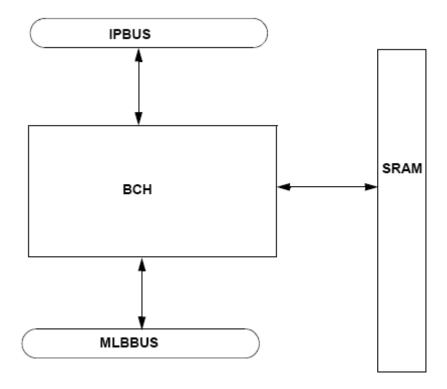
### **BCH**

#### Introduction

The BCH module privides an ECC engine which performs BCH Correction Encoding/Decoding 'on the fly' while data is being written to or read from the Nand-Flash ECC Data Channel. The ECC module supports 4 types of flash, which are a traditional type flash with (1024+14) bytes and newly developed with (1024+25) bytes,(1024+42) bytes and (1024+53) bytes.



Block Diagram of BCH

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### **BCH Features**

- Bose, Chaudury, Hocquenghem (BCH) Algorithm
- ➤ Hardware "On the fly" Encoding/Decoding
- Supports 528, 538, 539, 1070 bytes flash memory
- ➤ 14 bytes ECC codes for 528 bytes flash
- ➤ 25 bytes ECC codes for 538 bytes flash

- > 25 bytes ECC codes for 539 bytes flash
- ➤ 42 bytes ECC codes for 1070 bytes flash
- > 53 bytes ECC codes for 1080 bytes flash
- ➤ Can correct up to 8 bits error per page (514 bytes data + 14bytes ECC code).
- ➤ Can correct up to 14 bits error per page (513 bytes data + 25bytes ECC code).



- ➤ Can correct up to 14 bits error per page (514 bytes data + 25bytes ECC code).
- ➤ Can correct up to 24 bits error per page(1028 bytes data+ 42bytes ECC code).
- ➤ Can correct up to 30 bits error per page(1027 bytes data + 53bytes ECC code).
- Decoding parallel working with key equation solver and error location searching.
- Automatical error correction by hardware.

## **Performance and Characteristics**

• Frequency (WCS): 80 MHz • Process: 0.18µm (WCS, 1.62V, 120°)

• Cell Size: 0.92 mm<sup>2</sup>

# **Application Examples**

• SD Card

# **Availability**

• Q2, 2009

To obtain more information about the BCH or other  $C^*Core^{TM}$  products, please contact the  $C^*Core$  Technology Co., Ltd. by phone: 0512-68091375, email:  $\underline{support@china-core.com}$  or web:  $\underline{http://www.china-core.com}$ .  $C^*Core^{TM}$  is a trade mark of  $C^*Core$  Co., Ltd.

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