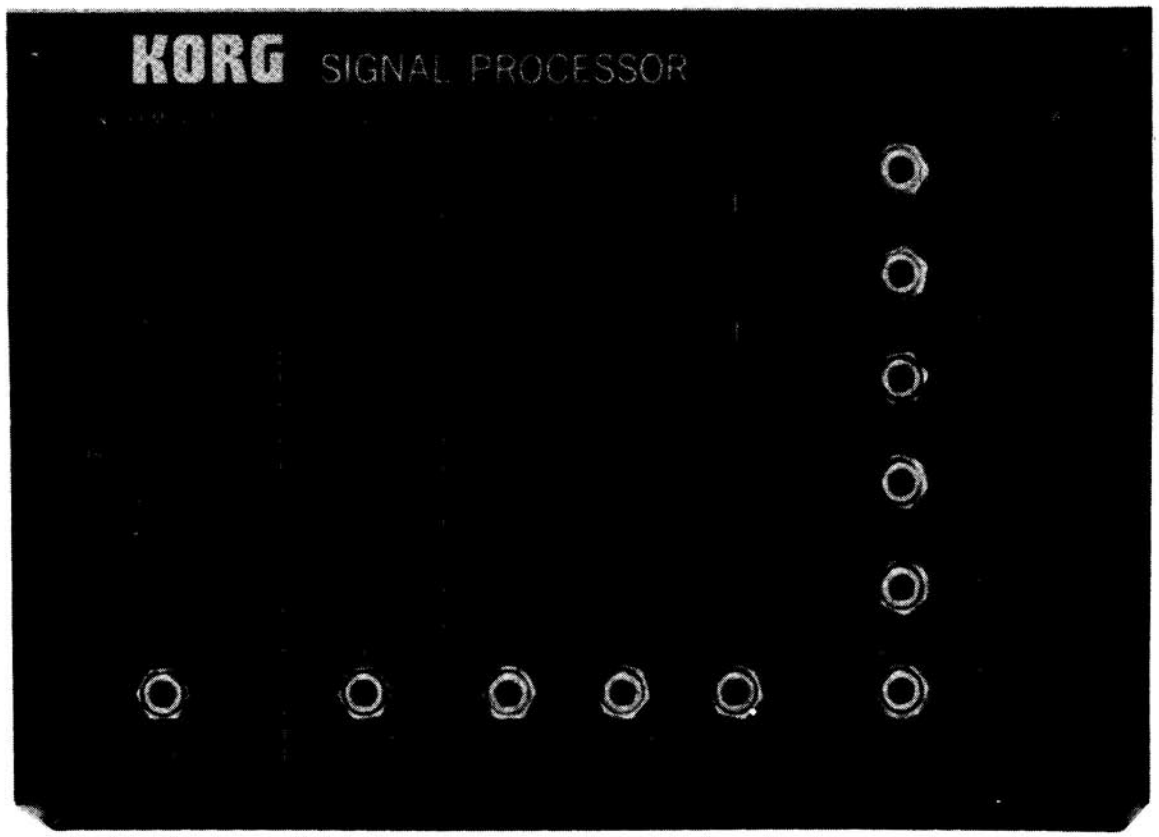
KORG



SIGNAL PROCESSOR SERVICE MANUAL MS-03

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