

# 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]  
 \fetch TZ?timer:fetcha

	\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	fetch	fetch
Jump & jop == 7	table	skip1

\mA SvAluOp[2]?00:SvAluOp[1:0]  
 \mL SvAluOp[2]?svAluOp[1:0]:11  
 \mCin !svAluOp[2]&svAluOp[0]  
 \S {00,svS}  
 \D {00,svD}  
 \kD prevK ? 0011 : {00,svD}  
 \kD2 useK ? 0011 : {00,svD}

label	aAd	bAd	wAd	wReg	dIn	rMem	dOut	wMem	aSel	bSel	logSel	Cin
reset	x	x	PL		1 ?		0 ?		0	0 B	^	0
resetb	x	x	PH		1 ?		0 ?		0	0 B	^	0
resetc	x	x	TL		1 ?		0 ?		0	0 B	^	0
resetd	x	x	TH		1 ?		0 ?		0	0 B	^	0
timer	x	TL	TL		1 ?		0 ?		0	-2 B	B	1
timerb	x	TH	TH		1 ?		0 ?		0	-2 B	B	1

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timerc	x	TL	TL	1 ?	0 ?	0	-2 B	B	0
fetcha	PH*	PL*	PL*	1 ?	1 ?	0	0 B	B	1
fetchb	x	PH*	PH*	1 Inst	0 ?	0	0 B	B	1
fetchc	x	x	x	0 Inst	0 ?	0	0 B	^	0
skipf	PH*	PL*	PL*	1 ?	1 ?	0	0 B	B	1
skipfb	x	PH*	PH*	1 Inst	0 ?	0	0 B	B	1
skipfc	x	x	x	0 Inst	0 ?	0	0 B	^	0
skip2	PH*	PL*	PL*	1 ?	0 ?	0	0 B	B	1
skip2b	x	PH*	PH*	1 ?	0 ?	0	0 B	B	1
skip1	PH*	PL*	PL*	1 ?	0 ?	0	0 B	B	1
skip1b	x	PH*	PH*	1 ?	0 ?	0	0 B	B	1
test	x	x	K	1 ?	0 ?	0	0 B	^	tr
mathRR	S	kD	kD2	1 ?	0 ?	0 mA	B	mL	mCir
call	x	PL*	LL	1 ?	0 ?	0	0 B	B	0
callb	x	PH*	LH	1 ?	0 ?	0	0 B	B	0
jump	PH*	PL*	PL*	1 ?	1 ?	0	0 B	B	1
jumpb	x	x	ML	1 PCL	0 ?	0	0 mem	B	0
jumpc	x	x	ML	1 PCL	0 ?	0	0 mem	B	0
jumpd	x	PH*	PH*	1 ?	0 ?	0	0 B	B	1
jumpe	PH*	PL*	x	0 ?	1 ?	0	0 B	B	0
jumpf	x	x	PH*	1 PCH	0 ?	0	0 mem	B	0
jumpg	x	ML	PL*	1 ?	0 ?	0	0 B	B	0
return	x	LL	PL*	1 ?	0 ?	0	0 B	B	0
returnb	x	LH	PH*	1 ?	0 ?	0	0 B	B	0

sA7 A7 sA0 A0 wIR wFL next

x	x	x	x	0	0 resetb	PH,PL = 0
x	x	x	x	0	0 resetc	
x	x	x	x	0	0 resetd	TH,TL = 0
x	x	x	x	0	0 fetch	
x	x	x	x	0	0 Z?(TZ?fetcha:timerb):timer	TL -= 1
x	x	x	x	0	0 timerc	TH -= 1

x	x	x	x	0	0 timer
	0 x		0 x	0	0 C?fetchb:fetchc
x	x	x	x	1	0 decode
x	x	x	x	1	0 decode
	0 x		0 x	0	0 C?skipfb:skipfc
x	x	x	x	0	0 decodeSkip
x	x	x	x	0	0 decodeSkip
x	x	x	x	0	0 C?skip2b:skip1
x	x	x	x	0	0 skip1
x	x	x	x	0	0 C?skip1b:fetch
x	x	x	x	0	0 fetch
x	x	x	x	0	0 useK !tr?fetch:skipf
x	x	x	x	0	1 fetch
x	x	x	x	0	0 callb
x	x	x	x	0	0 jump
	0 x		0 x	0	0 C?jumpb:jumpc
x	x	x	x	0	0 jumpd
x	x	x	x	0	0 jumpe
x	x	x	x	0	0 jumpe
x	x	x	x	0	0 jumpf
x	x	x	x	0	0 jumpg
x	x	x	x	0	0 fetch
x	x	x	x	0	0 returnb
x	x	x	x	0	0 fetch