Phone – Mote Setup

- Installing the Android Phone App
  - Slides 2->4

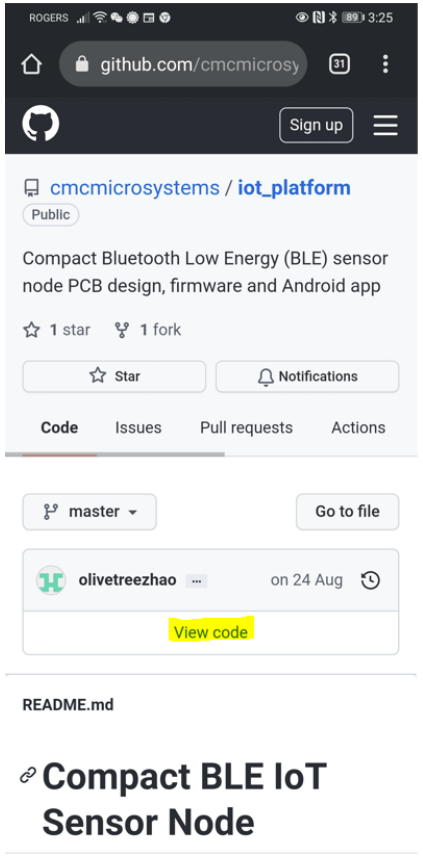
- Mote Reset when changing batteries

Installing the Android Phone App

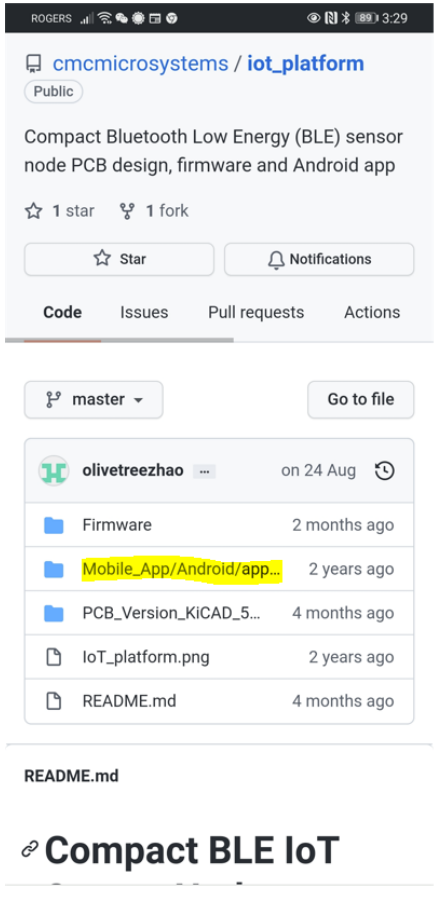
1). On an Android phone, Open the following web page:

https://github.com/cmcmicrosystems/iot_platform

You should see the page as shown below:

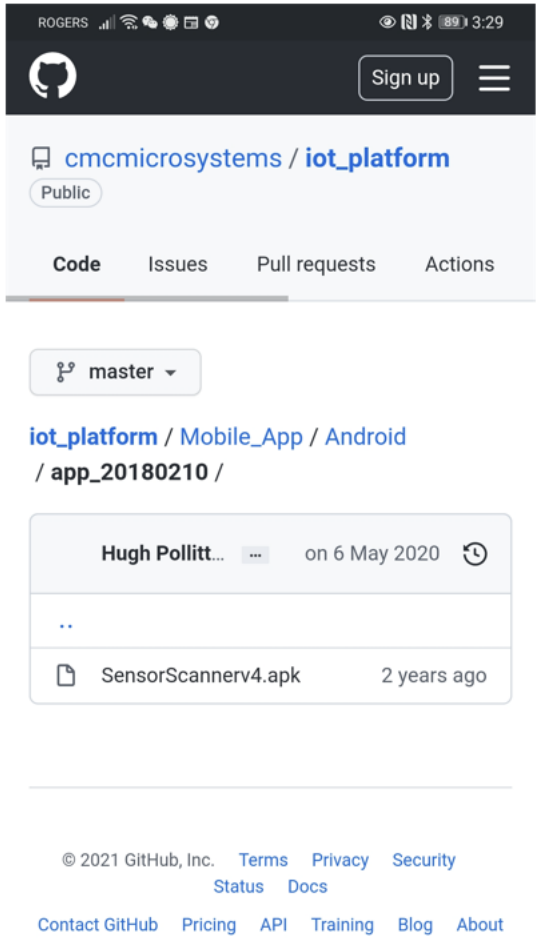


2).Click on “View code” to expand the file tree. You should have the following page:

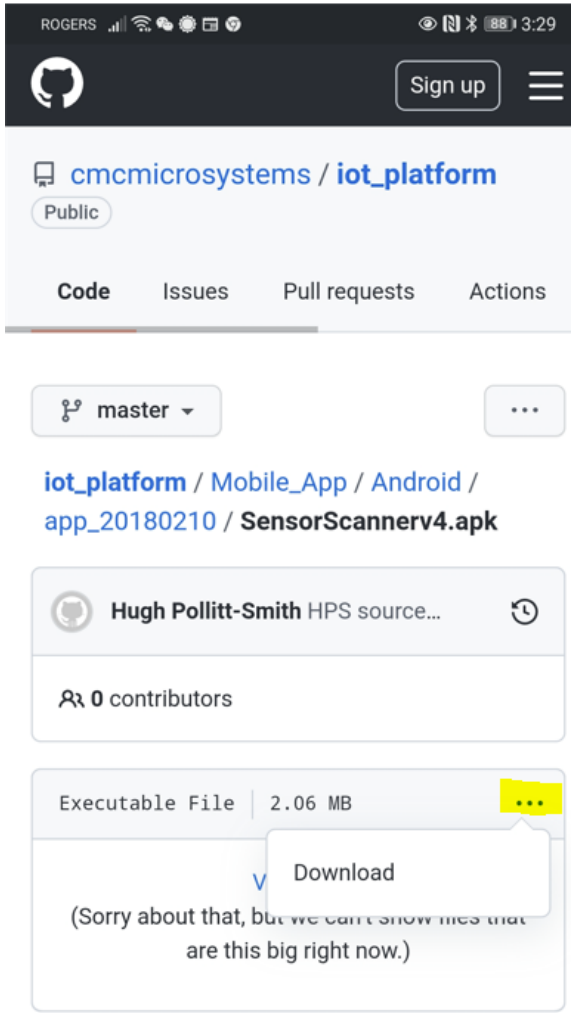


3). Open the “Mobile_App/Android/app_20180210” folder.

You should see a page as shown below:

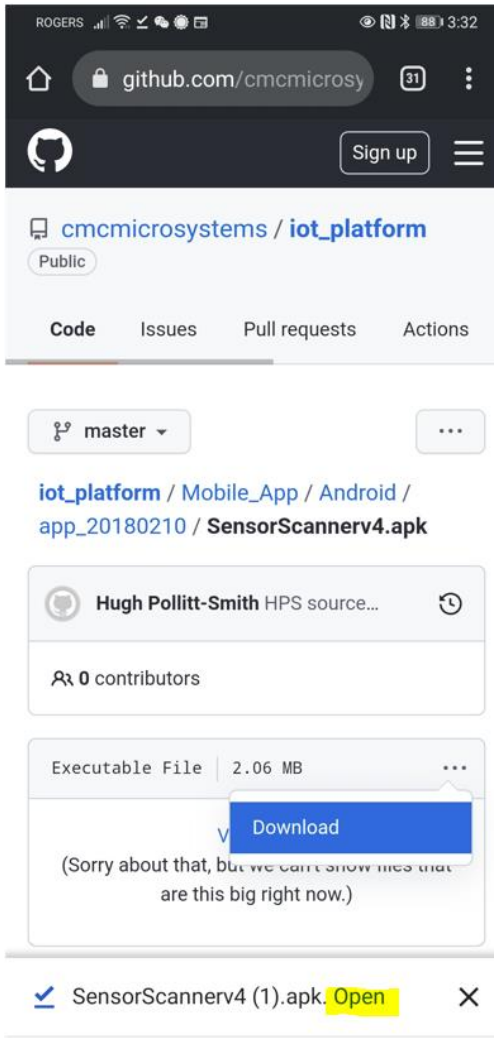


4). Click on SensorScannerv4.apk file, you should see a page as shown below:



5). Click the three dots “…” on the page, and select “Download”, then the downloading of the file starts.