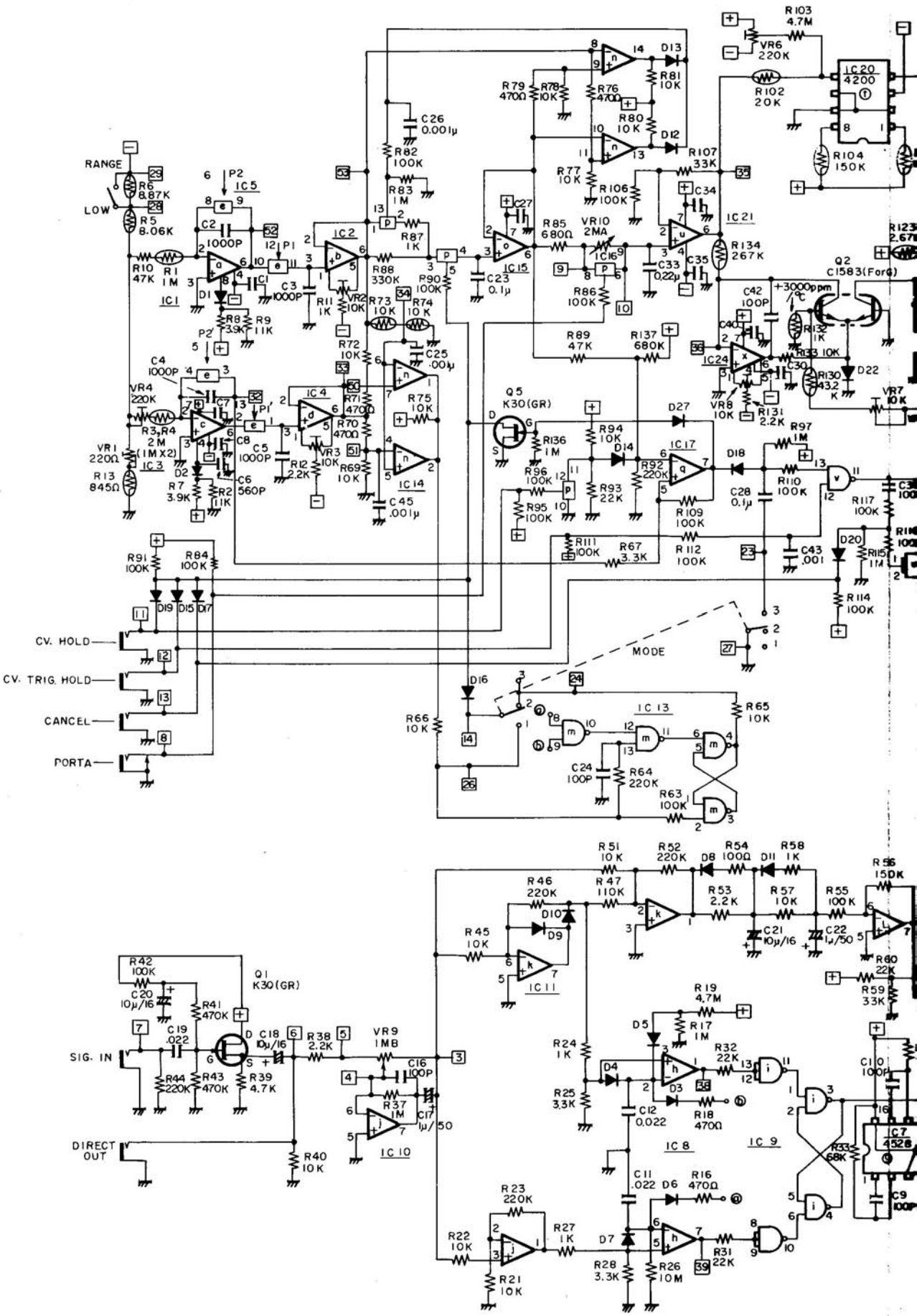
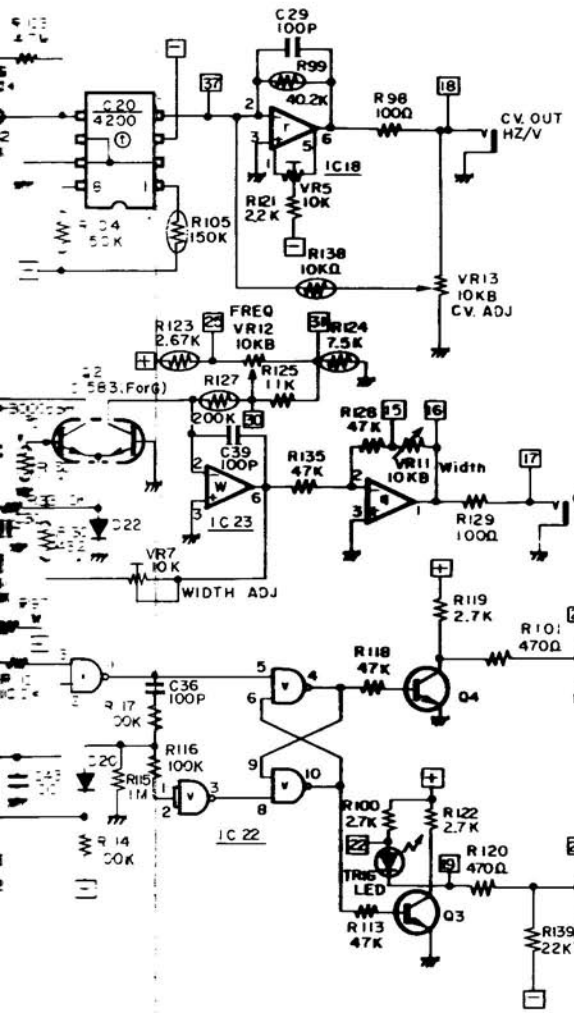
KEIO ELECTRONIC LABORATORY CORPORATION
TOKYO/JAPAN

