

Sheet1

\PH* PH ^ currInt<<2
 \PL* PL ^ currInt<<2

test Din == 011xxxxx
 math Din != x11xxxxx
 jump Din == 111x11xx
 imm Din == 111xxxxx & !jump
 k Din == xxx1xxxx
 zs Din == xxxx11xx
 zd Din == xxxxxx11
 jop Din[4,1:0]
 aluOp Imm ? Din[4:2] : Din[7:5]
 cond Din[3:0]

\decode \decodeSkip

test	test	fetch
Math & zs & zf	mathzz	skip2
Math & !zs & zd	mathrz	skip1
Math & zs & !zd	mathzr	skip1
Math & !zs & !zd	mathrr	fetch
Imm & zd	mathiz	skip2
Imm & !zd	mathir	skip1
Jump & jop == 0	jump	skip2
Jump & jop == 1	call	skip2
Jump & jop == 2	fetch	fetch
Jump & jop == 3	return	fetch
Jump & jop == 4	jumpz	skip1
Jump & jop == 5	callz	skip1
Jump & jop == 6	rjump	skip1
Jump & jop == 7	table	skip1

\mA IR[7:5] == 111 ? IR[3:2] : IR[6:5]
 \mL IR[7:5] == 111 ? !IR[4] | IR[3:2] : !IR[7] | IR[6:5]
 \mCin IR[7:5] == 111 ? !IR[4] & IR[2] : !IR[7] & IR[5]
 \S {00,IR[3:2]}
 \D {00,IR[1:0]}
 \kD prevK ? 0011 : {00,IR[1:0]}
 \kD2 useK ? 0011 : {00,IR[1:0]}

label	rA	rB	rW	dIn	dOut	wMem	aSel	bSel	logSel	Cin	sA7	A7	sA0	A0
reset	K	K	PL	?	?		0	0 B	^	0	0 x		0 x	
resetb	K	K	PH	?	?		0	0 B	^	0	0 x		0 x	
fetch	PH*	PL*	PL*	?	?		0	0 B	B	1	0 x		0 x	
fetchb	x	PH*	PH*	Inst	?		0	0 B	B	1	0 x		0 x	
fetchc	x	x	x	Inst	?		0	0 B	^	0	0 x		0 x	

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skipf	PH*	PL*	PL*	?	?	0	0 B	B	1	0 x	0 x
skipfb	x	PH*	PH*	Inst	?	0	0 B	B	1	0 x	0 x
skipfc	x	x	x	Inst	?	0	0 B	^	0	0 x	0 x
skip2	PH*	PL*	PL*	?	?	0	0 B	B	1	0 x	0 x
skip2b	x	PH*	PH*	?	?	0	0 B	B	1	0 x	0 x
skip1	PH*	PL*	PL*	?	?	0	0 B	B	1	0 x	0 x
skip1b	x	PH*	PH*	?	?	0	0 B	B	1	0 x	0 x
test	K	K	K	?	?	0	0 B	^	tr	0 x	0 x
mathRR	S	kD	kD2	?	?	0 mA	B	mL	mCir	0 x	0 x

wIR wFL next

0 0 resetb
0 0 fetch

PH,PL = 0

0 0 C?fetchb:fetchc
1 0 decode
1 0 decode

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0 0 C?skipfb:skipfc
0 0 decodeSkip
0 0 decodeSkip
0 0 C?skip2b:skip1
0 0 skip1
0 0 C?skip1b:fetch
0 0 fetch

0 0 useK | !tr : fetch : skipf

0 1 fetch