

- The Ethernet uses the binary block codes *mBnB*, which converts a block of *m* input bits at the coder input in to a block of *n* symbols at the coder output.
- The codes *mBnB* are used with goal of eliminating the dc component that may exist in the data source, as well as to introduce enough transitions to ensure adequate clock recovery. The code format is dual. This means that one uses sequentially two codes for each input sequence in order to preserve balance.

3B4B Code

Input bits	Mode 1	Mode 2
000	0010	1101
001	0011	0011
010	0101	0101
011	0110	0110
100	1001	1001
101	1010	1010
110	1100	1100
111	1011	0100

One of the problems associated with the using of these codes is the increase in the symbol rate of the transmitted information. The symbol rate at the coder output is given by $D_s = D_b \times n/m$, where D_b is the input bit rate.

Ex: Consider the code 8B/10B and signal at 1Gbit/s. The symbol rate at the output will be 1.25 Gbaud, ou 1.25 Gsymbols/s.