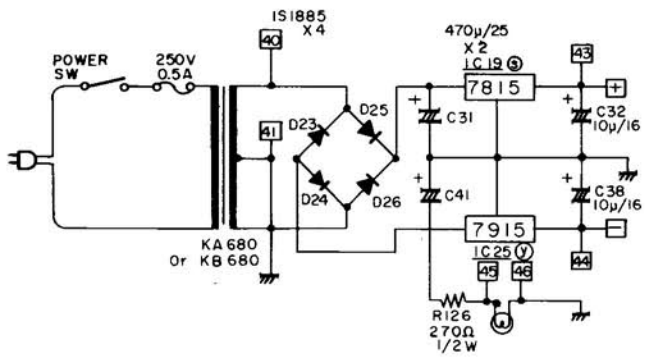
1. SPECIFICATIONS

1. CONTROL SECTION	● Input signal level ● Range switch (Low: 75～1400 Hz, Hi: 150～2800 Hz) ● Mode switch ● Portamento time ● CV hold ● CV & Trig hold ● Cancel switch ● OCT/V frequency adjust (±600 cent) ● OCT/V width adjust (0.9～1.1V/OCT) ● Power switch ● Portamento switch
2. INPUT & OUTPUT	● Signal In (auto pad system) (line level～mic level) ● CV out (Hz/V) ● CV out (OCT/V) ● Trig out ⌐ GND ● Trig out ⌐ GND ● Env. out ● Direct out
3. INDICATOR (LED)	● Peak indicator ● Trigger indicator
4. POWER CONSUMPTION	● 5W

