

## ABSTRACT

Telephone exchange is known as an expensive telecommunication core, so that it should be carefully maintain to keep its optimum work. Because of that reason, the temperature of the telephone exchange should be regularly checked. There are so many telephone exchanges in an exchange room, so that it is going to be easier if it is use a computing technology; also keep the human resources efficient.

This problem can be supported with existence of embedded system technology being based on TCP/IP. Popular of TCP/IP protocol capable to make the communications process and transfer of information become very easy. Integration between embedded system with the TCP/IP network have some advantage, like practical and high connectivity's. This integration is referred as Embedded Ethernet. Various of development for supporting embedded Ethernet have been conducted from software, like TCP/IP stack code development , and from hardware development used for monitor temperature.

The purpose of this final work is to design and implementation of monitoring for telephone exchange. This final project covers hardware and software implementation. The result obtained from this final work is a functional monitoring temperature system for telephone exchange which is able to connect with computer network, able to communicated with standard protocol (Ethernet, ICMP, TCP, IP, and HTTP), controlling two digital ports, and able to be accessed using standard web browser (Mozilla Firefox or Internet Explorer).

**Keywords** : *Embedded Ethernet, TCP/IP, mikrokontroler AVR Atmega8535, Monitoring*