

ABSTRACT

GPS (Global Positioning System) is a system built to determine the position of an object on the earth's surface based on the spatial coordinates. One of GPS applications is to monitor the position of an object. For example, vehicle monitoring, GPS can locate the vehicle and its route by displaying the spatial data in a digital map. And the transmission process of spatial data can use any media like GPRS, SMS, APRS, radio packet, and other media.

At this final project designed a system capable of monitoring objects by utilizing a combination of several technologies including Global Positioning System (GPS) and Automatic Position Reporting System (APRS). Position data is periodically transmitted to the observer through the medium of radio by using the AX.25 protocol. On the transmitter, will be used an APRS tracker that integrates with the PIC 16f628a microcontroller which has the function to modulate AFSK signal at a frequency of 1200 Hz and 2200 Hz. These AFSK signals are then sent and received by a Handy Talkie (HT). To demodulate the AFSK signal, it is done by computer using a Soundcard Interface, Software AGWPE and to display the data into digital maps used UI-VIEW

The observation indicates that the data received from the GPS receiver has an accuracy of 99% when displayed on a digital map. From the object's observation, during the data transmission, 2 seconds delay occurred for direct reception and 3 seconds delay for admission through the digipeater.

Keyword : GPS, APRS, APRS Tracker, AFSK