

Microinstruction Format and Decode

μ-instruction format

	Dest	ALU	Src1	Src2	Constant	Misc	Cond	Jump Addr
0000	None	None	None	None	None	None	None	
0001	C	ADD	A		4	MDR ← M[MAR]	Uncond	
0010	PC	SUB		B		M[MAR] ← MDR	zero?	
0011	MAR	RR	PC			A ← Rs1	negative?	
0100	MDR	RL	MAR			B ← Rs2	carry?	
0101	IR	SR	MDR			B ← Rd	overflow?	
0110		SL	IR (16 bits)			Rd ← C	Decode	
0111		AND	IR (26 bits)			R31 ← C		
1000		OR	Constant					
1001		XOR						
1010		NOT						
1011		Pass S1						
1100		Pass S2						
1101								
1110								
1111								

Opcode	Absolute Addr	Label
LD	5	Load:
ST	8	Store:
BEQ	12	BEQ:
BNE	14	BNE:
BL	16	BL:
BGE	18	BGE:
JAL	20	JAL:
J (PC relative)	22	JPC:
J (Register indirect)	23	JR:
ADD (R-R-R)	24	ADDR:
SUB (R-R-R)	25	SUBR:
RR (R-R-R)	26	RRR:
RL (R-R-R)	27	RLR:
SR (R-R-R)	28	SRR:
SL (R-R-R)	29	SLR:
AND (R-R-R)	30	ANDR:
OR (R-R-R)	31	ORR:
XOR (R-R-R)	32	XORR:
NOT (R-R-R)	33	NOTR:
ADD (R-R-I)	34	ADDI:
SUB (R-R-I)	35	SUBI:
RR (R-R-I)	36	RRI:
RL (R-R-I)	37	RLI:
SR (R-R-I)	38	SRI:
SL (R-R-I)	39	SLI:
AND (R-R-I)	40	ANDI:
OR (R-R-I)	41	ORI:
XOR (R-R-I)	42	XORI:
NOT (R-R-I)	43	NOTI: