PT-SS50-64K

User's Manual

Peripheral Technology

PT-SS50-64K

The SS50-64K is a memory board for a 6800 or 6809 SS50 computer. This board is intended to be used in systems that do not use extended addressing. There is no decoding on this board for use in systems that use address bits A16-A19 like the SWTPC S-09 computer. The SS50-64K can disable memory in 4K blocks at 8000,C000 and D000. E000-FFFF is always disabled since it would conflict with either EPROM or IO depending on the system. In addition there is a configuration jumper that can disable only 1K of memory at address 8000, leaving 8400-8FFF available as RAM. This is typically only useful when used with the PT-MB2 mother board which has tighter address decoding in the IO selection. SWTPC decoded the IO on their motherboard to a 4K block so enabling RAM from 8400-8FFF would cause the system to crash if enabled when using a SWTPC motherboard. The SS50-64 board uses a 128K SRAM chip. The speed of these chips is typically less than 120ns so this board can be used in systems with processor speeds to 2MHZ since a 250ns chip would support 2MHZ operation. Only one half of the RAM is used; the other half is disabled. The selection of the 128K RAM chip was due to it being still available and the cost of the RAM chip being so low cost was not an issue when discarding half of the capacity.

PAL Equations

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Name     SS50-64K ;

PartNo   U5 ;
Date     9/2/21 ;
Revision 0 ;
Designer Frederic C Brown ;
Company  Peripheral Technology ;
Assembly None ;
Location  ;
Device   g16V8a ;




/* *************** INPUT PINS ********************/
PIN   1  = RW                   ; /*    R/W                    */
PIN   2  = A8                   ; /*                           */
PIN   3  = A9                   ; /*                           */
PIN   4  = A10                  ; /*                           */
PIN   5  = A11                  ; /*                           */
PIN   6  = A12                  ; /*                           */
PIN   7  = A13                  ; /*                           */
PIN   8  = A14                  ; /*                           */
PIN   9  = A15                  ; /*                           */
PIN  10  = GND                  ; /*                           */
PIN  11  = E                    ; /*                           */
PIN  12  = SD000                ; /*                           */
PIN  13  = SC000                ; /*                           */
PIN  14  = S8000                ; /*                           */
PIN  18  = VMA                  ; /*                           */
PIN  19  = S256S4K              ; /*   0=256 1=4k  DISABLE      */
PIN  20  = VCC                  ; /*                           */


/* *************** OUTPUT PINS ********************/
PIN  15  = DIR                  ; /*                           */
PIN  16  = CS                   ; /*                           */
PIN  17  = WE                   ; /*                           */




!CS = ( !A15 & !VMA & !E )                       /*  SELECT 0000-7FFF */
   #  ( A15 & !A14 & !A13 &  A12 & !VMA & !E )        /*  SELECT 9000-9FFF */
   #  ( A15 & !A14 &  A13 & !A12 & !VMA & !E )        /*  SELECT A000-AFFF */
   #  ( A15 & !A14 &  A13 &  A12 & !VMA & !E )        /*  SELECT B000-BFFF */
   #  ( A15 & !A14 & !A13 & !A12 & !VMA & !E & S8000) /*  SELECT 8000-8FFF If S8000 JUMPER NOT INSTALLED */
   #  ( A15 &  A14 & !A13 & !A12 & !VMA & !E & SC000) /*  SELECT C000-CFFF If SC000 JUMPER NOT INSTALLED */
   #  ( A15 &  A14 & !A13 &  A12 & !VMA & !E & SD000) /*  SELECT D000-DFFF If SD000 JUMPER NOT INSTALLED */
   #  ( A15 & !A14 & !A13 & !A12 & !VMA & !E & !S8000 & !S256S4K &  A11) /* 8800-8FFF S8 AND 256 JUMPER INSTALLED */
   #  ( A15 & !A14 & !A13 & !A12 & !VMA & !E & !S8000 & !S256S4K & !A11 & A10) /* 8400-87FF S8 AND 256 INSTALLED */
   #  ( A15 & !A14 & !A13 & !A12 & !VMA & !E & !S8000 & !S256S4K & !A11 & A10 & A9) /* 8200-83FF S8 AND 256 INSTALLED */
   #  ( A15 & !A14 & !A13 & !A12 & !VMA & !E & !S8000 & !S256S4K & !A11 & A10 & !A9 & A8) /* 8100-81FF S8 AND 256 INSTALL */
      ;



WE = RW  ;                                      /* BUFFER R/W FROM SS50 BUS TO CMOS RAM CHIP */


DIR = !RW ;
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Parts List SS50-64K

