

PG-300

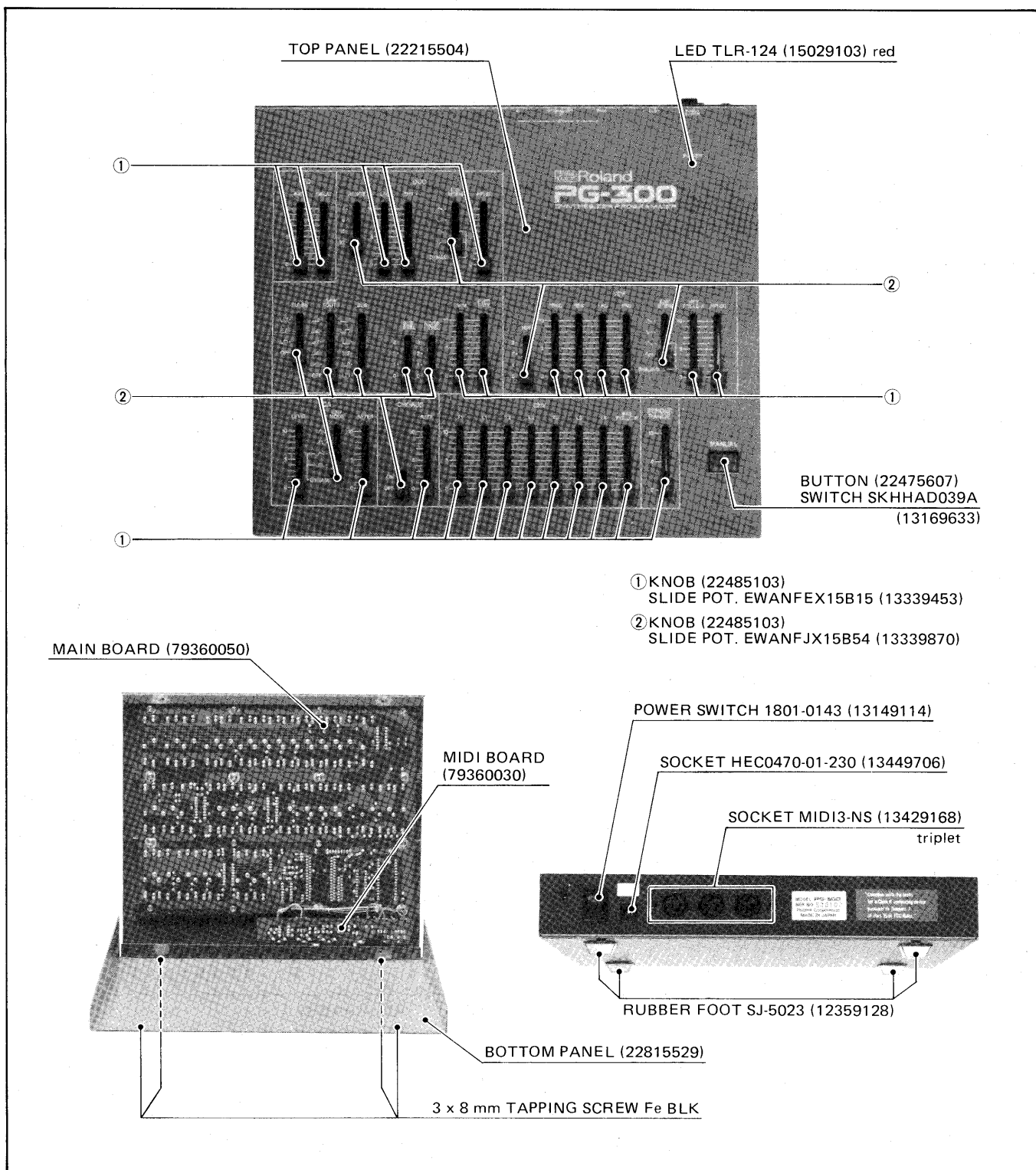
SERVICE NOTES

First Edition

SPECIFICATIONS

CURRENT CONSUMPTION 200mA DC at 9V
WEIGHT 1.7 kg/3 lb 12 oz (without Adaptor)
DIMENSIONS 267(W) x 55(H) x 238(D) mm
 10-1/2" x 2-1/8" x 9-1/8"

ACCESSORIES AC Adapter PSA-120, 220 or 240
 MIDI/SYNC Cable (1.5 m)



