BCH codes are very suitable in systems with block basis architecture such as mass storage devices or communication. Such systems are vulnerable to data corruption during transmission or data storage. BCH codes are also ideal choice for NAND flash devices.

EtcCore company provides fully hardware encoder/decoder IP block with correction capability up to 4 randomly distributed bits within 256 byte block. Encoder calculates 48 redundant bits (6 bytes) which can be stored accompanied with information data bits. Decoder analyzes data and shows location of error bits.
BCH Encoder/Decoder

Encoder block
8 bits/cycle

Decoder block
2 bits/cycle

FIFO (256 bytes)

Information data + Redundant data

IP Block

Error flag

Error loc1[11:0]

Error loc2[11:0]

Error loc3[11:0]

Error loc4[11:0]

FIFO (256 bytes + 48 bits)

Errors correction

DATAIN 32

DATAIN 16