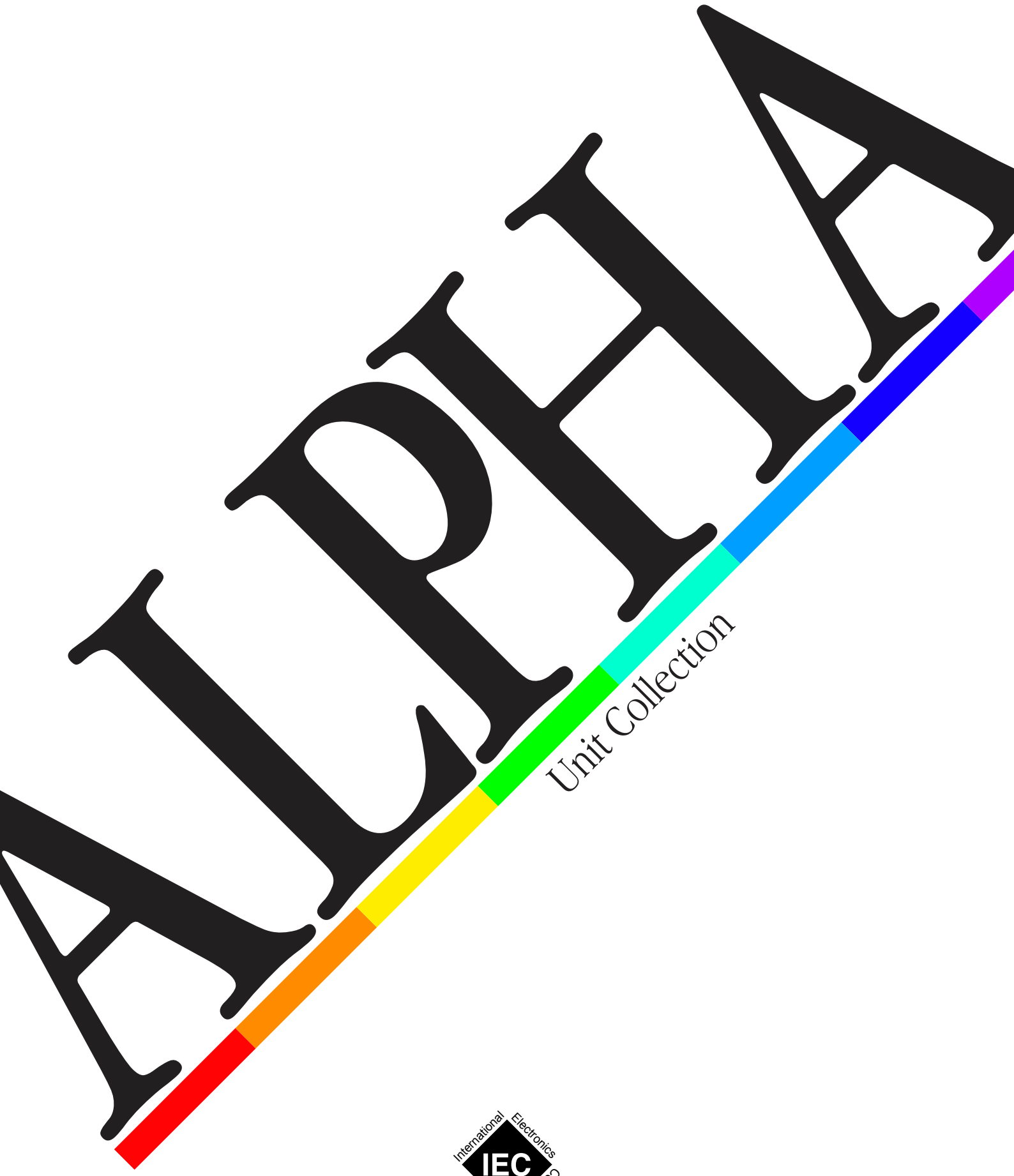

ALPHA
Unit Collection

International
Electronics
Consortium
IEC

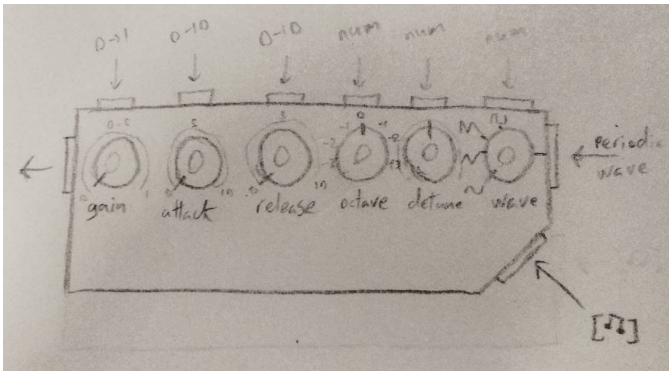
CONTENTS

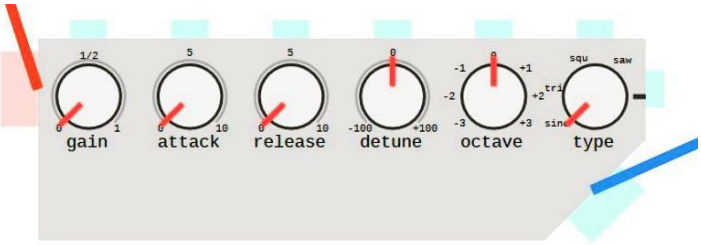
Preface

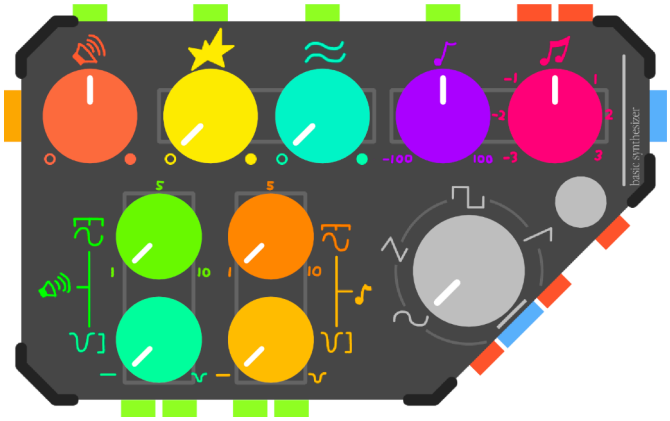
Originally conceived by the Research And Development department of the IEC as a way to test CUIS connections; the Alpha collection of units has proved to be a trustworthy base in the repertoire of designer's toolboxes. They cover all connection types and allow for the basic control needed to both understand the standard, and perform essential tasks - like splitting or combining transmissions.

The units in this collection were designed with the intention of getting projects off the ground. They provide basic functionality allowing users the basic abilities they need to work with the CUIS design. These are no-frills, milquetoast units designed with essential uses in mind. Batteries are included however, and efforts have been made in the designs to ensure that they are accessible and understandable, with a wide range of functions and control.

You'll likely find other units with similar abilities as those included in this collection, that are better designed with more features; but those will all be improvements. These are the originals.







