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(54) Title: UPSAMPLING FILTER AND HALF-PIXEL GENERATOR FOR AN HDTV DOWNCONVERSION SYSTEM

(57) Abstract

A video down conversion system compliant with the Advanced Television Systems Standard (ATSC) includes a decoder which decodes a Main Profile, High Level (MP@HL) image and employs a downconversion processor to produce a standard definition video signal. The system stores a subsampled image in order to reduce memory requirements and employs an upsampling filter to generate reference image data from the stored, subsampled image. The reference image data spatially correspond to the image data produced by the video decoder before it is subsampled. The upsampling filter uses different filter coefficients based on the subsampling phase of the stored image and the half-pixel indicator in the motion vector which is used to locate the downsampled reference image data in the stored subsampled image.

