

A decorative vertical bar on the left side of the slide, composed of a 5x5 grid of colored squares. The colors include shades of blue, green, orange, yellow, pink, and brown. Some squares contain white line-art icons: a piano keyboard, a robotic arm, a microscope, a computer monitor with a play button, and a lightbulb.

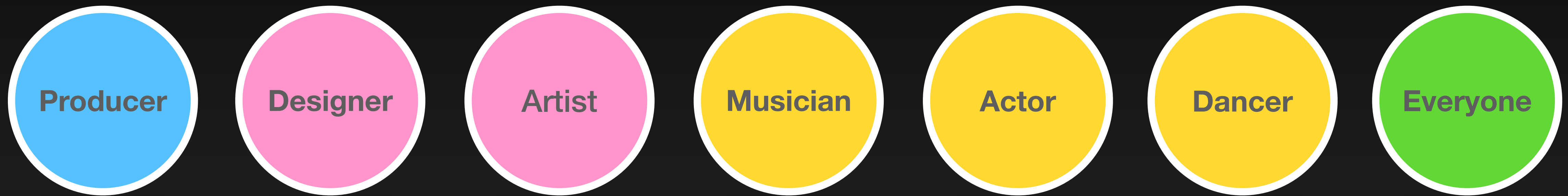
Learning DigiShow

1

Basic Concepts

Robin Zhang and Labs 2025

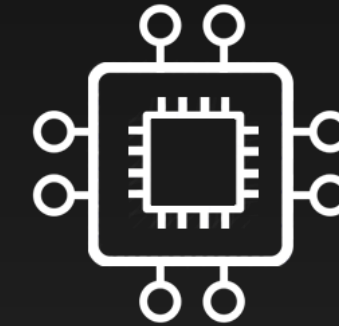
Who likes DigiShow ?



Suppose you are an immersive show producer, or an interactive media designer, theater artist, dancer, musician, magician or none of the above. We hope to discuss with you all: To consider objects, spaces, people and systems as co-performers. We want to use DigiShow to provide an easier workflow. Even for an ordinary person, every daily scene in life may be transformed into your mini disneyland.

What is **Digi**Show ?

DigiShow is a lightweight control software designed for **performance scene** and **immersive space** with music, lights, displays, robots and interactive devices.



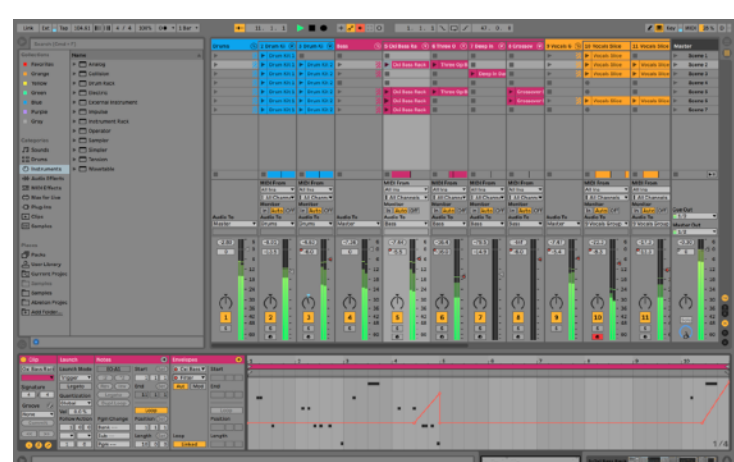
It serves as an easy-to-use **signal console**, also enables **signal mapping** between MIDI, DMX, OSC, ArtNet, Modbus, Arduino, Philips Hue and more digital interfaces.



Programming extensions using Python, JavaScript, etc.



Interactive content creation using TouchDesigner, Unity, Unreal, etc.



Digital audio workstation such as Ableton Live, Logic, etc.



