RTL_MINI_PROJECT_ALU

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Contents

1. Interface 2

2. Functional implementation. 3

3. Internal implementation. 4

3.1. Overall. 4

4. History 5

1. Interface

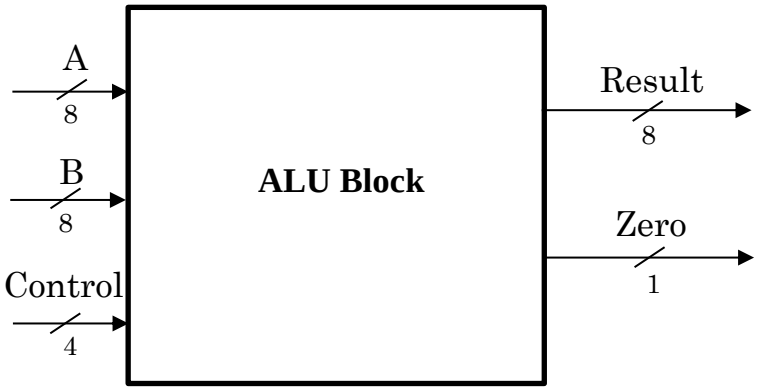

Figure 1: The figure of ALU Block.

Signal	Width	In/Out	Description
A	8	In	A signal input
B	8	In	B signal input
Control	4	In	Control signal input
Result	8	Out	System output
Zero	1	Out	Zero output signal

Table 1: Description of signals in ALU Block.

2. Functional implementation.

- Implement an Arithmetic Logic Unit - ALU.
- System’s Operation base on three input signal
  - A
  - B
  - Control
- The system specification
  - The ALU block is capable of performing 8-bit arithmetic operations, including addition, subtraction, and bitwise AND and OR operations.
  - The ZERO flag is activated when the output result is '0'.
  - The Control signal determines the ALU operation based on the following table, with other cases treated as **don't cares**:

Operation	Control value
ADD	0010
SUB	0110
AND	0000
OR	0001

3. Internal implementation.

3.1. Overall.

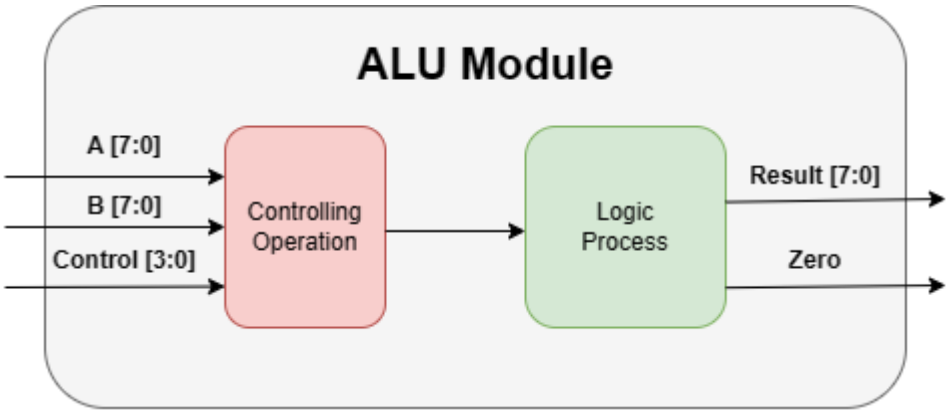

Figure 3.1: Block diagram of Bound Flasher

Block	Description
Controlling Operation	The block has three input signal which is A, B and Control signal. It is used to define which operation need to be used.
Logic Process	This is where the logic of the module are operated.

Table 3.1: Block diagram of ALU Description

4. History

Date	Author	Modified part	Description
2024/04/16	Nguyễn Khánh Nam	All	New creation
2024/04/17	Nguyễn Khánh Nam	Overall	Add new block diagram