# ABSTRACT

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Internet protocol (IP) based device has become a lifestyle to most people these day, thus almost all hardware has ability to interact with IP network. Moreover, the IP based microcontroller embedded system has become unsurprisingly popular because the easy implementation and the low price.

In a embedded design contest host by Wiznet, an internet IC producer company, there is an entry called Flexible Audio Transmission over Ethernet. The system offered to replace audio analog cable with ethernet with digital data, before converting back to analog signal. In the paper recommendation, the author proposed an idea to make IP based microphone, which is the reverse of his project. This IP microphone device will capture the sound nearby and send it to computer host via IP network.

This thesis analyze the audio codec performance, noise performance, and Qos performance such as delay and jitter of IP microphone device made with LPC1768, an ARM cortex M3 based microcontroller.

Keywords : Internet protocol, IP, network, audio, mikrofon, RTP, RTCP, mbed, NXP LPC1789, ARM Cortex M3