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(54) **LDPC ENCODING AND DECODING METHOD**

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(57) **ABSTRACT**
A LDPC encoding method is provided, which is highly scalable and may support a variety of code cases and allow a high processing speed. The LDPC encoding includes: receiving an information sequence to be encoded; segmenting the information sequence into blocks of a predetermined length; deriving parity bits for each of the segmented blocks by using a predetermined parity check matrix; and generating a codeword by combining the parity bits into a corresponding segmented block. The operation of deriving parity bits for each of the segmented blocks includes: performing multiplications with at least one element of the parity check matrix by circularly shifting the segmented block a number of times corresponding to the at least one element of the parity check matrix; and performing XOR operations on a plurality of bits of a circularly-shifted segmented block in parallel.

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