Oi, Kant!
User's immanual

Thank you very much for purchasing the **Oi, Kant!** On behalf of everyone at Optotronics, which is really just one person, we hope it will truly inspire you.

Oi, Kant! is a sort of drum machine. Sort of. Drum-ish machine, as I like to call it. And it's a weird one. It has 3 voices: drum, bass line and cymbal, though they all have their own Kant-related names, as do the rest of parts on this machine. It also has a resonant filter which can effectively be treated as a fourth voice.

All of these voices, predominantly based on CMOS semiconductor chips, can be sequenced using one of the built-in sequencers. Yes, sequencerS, plural. Four of them. Why? Well, why not? These sequencers are completely independent but they are synced to a master clock. Oi, Kant! also offers you an external clock input so you can control the sequencers tempo by sending pulses from other hardware. In fact, all of the voices can also be sequenced from external sequencers, if you'd like to do that.

Oi, Kant! offers individual outputs for each of its voices. Please note there is no master output, so in order to listen to them all at once you need to use a mixer or audio interface.

Oi, Kant! runs on 9v DC (negative tip, 600mA) or 12v DC, and it can also be powered with a 9v battery. The power input socket is located on the top left corner of the board, labelled 9VDC-.

This immanual is divided into 5 sections, each describing the fundamental sections of the board: (1) sequencers, (2) drum voice, (3) bass line generator, (4) cymbal and (5) filter.

1. Sequencers:

There are a total of 4 sequencers on the Oi, Kant!. For convenience, all sequencers are clocked from the same source. The master clock knob, which allows you to control the speed of the clock, is located to the lower left corner of the board, and it is labelled CLOCK. Alternatively you may also send clock pulses from some external source to the input labelled CLOCK IN. Use mono patch cables to go from sequencer outputs to voice inputs. From left to right, the sequencers are:

STUPID CUNT is an 8-step sequencer. You may use its triggers to sequence any of the voices or to trigger external sources from it.

CANTINFLAS is an 8-step bidirectional sequencer operated with 2 switches: "switch A" and "switch B".

"switch A" lets you change the direction of the running sequence.
"switch B" is a bit of a wildcard button, as it stretches the sequence by stuttering on some of the steps in order to create more complex, asymmetrical patterns on the fly.

You may use the CANTINFLAS triggers to sequence any of the voices, or to trigger external sources from it.

CANTALOUPE and **CANTERBURY** are two identical trigger sequencers based on shift registers. You can add steps to the sequence by pushing the "a" button/s (labelled "1a" on the CANTALOUPE and "2a" on the CANTERBURY) or subtract steps by pushing the "b" button/s (labelled "1b" on the CANTALOUPE and "2b" on the CANTERBURY).

You may use its triggers to sequence any of the voices but please note: if you are using any of the 8-step sequencers to trigger the Cantor's Set (bass line generator, see below!) then you should NOT send triggers from this sequencer to the other input of the bass line as well, as they will conflict with one another.

2. **CAN'T TOUCH THIS — Drum voice**
This is a simplified Twin-T notch filter circuit. Kind of a weirdo kick drum. It has one trigger input, 1 output and 3 knobs:

SEQUENCER IN - Connect trigger sequence here.
DRUM OUT - Output signal.
DECAY - Decay time of the drum.
TUNE (1) - Play with this to change the colour/timbre of the drum.
TUNE (2) - Play with this to change the colour/timbre of the drum.

3. CANTOR'S SET — Bass line generator
A bassy square wave oscillator based on the 4046 VCO and notch filter. This lets you make fun and banging bass lines, and rather than using boring chromatic keyboards to do so, it encourages trigger serendipity by using 2 sequencer inputs — one for triggers, labelled SEQUENCER/TRIGGER IN, and one for control voltage, labelled SEQUENCER/CV IN. You can either use sequences from the STUPID CUNT and/or CANTINFLAS, or a combination of pulses/CVs coming from internal and external sources such as Eurorack modules, standalone synths, sharks, and so on. Apart from its 2 inputs, it has 5 knobs to shape its tone:

GLIDE - Sets the glide time in between notes, from staccato to legato.
THIS OR THAT - Distortion control for the bass line.
PITCH - Sets the pitch of the bass line.
FILTER1 - Tone control for the bass line.
FILTER2 - Tone control for the bass line. Play with both!

4. CANTEEN — Enlightenment cymbal
This voice is based on XOR gates and its pitch depends on the enlightenment, or the light level hitting the LDR — Light Dependent Resistor. So please take ambient light into account! (playing your Oi, Kant! in a dark dungeon will sound different than playing it under a giant light bulb). Tip: It sounds even better when run through the resonant filter! The CANTEEN has 1 trigger input, 1 output and one knob:

SEQUENCER IN - Connect trigger input here.
CYMBAL OUT - Output signal.
DECAY - Decay time of the cymbal.

5. TADEUSZ KANTOR — Resonant filter
The filter in the Oi, Kant! is one of its best weapons. It is loosely based on the MS-20 circuit and has two modes: 12dB/octave low and a 6dB/octave high-pass. The TADEUSZ KANTOR has 1 input, 1 output and 3 knobs:

AUDIO IN - signal to be processed.
AUDIO OUT - processed signal.
FREQ - Cutoff frequency of the filter.
RESONANCE - Amount of resonance at the cutoff frequency. More resonance results in a more distorted, screamy output.
HIGH P. / LOW P. - Switches between high and low pass filter modes.

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