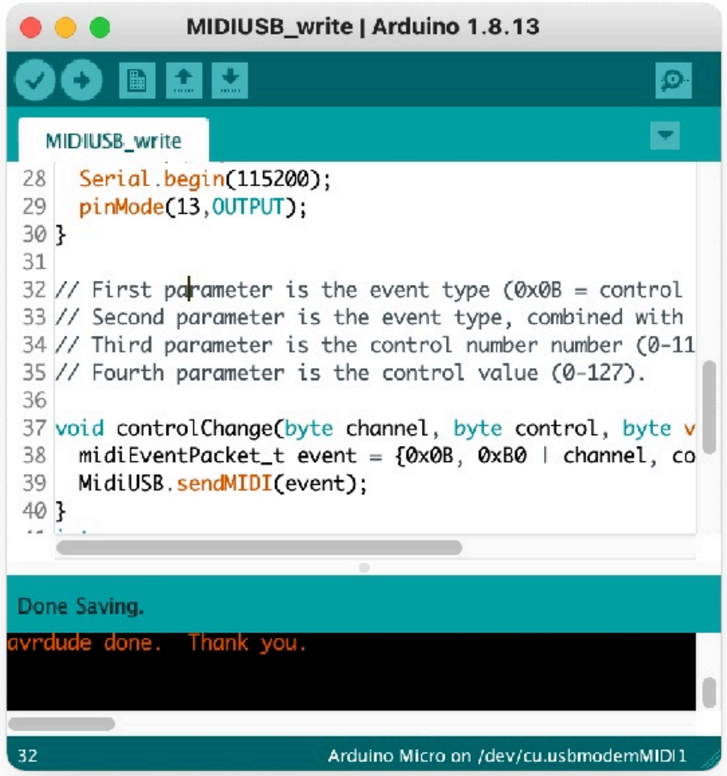
Workshop Arduino (MIDI) music

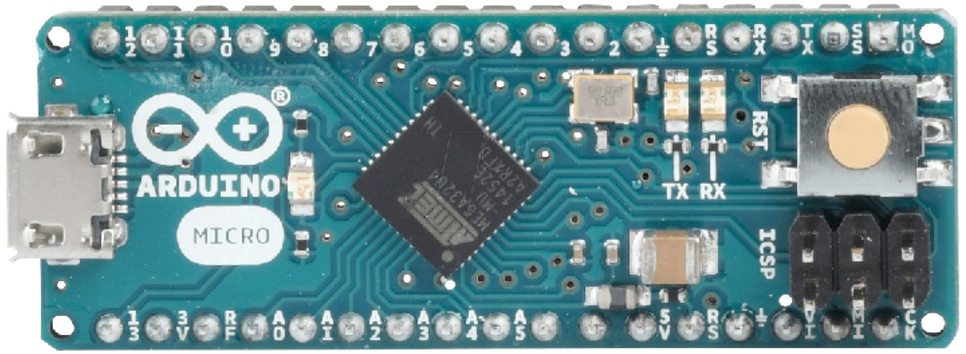
quick building blocks using USB-MIDI with Arduino Micro

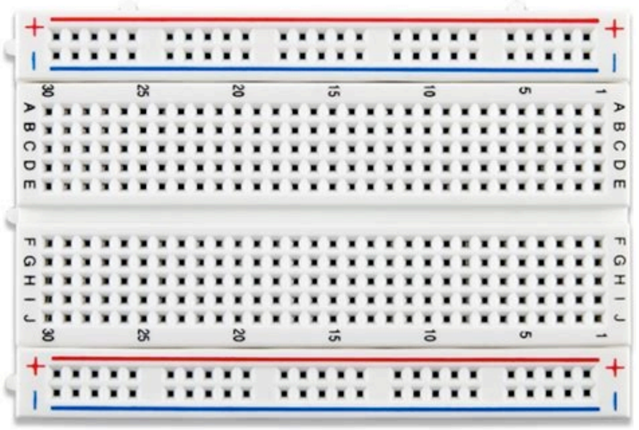
Edwin Dertien - Robot Theater Lab - October 2021 https://robottheaterlab.nl