6). After downloading is done, click on “Open” besides the downloaded SensorScannerv4.apk as shown below, then the installation starts. Follow the wizards to finish the installation.



Mote Reset
when changing batteries

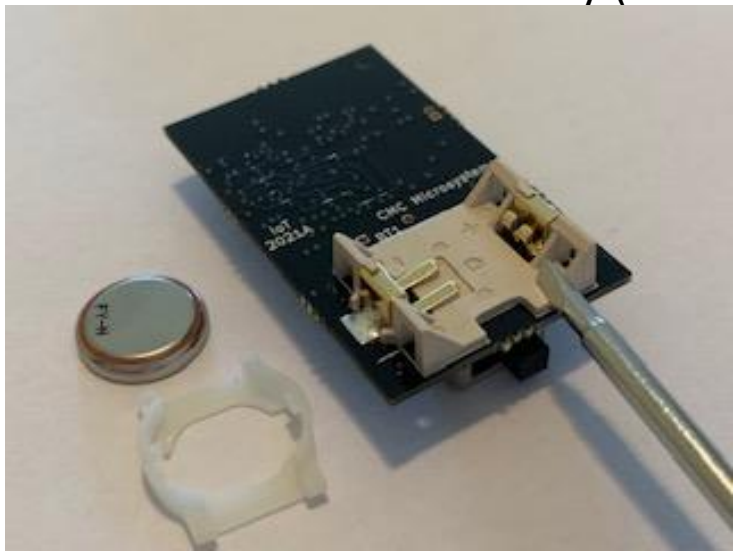
The mote currently requires an extra step when changing batteries. This step can be mitigated with further software changes or hardware development, but for now we manually implement the step.

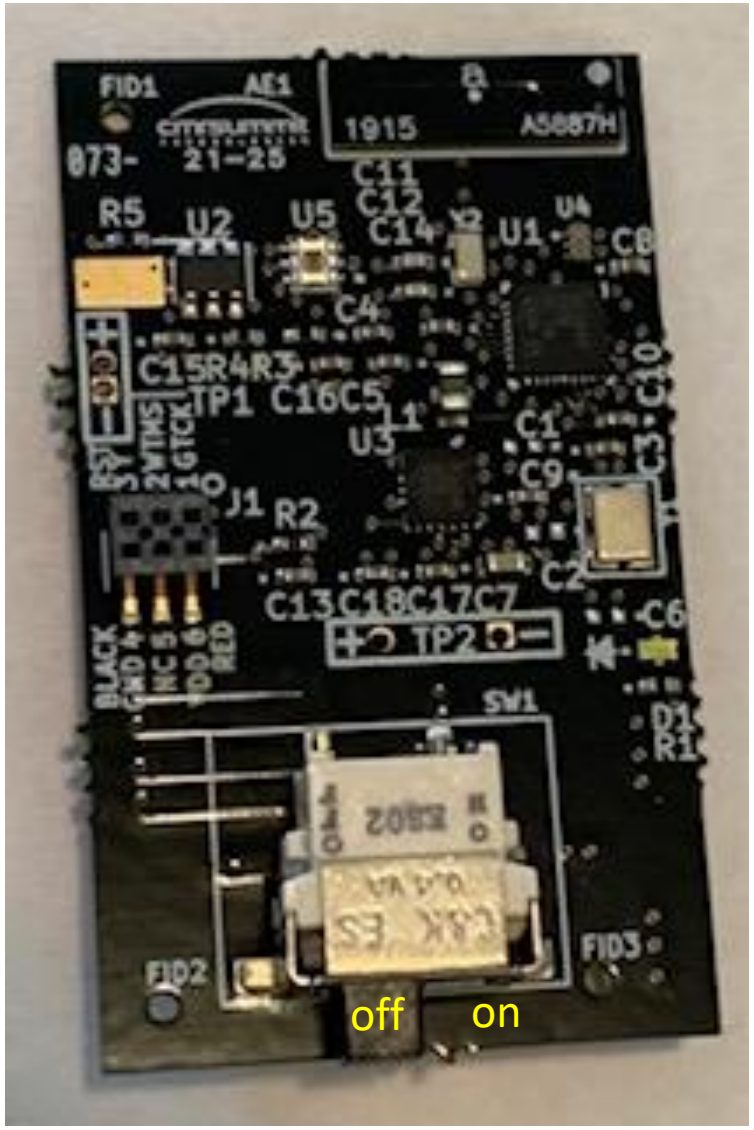
This extra step allows stored energy on the mote to discharge, resulting in a reset.

