

NOVAG INDUSTRIES LIMITED

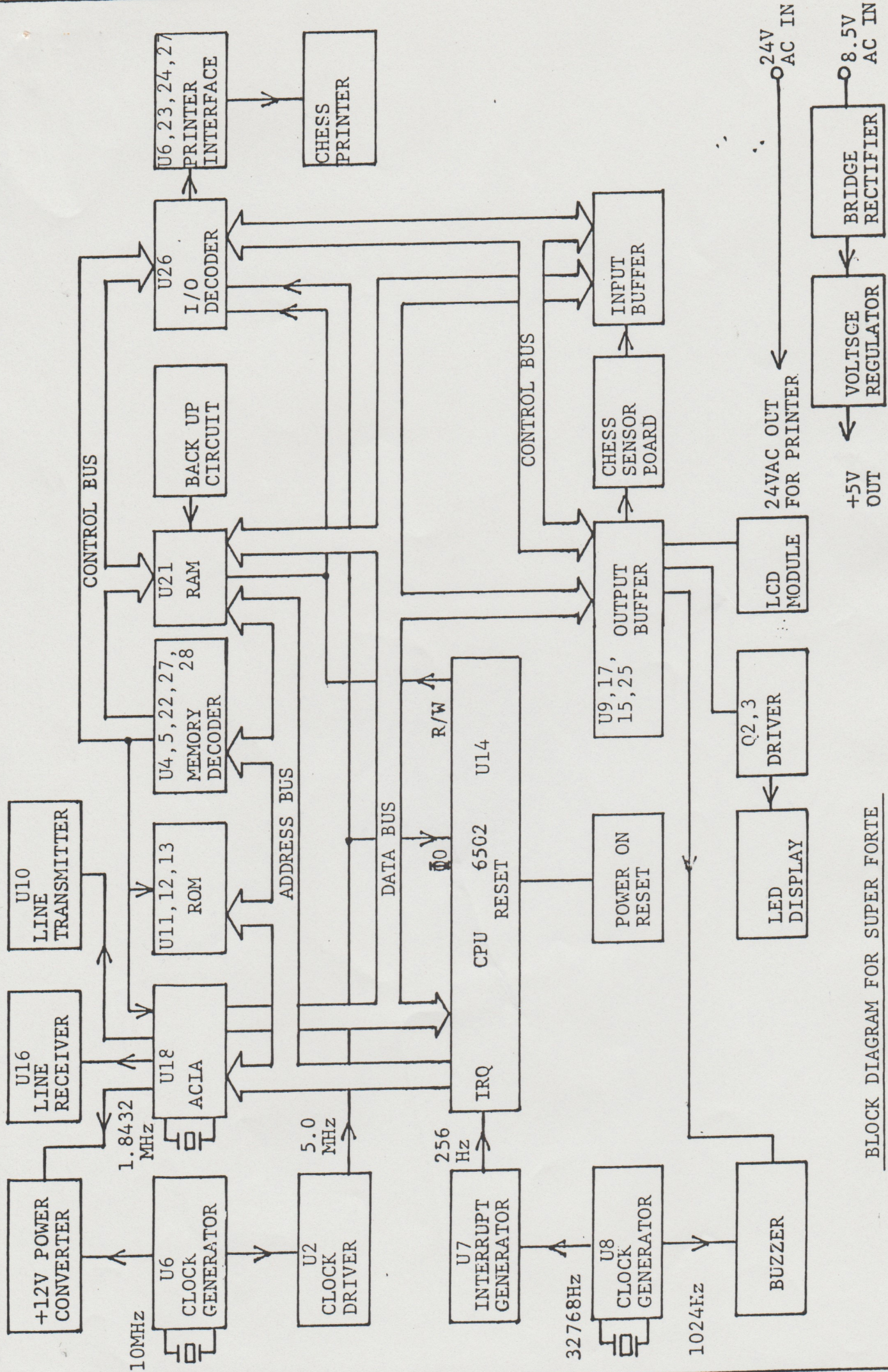
SUPER FORTE C 901

S E R V I C E M A N U A L

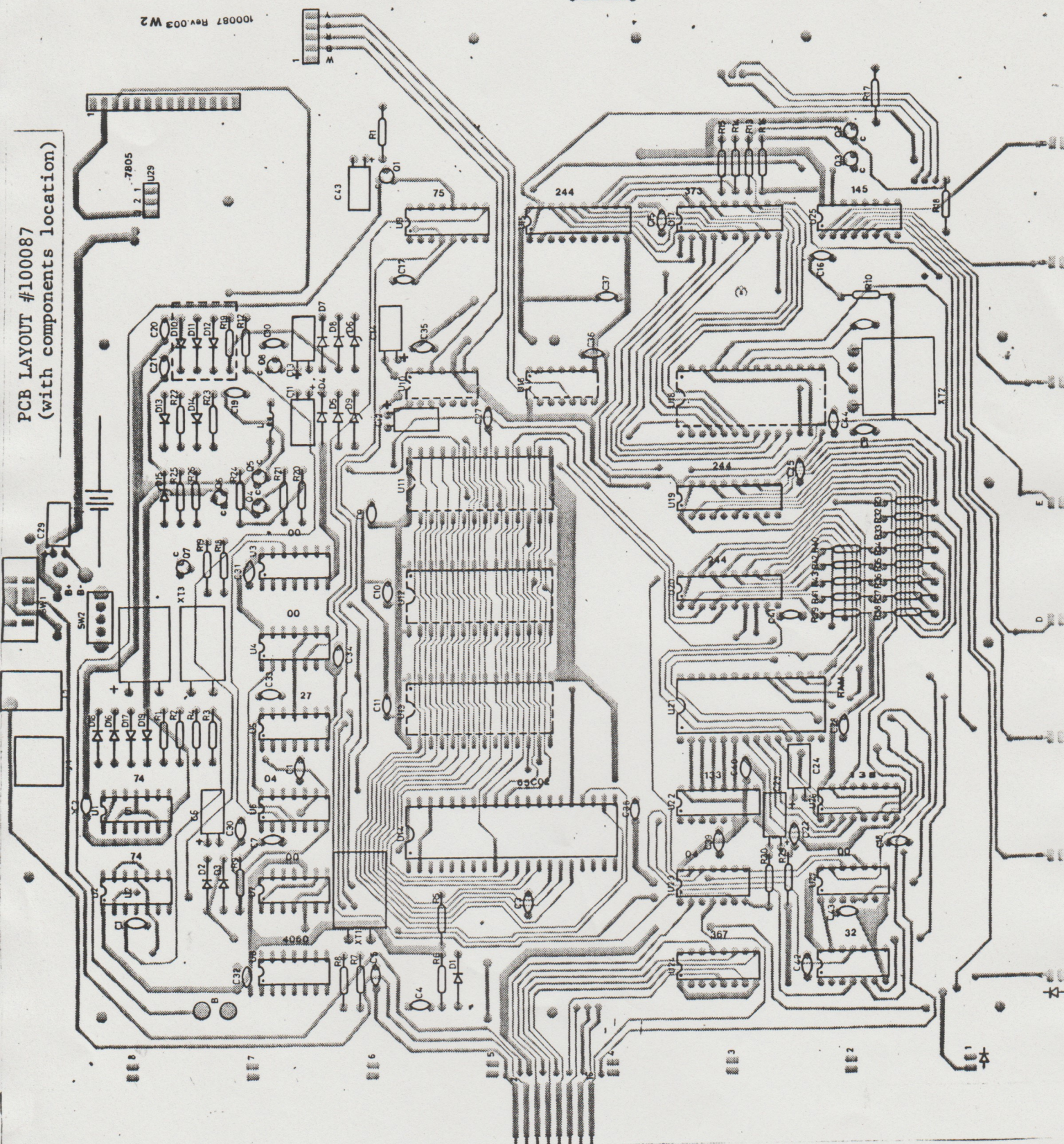
