

A Pipeline Structure for High-Speed Step-by-Step RS Decoding

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Abstract

Based on a modified step-by-step decoding procedure, a high-speed pipelined Reed-Solomon decoder is presented. The decoder requires only the delay time of three 2-input XOR gates for decoding each coded symbol. The decoder can be operated in a bit rate of Gbits/sec order and thus suitable for the very high speed data transmission systems.

Key words : High-speed transmission systems; Pipeline; Reed-Solomon codes;
Step-by-step decoding