2. CIRCUIT DIAGRAM



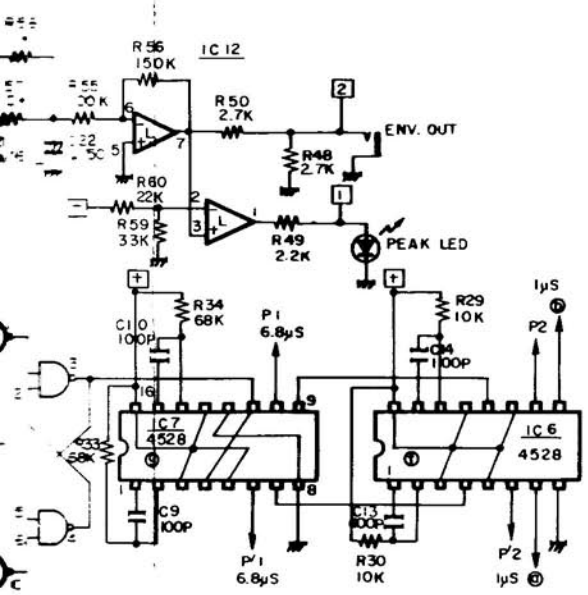




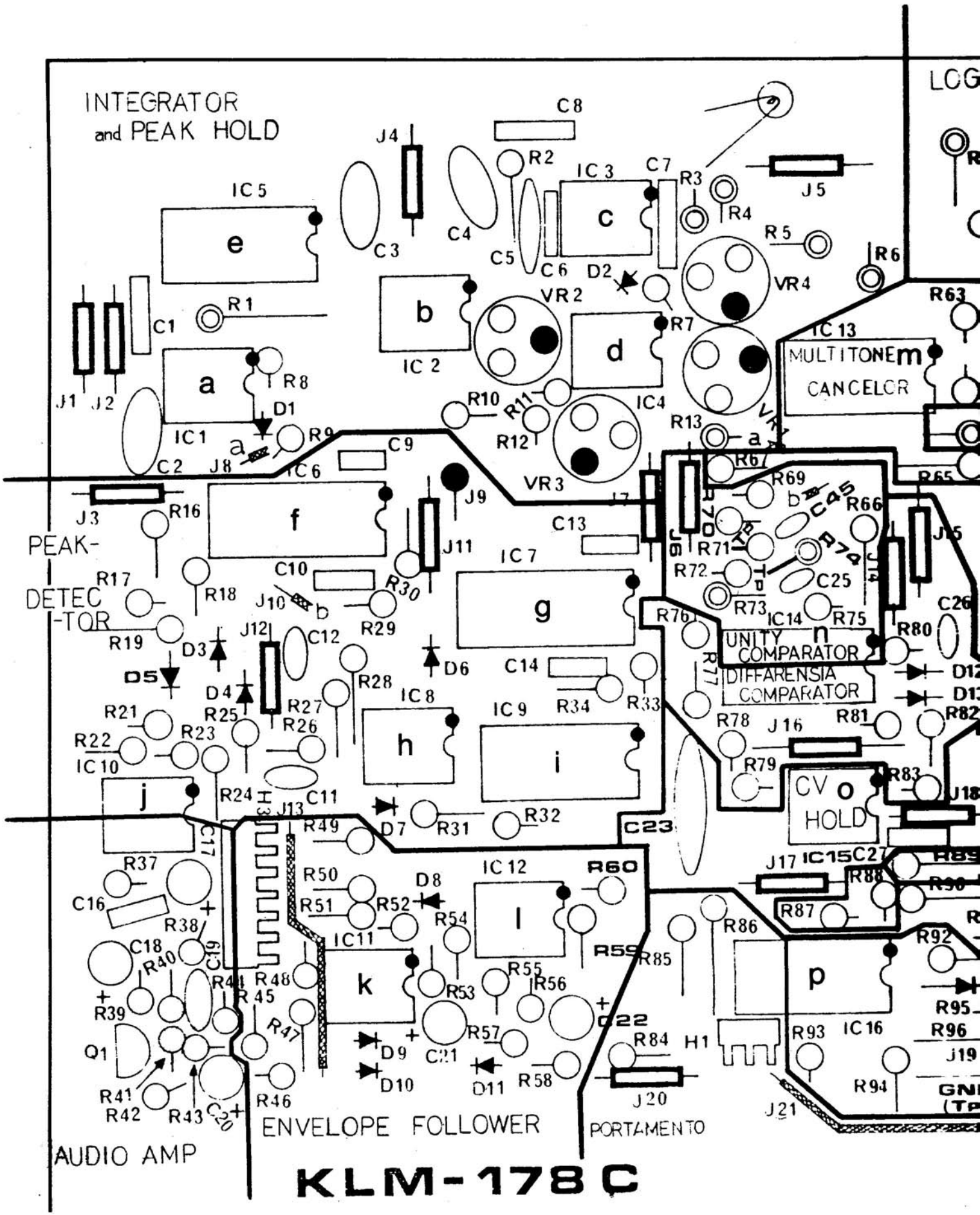
RENGE LOW

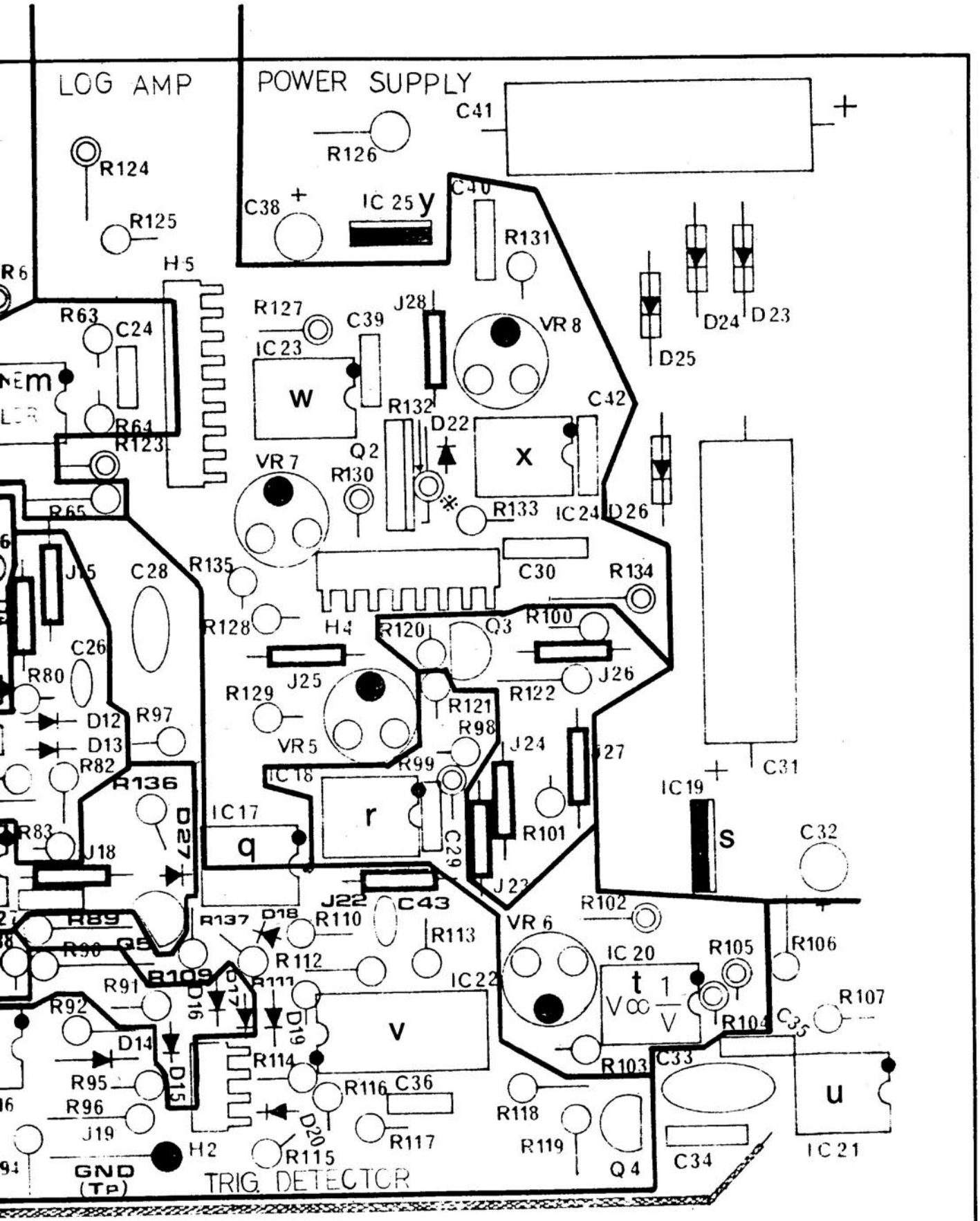
Freq	Tp 53(V)	Tp35(V)	Hz/V	OCT/V
1 KHz	0.75	1.00	8.00	3.50
500Hz	1.50	2.00	4.00	2.50
250Hz	3.00	4.00	2.00	1.50
125Hz	6.00	8.00	1.00	0.50