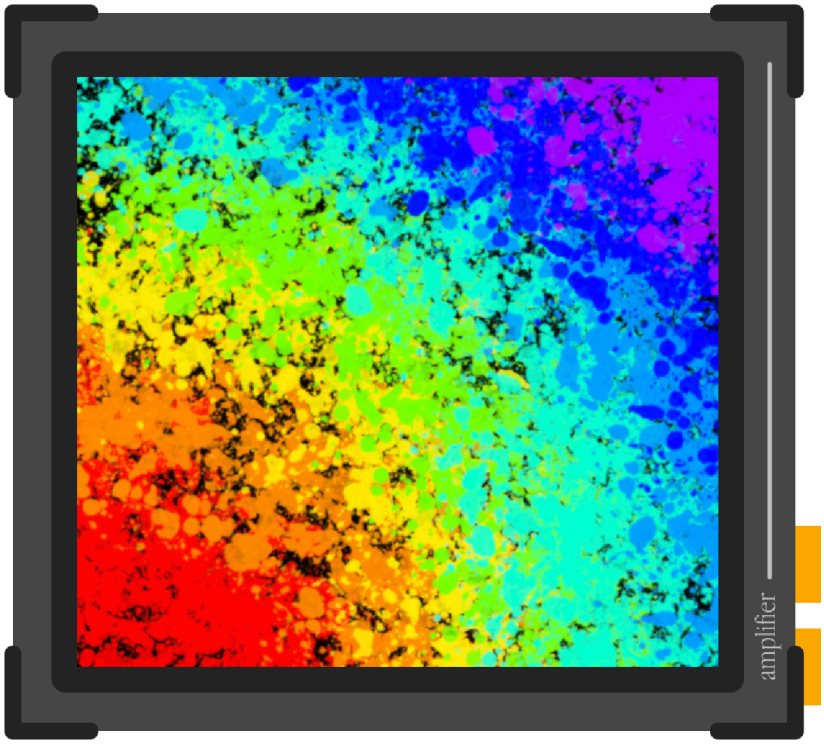
A trip down memory lane; the original designs for these units had a rather more stark feel with a reduced colour palate. As development progressed, the art department managed to get their way and have the units actually look good.

Top-left; the original design for the Basic Synthesizer. Top-right; an early prototype of the Basic Synthesizer. Right; the current design for the Basic Synthesizer

Monitors

Units of this group are used to convert transmissions into human-readable content - or indeed human-listenable content. Though not exhaustive in their ability, they provide a useful glimpse into the digital world.

Amplifier



Similar to any other amplifier; this unit converts audio transmissions into actual sound for a human to hear. There are two audio inputs for right and left stereo.

The unit has no input amplitude nor panning control; it is intended to be a direct representation of the audio transmission it receives.

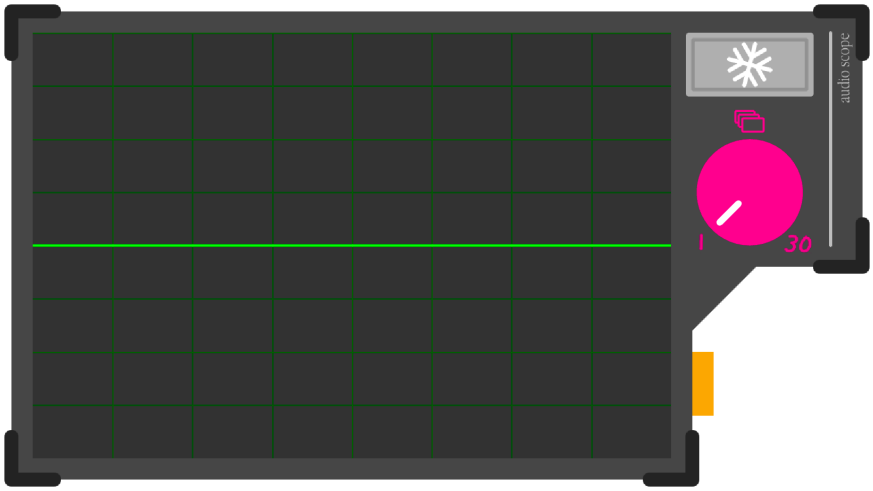
Audio Recorder

As the name suggests, this unit can be used to recored the audio transmissions it receives. Recordings can be paused and restarted, while finished recordings can then be saved. Similar to the Amplifier, this unit has stereo input.