Getting started with arduino

bits and pieces







Get arduino up and running

the ‘hello world’ of physical computing: a blinking LED

- Install Arduino on your system (from arduino.cc or our big-disk), start up the program
- connect the Arduino Micro board to your system. Select correct port and board in the ‘tools’ menu
- search in the examples directory (that comes with arduino) for a blink example. Check and Upload…
- install the MIDIUSB library through the library manager (or take our local copy)

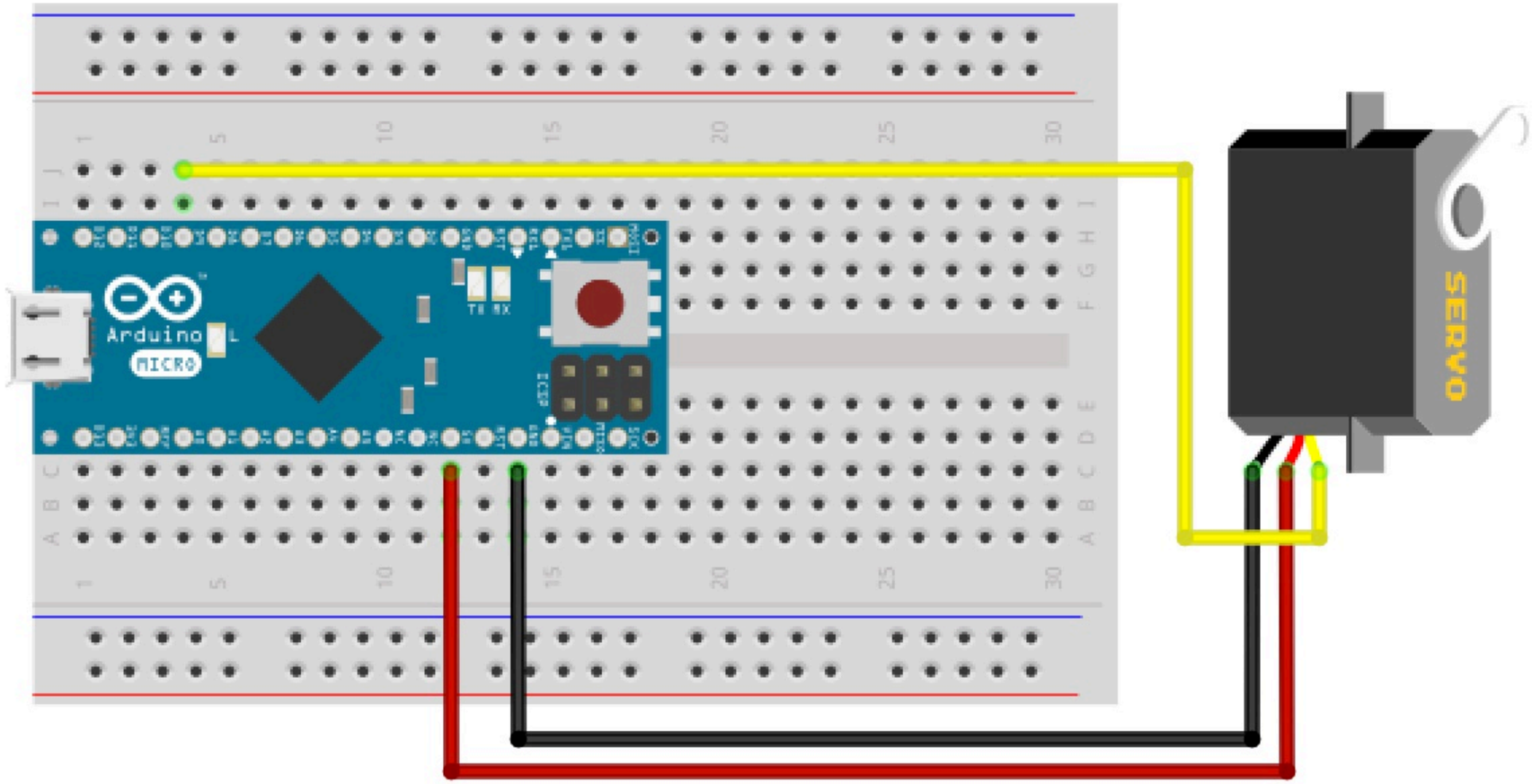
Get processing up and running

our free, open source audio tool and MIDI DAW for the day..

