

COMP9336 Mobile Data Networking - Lab 5

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I used the sample data in this lab, because after many attempts and studies, I found that my network card does not support capturing any packet with MCS index and data rate. **Figure 1** below show my effort on collecting data for this lab.

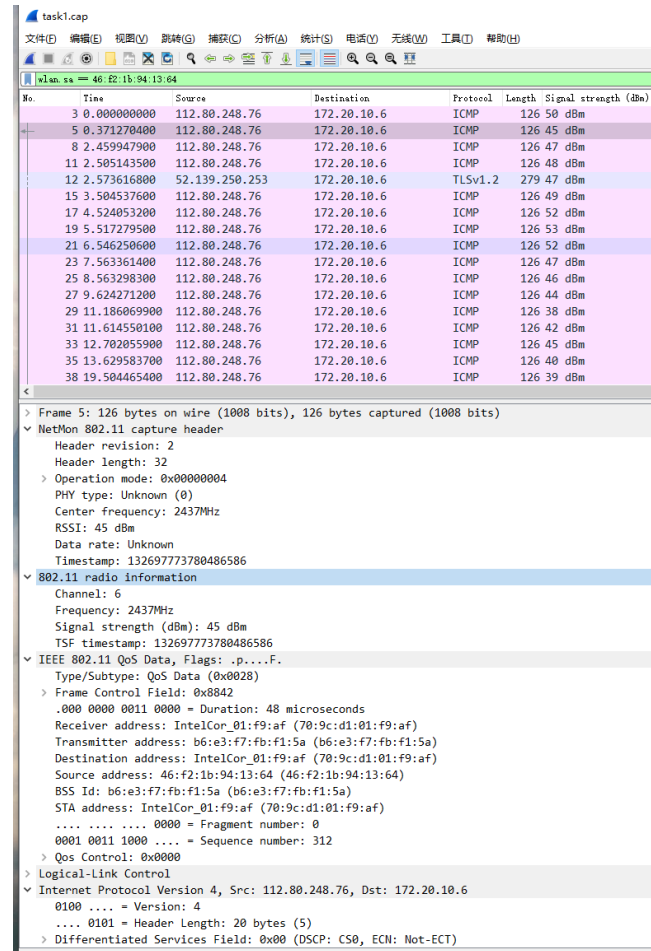


Figure 1. My capture

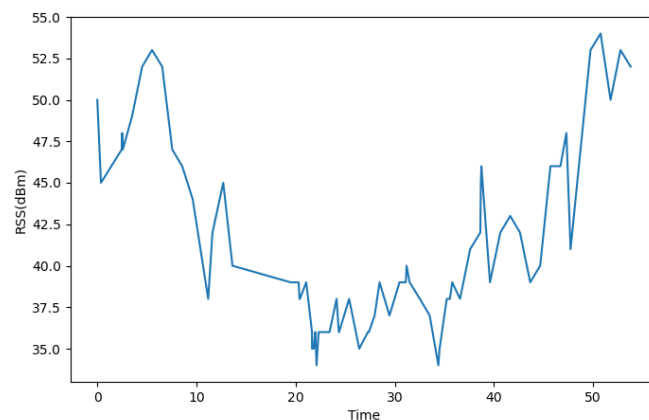


Figure 2. Graph of Signal Strength over time (in 1 min)

