Antilope is a pseudo drum and dynamics machine, a dual pingable fully resonant filter, with a distortion + multiFX feedback path, all controllable through a pattern recorder with 3 cv sources switchable between morphable AD envelopes or stepped voltages.
Its compatible with eurorack voltage levels (+10V/-10V) and has midi clk and sync inputs.
Has a stereo line level input for processing external sources, stereo line level out, and HP output (up to 250 ohm impedance).
Powered through USB C (2.4A) type input makes it powerable from a power bank.
Antilope is a analog and digital hybrid machine.

The backplate connections, the headphone potentiometer direction and orientation is shown by the arrow.

NOTE ON THE PSU: it is highly recommended to use a good, solid 5V USB charger that can deliver 2.4A.
If Antilope doesn't power-up, or if its RGB window blinks, it means your charger is not delivering enough current.

FILTER [analog (red knobs)]:

It's a dual filter with common cutoff and resonance controls, a spread control (moving the 2 filters cutoffs in opposite directions), and independent input level, LP/HP crossfade controls and attenuverters for v/oct CV in.
v/oct inputs can decently track for 4 octaves.
There's independent euro level audio/ping ins and CVs for v/oct (normalised from VCF1 to VCF2) and common resonance cv input.
The filters can self-oscillate in order to be treated as a dual VCO that can track v/oct up to 4 octaves.
But antilope shines when pinged, its worth to mention that its Q pot control has been shaped in order to offer a quasi-linear control of the decay length of the excited filters.

DISTORTION [analog (black knobs)]:

The 2 filters get summed then into the distortion section, modeled after the sunn o)) beta bass amplifier.
Its composed of a level control, distortion, Feedback and a three band equaliser with an emphasis on the low mid frequencies (don't worry, the High End can scream too!).
The level and feedback are VCAs, making them CV controllable.
Also, a 2 position switch allows to decide the feedback path:
LEFT: The distortion output goes straight back to its input, this shapes drastically the distortion harmonics till self oscillation;
RIGHT: The distortion output goes through the FX chain, which output then goes back to the distortion input, this adds an analog feedback path for the digital FX section, also the eq allows you to shape and control the color of the FX;

FXs [digital (blue knobs)]:

A spin fv-1 FX section runs right after the distortion, it offers 7 different stereo algorhythms, spacing from multitap echoes, flanger delays, pitch shifting delays and reverbs.
There is a dry/wet control, and 3 control parameters for the selected effect.
As mentioned before, the analog feedback path that brings the FX out back to the distortion section adds warmth and tone control, the drive amount changes also completily the character of the fx going up to crunchy, distorted and broken textures.
Hidden behind the star just above the dry/wet CV input, lays a clipping LED, this will light up to let you know when HARD clipping occurs at its ADCs (which is extremely rare).

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// FX LIST

RED: short to medium size delay.
pot 1: delay length;
pot 2: digital feedback;
pot 3: tone;

GREEN: dual pitch shifting delay.
pot 1: delay length/pitch Left;
pot 2: delay length/pitch Right;
pot 3: phaser/comb filtering;

YELLOW: three tap delay/echo.
pot 1: tap 1 length;
pot 2: tap 2 length;
pot 3: tap 3 length;

BLUE: dual Ring Mod + chorus.
pot 1: frequency Left;
pot 2: frequency Right;
pot 3: chorus depth (fixed frequency LFO);

PINK: dual Chorus.
pot 1: LFO 1 rate;
pot 2: LFO 2 rate (shorter range than LFO 1);
pot 3: depth;

LIGHT BLUE: reverse reverb.
pot 1: pre-delay;
pot 2: decay length;
pot 3: damping;

LILLA: plate reverb.
pot 1: pre-delay;
pot 2: decay length;
pot 3: damping;
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THE CORE [digital (grey knobs, white faders)]:

The brain of the antilope is a pattern recorder, which allows you to record events for 3 independent channels.
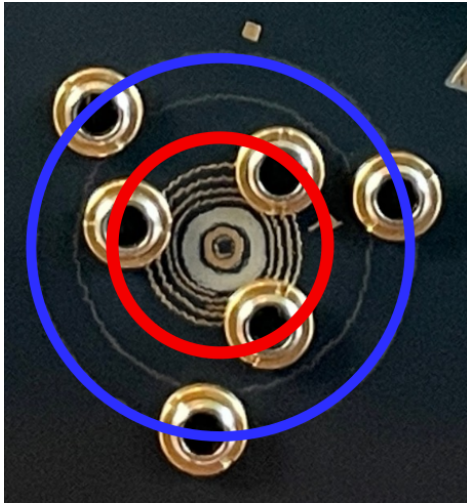

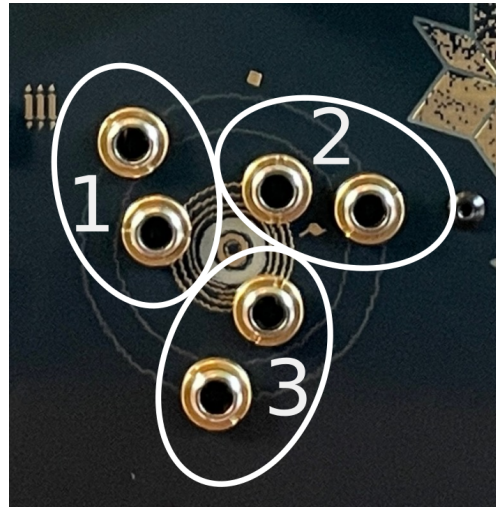Image A   Image B

Each channel has a dedicated CV and gate outputs, available on the front panel (gold nuts), outer circle (Image A – in blue) are gates, inner circle (Image A – in red) are CVs.

Also, Image B shows the CV channel outputs distribution.

The CV channels are triggered by the CHERRY-MX keyboard buttons (short press) and can be switched between an AD envelope (switch on the left) or a stepped voltages sequence (switch on the right). Faders in AD mode control envelope lengths, while step mode will read all 3 channels fader values to define each step voltage (the extracted sequence will have max 6 different values, but no limit in number of steps).
When the switch is at centre position, the pattern recorder is ig-nored, acting as a mute/freeze (you will still be able to play manually the CV trig buttons).
NOTE: While in record mode the MUTE is bypassed.

The envelope shape is morphable between:

 1. "log attack/exp decay";
 2. "exp attack/log decay";
 3. "exp attack/exp decay";
 4. "exp attack/log decay";

The envelope speed goes from 20ms/50Hz to 8s/0.125Hz.
Once a pattern has been recorded, each channel have independent control of the following parameters: phase, shape and multiplica-tion/division over playback speed.

!!In Step mode the Shape Encoder controls glide amount!!

This parameters can be externally CV controlled, through the jack
inputs on the rear panel of the antilope.

A touch/magnetic surface allows to introduce various types and
combinations of cross modulations between the 3 channels, this is
a great expressive tool to add momentary embelishments, and widen-
ing the palette of possible variations of an otherwise steady and
repetitive pattern.

At the moment, up to 7 patterns can be saved and recalled (only
the core parameters, as filter/distortion/FX are analogically con-
trolled).

Since the pattern recorder is unquantised, the external midi clock
and eurorack clock inputs work as a reset every 4 steps.

Antilope has a usb port for future CORE firmware updates.

Antilope is an instrument of experimentation and discovery, it's a
condensation of mrc sound and interface philosophy.

HOW TO RECORD A PATTERN:

To record a pattern, first make sure the CV switches are either
set in envelope mode (left) or step mode (right).
pressing the red button will engage recording, Antilope will be
waiting for the first CV button press before starting recording on
the buffer.
To stop and loop your recording press the Play button, now you
have set the buffer length!
Pressing again the rec button will let you overdub over it.
Holding stop + play (short press) will erase the buffer.
Holding a CV button and pressing stop will erase only the trig
recordings for that CV.