MIDI instruments and controllers

Virtual Pipe
(Web Socket)

OSC

MIDI Bus
IAC / loopMIDI

Hue 网桥

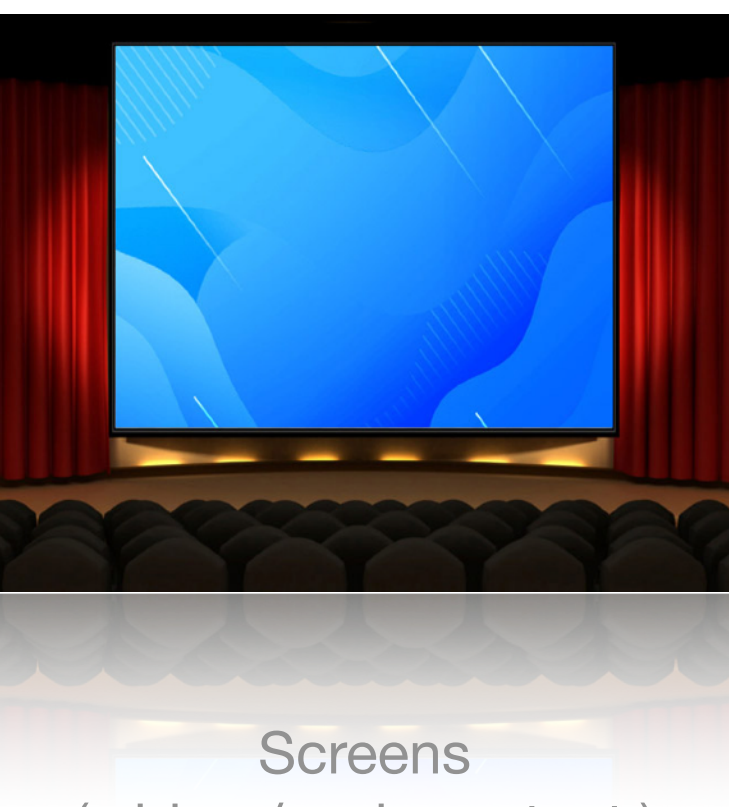
zigbee wireless

DMX-USB
ArtNet

dmx



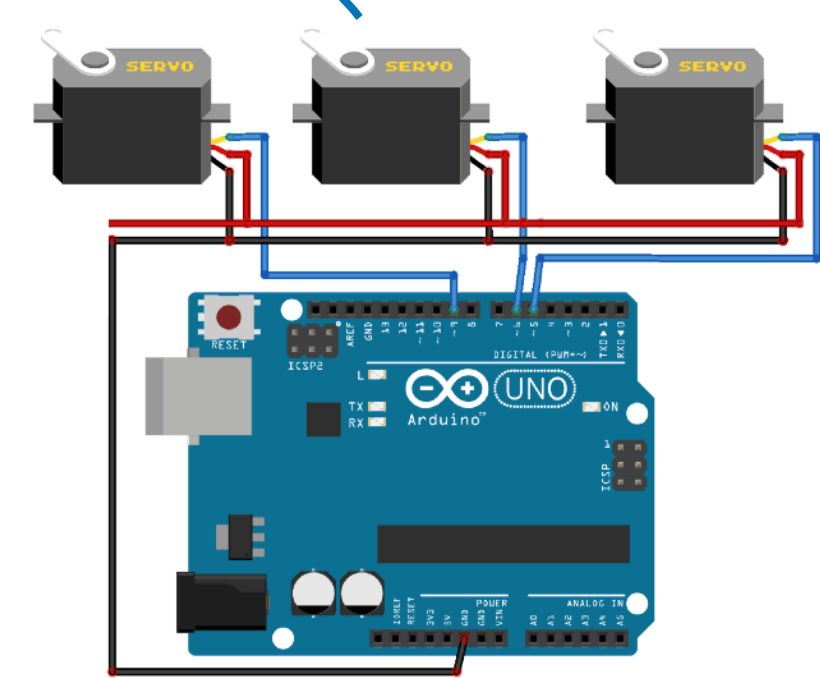
DMX stage lights
LED pixels



Screens
(video / web content)

