

A B S T R A C T

DATA CONVERSION METHOD, PILOT SIGNAL FORMATION METHOD
USING THE SAME AND ROTARY MAGNETIC
HEAD DEVICE FOR USE THEREIN

A data conversion method from m bits of data words into n bits of code words in recording or transmission, in which n is larger than m . A number of bit "0" arranged between one bit "1" and a next bit "1" is restricted to at most 4 in a code string of each code word, and a pair of groups of the n bits of code words corresponding to CDSs (code word digital sum) of two codes $+1$ and -1 are allowed to correspond to the m bits of data words. One of the two codes $+1$ and -1 is selectively used according to a DSV (digital sum variation) control signal to convert the m bits of data word into the n bits of code word. A pilot signal formation method using the data conversion method for obtaining a tracking error signal in a magnetic recording and reproducing apparatus, and a rotary magnetic head device for use in a magnetic recording and reproducing apparatus are also disclosed.

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