a, p, c o : 3140
d, r, u x, w : 071
e, p : 4066
h : 072(082)
n : 339
v, i, m : 4011
j, k, l, q : 4558



3. PC BOARD


INTEGRATOR
and PEAK HOLD
PEAK-
DETEC
-TOR
AUDIO AMP
ENVELOPE FOLLOWER
PORTAMENTO
MULTITONE
CANCELOR
UNITY
COMPARATOR
DIFFARENSIA
COMPARATOR
CV
HOLD
KLM-178C


LOG AMP
POWER SUPPLY
C41
R126
R124
C38
IC 25 y
C40
R125
R131
H5
R6
R63
C24
R127
C39
J28
VR 8
D24
D23
D25
IC 23
W
R132
C42
R64
R123
D22
Q2
X
VR 7
R130
R133
IC 24
D26
R65
C28
R135
C30
R134
J15
R128
H4
R120
Q3
R100
C26
R80
J25
J26
R129
R122
R121
D12
R97
R98
D13
VR 5
J24
J27
R82
R99
IC 18
C31
IC 19
R136
IC 17
r
R83
q
R101
S
C32
J18
D27
C29
J23
J22
C43
R102
R89
R137
D18
R110
VR 6
R113
R90
Q5
R112
IC 20
R105
R106
R109
R91
D16
D17
R111
IC 22
t
V∝ 1/V
R92
D19
v
R107
R104
C35
D14
R114
R103
C33
R95
D15
R116
C36
u
R96
R118
J19
D20
R117
R119
IC 21
H2
R115
Q4
C34
GND
(TP)
TRIG. DETECTOR

4. PARTS LIST
(Mechanical parts not listed)

● CARBON RESISTORS
not listed

● METAL FILM RESISTORS
1/4W 1% 845Ω x 1
267kΩ x 1
7.5kΩ x 1
8.06kΩ x 1
8.87kΩ x 1
10kΩ x 2
20kΩ x 1
40.2kΩ x 1
43.2kΩ x 1
200kΩ x 1
267kΩ x 1
150kΩ x 2
1MΩ x 2
1MΩ x 1

● FET
2SK 30A (GR) x 2

● DIODES
1S1555 x 22
1S1885 x 4

● LED
SEL 104S x 2

● LINEAR POSITIVE T.C. RESISTORS
1kΩJ + 3000 PPM/°C x 1

● CERAMIC CAPACITORS
50V 100pF x 10
0.0047μF x 8
560pF x 1

● MYLAR CAPACITORS
50VK 0.001μF x 4
0.022μF x 3
0.22μF x 1
0.1μF x 1

● POLYPROPYLENE
1000PF 100V G x 4
0.1μF 200V M x 1

● ELECTROLYTIC CAPACITORS
10μF 16V x 5
470μF 25V x 2
1μF 50V x 2

● SEMI-FIXED RESISTORS
SR-19D 220ΩB 10φ x 1
10IKB 10φ x 5
220KB 10φ x 2

● ROTARY VARIABLE RESISTORS
10KB EVH-COAK 15B14 x 2
1MB EVH-COAK 15B16 x 1
2MA EVH-COAK 15A16 x 1

● SLIDE KNOB
Black L6 x 2

● SLIDE SWITCHES
SSB-12202 x 1
SSB-12301 x 1

● SEESAW SWITCHES
1801-0121 x 1

● FUSE
250V 0.5A x 1

● TRANSISTORS
2SC 1685(S) x 2
2SC 1583F or G x 1

● IC
TL 071 x 5
072 x 1
CA3140E x 4
RC4200 x 1
339 x 1
4011 x 3
MC14066 x 2
4528 x 2
4558 x 4
7815 x 1
7915 x 1

