



Document Rev: 0.1



Wifi & BT Packet analyzer

Abstract

Wifi and BT (Bluetooth) devices are everywhere: Laptops, Tablets, Watches, Security cameras, Smart-House devices, Vehicles, Public and non-Public hotspots ...

In this project the students will use IOT device and open source software tools to implement a MAC sniffer (Packet Analyzer). One project will implement a sniffer on a RaspberryPi 4 and another project will implement a sniffer on an ESP32 module.

The performance of the SBC sniffer will be compared to a desktop sniffer that will also be implemented.



Figure 1: Raspberry Pi 4



Figure 2: esp32

Objective

The purpose of this project is to implement a sniffer on a single board computer (SBC) and compare its performance to a strong desktop sniffer.

Project Overview

1. Implement a Wifi and a BT sniffer on RaspberryPi (or ESP32)
2. Implement a Wifi and a BT sniffer on a desktop (I7 8th Gen or later with 16GB RAM)
3. Define KPI and perform measurements of those KPIs in both systems (SBC vs desktop).
4. Performance differences between SBC and desktop.

Notes

- The above list is an estimate. Goals and tasks might be modified during the first few weeks of the projects before the finalization of High Level Design Document.

General requirements for all LCCN Projects are specified at the lab website:

<https://lccn.cs.technion.ac.il/lab-courses/>



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Prerequisites

1. Introduction to Computer Networks (#236334).
2. Internet Protocols (#236341) – Nice to have.

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