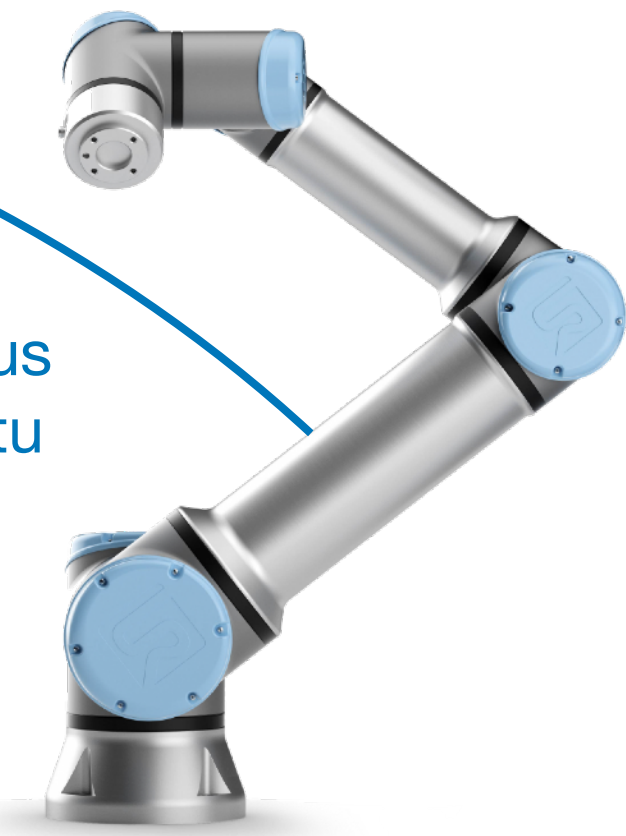


usb



Arduino with
sensors, LED lights, servos, motors, etc.

modbus
tcp / rtu



Industrial automation
machines and robots

DigiShow Signal Console

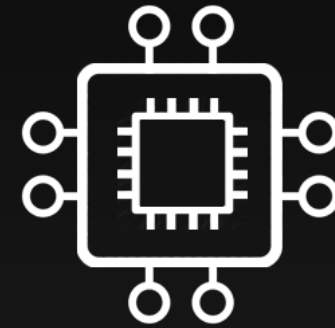
DigiShow itself is a simple and easy-to-use console software used to control various cross-media signals.



Comparison with lighting console
Lighting consoles generally only control stage lighting, DigiShow supports more signal types.

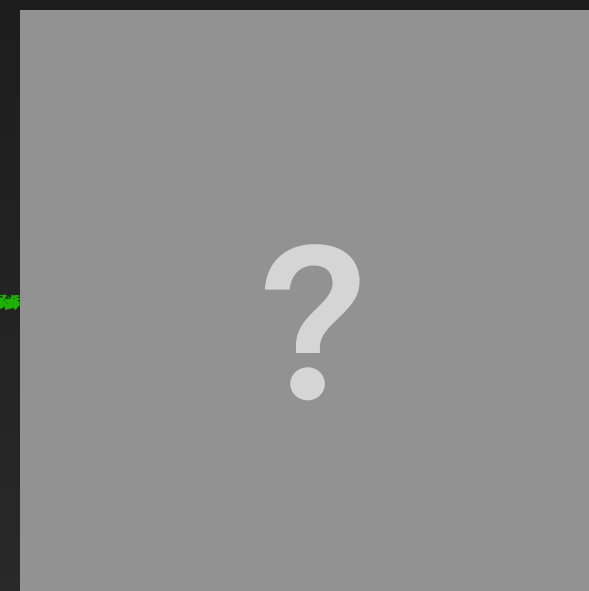
The screenshot shows the DigiShow LINK software interface. At the top, there's a header with a menu icon, a plus icon, a LINK button, a grid icon, a clock icon, a play button, a stop button, the text 'DigiShow LINK', and an 'Interface Manager' button. Below the header is a grid of 25 'Preset' buttons, numbered 1 to 25, arranged in 5 rows and 5 columns. A callout 'Preset buttons' points to this grid. Below the grid are four signal processing channels. Each channel has an input signal icon (e.g., 'Pipe Analog 3', 'MIDI Note Ch10 : F#2'), an 'IN' level indicator (a horizontal bar with a value like 100% or 0%), a 'LINK' button, a 'TAP' button, an 'OUT' level indicator (a horizontal bar with a value like 100% or 0%), and an output signal icon (e.g., 'DMX Ch8', 'Pipe Analog 1'). A callout 'Output signal level fader' points to the 'OUT' level indicator of the first channel. A callout 'Input signal level indicator' points to the 'IN' level indicator of the third channel. A callout 'Output signal level indicator' points to the 'OUT' level indicator of the third channel. To the right of the channels is a 'Parameters of mapping and conversion between input and output signals' section. It contains 'Input-output Mapping' with 'Input Range' and 'Output Range' sliders, and 'Output Envelope' with parameters like 'On Delay', 'Attack', 'Hold', 'Decay', 'Sustain', 'Release', and 'Off Delay'. A callout 'Parameters of mapping and conversion between input and output signals' points to this section. At the bottom right is an 'Output selection' section with a 'Virtual Pipe' dropdown, an 'Analog' dropdown, and a 'Channel 1' dropdown. A callout 'Output selection' points to this section. A callout 'Input selection' points to the 'MIDI IAC Driver Bus 1' dropdown at the top right. A callout 'Interface Manager' points to the 'Interface Manager' button at the top right.

