Wi-Fi Fan

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1. Introduction

Wi-Fi is one of the most important thing in life these days. we use Wi-Fi to keep in touch with our friends and families, surfing the internet, streaming videos, and many more. However since Wi-Fi is an EM wave, it's energy can decrease before reaching our device because it is absorbed by objects that is on the Wi-Fi's path to our device.

2. Research Method

This research was conducted by measuring the upload and download speed of a modem using speed tester. The results were averaged and cross correlated and analyzed. From it, the Wi-Fi strength with and without our device in different position could be known.

To measure the upload and download speed of the modem, we put the fan inside the science lab and we measure the incident and reflection angle. After we get the angle, we put the speed tester at the position we marked. From the result we obtain, the Wi-Fi's speed can be known. How the position of the device affects the Wi-Fi's strength can be known by conducting another experiment from different position without any barrier and comparing them.

An aluminum foiled fan is then created and used to affect the Wi-Fi's speed and strength. Using the fan, the Wi-Fi's travel path will change to avoid decreasing of energy. The most effective Wi-Fi can be controlled by calculating and changing the position of fan. The position of the device then can be adjusted in order to get the best signal from the Wi-Fi.

5. Results and Analysis

By examining the tables bellow, the difference between the two table can be seen. The fan affects the Wi-Fi's speed which in this case, makes it faster.

Bar	Without fan	Fan: On	Fan: Off
4	0 - 4 meters	0 - 5 meters	0 - 4 meters
3	4 - 14 meters	5 - 15 meters	4 - 13 meters
2	14 - 18 meters	15 - 21 meters	13 - 27 meters

	Condition	Facing Towards the	Download Speed (kb/s)	
With Fan	Off	Phone	146,7	227,5
	On	Phone	40,8	25,5
	Off	Modem	186	232,5
	On	Modem	8,2	48,2
Without Fan			16,4	

an's Condition	Position	Download Speed (kb/s)
Off	Middle	486,1
	Right	Unreachable
	Left	8,3
On	Middle	95,1
	Right	10,1
	Left	3,7

From the result acquired , the speed of each position variables can be known. After knowing the best position to put the fan and device, a better signal is obtained.

6. Conclusion

The speed decrease of the Wi-Fi is caused by energy decrease due to the absorption of energy during the wave's travel. By using aluminum foil coated fan, we can adjust the best position of the fan and device to obtain the best signal. A Wi-Fi tester program is used to adjust the best position.

References

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