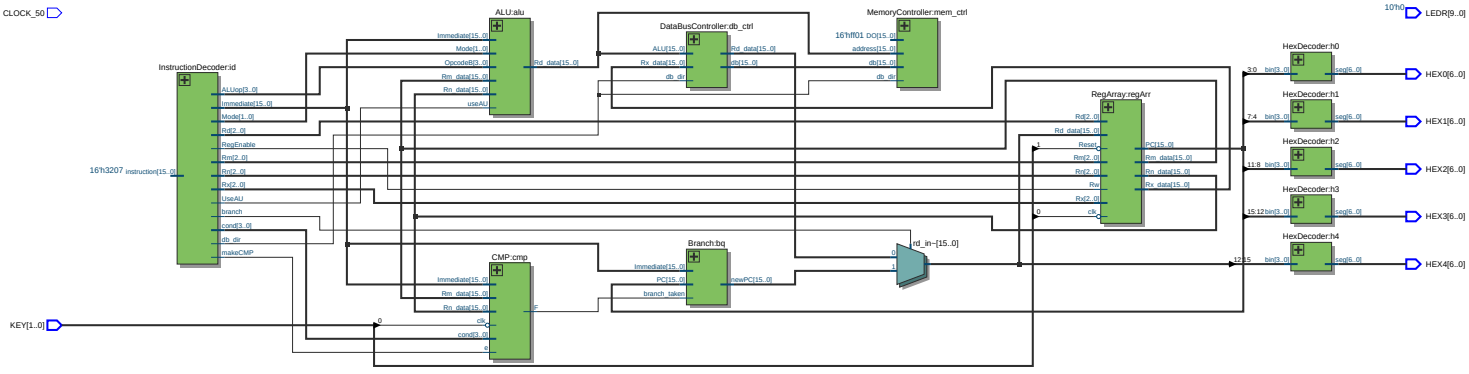
CLOCK_50
KEY[1..0]
16'h3207 instruction[15..0]
InstructionDecoder:id
ALUop[3..0]
immediate[15..0]
Mode[1..0]
Rd[2..0]
RegEnable
Rm[2..0]
Rn[2..0]
Rx[2..0]
UseALU
branch
cond[3..0]
db_dir
makeCMP
ALU:alu
Immediate[15..0]
Mode[1..0]
OpcodeB[3..0]
Rm_data[15..0]
Rn_data[15..0]
useALU
Rd_data[15..0]
DataBusController:db_ctrl
ALU[15..0]
Rx_data[15..0]
db_dir
Rd_data[15..0]
db[15..0]
MemoryController:mem_ctrl
16'hff01 DQ[15..0]
address[15..0]
db[15..0]
db_dir
RegArray:regArr
Rd[2..0]
Rd_data[15..0]
Reset
Rm[2..0]
Rn[2..0]
Rw
Rx[2..0]
clk
PC[15..0]
Rm_data[15..0]
Rn_data[15..0]
Rx_data[15..0]
CMP:cmp
Immediate[15..0]
Rm_data[15..0]
Rn_data[15..0]
cb
cond[3..0]
F
Branch:bq
Immediate[15..0]
PC[15..0]
branch_taken
newPC[15..0]
rd_in~[15..0]
HexDecoder:h0
HexDecoder:h1
HexDecoder:h2
HexDecoder:h3
HexDecoder:h4
bin[3..0]
seg[6..0]
3:0
7:4
11:8
15:12
12:15
10'h0
LEDR[9..0]
HEX0[6..0]
HEX1[6..0]
HEX2[6..0]
HEX3[6..0]
HEX4[6..0]