

DATA ENCODING SYSTEMS

ABSTRACT

Methods and apparatus are provided for encoding a succession of m -bit data words to produce a succession of n -bit code words, where $n > m$. Each data word is partitioned into blocks of bits, and at least one block is block encoded resulting in an n -bit sequence derived from the m bits of the data word. An n -bit code word is then produced by at least one stage of violation correction. Each stage of violation correction comprises detection of prohibited bit patterns at predetermined locations in the n -bit sequence, and replacement by a substitute bit pattern. The coding scheme and prohibited and substitute bit patterns are predetermined such that the maximum number of consecutive bits of one value is limited to a first predetermined number j , where $j \geq 2$, and the maximum number of consecutive bits of the other value is limited to a second predetermined number k .

Fig.2