



Drum Machines & MIDI





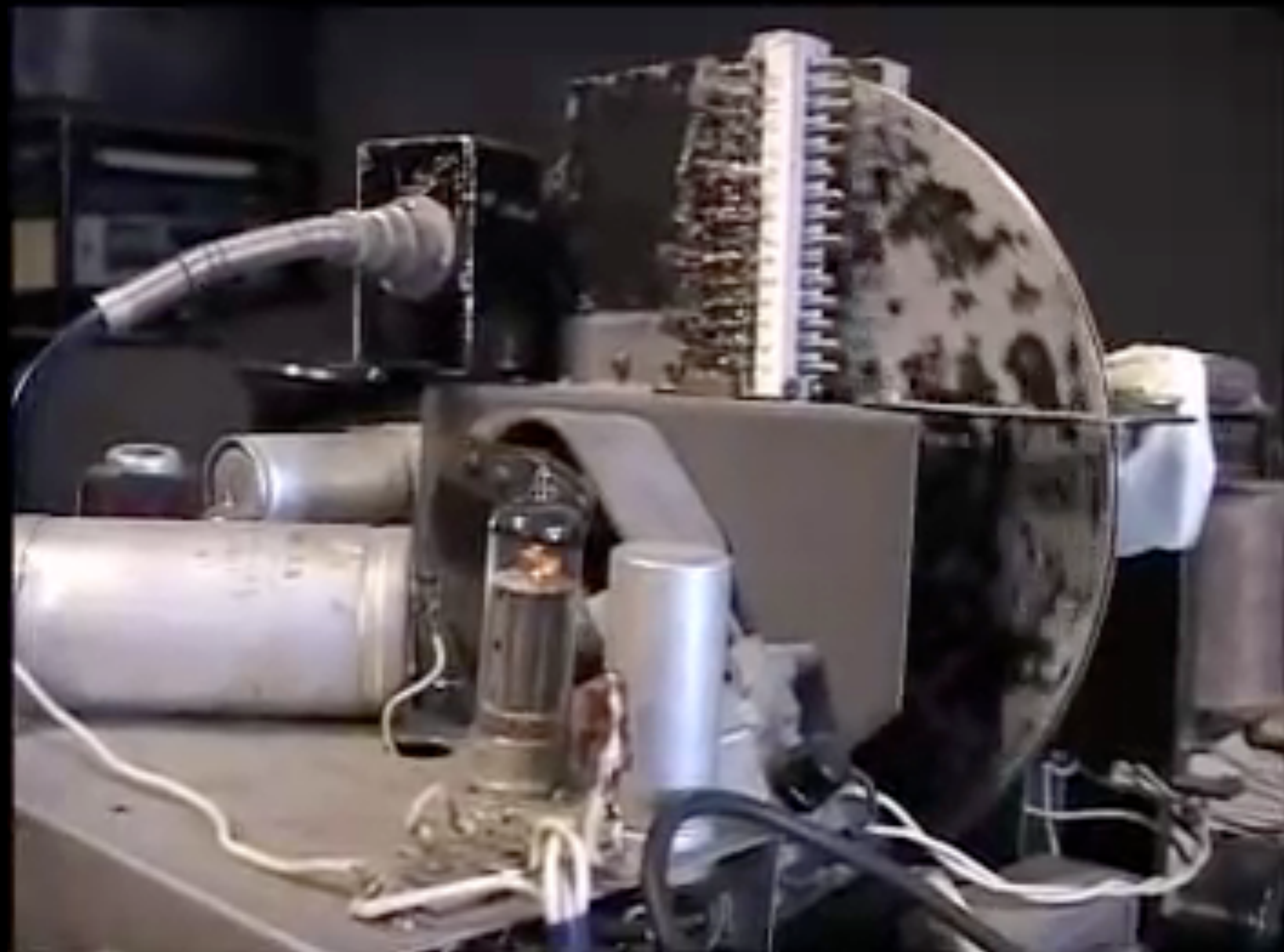
RHYTHMICON

1931

Composer Henry Cowell commissioned Leon Theremin to build a machine that could play complex rhythms

light is passed through radially indexed holes in a series of spinning 'cogwheel' discs before arriving at electric photoreceptors.

