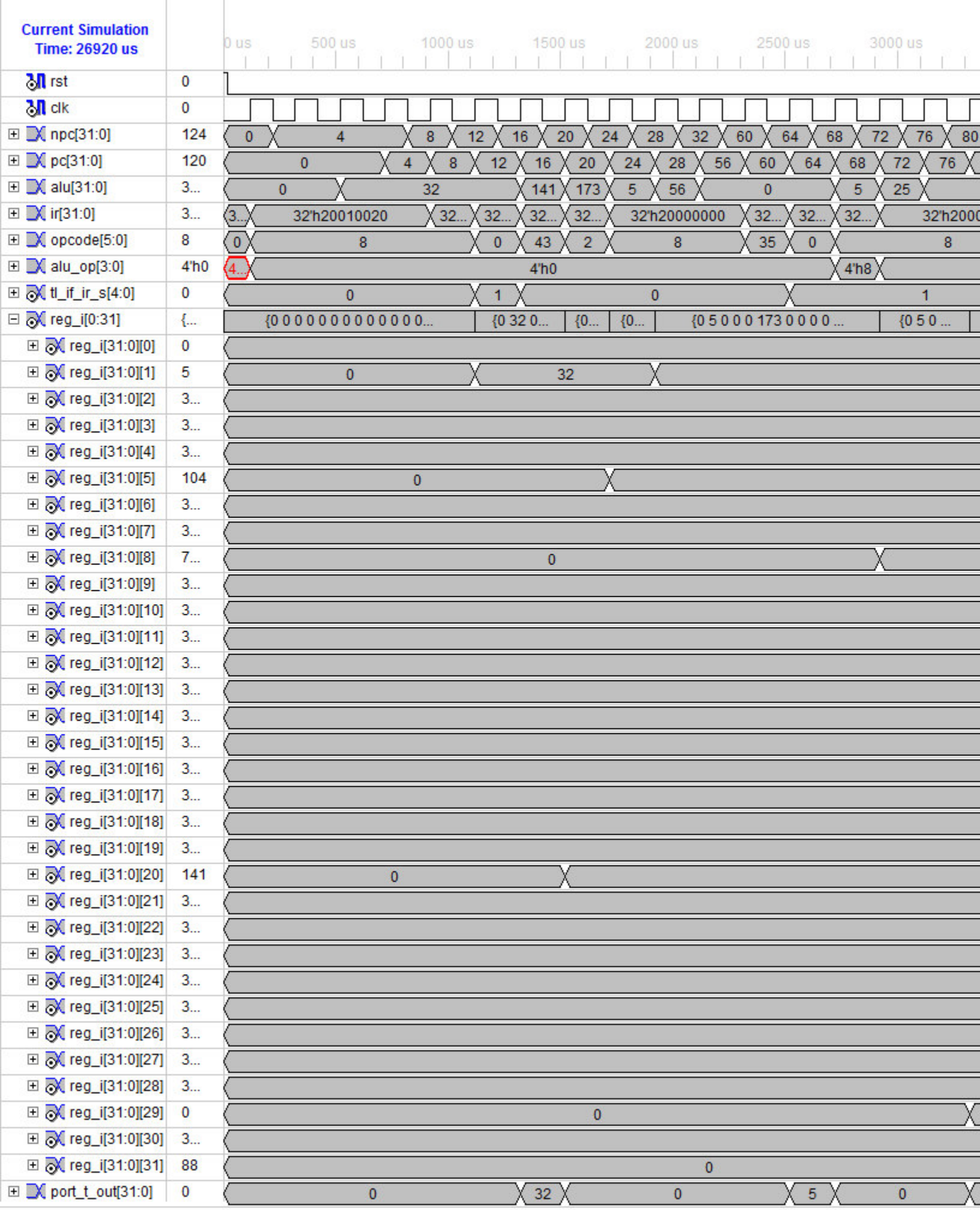
Current Simulation Time: 26920 us
0 us
500 us
1000 us
1500 us
2000 us
2500 us
3000 us
rst 0
clk 0
npc[31:0] 124 0 4 8 12 16 20 24 28 32 60 64 68 72 76 80
pc[31:0] 120 0 4 8 12 16 20 24 28 56 60 64 68 72 76
alu[31:0] 3... 0 32 141 173 5 56 0 5 25
ir[31:0] 3... 3... 32'h20010020 32... 32... 32... 32... 32'h20000000 32... 32... 32... 32'h2000
opcode[5:0] 8 0 8 0 43 2 8 35 0 8
alu_op[3:0] 4'h0 4... 4'h0 4'h8
tl_if_ir_s[4:0] 0 0 1 0 1
reg_i[0:31] {... {0 0 0 0 0 0 0 0 0 0 0 0 0 0 0... {0 32 0... {0... {0... {0 5 0 0 0 173 0 0 0 0 ... {0 5 0 ...
reg_i[31:0][0] 0
reg_i[31:0][1] 5 0 32
reg_i[31:0][2] 3...
reg_i[31:0][3] 3...
reg_i[31:0][4] 3...
reg_i[31:0][5] 104 0
reg_i[31:0][6] 3...
reg_i[31:0][7] 3...
reg_i[31:0][8] 7... 0
reg_i[31:0][9] 3...
reg_i[31:0][10] 3...
reg_i[31:0][11] 3...
reg_i[31:0][12] 3...
reg_i[31:0][13] 3...
reg_i[31:0][14] 3...
reg_i[31:0][15] 3...
reg_i[31:0][16] 3...
reg_i[31:0][17] 3...
reg_i[31:0][18] 3...
reg_i[31:0][19] 3...
reg_i[31:0][20] 141 0
reg_i[31:0][21] 3...
reg_i[31:0][22] 3...
reg_i[31:0][23] 3...
reg_i[31:0][24] 3...
reg_i[31:0][25] 3...
reg_i[31:0][26] 3...
reg_i[31:0][27] 3...
reg_i[31:0][28] 3...
reg_i[31:0][29] 0 0
reg_i[31:0][30] 3...
reg_i[31:0][31] 88 0
port_t_out[31:0] 0 0 32 0 5 0

