







*More Crumar manuals and schematics on
www.bleeps-and-peeps.com*

	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.

MODEL: EXPANDER

ELECTRONIC COMPONENT LIST

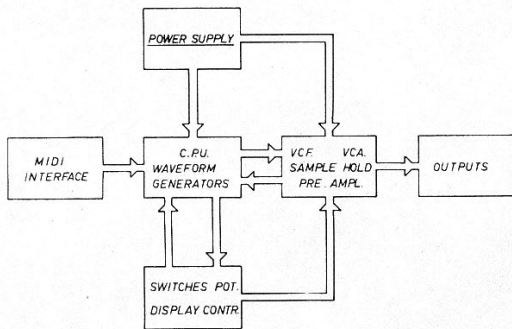
Schem. Ref.	Circuit	Type	Part Code
POWER SUPPLY (DWG 1)			
P1112 (Semko)	Complete with components Trasformer Semko	T81	978002871 18010137
P1112 (C.S.A.)	Complete with components Trasformer C.S.A.	T81	978002879 18010138
PD1	Rectifier bridge	KBL04	66000006
PD2	Rectifier bridge	W02	66000001
RT1	Voltage 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
IC1	Decoder	4511	68000086
IC2	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	Transparent latch	LS374	68020213
24-25			
IC3-6-17	Op. Ampl.	TL081	68030205
IC4-7	Master oscillator	74LS221	68000058
IC5-34-36-38	Dual Op. Ampl.	TL082	68030163
40-42-44			
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	Dual Op. Ampl.	LM393	68030222
43-45			
IC46 + 54	Quad Analog. Switches	4016	68000072

MODEL: EXPANDER

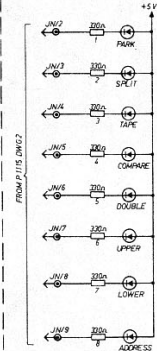
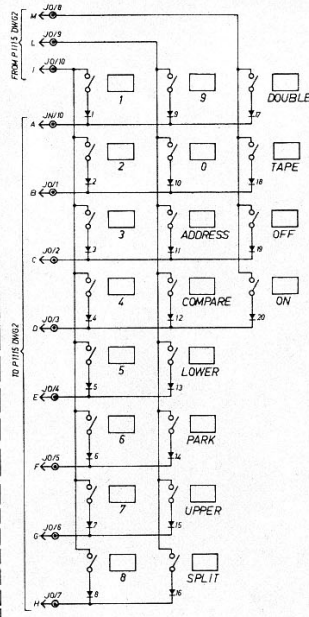
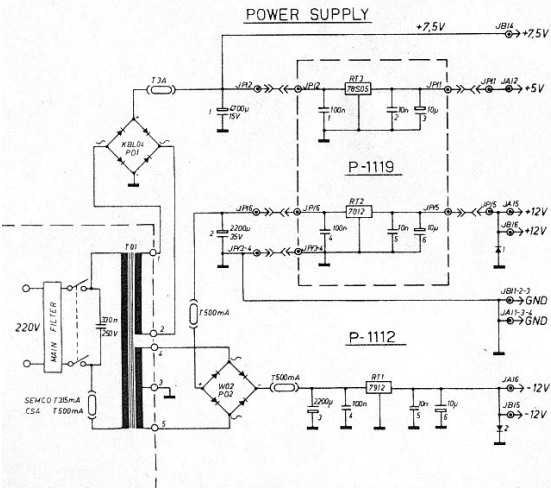
ELECTRONIC COMPONENT LIST

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
IC1-2-3-5-6-7-9	Dual Op. Ampl.	TL082	68030163
10-11-24 ÷ 29			
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

