Wireless Networks Lab

This lab aims to enrich the students in simulating, constructing, and troubleshooting wireless networks. The students expected to build basic knowledge on:

- Construct basic RF transceiver circuited using RF24L01module and Arduino board.

- Troubleshoot WIFI wireless network using the Fluke WIFI Air testers.

- Building the ability to make surveys and plans of Wi-Fi sites and produce heat maps.

- Real time detection and identification of the physical layer signals and interference within the Wi-Fi spectrum

- How to use the Arduino board to connect and communicate through Wi-Fi networks.

- Using Raspberry Pi4 to sniff and parse packets using scapy in python

Topics covered in the lab		
Topic	**Weeks**	**Contact hours**
Introduction to WIFI Networks.	**1**	2
WIFI Networks Survey and Plan	**1**	2
Spectrum analysis	1	2
Introduction to Arduino	**1**	2
Wireless communication using Arduino boards.	2	4
Packet sniffing to Raspberry Pi	1	2

Figure (1): Cisco Wireless AccessPoints\Wireless routers\ALFA Adapter
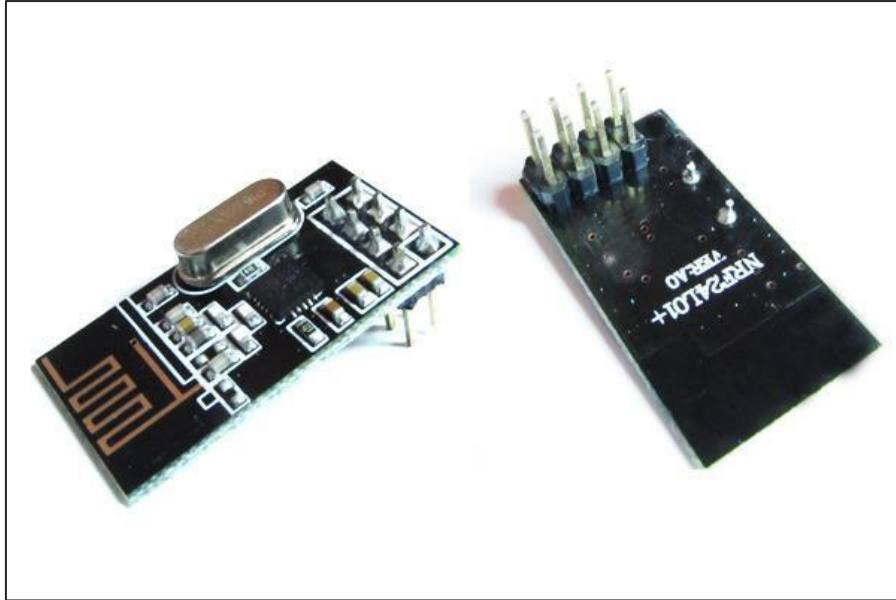

Figure (2): WIFI Air Tester\Cisco AccessPoint.

Figure (3): RFn24L01 Module

Figure (4): Arduino Board