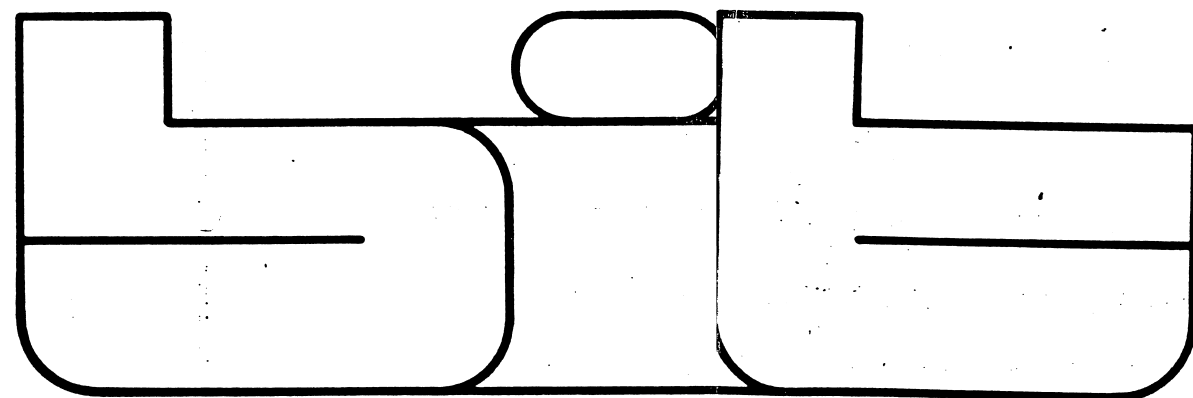


**SCHEMATIC
DIAGRAM**



01

RACI EXPANDER



FEMALE CONNECTOR SYMBOL (es. J 2/1)



PLUG IN CONNECTOR SYMBOL



WIRE SOLDERING POINT



TEST POINT (T P...)



CONNECTING POINT (ON p.c.b.)



METALLIC FILM RESISTOR 1%

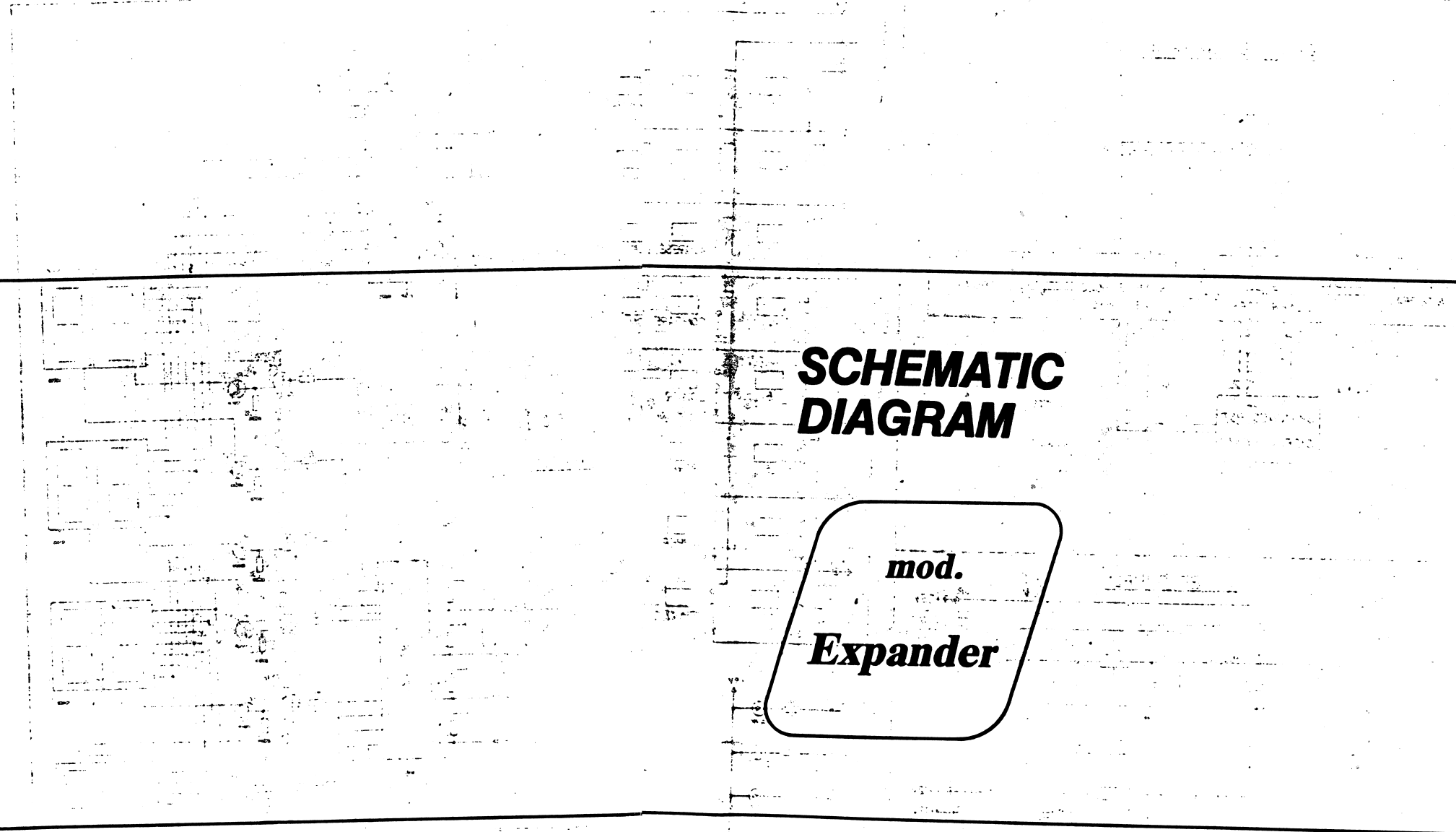
ALL resistors 1/4w unless otherwise indicated

ALL tab switches shown in OFF position

ALL key switches shown in OFF position

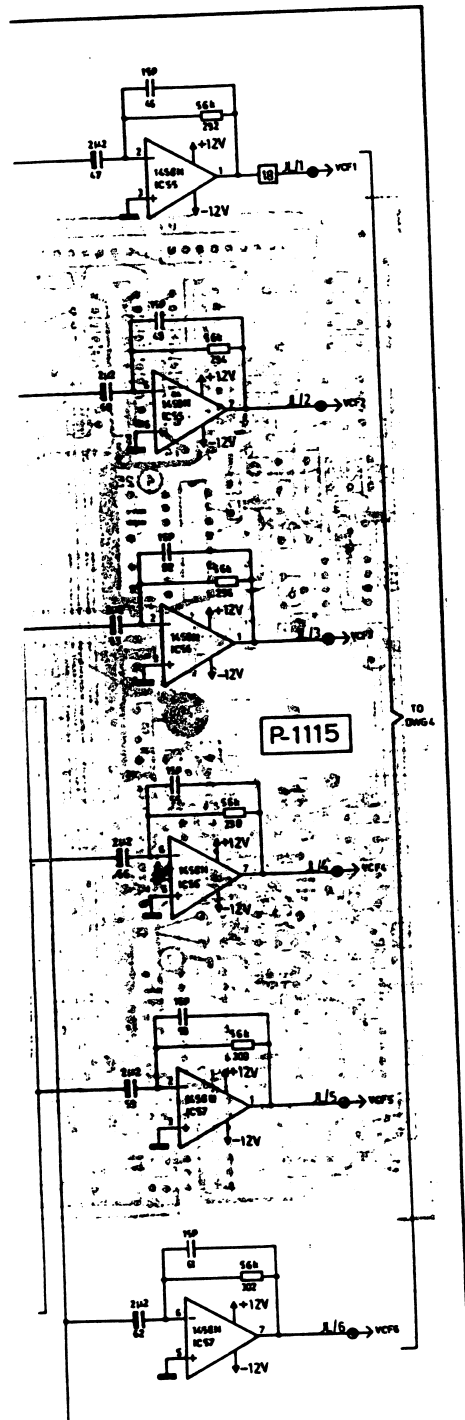
See part list for component part numbers

BIT RESERVES THE RIGHT TO CHANGE
SPECIFICATIONS AND DESIGNS, WITHOUT
NOTICE AND LIABILITY.



