


Problem Solver Systems RAM8-B

S100 8K Static RAM

Schematic

NOTES

- The symbol  represents a connector pin. The solid black end is the male side, the white-filled end is the female side.
Connector pins are identified by a label of the form:
N <connector> . <pin>
- A small black marker on the upper half of a gate symbol indicates an open-collector output.
- Based on reverse engineering of board #12213.
IC date codes on board are 1977-78.
- 2023 Apr: This drawing / bhilpert.

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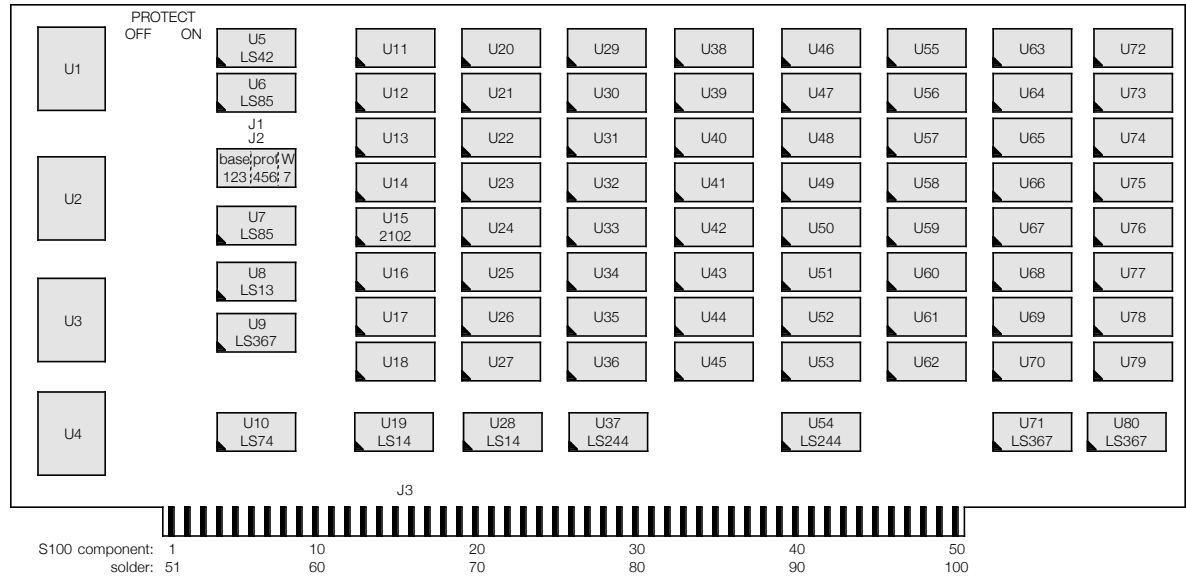
Rendition: Apr 5, 2024

Ux	Type	a	b	c	d	e	f	g	h
1::4	LM340-5	√							
5	74LS42	√							
6	74LS85	√							
7	74LS85	√							
8	74LS13	√	√						
9	74LS367	√	u	u	u	√	√		
10	74LS74	√	u						
19	74LS14	√	√	√	√	√	√		
28	74LS14	√	√	√	√	√	√		
37	74LS244	√	√	√	√	√	√	u	√
54	74LS244	√	√	√	√	√	√	√	√
71	74LS367	√	√	√	√	√	√		
80	74LS367	u	u	u	u	√	√		
11::19	21L02N-3	√							
20::27	"	√							
29::36	"	√							
38::53	"	√							
55::70	"	√							
72::79	"	√							

Total ICs: 80

Type	Qty	Pins	V+5	GND
21L02	64	16	10	9
74LS13	1	14	14	7
74LS14	2	14	14	7
74LS42	1	16	16	8
74LS74	1	14	14	7
74LS85	2	16	16	8
74LS244	2	20	20	10
74LS367	3	16	16	8
LM340-5	4			
Total:	80			

• 2102s installed in observed board are Signetics 21L02N-3 (63) and NatSemi MM2102AN-2L (1).



Configuration

• **BASE ADDRESS:** Switches 1, 2 & 3 select the base address of the board in 8K increments.

S3 is LSD. Switch OFF/OPEN=1.

S123	Address Range
0	0000 :: 1FFF
1	2000 :: 3FFF
2	4000 :: 5FFF
3	6000 :: 7FFF
4	8000 :: 9FFF
5	A000 :: BFFF
6	C000 :: DFFF
7	E000 :: FFFF

• **WRITE PROTECTION:** Setting the PROTECT switch ON enables write-protect for a selectable portion of the board. The protected portion is selected by switches 4, 5 & 6. These switches set a boundary on 1K segment increments below which writing is suppressed.

S6 is LSD. Switch OFF/OPEN=1.

S456	Protect Range (assuming base address = 0000)
0	0000 :: 03FF Protection applies to only the lowest 1K segment.
1	0000 :: 07FF
2	0000 :: 0BFF Protection applies to the lowest three 1K segments.
3	0000 :: 0FFF
4	0000 :: 13FF
5	0000 :: 17FF
6	0000 :: 1BFF
7	0000 :: 1FFF Protection applies to all eight 1K segments.

Opening J2 and closing J1 reverses the direction of protection application (protected range will be above switch setting rather than below).

• **WAIT STATES:** Switch 7 = ON/CLOSED : 0 Wait States.
Switch 7 = OFF/OPEN : 1 Wait State.

• **PHANTOM:** J3 = OPEN : PHANTOM~ (S100.67) is ignored.
J3 = CLOSED : The board will not enable when PHANTOM~ is asserted (LOW).

• **SEGMENT DISABLE:** Up to two 1K segments in the board address range can be disabled by jumpering between the two SEG-DISABLE contacts and the eight SEG contacts.

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