PARTS LIST

PANEL

22215504		Top
22815529		Bottom

KNOB, BUTTON

22485103	Knob	Slide Pot
22475607	Button	MANUAL

SWITCH

13169633	SKHHAD039A	MANUAL
13149114	1801.0143	POWER

PCB ASSY

79360050	(PCB 22925305)	Main Board
79360030	(PCB 22925305)	MIDI Board

SOCKET

13429168	MIDI3-NS	5P Triplet DIN
13449706	HEC0470-01-230	9V IN

CONNECTOR

13439285	5268-03A	3P
13439272	5268-04A	4P

SLIDE POTENTIOMETER

13339870	EWANFJX15B54	50KB
13339453	EWANFEX15B15	100KB

RESISTOR ARRAY

13919310	RMLS 8-103J	10K × 8
13910114	RGLD 4 × 223K	22K × 4

CAPACITOR ARRAY

13529127	B8ZC0111-32N	8200P × 7
----------	--------------	-----------

IC

15179190	μPD7811G-102-36	CPU
15179755	MBM2764-25Z-G	EP-ROM
15159508	TC40H373P	Octal D-type Latch
15159113H0	HD14051BP	8-channel Multiplexer/Demultiplexer
15169304H0	HD74LS04P	Hex Inverter
15219152	PST520D	Reset
15199106NH	μPC7805H	+ 5V Voltage Regulator