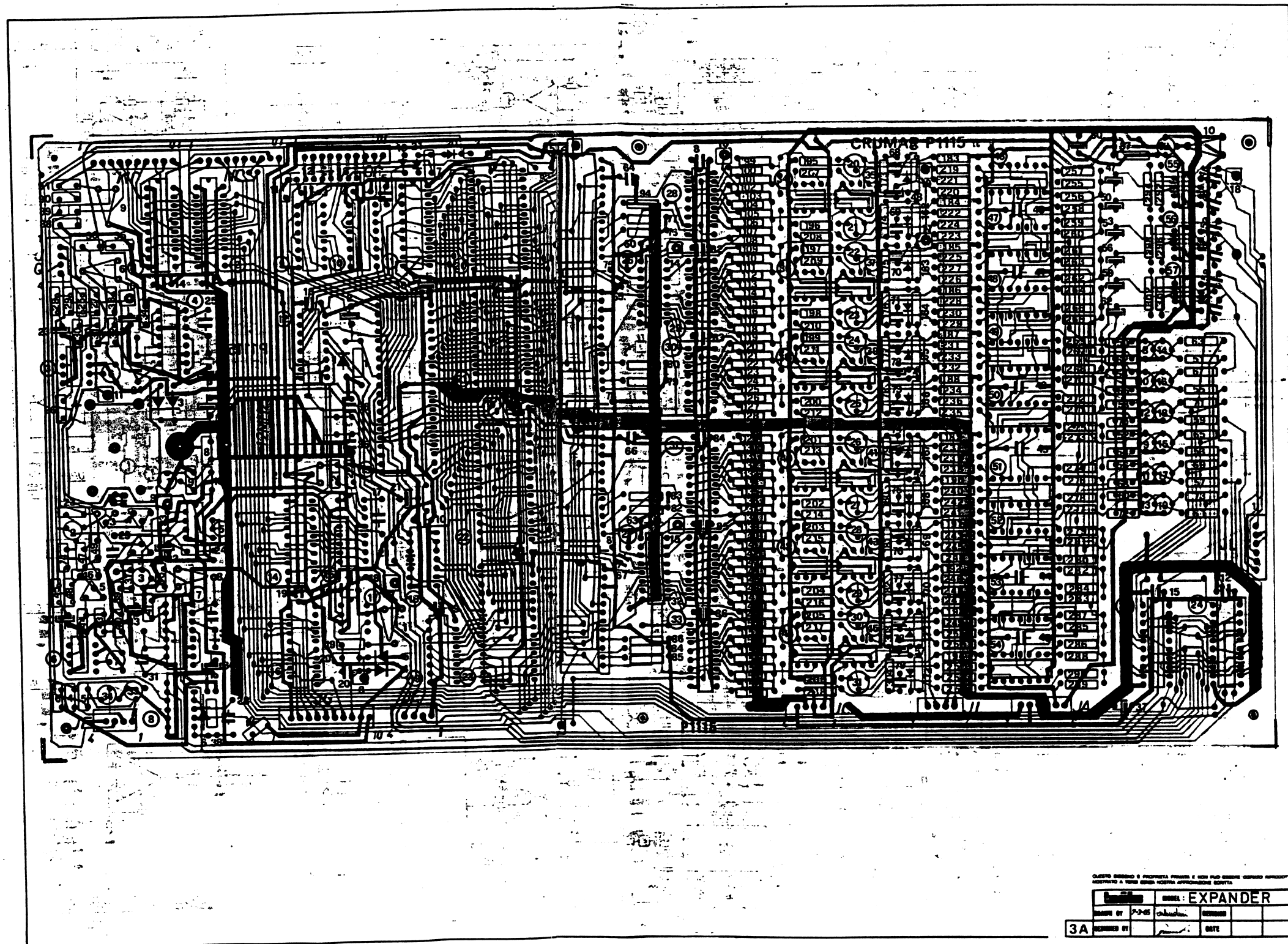
**SCHEMATIC
DIAGRAM**

mod.
Expander



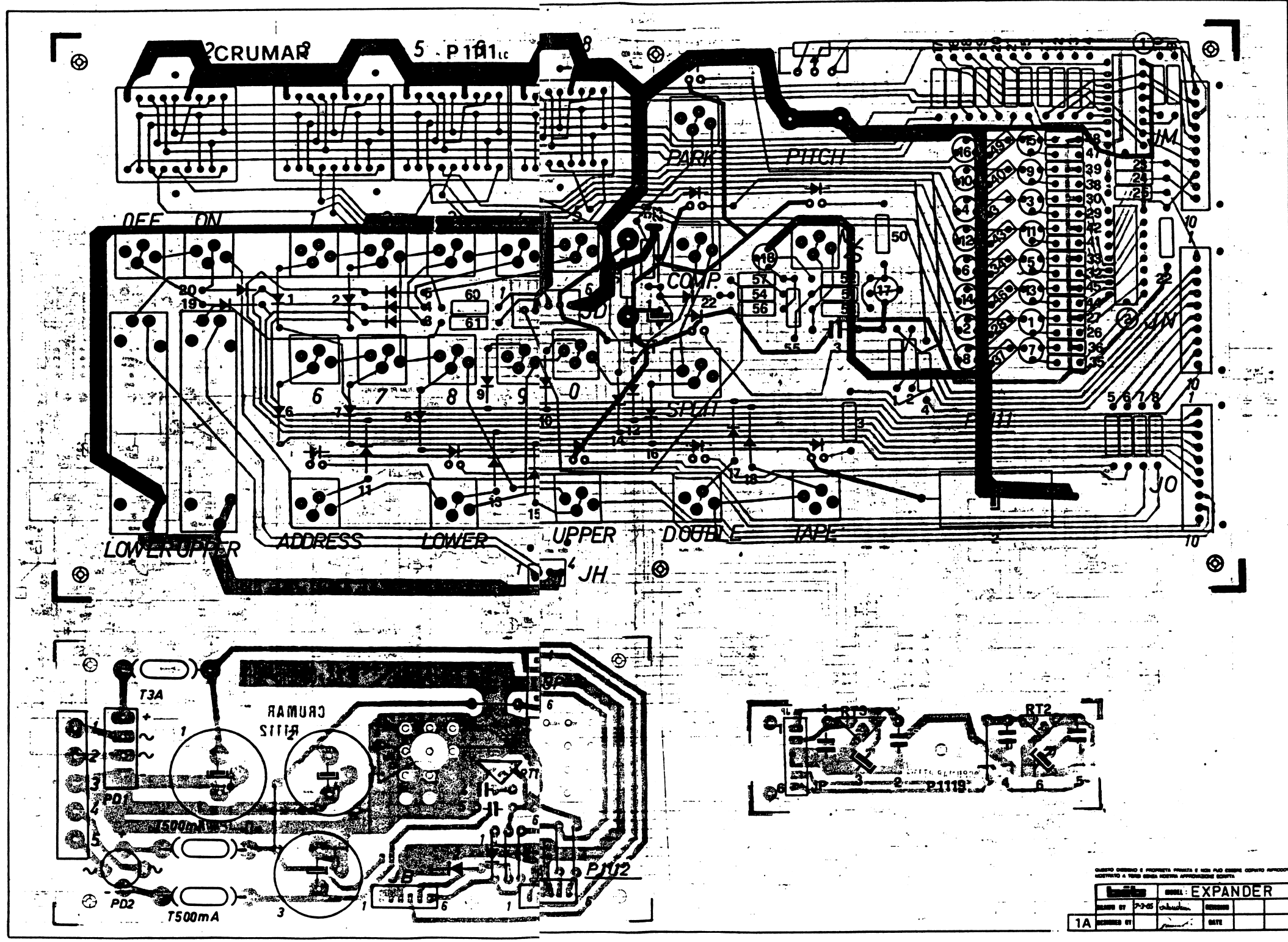
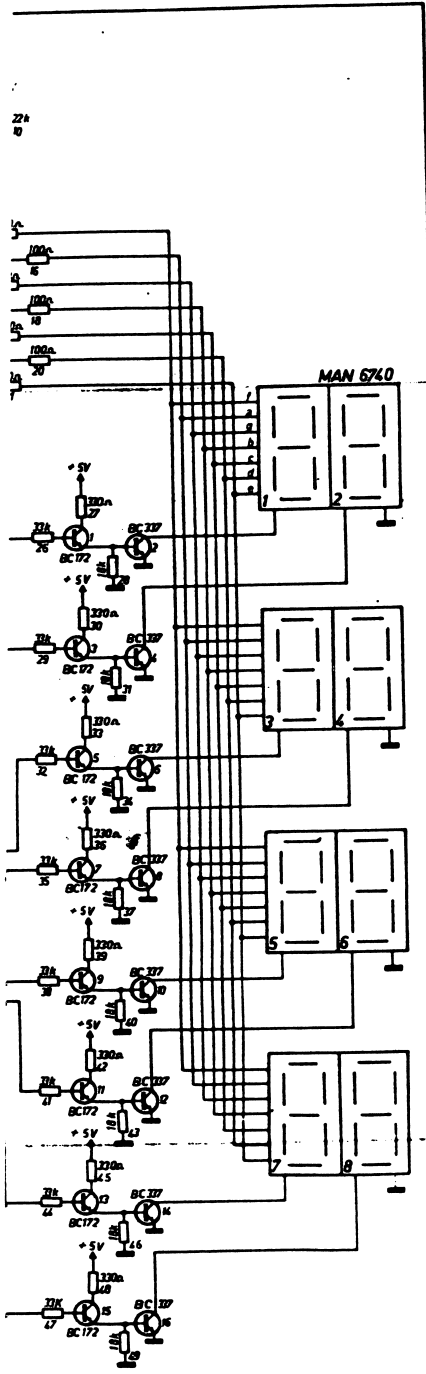
3

