imagine
TECHNOLOGY, LLC ™

Convolutional Coder

Product Part Number 1-0001-01

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Description

This Forward Error Correction algorithm is based on the Convolution Coder/ Decoder. Algorithm also includes Viterbi decoding with soft decision thresholding for improved performance. The algorithm can handle many rates, including 1/2, 1/3, 4/5, 1/8, and many more. Easy to setup and use, the developer just supplies the rate, the generator polynomials, and a few more miscellaneous parameters. As the internal buffers get nearly full, some of the decoded bits can be removed and the decoding will continue. This allows support for continuous data transfer.

Features

- TMS320™ Algorithm Standard compliant
- Variable rate, Viterbi decoding with Soft Decision
- Flexible memory model and efficient implementation
- Leading industry in MIPS/cycles performance
- Minimizes per channel memory for optimal multi-channel applications
- Algorithms are written in optimized C and assembly
- Framework and integration available
- Industry leading performance for all TI DSP Generations

Hardware Platforms

- TI TMS320C5000™ DSP platforms - All TI DSP Generations
- TI TMS320C6000™ DSP platforms - All TI DSP Generations
- TI OMAP platform

Contact Imagine Technology for integrated DSP solutions, framework, hardware design options and embedded demos for all available DSP algorithms.

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eXpressDSP™ Compliant
DSP
TEXAS INSTRUMENTS

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Specifications

The CONV module provides convolutional encoding and decoding for modem designs. The module performance is based upon several parameters:

- MaxBits – Maximum number of bits to be retained in working buffers. For encode this corresponds to how many bits can be put into the encoder, before samples are taken out. For decode, this is the number of bits to hold in the buffers, before the corrected bits are taken out.
- n – Input rate to the encoder, or output rate of the decoder. The rate is characterized by n/k.
- k – Output rate of the encoder, or input rate to the decoder.
- c – Constraint length of the encoder.

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