

A15	A14	A13	A12	HEX	Memory Space	2C-74154 Outputs	ROM Board Logic Diagram	Physical circuit board layout: Pin connects to CS for:	Physical circuit board layout: TYPOs on ROM Board Assembly Drawing (Page 6)
0	0	0	0	0	ROM1	0 - pin 1	4E - ROM 1	ROM C	Correct
0	0	0	1	1	ROM2	1 - pin 2	4C - ROM 2	ROM B	Correct
0	0	1	0	2	ROM3	2 - pin 3	4A - ROM 3	ROM A	Correct
0	0	1	1	3	ROM4	3 - pin 4	5E - ROM 4	ROM F	Correct
0	1	0	0	4	ROM5	4 - pin 5	5C - ROM 5	ROM E	Correct
0	1	0	1	5	ROM6	5 - pin 6	5A - ROM 6	ROM D	Correct
0	1	1	0	6	ROM7	6 - pin 7	6E - ROM 7	ROM I	Correct
0	1	1	1	7	ROM8	7 - pin 8	6C - ROM 8	ROM H	Correct
1	0	0	0	8	ROM9	8 - pin 9	6A - ROM 9	ROM G	Correct
1	0	0	1	9	RACNT	9 - pin 10			
1	0	1	0	A	RACNT	A - pin 11			
1	0	1	1	B	RACNT	B - pin 13			
1	1	0	0	C	I/O	C - pin 14			
1	1	0	1	D	ROM10	D - pin 15	7E - ROM 10	ROM J	ROM 12 on page 6
1	1	1	0	E	ROM11	E - pin 16	7C - ROM 11	ROM K	Correct
1	1	1	1	F	ROM12	F - pin 17	7A - ROM 12	ROM L	ROM 10 on page 6

ROM 12 goes in socket 7E, not in socket 7A as shown

ROM 10 goes in socket 7A, not in socket 7E as shown

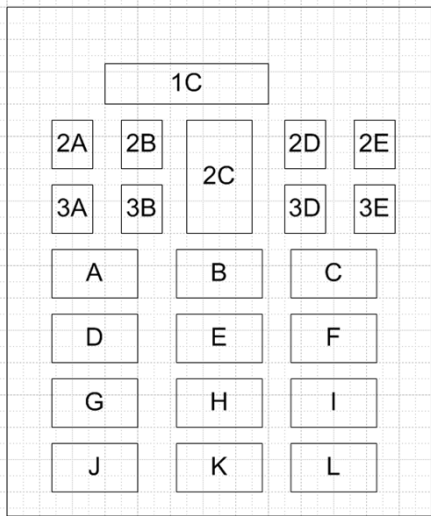
Memory Map

0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
ROM								RAM			I/O	CMOS	*	ROM	
Screen Memory															
RAM															

The classic Williams games cram 48K RAM, 48K ROM and 4K I/O into the 6809's 64K address space using bank-switching.

\$0000-8FFF is bank-switchable between RAM and ROM. Writes always go to RAM.
 \$9000-BFFF is always RAM.
 \$C000-CBFF is I/O.
 \$CC00-CFFF is CMOS RAM; \$CC00-CBFF is write-protected when coin door shut.
 \$D000-FFFF is always ROM.*
 Screen memory is \$0000-97FF (304 pixels x 256 pixels x 4 bits/pixel).
 * Sinistar has SRAM at D000-DFFF.
 Defender always has RAM from \$0000-BFFF and always has ROM from \$D000-FFFF.
 ROM and I/O is bank-switched into \$C000-CFFF.

Physical circuit board Layout



ROM Board Assembly Drawing (Page 6)

