

clk  
 res  
 pc\_out[7:0]  
 instruction\_in[15:0]  
 mar\_out[7:0]  
 mdr\_in[7:0]  
 mdr\_out[7:0]  
 write\_mem  
 memory[255:0, 7:0]  
 used\_mem  
 memory[1, 7:0]  
 memory[0, 7:0]  
 proc\_ctl  
 mar\_source  
 write\_mar  
 mdr\_source[1:0]  
 write\_mdr  
 pc\_source[1:0]  
 write\_pc  
 write\_ir  
 ac\_source[1:0]  
 write\_ac  
 ALU\_op\_select[2:0]  
 ALUctl[2:0]  
 write\_flags