3500 us 4000 us 4500 us 5000 us 5500 us 6000 us 6500 us 7000 us 7500 us

84 88 92 96 100 40 44 48 52 92 96 100 104 108 112 116 120 124 128 108 112 11

80 84 88 92 96 36 40 44 48 88 92 96 100 104 108 112 116 120 124 104 108 112

69 36 0 88 0 1 25 104 0

00000 32... 32'h20000000 32... 32'h20000000 32... 32... 32... 32'h20000000 32... 32...

3 8 0 8 0 5 8 0

4'h0 4'hC 4'h8 4'h0 4'hC

0 1 0 1

{0 5 0 0 0 173 0 0 5 0 ... {0 5 0 0 0 173 0 0 5 0 0 0 0 0 0 0 0 0 0 0 141 0 0 0 0 0 0 0 0 69 0 88} {0... {0... {0 5 0 0 0 104 0

0

32'h00000000

32'h00000000

32'h00000000

173

32'h00000000

32'h00000000

5 25

32'h00000000

32'h00000000

32'h00000000

32'h00000000

32'h00000000

32'h00000000

32'h00000000

32'h00000000

32'h00000000

32'h00000000

32'h00000000

32'h00000000

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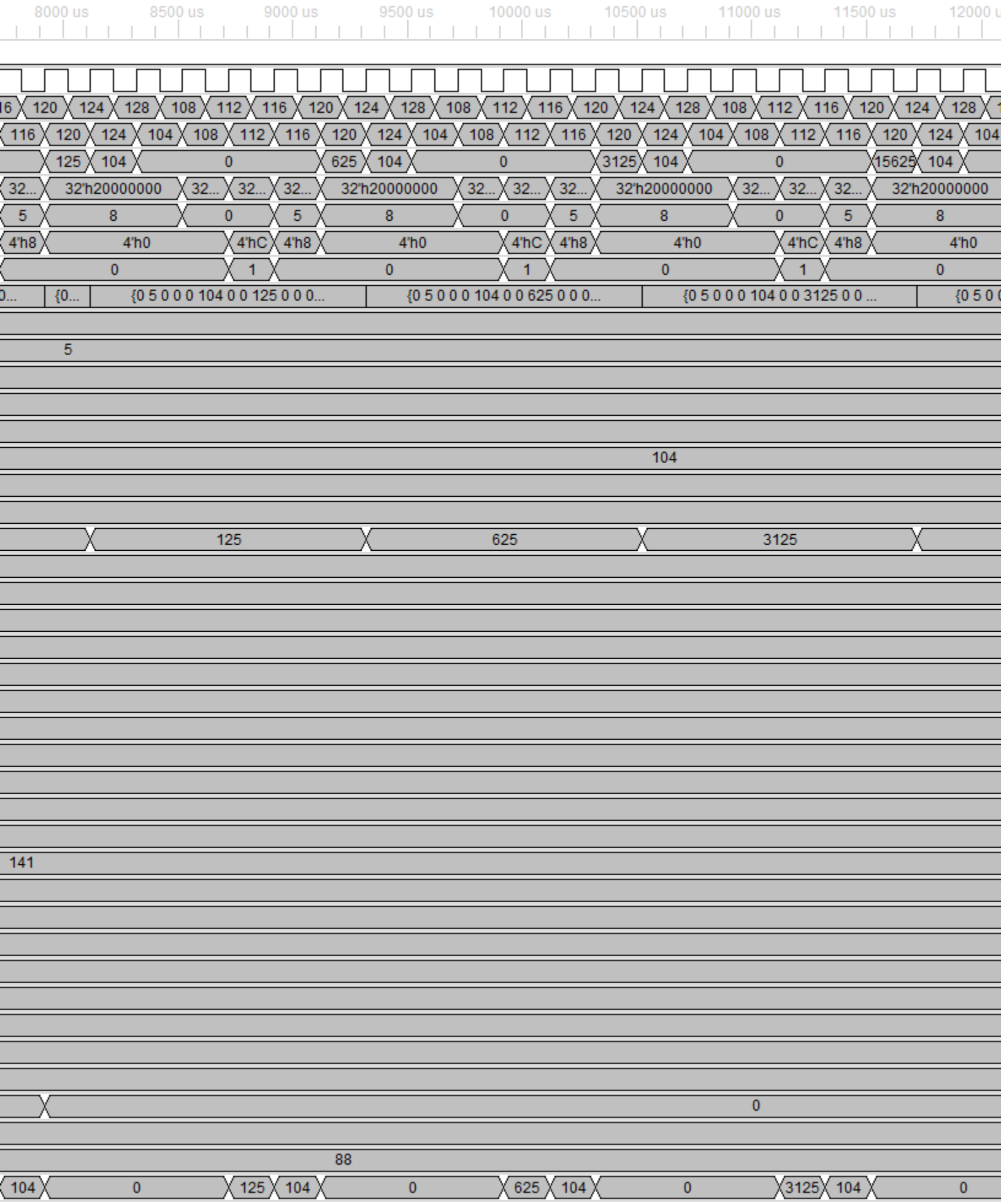
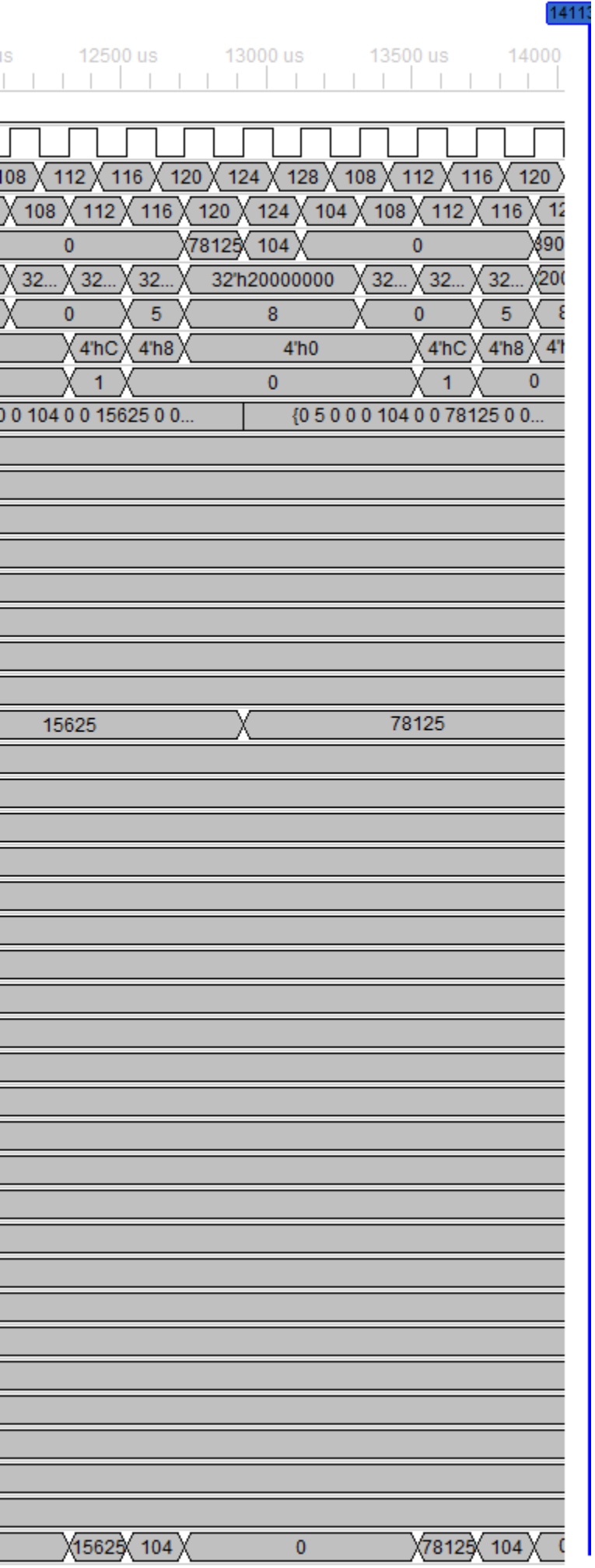
32'h00000000

