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## ABSTRACT

Direct sequence spread spectrum communication system is a method to overcome radio canal congestion and increasing the data transmission security. Performance of this system is strongly affected by the receiver performance. Code acquisition and tracking system that can find the correct PN code cell in short time and high precision is required in the receiver.

Code acquisition and tracking in direct sequence spread spectrum is realized in this final project. Acquisition system is using the serial search with multiple dwell time. This method is chosen for short acquisition duration. Code tracking system is using tau dither loop. This method is chosen for system simplicity. Realization of both systems is done at IF because of component availability.

Acquisition system implementation is using 16 dwell with three threshold. Tracking system implementation is using 3 kHz dither frequency. Flush system is added for rapid acquisition system. The process gain of this system is measured 20 dB. This system discriminate between correct PN code modulated signal and sinusoidal interference at low SNR and distorted input signal. Multiple dwell acquisition method can reduce acquisition duration compared to single dwell method. This system couldnt maintain the correct cell after acquisition due to noisy voltage threshold system and comparator instability. Measurement of tracking system partially indicated that this sub system could support the tracking process.

Keyword : DS-SS, multiple dwell, tau dither loop