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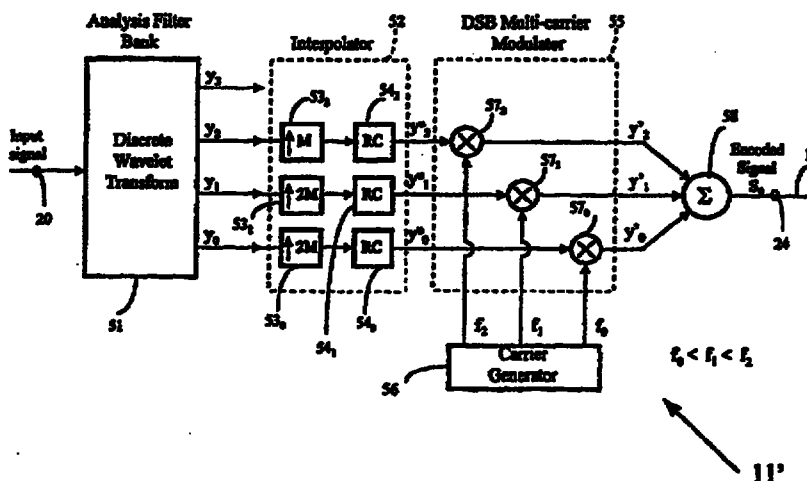
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(54) Title: FREQUENCY DIVISION MULTIPLEXED TRANSMISSION OF SUB-BAND SIGNALS



(57) Abstract

A method and apparatus for processing an input signal for transmission and/or storage, uses an analysis filter bank (21; 51) to decompose the signal into sub-band signals which are used to modulate a plurality of carriers. The carriers are combined into a single encoded signal for transmission/storage. The encoder/decoder is especially applicable to telecommunications systems and recording systems. The analysis filter bank may comprise a multiresolution filter, such as an octave band filter bank (40A/B/C/D...43A/B/C/D) implementing Discrete Wavelet Transform. The modulation may comprise double-sideband, single-sideband, quadrature amplitude modulation, and so on. Where the input signal is analog, the carriers may be modulated directly by the sub-band signals. Where the input signal is digital, however, the sub-band signals are interpolated, all to the same rate, and then used to modulate the carriers. The corresponding decoder (13) extracts the modulated carrier signals, demodulates them, decimates them (if applicable) and then synthesizes them to reconstruct the original input signal. One or more of the sub-bands, especially at the higher frequencies, may be discarded. Discrete wavelet transformation is applied to segments of the digital signal.