

**RANGING SYSTEM AND METHOD****ABSTRACT**

A system for estimating range to an object comprising a system for estimating range to an object comprising a transmitter to transmit at least one UWB signal, a receiver to receive at least one UWB signal, a sampler to sample the received UWB signal depending on a plurality of clock and/or sample pulses having a first frequency, and a circuit and/or processor configured to generate a fractional signal having a second frequency that is lower than the first frequency and a phase that is dependant on the delay between when the UWB signal is actually received and when the received UWB signal is first sampled, and determine the range based on at least a first number of clock or sample pulses between transmitting and receiving the UWB signal and the phase of the fractional signal. Also a method of estimating range to an object.

Figure 2