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(54) Title: PARTIAL RESPONSE MAXIMUM LIKELIHOOD (PRML) BIT DETECTION APPARATUS (57) Abstract A partial response maximum likelihood (PRML) bit detection apparatus is disclosed for deriving a bit sequence from an input information signal. The apparatus comprises input means for receiving the input information signal, sampling means for sampling the input information signal at sampling instants so as to obtain samples of the input information signal at said sampling instants, conversion means for converting an array of said samples into an array of bits of a first or a second binary value, detection means for repeatedly detecting a state for subsequent sequences of n subsequent bits of said array of bits, said subsequent sequences being obtained by shifting a time window of n subsequent bits each time over one bit in time, means for establishing the best path through the states, and deriving means for deriving a sequence of bits in accordance with the best path through said states. In accordance with the invention, n is larger than 3, and sequences of n subsequent bits having $n-1$ directly successive bits of the same binary value are allocated to the same state. In a specific embodiment n is an odd number larger than 4. Now, sequences of n subsequent bits having $n-2$ directly successive bits of the same binary value as the central $n-2$ bits in such n-bit sequence, are allocated to the same state. This results in an a PRML detection apparatus with reduced complexity.		