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Quantity	Designation	Description
5	R1-R5	10K 1/4 Watt Resistor
2	C1-C2	100uF 16 V Electrolytic Capacitor
4	C3-C6	0.1 uf Disc Cap
1	U1	74LS640
1	U2-U3	74LS244
1	U4	HM628128 128Kx8 SRAM any speed
1	U5	F16V8-15PU
1	IC6	7805
1	IC6	Small Heat sink for IC6
		Hardware, #4 screw,washer,nut
4		20 pin IC Socket
1		32 pin IC Socket
1		4x2 male header
4		Shorting Plugs as needed
1		Index Pin for Molex Connector Molex 0015040219
5		Molex Connector - **0009482101**
1		SS50-64K Board

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Parts Placement SS50-64K
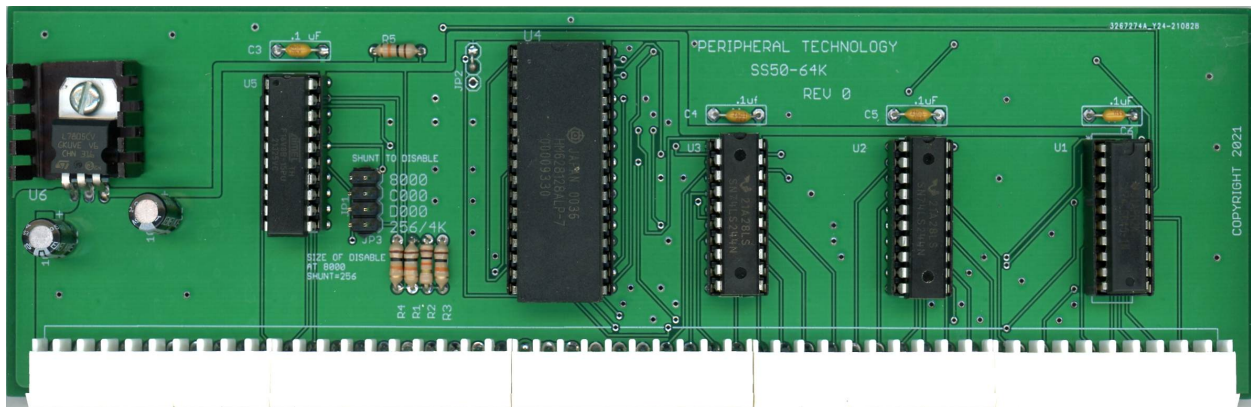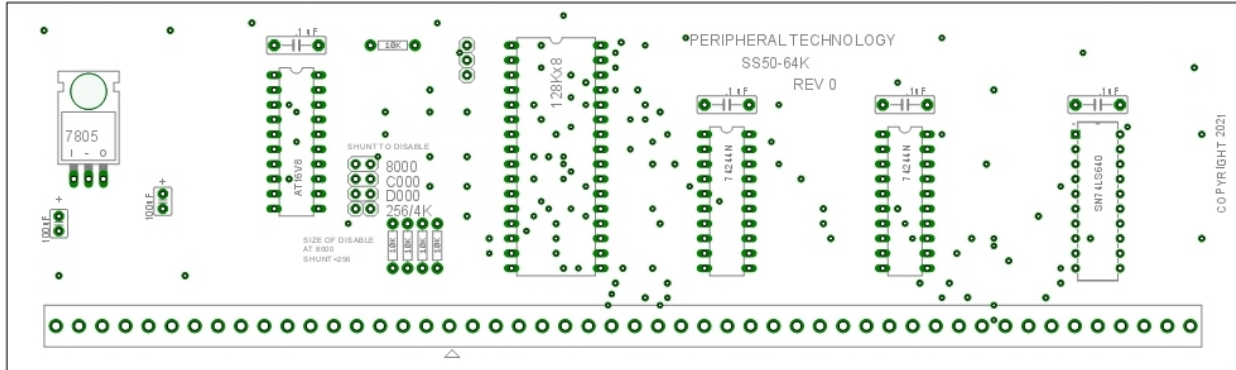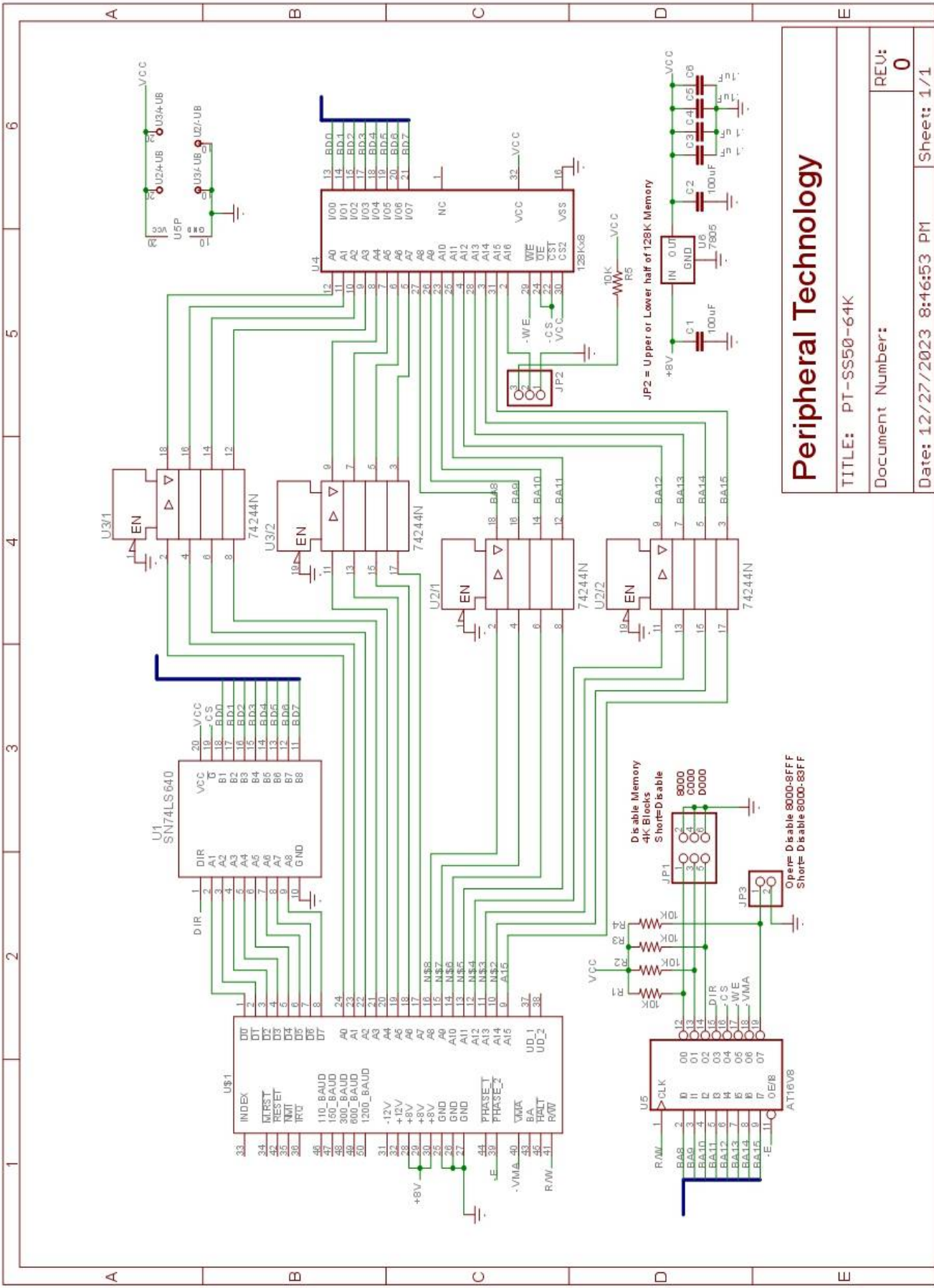
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U1 SN74LS640

