IQS7222D Arduino Example Code

Table of Contents

Introduction

This Arduino example code demonstrates how to set up and use the IQS7222D Integrated Circuit (IC). The IQS7222D is a Versatile Trackpad/ touchscreen controller with proximity, touch, trackpad, and gesture outputs

This example code is specifically aimed at the IQS7222D Evaluation Kit (PCB number *AZP1196A3*).

This example code is intended for an Arduino Compatible board that uses 3.3 V logic, such as Sparkfun's Pro Micro (3.3V, 8 MHz). If a 5V logic Arduino board is used, a logic-level translator will be required between the Arduino-based board and the IQS7222D.

Arduino Code Configuration

In the example code folder, go to file: `src/IQS7222D/IQS7222D.h`. Change the value of the define to the number of the specific IQS7222D IC that the EV-KIT is populated with.

```
/* Device IC version select */
/* Select the IC version below by changing the value of the define (default = 0):
0: IQS7222D IC Version 1.2
1: IQS7222D IC Version 1.1
 */
#define IQS7222D_IC_VERSION 0
```

The behaviour and pin assignments of the Arduino code can be configured with the `#define` settings at the start of `iqs7222d-example-code.ino`.

Change the following pin assignments and parameters to suit your hardware:

```
/*** Defines ***/
#define DEMO_IQS7222D_ADDR                    0x48
#define DEMO_IQS7222D_POWER_PIN               4
#define DEMO_IQS7222D_RDY_PIN                 7
```

- `DEMO_IQS7222D_ADDR` is the IQS7222D I2C Slave address. For more information, refer to the datasheet and application notes found on the IQS7222D Product Page.

- `DEMO_IQS7222D_POWER_PIN` can be used to power the IQS7222D directly from an Arduino GPIO. This parameter sets which pin to use. This is an optional setting and can be removed if the IQS7222D is powered from the VCC pin or an external power supply.

- `DEMO_IQS7222D_RDY_PIN` sets the pin assignment for the IQS7222D ready pin. This must support external interrupts. On the Sparkfun Pro Micro, pins 0, 1, 2, 3, and 7 support interrupts.

> ⓘ   Please note that powering an IQS device directly from a GPIO is *generally* not recommended. However, the `DEMO_IQS7222D_POWER_PIN` in this example could be used as an enable input to a voltage regulator.

Example Code Flow Diagram
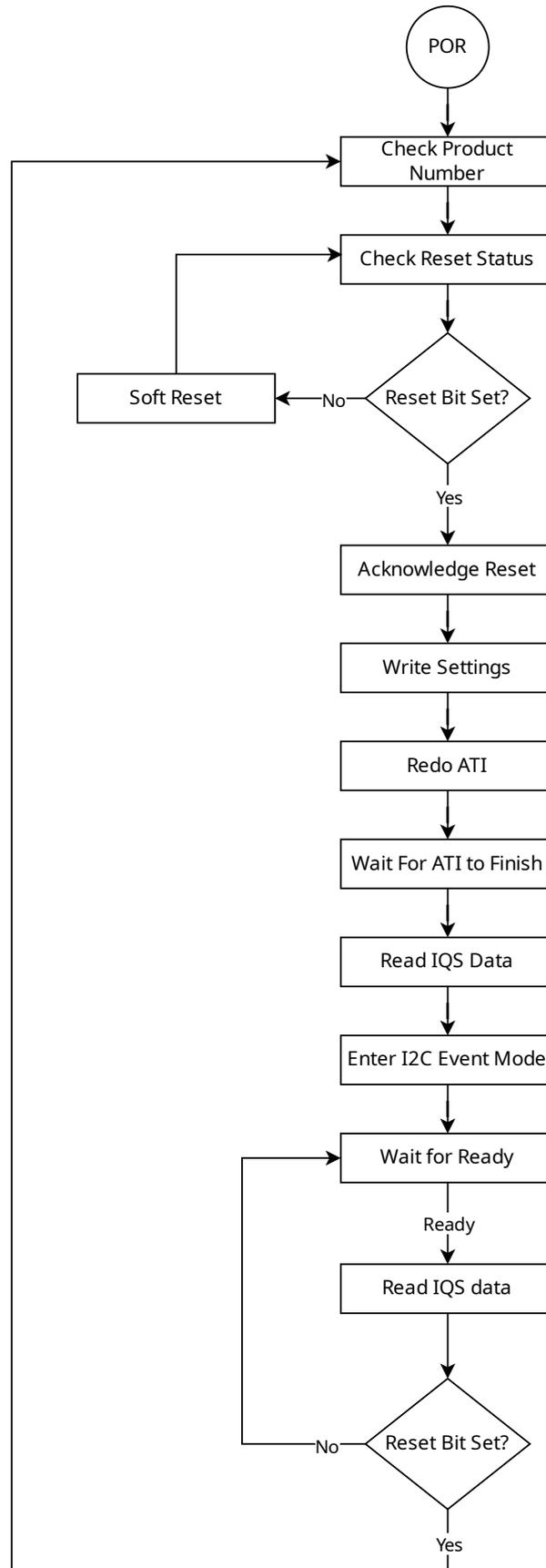
Sparkfun Board Library Installation

