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Design Documentation Lab 7

- Power Analysis
 - We decided on using STOP2 because it provided the most power savings while still being functional. The other power saving modes didn't save nearly enough power in our analysis. We also decided against using low power UART and keeping the device in STOP2 mode all the time, and instead provide a window when you restart the device so that you can use UART for a brief period of time and then put the device into STOP2 mode.
 - CubeMX predicted 25 days, but using a calculator on Digikey with the readings we got from the power management board our board should last about 73 days in the field.
 - We could change how often we collect light sensor data so that we only collect at night, lower the clock speed in RUN mode even lower than 4 MHz, remove the LED from our board, and if we changed how we retrieve our data we could remove UART from our board and save even more power.
- Power Measurement
 - During RUN mode the board drew around 4 milliamps while STOP2 only used 80 to 90 microamps. We use roughly 3900 microamps less when we enter power saving mode.
 - Predicted battery life is 73 days.

- Light Sensor Data