C O N T E N T S

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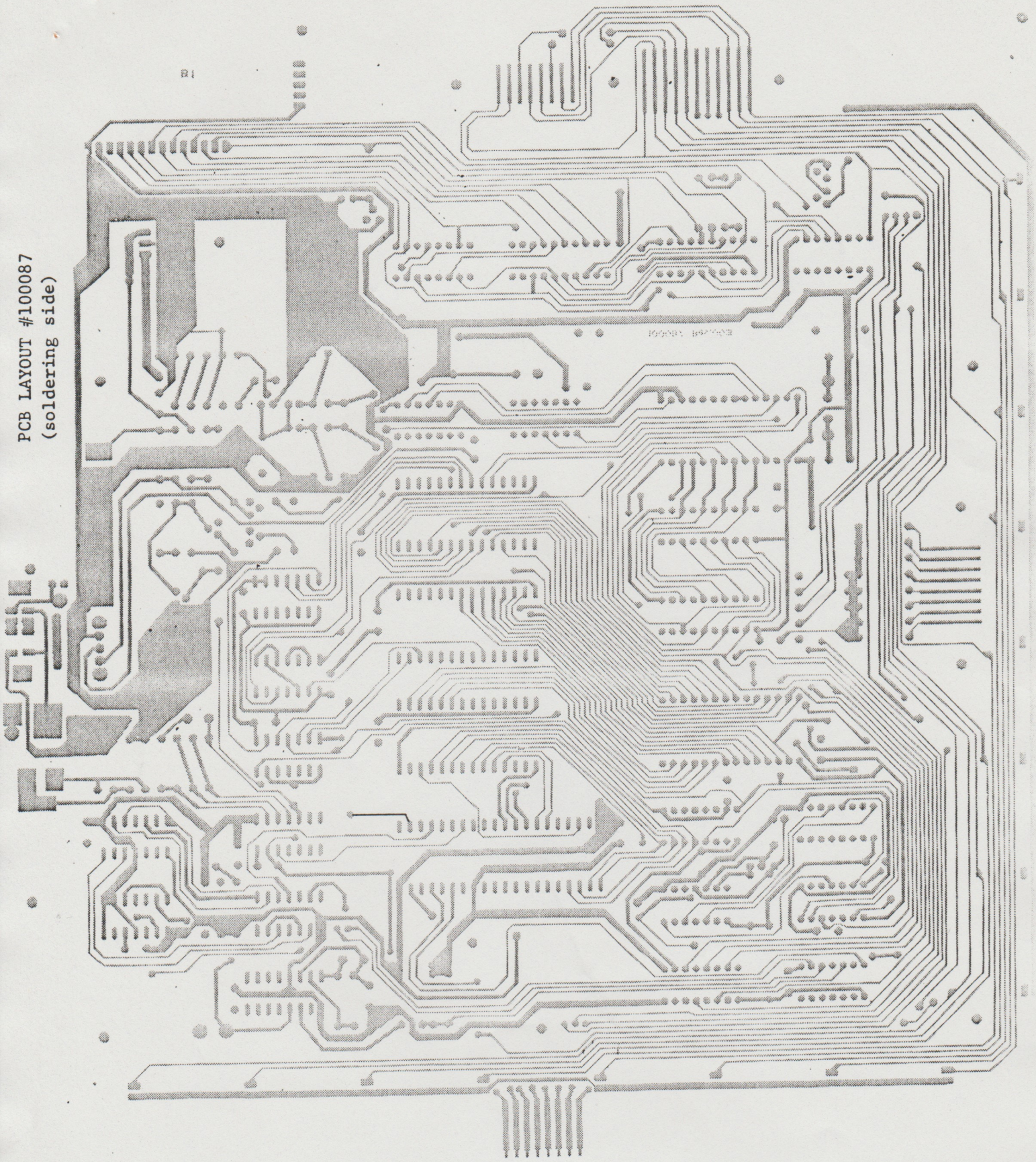
1. Block Diagram
2. Schematic Diagram
3. PCB Layout (component and soldering sides)
4. Parts List



BLOCK DIAGRAM FOR SUPER FORTE



PCB LAYOUT #100087
(soldering side)



BILL OF MATERIALS

MODEL : SUPER FORTE C (901)

