Title (en)

MULTI-RATE LDPC ENCODING AND DECODING WITH DIFFERENT CODE LENGTHS USING ONE MULTI-RATE EXPONENT TABLE AND ONE EXPANSION FACTOR

Title (de)

MULTIRATE-LDPC-CODIERUNG UND -DECODIERUNG MIT UNTERSCHIEDLICHEN CODELÄNGEN MIT EINER MULTIRATE-EXPONENTENTABELLE UND EINEM EXPANSIONSFAKTOR

Title (fr)

CODAGE ET DÉCODAGE LDPC MULTI-DÉBIT À DIFFÉRENTES LONGUEURS DE CODE UTILISANT UNE TABLE D'EXPOSANTS MULTI-DÉBIT ET UN FACTEUR D'EXPANSION

Publication

EP 3295569 A1 20180321 (EN)

Application

EP 15722234 A 20150518

Priority

EP 2015060877 W 20150518

Abstract (en)

[origin: WO2016184493A1] Encoder and decoder devices for performing multi-rate and multi-length LDPC coding and decoding and methods thereof using only one stored expansion table with one corresponding expansion factor. An encoder device (200) for performing LDPC coding includes: an input (210) for receiving an information sequence (B1); an output (220) for providing an encoded sequence (B2); a memory (201) for storing exponent matrices (Hexp), wherein the exponent matrices (Hexp) are stored in a plurality of groups (203a, 203b, 203c), such that each group (203a, 203b, 203c) corresponds to one code rate, and wherein each group (203a, 203b, 203c) comprises a plurality of nested exponent matrices (Hexp), each nested exponent matrix (Hexp) within a particular group corresponding to one code word length for the code rate of the particular group, wherein common elements in different groups (203a, 203b, 203c) are stored once in the memory (201); and further comprising a processing unit (205) configured to extract an exponent matrix (Hexp) for a specific code rate (R) from a corresponding group (203a, 203b, 203c) and; an encoding unit (207) for encoding the information sequence (B1) based on the extracted parity-check exponent matrix (Hexp) to provide the encoded sequence (B2).

IPC 8 full level

H03M 13/11 (2006.01); H03M 13/00 (2006.01)

CPC (source: EP)

H03M 13/116 (2013.01); H03M 13/1185 (2013.01); H03M 13/618 (2013.01); H03M 13/6393 (2013.01); H03M 13/6505 (2013.01); H03M 13/6516 (2013.01)

Citation (search report)

See references of WO 2016184493A1

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

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DOCDB simple family (application)

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