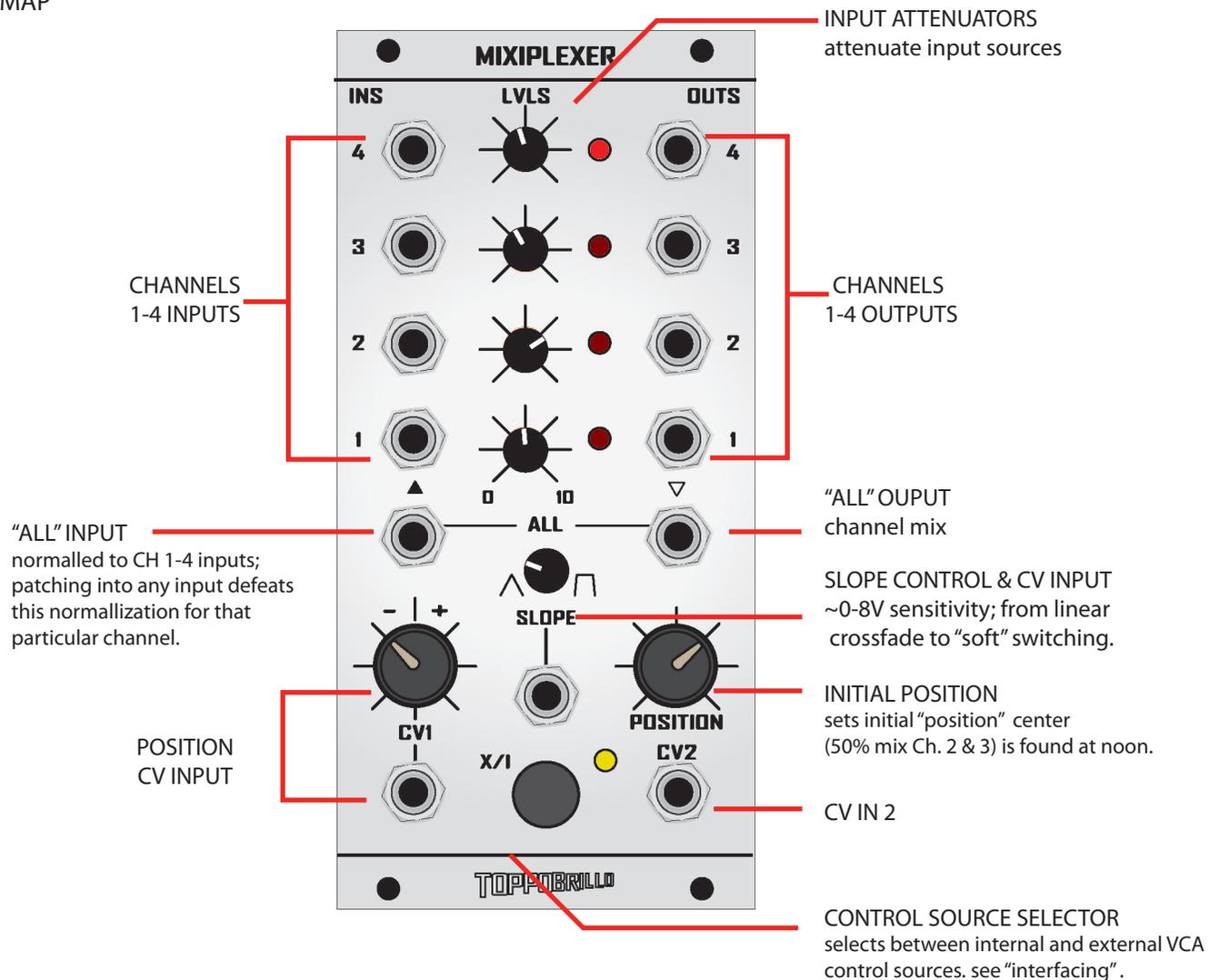# MIXIPLEXER v1.0

the Toppobrillo Mixiplexer is a 4- channel voltage controlled crossfading (or "scanning") device with mixing facility for both 4-1 and 1-4 distribution scheme. the Mixiplexer contains a 4 channel low-noise, low-distortion, VC mixer and a non-linear function generator that drives the VCAs. in addition, the channel sensitivity and control offset are globally controllable to facilitate a "slope" or response control parameter that drastically changes the changeover action and response of the channels.

PANEL MAP

INPUT ATTENUATORS
attenuate input sources

CHANNELS
1-4 INPUTS

CHANNELS
1-4 OUTPUTS

"ALL" INPUT
normalled to CH 1-4 inputs;
patching into any input defeats
this normallization for that
particular channel.

"ALL" OUPUT
channel mix

SLOPE CONTROL & CV INPUT
~0-8V sensitivity; from linear
 crossfade to "soft" switching.

INITIAL POSITION
sets initial "position" center
(50% mix Ch. 2 & 3) is found at noon.

POSITION
CV INPUT

CV IN 2

CONTROL SOURCE SELECTOR
selects between internal and external VCA
control sources. see "interfacing" .