A) ASSEMBLY : MAIN PCB				US\$
ITEM	PART NO.	DESCRIPTIONS	QTY	UNIT PRC
1	020020	65C51	1	9.00
2	020022	CPU W65C802P-6	1	40.00
3	030001	74LS00	4	.50
4	030003	74LS04	2	.50
5	030004	74LS74	2	.80
6	030005	74LS75	1	.80
7	030008	74LS138	1	.56
8	030009	74LS244	3	1.50
9	030022	Regulator 7805	1	.76
10	030029	74LS367	1	.50
11	030035	74LS373	3	.80
12	030042	CMOS 4060	1	1.00
13	030051	74LS145	1	.85
14	030054	74LS32	1	.35
15	030059	74LS27	1	.35
16	030060	74LS133	1	.70
17	030062	MC1488	1	.50
18	030063	MC1489	1	.50
19	050007	LED 2x5mm "RED"	16	.10
20	070048	Eprom 57256/27C256 H0	1	10.00

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A) ASSEMBLY : MAIN PCB			US\$	
ITEM	PART NO.	DESCRIPTIONS	QTY	UNIT PRC
21	070048	Eprom 57256/27C256 L	1	10.00
22	070048	Eprom 57256/27C256 H1	1	10.00
23	070050	CMOS RAM CXK5864AP	1	5.00
24	100087	Logic P.C.Board (Rev.5)	1	22.00
25	130009	Slide Switch MSK2x3-G-4	1	.18
26	130016	Reset Switch	1	.10
27	180005	Crystal 32768 Hz	1	.80
28	180009	Crystal 12.0 Mhz	1	1.40
29	180012	Crystal 1.8432 MHz	1	.80
30	350006	Earphone Jack 2.5mm	1	.20
31	350007	Female Socket PCB Type 2x5mm	1	.13
32	400024	40 Pin IC Socket	1	.40
33	400035	14 Pin IC Socket	2	.30
34	400038	28 Pin IC Socket	4	.40
35	450035	Nicad Battery 2.4V	1	2.30
36		Transistor 227 Y/9013H	2	.10
37		Transistor 8050	1	.10
38		Transistor 8550	1	.10
39		Transistor 9014C	2	.10
40		Transistor 9015C	2	.10

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MODEL : SUPER FORTE C (901)

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A) ASSEMBLY : MAIN PCB		US\$
ITEM	PART NO. DESCRIPTIONS	QTY UNIT PRC
41	Rectifier 1N4001 1A 50V	4 .02
42	Switching Diode 1N4148	9 .02
43	Zener Diode 4.3V 1/2W	1 .02
44	Zener Diode 12.0V 1/2W	2 .05
45	E.Cap 1000 MFD 16V +80 -20	1 .50
46	E.Cap 470 MFD 16V +80 -20	1 .25
47	E.Cap 100 MFD 10V +80 -20	1 .10
48	E.Cap 22 MFD 25V +80 -20	4 .05
49	E.Cap 10 MFD 10V +80 -20	1 .05
50	E.Cap 1 MFD 10V +80 -20	2 .05
51	Inductance Coil 47 UH	1 .40
52	Cer.Cap 20 PF 50V	1 .05
53	Cer.Cap 30 PF 50V	2 .05
54	Cer.Cap 47 PF 50V	2 .05
55	Cer.Cap 0.001 UF 50V	1 .05
56	Cer.Cap 0.005 UF 50V	3 .05
57	Cer.Cap 0.1 UF 12V	30 .05
58	Resistor 120 Ohm 1/4W	2 .01
59	Resistor 220 Ohm 1/4W	2 .01
60	Resistor 330 Ohm 1/4W	1 .01

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MODEL : SUPER FORTE C (901)

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A) ASSEMBLY : MAIN PCB US\$

ITEM	PART NO.	DESCRIPTIONS	QTY	UNIT	PRC
61		Resistor 470 Ohm 1/4W	1		.01
62		Resistor 560 Ohm 1/4W	2		.01
63		Resistor 680 Ohm 1/4W	1		.01
64		Resistor 1K Ohm 1/4W	1		.01
65		Resistor 1.2K Ohm 1/4W	3		.01
66		Resistor 1.5K Ohm 1/4W	1		.01
67		Resistor 2.2K Ohm 1/4W	1		.01
68		Resistor 2.7K Ohm 1/4W	2		.01
69		Resistor 3.3K Ohm 1/4W	4		.01
70		Resistor 4.7K Ohm 1/4W	3		.01
71		Resistor 10K Ohm 1/4W	15		.01
72		Resistor 47K Ohm 1/4W	1		.01
73		Resistor 470K Ohm 1/4W	2		.01
74		Foam Pad 10x10x1.5mm	2		.10

