

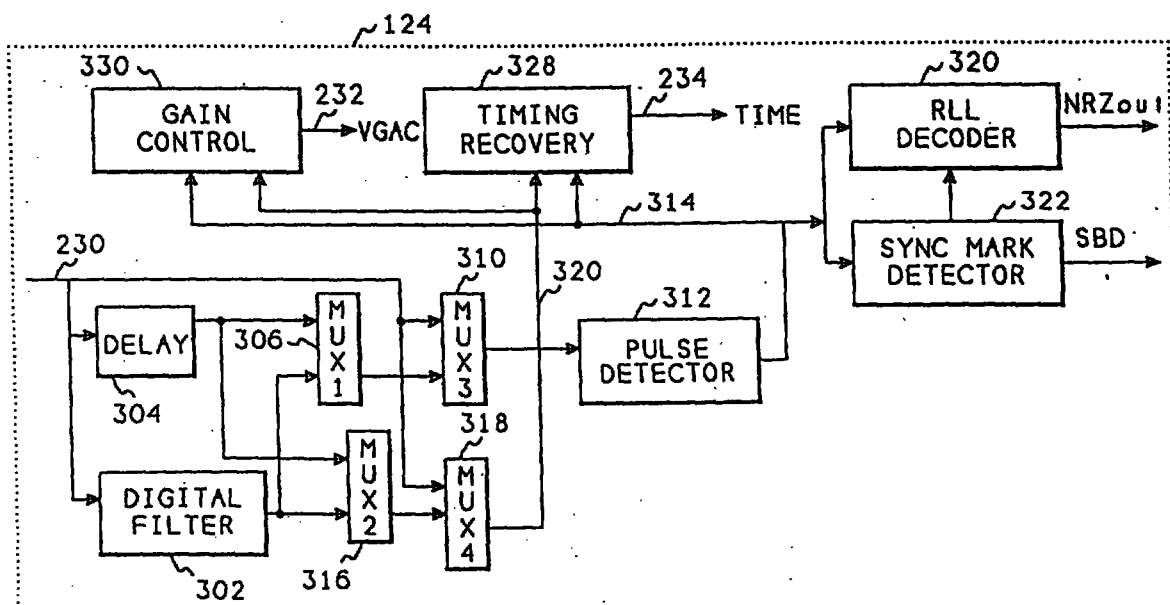
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(54) Title: TIMING RECOVERY CIRCUIT FOR SYNCHRONOUS WAVEFORM SAMPLING



(57) Abstract

A timing circuit having an analog to digital converter (206) to sample an analog signal, a controlled oscillator for controlling sample times of the analog to digital converter, a circuit (312) to detect pulses in the analog signal, a phase error circuit to subtract one of two samples from the other to create a phase error measurement and a frequency error measurement. The two samples are taken from either side of a pulse. The phase error measurement is used by the controlled oscillator to adjust the timing to take samples at desired locations on the pulse. The circuit also contains constant values used to compensate for the pulse being asymmetrical and to compensate for other pulses that occur close to the detected pulse. The circuit also inserts known frequency in place of the analog signal to establish a frequency of the controlled oscillator.