ABSTRACT

LOOK-AHEAD FOR CODED SIGNAL PROCESSING CHANNELS

A signal processing channel and method are described for processing digital sample values corresponding to an incoming analog signal representative of coded binary data. An eight-sample look-ahead algorithm is used to precompute the values of functional expressions for a baseline check and for a peak-position check. These precomputed values are compared against appropriate thresholds to provide respective binary decision outputs which, with state values corresponding to the current state, are used to determine state values for the next state, which become the current state values for the next iteration of the clock cycle. During each of a series of successive clock cycles, one successive bit of coded binary data corresponding to said current sample value is decoded, and at the next clock cycle, the computed next state becomes the new current state.

Sensitivity to missing or extra-bit errors is minimized and full advantage of a (1,7) run-length-limited code constraint is achieved. A phase check is not necessary.

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