

S0

R7 → IMemA, I	-
IMemD → IR	S0
	MUX

→ S1, S5, S6, S7, S10, S12, S19, S22, S24, S40

S1

I → R7	-
IR ₁₁₋₉ → RFA1	S1
IR ₈₋₆ → RFA2	S2
RFD1 → T1	
RFD2 → T2	

S2

IR ₁₀ → ALU C2	OP
T1 → ALU A	S2
T2 → ALU B	S3
ALU C → T3	

S3

T3 → RFD3	-
IR ₈₋₃ → RFA3	S3
	IB

S4

R7 → IMemA, J	-
ImemD → IP	S4
	BC

S5

I → R7	-
	S5
	IB

S6

I → R7	-
IR → RFA1	S6
IR ₁₁₋₉ → RFA2	S2
RFD1 → T1	
RFD2 → LS1 → T2	

S7

IR ₁₁₋₉ → RFA1	-
RFD1 → T1	S7
IR ₅₋₀ → SE06 → T2	S8
I → R7	

S8

T1 → ALU A	OP
T2 → ALU B	S8
ALU C → T3	MUX S9

→ S9, S13, S14, S18, S23

S9

IR ₈₋₆ → RFA3	-
	S9
T3 → RFD3	IB

S10

IR ₈₋₀ → SE916 → T1	-
R7 → I	S10
	MUX S11

→ S11, S8

S11

T1 → T3 → RFD3	-
IR ₁₁₋₉ → RF-A3	S11
	S5

S12

IR ₈₋₆ → RF-A1	-
RFD1 → T1	S12
IR ₅₋₀ → SE06 → T2	S8
I → R7	

S13

$T3 \rightarrow DmemA$	-
$IR_{11-1} \rightarrow RFA3$	S13
$DmemD \rightarrow RFD3$	IB

S14

$T3 \rightarrow DmemA$	-
$IR_{11-1} \rightarrow RF-A1$	S14
$RF-D1 \rightarrow DmemD$	IB

S15

$IR_{8-8} \rightarrow SE616 \rightarrow T1$	-
$R7 \rightarrow I, T2$	S15
	S16

S16

$I \rightarrow R7$	ADD
$T1 \rightarrow ALWA$	S16
$T2 \rightarrow ALUB$	
$ALUC \rightarrow T3$	S17

S17

$IR_{8-8} \rightarrow RFA2$	-
$RFD2 \rightarrow T2$	S17
$IR_{11-1} \rightarrow RFA1$	
$RFD1 \rightarrow T1$	BC

~~S18~~

$I \rightarrow RFD3$	-
$IR_{11-1} \rightarrow RFA3$	S18
$T3 \rightarrow R7$	IB

S19

$IR_{8-8} \rightarrow RFA1$	-
$RFD1 \rightarrow T1$	S19
$R7 \rightarrow T2$	S20

S20

$T2 \rightarrow I$	-
	S20
	S21

~~S21~~

$I \rightarrow RFD3$	-
$IR_{11-1} \rightarrow RFA3$	S21
$T1 \rightarrow R7$	IB

S22

$IR_{11-1} \rightarrow RF-A1$	-
$RFD1 \rightarrow T1$	S22
$IR_{8-8} \rightarrow SE916 \rightarrow T2$	S8

S23

$T3 \rightarrow R7$	-
	S23
	IB

S14

$I \rightarrow RFD3$	S14
$IR_{11-1} \rightarrow RFA3$	S23

↓

$T3 \rightarrow R7$	S14
	IB

S56

S21

$I \rightarrow RFD3$	S21
$IR_{11-1} \rightarrow RFA3$	S27

↓

$T1 \rightarrow R7$	S21
	IB

S57

for further states refer LM & SM
HFCs

12
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