- download and install processing (from processing.org or our big disk)
- install the ‘midibus’ library through the library manager
- collect the sources for today from https://github.com/edwindertien/robottheaterlab/tree/main/workshop
- you might want to try dimmer/fader panels, download akai config tools from (for example https://www.akaipro.com/lpd8-lpd8)

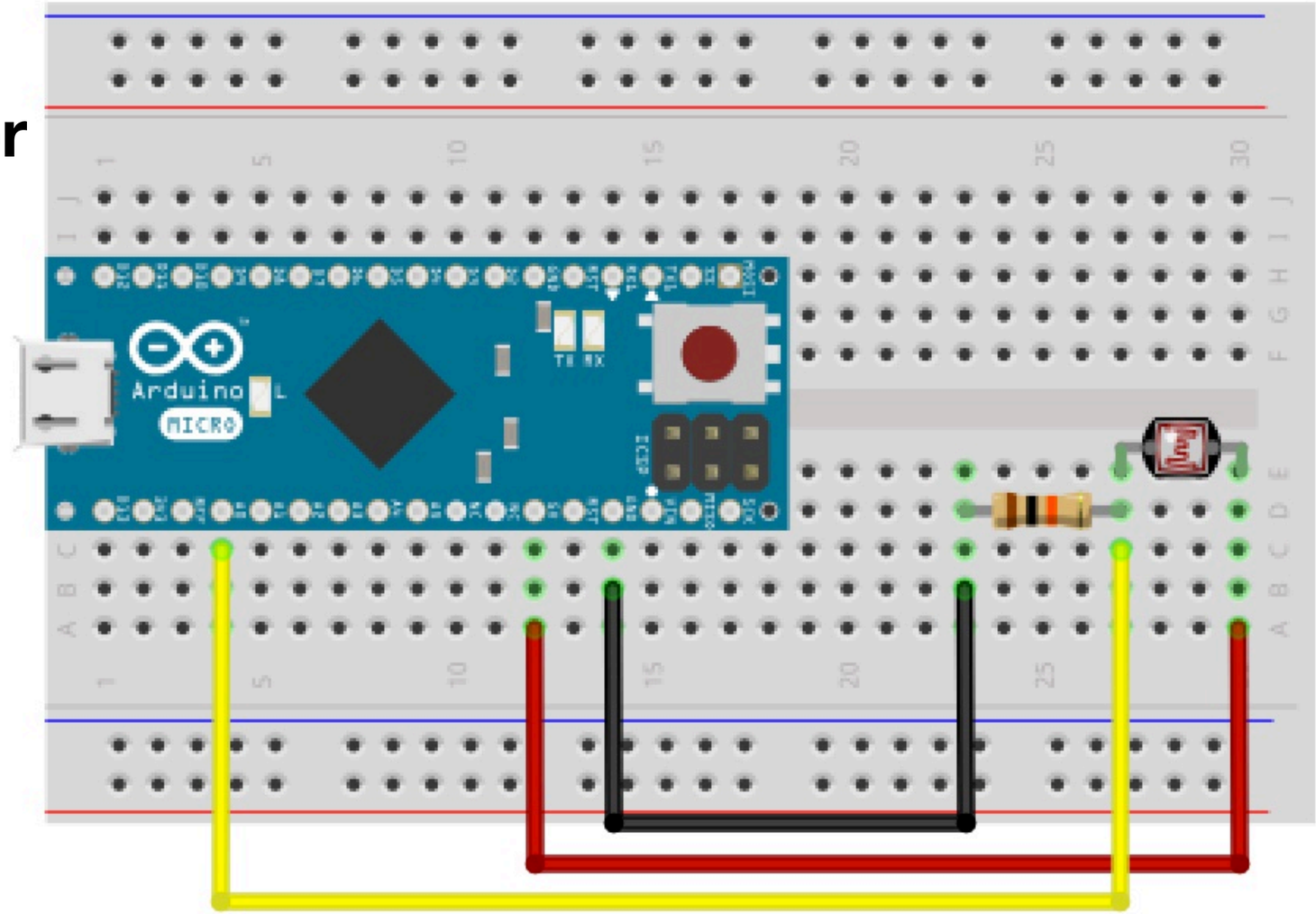
RC servo

(signal from pin 9)



