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| --- | --- | --- |
| Cases | Inputs (S) | Output (Y) |
| A | 0000 | I0 |
| B | 0001 | I1 |
| C | 0010 | I2 |
| D | 0011 | I3 |
| E | 0100 | I4 |
| F | 0101 | I5 |
| G | 0110 | I6 |
| H | 0111 | I7 |
| I | 1000 | I8 |
| J | 1001 | I9 |
| K | 1010 | I10 |
| L | 1011 | I11 |
| M | 1100 | I12 |
| N | 1101 | I13 |
| O | 1110 | I14 |
| P | 1111 | I15 |

In the 16 to 32 bit multiplexer, the output (Y) is equal to one of the sixteen 32 bit values in I0-I15, which is determined by the input S.