DigiShow Signal Mapping



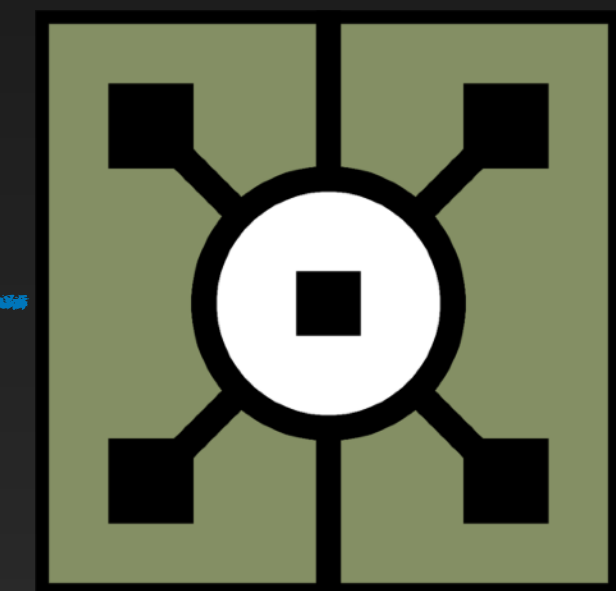
Ableton Live

MIDI



DigiShow

OSC



TouchDesigner

Enables signal exchange between various
hardware and software

DigiShow Signal Mapping !

What do we create ?

Signal Mapping Example 1

Dancing Ink (ferrofluids)



