Microprograms

Loc	Label	Dest	ALU	Src1	Src2	Constant	Misc	Cond	Jump Addr
0	**Ifetch:**	MAR	Pass S1	PC	None	None	None	None	
1		None	None	None	None	None	MDR ← M[MAR]	None	
2		IR	Pass S1	MDR	None	None	None	None	
3		PC	ADD	PC	Constant	4	A ← Rs1	None	
4		None	None	None	None	None	B ← Rs2	Decode	
5	**Load:**	MAR	ADD	A	IR (16 bits)	None	None	None	
6		None	None	None	None	None	MDR ← M[MAR]	None	
7		C	Pass S1	MDR	None	None	None	Uncond	**Write:**
8	**Store:**	None	None	None	None	None	B ← Rd	None	
9		MAR	ADD	A	IR (16 bits)	None	None	None	
10		MDR	Pass S2	None	B	None	None	None	
11		None	None	None	None	None	M[MAR] ← MDR	Uncond	**Ifetch:**
12	**BEQ:**	None	SUB	A	B	None	None	zero?	**Branch:**
13		None	None	None	None	None	None	Uncond	**Ifetch:**
14	**BNE:**	None	SUB	A	B	None	None	zero?	**Ifetch:**
15		None	None	None	None	None	None	Uncond	**Branch:**
16	**BL:**	None	SUB	A	B	None	None	negative?	**Branch:**
17		None	None	None	None	None	None	Uncond	**Ifetch:**
18	**BGE:**	None	SUB	A	B	None	None	negative?	**Ifetch:**
19	**Branch:**	PC	ADD	PC	IR (16 bits)	None	None	Uncond	**Ifetch:**
20	**JAL:**	C	Pass S1	PC	None	None	None	None	
21		None	None	None	None	None	R31 ← C	None	
22	**JPC:**	PC	ADD	PC	IR (26 bits)	None	None	Uncond	**Ifetch:**
23	**JR:**	PC	ADD	A	IR (16 bits)	None	None	Uncond	**Ifetch:**
24	**ADDR:**	C	ADD	A	B	None	None	Uncond	**Write:**
25	**SUBR:**	C	SUB	A	B	None	None	Uncond	**Write:**
26	**RRR:**	C	RR	A	B	None	None	Uncond	**Write:**
27	**RLR:**	C	RL	A	B	None	None	Uncond	**Write:**
28	**SRR:**	C	SR	A	B	None	None	Uncond	**Write:**
29	**SLR:**	C	SL	A	B	None	None	Uncond	**Write:**
30	**ANDR:**	C	AND	A	B	None	None	Uncond	**Write:**
31	**ORR:**	C	OR	A	B	None	None	Uncond	**Write:**
32	**XORR:**	C	XOR	A	B	None	None	Uncond	**Write:**
33	**NOTR:**	C	NOT	A	B	None	None	Uncond	**Write:**
34	**ADDI:**	C	ADD	A	IR (16 bits)	None	None	Uncond	**Write:**
35	**SUBI:**	C	SUB	A	IR (16 bits)	None	None	Uncond	**Write:**
36	**RRI:**	C	RR	A	IR (16 bits)	None	None	Uncond	**Write:**
37	**RLI:**	C	RL	A	IR (16 bits)	None	None	Uncond	**Write:**
38	**SRI:**	C	SR	A	IR (16 bits)	None	None	Uncond	**Write:**
39	**SLI:**	C	SL	A	IR (16 bits)	None	None	Uncond	**Write:**
40	**ANDI:**	C	AND	A	IR (16 bits)	None	None	Uncond	**Write:**
41	**ORI:**	C	OR	A	IR (16 bits)	None	None	Uncond	**Write:**
42	**XORI:**	C	XOR	A	IR (16 bits)	None	None	Uncond	**Write:**
43	**NOTI:**	C	NOT	A	IR (16 bits)	None	None	None	
44	**Write:**	None	None	None	None	None	Rd ← C	Uncond	**Ifetch:**