3	EXPANDER
DATE	



3A

DATE	EXPANDER
DATE	

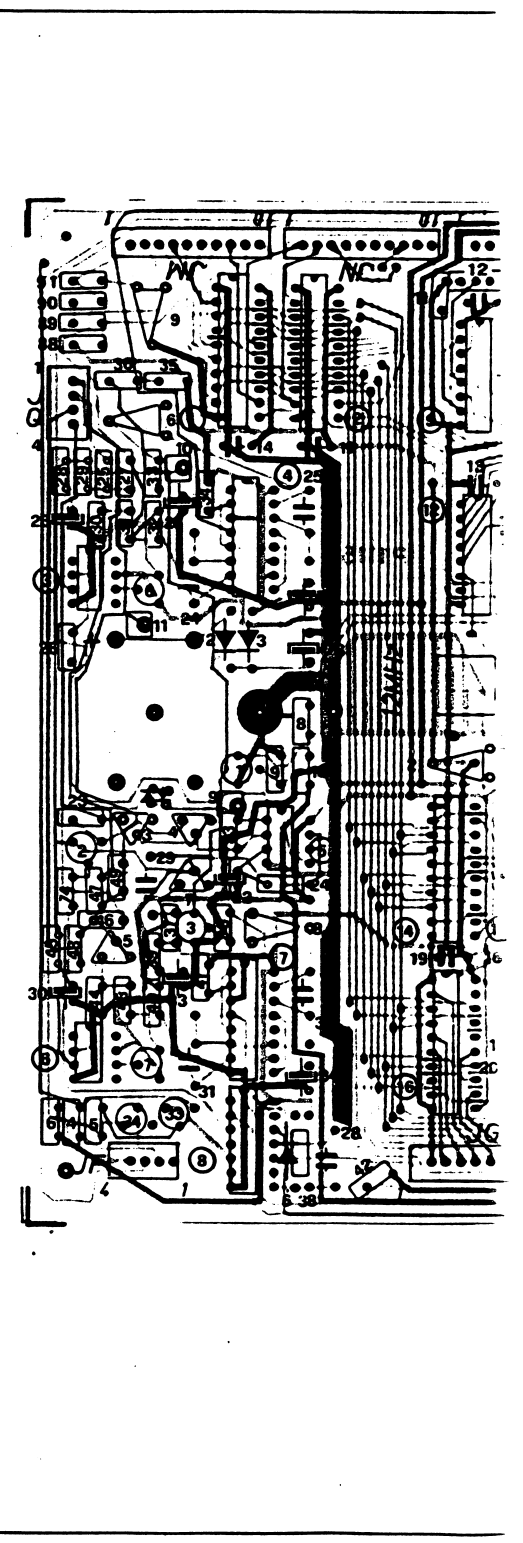
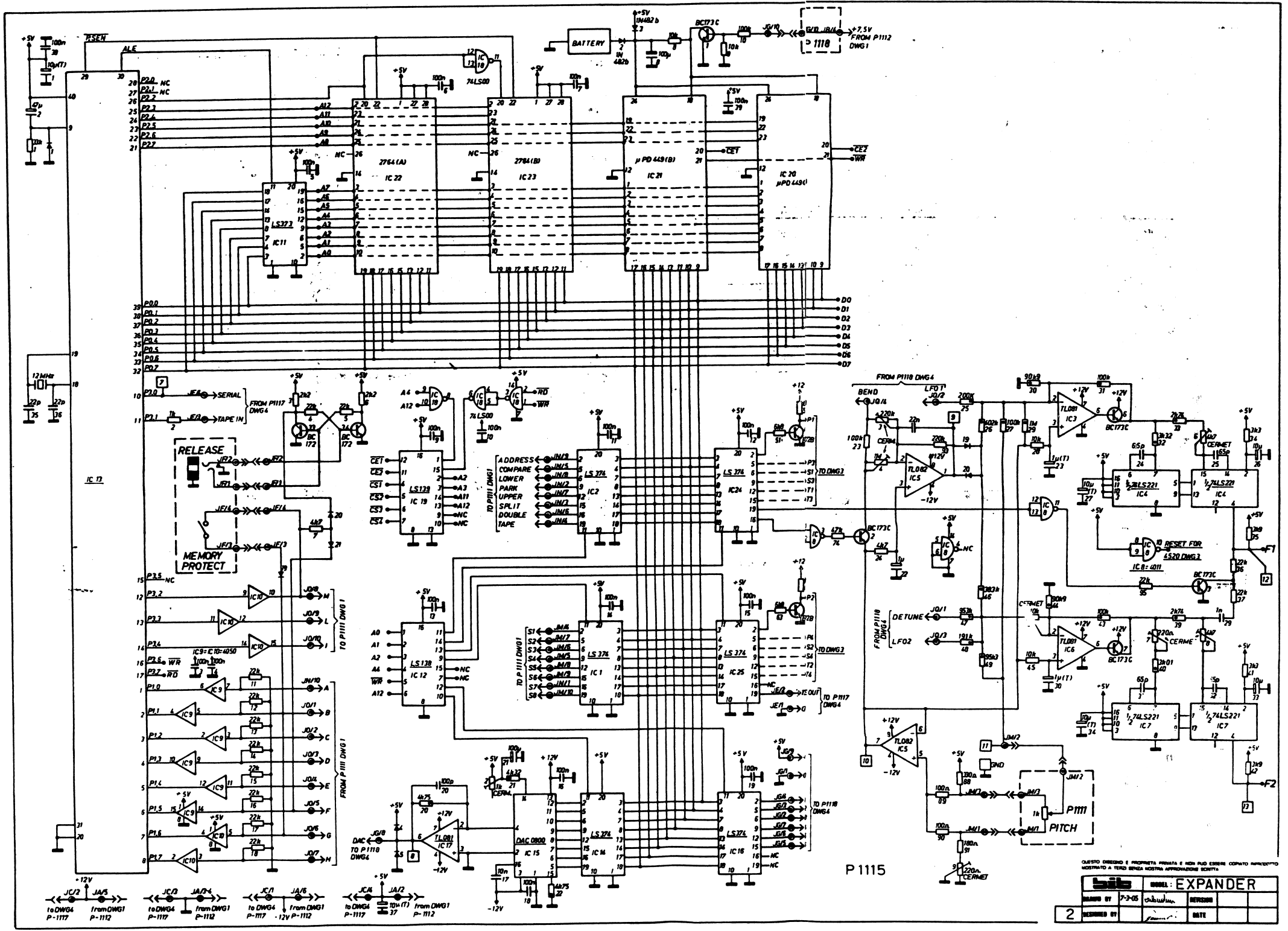


