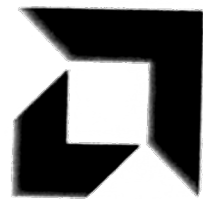


Advanced Micro Devices

Microprogram Memory Field Definition



RAM & MUX SELECT	7				6				5				4				3				2				1				0						
RAM LOCATION	U9				U7				U8				U6				U5				U4				U3				U2						
BIT NUMBER	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0			
BIT DEFINITION	BR ₃	BR ₂	BR ₁	BR ₀	P ₃	P ₂	P ₁	P ₀	MUX ₁	I ₈	I ₇	I ₆	MUX ₀	I ₂	I ₁	I ₀	C _n	I ₅	I ₄	I ₃	A ₃	A ₂	A ₁	A ₀	B ₃	B ₂	B ₁	B ₀	D ₃	D ₂	D ₁	D ₀			
FIELD DEFINITION	BRANCH ADDRESS				NEXT μ INSTRUCTION CONTROL				MUX ₁	DESTINATION CONTROL				MUX ₀	SOURCE SELECT				C _n	ALU				"A"				"B"				"D"			

CODE	FUNCTION
0	BRANCH REGISTER IF F \neq 0
1	BRANCH REGISTER
2	CONTINUE
3	BRANCH MAP (D SWITCHES)
4	JUMP-TO-SUBROUTINE IF F \neq 0
5	JUMP-TO-SUBROUTINE
6	RETURN-FROM-SUBROUTINE
7	FILE REFERENCE
8	END LOOP AND POP IF F = 0
9	PUSH (AND CONTINUE)
10	POP (AND CONTINUE)
11	END LOOP AND POP IF C _{n+4}
12	BRANCH REGISTER IF F = 0
13	BRANCH REGISTER IF F ₃
14	BRANCH REGISTER IF OVR
15	BRANCH REGISTER IF C _{n+4}

	LOAD	Y =
0	F \rightarrow Q	F
1	NOTHING	F
2	F \rightarrow B	A
3	F \rightarrow B	F
4	F/2 \rightarrow B Q/2 \rightarrow Q	F *
5	F/2 \rightarrow B	F *
6	2F \rightarrow B 2Q \rightarrow Q	F **
7	2F \rightarrow B	F **

	R	S
0	A	Q
1	A	B
2	O	Q
3	O	B
4	O	A
5	D	A
6	D	Q
7	D	O

	F
0	R + S
1	S - R
2	R - S
3	R \vee S
4	R \wedge S
5	$\bar{R} \wedge S$
6	R \neq S
7	$\bar{R} \neq S$

	TYPE	DOWN*	UP**
0 0	ZERO	0 \rightarrow RAM ₃ 0 \rightarrow Q ₃	0 \rightarrow RAM ₀ 0 \rightarrow Q ₀
0 1	ROTATE	RAM ₀ \rightarrow RAM ₃ Q ₀ \rightarrow Q ₃	RAM ₃ \rightarrow RAM ₀ Q ₃ \rightarrow Q ₀
1 0	ROTATE DOUBLE	RAM ₀ \rightarrow Q ₃ Q ₀ \rightarrow RAM ₃	RAM ₃ \rightarrow Q ₀ Q ₃ \rightarrow RAM ₀
1 1	ARITHMETIC DOUBLE	F ₃ (Sign) \rightarrow RAM ₃ RAM ₀ \rightarrow Q ₃	Q ₃ \rightarrow RAM ₀ 0 \rightarrow Q ₀

FIGURE 7: Programming Guide for the AM2900 Evaluation and Learning Kit