Road Safety Reaction Timer on BBC micro:bit

The program was written in micropython using the mu editor. Download and save a local copy of the .hex file. Connect the BBC micro:bit to the computer’s USB port. If you go to My Computer or the equivalent, you should see a drive called micro:bit . Simply drag and drop the .hex file onto this ‘drive’.

If anyone would like a copy of the .py file for the mu editor please feel free to get in touch.

A version that stores several results in a .csv file is currently being worked on.

Program description

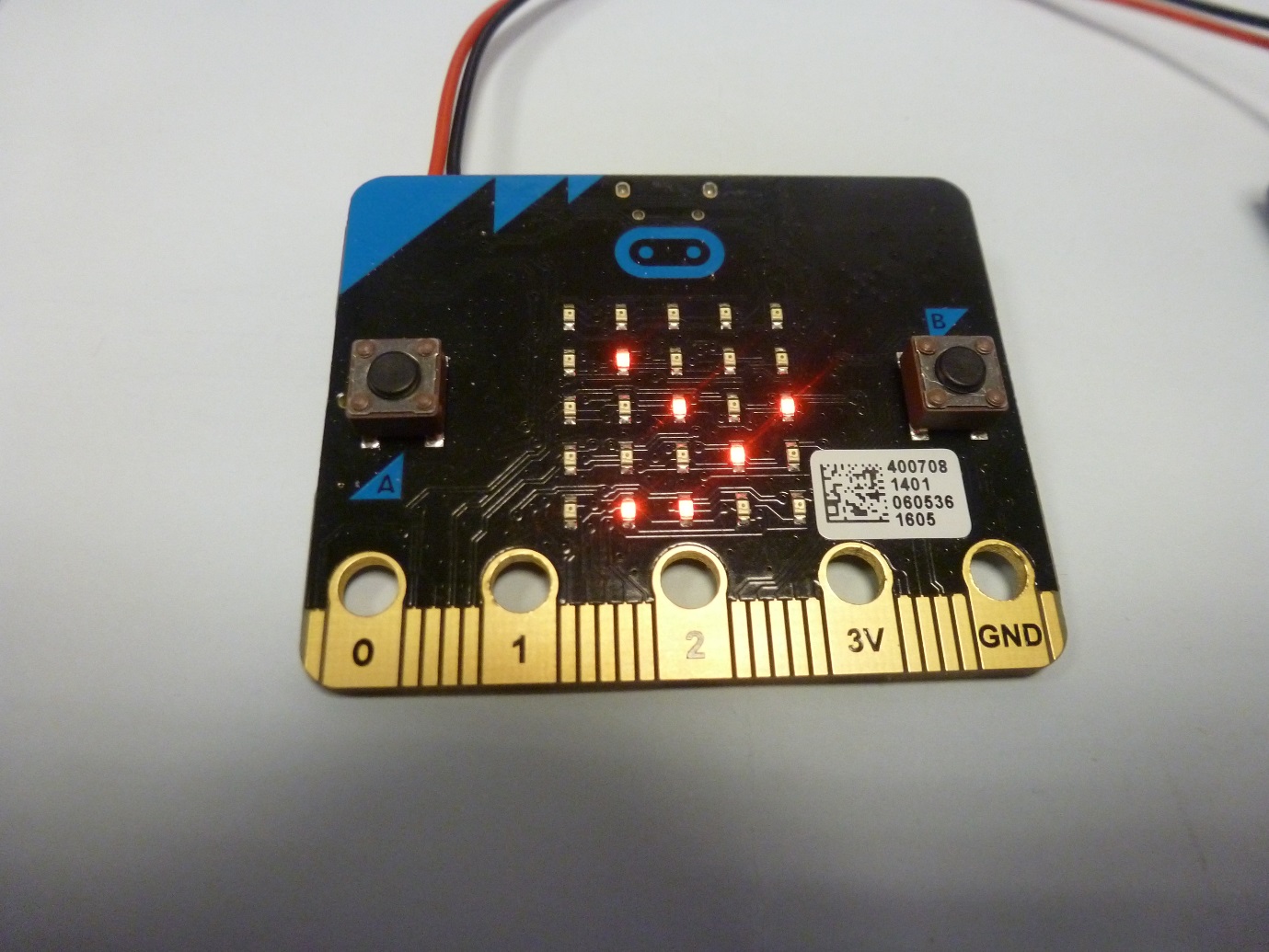
Load the program onto the BBC micro:bit and power the BBC micro:bit either by battery or via the computer USB cable.