It is important to remove the battery and note the position of the on/off switch during the process.

In the picture to the right, the switch is off (leftmost position, close to the label FID2) Moving the switch to the right, (near label FID3), it is in the on position.

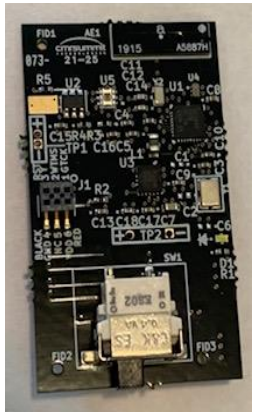
In the below picture, a small standard screwdriver is used to pry the battery out of the mote from the location shown.
The smaller side of the battery (shown) is the negative side.



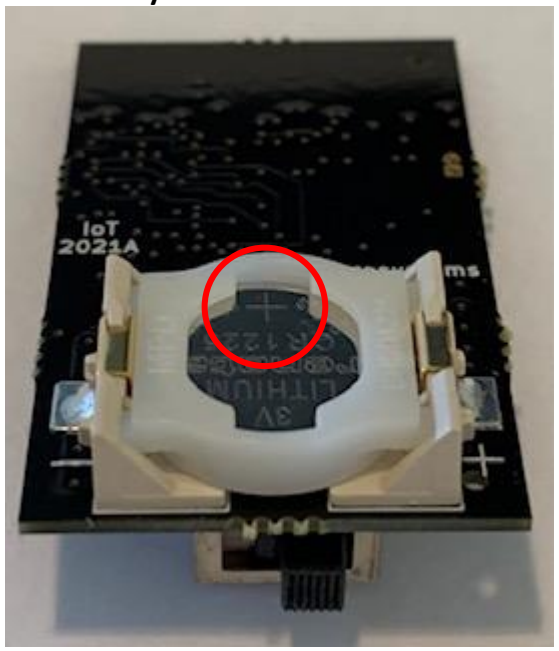


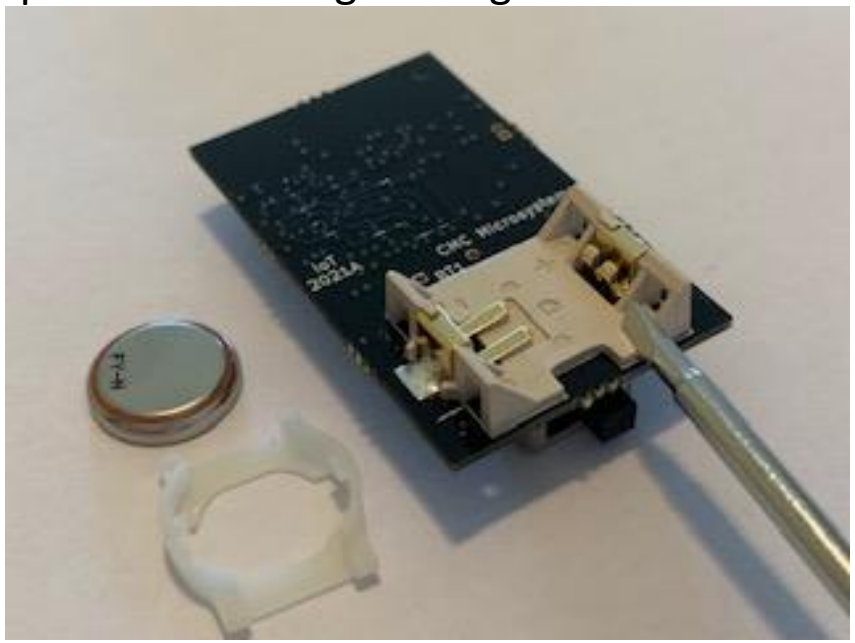
STEPS

1) Turn the mote off by sliding the switch to the left.



