

ReedSolomon_VSS_MATLAB_Compare

Where To Find This Example

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Open Install Example

Design Notes

Reed Solomon Encoding/Decoding

This example compares the behavior of the RS_ENC and RS_DEC blocks to the equivalent functions in MATLAB®. The VSS MATLAB block is used to invoke MATLAB. The VSS RS blocks allow specification of shortened codes, the initial root, and the scaling factor of the generator polynomial.

RS_ENC accepts k information symbols and encodes them to an output block of length n by adding n-k parity symbols.

RS_DEC accepts the n symbol block and produces the decoded k symbol block.

The digital source RND_D has an alphabet size of 2^m .

You need to have MATLAB and the Communications Toolbox installed in order to run this example. The MATLAB blocks call the gf(), rsenc() and rsdec() MATLAB functions.

Input Parameters:

m: number of bits/symbol over $GF(2^m)$

n: block length

k: message length

genpoly: generator polynomial in decimal e.g. $D^3 + D^2 + 1 = 1\ 1\ 0\ 1 = 13$

Note: MATLAB is a registered trademark of The MathWorks Inc.

Reed Solomon Encoding/Decoding

n=31 Block Length
 k=25 Message Length
 m=5 GF(2^m)
 genpoly=37 Generator Polynomial in decimal e.g. D³+D²+1 = 1 1 0 1 = 13