Task 1

1. Graph

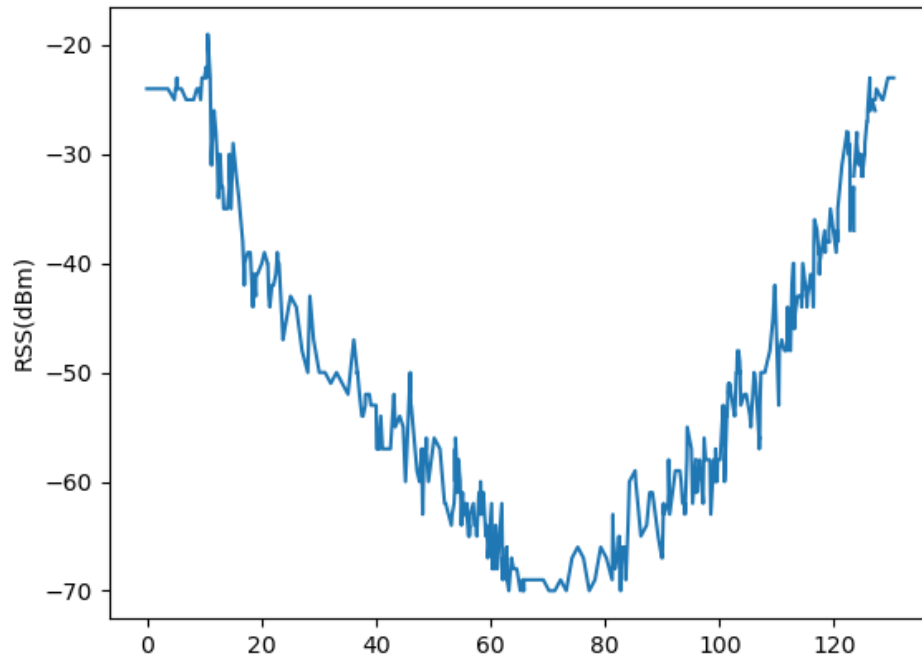


Figure 3. Graph of Signal Strength over time

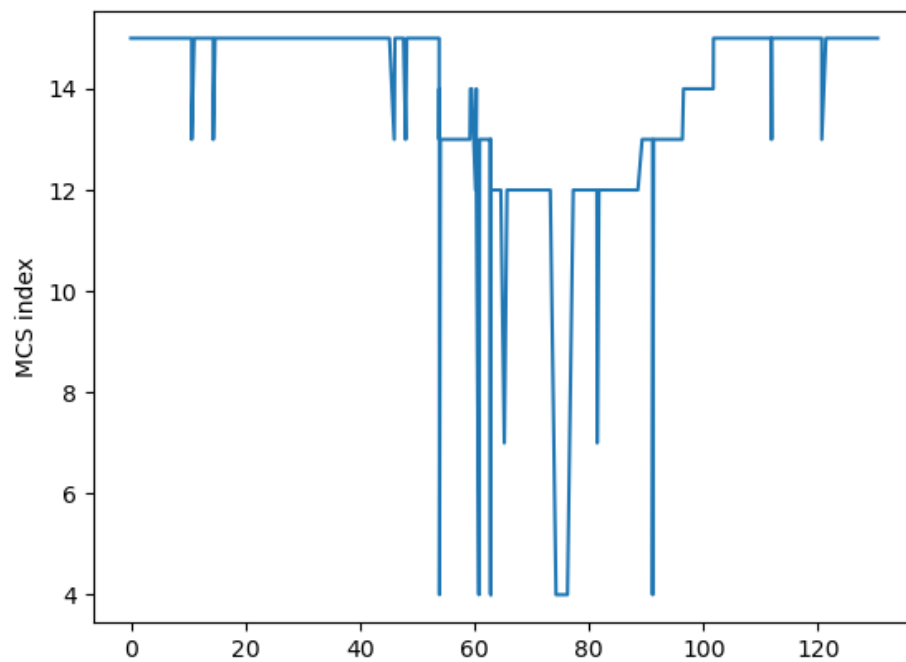


Figure 4. Graph of MCS index over time

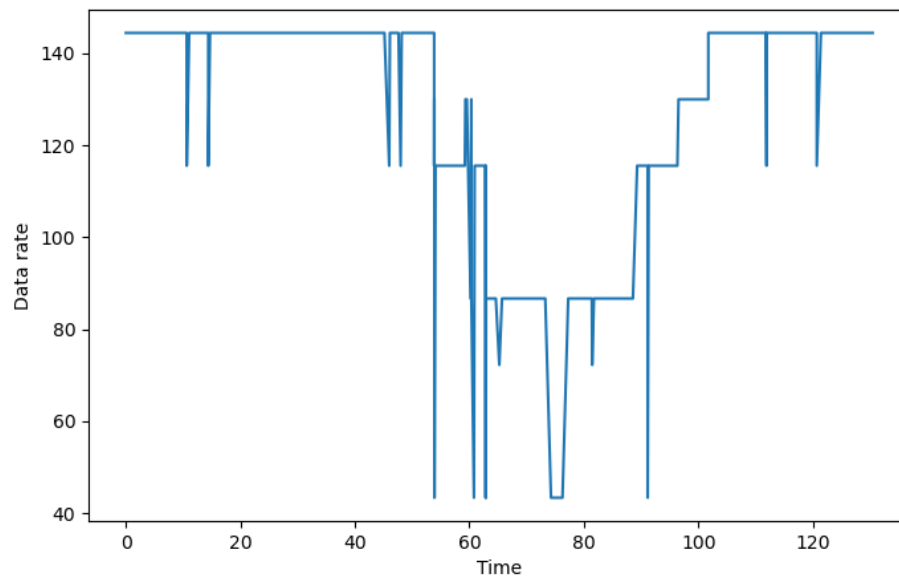


Figure 5. Graph of Data rate over time

2. Analysis

By observing the above three images, we can find that the three attributes (MCS index, Data rate and RSS) decreased with the increase of distance between the computer and hotspot and increased with the decrease of distance.

