

OVERVIEW

The PS/2 Keyboard Interface module allows the user to connect a PS/2 keyboard (or mouse) to an Arduino or other microcontrollers. The module facilitates connection by integrating a PS/2 port with standard header pins for power and data lines. The PS/2 port is a 6-pin mini-DIN connector. When connected to a keyboard, alphanumeric characters may then be read by the host microcontroller.



Figure 1 PS2 Port

See the applications notes for suggested software/library.

FEATURES

- 6 pin DIN PS/2 port
- Standard headers for power and data lines
- Power indicator
- < 3mA power consumption
- Designed primarily for Arduino users

PIN FUNCTIONS

The module has a 4 pin 2.54mm pitched header with the following functions.

Pin Label	Function/Operation/Remarks
VCC	+5Vdc. This is the keyboard power. The LED indicator on board will light up when power is applied. Since the module alone draws less than 3mA at 5V, and with keyboards typically being low power, this pin may then be connected to the Saleng Uno/Arduino's 5V pin. Check your specific keyboard and application for exact current consumption.
GND	Ground pin.
DAT	Data pin. Connects to host microcontroller.
CLK	Clock pin. Connects to host microcontroller. When using the recommended library, please connect this to an external interrupt pin. In the Saleng Uno/Saleng BYOA/Saleng Mini 88/Arduino Uno/Nano/Pro Mini/Mega, you may use pins 2 or 3. If the host is the Saleng Mini 644, contact Layad Circuits for instructions. Note that there are other available libraries and this may not be a requirement.

PRECAUTION

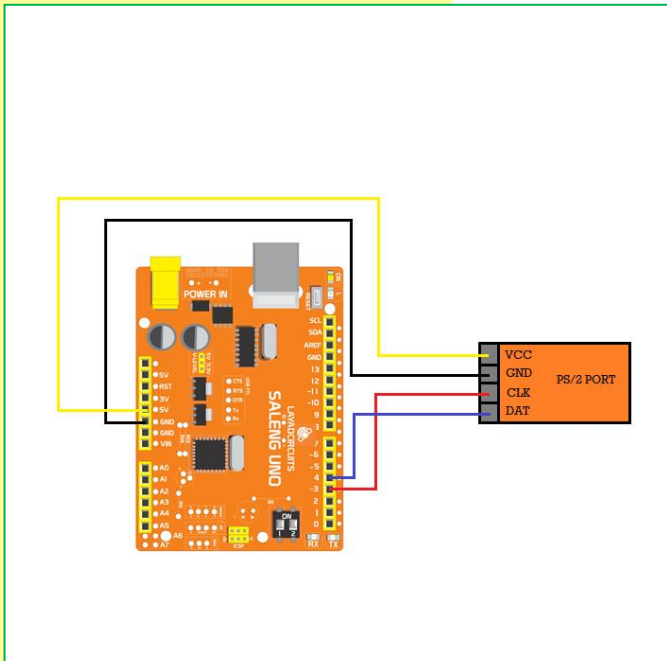
Because PS/2 keyboards are typically 5V logic, use level shifters when using 3.3V microcontrollers to safely connect the keyboard to your host.

APPLICATION NOTES

The basic usage and test setup is explained in this note. Using the module, a PS/2 keyboard shall send the equivalent ASCII value of the key which has been pressed. The Arduino shall then display this on screen. The program and library is based on the [PS2Keyboard library by PaulStoffregen](#).

Wiring

The following diagram shows the module used with a Saleng Uno/Arduino Uno:



Code

```
#include <PS2Keyboard.h>

const int DataPin = 4;
const int IRQpin = 3;

PS2Keyboard keyboard;

void setup() {
  delay(1000);
  keyboard.begin(DataPin, IRQpin);
  Serial.begin(9600);
  Serial.println("Keyboard Test:");
}

void loop() {
  if (keyboard.available()) {

    // read the next key
    char c = keyboard.read();

    // check for some of the special keys
    if (c == PS2_ENTER) {
      Serial.println();
    } else if (c == PS2_TAB) {
      Serial.print("[Tab]");
    } else if (c == PS2_ESC) {
      Serial.print("[ESC]");
    } else if (c == PS2_PAGEDOWN) {
      Serial.print("[PgDn]");
    } else if (c == PS2_PAGEUP) {
      Serial.print("[PgUp]");
    } else if (c == PS2_LEFTARROW) {
      Serial.print("[Left]");
    } else if (c == PS2_RIGHTARROW) {
      Serial.print("[Right]");
    } else if (c == PS2_UPARROW) {
      Serial.print("[Up]");
    } else if (c == PS2_DOWNARROW) {
      Serial.print("[Down]");
    } else if (c == PS2_DELETE) {
      Serial.print("[Del]");
    } else {
      // otherwise, just print all normal characters
      Serial.print(c);
    }
  }
}
```

The results may be viewed from the Serial Monitor with baud rate set to 9600.

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