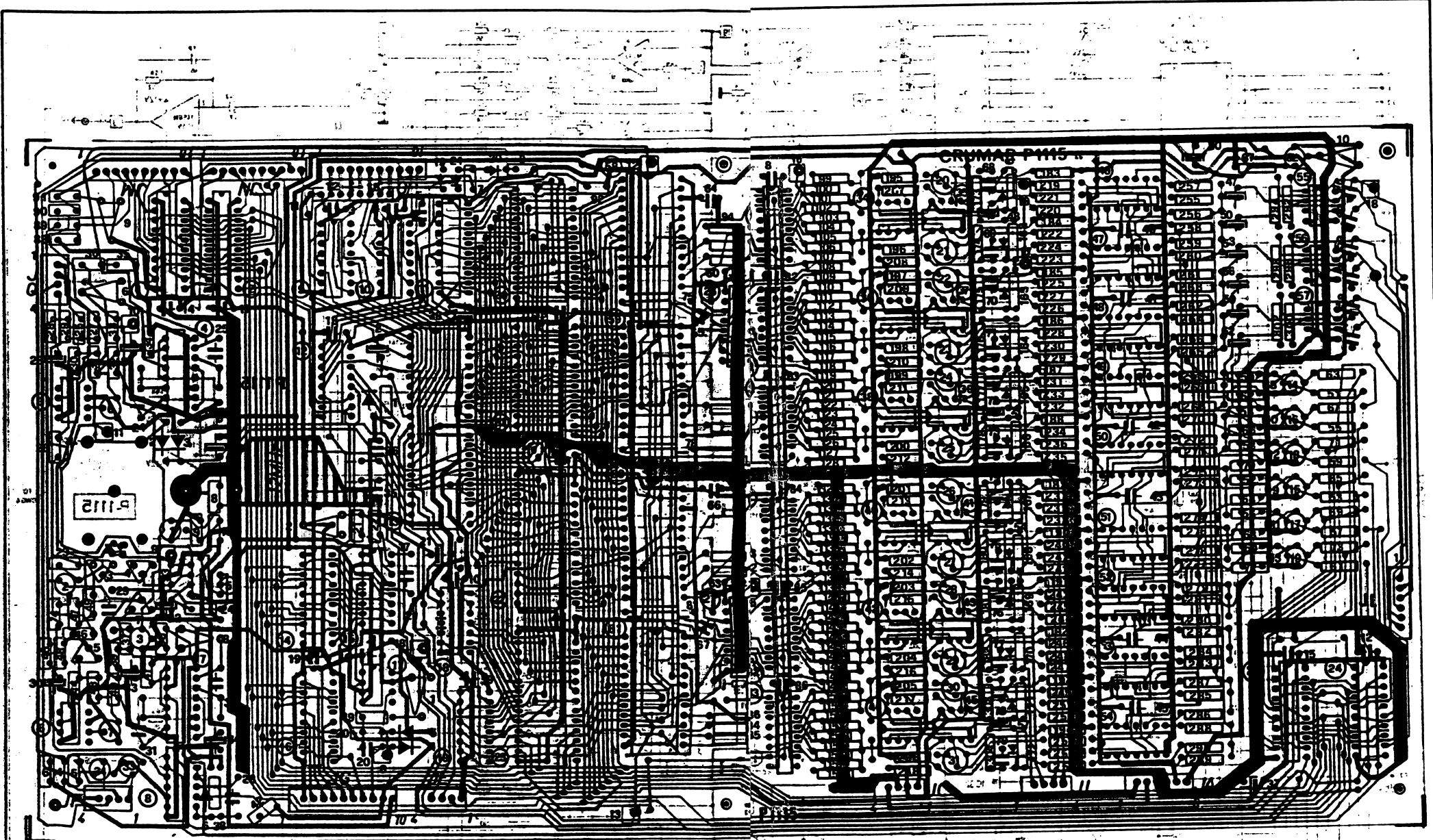
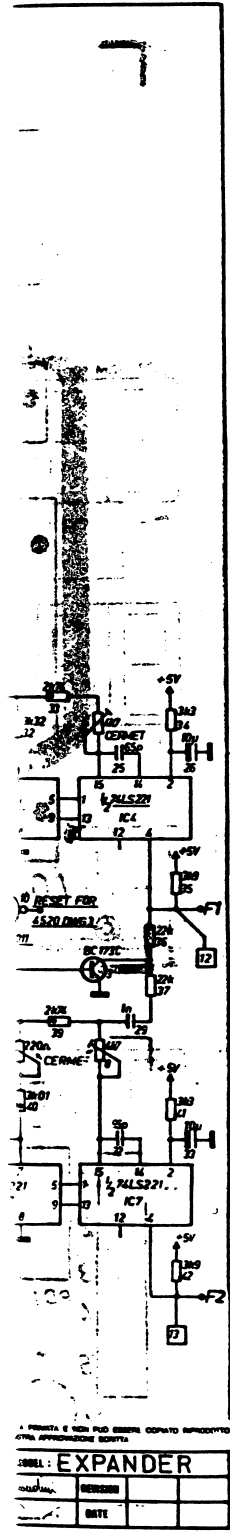
QUESTO SCHEMA E PROPRIETA' DELL'IBM E NON PUO' ESSERE COPIATO, RIPRODOTTO, DISTRIBUITO O USATO SENZA AUTORIZZAZIONE SCRITTA.

MODEL: EXPANDER	REVISION:
MADE BY: P-05	DATE:
DESIGNED BY:	DATE:

QUESTO SCHEMA E PROPRIETA' DELL'IBM E NON PUO' ESSERE COPIATO, RIPRODOTTO, DISTRIBUITO O USATO SENZA AUTORIZZAZIONE SCRITTA.

