

;SEGMENT A:

PIN 2 HC3 COMBINATORIAL ; OUTPUT counter output - dense xhatch lines
 PIN 4 HEN1 REGISTERED ; OUTPUT active video enable
 PIN 5 HX COMBINATORIAL ; OUTPUT vertical xhatch lines
 PIN 6 START_HB COMBINATORIAL ; INPUT start of horizontal count
 PIN 7 VLTC COMBINATORIAL ; INPUT clock for row counter
 NODE 3 HTC REGISTERED ; OUTPUT
 PIN 14 GRO REGISTERED ; OUTPUT grayscale - LSB
 PIN 15 GR1 REGISTERED ; OUTPUT grayscale
 PIN 16 GR2 REGISTERED ; OUTPUT grayscale - MSb
 PIN 17 MIDV COMBINATORIAL ; INPUT lower half of raster (for grayscale)
 PIN 18 FONT_CLK REGISTERED ; OUTPUT clocks and muxes font address/data
 PIN 19 LDSHIFT REGISTERED ; OUTPUT loads output shift registers
 PIN 20 OEFONT COMBINATORIAL ; OUTPUT muxes font and font slices
 PIN 21 CG12 COMBINATORIAL ; OUTPUT selects font or character from RAM
 NODE 13 ELS REGISTERED ; OUTPUT
 NODE 9 OEROW COMBINATORIAL ; OUTPUT muxes row and column addresses

GROUP MACH_SEG_A HEN1 HTC FONT_CLK LDSHIFT ELS GRO GR1 GR2

;SEGMENT B:

PIN 24 COLO REGISTERED ; OUTPUT column count - CG0
 PIN 25 COL1 REGISTERED ; OUTPUT column count - CG1
 PIN 26 COL2 REGISTERED ; OUTPUT column count - CG2
 PIN 27 COL3 REGISTERED ; OUTPUT column count - CG3
 PIN 28 COL4 REGISTERED ; OUTPUT column count - CG4
 PIN 29 COL5 REGISTERED ; OUTPUT column count - CG5
 NODE 33 COL6 REGISTERED ; OUTPUT column count
 PIN 36 ROW0 REGISTERED ; OUTPUT row count - CG6
 PIN 37 ROW1 REGISTERED ; OUTPUT row count - CG7
 PIN 38 ROW2 REGISTERED ; OUTPUT row count - CG8
 PIN 39 ROW3 REGISTERED ; OUTPUT row count - CG9
 PIN 40 ROW4 REGISTERED ; OUTPUT row count - CG10
 PIN 41 ROW5 COMBINATORIAL ; OUTPUT dummy row bit - CG11
 PIN 42 ATC REGISTERED ; OUTPUT same as ROW0 but not tristated

GROUP MACH_SEG_B CG0 COL1 COL2 COL3 COL4 COL5 COL6

----- Boolean Equation Segment -----

EQUATIONS

;SEGMENT A:

HTC=COL6*/LDSHIFT
 HEN1.T=HEN1*START_HB+/HEN1*HTC
 HC3=COL1

MACH_SEG_A.CLKF=PIXCLKB
 MACH_SEG_A.SETF=GND
 MACH_SEG_A.RSTF=GND

HX=ELS*/FONT_CLK*/HCLK*COLO ;Vertical crosshatch lines
 HC3.TRST=OE
 HEN1.TRST=OE ;Global tristates
 HX.TRST=OE

GR2.T=/LDSHIFT*(MIDV*/COL5*/GR2 ;Grayscale outputs
 +MIDV*COL5*GR2
 +/MIDV*/COL5*GR2
 +/MIDV*COL5*/GR2)