- The four lights across the top of the unit indicate the current state; “Empty”, “Recording”, “Paused”, “Full”.
- The central LCD screen will display the current recording time, in hours, minutes and seconds.
- The five buttons on the bottom of the unit control the recording; “Record”, “Pause”, “Stop”, “Save” and “Empty”.

For example, in the current state we see in the included diagram; the “Empty” light is lit indicating that this unit has no internal recorded data and is ready to start recording. Pressing the “Record” button will commence the recording lighting the “Recording” light. One can pause and unpause the recording with the “Pause” and “Record” buttons; changing the lights accordingly. Pressing the “Stop” button will halt recording, lighting the “Stopped” button. You will be unable to restart recording from this state. You can now use the “Save” button to save the recording to a file. Pressing the “Empty” button will wipe all recorded data returning the unit to the beginning state.

Audio Scope

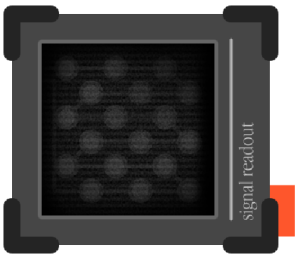


Audio transmissions can been see as well as heard. The audio scope unit can be used to plot audio transmission onto a graph to allow for viewing. No synchronizing of audio frequency and framerate is performed; you are simply presented with the audio wave as-is.

This unit provides two interface items; a control for the framerate of the device, between 1 and 30 frames-per-second, and a “freeze” button which will cause the screen to hold on a certain frame of the waveform.

Data Readout

Very simply, this unit is capable of printing out onto its screen, a text-version of whatever data transmission it receives. Typically, this information appears in a JSON format, though some adjustments have been made to the standard parser to incorporate additional data types not covered. The readout has no scrolling functions, nor the ability to control the output in anyway, you are simply presented with the data as-is.

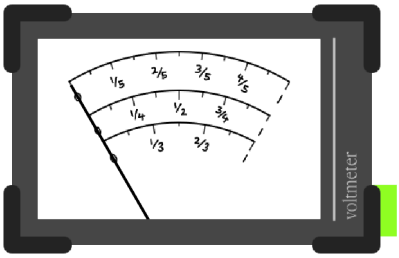


Signal Readout

The simplest of the transmission types also has the simplest of readout's. If the signal is 'active' then the light inside this readout will glow.

Voltage Readout

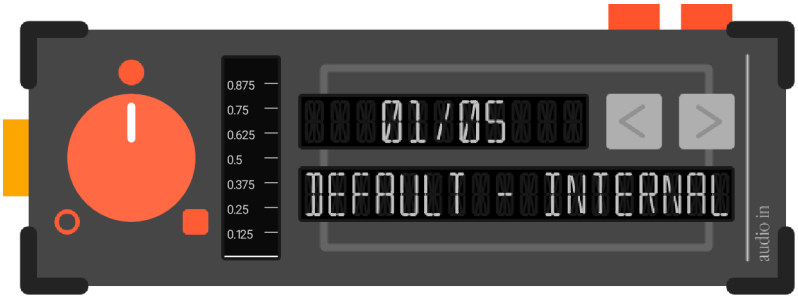
This unit displays the current value of the incoming voltage transmission. It is limited to a rage of zero to one.



Human Interface Devices

In a fun twist, units of this group do the opposite of those from the previous one. These units are all about converting human actions into transmissions. Similar to their counterparts in the previous section, their abilities are somewhat restricted - not to mention their forms are a little chunky - but they provide essential utility for humans to generate transmissions for a wider system.

Audio In



This unit attaches to your browser's audio-input devices. As such, in creating this unit you may be asked to allow the website to access your microphones. Once allowed, one can use the left and right control buttons to select which of the available inputs to use - the name of the selection appearing on the lower LCD screen.

To the left is a meter visualizing the incoming audio, and to its left is a master control of amplitude, ranging from x0, to x1 to x2 (represented as an empty circle, filled circle and filled square respectively) Finally, the collected audio is produced from the audio connection on the left of the unit.

