



ABSTRACT

A digital time interpolation system and method for quantizing the time-difference between two digital signals. The present invention measures the time-difference between consecutive zero crossings of a user
5 signal and a reference oscillator (316). The present invention outputs interpolator data, which represents this time-difference in digital form. The present invention includes a quadrature hybrid (305), a synchronizer (304), track-and-holds (T&Hs) (306), analog-to-digital converters (ADC) (308), an encoding circuit (312), and a boundary detector (310). The
10 present invention also includes a system for deskewing the recorded coarse time count and the fine time value. According to the present invention, the reference oscillator (316) is a continuous, two-phase signal having a unique pair of output values at any given instant of its period. By using this reference oscillator (316), the present invention accelerates
15 conversion. The present invention uses a novel boundary detection scheme. By using this boundary detection scheme, the present invention avoids the timing errors which are traditionally introduced by measuring synchronizer outputs directly.

(Fig. 3)