

ABSTRACT

At the time of a major disaster occurs, its often caused an impact and damage on the public communication infrastructure that hinder or block the performance and coordination in disaster management such as evacuation and aid delivery in the response. In principle, this disaster response communication system using radio transceiver for the media with microcontroller as controllers, processors, and interface by means TNC (Terminal Node Controller).

As for each node station (posts) can act as a sender or data source (data source) and receiver of information and data processing (data processing). To improve the efficiency and effectiveness of delivery that broadcast from HT (handy talky) as the transceiver will require the addition of the addressing or header in any format data to be transmitted. In terms of ease of synchronization and media access transmission over radio AX.25 protocol used to work at layer 2 (Data Link Layer) and will be implemented to the microcontroller AVR ATmega 162 and audio modem FSK TCM 3105.

From the results of designing, testing and analysis found that the AX.25 protocol can be implemented on the ATmega162 which have been able to connect with user interface program and has been able to display or store data in a MySQL database and Microsoft Access. FSK modem using CCITT V.23 standard with a bit rate of 1200 bps and produce delays in the process of modulation and demodulation of 3.31 ms, while the second device there is a discrepancy in frequency standards on the modem that resulting in differences for the reading of bit 1 and bit 0 representation. The things to note for the TNC to communicate between devices through this system, is necessary of conformity for mark and space frequencies generated by the FSK modem.

Key words: *Microcontroller, ATmega 162, TNC, Modem Audio, FSK, Data Communication, AX.25, Radio Transceiver, Disaster Mitigation*