

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	
Q[5..0]	IR[5..0]	Z N	D[5..0]	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	Present State Function
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	0001	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

Pres State	Opcode	Flags	Next State	Mux Select			Control		REG INC	ADDR SEL	PC	MAR	X,Y Loading		Disp Regs	
Q[5..0]	IR[5..0]	Z N	D[5..0]	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	Present State Function
011001	*****	**	011010	01	10	0000	0	1	1000	00	00	01	00	00	00	LDY addr, state 19
011010	*****	**	011011	01	10	0000	0	1	0100	01	00	00	00	10	00	LDY addr, state 1A
011011	*****	**	000000	01	10	0000	0	1	0000	01	00	00	00	01	00	LDY addr, state 1B
000001	001100	**	011100	01	10	0000	0	1	1000	00	00	00	00	00	00	LDAA dd,X state 1
011100	*****	**	011101	01	10	0000	0	1	1000	00	00	00	00	00	10	LDAA dd,X state 1C
011101	*****	**	000000	00	10	0000	0	1	0000	10	00	00	00	00	00	LDAA dd,X state 1D
000001	001101	**	011110	01	10	0000	0	1	1000	00	00	00	00	00	00	LDAA dd,Y state 1
011110	*****	**	011111	01	10	0000	0	1	1000	00	00	00	00	00	01	LDAA dd,Y state 1E
011111	*****	**	000000	00	10	0000	0	1	0000	11	00	00	00	00	00	LDAA dd,Y state 1F
000001	001110	**	100000	01	10	0000	0	1	1000	00	00	00	00	00	00	LDAB dd,X state 1
100000	*****	**	100001	01	10	0000	0	1	1000	00	00	00	00	00	10	LDAB dd,X state 20
100001	*****	**	000000	01	00	0000	0	1	0000	10	00	00	00	00	00	LDAB dd,X state 21
000001	001111	**	100010	01	10	0000	0	1	1000	00	00	00	00	00	00	LDAB dd,Y state 1
100010	*****	**	100011	01	10	0000	0	1	1000	00	00	00	00	00	01	LDAB dd,Y state 22
100011	*****	**	000000	01	00	0000	0	1	0000	11	00	00	00	00	00	LDAB dd,Y state 23
000001	010000	**	100100	01	10	0000	0	1	1000	00	00	00	00	00	00	STAA dd,X state 1
100100	*****	**	100101	01	10	0000	0	1	1000	00	00	00	00	00	10	STAA dd,X state 24
100101	*****	**	000000	01	10	0000	0	0	0000	10	00	00	00	00	00	STAA dd,X state 25
000001	010001	**	100110	01	10	0000	0	1	1000	00	00	00	00	00	00	STAA dd,Y state 1
100110	*****	**	100111	01	10	0000	0	1	1000	00	00	00	00	00	01	STAA dd,Y state 26
100111	*****	**	000000	01	10	0000	0	0	0000	11	00	00	00	00	00	STAA dd,Y state 27
000001	010010	**	101000	01	10	0000	0	1	1000	00	00	00	00	00	00	STAB dd,X state 1
101000	*****	**	101001	01	10	0001	0	1	1000	00	00	00	00	00	10	STAB dd,X state 28
101001	*****	**	000000	01	10	0001	0	0	0000	10	00	00	00	00	00	STAB dd,X state 29
000001	010011	**	101010	01	10	0000	0	1	1000	00	00	00	00	00	00	STAB dd,Y state 1
101010	*****	**	101011	01	10	0001	0	1	1000	00	00	00	00	00	01	STAB dd,Y state 2A
101011	*****	**	000000	01	10	0001	0	0	0000	11	00	00	00	00	00	STAB dd,Y state 2B
000001	010100	**	000000	11	10	0010	0	1	1000	00	00	00	00	00	00	SUM_BA state