● PILOT LAMP
14V 0.04A x 1

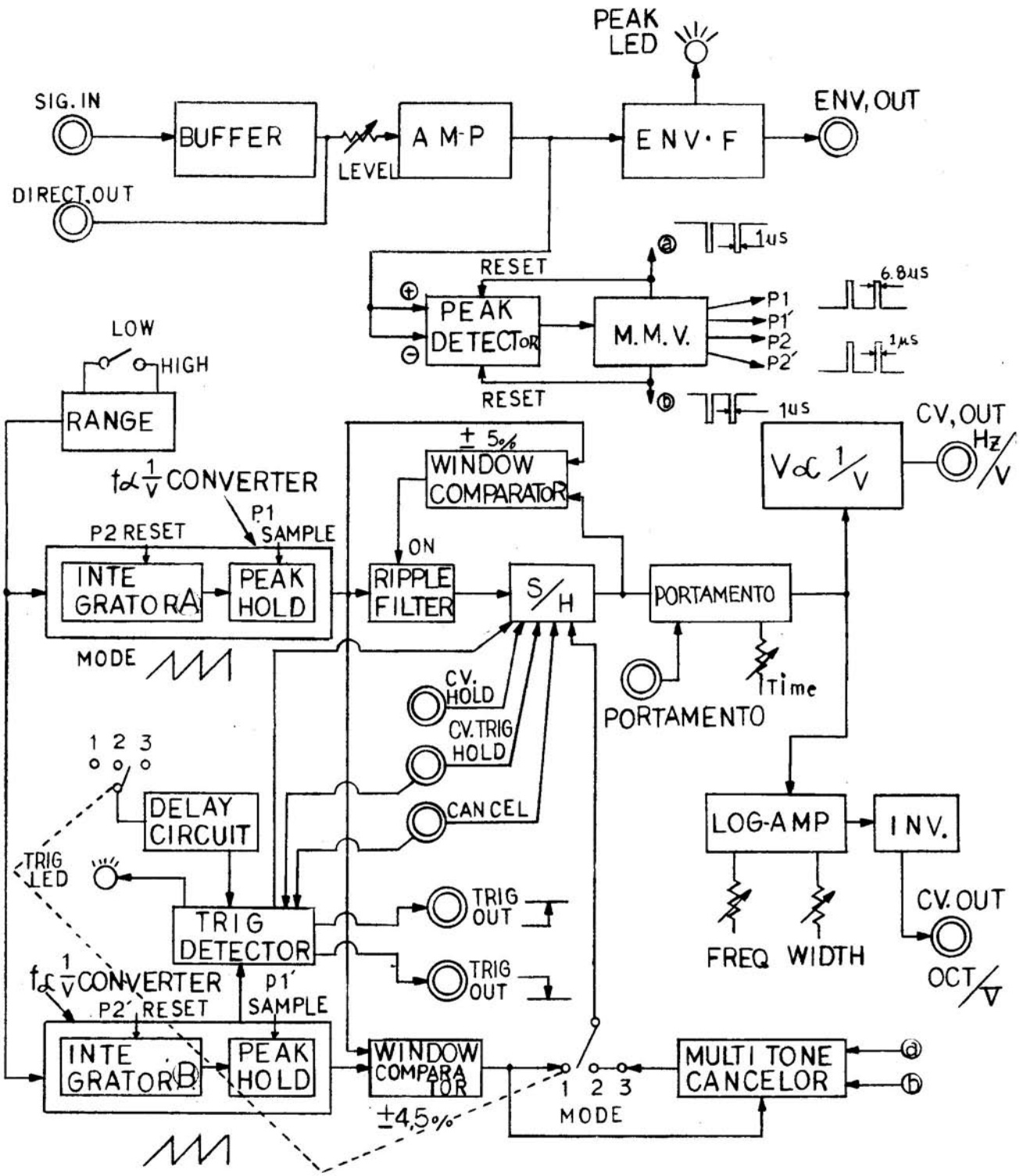
● LAMP HOLDER
BFE-R x 1

● PC BOARD
KLM-178C x 1

● CONNECTORS
MS-0301 x 1
MS-0302 x 1
MS-0303 x 1
MS-0304 x 1
TRC-100 x 1
3P x 1
4P x 1
7P x 1
8P x 1
9P x 1

