

4 bit minimal ALU

- Input ports “A” and “B”
- Select port “S” (for selecting operation).
- Clock port
- Cin and Cout ports for Adder
- Result output port “r”
- Special output port “sr” (currently used for multiplier : store 4 most significant bits) .

Select “s”

- “0000” : for AND operation
- “0001” : for OR operation
- “0010” : for XOr operation.
- “0011”: for Addition .
- “0100”: for Multiplication.
- “0101” : for Division .

Operations.

1. Bitwise AND operation
2. Bitwise OR operation
3. Bitwise XOR operation.
4. Adder

5. Multiplier – 4 cycles (8 bit result is given out by two 4 bit output ports , port “s” contains product[3:0] and port “sr” contains product[7:4].
6. Diviser - 4 cycles (currently 4 bit quotient , remainder can be added and passed to “sr” port).