TRANSISTOR

15119113	2SA1015-GR	
----------	------------	--

DIODE

15019125	1SS133		
15019208	1SR35-200		
15029103	TLR-124	red	LED

PHOTO COUPLER

15229706	TLP552	
----------	--------	--

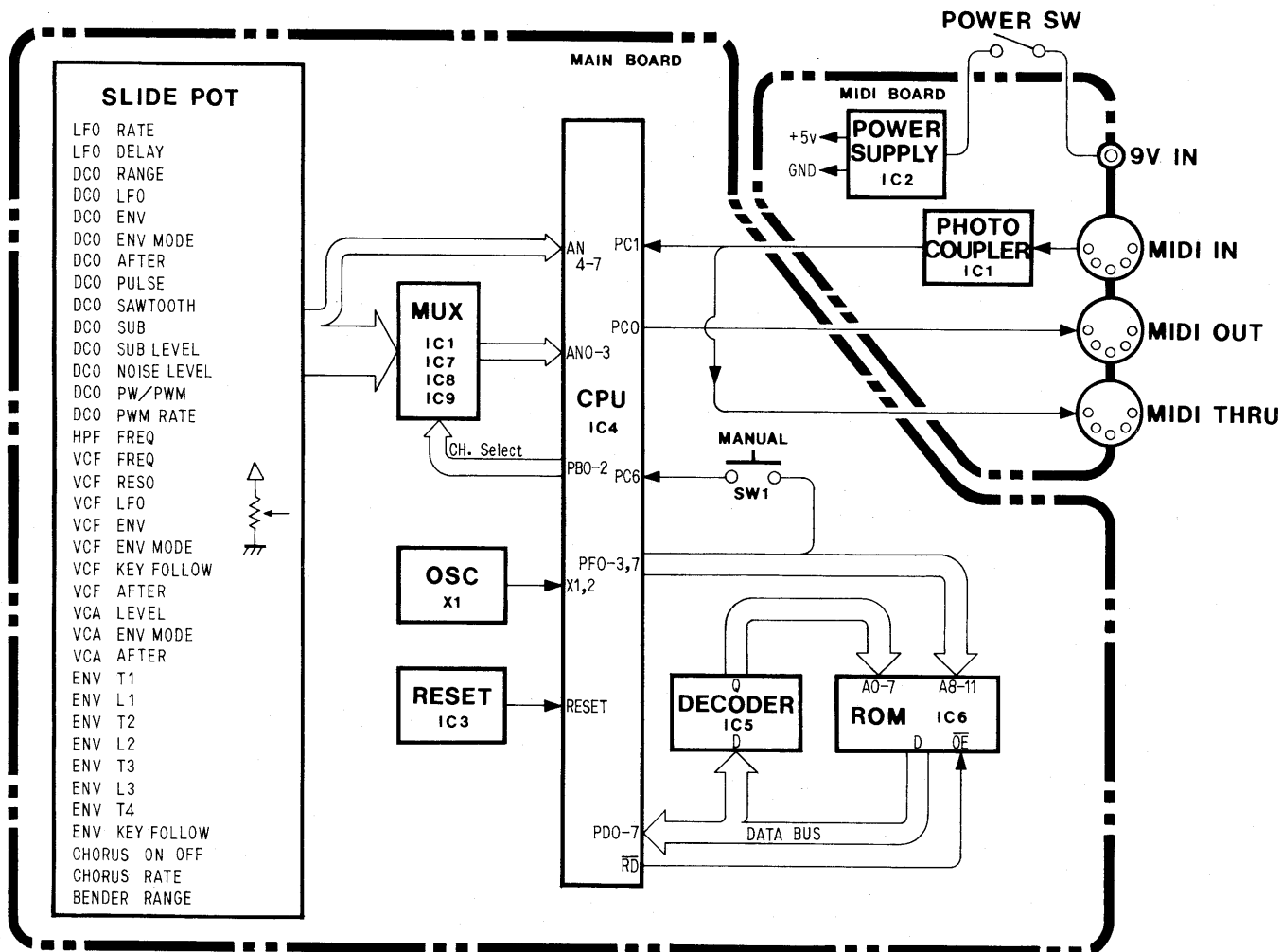
MISCELLANEOUS

12449243	ELE-A120KA	12μH	Coil
12389719	KMFC1007T31	12MHz	Xtal
13429532	TDH4100-28B	28pin	IC Socket
12359128	SJ-5023		Rubber Foot
22165124			Voltage Regulator Spacer

COMMERCIALLY AVAILABLE

12449509	PSA-100	100V	AC Adapter
12449510	PSA-120	117V	AC Adapter
12449511	PSA-220	220V	AC Adapter
12449512	PSA-240	240V	AC Adapter
23485155		1.5m	MIDI/Sync Cable
	MSC-25	2.5m	MIDI/Sync Cable
	MSC-50	5m	MIDI/Sync Cable

