

DECIMATION OF BASEBAND DTV SIGNALS PRIOR TO CHANNEL EQUALIZATION IN DIGITAL TELEVISION SIGNAL RECEIVERS

Abstract of the Disclosure

A radio receiver uses the same tuner for receiving a selected digital television (DTV) signal, irrespective of whether it is a quadrature-amplitude-modulation (QAM) or a vestigial sideband (VSB) signal. The final IF signal is digitized at a rate that is a multiple of both the symbol frequencies of the QAM and VSB signals, for
5 synchrodyning to baseband. The carrier frequencies of the QAM and VSB final IF signals are regulated to be submultiples of the multiple of both the symbol frequencies of the QAM and VSB signals by applying automatic frequency and phase control (AFPC) signals developed in the digital circuitry to a local oscillator of the tuner.
Baseband DTV signals obtained by synchrodyning the final IF signals have a sample
10 rate higher than symbol rate to facilitate symbol synchronization. The baseband DTV signals are decimated to symbol rate before performing channel equalization to reduce the number of multipliers required in the channel equalization filter.

This Sheet Has Been Replaced

