



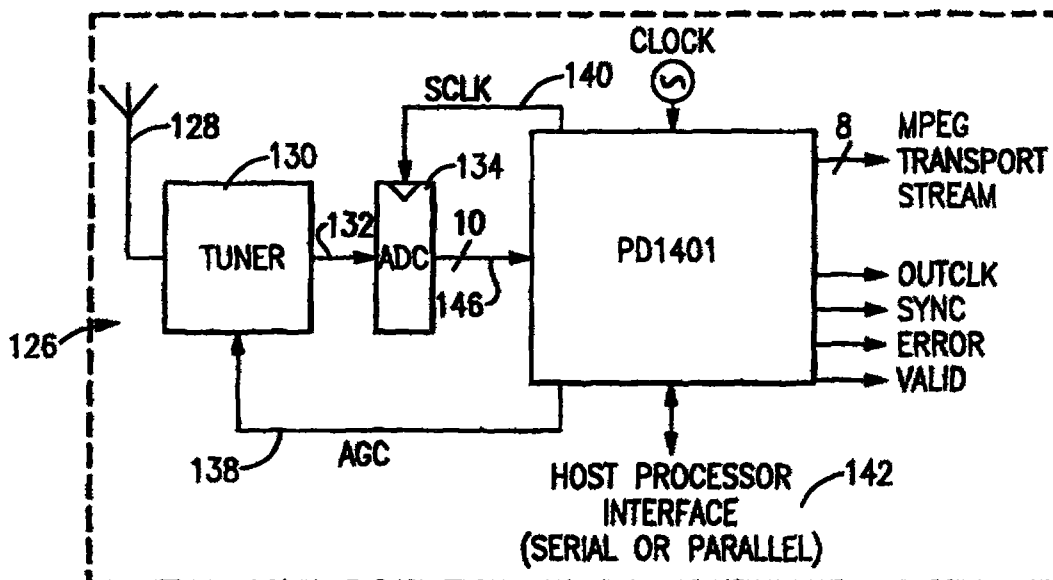
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(54) Title: SINGLE CHIP VLSI IMPLEMENTATION OF A DIGITAL RECEIVER EMPLOYING ORTHOGONAL FREQUENCY DIVISION MULTIPLEXING



(57) Abstract

The invention provides a single chip implementation of a digital receiver for multicarrier signals that are transmitted by orthogonal frequency division multiplexing. Improved channel estimation and correction circuitry are provided. The receiver has highly accurate sampling rate control and frequency control circuitry. BCH decoding of tps data carriers is achieved with minimal resources with an arrangement that includes a small Galois field multiplier. An improved FFT window synchronization circuit is coupled to the resampling circuit for locating the boundary of the guard interval transmitted with the active frame of the signal. A real-time pipelined FFT processor is operationally associated with the FFT window synchronization circuit and operates with reduced memory requirements.