| | |
|---|---|
| \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 | 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 | K | K | PL | 1 | ? | 0 | ? | 0 | 0 | B | ^ | 0 |
| resetb | K | K | PH | 1 | ? | 0 | ? | 0 | 0 | B | ^ | 0 |
| | | | | | | | | | | | | |
| fetch | 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 | fetch |
| | 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 |