2) Flip the unit over and note the orientation of the battery with the larger side marked with a + for the positive side. Pry the battery out on the side shown in the picture on the right using a small standard screwdriver.





3) Three methods to reset the mote will be described, all of them do the same thing, ***Method C is preferred***.

Method A)

In the figure labelled Method A, the screwdriver points to + and – terminals. Shorting those now with a conductor, like the screwdriver or a wire should reset the mote, however, you may not get the best connection when doing so.

Method B)

With the mote electronics facing up as shown in the figure Method A slide the mote switch to the right to place it in the '**on**' position.

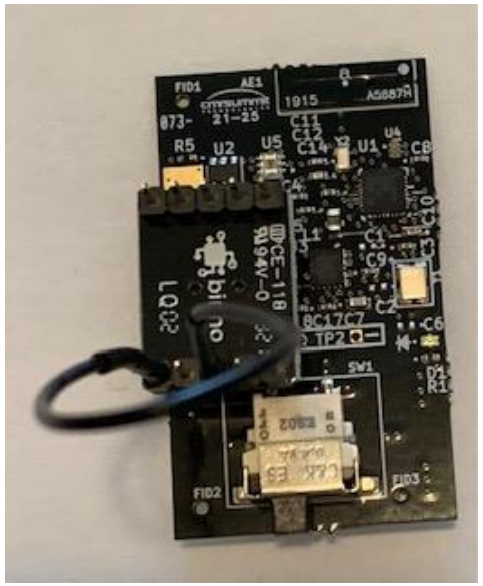
Flip the mote over to reveal the empty battery holder as shown in the figure labelled Method B.

Using a conductive metal (a screwdriver, wire, tin foil), short the brass battery terminals for a few moments.

Flip the mote back over, showing the electronics, and slide the switch to the left to place the mote in the '**off position**'.

Method A

Method B



Method C

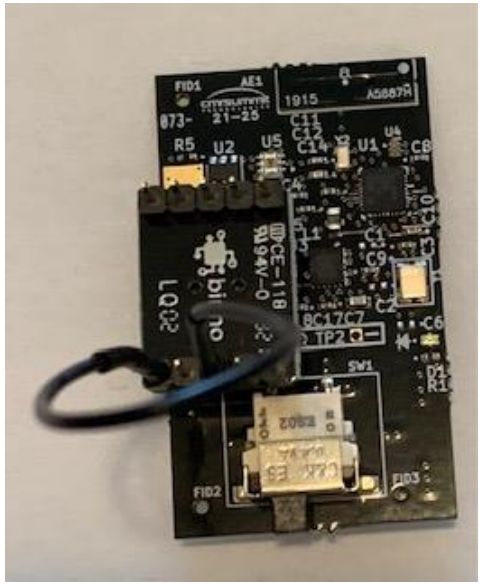
Method C) This is the preferred method and it provides the best connection.

Just below the +/- terminals pointed to in Method A is the unit's "J1" connector (black with six holes). The bottom left corner is labelled "BLACK **GND 4**", the bottom right corner is labelled "**VDD 6** RED". Short these two connectors using the binho adapter and a female-to-female jumper wire configured as shown in the figure labelled Method C1.
Since the binho adapter is larger than J1, you need to make sure that when you insert the adapter into J1, the bottom right adapter pins line up with the bottom right J1 pins. The adapter should insert gently, all the way down.
If you are unsure if you have the right connection, it is okay, you can't damage the mote (electrically) by gently inserting the adapter.

