIO/CV-DAW/DRUM LOOP ETC!!

this patch is more of an experimental technique but it should get you in the mode of trying anything

patch a drumbeat or loop from a DAW using silent way (for proper levels) OR boost a daw signal to euro levels with an interface module.

now using a mult/stack cable patch that signal into the CV input of the chaos brother AND into the FM input of a resonant filter. use a step sequencer or vclfo to create a little timed sawtooth wave melody ...you can have the "clock" of the sequenced melody coming from the gate out of the chaos brother using a stack cable)

patch the out of the filter into a VCA.

get an ADSR ready. take the gate out of the chaos brother and plug it into the ADSR gate input.

plug the output of the VCA into the snazzyfx wow and flutter and mix in some delay with wet / dry.

now take the Y out of the chaos brother and patch it into the delay CV input jack of the well and flutter. turn up the depth control to Adjust delay time CV. take the X output of the chaos brother and patch it into your sawtooth vco expo in. adjust cv expo depth to taste.

for more weirdness:

if you boost the drum beat/loop loud enough you could mix the X out of the chaos brother in with the sawtooth audio , using a mixer before the filter!!

LAST PATCH (maybe most important!!)

The one final patch that is recommended with every chaos module is <cross coupling and or feedback patch>

if you have two chaos brothers use those.... if you have one dreamboat and one chaos brother use those... or if all you have is one chaos brother use one chaos brother and one regular VCO

what you need for cross coupling is two separate modules that have each have a CV input and a signal out##

however if you do this with two modules that are already chaotic the results can be really really neat

so quite simply we are going to label whatever two modules we use as module A
module B

after I describe how to set up this patch you can go back and add VCA's to the signal paths to allow for further control and precision

you could also go back and add slews or filters or offsets or attenuverters to the CV/feedback paths!!

OK

the CROSS-COUPLING/feedback patch is SUPER simple.

here it is:

1. plug the The X or Y output of module A into the CV input of module B.
2. then plug the X or Y output of module B into the CV input of module A

3. take any output from one of the modules and plug it into an audio mixer / speaker or take that output and plug it into the CV in of a third module such as a VCO and plug that into a mixer. or take CV out and audio out

The point is you need to somehow hear your creation

4. adjust speed/cv depth/pitch/chaos knobs to taste!!

ok

if for your second module you are using a standard VCO I recommend using the exponential input with an attenuator knob to control the depth of cv (very important to have depth control) coming from the other module

if one of the modules for A or B you're using is a VCO I recommend trying the triangle or sine waves As the out to plug into the other modules cv input and then checking out square or sawtooth waves.

this patch can be expanded in many ways

instead of just using A and B one possibility is to use a chain of modules for A and a chain of modules for B

good luck with your new module

happy chaos!!

more patches can be found on the snazzyfx subforum at the muffwiggler forum further information on using chaos in your modular system please refer to the extensive dreamboat manual.

the dreamboat manual has some information on Chaos Theory in general (links too!!) and “Modular Chaos Use” specifically.

please stay tuned to snazzyfx.com for further developments UTILIZING CHAOS , feedback, generative musics, synthesizer development and lots of other stuff concerning music making in the modern world.

head on over to the Snazzy FX SubForum on the
MuffWiggler Euro Forum
OR FIND ME ON TWITTER!! OR ON FB.
or at HELP@SNAZZYFX.COM

WE LOVE TO HEAR FROM YOU!!



SNAZZY FX has a one year parts and six months labor warranty. This warranty covers defects and does not cover mis-use. If there is a problem with your SNAZZY FX device, please contact the dealer you purchased it from to first determine if the problem is related to control settings. Your SNAZZY FX dealer will then give you information on how to return the product so that you can get back to making weird sounds.

NOT RESPONSIBLE FOR ANY DAMAGE YOU MAY DO TO YOURSELF OR YOUR SPEAKERS

@2015 SNAZZY FX

SNAZZYFX.COM

#Snazzy FX

youtube channel SNAZELLE

soundcloud.com/LOSS1234