69 1

32'h00000000

69 0 88 0 69 5 173 0 1 25

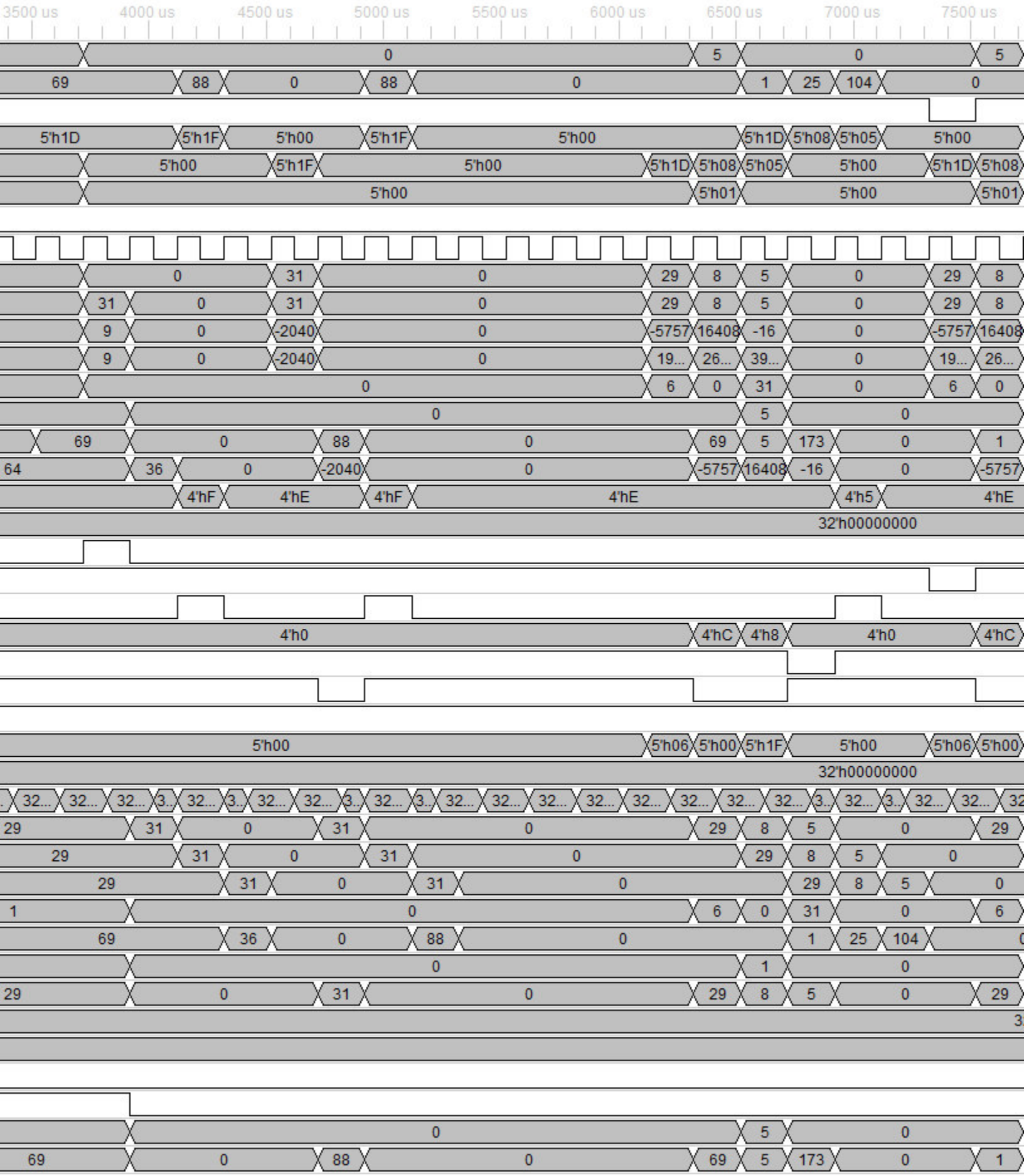

8000 us
8500 us
9000 us
9500 us
10000 us
10500 us
11000 us
11500 us
12000 u
16 120 124 128 108 112 116 120 124 128 108 112 116 120 124 128 108 112 116 120 124 128
116 120 124 104 108 112 116 120 124 104 108 112 116 120 124 104 108 112 116 120 124 104
125 104 0 625 104 0 3125 104 0 15625 104
32... 32'h20000000 32... 32... 32... 32'h20000000 32... 32... 32... 32'h20000000 32... 32... 32... 32'h20000000
5 8 0 5 8 0 5 8 0 5 8
4'h8 4'h0 4'hC 4'h8 4'h0 4'hC 4'h8 4'h0 4'hC 4'h8 4'h0
0 1 0 1 0 1 0
0... {0... {0 5 0 0 0 104 0 0 125 0 0 0... {0 5 0 0 0 104 0 0 625 0 0 0... {0 5 0 0 0 104 0 0 3125 0 0 ... {0 5 0 (
5
104
125 625 3125
141
0
88
104 0 125 104 0 625 104 0 3125 104 0