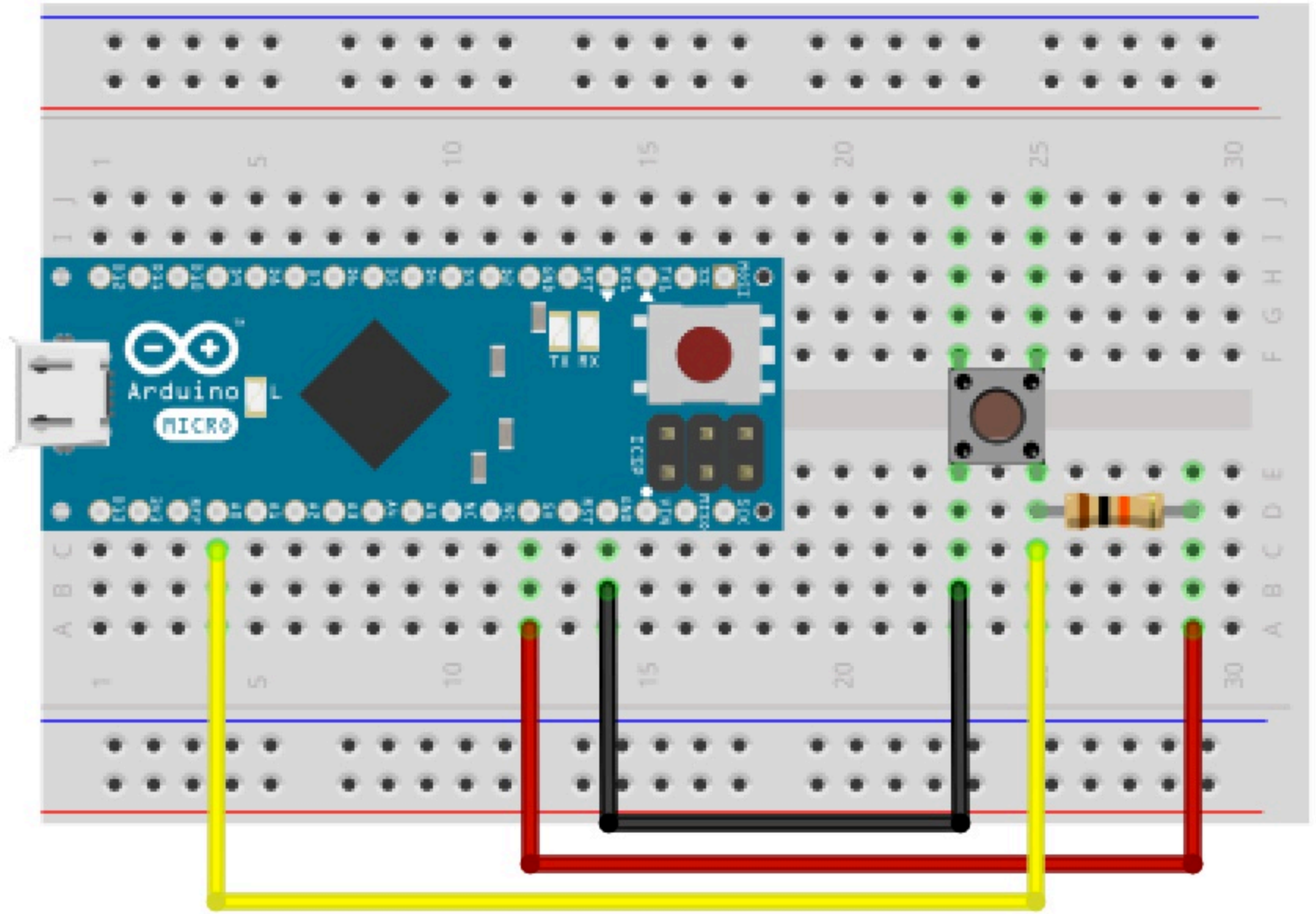
Light sensor

LDR with pull-down resistor

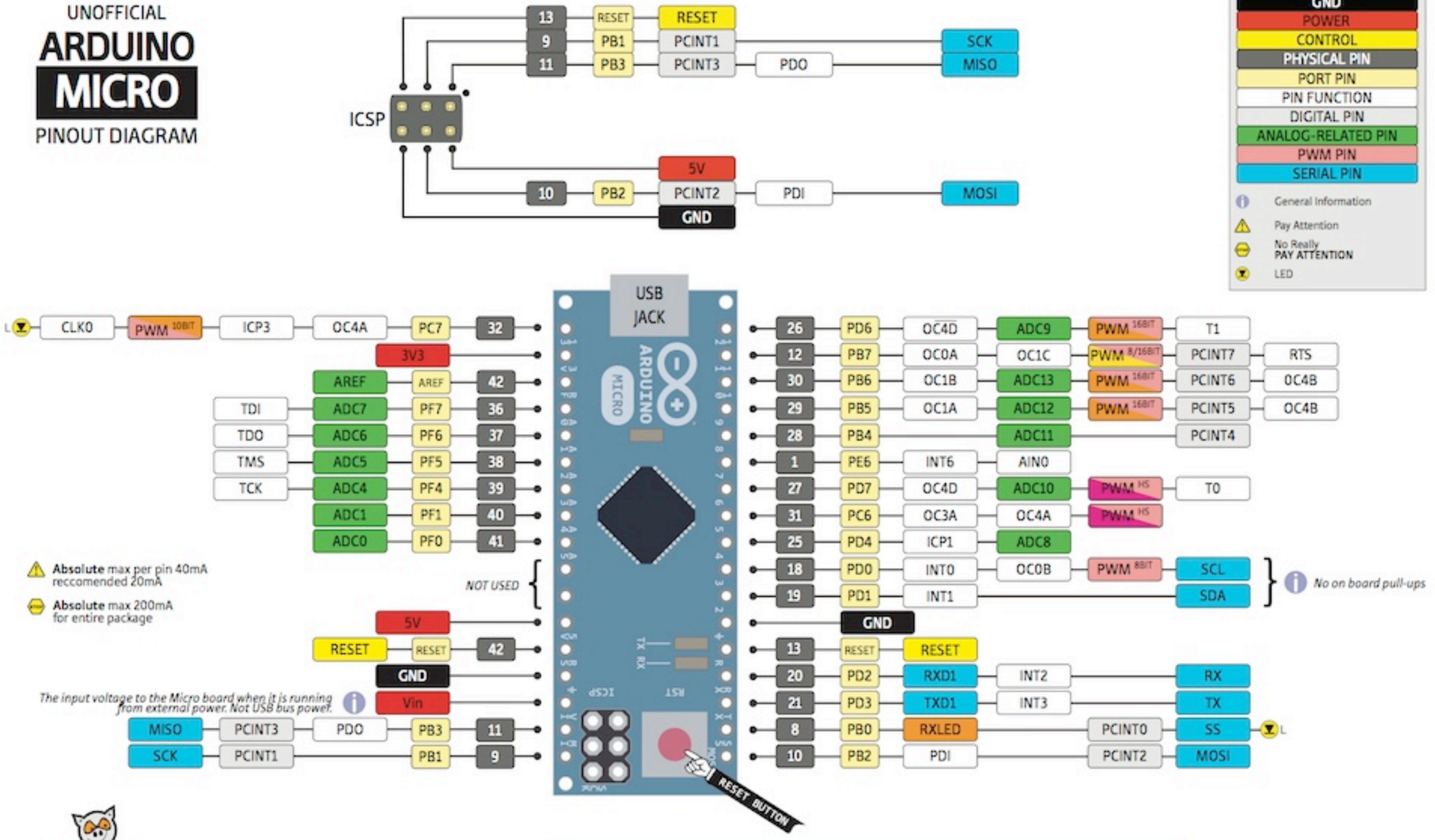


pushbutton

(with pull-up resistor)



THE UNOFFICIAL ARDUINO MICRO PINOUT DIAGRAM



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MIDI messages

(USB-MIDI or wired MIDI or virtual MIDI)

