
Bitwise Operations
Bitwise operations support the following operations. The control input values are give for each operation.
[0000] ZERO
[0011] NOT y
[0110] x XOR y
[1000] x AND y
[1100] Y
[1110] x OR y
[1111] 255
NOTE: We are only using one of two available selectors in each chip. It is possible to swap which one is used to make routing easier.
NOTE: There are more combinations of control input values. Do they do anything interesting?
Bus Displays
X Bus
Y Bus
Shift Operations
Shifter supports passthrough, shift-left, shift-right and zero. The 'shift_control_X' lines control which functionality to use.
[00]: Unchanged
[01]: Shift Left
[10]: Shift Right
[11]: Zero
Intermediate Latches
D_BUS Buffer
Adder
Flags
Flags logic. After an operation the flag lines are updated
The following flags are supported
0: Zero: did the operation result in a zero value
1: Logical Carry: did a logical operation result in a carry
2: Arrithmetic Carry: did an arithetic operation result in a carry
3: Sign: did the operation result in a negative value (high bit on)
4: Overflow: did the operation result in an overvlow
The 'arr_carry_select_X' lines control the value going to the arithmetic carry in line.
[00]: Zero
[01]: Previous add_carry_out
[10]: One
[11]: unused
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