U3/1 74244N
U3/2 74244N
U2/1 74244N
U2/2 74244N

U4 128Kx8

U5 AT16V8

U6 7805

U$1

JP1
Disable Memory 4K Blocks
Short=Disable

8000
C000
D000

JP2 = Upper or Lower half of 128K Memory

JP3
Open= Disable 8000-8FFF
Short= Disable 8000-83FF

R1 10K
R2 10K
R3 10K
R4 10K
R5 10K
R6 33R

C1 100uF
C2 100uF
C3 .1uF
C4 .1uF
C5 .1uF
C6 .1uF

VCC
+8V
-12V
+12V
GND
GND
GND
GND

DIR
-CS
WE
VMA
-E
-VMA
R/W

U5P
U2/+UB
U2/-UB
U3/+UB
U3/-UB

BD0 BD1 BD2 BD3 BD4 BD5 BD6 BD7

BA8 BA9 BA10 BA11 BA12 BA13 BA14 BA15

DT0 DT1 DT2 DT3 DT4 DT5 DT6 DT7

A0 A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11 A12 A13 A14 A15

INDEX
M.RST
RESET
NMI
IRQ
110_BAUD
150_BAUD
300_BAUD
600_BAUD
1200_BAUD
PHASE1
PHASE_2
HALT
BA