



IQS397 Arduino Example Code



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Introduction

This Arduino example demonstrates how to configure and use the **Azoteq IQS397 ProxFusion®** sensing device over I2C. The example showcases inductive/capacitive touch, proximity sensing, integrated haptics control, and power-mode operation.

This example code is specifically intended for use with the **IQS397 Evaluation Kit** (PCB number *AZP1397B1*).

This example requires an Arduino board that supports 5 V logic, I2C communication, such as [SparkFun's Pro Micro \(5 V, 16 MHz\)](#).



Arduino Code Configuration

The behavior and pin assignments of the Arduino code can be configured using the `#define` statements at the start of `iqs397-example-code.ino`.

Modify the following parameters to suit your hardware:

```
/** Defines */  
#define DEMO_IQS397_ADDR 0x56  
#define DEMO_IQS397_POWER_PIN 4  
#define DEMO_IQS397_RDY_PIN 7  
  
/* UI Selection */
```

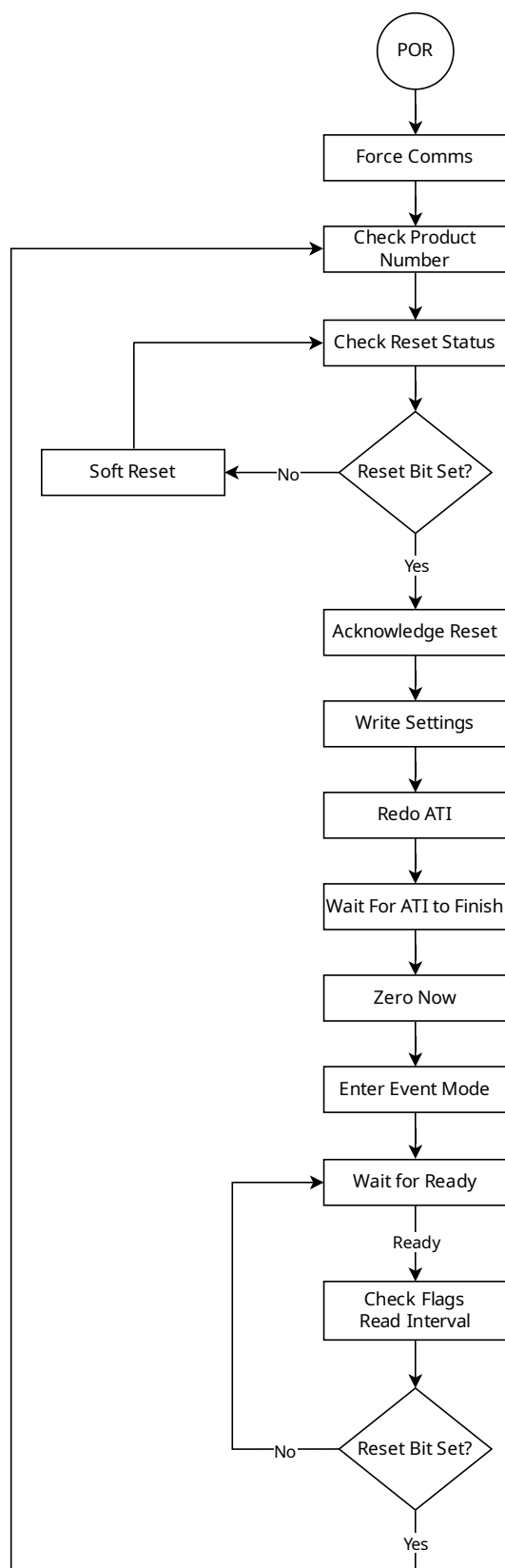
- `DEMO_IQS397_ADDR` sets the I2C address of the IQS397 device.
- `DEMO_IQS397_POWER_PIN` specifies the Arduino GPIO pin used to power or enable the IQS397. This is optional and may be removed if the device is powered directly from VCC or an external supply.
- `DEMO_IQS397_RDY_PIN` sets the pin connected to the IQS397 RDY signal. This pin must support external interrupts. On the SparkFun Pro Micro, pins 0, 1, 2, 3, and 7 support interrupts.



