
TinyMicro ALU

X67117_en

Design the ALU of the TinyMicro. The ALU has two operands, a and b , and one result c . The operation of the ALU is determined by the 2-bit control signals Op as follows:

- $Op=00, c = a + b$.
- $Op=01, c = a - b$.
- $Op=10, c = b - a$.
- $Op=11, c = a$.

Design a parametrized N -bit ALU with a default value of $N = 8$.

Specification

```
module ALU( $a, b, Op, c$ );  
  parameter  $N=8$ ;  
  input [ $N-1:0$ ]  $a, b$ ;  
  input [ $1:0$ ]  $Op$ ;  
  output [ $N-1:0$ ]  $c$ ;
```

Input

- a and b are the two input operands.
- Op indicates the type of operation.

Output

- c is the result of the operation.

Problem information

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