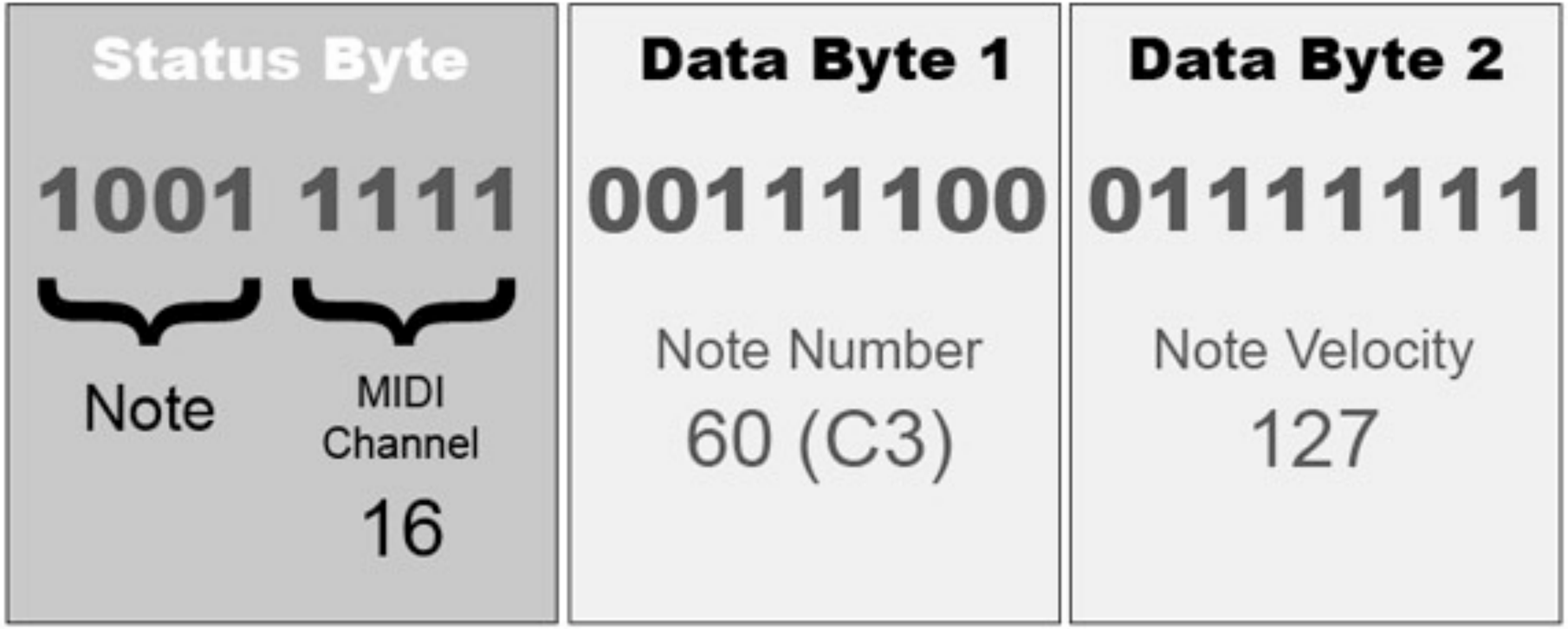

Table 1: MIDI 1.0 Specification Message Summary		
Status D7----D0	**Data Byte(s) D7----D0**	**Description**
Channel Voice Messages [nnnn = 0-15 (MIDI Channel Number 1-16)]		
1000nnnn	0kkkkkkk 0vvvvv	Note Off event. This message is sent when a note is released (ended). (kkkkkkk) is the key (note) number. (vvvvv) is the velocity.
1001nnnn	0kkkkkkk 0vvvvv	Note On event. This message is sent when a note is depressed (start). (kkkkkkk) is the key (note) number. (vvvvv) is the velocity.
1011nnnn	0ccccccc 0vvvvv	Control Change. This message is sent when a controller value changes. Controllers include devices such as pedals and levers. Controller numbers 120-127 are reserved as "Channel Mode Messages" (below). (ccccccc) is the controller number (0-119). (vvvvv) is the controller value (0-127).