

ABSTRACT

A spread spectrum communications system for use over a communications channel, including a transmitter-generic-chip-code generator, a transmitter-message-chip-code generator, an EXCLUSIVE-OR gate, a combiner, a transmitter, a receiver-generic-chip-code generator, a receiver-generic mixer, a generic-bandpass filter, a receiver-message-chip-code generator, a receiver-message mixer, a message-bandpass filter, and a synchronous detector. The transmitter-generic-chip-code generator generates a generic-chip-code signal and the transmitter-message-chip-code generator generates a message-chip-code signal. The EXCLUSIVE-OR gate spread-spectrum processes message data with the message-chip-code signal to generate a spread-spectrum signal. The combiner combines the generic-chip-code signal with the spread-spectrum signal. The transmitter transmits the combined generic-chip-code signal and spread-spectrum signal, on a carrier signal over the communications channel as a spread-spectrum-communications signal. The receiver-generic-chip-code generator generates a replica of the generic-chip-code signal. The generic mixer recovers the carrier signal from the spread-spectrum-communications signal. The receiver-message-chip-code generator generates a replica of the message-chip-code signal. The receiver-message mixer despreads the spread-spectrum-communications signal as a modulated-data signal. The tracking and acquisition circuit uses the recovered carrier signal for synchronizing the replicas of the generic-chip-code signal to the recovered carrier signal. The synchronous detector synchronously demodulates the modulated-data signal as received data.