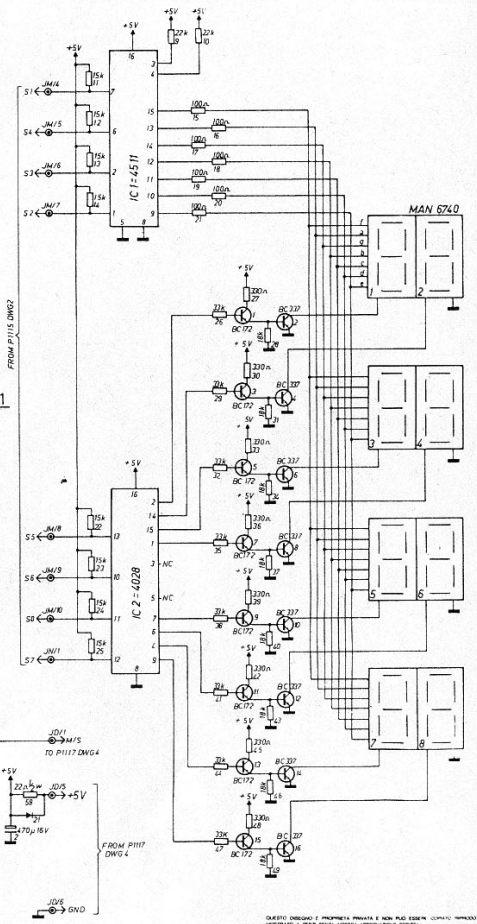
BLOCK DIAGRAMM



POWER SUPPLY

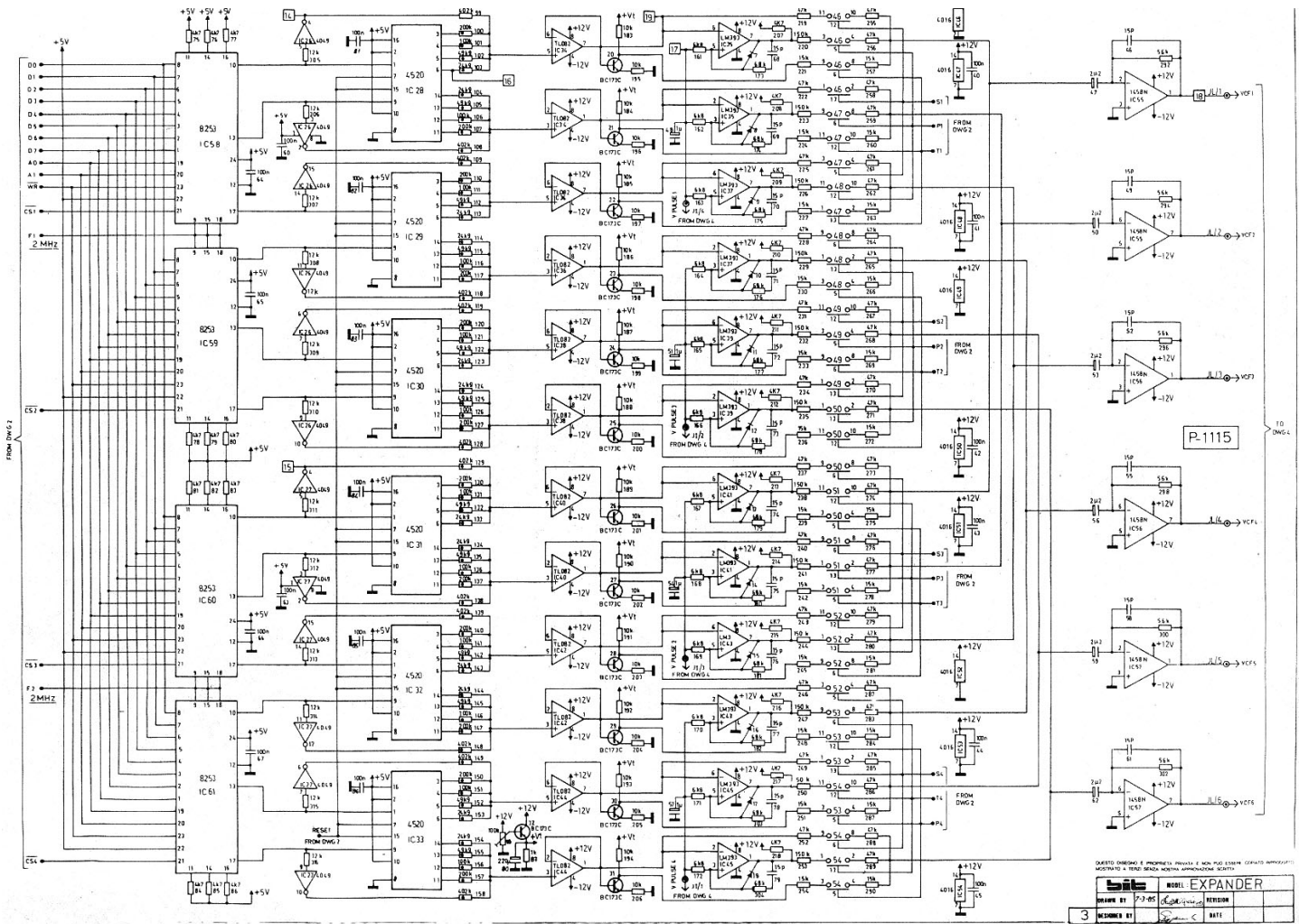


P-1111



QUESTO CIRCUITO È PROPIETÀ PRIVATA E NON PUÒ ESSERE COPIATO, RIPRODOTTO, MISTRATO O USATO SENZA AUTORIZZAZIONE SCRITTA.

MODEL EXPANDER	
DESIGNED BY	DATE
REVISION	



DISEGNO E PROGETTO: P. BIANCHI
 COSTRUTTORE: P. BIANCHI
 VERIFICATO: P. BIANCHI

MOBILE EXPANDER	
DATA	REVISIONE
3	