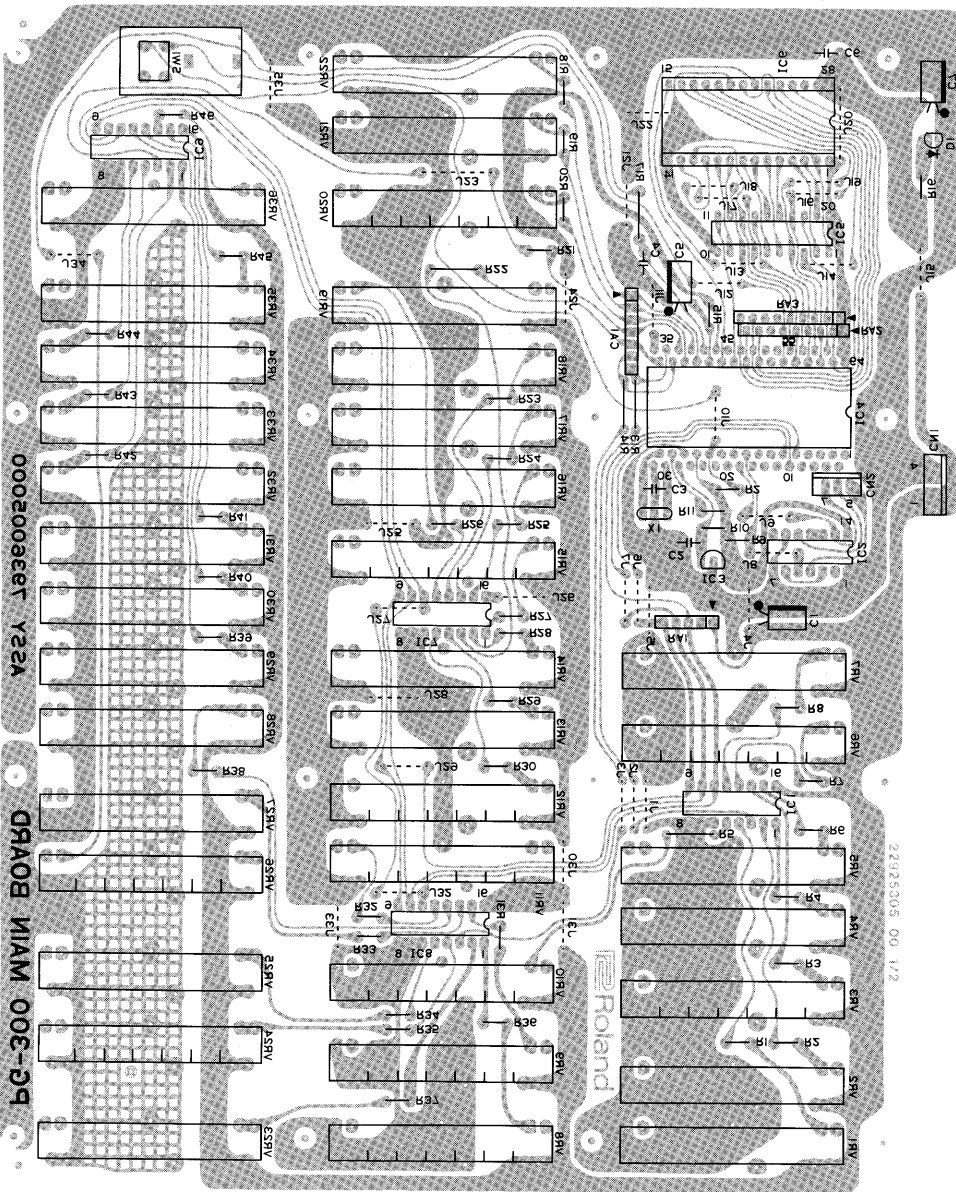
BLOCK DIAGRAM



7 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

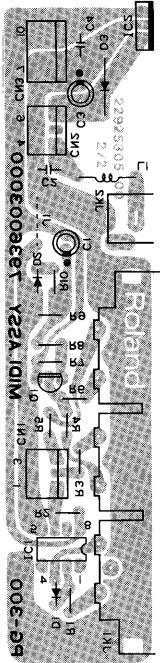
MAIN BOARD 79360050(pcb 22925305)

View from foil side.



MIDI BOARD 79360030 (pcb 22925305)

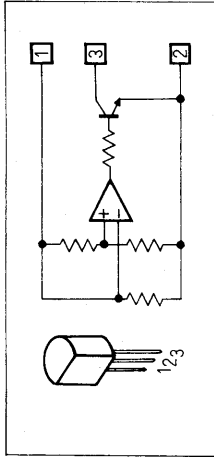
View from foil side.