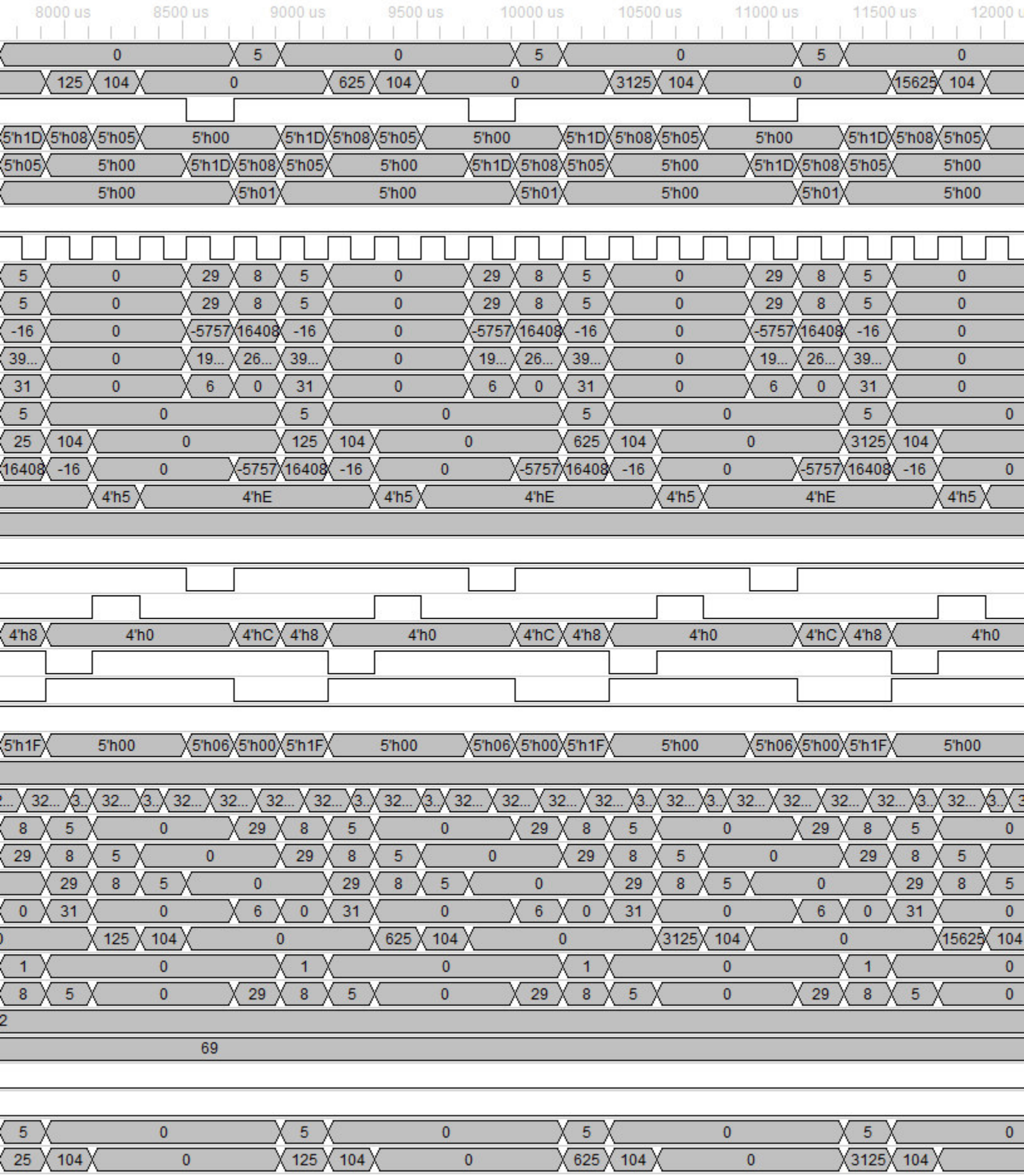

14113
us
12500 us
13000 us
13500 us
14000
108 112 116 120 124 128 108 112 116 120
108 112 116 120 124 104 108 112 116 12
0 78125 104 0 390
32... 32... 32... 32'h20000000 32... 32... 32... 200
0 5 8 0 5 8
4'hC 4'h8 4'h0 4'hC 4'h8 4'h
1 0 1 0
0 0 104 0 0 15625 0 0...
{0 5 0 0 0 104 0 0 78125 0 0...
15625
78125
15625 104 0 78125 104 0

