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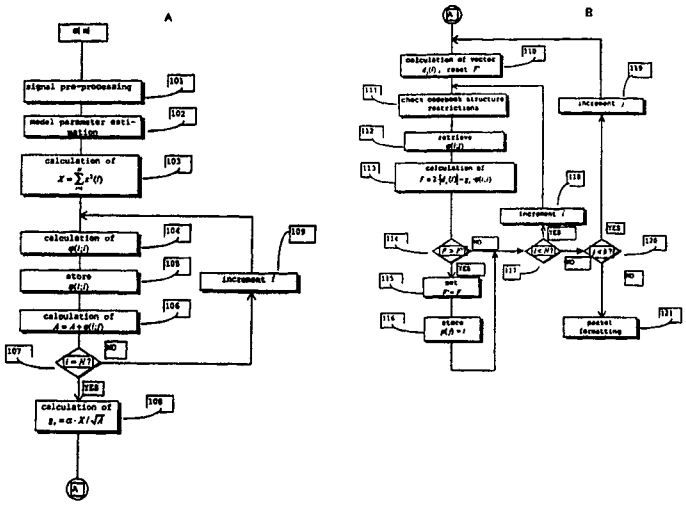

(57) Abstract

A method for a CELP algorithm including the steps of pre–processing (101) a sampled speech s{n} in a signal pre–processor so as to output at least a noise filtered speech output vector and a channel noise estimate, model parameter estimation (102) of the noise filtered speech output vector so as to output a prediction residual and a long term prediction gain, encoding (104 – 120) the prediction residual so as to output an adaptive codebook vector including an index of impulse response functions of a filter and a vector gain, formatting (121) the encoded speech packets, is proposed wherein the step of encoding (104 – 120) comprises in the following order the steps of determination (104 – 109) of the gain by choosing a start value close to a theoretical optimal value, and vector optimisation (110 – 120) by successive searching for an extremum of an estimate function based on a recursively corrected correlation vector. Further, a digital signal processor for processing electrical signals to determine a codebook vector and a gain of said codebook vector is provided that operates correspondingly to the method according to the invention.

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