MODEL: EXPANDER	REVISION:
MADE BY: P-05	DATE:
DESIGNED BY:	DATE:

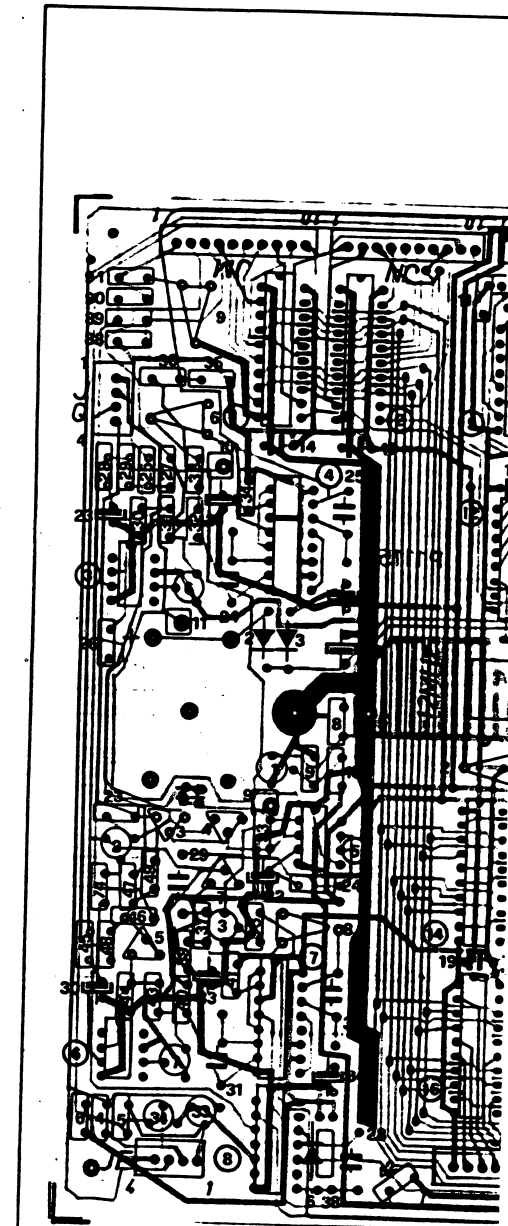
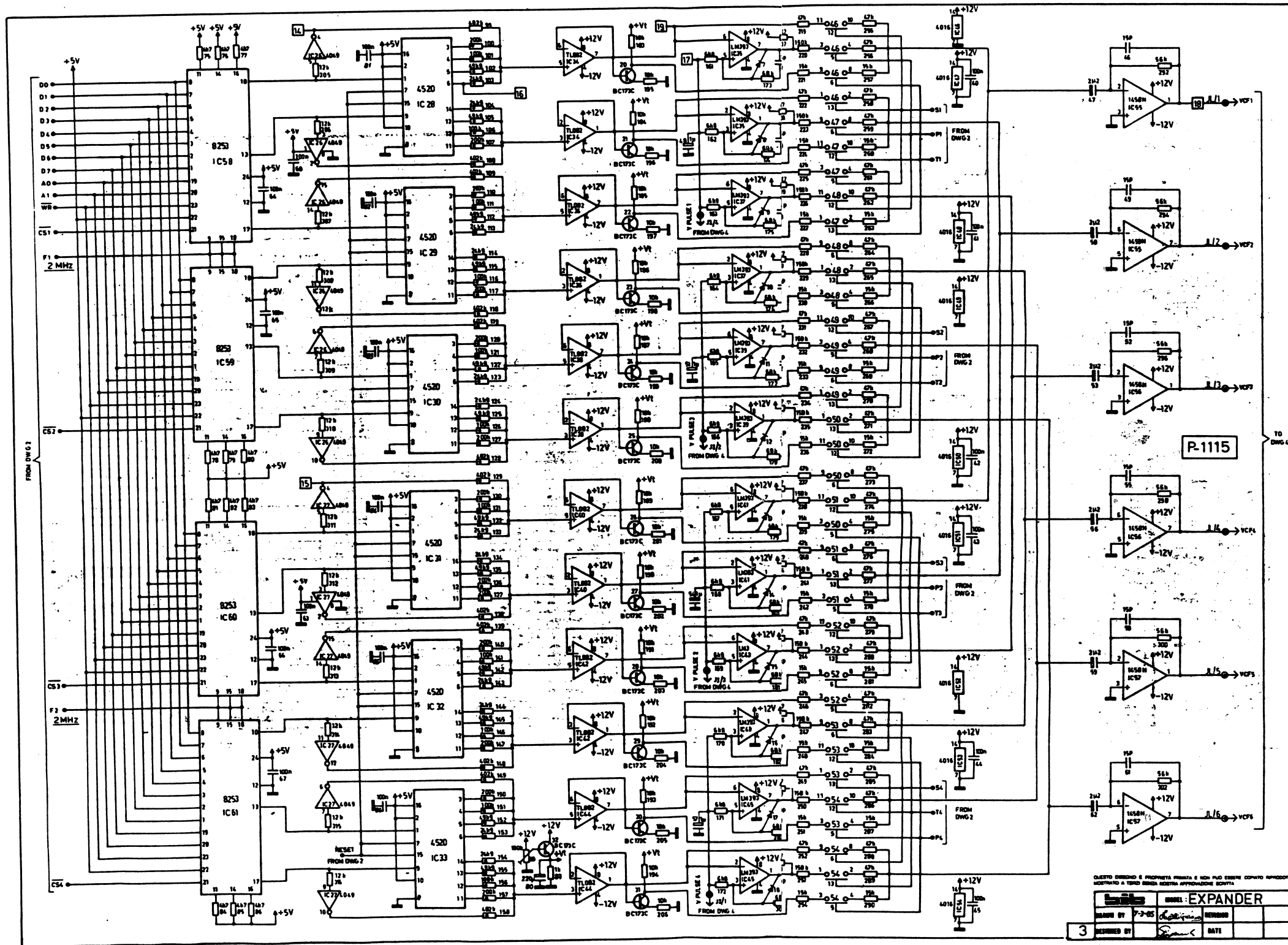


