

G-CPU Controller Next State Table

Pres State	Opcode	Flags	Next State	Mux Select			Control		REG INC	ADDR SEL	PC	MAR	X,Y Loading		Disp Regs	Present State Function
				MSA [1..0]	MSB [1..0]	MSC [3..0]	IR LD	R /W	PC MAR X Y	ADDR SEL [1..0]			PC LD L/U	MAR LD L/U	X LD L/U	
000000	*****	**	000001	01	10	0000	1	1	0000	00	00	00	00	00	00	generic instruction fetch
000001	000000	**	000000	01	01	0000	0	1	1000	00	00	00	00	00	00	Transfer A to B (TAB)
000001	000001	**	000000	10	10	0000	0	1	1000	00	00	00	00	00	00	Transfer B to A (TBA)
000001	000010	**	000010	01	10	0000	0	1	1000	00	00	00	00	00	00	LDAA #data, state 1
000010	*****	**	000000	00	10	0000	0	1	1000	00	00	00	00	00	00	LDAA #data, state 2
000001	000011	**	000011	01	10	0000	0	1	1000	00	00	00	00	00	00	LDAB #data, state 1
000011	*****	**	000000	01	00	0000	0	1	1000	00	00	00	00	00	00	LDAB #data, state 3
000001	000100	**	000100	01	10	0000	0	1	1000	00	00	00	00	00	00	LDAA addr, state 1
000100	*****	**	000101	01	10	0000	0	1	1000	00	00	10	00	00	00	LDAA addr, state 4
000101	*****	**	000110	01	10	0000	0	1	1000	00	00	01	00	00	00	LDAA addr, state 5
000110	*****	**	000000	00	10	0000	0	1	0000	01	00	00	00	00	00	LDAA addr, state 6
000001	000101	**	000111	01	10	0000	0	1	1000	00	00	00	00	00	00	LDAB addr, state 1
000111	*****	**	001000	01	10	0000	0	1	1000	00	00	10	00	00	00	LDAB addr, state 7
001000	*****	**	001001	01	10	0000	0	1	1000	00	00	01	00	00	00	LDAB addr, state 8
001001	*****	**	000000	01	00	0000	0	1	0000	01	00	00	00	00	00	LDAB addr, state 9
000001	000110	**	001010	01	10	0000	0	1	1000	00	00	00	00	00	00	STAA addr, state 1
001010	*****	**	001011	01	10	0000	0	1	1000	00	00	10	00	00	00	STAA addr, state A
001011	*****	**	001100	01	10	0000	0	1	1000	00	00	01	00	00	00	STAA addr, state B
001100	*****	**	000000	01	10	0000	0	0	0000	01	00	00	00	00	00	STAA addr, state C
000001	000111	**	001101	01	10	0000	0	1	1000	00	00	00	00	00	00	STAB addr, state 1
001101	*****	**	001110	01	10	0000	0	1	1000	00	00	10	00	00	00	STAB addr, state D
001110	*****	**	001111	01	10	0000	0	1	1000	00	00	01	00	00	00	STAB addr, state E
001111	*****	**	000000	01	10	0001	0	0	0000	01	00	00	00	00	00	STAB addr, state F
000001	001000	**	010000	01	10	0000	0	1	1000	00	00	00	00	00	00	LDX #data, state 1
010000	*****	**	010001	01	10	0000	0	1	1000	00	00	00	10	00	00	LDX #data, state 10
010001	*****	**	000000	01	10	0000	0	1	1000	00	00	00	01	00	00	LDX #data, state 11
000001	001001	**	010010	01	10	0000	0	1	1000	00	00	00	00	00	00	LDY #data, state 1
010010	*****	**	010011	01	10	0000	0	1	1000	00	00	00	00	10	00	LDY #data, state 12
010011	*****	**	000000	01	10	0000	0	1	1000	00	00	00	00	01	00	LDY #data, state 13
000001	001010	**	010100	01	10	0000	0	1	1000	00	00	00	00	00	00	LDX addr, state 1
010100	*****	**	010101	01	10	0000	0	1	1000	00	00	10	00	00	00	LDX addr, state 14
010101	*****	**	010110	01	10	0000	0	1	1000	00	00	01	00	00	00	LDX addr, state 15
010110	*****	**	010111	01	10	0000	0	1	0100	01	00	00	10	00	00	LDX addr, state 16
010111	*****	**	000000	01	10	0000	0	1	0000	01	00	00	01	00	00	LDX addr, state 17
000001	001011	**	011000	01	10	0000	0	1	1000	00	00	00	00	00	00	LDY addr, state 1
011000	*****	**	011001	01	10	0000	0	1	1000	00	00	10	00	00	00	LDY addr, state 18

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Pres State	Opcode	Flags	Next State	Mux Select			Control		REG INC	ADDR SEL	PC	MAR	X,Y Loading		Disp Regs	Present State Function
				MSA [1..0]	MSB [1..0]	MSC [3..0]	IR LD	R /W	PC MAR X Y	ADDR SEL [1..0]	PC LD L/U	MAR LD L/U	X LD L/U	Y LD L/U	XD_LD YD_LD	
000001	011101	**	000000	11	10	1000	0	1	1000	00	00	00	00	00	00	SHFA R state 1
000001	011110	**	000000	01	11	1001	0	1	1000	00	00	00	00	00	00	SHFB L state 1
000001	011111	**	000000	01	11	1010	0	1	1000	00	00	00	00	00	00	SHFB R state 1
000001	100000	1*	101100	01	10	0000	0	1	1000	00	00	00	00	00	00	BEQ addr state 1
000001	100000	0*	101101	01	10	0000	0	1	1000	00	00	00	00	00	00	BEQ addr state 1
101100	*****	**	000000	01	10	0000	0	1	0000	00	10	00	00	00	00	BEQ addr state 2C
101101	*****	**	000000	01	10	0000	0	1	1000	00	00	00	00	00	00	BEQ addr state 2D
000001	100001	0*	101110	01	10	0000	0	1	1000	00	00	00	00	00	00	BNE addr state 1
000001	100001	1*	101111	01	10	0000	0	1	1000	00	00	00	00	00	00	BNE addr state 1
101110	*****	**	000000	01	10	0000	0	1	0000	00	10	00	00	00	00	BNE addr state 2E
101111	*****	**	000000	01	10	0000	0	1	1000	00	00	00	00	00	00	BNE addr state 2F
000001	100010	*1	110000	01	10	0000	0	1	1000	00	00	00	00	00	00	BN addr state 1
000001	100010	*0	110001	01	10	0000	0	1	1000	00	00	00	00	00	00	BN addr state 1
110000	*****	**	000000	01	10	0000	0	1	0000	00	10	00	00	00	00	BN addr state 30
110001	*****	**	000000	01	10	0000	0	1	1000	00	00	00	00	00	00	BN addr state 31
000001	100011	*0	110010	01	10	0000	0	1	1000	00	00	00	00	00	00	BP addr state 1
000001	100011	*1	110011	01	10	0000	0	1	1000	00	00	00	00	00	00	BP addr state 1
110010	*****	**	000000	01	10	0000	0	1	0000	00	10	00	00	00	00	BP addr state 32
110011	*****	**	000000	01	10	0000	0	1	1000	00	00	00	00	00	00	BP addr state 33
000001	110000	**	000000	01	10	0000	0	1	1010	00	00	00	00	00	00	Increment X (INX)
000001	110001	**	000000	01	10	0000	0	1	1001	00	00	00	00	00	00	Increment Y (INY)