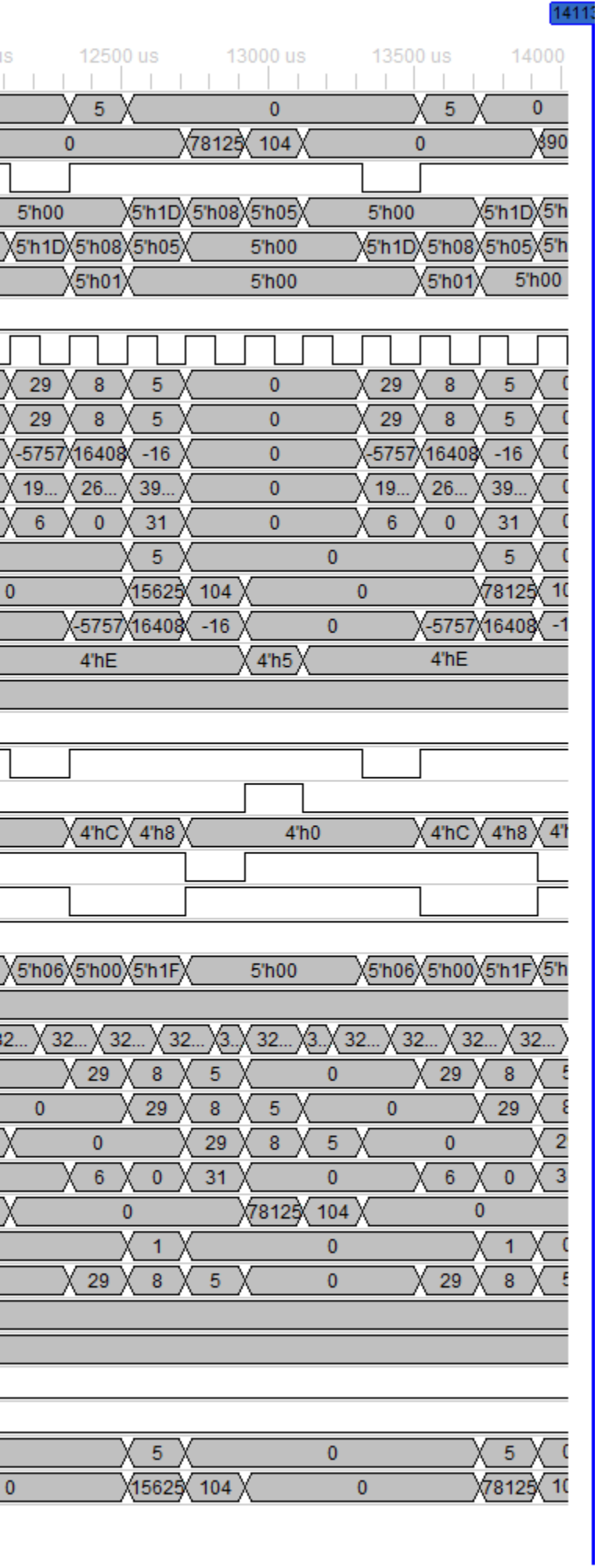
Current Simulation Time: 26920 us

0 us | 500 us | 1000 us | 1500 us | 2000 us | 2500 us | 3000 us

Signal	Value	Waveform
port_s_out[31:0]	0	0 | 32 | 0 | 5
port_d_in[31:0]	3...	3... | 0 | 32 | 141 | 173 | 5 | 0 | 0 | 5 | 0
write_d_en	1	
port_d_addr[4:0]	5'h08	5'h00 | 5'h01 | 5'h14 | 5'h05 | 5'h01 | 5'h00 | 5'h08 | 5'h18
port_t_addr[4:0]	5'h00	5... | 5'h01 | 5'h14 | 5'h01 | 5'h00 | 5'h08 | 5'h01 | 5'h1D
port_s_addr[4:0]	5'h00	5'h00 | 5'h01 | 5'h00 | 5'h01
rst	0	
clk	0	
tl_if_ir_t[4:0]	0	0 | 1 | 20 | 1 | 0 | 8 | 1 | 29
tl_if_ir_d[4:0]	0	0 | 1 | 20 | 5 | 1 | 0 | 8 | 24 | 29
tl_if_ir_imm[15:0]	0	0 | 32 | 141 | 10272 | 5 | 14 | 0 | 5 | -1... | 64
tl_if_target[25:0]	0	0 | 65568 | 13... | 34... | 65541 | 14 | 0 | 52... | 22... | 3997760
tl_if_shamt[4:0]	0	0 | 2 | 0 | 1
tl_id_rega...	0	0 | 32 | 0 | 5
tl_id_regb...	104	0 | 32 | 0 | 5 | 0
tl_id_imm_...	-16	0 | 32 | 141 | 10272 | 5 | 56 | 0 | 5 | -1...
cs_ec_cond...	4'hE	4... | 4'h0 | 4'hE | 4'hF | 4'hE
lmd[31:0]	3...	
cs_id_mux_sel	0	
cs_id_regf_rw	1	
tl_ec_cond_out	0	
cs_ec_alu_...	4'h0	4... | 4'h0 | 4'h8
cs_ec_muxa_sel	0	u
cs_ec_muxb_sel	1	u
cs_alureg_en	1	u
cs_ec_sham...	5'h00	5'h00 | 5'h02 | 5'h00 | 5'h01
tl_ma_reg_...	3...	
tl_ma_mux_...	3...	32... | 32'h00000004 | 32... | 32... | 32... | 32... | 32... | 3... | 32... | 3... | 32... | 32... | 32... | 32... | 32... | 32...
tl_id_ir_d[4:0]	5	0 | 1 | 20 | 5 | 1 | 0 | 8 | 24
tl_ec_ir_d[4:0]	8	0 | 1 | 20 | 5 | 1 | 0 | 8 | 24
tl_wb_ir_d[4:0]	29	0 | 1 | 20 | 5 | 1 | 0 | 8 | 24
tl_id_shamt[4:0]	31	0 | 2 | 0
tl_ma_alu_...	0	0 | 32 | 141 | 173 | 5 | 56 | 0 | 5 | 25
tl_id_ir_s[4:0]	0	0 | 1 | 0 | 1
tl_id_ir_t[4:0]	5	0 | 1 | 20 | 1 | 0 | 8 | 1
hc_op_rs[31:0]	32	0
hc_op_rt[31:0]	69	0 | 32 | 141
hc_op_rs_sel	0	
hc_op_rt_sel	0	
hc_mux1_ou...	0	0 | 32 | 0 | 5
hc_mux2_ou...	104	0 | 32 | 0 | 141 | 32 | 0 | 5 | 0


