

```
1 import time
2 import board
3 import digitalio
4 import pulseio
5
6 # Frequency scaling pins
7 s0 = digitalio.DigitalInOut(board.A1)
8 s1 = digitalio.DigitalInOut(board.A2)
9 s0.direction = digitalio.Direction.OUTPUT
10 s1.direction = digitalio.Direction.OUTPUT
11
12 # Color filter select pins
13 s2 = digitalio.DigitalInOut(board.A3)
14 s3 = digitalio.DigitalInOut(board.A4)
15 s2.direction = digitalio.Direction.OUTPUT
16 s3.direction = digitalio.Direction.OUTPUT
17
18 # Sensor output pin
19 sensor_out = pulseio.PulseIn(board.A6, maxlen=50, idle_state=False)
20
21 # Set frequency scaling to 20%
22 s0.value = True
23 s1.value = False
```

```

25 def read_color(s2_state, s3_state):
26     s2.value = s2_state
27     s3.value = s3_state
28     time.sleep(0.1)
29
30     sensor_out.clear()
31     sensor_out.resume()
32     time.sleep(0.05)
33     sensor_out.pause()
34
35     n = len(sensor_out)
36     if n == 0:
37         return 0
38
39     total = 0
40     for i in range(n):
41         total += sensor_out[i]
42
43     avg_pulse = total / n
44     freq = 1_000_000 / avg_pulse
45     return int(freq)
46
47 while True:
48     red = read_color(False, False)
49     blue = read_color(False, True)
50     green = read_color(True, True)
51     clear = read_color(True, False)
52
53     print("R:", red, " G:", green, " B:", blue, " C:", clear)
54     time.sleep(0.5)
55

```