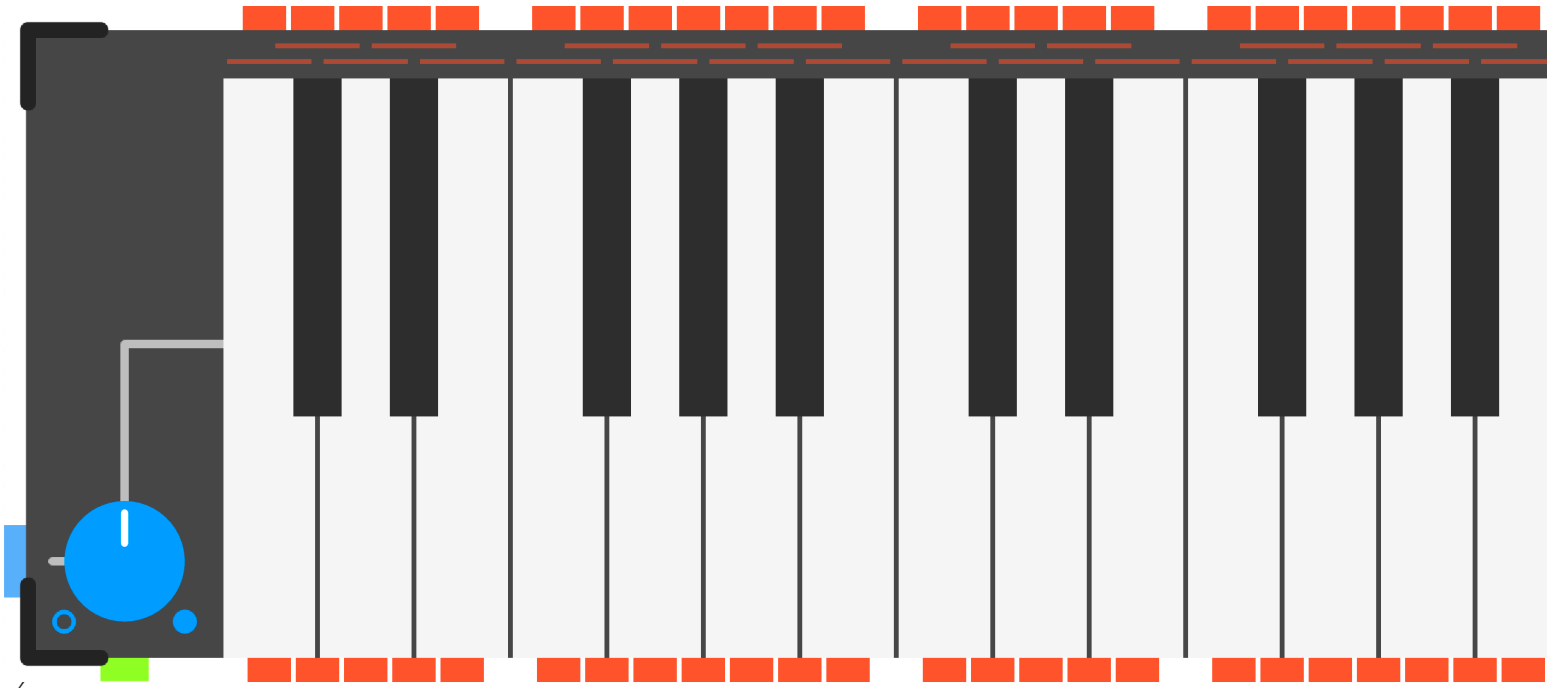
In addition, above the left and right control buttons, two signal input connection ports are available, allowing the input device to be selected externally.

Musical Keyboard

A very familiar sight to many, the musical keyboard is a four octave keyboard. The keyboard is not touch sensitive, though one can control this value using the blue dial on the left side of the unit, which itself can be externally controlled by a voltage transmission, entering the connection underneath. It ranges in value from zero to one (represented as an empty circle and a filled circle respectively) By pressing a key, a data transmission is sent from the data connection on the left, using the "midinumber" data format. Pressing a key will also activate a corresponding signal connection located at the top of the unit, along with a fun red LED which all of us here at the IEC agree looks pretty cool.

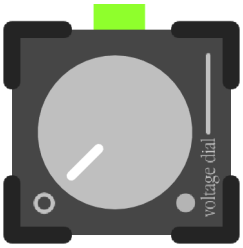
Additionally, the signal connections on the button of the unit can be used to activate keys, while the data connection on the right will interpret data transmissions of the "midinumber" data format, pressing the matching key. Therefore, this unit can be used as a translation point between signals and midinumber data transmissions.

