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- [54] **METHOD AND APPARATUS FOR TIME VARYING SPECTRUM ANALYSIS**
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- [52] U.S. Cl. **364/485; 364/725**
- [58] Field of Search **364/484, 485, 826, 725; 342/192, 194, 195; 73/602**

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[57] **ABSTRACT**

A signal analyzer generates a time varying spectrum for input signals characterized by frequency components which change in time. The signal analyzer includes a converter generating a sequence of digital signals representative of an input signal. The sequence of digital signals is supplied to a digital signal processor which computes orthogonal-like discrete Gabor transform coefficients $C_{m,n}$ in response to the sequence, and a time varying spectrum of the input signal energy in response to the coefficients. Finally, a data processor processes the spectrum for further analysis or display. One particular analysis step for which the time varying spectrum is useful is in partitioning the input signal into separate components. The orthogonal-like discrete Gabor transform coefficients are computed using a non-periodic, localized discrete window function h and a discrete auxiliary function γ , similar to h . The time varying spectrum is computed utilizing a cross-term deleted Wigner-Ville distribution.

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48 Claims, 9 Drawing Sheets

