

The Dirty Electronics 7-Segment Display (3rd ed.)

John Richards 2012

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Features

7-segment LED display

Sequencer

Internal clock

External clock input/sync

Wave-shaping

Feedback

Noise

Touch controls

The Dirty Electronics 7-Segment Display, initially designed for Athens Video Art Festival 2012, is a hand-held device for sound and light that uses multiple 7-segment LED decimal digit displays (like you get in old digital clocks). At the centre of each printed circuit board (PCB) there is a pseudo screen made from clusters of 7-segment displays that generates abstract patterns with corresponding sequenced sounds. The device also introduces the idea of composition through electronics and 4-bit binary coding.

Designed by John Richards, Stu Smith (display prototyping) and Jim Frize (CAD and PCB).

Power on/off

Switch S4

Sequencer and pitch

The sequencer has a maximum of 8 steps. To save space and costs, the pitch of each step is controlled by 4 pots on the left (2 pitches per pot): as a pot is turned one pitch will rise, another fall.

The sequencer can be set to the first step of the sequence with the 'Reset' button or held/interrupted by the 'Freeze' button.

The direction of the sequenced pattern (up/down) can be controlled by the touch electrodes on the left.

Clock

Interesting results can be achieved by using an external clock source. An audio signal in the clock input can also work and provide a quick way of syncing the device. Just connect a jack socket with a couple of wires to the clock input terminal (C tip; - sleeve). Such an input signal needs to 'hot'. Switch S3 selects either external or internal clock.

Wave-shaping

The waveform can be shaped from a triangle (soft) to square wave (hard).

Filter

The filter is a simple RC filter (resistor/capacitor) for the noise generator.

Feedback

The feedback control is dependent of the settings of switch DS4. Feedback may also be controlled by the touch electrodes on the right.

Display

The LED displays can be turned on/off by the DIL switches (DS1, DS2 and DS3) on the left.

Unpacking/packaging

Nine pot shafts are included that need to be inserted into the pots.

The plastic protective coating on the displays can be removed.

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