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1: |-----
2: | The idea of this script is to run the program below,
3: | which is useless, except that it exercises almost
4: | every feature of the Cleopatra processor
5: |
6: |                                CLOCKS TAKEN
7: | 00 40 FF prgtst: lda #0FFH      ; 6   AC initialized with FF
8: | 02 24 80          sta minus1   ; 7   write FF at position 80 using direct AM
9: | 04 4C 7A          lda minus1,R  ; 8   restore FF, relative AM, setting N flag
10: | 06 58 83          add pone,I    ; 10  incr. AC (to 00), indirect, C and Z set
11: | 08 9C 02          jc  xuxu,R    ; 6   relative jump, go to xuxu
12: | 0A 84 14          jmp  xexe     ; 0   this instruction should never execute
13: | 0C 54 82 xuxu:   add  one       ; 8   incr. AC (to 01), direct; C=Z=0
14: | 0E A4 81          jn  xaxa     ; 5   conditional jump should never be taken
15: | 10 00             not           ; 4   invert AC (goes to FE), setting N flag
16: | 11 C8 81          jsr xaxa,I    ; 9   indirect jump to subroutine
17: | 13 F0             hlt           ; 4   executed after RTS below
18: | 14 D0      xexe:  rts           ; 4   subroutine does nothing, just returns
19: |
20: |          Data area              ; Total of 71 clocks
21: |                org #80h
22: | 80 00  minus1:  db  #00h        ; initialized to 0
23: | 81 14  xaxa:    db  xexe        ; generates indirect address
24: | 82 01  one:     db  #01h        ;
25: | 83 82  pone:    db  one         ;
26: |
27: | Created by Ney Calazans
28: | Last Change on 18/09/02
29: |-----
30: |
31: | Initial settings
32: delete_signals
33: set_mode functional
34: restart
35: stepsize 10 ns
36: |
37: | Watched Signals and Vectors
38: |
39: | Define your signal and vector watch list here
40: watch CLOCK RESET
41: |
42: wfm CLOCK 0ns=0 (41.6666ns=1 41.6666ns=0)*71
43: wfm RESET 0ns=1 60ns=0
44: |
45: |
46: watch CE RW HALT
47: | Vector Definitions
48: |
49: | Add your vector definition commands here
50: vector ADDRESS ADDRESS7 ADDRESS6 ADDRESS5 ADDRESS4 ADDRESS3 ADDRESS2 +
51: ADDRESS1 ADDRESS0
52: radix hex ADDRESS
53: |
54: vector DATAIN DATAIN7 DATAIN6 DATAIN5 DATAIN4 DATAIN3 DATAIN2 +
55: DATAIN1 DATAIN0
56: radix hex DATAIN

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57:
58: vector DATAOUT DATAOUT7 DATAOUT6 DATAOUT5 DATAOUT4 DATAOUT3 DATAOUT2 +
59: DATAOUT1 DATAOUT0
60: radix hex DATAOUT
61:
62: wfm DATAIN 0ns=00\H 144.3ns=40\H 83.2ns=00\H 166.4ns=FF\H 83.2ns=00\H 166.4ns=24\H +
63: 83.2ns=00\H 166.4ns=80\H 83.2ns=00\H 250ns=4C\H 83.2ns=00\H 166.4ns=7A\H 83.2ns=00\H +
64: 83.2ns=FF\H 83.2ns=00\H 166.4ns=58\H 83.2ns=00\H 166.4ns=83\H 83.2ns=00\H 83.2ns=82\H +
65: 83.2ns=00\H 83.2ns=01\H 83.2ns=00\H 166.4ns=9C\H 83.2ns=00\H 166.4ns=02\H 83.2ns=00\H +
66: 166.4ns=54\H 83.2ns=00\H 166.4ns=82\H 83.2ns=00\H 83.2ns=01\H 83.2ns=00\H 166.4ns=A4\H +
67: 83.2ns=00\H 166.4ns=81\H 83.2ns=00\H 416ns=C8\H 83.2ns=00\H 166.4ns=81\H 83.2ns=00\H +
68: 83.2ns=14\H 83.2ns=00\H 249.6ns=D0\H 83.2ns=00\H 250ns=F0\H 83.2ns=00\H
69:
70: vector MAR CLEOPATRA\U5\MAR\Q7 CLEOPATRA\U5\MAR\Q6 CLEOPATRA\U5\MAR\Q5 +
71: CLEOPATRA\U5\MAR\Q4 CLEOPATRA\U5\MAR\Q3 CLEOPATRA\U5\MAR\Q2 +
72: CLEOPATRA\U5\MAR\Q1 CLEOPATRA\U5\MAR\Q0
73: radix hex MAR
74: vector MDR CLEOPATRA\U5\MDR\Q7 CLEOPATRA\U5\MDR\Q6 CLEOPATRA\U5\MDR\Q5 +
75: CLEOPATRA\U5\MDR\Q4 CLEOPATRA\U5\MDR\Q3 CLEOPATRA\U5\MDR\Q2 +
76: CLEOPATRA\U5\MDR\Q1 CLEOPATRA\U5\MDR\Q0
77: radix hex MDR
78: vector IR CLEOPATRA\U5\IR\Q7 CLEOPATRA\U5\IR\Q6 CLEOPATRA\U5\IR\Q5 +
79: CLEOPATRA\U5\IR\Q4 CLEOPATRA\U5\IR\Q3 CLEOPATRA\U5\IR\Q2 +
80: CLEOPATRA\U5\IR\Q1 CLEOPATRA\U5\IR\Q0
81: radix hex IR
82: vector PC CLEOPATRA\U5\PC\Q7 CLEOPATRA\U5\PC\Q6 CLEOPATRA\U5\PC\Q5 +
83: CLEOPATRA\U5\PC\Q4 CLEOPATRA\U5\PC\Q3 CLEOPATRA\U5\PC\Q2 +
84: CLEOPATRA\U5\PC\Q1 CLEOPATRA\U5\PC\Q0
85: radix hex PC
86: vector AC CLEOPATRA\U5\AC\Q7 CLEOPATRA\U5\AC\Q6 CLEOPATRA\U5\AC\Q5 +
87: CLEOPATRA\U5\AC\Q4 CLEOPATRA\U5\AC\Q3 CLEOPATRA\U5\AC\Q2 +
88: CLEOPATRA\U5\AC\Q1 CLEOPATRA\U5\AC\Q0
89: radix hex AC
90: vector RS CLEOPATRA\U5\RS\Q7 CLEOPATRA\U5\RS\Q6 CLEOPATRA\U5\RS\Q5 +
91: CLEOPATRA\U5\RS\Q4 CLEOPATRA\U5\RS\Q3 CLEOPATRA\U5\RS\Q2 +
92: CLEOPATRA\U5\RS\Q1 CLEOPATRA\U5\RS\Q0
93: radix hex RS
94:
95: watch CLEOPATRA\U5\C CLEOPATRA\U5\V CLEOPATRA\U5\N CLEOPATRA\U5\Z
96:
97: | Perform Simulation
98: |
99: | Run simulation for a selected number of
100: | clock cycles or a time range
101: sim 5964.83ns
102:

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