An early rhythm machine, ancestor of the drum machine



SIDE MAN

Made by Wurlitzer in 1959





Analog Drums

Organ Accompanists



1970s: Rhythm Ace, by Ace Tone (later Roland)



1978: Roland CR-78

programmable drum machine, analog drum voices
preset rhythms for Waltz, Bossa Nova and Rhumba;
preset fills and variations



1980: Roland TR-808 Rhythm Composer

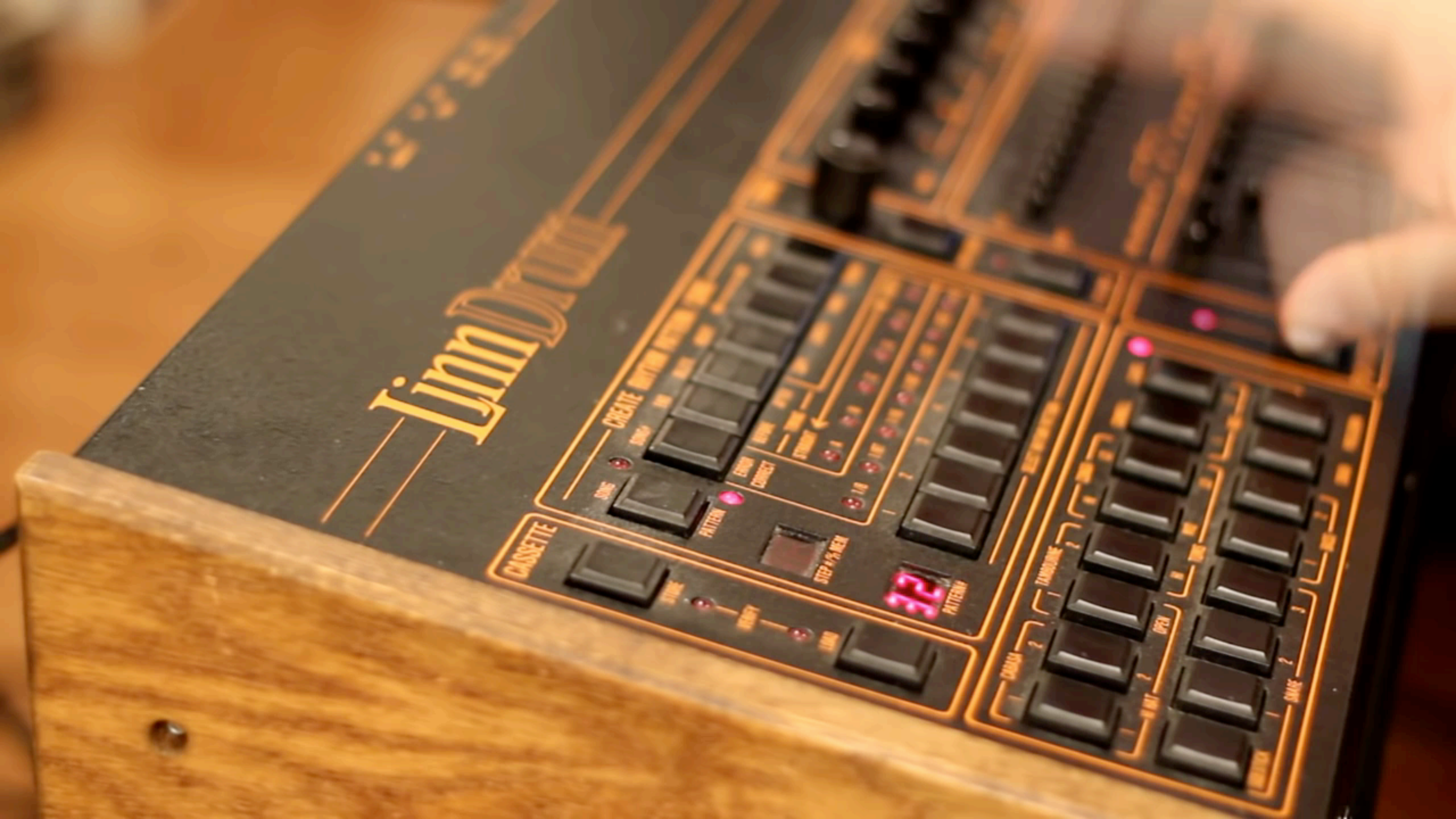


transistor rhythm (TR); sixteen sounds; 32 programmable steps



Linn Drum (1982)









MIDI

MUSICAL INSTRUMENT DIGITAL INTERFACE

The MIDI protocol provides a way to specify music as instructions.

