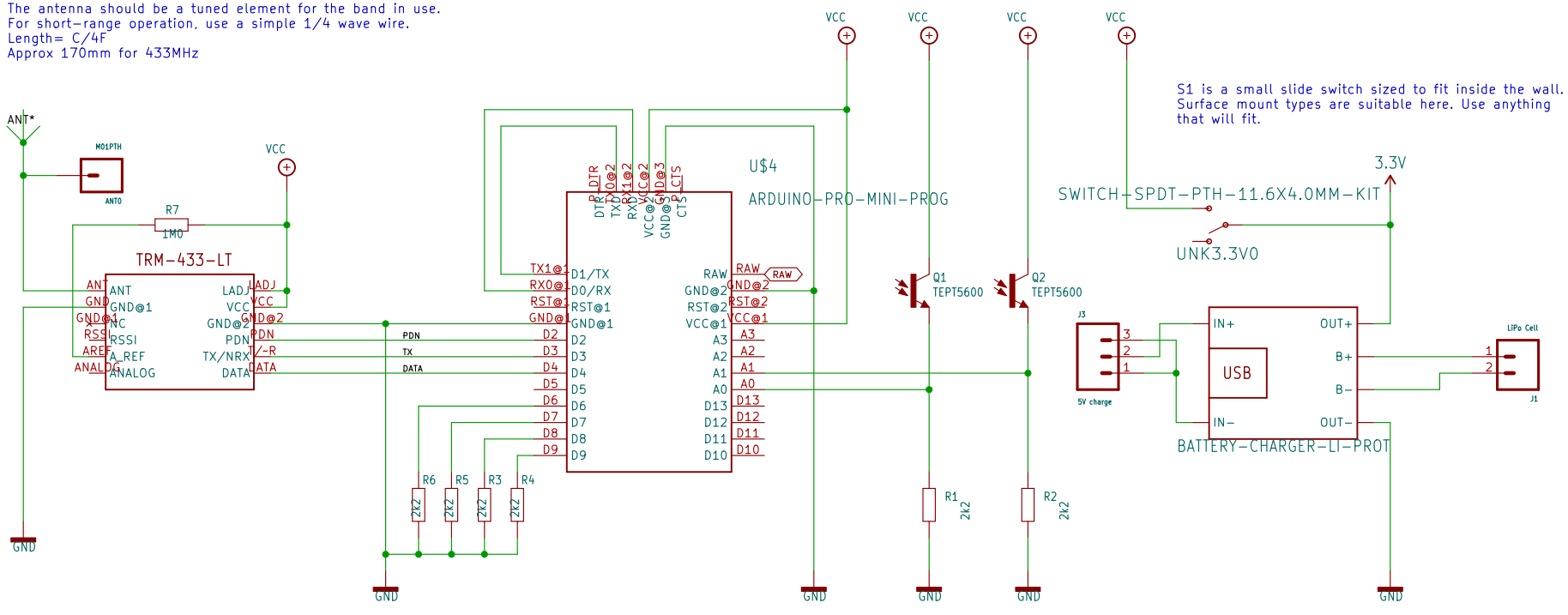
Micromouse Timer Gate Detector V2

https://github.com/micromouseonline/micromouse-timer

The antenna should be a tuned element for the band in use.
For short-range operation, use a simple 1/4 wave wire.
Length= C/4F
Approx 170mm for 433MHz



Resistors connected to D6, D7, D8 and D9 provide an ID for the gate detector allowing up to 16 gates to be in use simultaneously.
Pins are pulled high in software do give default ID of 15. Pull down pins to get appropriate binary value. If it fits, a 4-pole DIP switch would be a tidier option

The start gate uses two sensors. one across the posts and one about 2/3 of the way back into the cell.
Goal gates use only one sensor placed across the posts.
The post sensor is Q1/R1
If the other sensor is not used, omit only the phototransistor and pull pin A1 to ground.
TEPT5600 is an ambient light sensor with a peak response at about 570nm - yellow/green. It is relatively insensitive to IR.

Battery management is provided by an ebay module holding a TP4056 charger along with a discharge protection circuit.

The battery can be any LiPo or LiIon single cell type that will fit.
The Nokia BL-4S has a capacity of 860mA and is a perfect size to fit inside a classic wall.
Circut power consumption is a few tens of mA at idle.

>DRAWING_NAME
>LAST_DATE_TIME
Sheet: >SHEET