B) ASSEMBLY : LCD PCB US\$

ITEM	PART NO.	DESCRIPTIONS	QTY	UNIT	PRC
1	060009	LCD Module	1		22.00
2	400056	14 Pin Header	1		.45
3	410044	14 Pin Cable Ass'y	1		.90

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MODEL : SUPER FORTE C (901)

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C) ASSEMBLY : HOUSING			US\$	
ITEM	PART NO.	DESCRIPTIONS	QTY	UNIT PRC
1	110016	Membrane Chessboard	1	10.00
2	110019	Membrane Keyboard	1	2.00
3	400027	Telephone Socket 6 Pin	1	2.00
4	410030	Silicon Rubber 32x4x3mm	3	.10
5	530047	Heat Sink	1	.25
6	530052	Battery Contact (+)	1	.06
7	530053	Battery Contact (-)	1	.06
8	530056	Battery Terminal	1	.06
9	600397	Lens Transperent 'C'	1	.40
10	600272	Top Housing	1	3.50
11	600274	Bottom Housing	1	2.50
12	600275	Battery Door	1	.20
13	800028	Keyboared Overlay	1	.60
14	800034	Chessboard Overlay	1	.60
15		Buzzer 27mm (Transducer)	1	.20
16		PVC Cover For Printer Slot	1	.15
17		Metal Clamp (s) 46x5.5mm	1	.20
18		Metal Clamp (L) 86x5.5mm	1	.20
19		Metal (Inlay)	1	.50
20		LCD Module Mtg Plate	1	.40

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MODEL : SUPER FORTE C (901)

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C) ASSEMBLY : HOUSING			US\$
ITEM	PART NO.	DESCRIPTIONS	QTY UNIT PRC
21		Rubber Feet 11.4x1.5mm	4 .10
22		Battery Strip 3/8" (Black)	1 .01
23		Anti-Dust 90x90x0.03mm	1 .10
24		Anti-Dust 113x52x0.03mm	2 .10
25		Anti-Dust 22x38x0.03mm	1 .10
26		Reset Switch Felt	1 .05
27		Screw P3x12 TA (Black)	5 .01
28		Screw P3x18 TA (Black)	7 .01
29		Screw P2.6x8 KT	5 .01
30		Screw M3x8x0.5mm	1 .01
31		Nut M3x0.5mm	1 .01
32		Jumper Wire #28 300mm Blue	2 .10
33		Jumper Wire #28 380mm Black	1 .10
34		Jumper Wire #28 380mm Red	1 .10
35		Jumper Wire #28 220mm Black	2 .10

D) ASSEMBLY : PRINTER CABLE			US\$
ITEM	PART NO.	DESCRIPTIONS	QTY UNIT PRC
1	100046	P.C.Board - For Printer Cable	1 .20
2	410028	Printer Cable Ass'y	1 2.50

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MODEL : SUPER FORTE C (901)

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D) ASSEMBLY : PRINTER CABLE US\$

ITEM	PART NO.	DESCRIPTIONS	QTY	UNIT	PRC
3	600144	Printer Cable Top Housing	1		.10
4	600145	Printer Cable Bottom Housing	1		.10
5		Polybag 0.4x4x14"	1		.02

E) ASSEMBLY : PACKING US\$

ITEM	PART NO.	DESCRIPTIONS	QTY	UNIT	PRC
1	520003	Pouch	1		.65
2	600276	Chess Pcs - Light Grey	1		1.50
3	600277	Chess Pcs - Dark Grey	1		1.50
4	960084	Warning Label 'R232....'	1		.10
5	970192	Instruction Manual	1		.30
6	970290	Instruction Insert 'C'	1		.10
7	990123	Gift Box	1		1.50
8		Bubble Bag	1		.15
9		Carton Sleeve (Chess Pcs)	1		.10
10		Carton Sleeve - Left	1		.06
11		Carton Sleeve - Right	1		.06
12		Polybag - Unit	1		.02
13		Shipping Carton	1/5		1.30