Powering an IQS device directly from an Arduino GPIO is *generally* not recommended. The `DEMO_IQS397_POWER_PIN` should preferably be used as an **enable signal for a voltage regulator**, rather than as a direct power source.



Example Code Flow Diagram



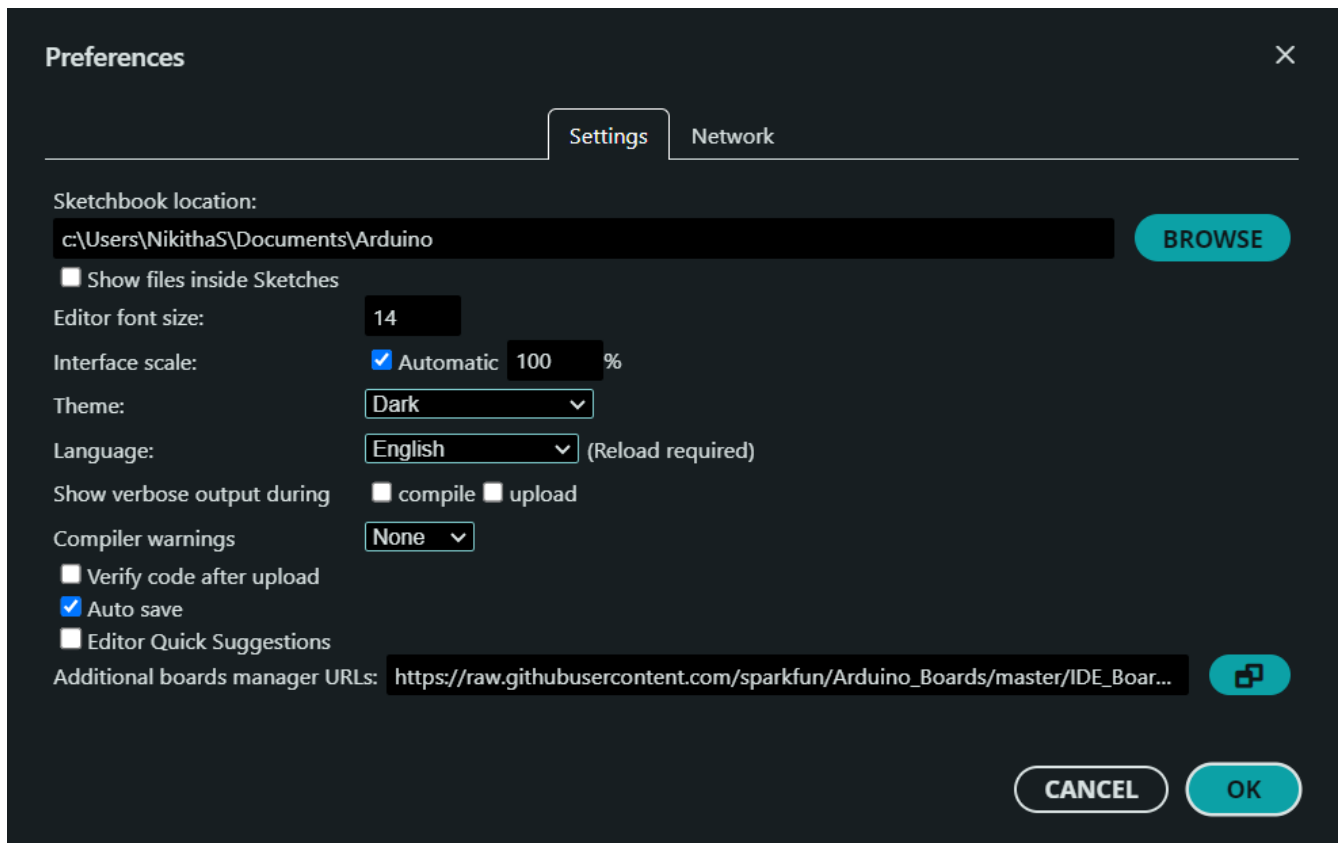


