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NTSC INTERFERENCE DETECTORS USING COMB FILTERS THAT SUPPRESS DTV PILOT CARRIER TO EXTRACT NTSC ARTIFACTS

ABSTRACT OF THE DISCLOSURE

A first comb filter differentially combines an I- or Q-channel baseband signal supplied as input signal to a co-channel NTSC interference detector for a DTV receiver with that signal as subjected to a first amount of differential delay. This generates a first comb filter response in which artifacts arising from synchronous detection of the co-channel interfering analog television signal are suppressed. The detector includes a second comb filter that combines the input signal with that signal as subjected to a second amount of differential delay to generate a second comb filter response in which artifacts of the co-channel interference are reinforced. The first and second comb filters both use the same type of linear combiner so the direct term of input signal is treated similarly in the first comb filter response and in the second comb filter response. First and second amplitude detectors detect the respective amplitudes of these comb filter responses. An amplitude comparator compares the first and second amplitude detection responses and indicates, when and only when the first and second amplitude detection responses differ more than a prescribed amount, that co-channel interference is of sufficient strength to be objectionable.

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