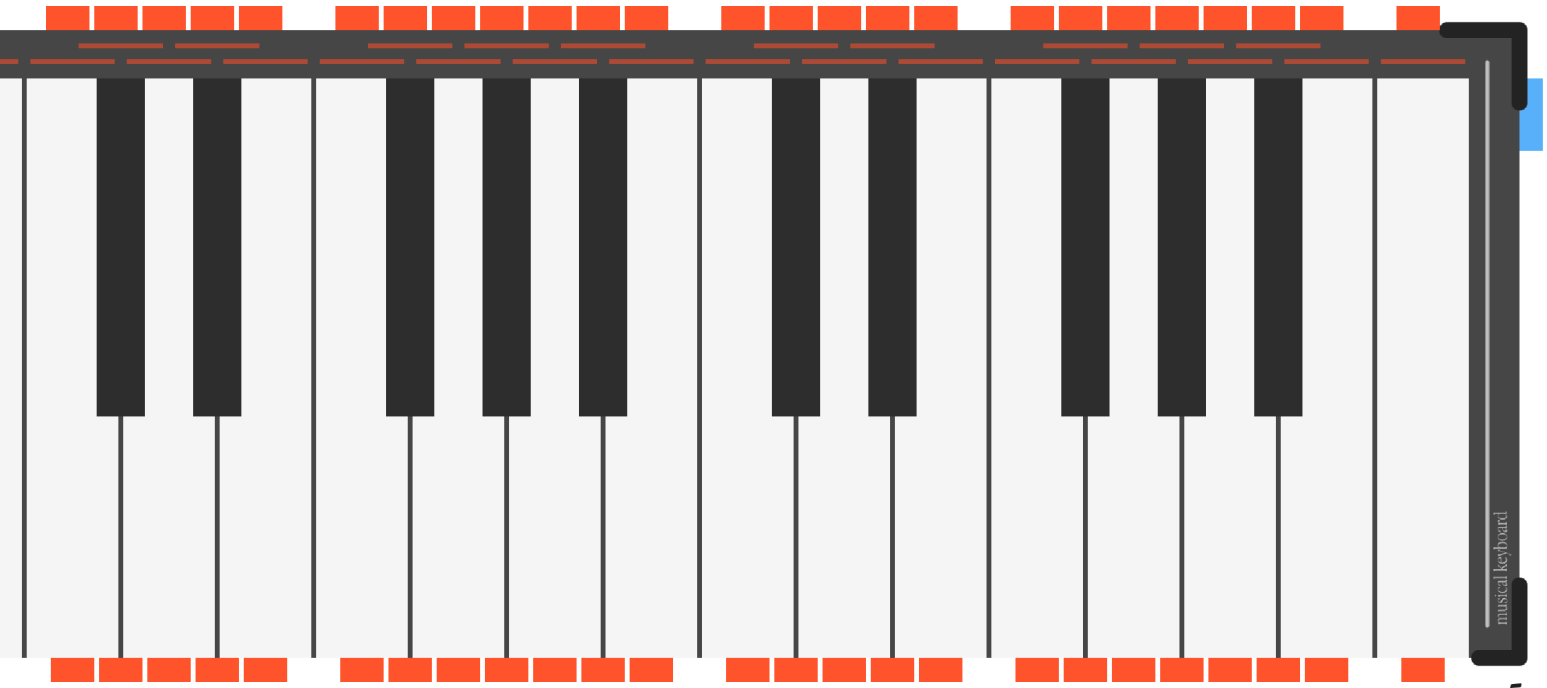
Finally, by hovering your mouse over this unit your real typing keyboard will be connected, allowing for musical typing.



Signal Switch & Voltage Dial

These two simple controls correspond directly to their readout counterparts in the monitors section. The signal switch is a basic switch, producing either an ‘active’ or ‘inactive’ signal. The voltage dial produces a voltage value between zero and one (represented as an empty circle and a filled circle respectively)



