

# Makey Makey Compatible Shield for Arduino

## Introduction:

Have you seen the Makey touch keyboard simulation? MaKey MaKey is a very simple circuit board that can make any objects as a computing input device. That's to say, it can make stairway into a piano, bananas into a keyboard, plasticine into a joystick or even your families into a musical synthesizer.

The principle is simple. It uses ARDUINO microcontroller to simulate a keyboard, and lead out several keys, replacing the switch with touch key.

The shield uses touch input, namely, a double-contact switch, leading out touch port and ground connected to two touch electrodes. Because of body-resistance, when you touch the two electrodes, there is certain current flowing through between them, so can detect the touch event through the current detection.

## Features:

- Compatible with UNO R3 and Mega 2560 boards
- XP and win 7 system Driver-free auto-identification
- Identify six buttons at most
- Operating voltage: DC 5V
- Can set the 6 buttons output in the code
- Onboard comes with 2 anti-reversed interfaces, used to connect other devices.



## **Technical Details:**

- Dimensions: 70mm x 53mm x 26mm
- Weight: 19.8g



#### **PINOUT:**



### **Test Code:**

Below is an example code. Click here to download the libraries. Click here to download the code Or you can directly copy and paste the code below to Arduino IDE. \*\*\*\*\*\* #include "UsbKeyboard.h" int InData1 = 0, InData2 = 0, InData3 = 0, InData4 = 0, InData5 = 0, InData0 = 0; //touch input value //temporary storage int TouchSensitivity = 20; //touch sensitivity.  $0^{\sim}1023$ , the larger the value, the lower the sensitivity. void setup() { for (int i = A0; i <= A5; i++) pinMode(i, INPUT); //A0<sup>A5</sup> port as input port for (int i = 6;  $i \le 12$ ; i + +) pinMode(i, OUTPUT); //A0~A5 port as input port TIMSKO &=  $!(1 \ll \text{TOIEO});$ } void 100p() UsbKeyboard.update(); //read out the voltage value of all pins, and because of pull-up resistor, //the default of all pins of maximum level is 1023, decrease the level of pins though touch. //so the value is by 1024-analogRead(A0); InData0 = 1024 - analogRead(A0);InData1 = 1024 - analogRead(A1);InData2 = 1024 - analogRead(A2);InData3 = 1024 - analogRead(A3);InData4 = 1024 - analogRead(A4);InData5 = 1024 - analogRead(A5);//trigger keyboard events with various possibility if (InData0 >= TouchSensitivity) { digitalWrite (11, HIGH); UsbKeyboard.sendKeyStroke(4); //A }

```
else digitalWrite(11, LOW);
if(InData1 >= TouchSensitivity) {
digitalWrite(10, HIGH);
UsbKeyboard.sendKeyStroke(5); //B
}
else digitalWrite(10, LOW);
if(InData2 >= TouchSensitivity)
{
digitalWrite(9, HIGH);
UsbKeyboard.sendKeyStroke(6); //C
else digitalWrite(9, LOW);
if(InData3 >= TouchSensitivity)
{
digitalWrite(8, HIGH);
UsbKeyboard.sendKeyStroke(7); //D
}
else digitalWrite(8, LOW);
if(InData4 >= TouchSensitivity)
{
digitalWrite(7, HIGH);
UsbKeyboard.sendKeyStroke(8);//E
else digitalWrite(7, LOW);
if(InData5 >= TouchSensitivity)
digitalWrite(6, HIGH);
UsbKeyboard.sendKeyStroke(9);//F
else digitalWrite(6, LOW);
delay(100);
```

#### **Code to Note:**

1.Before compile the code, do remember to add the necessary libraries inside the libraries directory of Arduino IDE.

Download the libraries from below link: <u>https://drive.google.com/open?id=1WfwYEaAQSRz\_q6QHv8qjIF8BfGwH0UNa</u> 2.In the code **UsbKeyboard.sendKeyStroke(9)**, here you can change the value to make 6 buttons output different value. The detailed value you can find in the **UsbKeyboard.h** file, as the figure shown below.

·1···	1 · 4 · 1 · 5 · 1 · 6 · 1 · 7 · 1 · 8 · 1 · 9 · 1 · 10 · 11 · 12 · 13 · 14 · 15 · 15 · 16 · 17 · 18	£•
		S.
#define KEY_A	4	
#define KEY_B	5	
#define KEY_C	6	
#define KEY_D	7	
#define KEY_E	8	
#define KEY_F	9	11
#define KEY_G	10	1
#define KEY_H	11	
#define KEY_I	12	
#define KEY_J	13	
#define KEY_K	14	
#define KEY_L	15	
#define KEY_M	16	
#define KEY_N	17	
#define KEY_O	18	
#define KEY_P	19	
#define KEY_Q	20	
#define KEY_R	21	

## **Example Use**

Upload well the code to UNO R3, then stack the shield onto UNO R3. Connect the alligator clip line to both GND and A0-A5 interfaces, and clip the coin to GND and A0 connected to alligator clip line.



Then connect the shield to computer (WIN7) using a USB cable, the computer will automatically identify the shield.

Open a Notepad, when your fingers touch the two coins, the letter A will continue to display on the text.



If use your fingers to separately touch the coin connected to GND and one end of A1-A5 alligator clip line, the letter BCDEF will display on the text.