erica synths x richie hawtin

bull frog

learn. produce. perform

Thank you for purchasing the Bullfrog Gesture Controller Voice card!

This Voice card turns the Bullfrog into a Theremin-like instrument where **pitch, volume and filter** cutoff can be controlled by gestures. The voice card features two extremely accurate sensors – vertical and horizontal, with individual CV outputs for creative patching of the Bullfrog synthesizer or for use with external **modular systems**. The voice card provides internal audio and CV patching of the Bullfrog – the mixer output is internally routed to the VCF and the VCF output is sent to the VCA input. The vertical sensor is assigned to the **VCF and VCA CV1 inputs** with attenuators, so via the attenuator settings you can decide whether the vertical sensor controls VCF cutoff and/or VCA offset (volume), while the horizontal sensor is assigned to **1V/oct input of the VCO**. We use optical "time to flight" sensors – a laser emitter and receiver that ensure precise linear control of parameters. With the flip of a switch, the response of both sensors can be **continuous or quantized** in semitones, the **pitch range** can be set to 1, 3, or 5 octaves. With the EG GATE switch set to ON, the voice card **sends the gate signal** to the envelope generators, so instead of continuous cutoff/volume control via the vertical sensor, you can initiate envelopes when the vertical "beam" hits a certain threshold. The envelope outputs can be patched to the obvious VCF and VCA CV inputs, but they can also be used for other modulations.

PITCH CV   VCA/VCF CV

EG GATE   QUANTIZATION   PITCH CV RANGE

ON   ON   5V
OFF   OFF   3V
                                  1V

GESTURE CONTROLLER

For more flexibility, the Gesture Controller voice card is configurable to address **a variety of preferences.**

## In order to configure the voice card:

- **Insert it into the Bullfrog**
- **Connect the Bullfrog to your computer via the USB port**
- **Push the recessed CONFIG button**
  (to access the button use a matchstick or similar object).
- **A mass storage device folder should open up on your computer.**
- **Open the CONFIG.TXT file** (inside are all the parameters
  listed in the format as seen below)

V0_start: 50   #[50..120]

Adjust the desired parameters by changing the current value within the allowed range. Save the file to apply changes – the file should automatically close and the changes will be written to the voice card.

The configurable parameters are as follows:

dst_per_oct the distance covered by an octave on the V/0 (pitch) control (mm)

V0_start the distance from the voice card where the V/0 control starts to operate (mm)

CV_start the distance from the voice card where the VCF and VCA control starts to operate (mm)

CV_start the distance from the voice card where the VCF and VCA control stops operating (mm)

qant_glide an option to slide or discretely switch between notes when quantization is on (0 – hard switch, 1 – smooth slide)
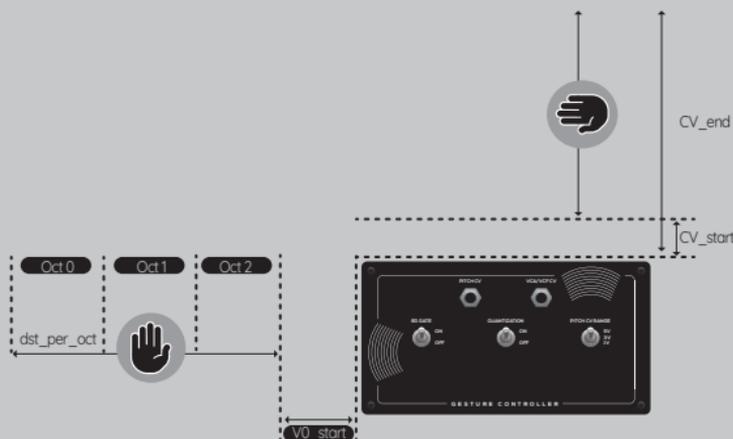
Bullfrog voice card firmware update:

To update the firmware, go to the product page at www.ericasynths.lv and download the latest firmware file. Insert the voice card into your Bullfrog and connect the Bullfrog to your computer via USB. Press the recessed CONFIG button at the back just like you would to change the voice card internal parameters (using a matchstick or similar object). Simply drag and drop the firmware file into the mass storage device folder that popped up. After a few seconds, the update will be complete. Enjoy the new features!