SparkFun Board Library Installation

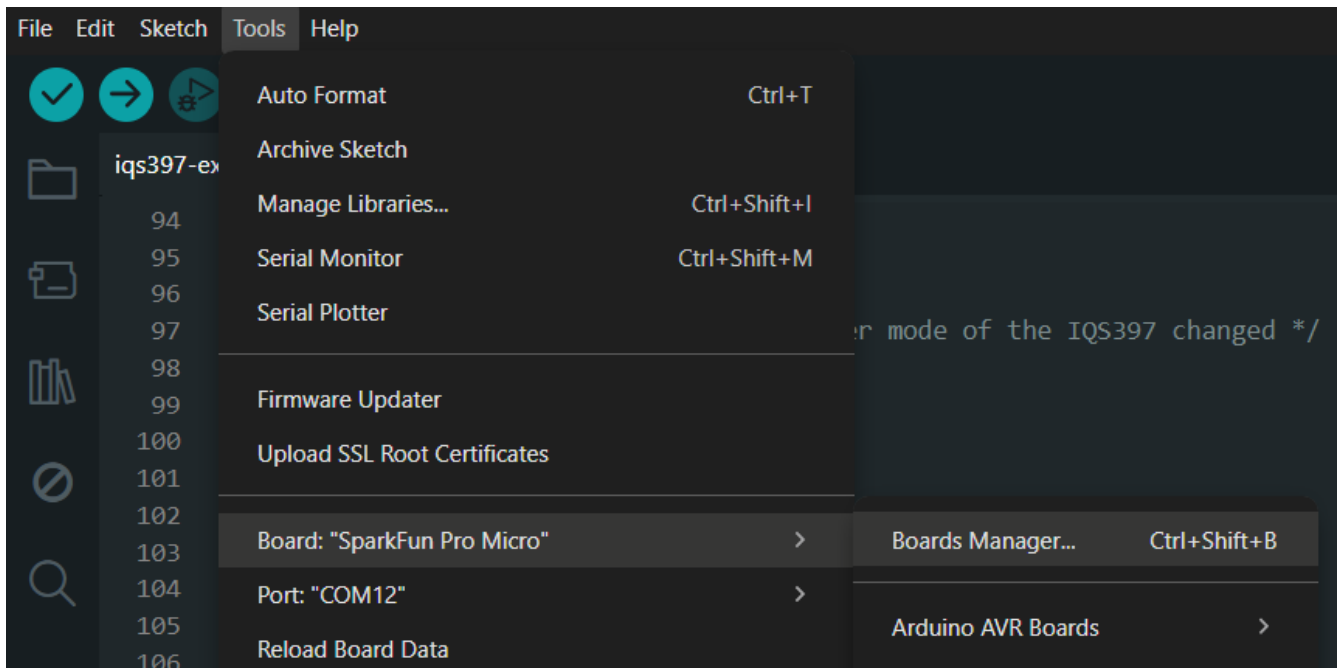
To use the SparkFun Pro Micro, the SparkFun Board Library must be installed in the Arduino IDE.

Add the SparkFun Board Library by opening **File > Preferences**, and paste the following URL into the **Additional Board Manager URLs** field:

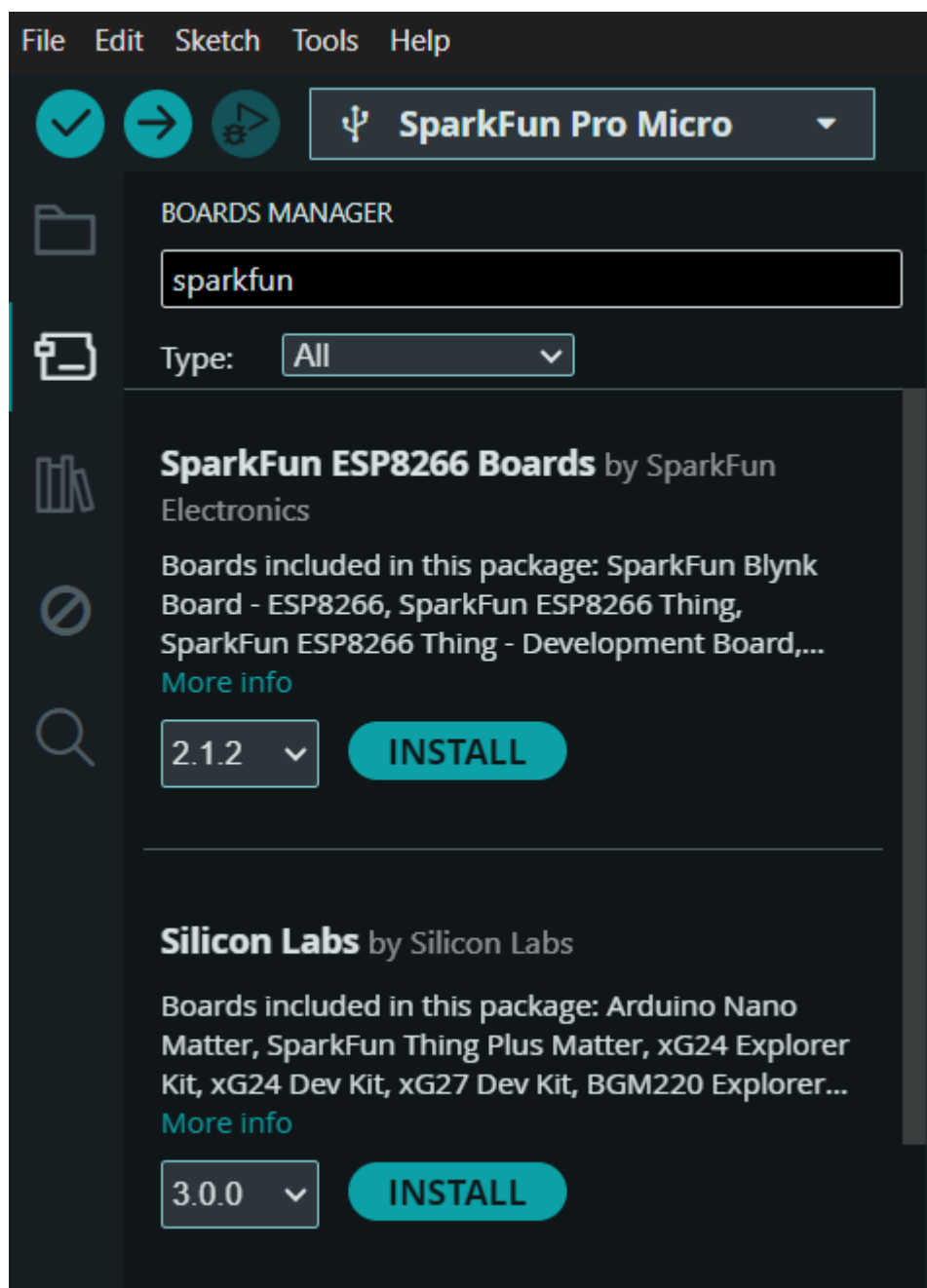
```
https://raw.githubusercontent.com/sparkfun/Arduino_Boards/master/IDE_Board_Manager/package_sparkfun_index.json
```