● POWER TRANSFORMER
KA680 100V, 220V, 240V x 6
KB680 UL, CSA, 117V x 2

5. BLOCK DIAGRAM



6. ADJUSTMENT PROCEDURE

Settings MS-03		
Sig in	←	WT-10A out or Freq. OSC
CV out	→	Digital voltmeter (4-1/2)
Range	→	Low
Peak	→	On
Settings WT-10A		
Sound/meter SW	→	Sound
Chromatic Dial	→	B
Meter	→	+20 cent

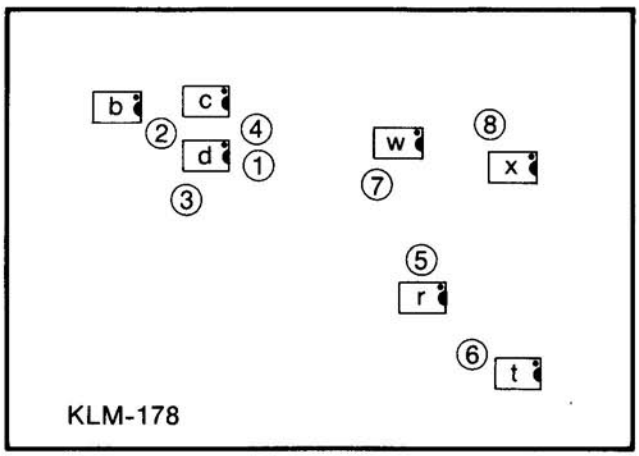


Fig. 1

- Turn CV OUT Hz/V ADJUST knob at the rear panel all the way clockwise to the KORG CV position.
- Please refer to fig.–1 concerning Adjust Vr. No.
- The value indicated in ( ) show you frequency and voltage which you get when you put Frequency OSC into the Sig.–In.
- Please refer to the circuit diagram regarding Test Point No. (TP).
- You must make adjustment again and again until you get the same value of Output Voltage indicated in the list below.
- Please note this adjustment process is mentioned when WT-10A is used.

	WT-10A OCT		TP	Digi.Vol. (4-1/2)		Adjust Vr. No.	Note
Hz/V	(1 kHz)	H	18	(8.00V)	8.00V	6	Accuracy: –10 cent +5 cent
	(500 Hz)	M	18	(4.00V)	4.00V	1	
	(250 Hz)	L	18	(2.00V)	2.00V	5	
OCT/V	(250 Hz)	L	17	(1.50V)	1.50V	Freq. Vr→0	
	(1 kHz)	H	17	(3.50V)	3.50V	8	
	(500 Hz)	M	17	(2.50V)	2.50V	7	
Peak Hold-1	(125 Hz)	L	53	(6.00V)	3.00V	1	When you cannot make adjustment, please make it as indicated in the list on the left.
Peak Hold-1	(125 Hz)	L	34	(3.00V)	1.50V	1	
	(1 kHz)	H	34	(0.375V)	0.375V	2	
Peak Hold-2	(125 Hz)	L	33	(3.00V)	1.50V	4	
	(1 kHz)	H	33	(0.375V)	0.375V	3	
V∝1/V	(125 Hz)		35	(8.00V)		Check	
	(250 Hz)	L	35	(4.00V)	4.00V		
	(500 Hz)	M	35	(2.00V)	2.00V		
	(1 kHz)	H	35	(1.00V)	1.00V		