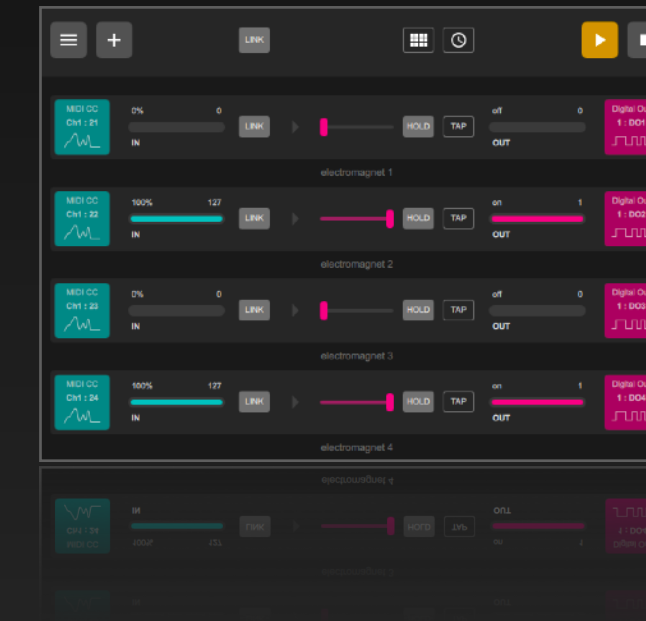
Ableton Live



Arrange and play drum rhythms and output MIDI signals synchronously



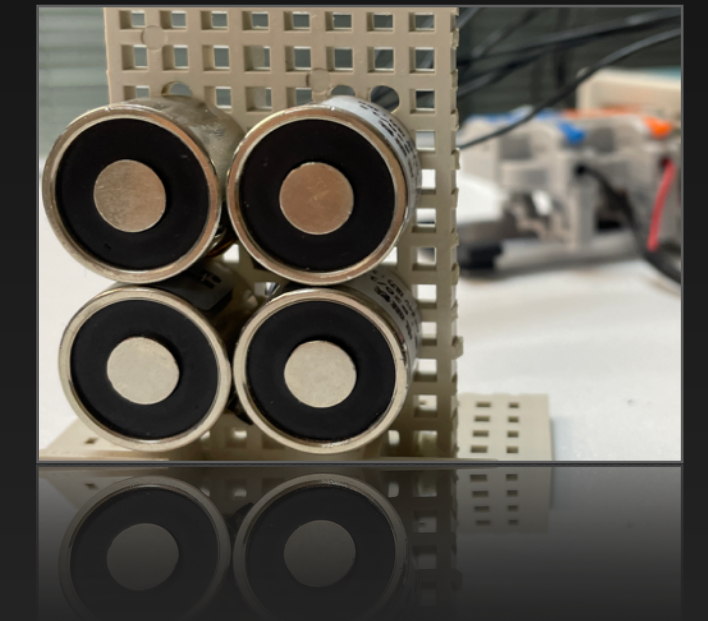
DigiShow



Receive MIDI signals and map them to Arduino IO switch signals

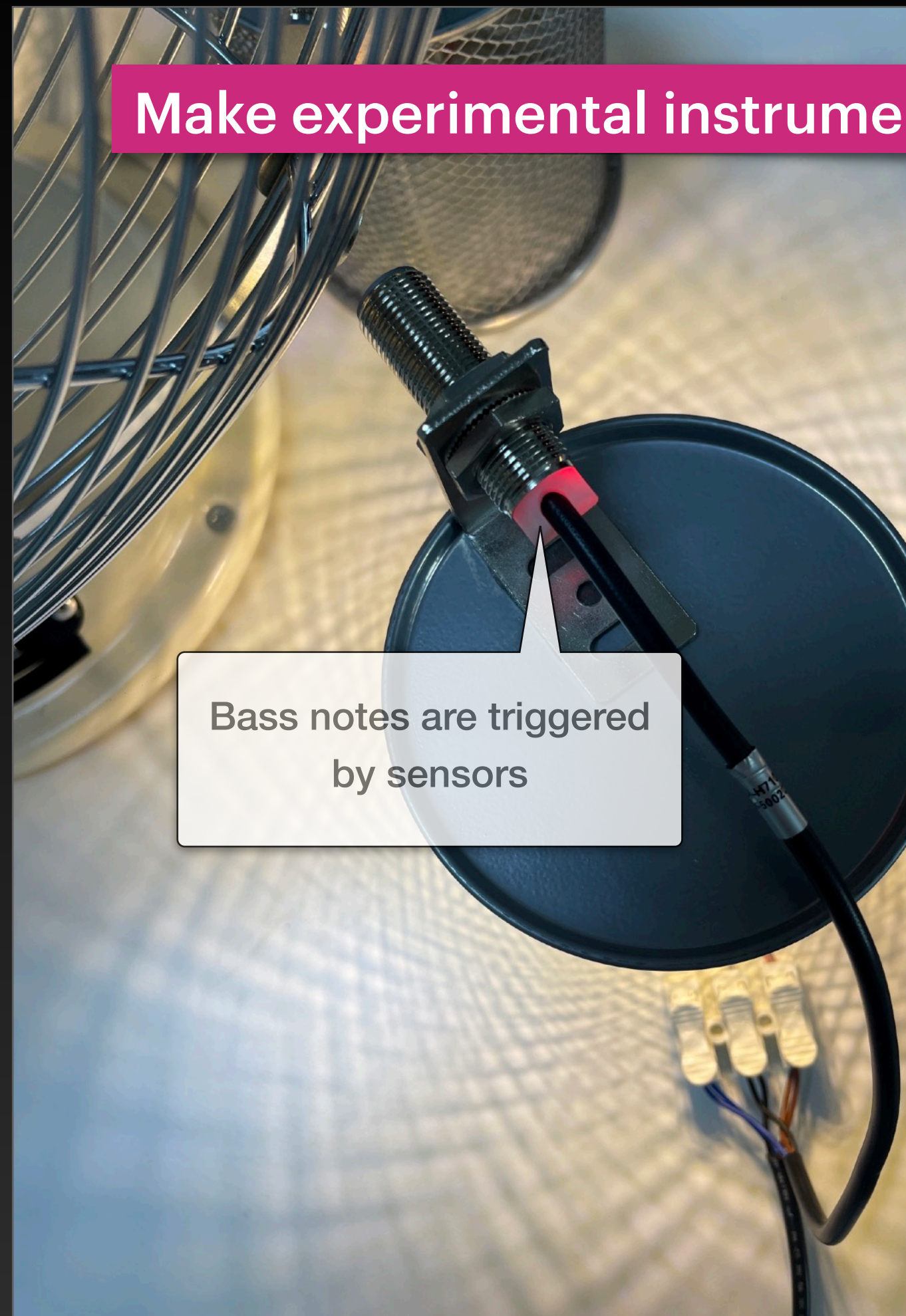


Arduino



Receive switch signals to drive the connected electromagnets

Completely no coding required!

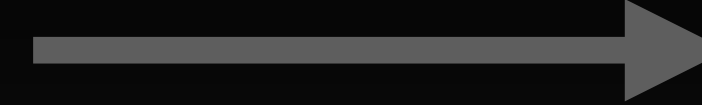


Make experimental instrument !

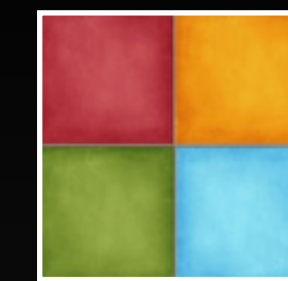
Bass notes are triggered by sensors



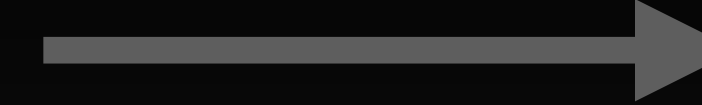
Arduino



sensor signals



DigiShow



MIDI notes



Ableton Live



Melody notes are triggered by sensors

Connect all sensors to Arduino

Drum notes are triggered by sensors

Signal Mapping Example 2

“ Jam with Things ”

