

My6502 MICROINSTRUCTION ROM ORGANISATION

2x16-bit ROMs; 52 Microinstructions

ROM #1

ENCODED MICROINSTRUCTIONS (3-bit - 7 values)

BIT	7	6	5	4	3	2	1	0	
0	1	0	1	0	1	0	1	0	
1	1	1	0	0	1	1	0	0	
2	1	1	1	1	0	0	0	0	
[0..2]	ALU.OUT	P.OUT	T.OUT	SR.OUT	Y.OUT	X.OUT	A.OUT	-	R & W Bus Output Enables
	30	30	20	20	10	10	0	0	
3	1	0	1	0	1	0	1	0	
4	1	1	0	0	1	1	0	0	
5	1	1	1	1	0	0	0	0	
[3..5]	-	ADH.FF	ADH.00	PCLR.OUT	PCHR.OUT	ADH.OUT	PCH.OUT	-	ADH Bus Output Enables & Consts
	1C0	100	140	100	C0	00	40	0	
6	1	0	1	0	1	0	1	0	
7	1	1	0	0	1	1	0	0	
8	1	1	1	1	0	0	0	0	
[6..8]	-	INT.VEC_HI	INT.VEC_LO	S.OUT	ADLR.OUT	ADL.OUT	PCL.OUT	-	ADL Bus Output Enables & Consts
	E00	C00	A00	000	600	400	200	0	
9	1	0	1	0	1	0	1	0	
10	1	1	0	0	1	1	0	0	
11	1	1	1	1	0	0	0	0	
[9..11]	IR.LOAD	P.LOAD	T.LOAD	S.LOAD	Y.LOAD	X.LOAD	A.LOAD	-	W & D Bus Load Enables
	7000	6000	5000	4000	3000	2000	1000	0	
12	1	0	1	0	1	0	1	0	
13	1	1	0	0	1	1	0	0	
14	1	1	1	1	0	0	0	0	
[12..14]	P.LOAD_IR5	P.LOAD_ALU	ALU.SR	ADH.LOAD	ADL.LOAD	PCH.LOAD	PCL.LOAD	-	Additional Load/Function Enables
NON-ENCODED MICROINSTRUCTIONS									
15							S.DN		Stack count direction

ROM #2

ENCODED MICROINSTRUCTIONS (2-bit - 3 values)

BIT	3	2	1	0	
0	1	0	1	0	
1	1	1	0	0	
[0..1]	RB.DB	RB.WB	DB.WB	-	Buffer Enables
	C	0	4	0	
2	1	0	1	0	
3	1	1	0	0	
[2..3]	S.COUNT	ADL.INC	PCL.INC	-	Count Enables

NON-ENCODED MICROINSTRUCTIONS

4		ALU.F_LA		ALU Function Selectors
5		ALU.F_LB		
6		ALU.F_R0		
7		ALU.F_R1		
8		ALU.F_R2		
9		ALU.F_R3		
10		(ALU.USE_P_CARRY)		ALU Carry Logic
11		ALU.F_CARRY		
12		P.C_LOAD		Status Register Load Enables
13		P.ZN_LOAD		
14		P.I_LOAD		
15		P.V_LOAD		