

4.Screen shot with comments:

4.1 Python codes:

```
1. from signal import signal
2. import serial
3. import io
4. import pyqtgraph as pg
5. import array
6. import numpy as np
7.
8. Data = serial.Serial()
9. Data.baudrate = 38400
10. Data.port = 'COM3'
11. Data.timeout = 0.01
12. Data.open()
13. # sio = io.TextIOWrapper(io.BufferedRWPair(Data,Data,1),encoding='a
    scii',newline='\r')
14.
15. # app=pg.mkQApp()
16. # win = pg.GraphicsWindow()
17. # win.setWindowTitle('demo')
18. # win.resize(1600,900)
19. # xLength = 300
20. # fig1 = win.addPlot()
21. # fig1.showGrid(x=True, y=True)
22. # fig1.setRange(xLength=[0,xLength],padding=0)
23. # fig1.setLabel(axis = 'left',text='g')
24. # fig1.setLabel(axis = 'bottom',text='x / point')
25. # fig1.setTitle('acceleration')
26.
27. # curve1 = fig1.plot()
28. # curve2 = fig1.plot()
29. # curve3 = fig1.plot()
30.
31. # data = [np.zeros(xLength).__array__('d'),
32. #         np.zeros(xLength).__array__('d'),
33. #         np.zeros(xLength).__array__('d')]
34.
35.
36. # def canFloat():
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37. #     try:
38. #         float(data)
39. #         return True
40. #     except:
41. #         return False
42.
43. # def dataProcess(data):
44. #     data = str(data)
45. #     dataSet = []
46. #     datapoint = ''
47. #     for i in data:
48. #         if i.isdigit() or i == '.':
49. #             datapoint +=1
50. #         elif i == "," and canFloat(datapoint):
51. #             dataSet.append(float(datapoint))
52. #             data = ''
53. #     return dataSet
54.
55. # def plotData():
56. #     global signal
57. #     single = Data.readline()
58. #     singal = dataProcess(singal)
59. #     if(len(singal)==3):
60. #         for i in range(len(data)):
61. #             if len(data[i]) < xLength:
62. #                 data[i].append(singal[i])
63. #             else:
64. #                 data[i][: -1] = data[i][1:]
65. #                 data[i][-1] = singal[i]
66. #                 curve1.setData(data[0],pen=pg.mkPen('g',width=3))
67. #                 curve2.setData(data[1],pen=pg.mkPen('r',width=3))
68. #                 curve3.setData(data[2],pen=pg.mkPen('b',width=3))
69.
70. while True:
71.     print(Data)
72.     # signal = Data.readline()
73.     # print(signal)
74.
75.
76. timer = pg.QtCore.QTimer()
77. timer.timeout.connect(plotData)
78. timer.start(1)
79. app.exec()

```