If the original data to send is 10011001 11100010 00100100 10000100. How would it be possible to detect error using two dimensional error detecting technique?

Two dimensional parity check —
Data words (block of data) arranged one
above another line in 2D Matrix.

| Data word | K₁ | K₂ | ---- | Km | Data |

Eg. | 10011001 | 11100010 | 00100100 | 10000100 |
Original data

| 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | Row parentic
|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 |
| 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 |
| 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 |

Column parentice

Note :- If block data contains odd no. of
1's odd   ∴=1. even no. of 1's case add-d

Data sended -
| 10011001 | 11100010 | 00100100 | 10000100 |
| 11011010 |