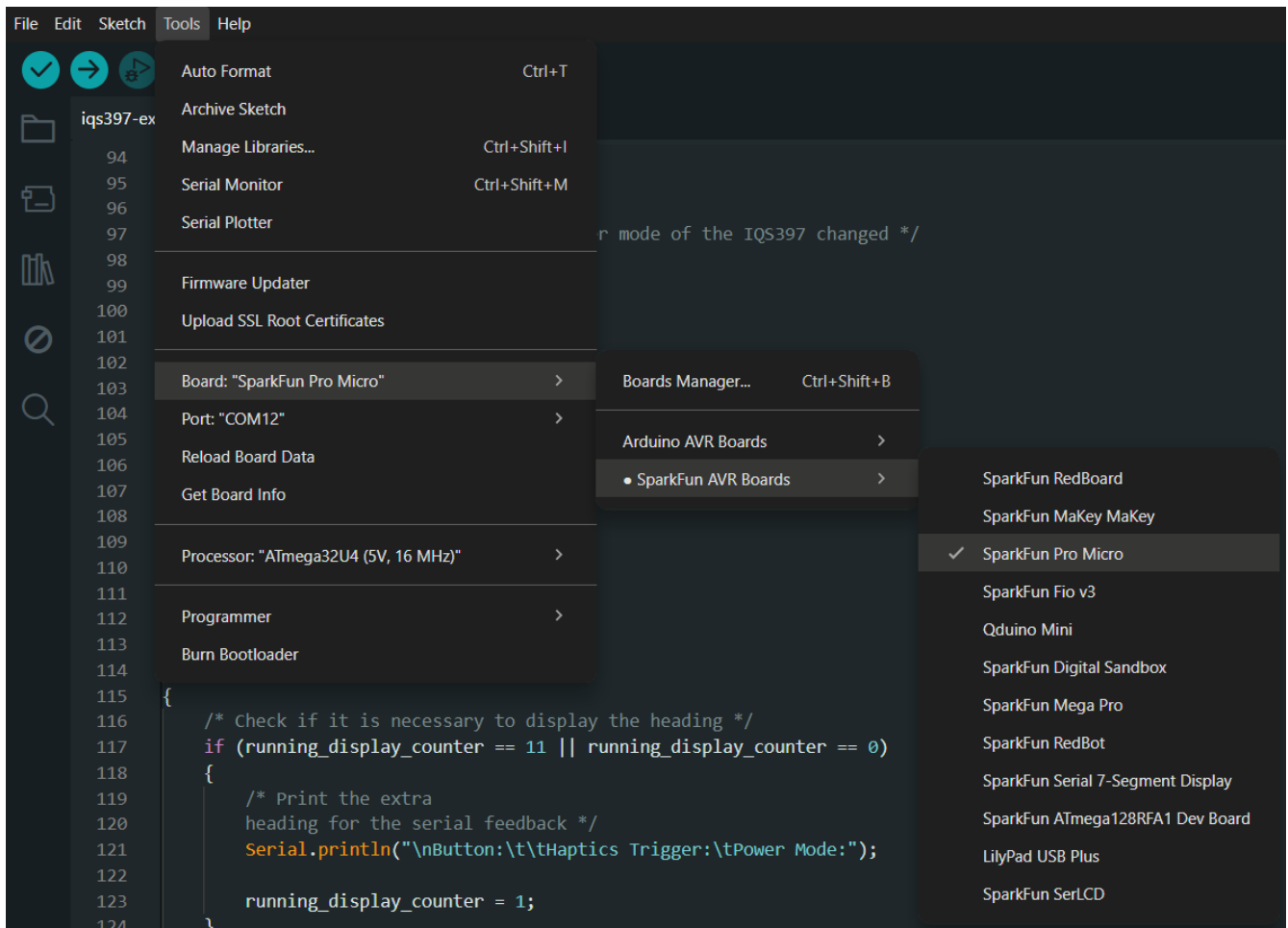
Click **OK**, then open the Board Manager under **Tools > Board > Boards Manager....**



