# State Transition Table

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| Current State | Next State | Condition |
|---|---|---|
| $S_1$ | $S_2$ | don't care |
| $S_2$ | $S_3$ | $(opcode=0001 + opcode=0010)\cdot((oper=00)+(oper=01).Z+(oper=10)'C)$ |
| $S_2$ | $S_6$ | $opcode=1100 + opcode=1101$ |
| $S_2$ | $S_4$ | $opcode=0011$ |
| $S_2$ | $S_{15}$ | $opcode=1000$ |
| $S_2$ | $S_{20}$ | $opcode=1011$ |
| $S_2$ | $S_5$ | $(opcode=0010)\cdot(oper=11)$ |
| $S_2$ | $S_{17}$ | $(opcode=1001)+(opcode=1010)$ |
| $S_2$ | $S_1$ | else |
| $S_3$ | $S_4$ | $(opcode=0001)+(opcode=0010)+(opcode=0000)$ |
| $S_3$ | $S_7$ | $opcode=0111$ |
| $S_3$ | $S_{17}$ | $opcode=0101$ |
| $S_4$ | $S_1$ | don't care |
| $S_5$ | $S_4$ | don't care |
| $S_6$ | $S_{10}$ | $opcode=1100$ |
| $S_6$ | $S_{12}$ | $opcode=1101$ |
| $S_6$ | $S_4$ | $opcode=0011$ |

| Current State | Next State | Condition |
|---|---|---|
| $S_7$ | $S_{16}$ | don't care |
| $S_8$ | $S_1$ | don't care |
| $S_9$ | $S_1$ | don't care |
| $S_{10}$ | $S_{11}$ | don't care |
| $S_{11}$ | $S_1$ | $T_2 =$ "00 .... 0" (16 bits) |
| $S_{11}$ | $S_{12}$ | else |
| $S_{12}$ | $S_{13}$ | don't care |
| $S_{13}$ | $S_{14}$ | don't care |
| $S_{14}$ | $S_1$ | $T_2 =$ "00 ... 0" (16 bits) |
| $S_{14}$ | $S_{12}$ | else |
| $S_{15}$ | $S_{16}$ | don't care |
| $S_{16}$ | $S_1$ | don't care |
| $S_{17}$ | $S_{18}$ | opcode = 1001 |
| $S_{17}$ | $S_{19}$ | opcode = 1010 |
| $S_{18}$ | $S_1$ | don't care |
| $S_{19}$ | $S_1$ | don't care |
| $S_{20}$ | $S_1$ | don't care |