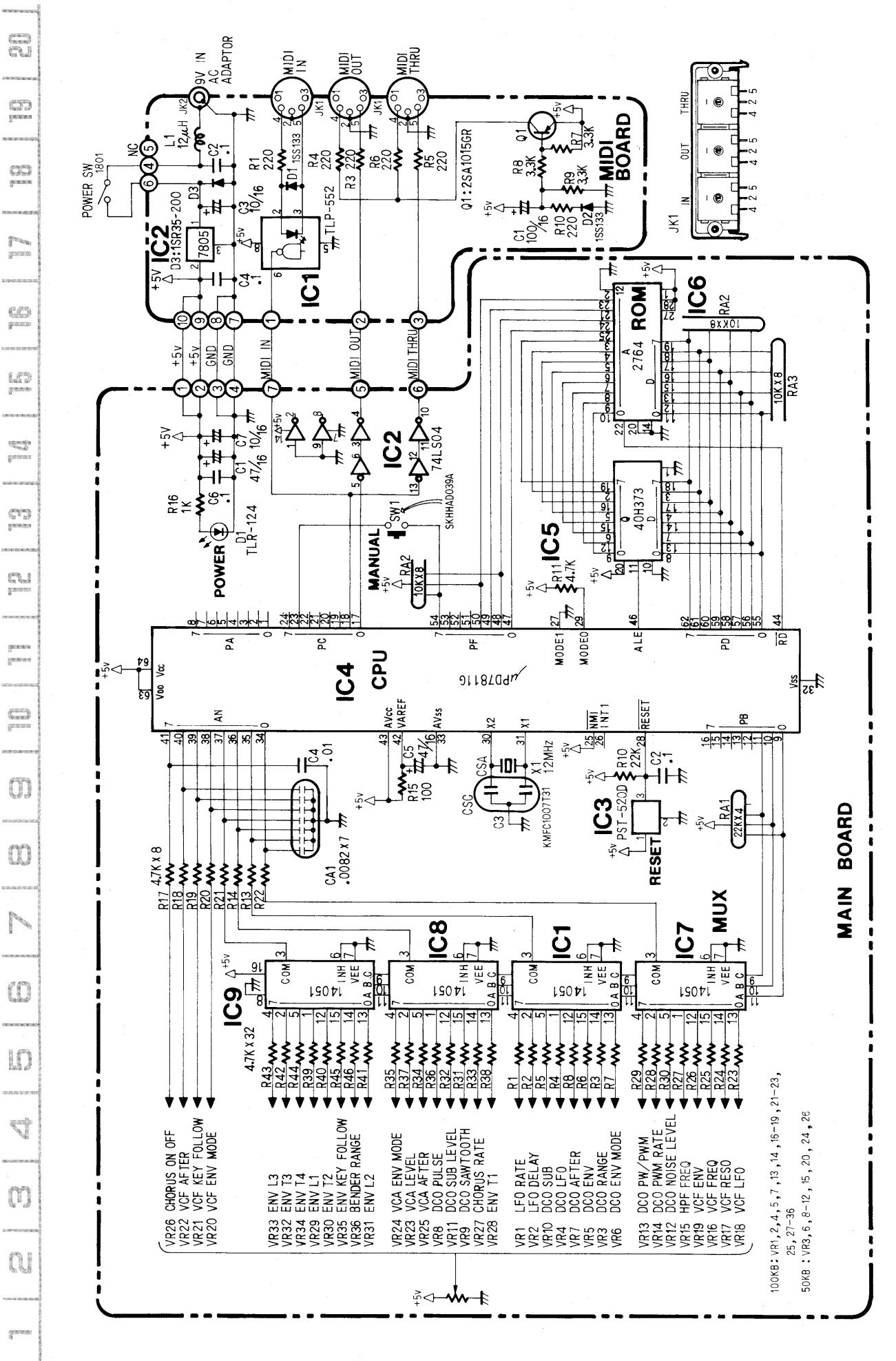
μPD7811G

1	PA0	Vcc
2	PA1	Vdd
3	PA2	PD7
4	PA3	PD6
5	PA4	PD5
6	PA5	PD4
7	PA6	PD3
8	PA7	PD2
9	PB0	PD1
10	PB1	PD0
11	PB2	PF7
12	PB3	PF6
13	PB4	PF5
14	PB5	PF4
15	PB6	PF3
16	PB7	PF2
17	PC0	PF1
18	PC1	PF0
19	PC2	ALE
20	PC3	WR
21	PC4	RD
22	PC5	AVcc
23	PC6	VAREF
24	PC7	AN7
25	NMI	AN6
26	INT1	AN5
27	MODE1	AN4
28	RESET	AN3
29	MODE0	AN2
30	X2	AN1
31	X1	ANO
32	Vss	AVss

PST520D



A B C D E F G H - J K L M N O P



MAIN BOARD

MIDI BOARD

100KB: VR1, 2, 4, 5, 7, 13, 14, 16-19, 21-23, 25, 27-36
 50KB: VR3, 6, 8-12, 15, 20, 24, 26

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

A B C D E F G H I J K L M N

Programmer for JU-1, JU-2

MODEL PG-300 MIDI Implementation Chart

Function.....		Transmitted	Recognized	Remarks
Basic Channel	Default Changed	1 - ** 1 - 16 **	× ×	
Mode	Default Messages Altered	× * *****	× ×	
Note Number	True voice	* *****	×	
Velocity	Note ON Note OFF	* *	× ×	
After Touch	Key's Ch's	* *	× ×	
Pitch Bender		*	×	
Control Change		*	×	
Prog Change	True #	* *****	× ×	
System Exclusive		○	×	Tone parameter
System Common	Song Pos Song Sel Tune	* * *	× × ×	
System Real Time	Clock Commands	* *	× ×	
Aux Messages	Local ON/OFF All Notes OFF Active Sense Reset	* * ○ *	× × ○ ×	
Notes		* : This unit transmits all received MIDI messages except Active Sense. ** : Used as 'Unit #' in Exclusive Messages.		

Mode 1 : OMNI ON, POLY
Mode 3 : OMNI OFF, POLY

Mode 2 : OMNI ON, MONO
Mode 4 : OMNI OFF, MONO

○ : Yes
× : No

Programmer for JU-1, JU-2

MODEL PG-300 MIDI Implementation

*** PG-300 MIDI IMPLEMENTATION ***
 version 1.0
 Dec.11 1985

#2 Parameter format

1. TRANSMITTED DATA

- 1.1 All received messages. (except Active Sense)
- 1.2 Created message.

Status	Second	Third	Description
1111 1110			Active Sensing

Note :
 This unit stops transmitting Active Sense message if this unit detects Non Active condition on MIDI IN.

2. RECOGNIZED RECEIVE DATA

Status	Second	Third	Description
1111 1110			Active Sensing

3. TRANSMITTED EXCLUSIVE MESSAGES

- 3.1 All received Exclusive Messages.
- 3.2 All Tone Parameters without Tone names (APR)

When 'MANUAL Button' is pressed.