BASIC OPERATION

it may be beneficial to view the Mixiplexer as simply as Voltage-Controlled router, or switch, that happens to nicely fade between channels to some selectable degree, as set by the SLOPE control and CV input. this is the basic idea. patch a source [Audio or Control, as desired] or multiple sources into the input jacks, set the level controls as appropriate, and monitor a singular or multiple output jacks, or re-route these outputs in your system however you want. patch a control-source such as an Envelope or an LFO into either CV1 or CV2. adjust the SLOPE control to taste. patch in another control source for more variation on which channels are on and off over time.

POSITION CONTROL AND ASSOCIATED CV INPUTS
are summed and processed by the non-linear
function generator. the 4 derived functions then
drive the 4 VCA channels [when not in External
Control mode} with Position Control at full CCW, a
positive-going ~v0-8V input source at CV2 [the
unattenated CV input] will sequentially 'open" and
"close" the VCA channels 1-4 as seen in the diagram.

control input   derived functions

internal control functions
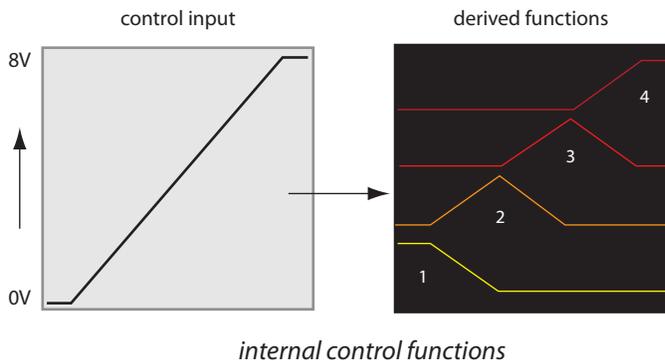
SLOPE CONTROL AND CV INPUT dictate how the
VCA channels respond to the derived functions. a
graphical representation shows the approximate
action.

variable channel response
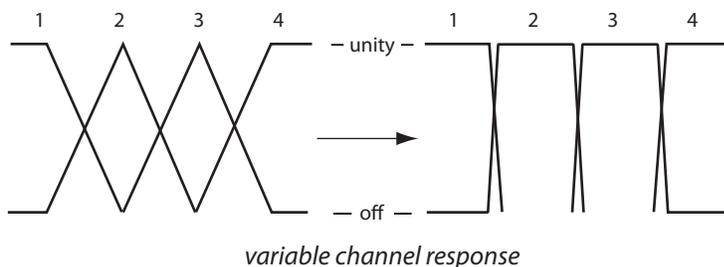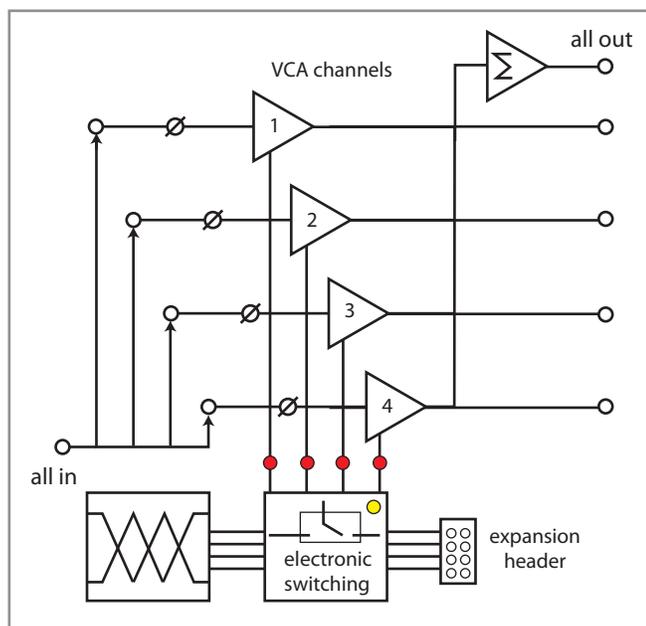
INTERFACING

Mixiplexer expansion header pins

the expansion header located at the rear of the module's purpose
is to allow for external control of the 4VCAs in the Mixiplexer, when
the "X/I" mode switch is set to external control (LED lit). there are a
number of ways you may want to control the Mixiplexer behind the
scenes when not using the internal complex function generator.. such
as LFOs, gate sources, etc. or creating a jack panel to allow individual
control to the VCA channels to be externally patched. note that the "slope"
control's effect on VCA sensitivity still applies!

4 ext — ⬭ ⬭ — 3 ext
GND ⬭ ⬭ **+12V**
CV out ⬭ ⬭ **−12V**
1 ext — ⬛ ⬭ — 2 ext

rear view

simplified block diagram
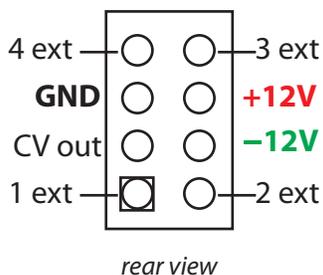
1,2,3,4 ext = external control inputs for the 4 VCAs in the Mixiplexer.
CV sensitivity is around +10V to unity (with "slope" at full CCW),
input impedance ~100K.

CV out = sum of CV1, CV2 and "Position" panel control for driving an
expansion device.

+/-12V and GND pins = power can be daisy chained to expansion via
these pins.