

## ABSTRACT

Telemonitoring systems require a medium to send data from data source to data processing center. The medium have to fulfill three criteria that are well guaranteed data accuracy, long distance range, and economic value. One of media that fulfill the criteria is amateur radio. In order to serve the purpose of medium in telemonitoring system, amateur radio need an interface terminal called TNC (Terminal Node Controller). TNC has a function to accommodate a form of information sent to the medium, arrange communications between amateur radios, and also guarantee mainstay of data transmission using AX.25 protocol.

This research conducted design and implementation of telemonitoring system using amateur radio as data transmission medium, and AX.25 protocol to maintain the communication. The design covers some component supporting in telemonitoring system. Monitoring application used to monitoring the temperature.

The system that build have made a connection development, conducting retransmission of frame at digipeater station, delivering of measurement data from data source to data processing center, and also disconnect the link. Total delay during transmission process is 3,64 ms, and acknowledge timer is 7,023 second using one digipeater station.