To use the Sparkfun Pro Micro, the Sparkfun Board Library must be installed in the Arduino IDE.

Add the Sparkfun Board Library by opening Preferences (**File** > **Preferences**), and paste the following URL into the "Additional Board Manager URLs" text box.

https://raw.githubusercontent.com/sparkfun/Arduino_Boards/master/IDE_Board_Manager/package_sparkfun_index.json
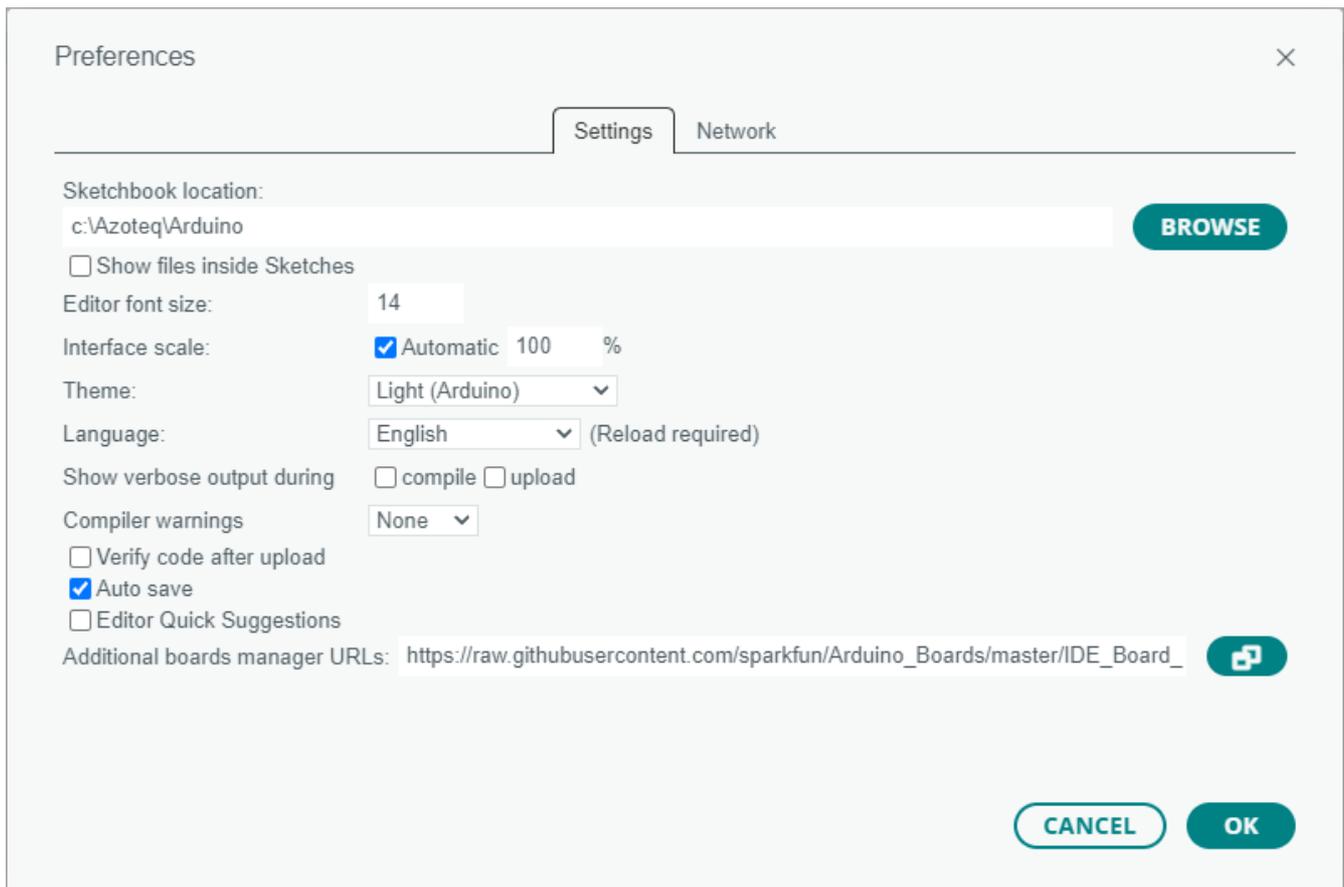
