

NOTES:

1. 411G: 1R, 1S, 1T, 1U, 1V, 1X, 1Y, 1Z, 2R, 2S, 2T, 2U, 2V, 2X, 2Y, 2Z, 3R, 3S, 3T, 3U, 3V, 3X, 3Y, 3Z

2. 4.7K RESISTOR:
R11, R12, R13, R14, R15, R23, R29, R30, R31, R32, R33, R34, R35, R36, R37, R38, R40, R41, R42, R43, R45, R46, R47, R52, R53, R66, R69

3. 1 MFD. CAPACITORS:
C1, C2, C3, C4, C5, C6, C7, C8, C9, C10, C11, C12, C13, C14, C15, C16, C17, C18, C19, C20, C21, C22, C23, C24, C25, C26, C27, C28, C29, C30, C31, C32, C33, C34, C35, C36, C37, C38, C39, C40, C41, C42, C43, C44, C45, C46, C47, C48, C49, C50, C51, C52, C53, C54, C55, C56, C57, C58, C59, C60, C62, C63, C64, C65, C66, C67, C68, C69, C70, C71, C72, C73, C74, C75, C76, C77, C78, C79, C80, C84, C85, C88, C89, C91

4. IN4148 DIODE:
D1, D2, D3, D4, D5, D6, D7, D8, D9, D10, D11, D12, D14

5. * THESE COMPONENTS ARE NOT USED IN THIS GAME - DEFENDER.

ITEM NO.	PART NO.	PART DESIGNATION	DESCRIPTION	REQ. NO.
76	5010-09508-00	R17, R19, R21	RESISTOR, C.F., 270 OHM 2% 1/4 W.	3
77	5010-09534-00	W1	RESISTOR, C.F., 0 OHM	1