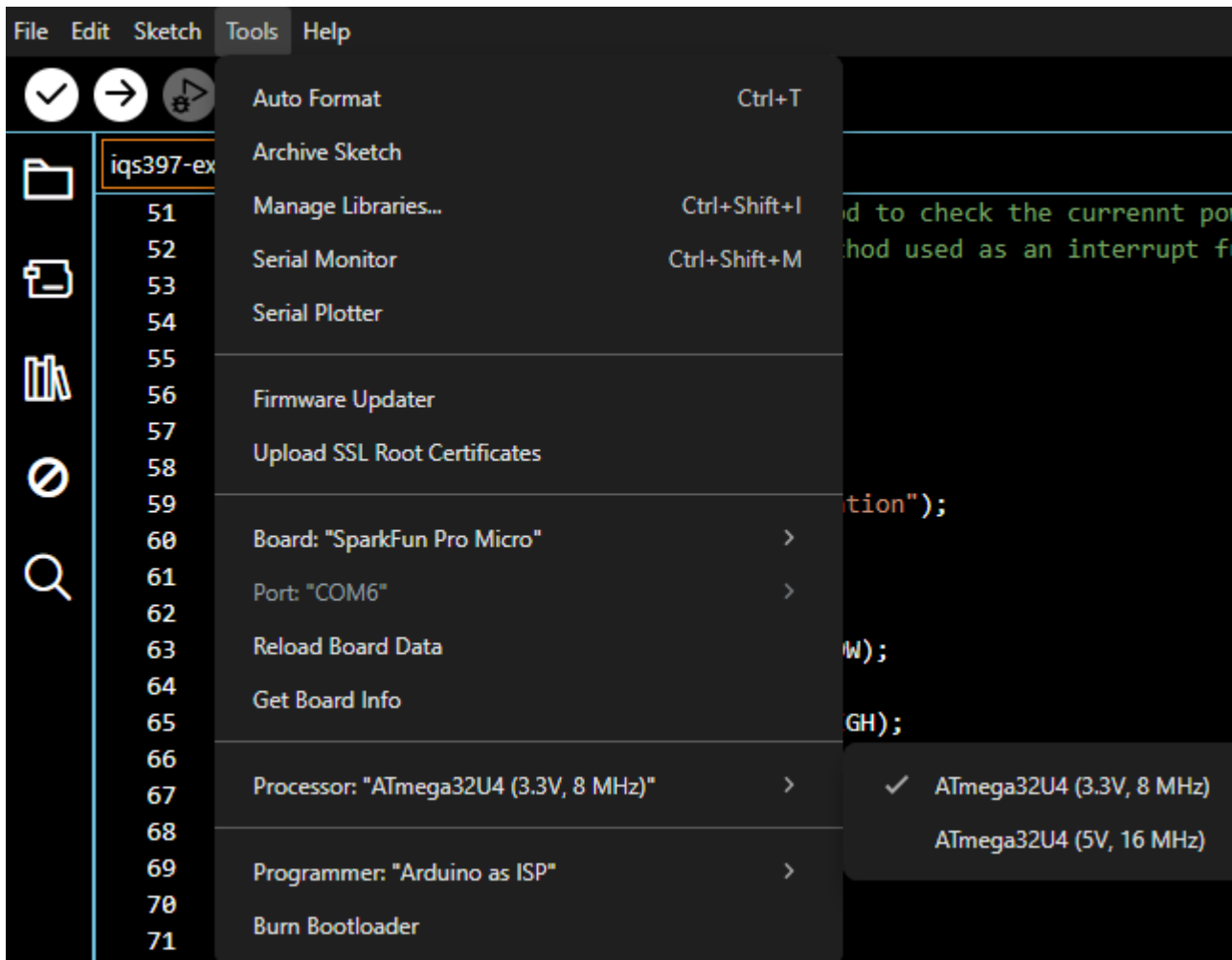
Search for **SparkFun** and install **SparkFun AVR Boards by SparkFun**.



You can now select **SparkFun Pro Micro** in the board selection menu.



Ensure that the 5 V, 16 MHz processor option is selected under Tools > Processor.



Source: [Pro Micro Hookup Guide](#)



Serial Communication and Interface

The example code provides verbose serial output to assist with demonstration and debugging of the following:

- Touch and proximity events
- Haptics trigger events
- Power-mode transitions
- Forced communication requests

```
Output  Serial Monitor X
Message (Enter to send message to 'SparkFun Pro Micro' on 'COM12')

Start Serial communication
IQS397 Initialization:
    IQS397_INIT_VERIFY_PRODUCT
        Product number is: 3073 v1.0
        IQS397 Confirmed!
    IQS397_INIT_ACTIVATE_STREAM_MODE
    IQS397_INIT_READ_RESET
        Reset event occurred.
    IQS397_INIT_ACK_RESET
    IQS397_INIT_UPDATE_SETTINGS
        1. Write System Settings
        2. Write ProxFusion CH0 Settings
        3. Write ProxFusion CH1 Settings
        4. Write ProxFusion ATI Settings
        5. Write Haptic & H-bridge Configuration
        6. LRA Drive Settings
    IQS397_INIT_ATI
    IQS397_INIT_READ_DATA
    IQS397_INIT_ACTIVATE_EVENT_MODE
    IQS397_INIT_DONE
IQS397 Initialization complete!

Button State:  Haptics Trigger:  Power Mode:
--             --              NORMAL POWER
--             --              NORMAL POWER
--             --              ULP
```