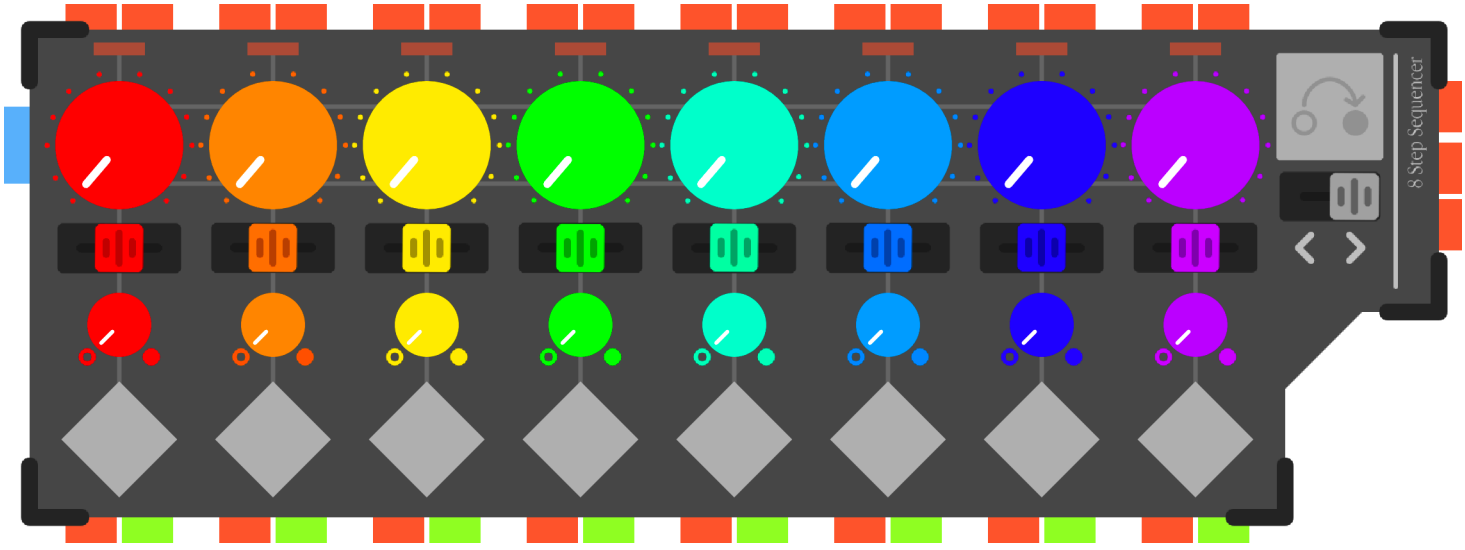


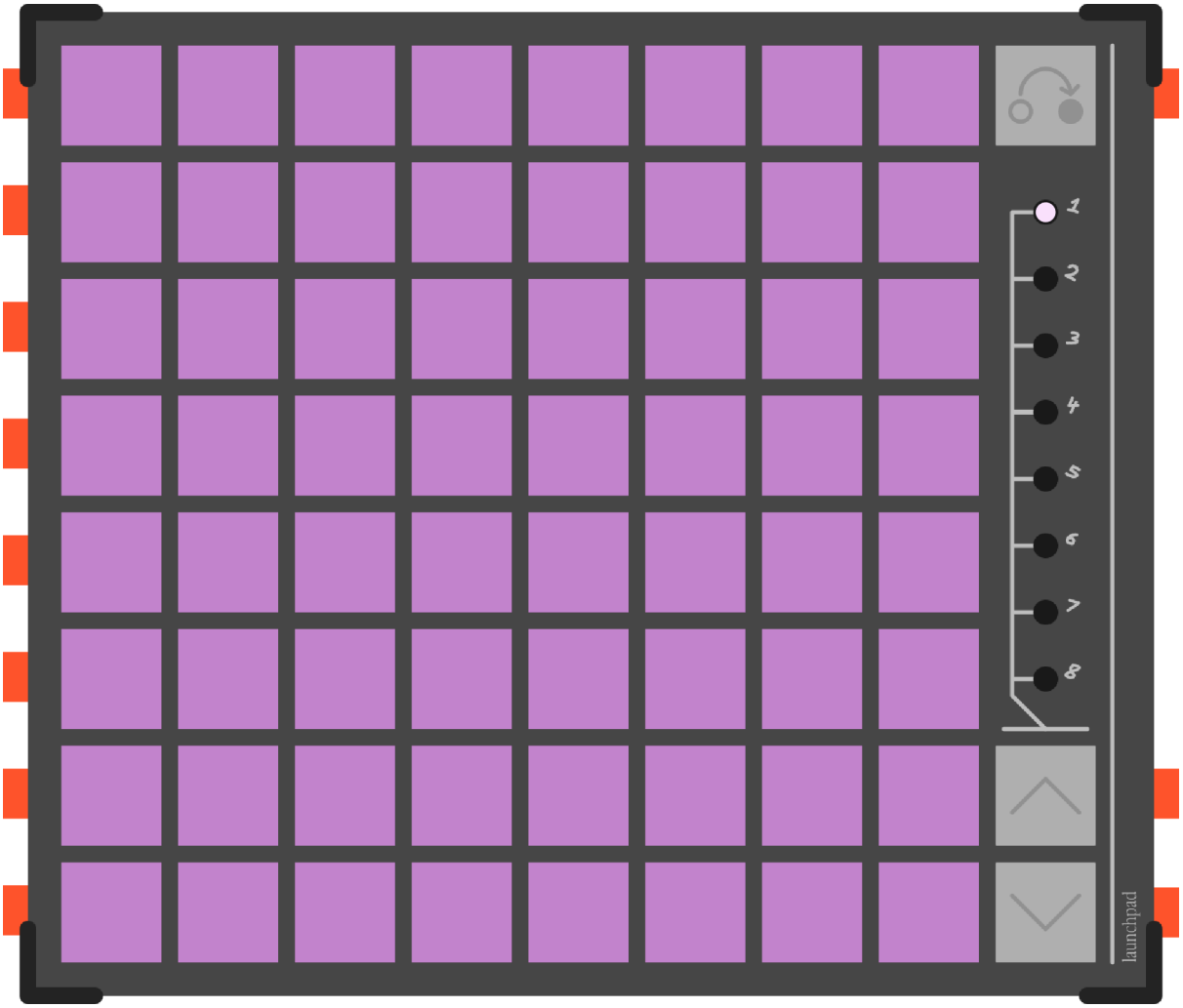
Sequencers

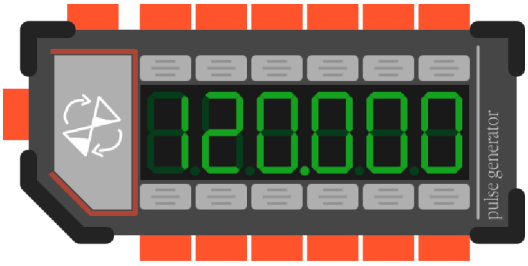
Eight Step Sequencer

Launchpad

Pulse Generator



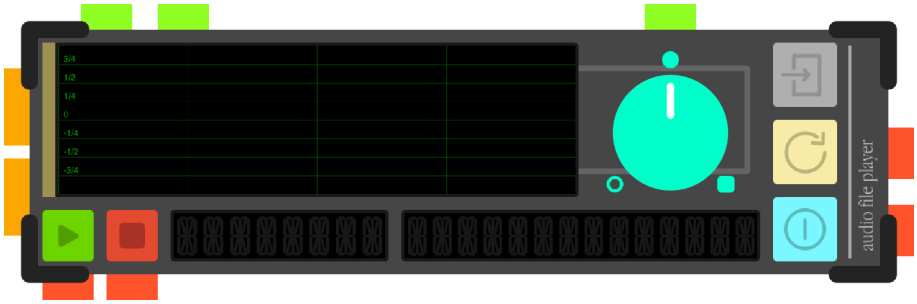

1
2
3
4
5
6
7
8
launchpad

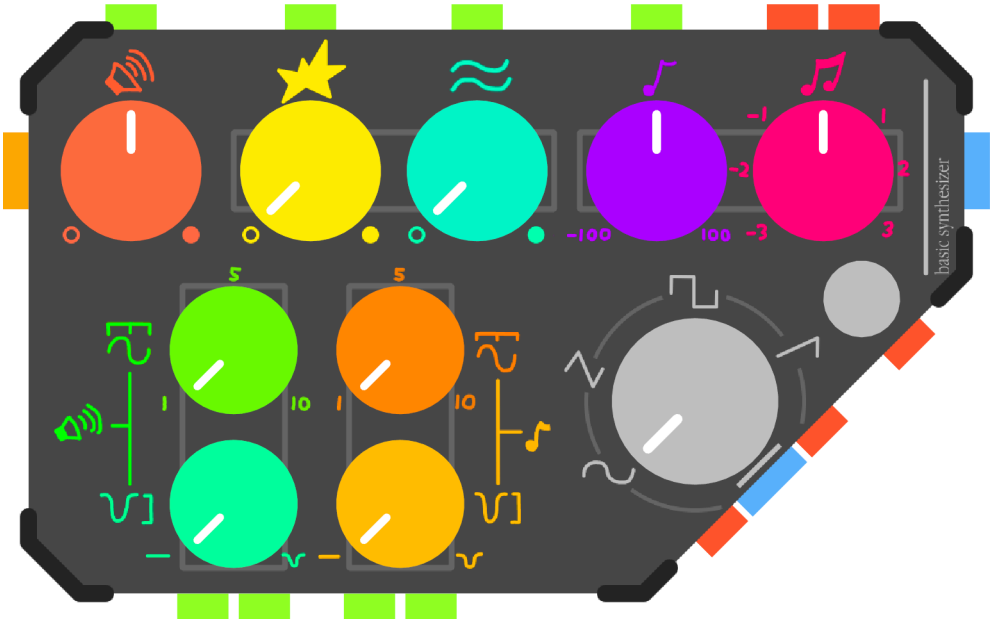

120.000
pulse generator

Synthesizers

Audio File Player

Basic Synthesizer


audio file player

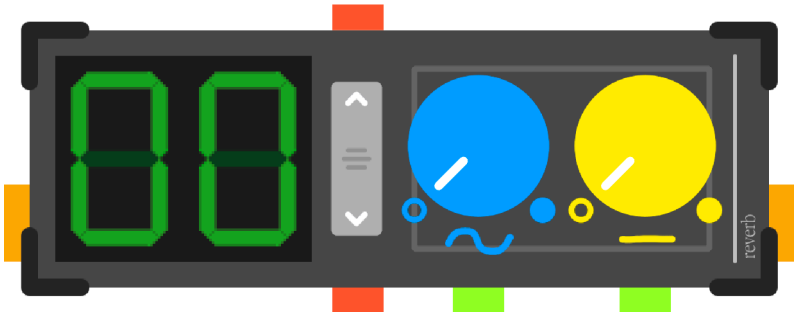

basic synthesizer