BILL OF MATERIAL

ITEM NO.	PART NO.	PART DESIGNATION	DESCRIPTION	REQ. NO.
1	5770-09618-00	---	BARE P.C. BOARD	1
2	5280-09073-00	4B	7400 QUAD 2-INPUT NAND	1
3	5280-08948-00	5M	7402 QUAD 2-INPUT NOR	1
4	5281-09218-00	7P	74LS04 HEX. INVERTER	1
5	5280-09018-00	5B, 6M	7404 HEX. INVERTER	2
6	5280-08973-00	4J	7408 QUAD AND	1
7	5280-09011-00	6J, 6P	7410 TRIPLE 3-INPUT NAND	2
8	5280-09475-00	3B, 6D	7411 TRIPLE 3-INPUT AND	2
9	5280-09530-00	5C	7420 DUAL 4-INPUT NAND	1
10	5280-09476-00	4C	7421 DUAL 4-INPUT AND	1
11	5280-09477-00	4R, 5P	7432 QUAD 2-INPUT OR	2
12	5280-09478-00	4E, 6R, 7J, 7L	7474 DUAL D-TYPE FLIP-FLOP	4
13	5280-09479-00	3A, 5R	7486 QUAD 2-INPUT EX-OR	2
14	5281-09480-00	7R	74LS107 DUAL J-K FLIP-FLOP	1
15	5281-09532-00	5K	74LS153 3-INPUT NAND	1
16	5281-09246-00	4K	74LS159 DUAL 2 to 4 LINE DECODER	1
17	5280-09481-00	3G, 3I, 4F, 4H	74153 DUAL 4 to 1 DATA INVERT	4
18	5280-09482-00	1D, 2D, 3D, 4D, 1P, 2P, 3P, 4P	74165 8-BIT SHIFT REGISTER	8
19	5281-09483-00	1C, 2C	74LS280 74LS280 74LS280 74LS280 16 to 4 RAM	2
20	5281-09308-00	1K	74LS245 OCTAL BUS TRANSCEIVER	1
21	5281-09485-00	2E, 2M	74LS257 QUAD DATA MUX/PLX.	2
22	5370-08989-00	1F, 2F	8T97 HEX. TS BUFFER	4
	5281-09385-00	2K, 3D	74LS367 HEX. BUS DRIVER	8
23	5281-09486-00	1M, 3M, 4M	74LS374 OCTAL D-TYPE FLIP-FLOP	3
24	5281-09487-00	4S, 5S	74LS374 DUAL D-TYPE FLIP-FLOP	2
25	5281-09533-00	5O	74LS393 DUAL 4-BIT BIN. COUNTER	1
26	5342-09015-00	3E, 3K	7641 512 x 8 PROM	2
27	5310-09237-00	6H	4071 CMOS QUAD 2-INPUT NOR	1
28	5340-09488-00	SEE NOTE #1	4116 (8018 ACCESS) 16K x 1 DYNAMIC RAM	24
29	5340-09017-00	1E	5101 256 x 4 CMOS RAM	1
30	5280-09489-00	5E, 5F, 5H, 5J	9516 4-BIT BIN. COUNTER	4
31	5400-09490-00	2I	6809 MICROPROCESSOR	1
32	5280-09491-00	6K	7417 TRIPLE 3-IMP. BUFFER	1
33	5010-09508-00	R16, R18, R20	RESISTOR, C.F. 48 OHM 2% 1/4 W.	3
34	5010-09034-00	R66	RESISTOR, C.F. 100 OHM 5% 1/4 W.	1
35	5010-09181-00	R1, R3, R5, R7, R9, R13, R16	RESISTOR, C.F. 150 OHM 5% 1/4 W.	6
36	5010-09416-00	R23	RESISTOR, C.F. 470 OHM 5% 1/4 W.	1
37	5010-08972-00	R7, R10, R26	RESISTOR, C.F. 560 OHM 5% 1/4 W.	3
38	5010-09358-00	R2, R4, R6, R12, R19, R55, R72	RESISTOR, C.F. 1K OHM 5% 1/4 W.	7
39	5010-09314-00	R24, R25	RESISTOR, C.F. 1.2K OHM 5% 1/4 W.	2
40	5010-08998-00	R60, R70, R71	RESISTOR, C.F. 2.2K OHM 5% 1/4 W.	3
41	5010-08997-00	R61, R64	RESISTOR, C.F. 2.7K OHM 5% 1/4 W.	2
42	5010-08988-00	R59, R44, R59, R67, R75	RESISTOR, C.F. 3.3K OHM 5% 1/4 W.	5
43	5010-08991-00	SEE NOTE #2	RESISTOR, C.F. 4.7K OHM 5% 1/4 W.	27
44	5010-09034-00	R48, R54	RESISTOR, C.F. 10K OHM 5% 1/4 W.	2
45	5010-08974-00	R50, R56, R58, R63	RESISTOR, C.F. 22K OHM 5% 1/4 W.	4
46	5010-09113-00	R62	RESISTOR, C.F. 33K OHM 5% 1/4 W.	1
47	5010-09359-00	R65	RESISTOR, C.F. 47K OHM 5% 1/4 W.	1
48	5010-09442-00	R51	RESISTOR, C.F. 550K OHM 5% 1/4 W.	1
49	5010-09001-00	R8, R9, R21	RESISTOR, C.F. 330 OHM 5% 1/4 W.	3
50	5010-09039-00	R87	RESISTOR, C.F. 10 OHM 5% 1/4 W.	1
51	5043-09491-00	C87	CAPACITOR, AXIAL 22 PFD. 1K V. 20%	1
52	5043-09492-00	C86	CAPACITOR, AXIAL 100 PFD. 50 V. 10%	1
53	5040-09545-00	C90	CAPACITOR, AXIAL 22 PFD. 10 V. 20%	1
54	5045-09065-00	C61	CAPACITOR, AXIAL 470 PFD. 50 V. 21%	1
55	5043-08996-00	SEE NOTE #3	CAPACITOR, AXIAL .1 MFD. 50 V. 20%	84
56	5040-09421-00	C81, C82, C83	CAPACITOR, RADIAL 100 MFD. 55 V. 50-10%	3
57	5075-09059-00	ER2	1N5990A 3.9 V. ZENER DIODE	1
58	5075-09018-00	ER1	1N5996A 6.9 V. ZENER DIODE	1
59	5070-08919-00	SEE NOTE #4	1N4148 DIODE, SILICON	13
60	5070-09266-00	D13	1N5817 DIODE, SILICON	1
61	5160-08930-00	Q5, Q6, Q7, Q8, Q9, Q10, Q11	2N4401, TO-92 TRANSISTOR, NPN	7
62	5190-09016-00	Q1, Q2, Q3, Q4, Q12	2N4403, TO-92 TRANSISTOR, PNP	5
63	5520-09495-00	CR1	12 MHE CRYSTAL	1
64	5641-09071-00	SW1	PUSH BUTTON SW. (MOMENTARY ON)	1
65	5580-09022-00	B1, B2, B3	BATTERY ALKALINE 1.5 V. (AA)	3
66	5681-09021-00	---	BATTERY HOLDER #171	1
67	5700-09006-00	---	16-PIN IC SOCKET	24
68	5700-09004-00	---	24-PIN IC SOCKET	2
69	5700-08988-00	---	40-PIN IC SOCKET	1
70	5791-09437-00	1P4	20 PIN RIBBON CABLE HEADER	1
71	5791-09439-00	1P1	40 PIN RIBBON CABLE HEADER	1
72	---	---	---	---
73	5791-09438-00	1P5	4PIN HEADER 09-65-1041	1
74	5791-09437-00	1P2	7PIN HEADER 09-65-1071	1
75	5791-09439-00	1P3	9PIN HEADER 09-65-1091	1