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 ) .