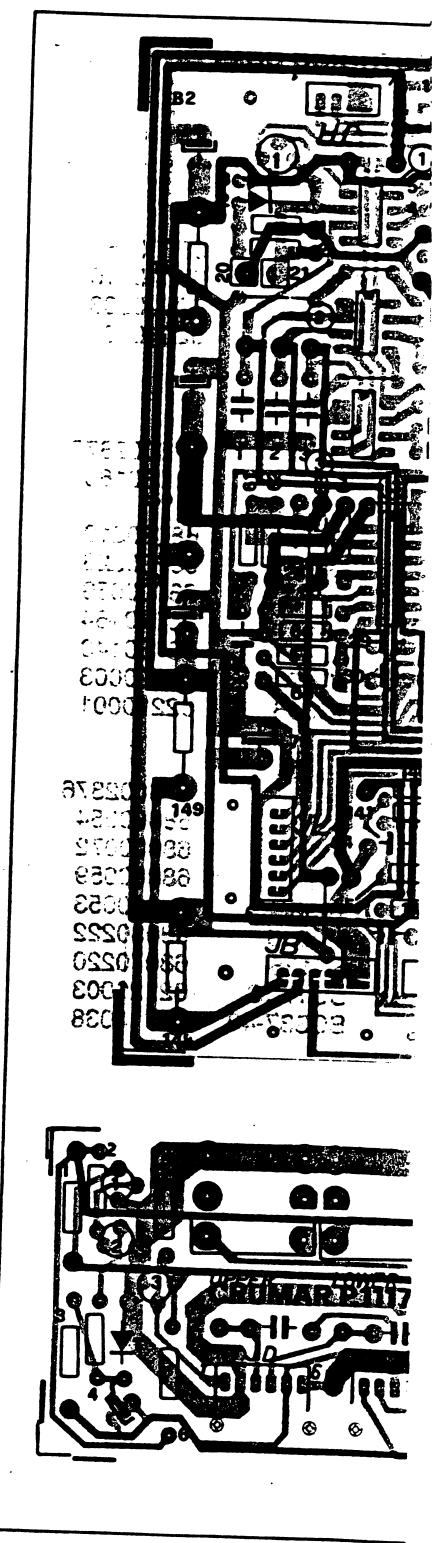
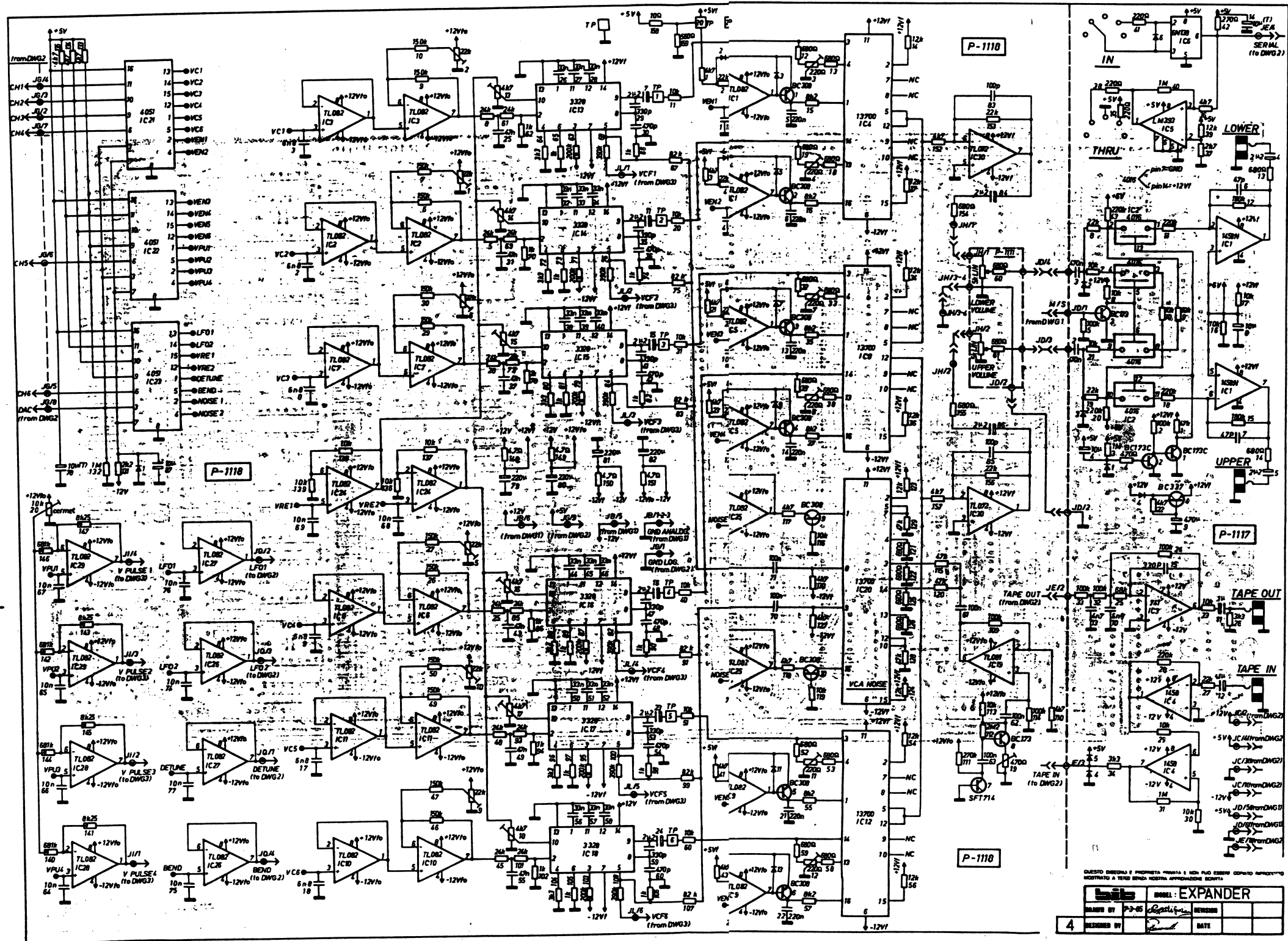


