CROSS PRODUCT ENHANCED SUBBAND BLOCK BASED HARMONIC TRANSPOSITION

Abstract

The invention provides an efficient implementation of cross-product enhanced high-frequency reconstruction (HFR), wherein a new component at frequency $Q\Omega + r\Omega_0$ is generated on the basis of existing components at Ω and $\Omega + \Omega_0$. The invention provides a block-based harmonic transposition, wherein a time block of complex subband samples is processed with a common phase modification. Superposition of several modified samples has the net effect of limiting undesirable intermodulation products, thereby enabling a coarser frequency resolution and/or lower degree of oversampling to be used. In one embodiment, the invention further includes a window function suitable for use with block-based cross-product enhanced HFR. A hardware embodiment of the invention may include an analysis filter bank (101), a subband processing unit (102) configurable by control data (104) and a synthesis filter bank (103).

Fig. 1