Press the ‘RESET’ button on the back of the micro:bit (between the power and microusb sockets).

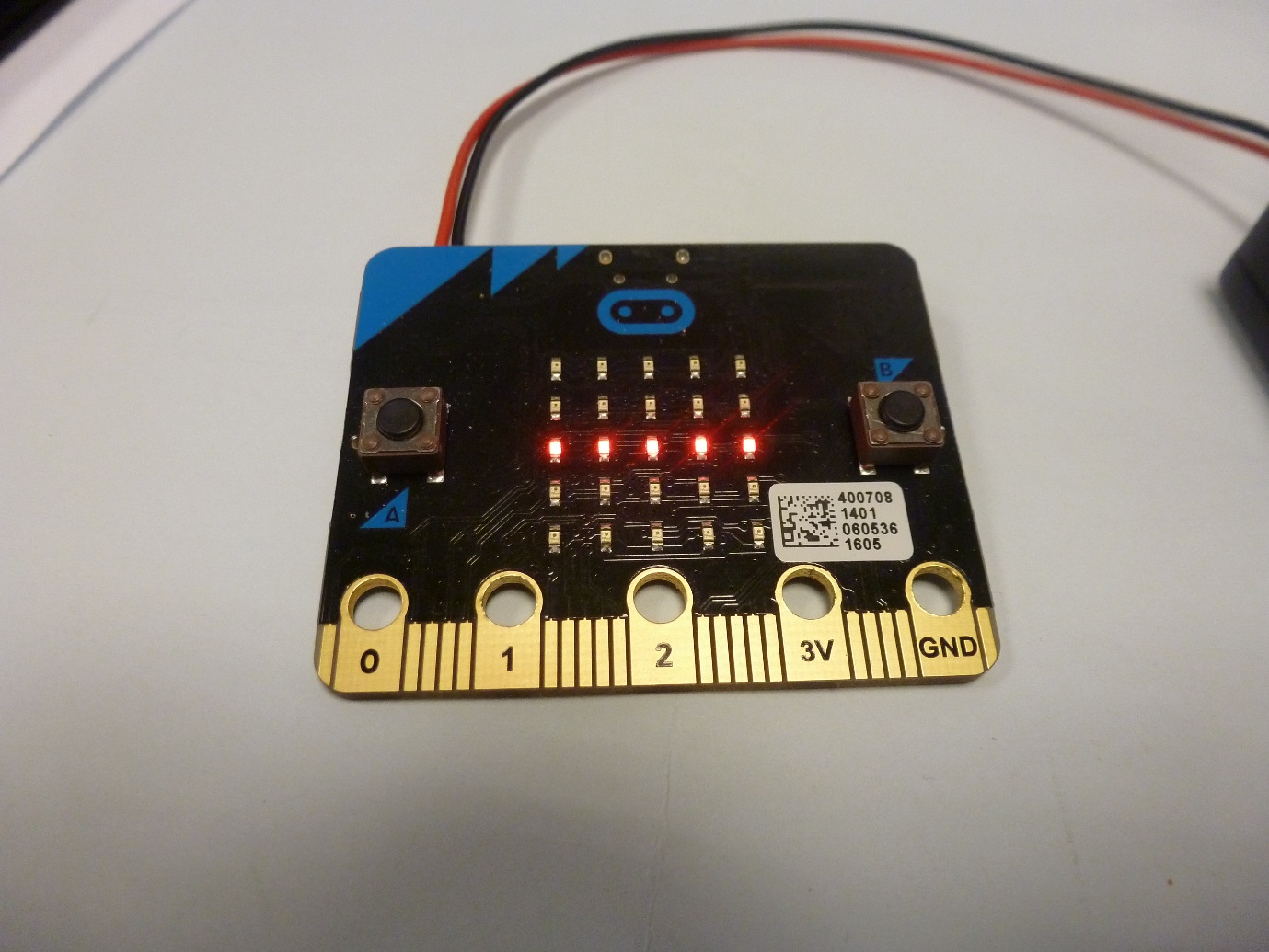


You will see the following text scroll right to left across the micro:bit LED array:

**“road = Dry A = change, B=OK”**



Followed by a horizontal line consisting of five leds ‘pointing’ to the **A** & **B** buttons.



On each push of the A button the road condition will cycle through Dry, wet, icy and will display the current selection.

When you are happy with the choice push the B button and a brief confirmatory tick (✔) will display before the following text scrolls right to left on the led array.

**“Speed = 20mph A=change, B=OK”**

Followed by the horizontal line consisting of five leds ‘pointing’ to the **A** & **B** buttons.