Each MIDI instruction (“event”) specifies:

- timestamp
- action, for example: NoteOn, NoteOff
- note, for example: 59 is B, 63 is D#
- velocity (volume)

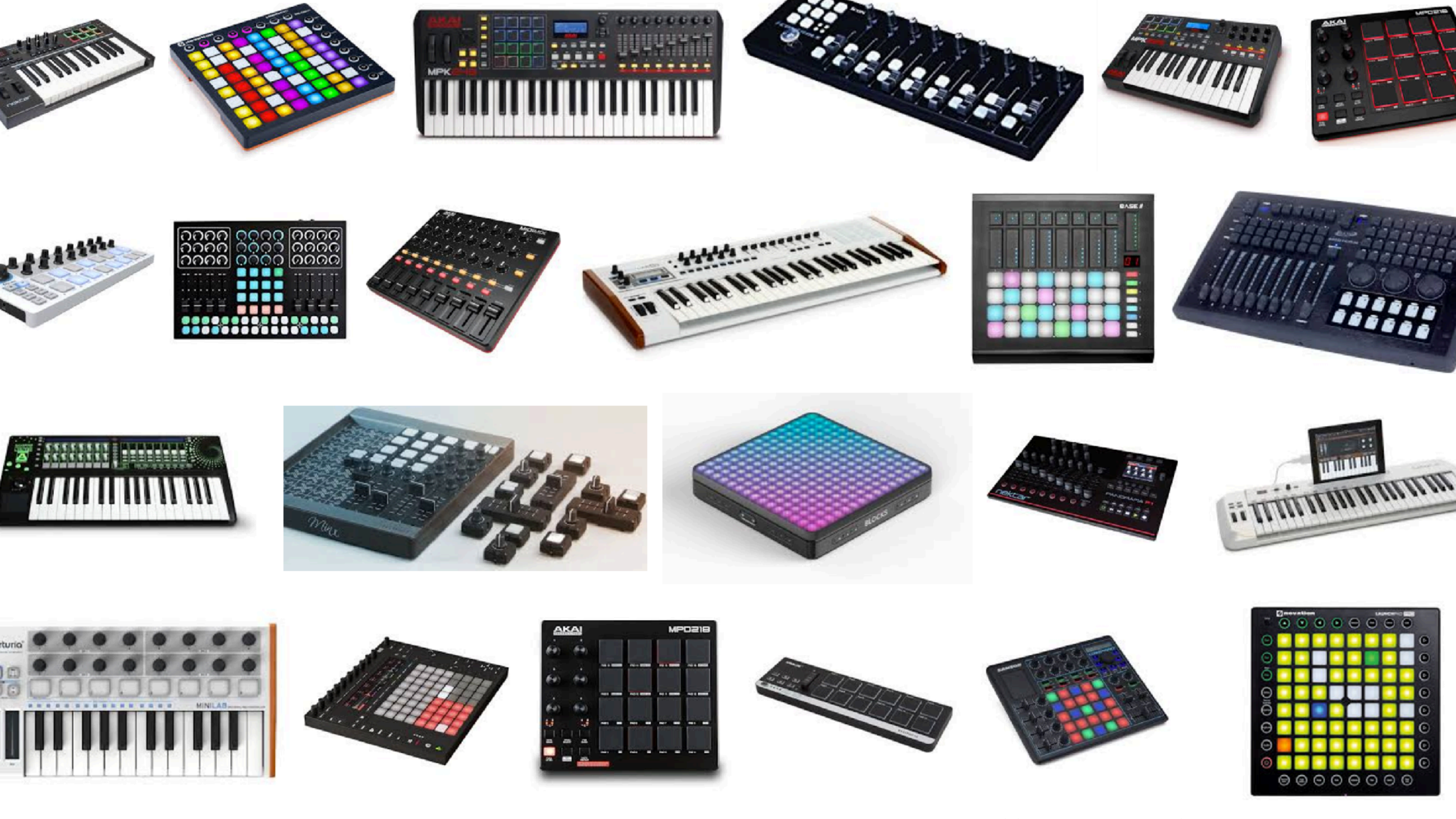
Some Clarification:

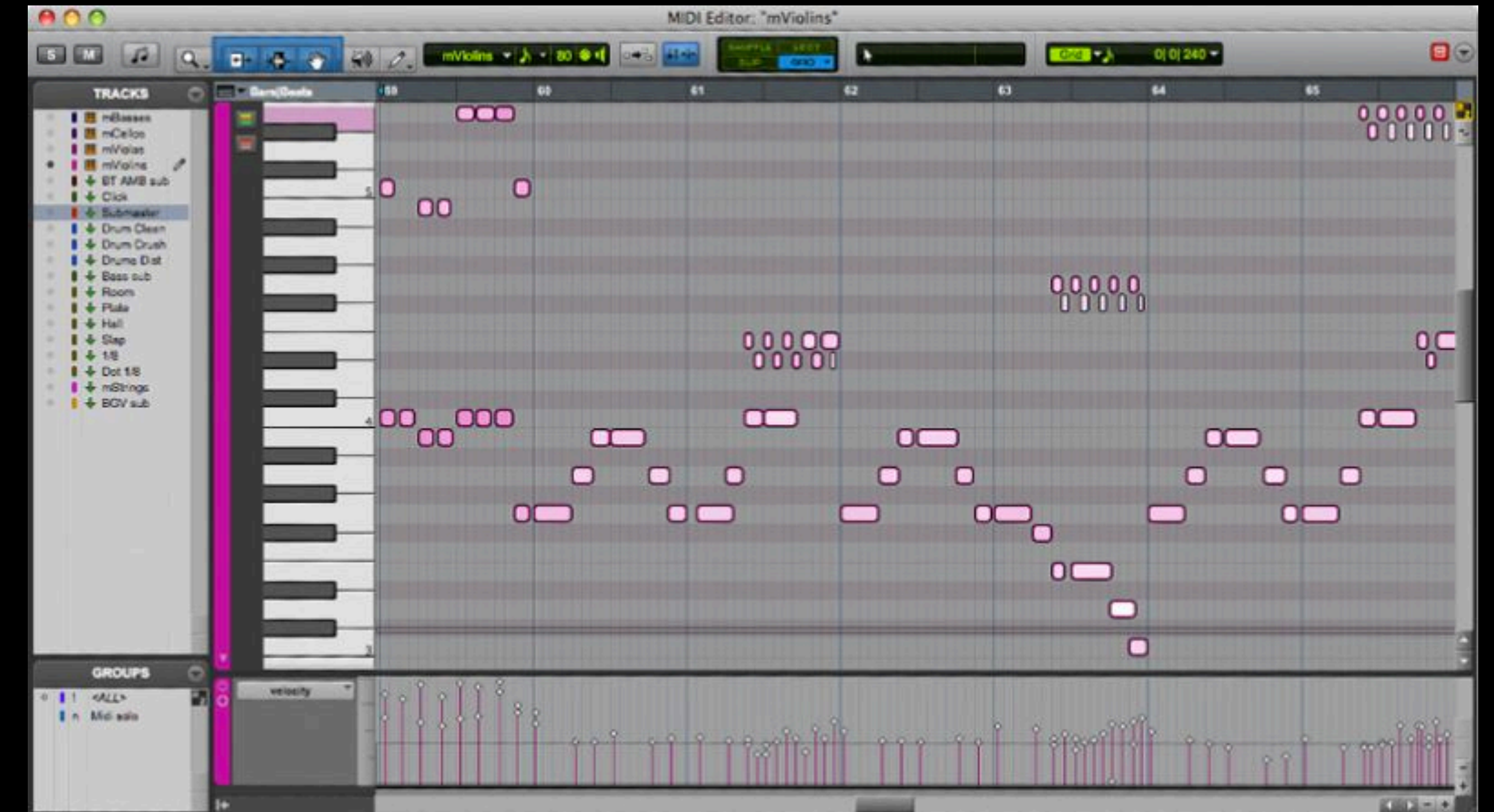
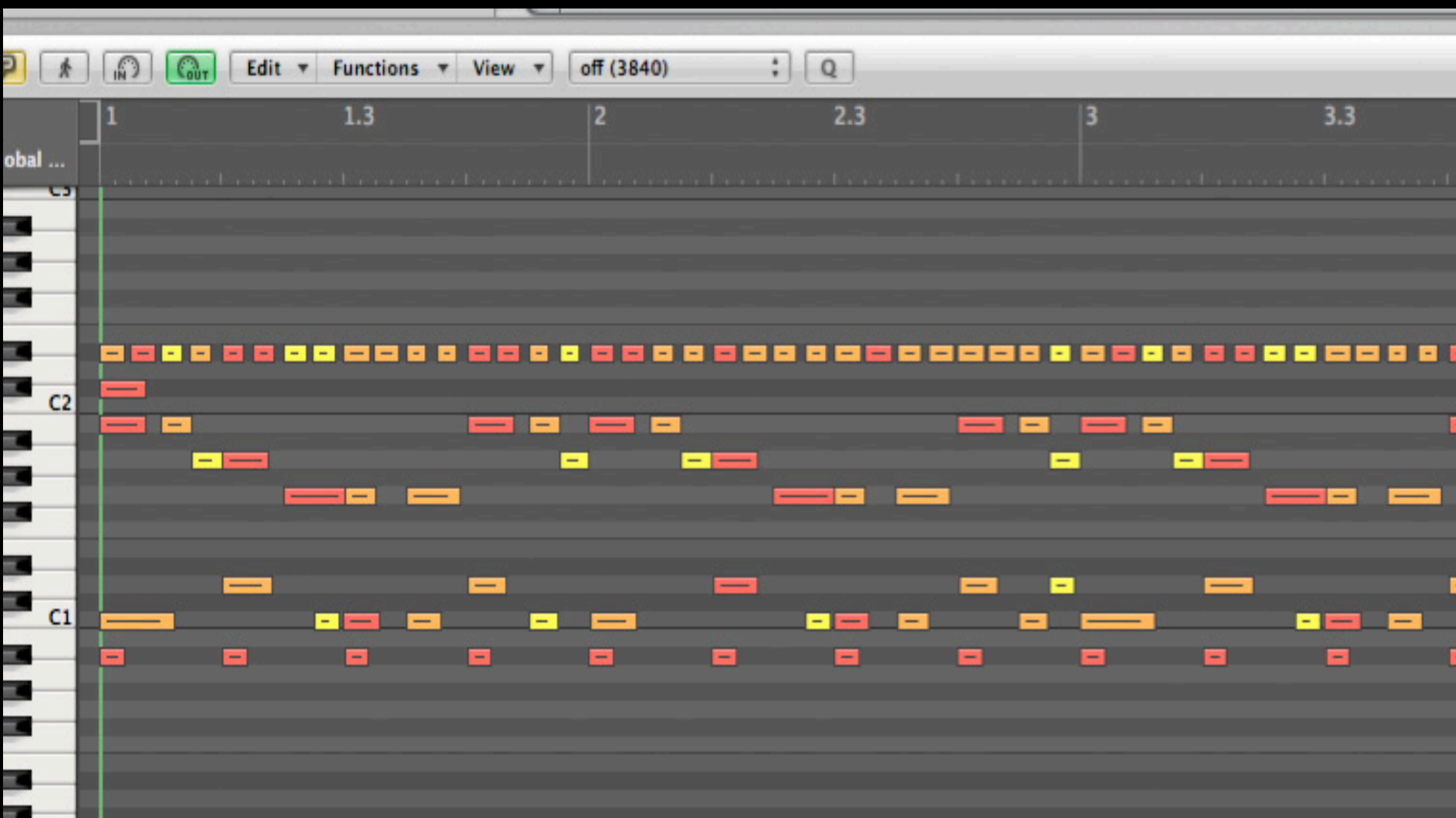
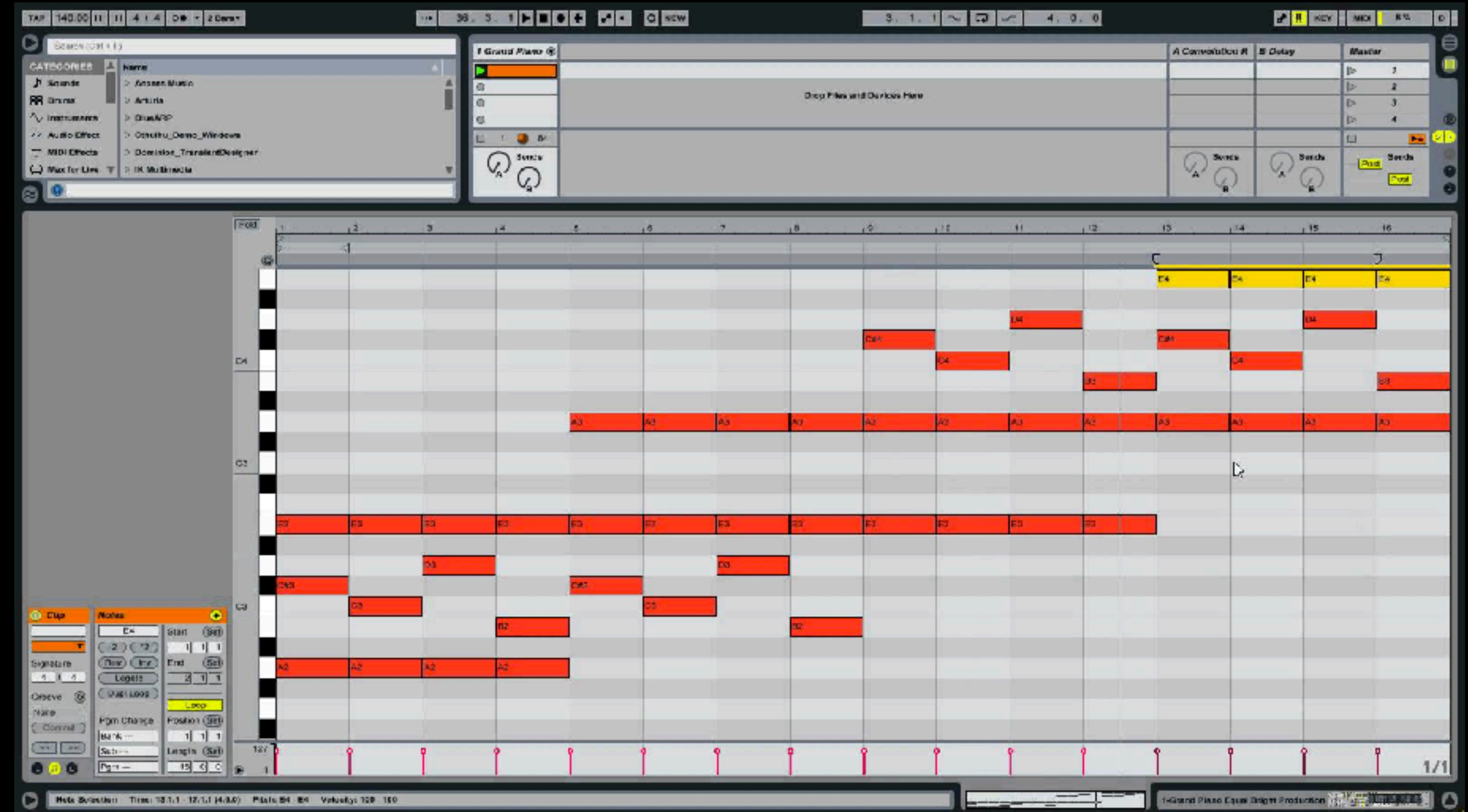
