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THE STUDY OF A NEW SCHEME FOR GNSS BOC SIGNAL ACQUISITION

Abstract

The signal acquisition is one of the key techniques of the baseband signal processing to the GNSS signals. The BOC (Binary Offset Carrier) modulation will be used widely in the future. This article put forward a new scheme for BOC signal acquisition through an in-depth study of BOC signal subcarrier. We do the main ideas in three steps. First, transform the received BOC signal into the frequency domain and get the band of the both sides. Second, move the left and right side band to the center frequency point. Third, give phase compensation and make a superposition. Finally, process the combined signals in accordance with the BPSK signal acquisition. With the analysis compared to the traditional BPSK signal in frequency domain, we can obviously find the advantages of the new method. Theoretical analysis and simulation experiments show that, it improves the acquisition performance and easy to implementation using DSP compared to the traditional sideband method, and also gives a reference for the miniaturization design of the future navigation receiver.