HOW TO CHANGE SETTINGS ON CV CHANNELS:

Each channel has independent settings for phase, shape and play-
back speed (which comes in various divisions and multiplications
of the buffer length).
To access those settings press and hold the desired CV trig button
and turn the encoder (pressing the encoder will reset its value to
zero).
While holding the button, the LEDs will show the values in bright-
ness, for mult/divider, turning left multiplies (steady lit LED),
and turning right divides (blinking LED).

HOW TO ASSIGN EXTERNAL CVs:

Once you have an external CV source plugged on the back, press and
HOLD the corresponding encoder and then select the CV trig button
to which you want to assign the CV.
While holding the encoder, the green LEDs will lit to show which
channel is receiving external CVs for that specific parameter.

HOW TO SAVE/LOAD:

TO SAVE: once you have a pattern, press and HOLD the rec button,
the 3 green LEDs on the side of the encoders will display the slot
number in binary (from 1 to 7), in SAVE mode the LEDs will be
blinking.
The FX encoder lets you select the saving slot, while pressing the
FX encoder will confirm and save your selection.

TO LOAD: press and HOLD the play button to enter the load menu,
the 3 green LEDs on the sides of the encoders will show you the
slots available to load, the FX encoder lets you scroll between
them and select (by pressing the encoder) the desired slot.
In LOAD mode the LEDs will be pulsating.

!!BEWARE!! as said before, only pattern recordings, fader posi-
tions and encoder settings can be saved and recalled.

MIDI CLOCK:

Antilope, when receiving a midi clock, automatically sets its buf-
fer to a 4/4 bar related the midi BPM.
For this, Antilope needs to receive a midi start message (PLAY
from your external device).
If antilope has already a buffer recorded before sending a MIDI
clock, it will clip the original buffer length to a 4/4 bar loop.
Antilope can detect when a MIDI cable is unplugged and will reset
to its original buffer length.

EURORACK CLOCK IN:

when sending an external gate clock (input marked as .clk)
antilope resets its buffer every 4 beats.
The minimum clock speed required is 4.095s.

!!WHEN BOTH MIDI AND EXT CLK ARE SENT TO ANTILOPE, THE EXT CLK HAS
THE PRIORITY AND MIDI WILL BE IGNORED!!

HOW TO UPDATE ANTILOPE'S CORE:

While antilope is not powered, connect a micro usb cable between
your laptop and antilope's port on the right side.
Power-up your antilope while holding the grey button on the side
of the usb port, hold for 1-2 seconds, then release it.

Antilope will appear as a usb device, drag and drop the .uf2
firmware file.
The usb device will eject on its own, you can now uplog the usb
micro cable.

// BUTTON COMBOS CHEAT SHEET

It is worth to keep in mind that antilope buttons recognize two
different type of presses: short(less than half a second) and long
(more than half a second).
This is essential to remember, i.e. only a short press of the key-
board switch will trig its correspondent CV channel.

HOLD CV trig + turn grey ENCODER : change CV channel settings;
HOLD CV trig + push grey ENCODER : set CV channel parameter to 0;
HOLD grey ENCODER + press CV trig : assign external CV to channel;
HOLD STOP button + press PLAY button : erase all recorded buffers;
HOLD STOP button + press CV trig : erase CV channel buffer;

LONG PRESS RECORD button : enter SAVE menu;
LONG PRESS PLAY button : enter LOAD menu;

while on SAVE or LOAD menu:
→ FX ENCODER turn : change slot;
→ FX ENCODER press : select slot;

BYNARY CODE:

| 000 → 0 | 001 → 1 | 010 → 2 | 011 → 3 |
| 100 → 4 | 101 → 5 | 110 → 6 | 111 → 7 |