Method A

Method B

Method C1



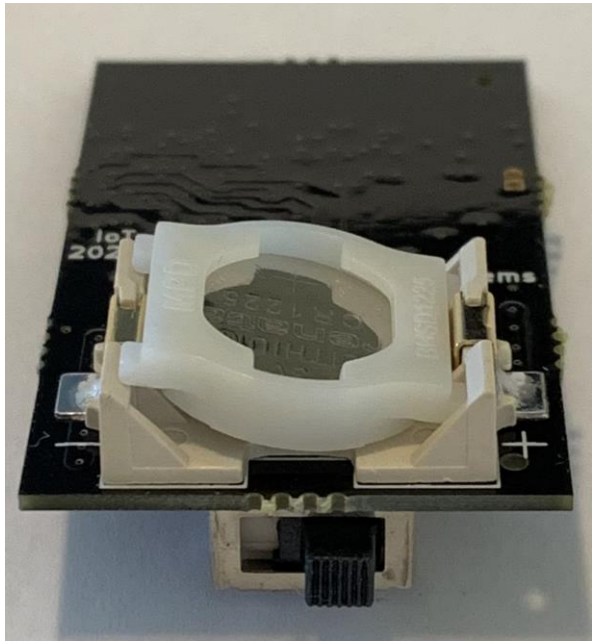
Method C2

The energy stored in the mote's capacitors has been discharged and it will allow the mote to start successfully.

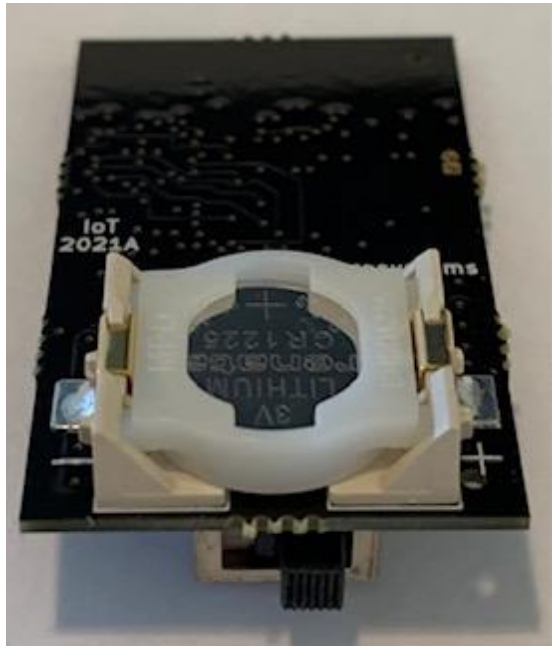
Insert a fresh Renata CR1225 battery

Ensure the mote switch is in the off position (to the left, when the electronics are facing up)
Flip the mote over, revealing the battery holder, ***open***.
Orient the battery in the white plastic clip such that the larger side (the + terminal) will be facing up after insertion.
Place the battery as shown in the middle figure labelled ***rest***.
As you press down on the left side of the battery, push it to the right, and the battery should snap in, ***secured***.

open



rest



secured

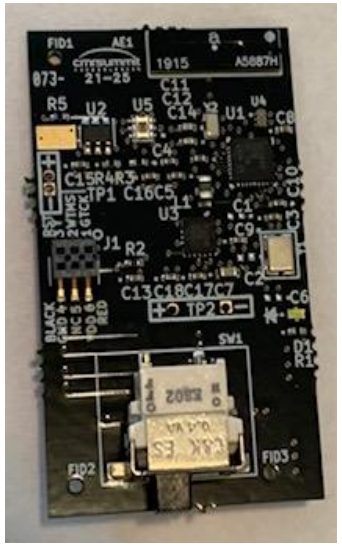
When you are ready to use the mote with the Android app, with the mote's electronics facing up, slide the switch to the right to turn it on.

It will take (~1-2 minutes) for the mote's first data to display in the Android app, with the temperature data being sent first and the light intensity data being sent next.

If the mote is turned off or the battery changed, you will need to reset the mote again by discharging the capacitors.

A tapping of the mote wake's the unit up to send data to the phone. Do this periodically on startup and whenever You want to update the phone's display.

off



on