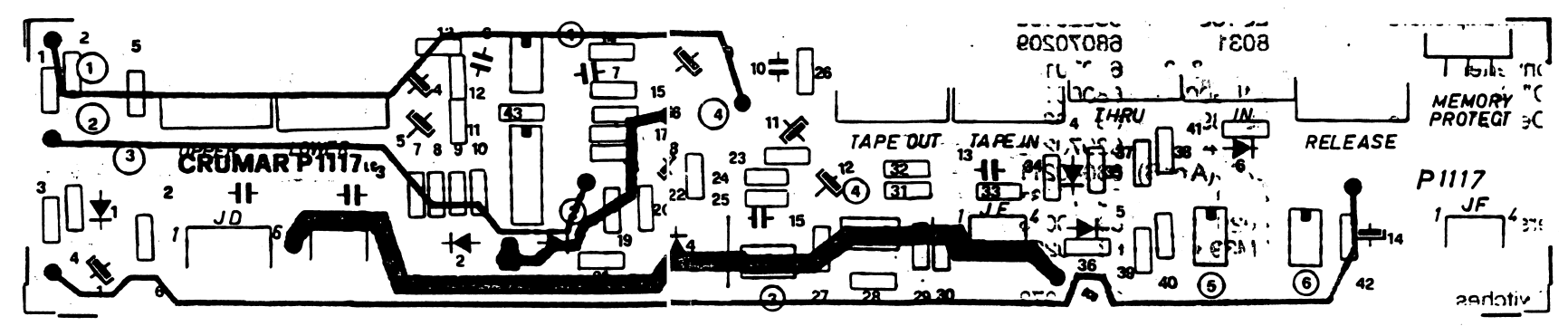
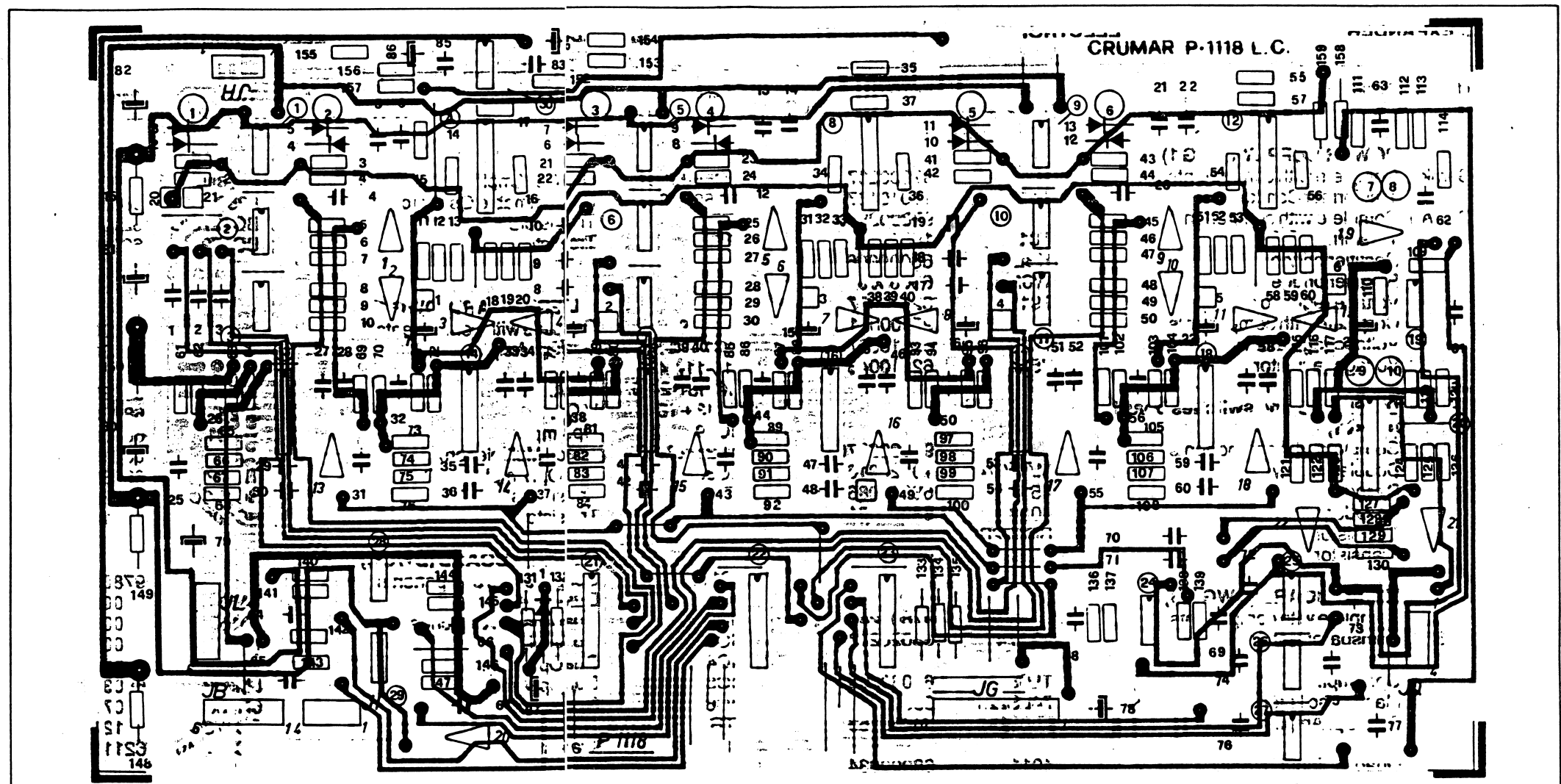
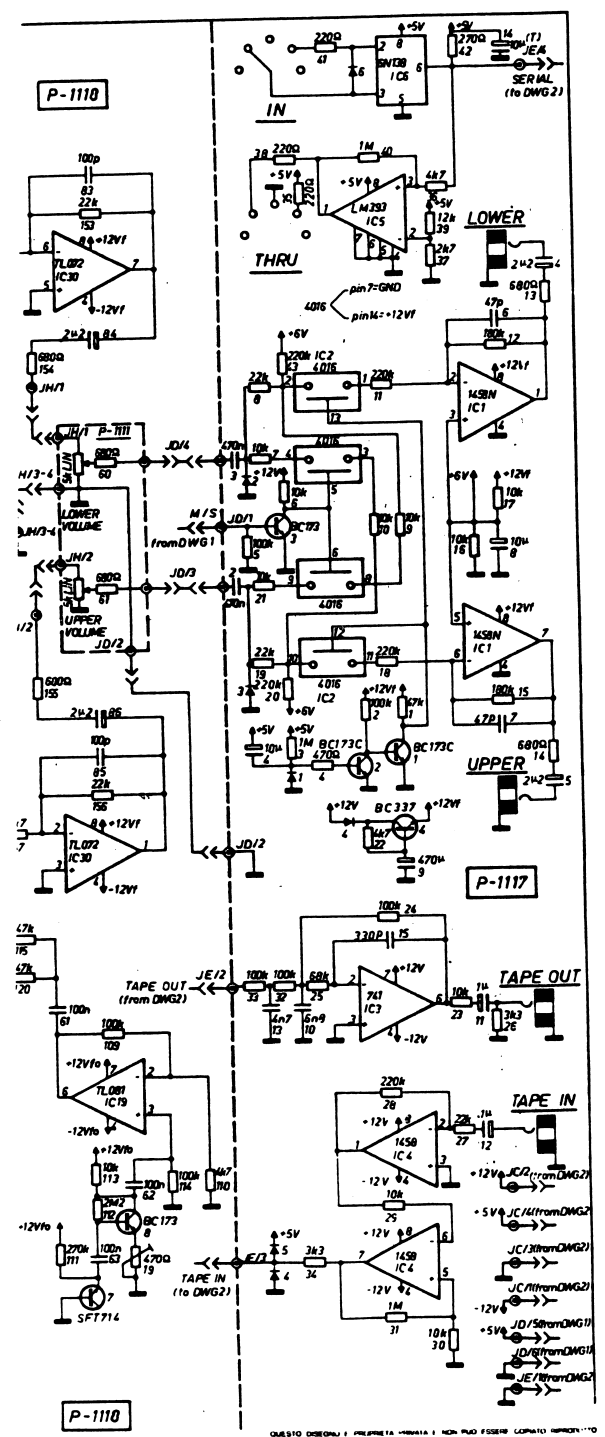
TITLE: EXPANDER	
DATE:	

2A

DATE:	BY:	CHKD:	APPD:







QUESTO CIRCUITO È PROPRIETÀ INTELLETTUALE E NON PUÒ ESSERE COPERTO, RIPRODOTTO, MODIFICATO O TERZO SENZA NOSTRA APPROVAZIONE SCRITTA.

DATE	MODEL: EXPANDER
DESIGNED BY: J-3-85	REVISION:
ISSUED BY:	DATE:

QUESTO CIRCUITO È PROPRIETÀ INTELLETTUALE E NON PUÒ ESSERE COPERTO, RIPRODOTTO, MODIFICATO O TERZO SENZA NOSTRA APPROVAZIONE SCRITTA.

DATE	MODEL: EXPANDER
DESIGNED BY: J-3-85	REVISION:
ISSUED BY:	DATE:

MODEL: EXPANDER

ELECTRONIC COMPONENT LIST

Schem. Ref.	Circuit	Type	Part Code
POWER SUPPLY (DWG 1)			
P1112 (Semko)	Complete with components Trasformer Semko	T81	978002871 18010137
P1112 (C.S.A.)	Complete with components Trasformer C.S.A.	T81	978002879 18010138
PD1	Rectifier bridge	KBL04	66000006
PD2	Rectifier bridge	W02	66000001
RT1	Voltage regulator	7912	62110037
P1119	Complete with components		97800041
RT2	Voltage regulator	7812	62110027
RT3	Voltage regulator	75505	62110043
DISPLAY'S and switches board (DWG 1)			
P1111	Complete with components		978002870
1÷8	Double Display	MAN6740	10120016
IC 1	Decoder	4511	68000086
IC 2	Decoder	4028	68000091
TR	Transistor	BC172B	62210003
TR	Transistor	BC337-40	62110038
MICRO BOARD (DWG 2-3)			
P1115	Complete with components		978002874
IC1-2-14-16 24-25	Transparent latch	LS374	68020213
IC3-6-17	Op. Ampl.	TL081	68030205
IC4-7	Master oscillator	74LS221	68000058
IC5-34-36-38 40-42-44	Dual Op. Ampl.	TL082	68030163
IC8	Quad. 2-input "NAND" Gate	4011	68000034
IC9-10	Non invert. Buffers.	4050	68000085
IC11	Transparent latch.	LS373	68020214
IC12	Decoders and Demultiplexers	LS138	68020153
IC13	Micro	8031	68070209
IC15	Dig. Analog. Converter	DAC0800	67070197
IC18	Positive "NAND" Gate	74LS00	68000117
IC19	Decoders and Demultiplexers	LS139	68020215
IC20-21	RAM	μPD449	68070216
IC22-23	Memory	2764(A or B)	68040211
IC26-27	Invert. Buffers	4049	68010131
IC28 + 33	Dual up. counters.	4020	68000045
IC35-39-41-37 43-45	Dual Op. Ampl.	LM393	68030222
IC46 ÷ 54	Quad Analog. Switches	4016	68000072