Click "OK". Then open the Board Manager under **Tools** > **Board** > **Boards Manager....**
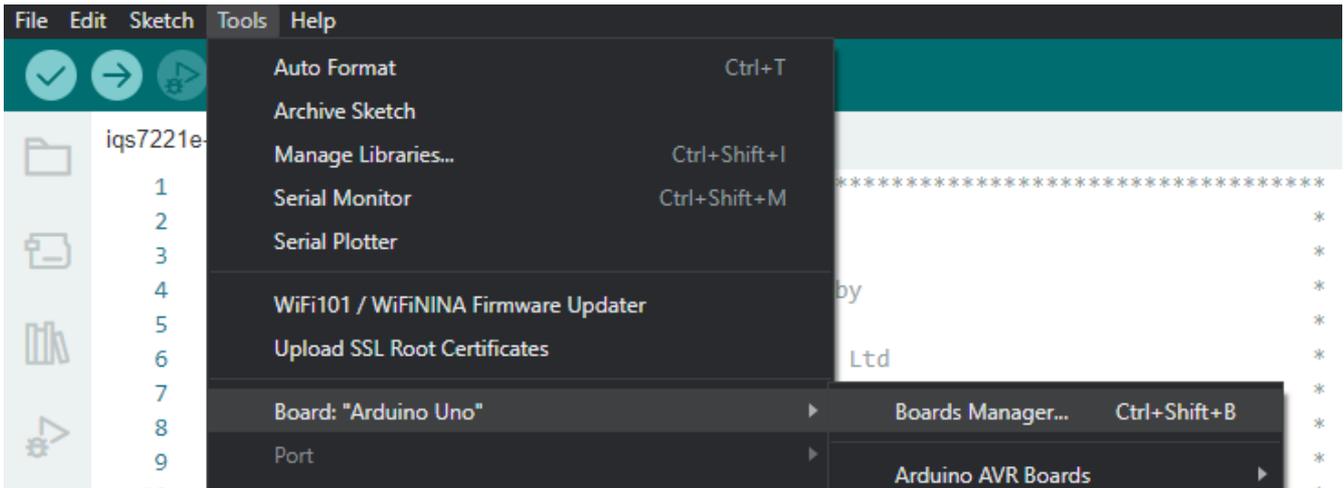
Search for "sparkfun", and install "SparkFun AVR Boards by SparkFun".
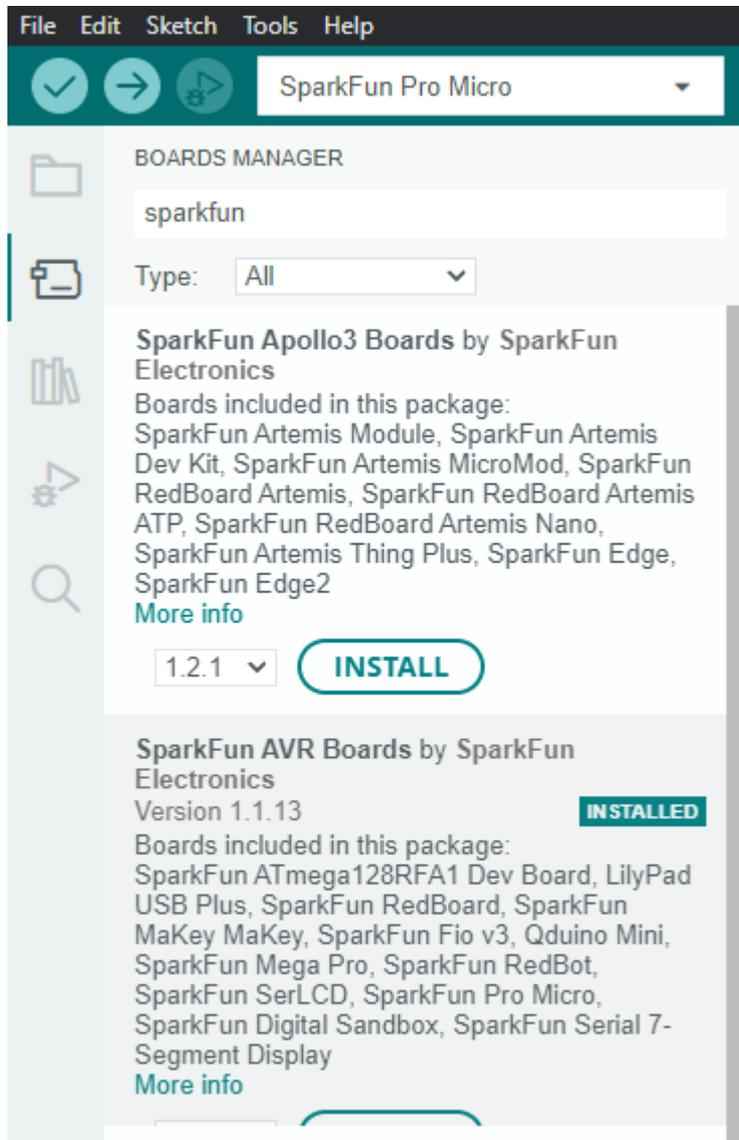
You can now select the "SparkFun Pro Micro" in the Board selection menu.
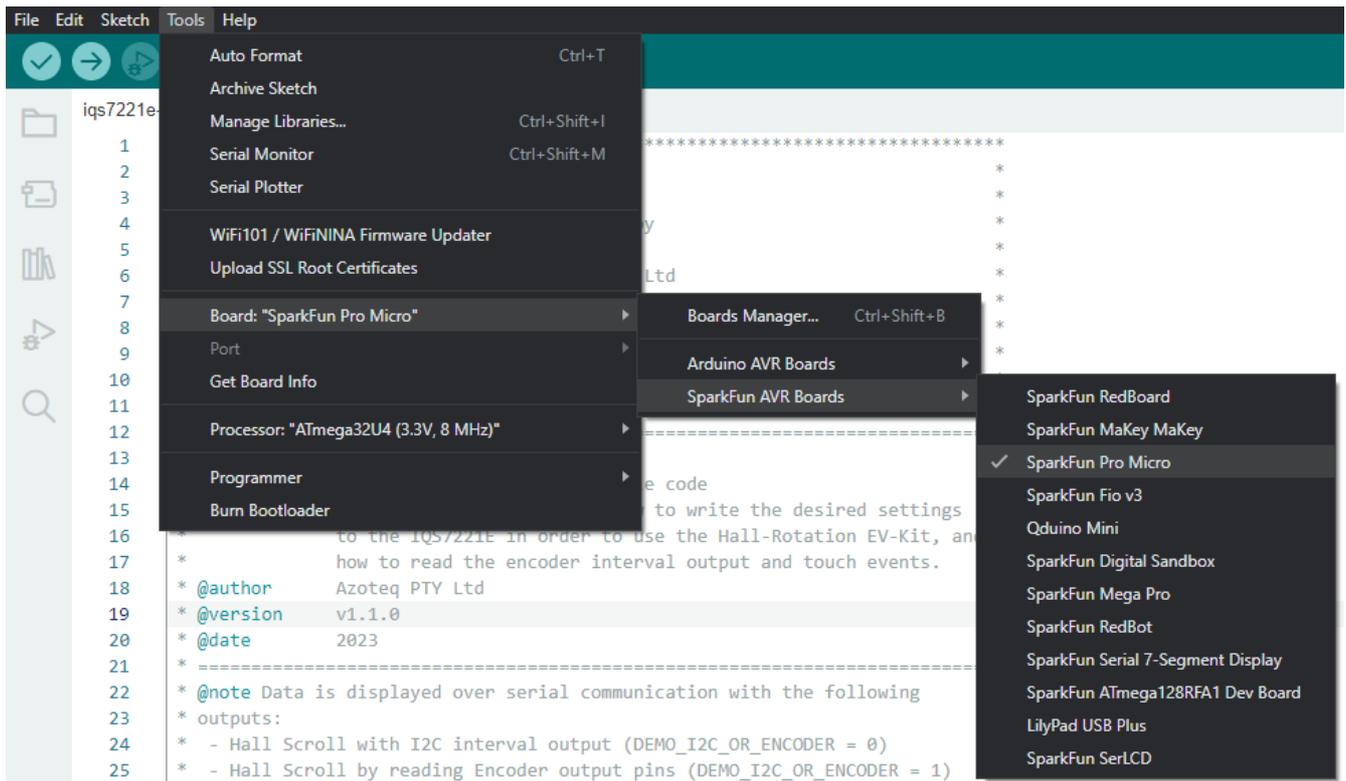
