# ALU OPERATION'S

| OP-Code | Operation | | description |
|---|---|---|---|
| 0000 0x0 | ADD | $A + \mathrm{B}$ | add |
| 0001 0x1 | ADC | $A + B + C$ | add with carry |
| 0010 0x2 | SUB | $A + \bar{B}$ | subtract |
| 0011 0x3 | SBB | $A + \bar{B} + C$ | subtract with borrow |
| 0100 0x4 | SHL | *A << 1* | shift left (ALU_LEFT) |
| 0101 0x5 | SHRA | *A >>> 1* | shift right (arithmetic) (ALU_LEFT) |
| 0110 0x6 | SHRL | *A >> 1* | shift right (logic) (ALU_LEFT) |
| 0111 0x7 | INC | $A + 1$ | increment (ALU_LEFT) |
| 1000 0x8 | AND | *A and B* | and |
| 1001 0x9 | OR | *A or B* | or |
| 1010 0xa | XOR | *A xor B* | xor |
| 1011 0xb | NAND | *A nand B* | nand |
| 1100 0xc | NOR | *A nor B* | nor |
| 1101 0xd | XNOR | *A xnor B* | xnor |
| 1110 0xe | NEG | *2's A* | 2's ALU_LEFT |
| 1111 0xf | NOT | $\bar{A}$ | invert ALU_LEFT |

ALU_Right = A
ALU_Left = B