On each push of button **A** the speed will cycle through 20mph, 30mph, 40mph, 50mph, 60mph, 70mph and the selected speed will be displayed.

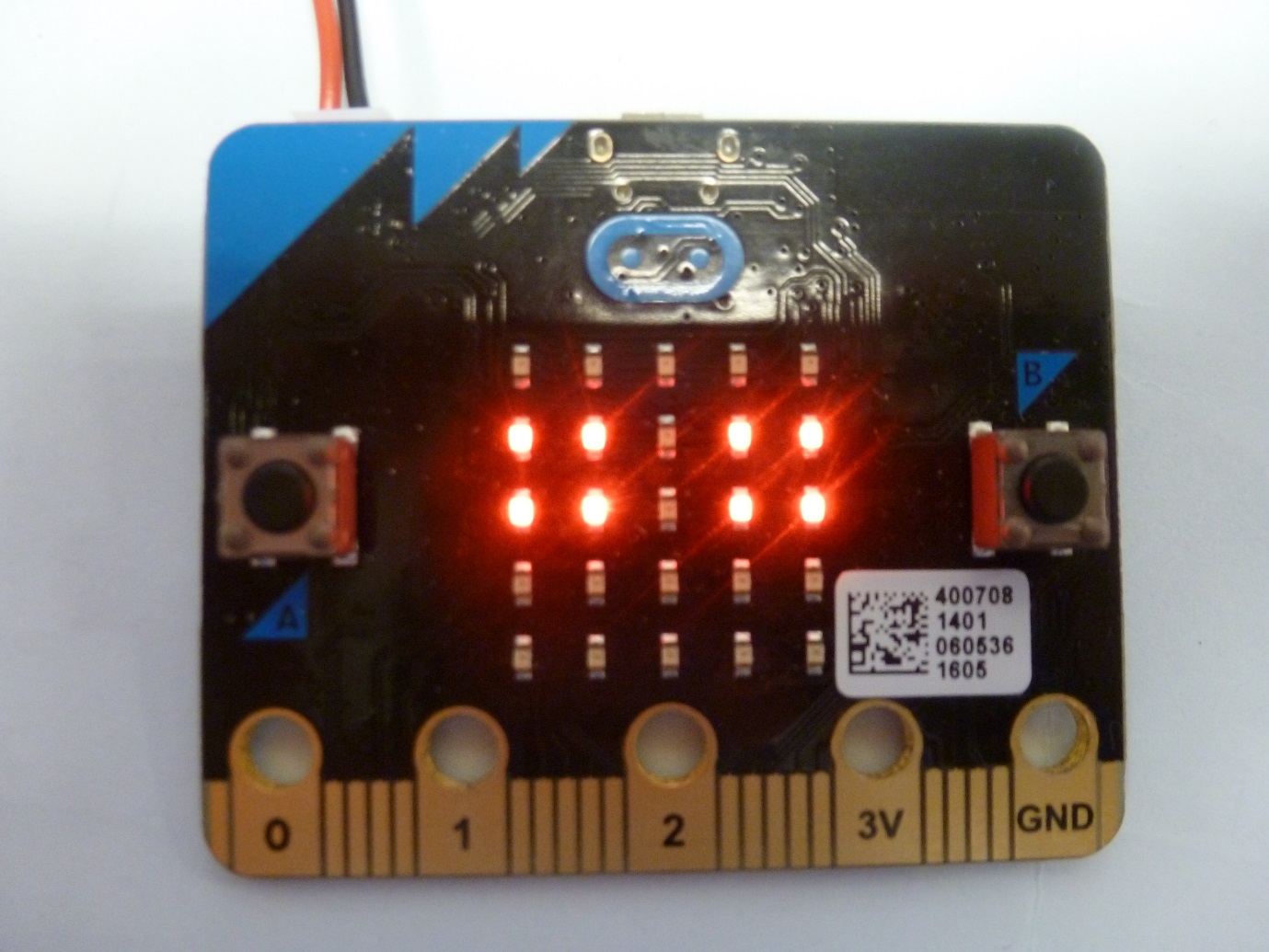
So if you wanted to select a speed of 40mph you would push button **A** twice (first push 30mph displayed, second push 40mph displayed).

When you are happy with the choice push the **B** button and a brief confirmatory tick (✔) will display followed by a happy face.

The following text is then scrolled **“A/B to start/stop”** followed by the horizontal line of five leds ‘pointing’ to the **A** & **B** buttons.