Byte	Description
a 1111 0000	Exclusive status
b 0100 0001	Roland ID #
c 0011 0101	Operation code = APR (all parameters)
d 0000 nnnn	Unit # = MIDI basic channel, nnnn = 0 - 15 where nnnn + 1 = channel #
e 0010 0011	Format type (JU-1, JU-2)
f 0010 0000	Level # = 1
g 0000 0001	Group #
h 0vvv vvvv	Value (0 - 127)
i	In sequence (36 bytes total)
j 1111 0111	End of System Exclusive

3.3 Individual Tone Parameter (IPR)

When the volume controllers or switches are changed.

Byte	Description
a 1111 0000	Exclusive status
b 0100 0001	Roland ID #
c 0011 0110	Operation code = IPR (individual parameter)
d 0000 nnnn	Unit # = MIDI basic channel, nnnn = 0 - 15 where nnnn + 1 = channel #
e 0010 0011	Format type (JU-1, JU-2)
f 0010 0000	Level # = 1
g 0000 0001	Group #
h 00pp pppp	Parameter # (0 - 35, 48)
i 0vvv vvvv	Value (0 - 127)
j	h and i (repetitively)
j 1111 0111	End of System Exclusive

Notes :

*1 Default MIDI basic channel is 1.
 It can be set to other MIDI basic channels as follows :

1. Turn power off.
2. Set up the position of 'SUB LEVEL' switch and 'NOISE LEVEL' switch to correspond to MIDI channel #.

MIDI channel # <-> switch table

NOISE LEVEL switch	
S	0 : 1 : 2 : 3
U	0 : 1 : 2 : 3
B	0 : 1 : 2 : 3 : 4
L s	0 : 1 : 2 : 3 : 4
E w	5 : 6 : 7 : 8
V i	5 : 6 : 7 : 8
E t	9 : 10 : 11 : 12
L c	9 : 10 : 11 : 12
h	13 : 14 : 15 : 16

3. Turn power on while holding the 'MANUAL Button' down.

#	Function	Value
0	DCO ENV MODE	0 = ENV normal 1 = ENV inverted 2 = ENV normal with dynamics 3 = ENV inverted with dynamics
1	VCF ENV MODE	0 = ENV normal 1 = ENV inverted 2 = ENV normal with dynamics 3 = dynamics
2	VCA ENV MODE	0 = ENV 1 = GATE 2 = ENV with dynamics 3 = GATE with dynamics
3	DCO WAVEFORM PULSE	0 - 3
4	DCO WAVEFORM SAWTOOTH	0 - 5
5	DCO WAVEFORM SUB	0 - 5
6	DCO RANGE	0 = 4' 1 = 8' 2 = 16' 3 = 32'
7	DCO SUB LEVEL	0 - 3
8	DCO NOISE LEVEL	0 - 3
9	HPF CUTOFF FREQ	0 - 3
10	CHORUS	0 = OFF 1 = ON
11	DCO LFO MOD DEPTH	0 - 127
12	DCO ENV MOD DEPTH	0 - 127
13	DCO AFTER DEPTH	0 - 127
14	DCO PW/PWM DEPTH	0 - 127
15	DCO PWM RATE	0 = PW manual 1 - 127 = PWM LFO RATE
16	VCF CUTOFF FREQ	0 - 127
17	VCF RESONANCE	0 - 127
18	VCF LFO MOD DEPTH	0 - 127
19	VCF ENV MOD DEPTH	0 - 127
20	VCF KEY FOLLOW	0 - 127
21	VCF AFTER DEPTH	0 - 127
22	VCA LEVEL	0 - 127
23	VCA AFTER DEPTH	0 - 127
24	LFO RATE	0 - 127
25	LFO DELAY TIME	0 - 127
26	ENV T1	0 - 127 (ATTACK TIME)
27	ENV L1	0 - 127 (ATTACK LEVEL)
28	ENV T2	0 - 127 (BREAK TIME)
29	ENV L2	0 - 127 (BREAK LEVEL)
30	ENV T3	0 - 127 (DECAY TIME)
31	ENV L3	0 - 127 (SUSTAIN LEVEL)
32	ENV T4	0 - 127 (RELEASE TIME)
33	ENV KEY FOLLOW	0 - 127
34	CHORUS RATE	0 - 127
35	BENDER RANGE	0 - 12