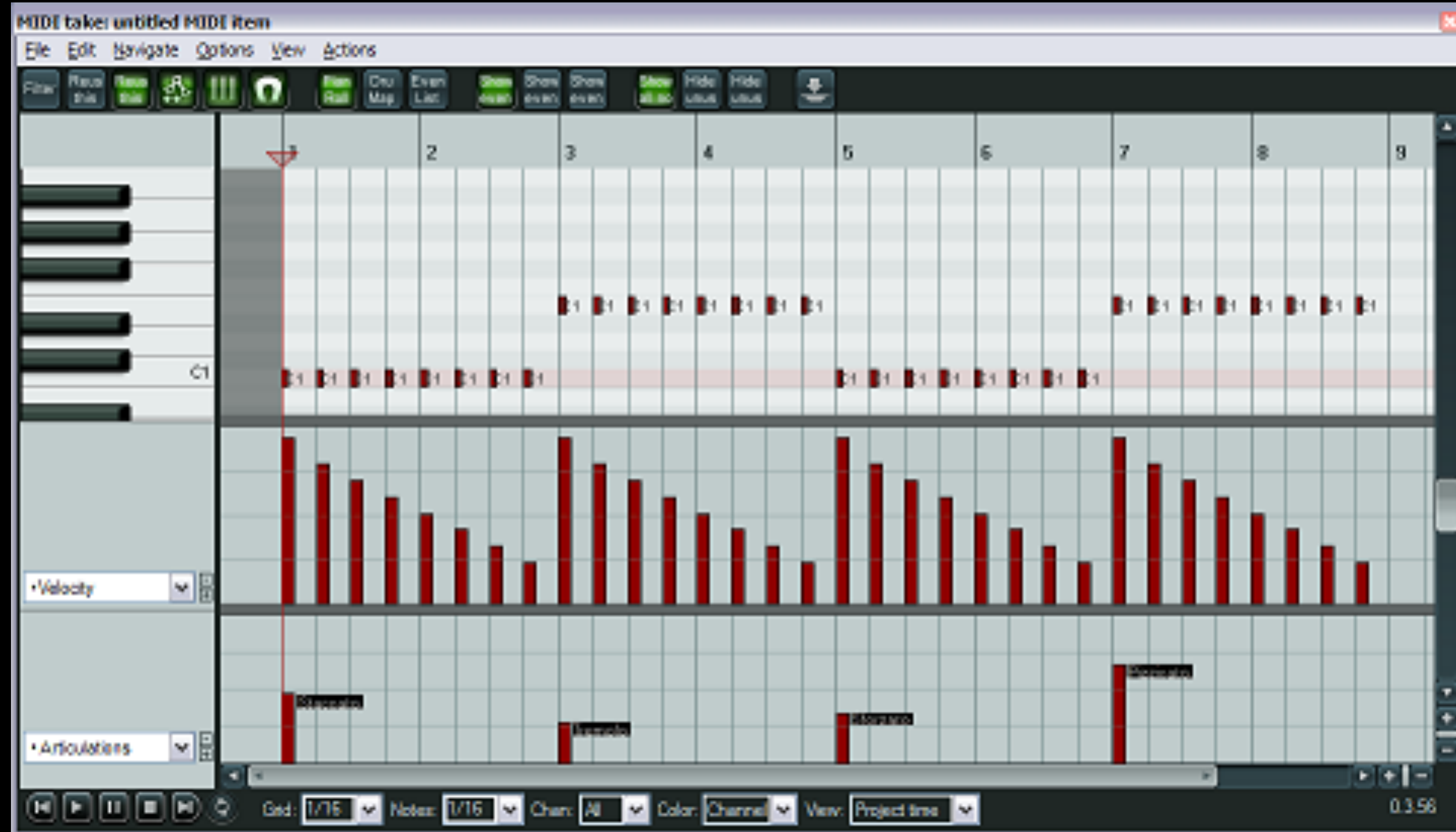
- MIDI doesn’t directly describe musical sound
- MIDI is not a language
- It is a data communications protocol



MIDI standardized the control signal and inter-machine communication between synthesizer devices using inexpensive, readily available cables.

The last official edition (MIDI 1.0) incorporated everything through 1996







BEYOND MIDI