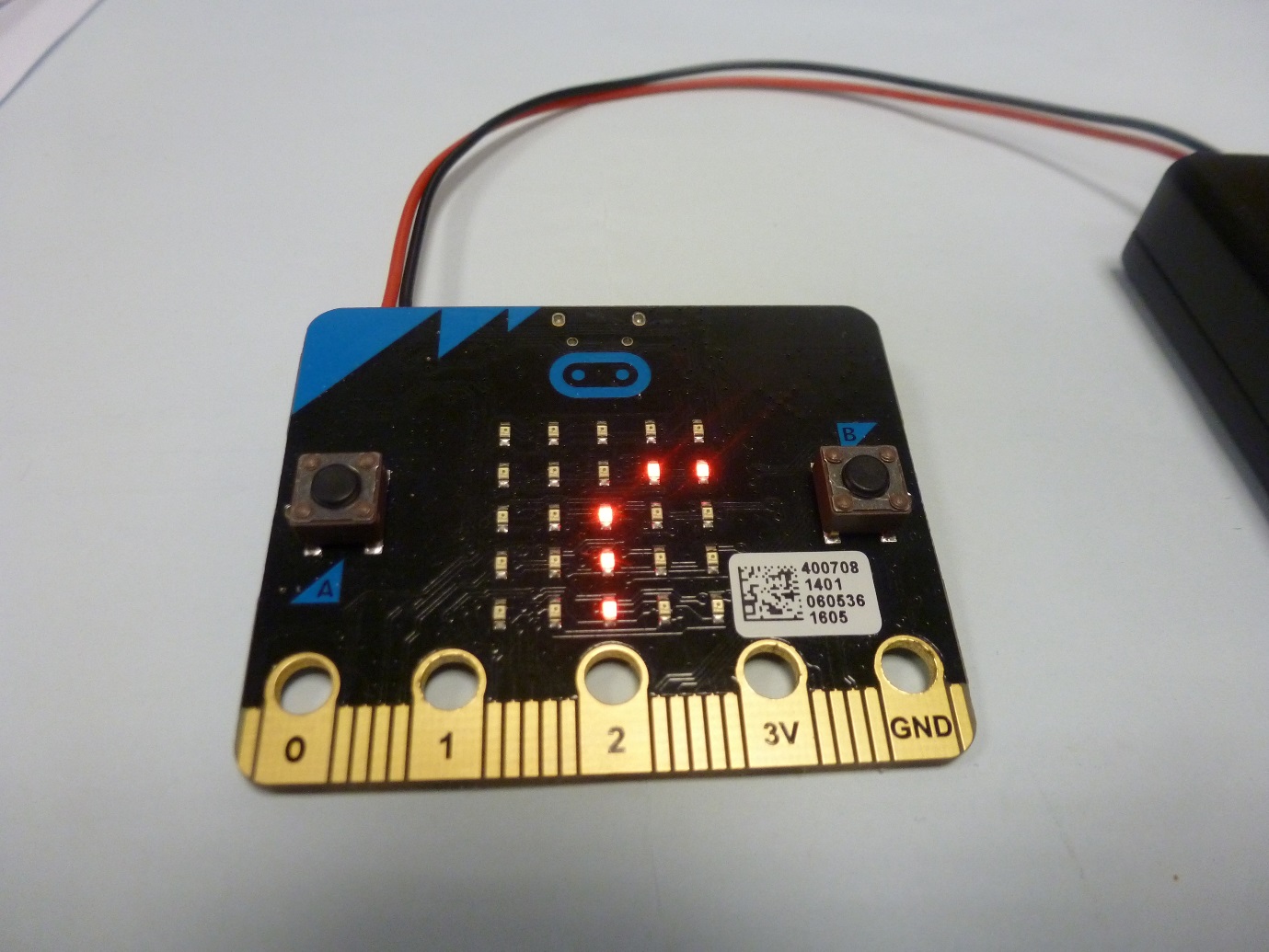
At this point pushing either button **A** or button **B** will firstly display a brief confirmatory tick (✔) then start to display some random patterns on the LED array.

When two side by side squares of four LEDs are displayed the timer is started. These squares represent the brake lights of the car in front of you.



Pushing either the **A** or the **B** button before the squares are displayed will result in an error before restarting the program. Pushing either button after the squares display will stop the timer and briefly display a smiley face before repeatedly cycling through the following ‘results’.

**“react time = \_\_\_ms think dis t= \_m brake dist = \_\_\_m stop dis t=\_\_\_m “**

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Followed by the horizontal line. Pushing the **B** button at the end of the line display, or the reset button, starts the process over.