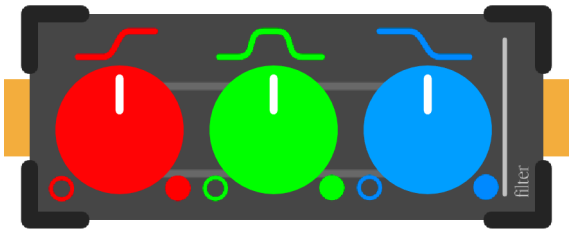
Audio Effect Units

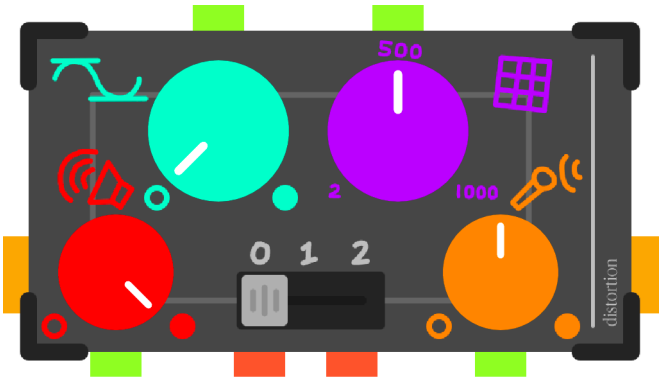
Distortion

Filter

Reverb

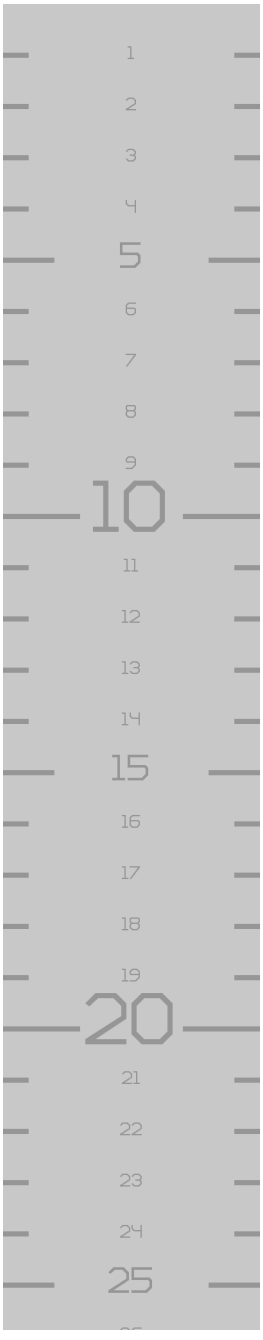

reverb


filter


500
2
1000
0 1 2
distortion

Tools

Ruler



Miscellaneous

Audio Duplicator

Data Combiner

Data Duplicator

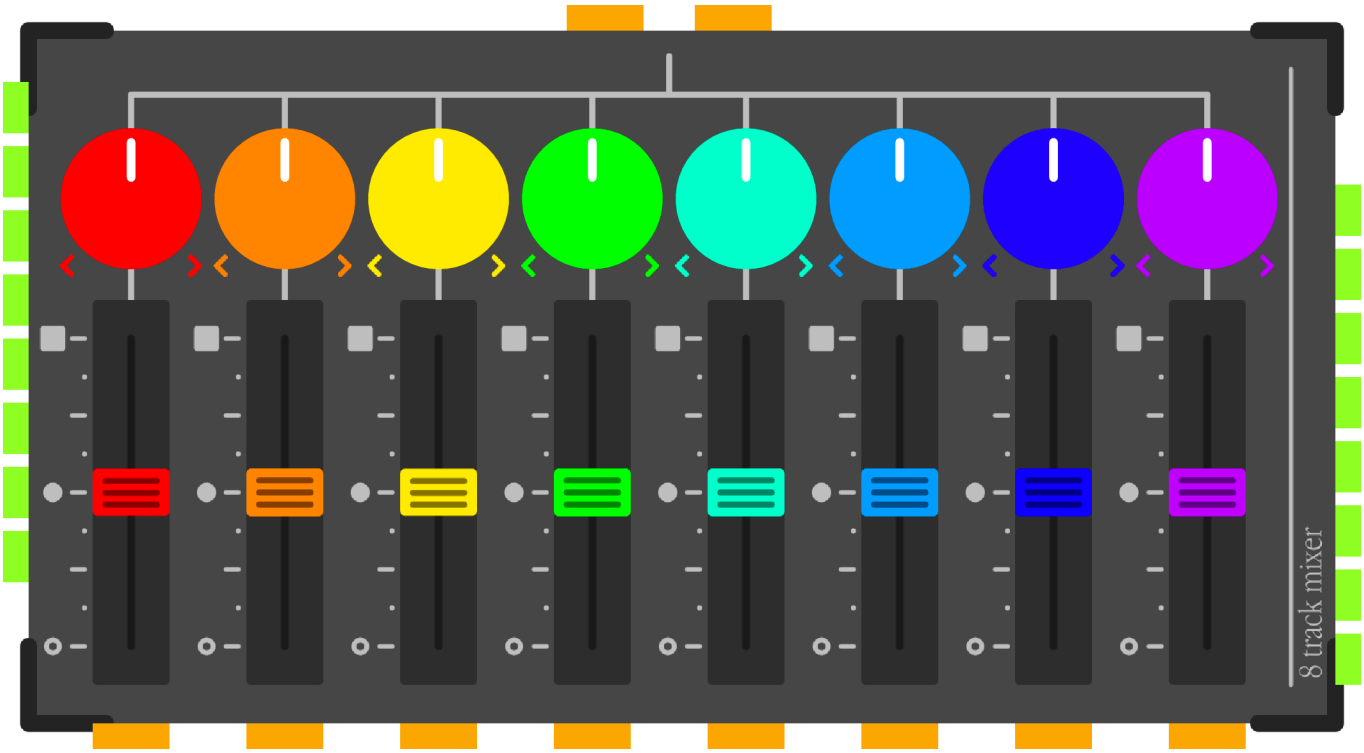
Eight Track Mixer

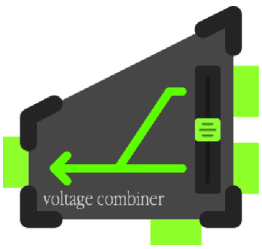
Signal Combiner

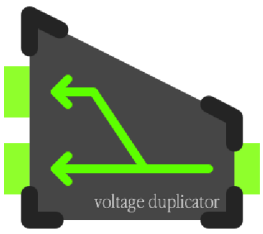
Signal Duplicator