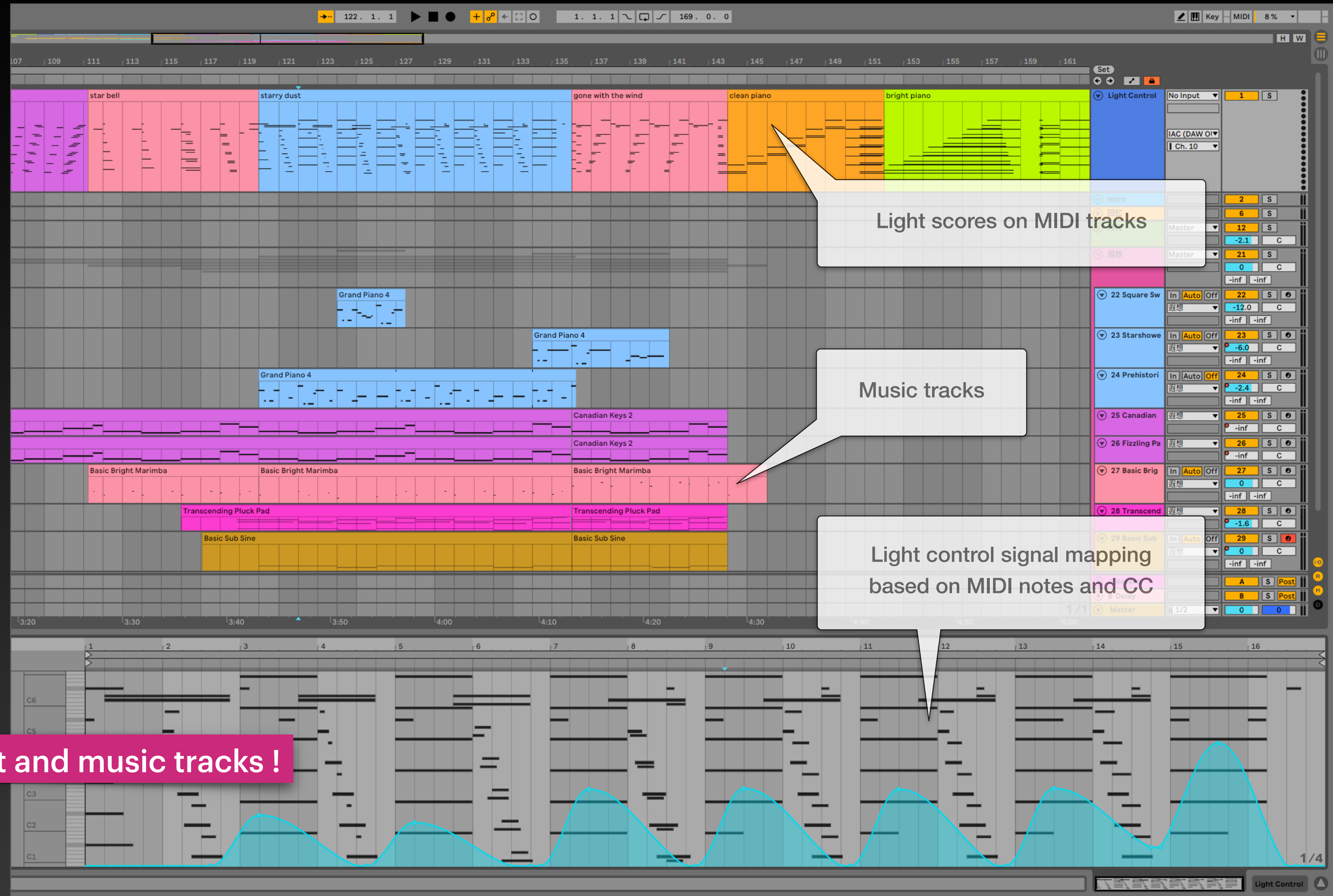
Signal Mapping

Example 3

Music-to-Light
Show
in Ableton



Production of both light and music tracks !



DigiShow Application Fields

- Interactive media **art installations**
- Interactive **performance props**, experimental musical instruments
- Cue control for **small stage**, linking audio, lights, screens, props
- Scene design for **immersive spaces** (shows or games)
- Scene design for **parties** and public events
- Scene design for **smart homes** or daily life environments

DigiShow Design Philosophy

- All are **performers**

DigiShow requires a group of hardware and software playing their own roles to work together. They are all considered as co-performers along with objects, spaces, people and systems.

- The creator is the **director**

Through DigiShow, we share the language to communicate with various hardware and software to direct the performance.

Learning DigiShow

1 Basic Concepts

2 Installation and Basic Usage

3 Signal Mapping

4 Common Operations

5 Artistic Lighting Applications

6 Digital Music Applications

7 Interactive Applications

8 Expressions and Scripts