MODEL: EPANDER

ELECTRONIC COMPONENT LIST

Schem. Ref.	Circuit	Type	Part Code
IC55-56-57	Dual Op. Ampl.	1458N	68000053
IC58 ÷ 61	Programmable Oscillator	8253	68070210
TR	Transistors	BC1273/C	62120003
TR	Transistors	BC172B	62210003
FILTERS BOARD (DWG 4)			
P1119	Complete with components		978002877
IC1-2-3-5-6-9 10-11-24 ÷ 2	Dual Op. Ampl.	TL082	68030163
IC4-8-12-20	V.C.A.	13700	68030219
IC13+18	V.C.F.	3328	68030223
IC19	Op. Ampl.	TL081	68000059
IC21-22-23	Analog Multiplexers	4051	68010154
IC30	Dual Op. Ampl.	TL072	68030140
TR	Transistors	BC173C	62120003
TR	Transistors	BC308	62210001
OUTPUTS BOARD (DWG 4)			
P1117	Complete with components		978002876
IC1	Dual Op. Ampl.	1458	68000054
IC2	Quad Analog. Switches	4016	68000072
IC3	Op. Ampl.	741	68000059
IC4	Dual Op. Ampl.	1458N	68000053
IC5	Dual Op. Ampl.	LM393	68030222
IC6	Opto isolator	6N138	68070220
TR	Transistors	BC173C	62120003
TR	Transistors	BC337-40	62110038

Number	Name
51	CALLIOPE
52	VELOCITY CONTROLLED SAWTOOTH DECAY 2
53	DIGITAL PERCUSSION 2
54	NOISE CLAPS (play arpeggiated chords)
55	LEAD SYNTH. 1
56	PULSE DECAY 2
57	KNOCK ON WOOD
58	MALLET BELL 2
59	VELOCITY CONTROLLED SAWTOOTH DECAY 3
60	DELAYED GHOST
61	ELICOPTER/AMBULANCE (play lowest C and D and higher C)
62	SAWTOOTH DECAY
63	VELOCITY CONTROLLED DIGITAL REPEAT
64	INVERTED BACKGROUND
65	KOTO
66	PULSE DECAY 3
67	SPILLO TRILLO
68	MALLET BELL 3
69	DIGITAL ATTACK BACKGROUND
70	DIGI BELL LOW
71	DIGI BELL HIGH
72	SINUS TONE
73	MALLET HARMONIC 1
74	DARK WOOD TONE
75	MALLET HARMONIC 2
76	DOUBLE: 70 + 71 = DIGI BELL
77	DOUBLE: 72 + 73 = VIBRAPHONE
78	DOUBLE: 74 + 75 = MARIMBA
79	DOUBLE: 62 + 41 = SAWTOOTH DECAY + SQUARE PIANO BASS
80	DOUBLE: 17 + 47 = JAZZ ORGAN 1 + MALLET BELL 1
81	DOUBLE: 60 + 66 = DELAYED GHOST + PULSE DECAY 3
82	DOUBLE: 65 + 3 = KOTO + DIGITAL PIANO 1
83	DOUBLE: 37 + 47 = CARILLON
84	DOUBLE: 3 + 13 = DIGITAL PIANO 1 + DIGITAL PIANO 2
85	DOUBLE: 39 + 25 = DARK SAWTOOTH BACKGROUND + ELECTRIC PIANO 3
86	DOUBLE: 24 + 11 = VELOCITY CONTR. STRINGS + BRIGHT PIANO
87	DOUBLE: 53 + 21 = DIGITAL PERCUSSION 2 + CLAVICHORD
88	DOUBLE: 75 + 57 = MALLET HARMONIC 2 + KNOCK ON WOOD
89	SPLIT: 46 + 5 VELOCITY CONTR. SAW. DECAY 1 + ELECTRIC PIANO 1
90	SPLIT: 36 + 32 SEQUENCER BASS + FAST BRASS 4
91	SPLIT: 40 + 9 FUNK TOUCH 4 + RESONANCE SWEEP BACKGROUND
92	SPLIT: 38 + 35 CLASSIC GUITAR + FLUTE
93	SPLIT: 41 + 31 SQUARE PIANO BASS + HARP
94	SPLIT: 30 + 67 FUNK TOUCH 3 + SPILLO TRILLO
95	SPLIT: 21 + 35 CLAVICHORD + FLUTE
96	SPLIT: 40 + 20 FUNK TOUCH 4 + FUNK TOUCH 2
97	SPLIT: 75 + 57 MALLET HARMONIC 2 + KNOCK ON WOOD
98	SPLIT: 43 + 54 ELECTRONIC TOMS + NOISE CLAPS
99	SPLIT: 59 + 14 VELOCITY CONTR. SAW. DECAY 3 + STRINGS 1

BIT 01 RACK EXPANDER - PRELOAD PROGRAM LIST (SET 1)

Number	Name
01	ELECTRIC GRAND
02	BRASS 1 (velocity controlled)
03	DIGITAL PIANO 1
04	STRINGS WITH BOW
05	ELECTRIC PIANO 1
06	VELOCITY CONTROLLED PULSE
07	CHURCH ORGAN
08	GUITAR 1
09	RESONANCE SWEEP BACKGROUND
10	FUNK TOUCH 1
11	BRIGHT PIANO
12	SLOW BRASS 2
13	DIGITAL PIANO 2
14	STRINGS 1
15	ELECTRIC PIANO 2
16	PULSE DECAY
17	JAZZ ORGAN 1
18	GUITAR 2
19	SAWTOOTH BACKGROUND
20	FUNK TOUCH 2
21	CLAVICHORD
22	BRASS 3
23	DIGITAL PIANO 3
24	VELOCITY CONTROLLED STRINGS (play soft = slow Attack - play hard = fast Attack).
25	ELECTRIC PIANO 3
26	CLAVINET
27	VELOCITY CONTROLLED LESLIE ORGAN (play soft = slow Vibrato - play hard = fast Vibrato).
28	SHIFTED GUITAR
29	SAWTOOTH BACKGROUND WITH VELOCITY CONTROLLED ATTACK
30	FUNK TOUCH 3
31	HARP
32	FAST BRASS 4
33	DIGITAL PERCUSSION 1
34	VELOCITY CONTROLLED SOFT STRINGS
35	FLUTE
36	SEQUENCER BASS
37	TOY SISTRON
38	CLASSIC GUITAR
39	DARK SAWTOOTH BACKGROUND
40	FUNK TOUCH 4
41	SQUARE PIANO BASS
42	SOFT BRASS WITH RELEASE
43	ELECTRONIC TOMS
44	STRINGS 3
45	TRUMPET
46	VELOCITY CONTROLLED SAWTOOTH DECAY 1
47	MALLET BELL 1
48	LUTE
49	RESONANCE BACKGROUND
50	MODULATED GHOST