Task 2

1. Graph

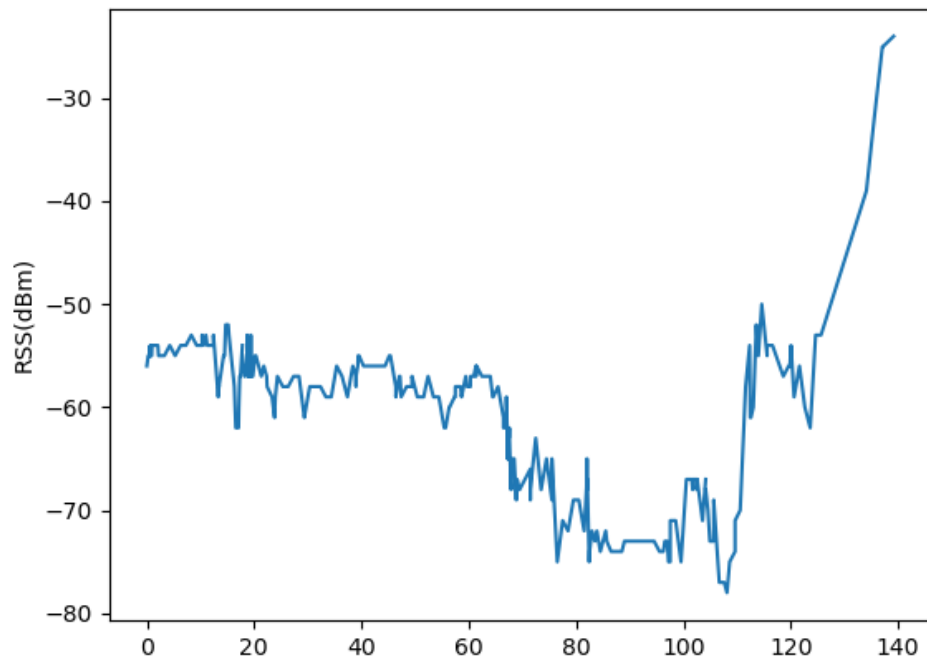


Figure 6. Graph of Signal Strength over time

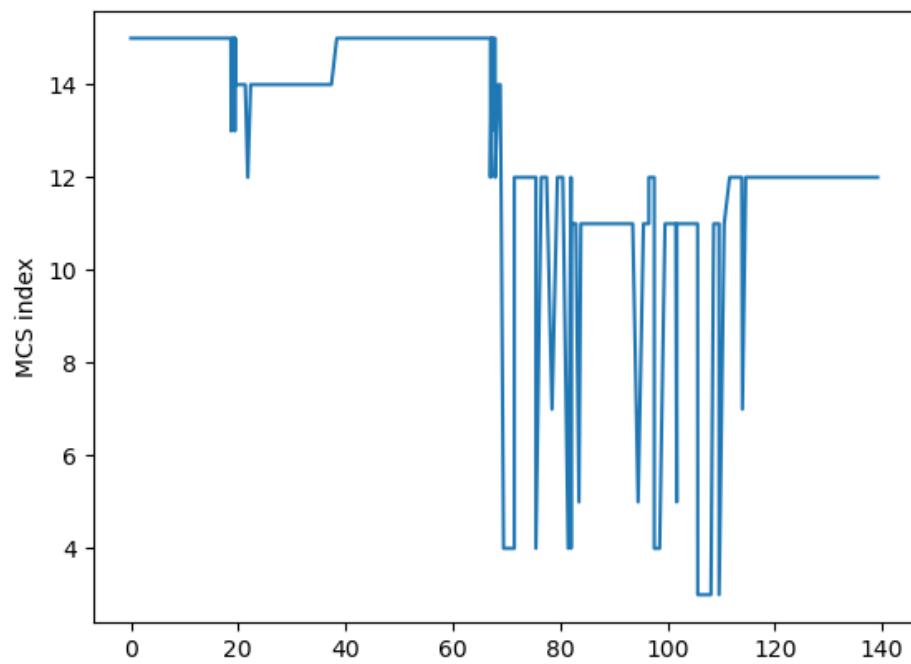


Figure 7. Graph of MCS index over time

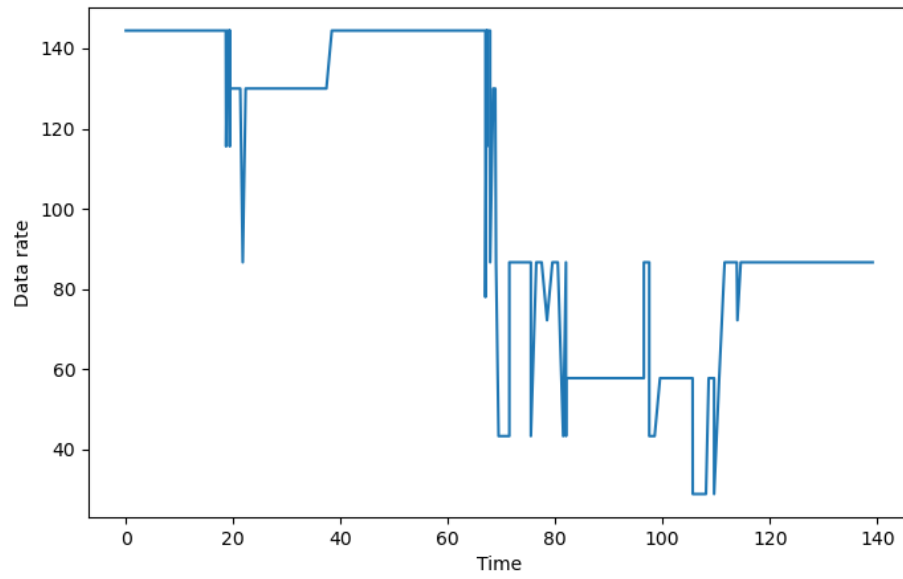


Figure 8. Graph of Data rate over time

2. Analysis

In the process of the sofa moving slowly to the middle of the laptop and hotspot, MCS index, Data rate and RSS are falling, and when the sofa is removed, the three gradually rises again. This is because reflector (sofa) affects the signal.