3500 us
4000 us
4500 us
5000 us
5500 us
6000 us
6500 us
7000 us
7500 us
5'h1D
5'h1F
5'h00
5'h01
5'h05
5'h08
5'h06
4'h0
4'hC
4'h8
4'hF
4'hE
4'h5
32'h00000000


8000 us
8500 us
9000 us
9500 us
10000 us
10500 us
11000 us
11500 us
12000 u
0 5 0 5 0 5 0
125 104 0 625 104 0 3125 104 0 15625 104
5'h1D 5'h08 5'h05 5'h00 5'h1D 5'h08 5'h05 5'h00 5'h1D 5'h08 5'h05 5'h00 5'h1D 5'h08 5'h05
5'h05 5'h00 5'h1D 5'h08 5'h05 5'h00 5'h1D 5'h08 5'h05 5'h00 5'h1D 5'h08 5'h05 5'h00
5'h00 5'h01 5'h00 5'h01 5'h00 5'h01 5'h00
5 0 29 8 5 0 29 8 5 0 29 8 5 0
5 0 29 8 5 0 29 8 5 0 29 8 5 0
-16 0 -5757 16408 -16 0 -5757 16408 -16 0 -5757 16408 -16 0
39... 0 19... 26... 39... 0 19... 26... 39... 0 19... 26... 39... 0
31 0 6 0 31 0 6 0 31 0 6 0 31 0
5 0 5 0 5 0 5 0
25 104 0 125 104 0 625 104 0 3125 104
16408 -16 0 -5757 16408 -16 0 -5757 16408 -16 0 -5757 16408 -16 0
4'h5 4'hE 4'h5 4'hE 4'h5 4'hE 4'h5
4'h8 4'h0 4'hC 4'h8 4'h0 4'hC 4'h8 4'h0 4'hC 4'h8 4'h0
5'h1F 5'h00 5'h06 5'h00 5'h1F 5'h00 5'h06 5'h00 5'h1F 5'h00 5'h06 5'h00 5'h1F 5'h00
32... 3.. 32... 3.. 32... 32... 32... 32... 3.. 32... 3.. 32... 32... 32... 32... 3.. 32... 3.. 32... 32... 32... 32... 3.. 32... 3..
8 5 0 29 8 5 0 29 8 5 0 29 8 5 0
29 8 5 0 29 8 5 0 29 8 5 0 29 8 5
29 8 5 0 29 8 5 0 29 8 5 0 29 8 5
0 31 0 6 0 31 0 6 0 31 0 6 0 31 0
125 104 0 625 104 0 3125 104 0 15625 104
1 0 1 0 1 0 1 0
8 5 0 29 8 5 0 29 8 5 0 29 8 5 0
69
5 0 5 0 5 0 5 0
25 104 0 125 104 0 625 104 0 3125 104


14113
12500 us
13000 us
13500 us
14000
5 0 5 0
0 78125 104 0 390
5'h00 5'h1D 5'h08 5'h05 5'h00 5'h1D 5'h
5'h1D 5'h08 5'h05 5'h00 5'h1D 5'h08 5'h05 5'h
5'h01 5'h00 5'h01 5'h00
29 8 5 0 29 8 5
29 8 5 0 29 8 5
-5757 16408 -16 0 -5757 16408 -16
19... 26... 39... 0 19... 26... 39...
6 0 31 0 6 0 31
5 0 5
0 15625 104 0 78125 10
-5757 16408 -16 0 -5757 16408 -1
4'hE 4'h5 4'hE
4'hC 4'h8 4'h0 4'hC 4'h8 4'
5'h06 5'h00 5'h1F 5'h00 5'h06 5'h00 5'h1F 5'h
32... 32... 32... 32... 32... 32... 32... 32...
29 8 5 0 29 8
0 29 8 5 0 29
0 29 8 5 0
6 0 31 0 6 0
0 78125 104 0
1 0 1
29 8 5 0 29 8
5 0 5
0 15625 104 0 78125 10