

ABSTRACT

Ultra-Wideband (UWB) wireless technology transmits digital data as modulated coded impulses over a very wide frequency spectrum with very low power over a short distance. Accordingly, the inventors have established UWB devices which accommodate and adapt to inaccuracies, errors, or issues within the implemented electronics, hardware, firmware, and software. Beneficially, UWB receivers may accommodate offsets in absolute frequency between their frequency source and the transmitter, accommodate drift arising from phase locked loop and/or from relative clock frequency offsets of the remote transmitter and local receiver. UWB devices may also employ modulation coding schemes offering increased efficiency with respect to power, data bits per pulse transmitted, and enabled operation at higher output power whilst complying with regulatory emission requirements. Further, UWB devices may support a ranging function with range / accuracy not limited to the low frequency master clock employed within these devices enabling operation with ultra-low power consumption.

(Figure 7A)