Task 3

1. Graph

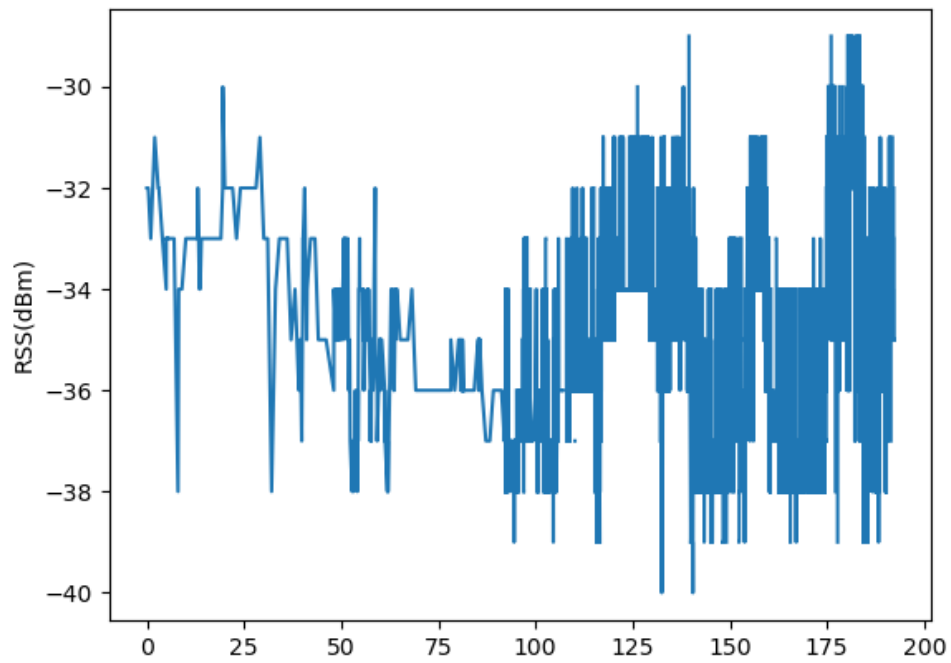


Figure 9. Graph of Signal Strength over time

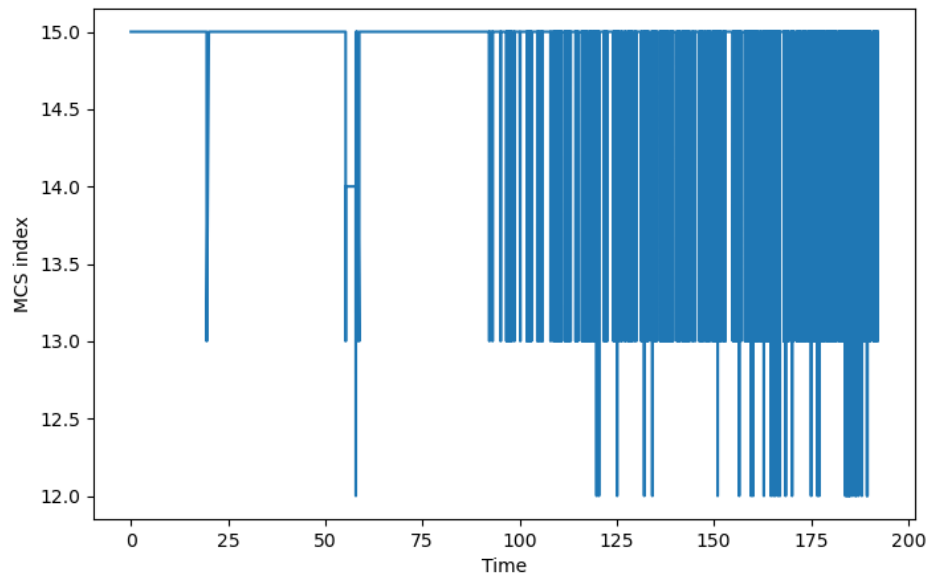


Figure 10. Graph of MCS index over time

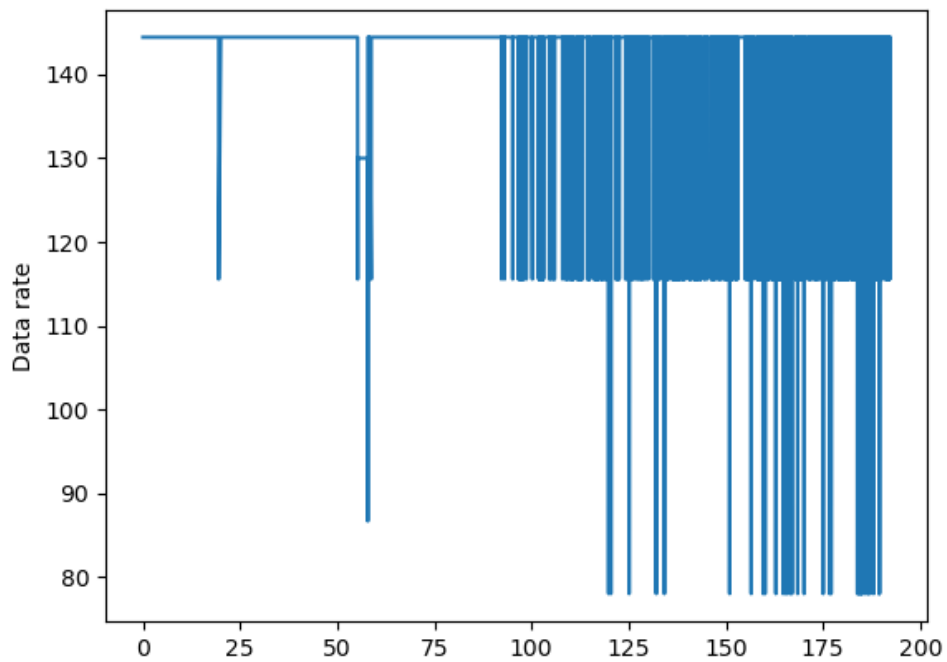


Figure 11. Graph of Data rate over time

2. Analysis

Microwave affected MCS index, Data rate and RSS periodically. The graphs of the three shows a state of ups and downs. Since all the deices in this experiment uses 2.4GHz, when capturing signals, microwave will cause interference and confusion of sniffer device, resulting in the change of data rate.