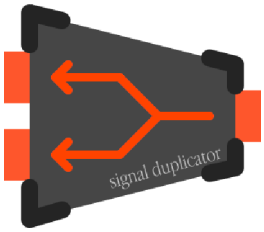
Voltage Combiner

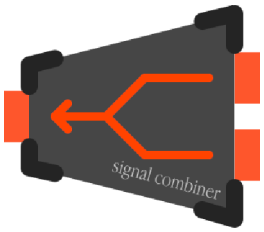
Voltage Duplicator

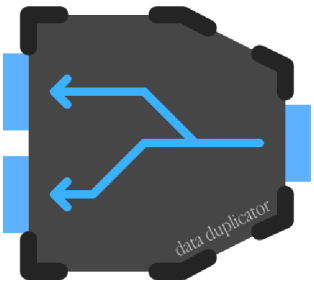

8 track mixer


voltage combiner


voltage duplicator


signal duplicator


signal combiner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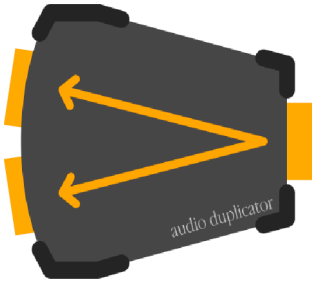
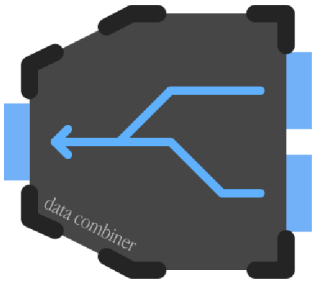

audio duplicator


data combiner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