Arudino Sleep tutorial: <https://thekurks.net/blog/2018/1/24/guide-to-arduino-sleep-mode>

Mayfly SDI12 Tutorial: <https://github.com/EnviroDIY/Arduino-SDI-12/wiki>

<https://www.envirodiy.org/topic/sleep-mode-low-power/> - Keep in mind that the Mayfly board’s default pin is A7 for reading the square wave alarm output from the DS3231, which is why you also need the Sodaq\_PcInt library (this library allows other pins to be used as interrupts besides the board’s regular hardware interrupts of D0, D1, and D10). If you really want to use a hardware interrupt instead of the pin change interrupt, you can modify the solder jumper SJ1 on the back of Mayfly boards version 0.4 and greater by cutting the trace to the A7 pad and solder jumpering to the D10 pad.

<https://github.com/EnviroDIY/Libraries>

* [Tiny GSM](https://github.com/EnviroDIY/TinyGSM.git) - A smaller GSM communication library that supports, among others, [Sodaq's GPRSBee](https://shop.sodaq.com/en/gprsbee.html), Digi's [LTE](https://www.digi.com/products/xbee-rf-solutions/embedded-rf-modules-modems/digi-xbee-cellular) and [WiFi](https://www.digi.com/products/xbee-rf-solutions/embedded-rf-modules-modems/xbee-wi-fi) XBees, and ESP8266 based WiFi-XBee's like [Itead's Wee](https://www.itead.cc/wiki/Wee_Serial_WIFI_Module) or [DFRobot's Wifi Bee](https://www.dfrobot.com/product-1279.html). This library is more compact (and possibly easier to use) than the [EnviroDIY\_GPRSbee](https://github.com/EnviroDIY/GPRSbeeMod/tree/v1.2_hacked) and supports many more modules, but does not include direct support for putting the modems to sleep. The "ModemSupport" module of the [EnviroDIY Modular Sensors](https://github.com/EnviroDIY/ModularSensors) library does adds that.
* [EnableInterrupt](https://github.com/EnviroDIY/EnableInterrupt) - Administrates and handles both "external" and "pin change" interrupts on the Atmel microcontroller built into the Mayfly. This allows to Mayfly to sleep and save battery. This library also works well as a controller for the versions of SoftwareSerial and SDI-12 linked below that have been stripped of interrupt control.
* [Sodaq RTCTimer](https://github.com/SodaqMoja/RTCTimer) - Works with the DS3231 to easily perform scheduled tasks. This library **does not handle sleeping** and is intended for use with a continously awake logger.

#### These libraries are modified versions that are necessary in order to work together:

* + These modified versions are necessary because each of these libraries will try to simultaneously monitor all pin change interrupt vectors on any Arduino board causing compiler errors. Instead of allowing them to handle interrupts on their own, these have been stripped of interrupt vector control and require and external pin change interrupt to set up their interrupts for them. The modified versions are only necessary to use two or more of these together. Any pin that supports pin change interrupts can be used with these libraries, provided that you use [EnableInterrupt](https://github.com/EnviroDIY/EnableInterrupt) or another library to allow them interrupt control. These can also be used with other AVR boards (including the Arduino Uno, Mega, or Leonardo).
    - [EnviroDIY SoftwaterSerial\_ExtInts](https://github.com/EnviroDIY/SoftwaterSerial_ExternalInts)
    - [EnviroDIY SDI-12\_ExtInts](https://github.com/EnviroDIY/Arduino-SDI-12/tree/ExtInts)
  + Instead of being controlled by an alternate library, these versions have been cropped to only look at only one interrupt vector each. This means they are each only able to operate on the specified pins rather than any pin that supports pin change interrupts. These will only work together with the listed pin numbers on the EnviroDIY Mayfly itself.
    - [EnviroDIY PCInt\_PCINT0](https://github.com/EnviroDIY/PcIntMod) - Will only work on pins D24-D31 (A00-A07)
    - [EnviroDIY SoftwareSerial\_PCINT12](https://github.com/EnviroDIY/SoftwareSerialMod) - Will only work on pins D8-D23
    - [EnviroDIY SDI-12\_PCINT3](https://github.com/EnviroDIY/Arduino-SDI-12/tree/Mayfly) - Will only work on pins D0-D7