Also be sure to select the "3.3 V, 8 MHz" version under **Tools** > **Processor**.
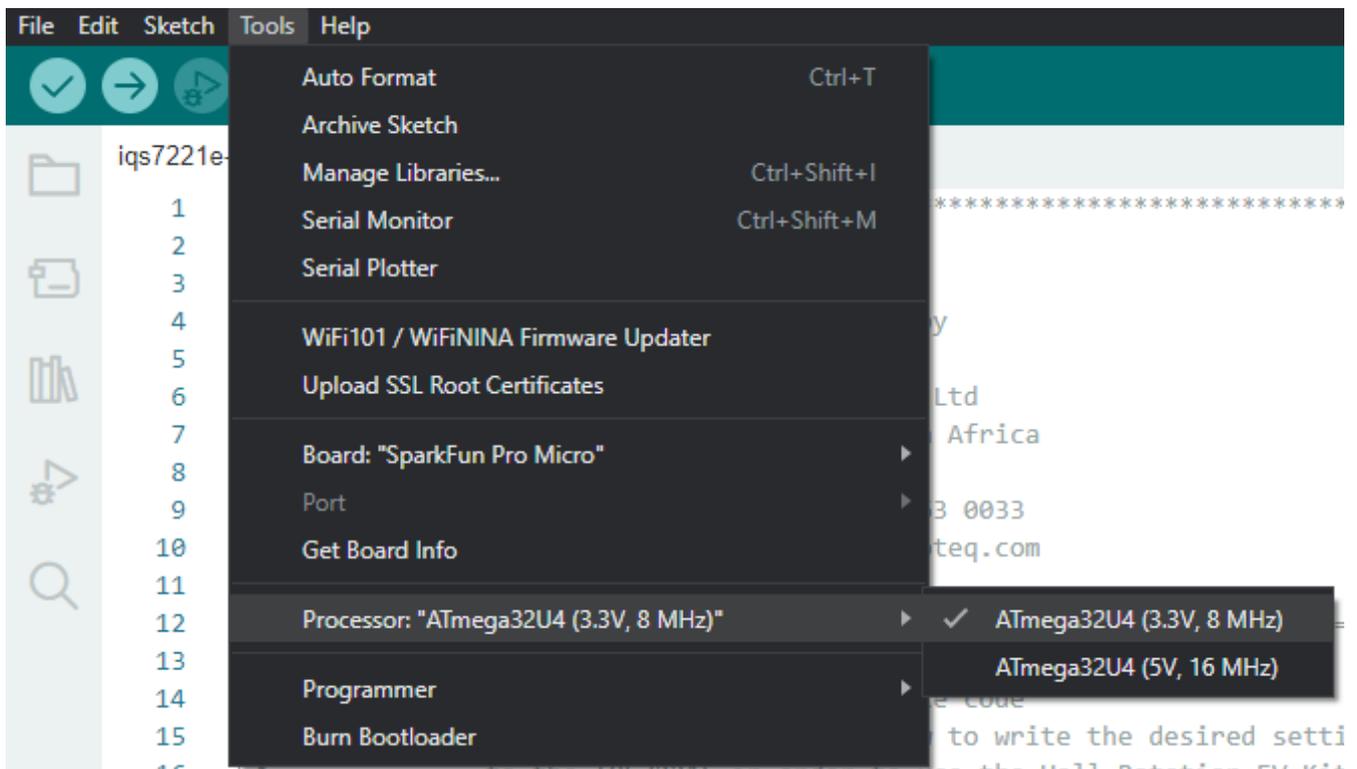
Source: Pro Micro Hookup Guide

Serial Communication and Interface

The example code provides verbose serial feedback to aid in the demonstration of start-up and operational functions. It also has two built-in commands to demonstrate the IQS7222D's functionality. To use these built-in commands, the Arduino code simply sends an 'f' or 'r' over the serial interface.

```
1 - "f\n" - Force open a communication(RDY) window
```

```
2 - "r\n" - Request a Software Reset during runtime
```

It is important to take note of the newline ('\n') character that is needed to complete any serial request. It can be activated in the built-in Arduino IDE Serial monitor and is shown inside the blue rectangle in the figure below.