Data format: timestamp (ms), x\_msb, x\_lsb, y\_msb, y\_lsb, z\_msb, z\_lsb

XYZ acceleration data stored as 2’s complement integers

Data is currently configured to be in +/- 4g range

Interpreting data:

xAccl = (x\_msb \* 256 + x\_lsb) / 16

if xAccl > 2047 :

xAccl -= 4096

xAccl = xAccl / 512

yAccl = (y\_msb \* 256 + y\_lsb) / 16

if yAccl > 2047 :

yAccl -= 4096

yAccl = yAccl / 512

zAccl = (z\_msb \* 256 + z\_lsb) / 16

if zAccl > 2047 :

zAccl -= 4096

zAccl = zAccl / 512

* x\_msb makes up upper 8 bits of the acceleration value, upper 4 bits of x\_lsb make up lower 4 bits of acceleration value
  + same for y and z axes
* since accelerometer is configured to measure in range +/-4g, there are 512 counts per g
* if values are greater than 2048, this means that the number is negative since the values are represented as 2’s complement; therefore, in Python, we have to subtract 4096
  + need to make sure that QT code handles the 2’s complement numbers correctly