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g-byte Error Control Codes

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Abstract. This paper considers a model of error control codes for semiconductor memories consisting of RAM chips not necessarily of the same size. The data stored on a chip corresponds to a variable length byte and thus byte length is not same in this model and varies from chip to chip. The variable length byte is termed as a “general byte” or simply a “g-byte” [8]. The author in [8] has introduced and given the construction method of g-byte codes capable of correcting all single g-byte errors along with their decoding algorithm.

In this paper, we present three classes of g-byte codes, viz. the single g-byte error correcting codes with an alternative construction method of parity check matrix H , single error correcting and simultaneously single g-byte error detecting codes followed by sector error locating codes and single bit error correcting simultaneously with sector error locating g-byte codes.

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