PG-10

SERVICE NOTES
First Edition

SPECIFICATIONS

CURRENT CONSUMPTION
200mA DC at 9V

WEIGHT
800g/1 1/2 lb.  2oz (without Adaptor)

DIMENSIONS
278(W) x 142(D) x 46(H)mm
10-15/16" x 5-9/16" x 1-13/16"

ACCESSORY
AC ADAPTER
PSA-100 100V
PSA-120 117V
PSA-220 220V
PSA-240 240V Australian

Roland

Printed in Japan AI-2 (CFI)
PARTS LIST

CASING
22015219 Top Case
22025388 Bottom Cover
22045145 LCD Cover
22245172 Volume Cover
22245667 LCD Dust Cover
22355397 Bottom Base

BUTTON, KNOB
22485133 Knob
22475669 Button single
22495668 Button dual
22475667* Button quad
12499175 Button single

*This type separable into four: replacement single type only.

AC ADAPTER
12449509 PSA-100 100V
12449510 PSA-120 117V
12449511 PSA-220 220V
12449512 PSA-240 240V Australian

LCD
15029466 DM032Z-4S

No replacement for individual parts.

PC-board
7944610000 Main Board (PCB 22925566)
7944630000 Panel Board (PCB 22925586)

Main board and Panel board are supplied together in a set.

IC
15179184 15PD7810G CPU
1544913100 MB27C-128-20 EPROM
1517934350 LC3517AS-12 SRAM
15169515 TC74HC00 quad 2-input NAND gate
15169516 TC74HC02 quad 2-input NOR gate
15169544 TC74HC573P octal d-type latch (8-state)
15169304X0 SN74L504N hex inverter
15199135 L78MR05 +5V voltage regulator

OPTICAL ISOLATOR
15229720 PC9D10 main board

TRANSISTOR
15119132 2SA1015GR main board

DIODE
15019126D0 1SS-133 T77 main board, panel board
15019281 1SR35-100AT-83 main board

CRYSTAL
12389765 TOC-226A-6R 12MHz main board

RESISTOR ARRAY
13919312M0 RGLDB8X153J (15KΩ x 8) main board

CAPACITOR ARRAY
13529147 CXXD8X101M (100µF x 8) main board

FILTER
12449326 SBT-0460 main board

INDUCTOR
22445240 BL02RN2-R62 main board

POTENTIOMETER
13339468 EVA-NFEX10B54 main board
13299931 EVN-A1A00B13 1KΩD

SWITCH
13129143 SDDW-A1 DC10V 1A
13129730M0 SOA-223HS

CONNECTOR
(cable holder)
13429222 51016-1000 10P panel board
13429223 51016-1100 11P panel board

(wire trap)
13439445 52011-0710 7P main board

SOCKET
13429168 MIDI-NS (triplet)
13429654 TCS5351-01-1111 (DIN connector)
13449706 HEC470-01-230 (AC adapter jack)

HOLDER
22195869 MIDI holder

HEAT SINK
12469158 SC-7-BS-T main board
TEST MODE

SLIDER · SWITCH TEST

Holding down EXIT and PREVIOUS VALUE, switch the power on; the LCD will read as follows:

Moving a slider (shown above) will read its respective positions on the LCD (0 at bottom; 127 at top). Pressing a button on the panel will indicate its designation on the left of the LCD.

LCD TEST

Press and hold ENTER and TONE EDIT FUNCTION buttons and then switch the power on. Pressing < will cause all LCD segments to light and stay on. Pressing > will cause all LCD segments to go off.

テ스트モード

スライダー・スイッチテスト

EXITとPREVIOUS VALUEを押しながら電源をONすると、LCDが下のような表示になる。

各スライダーを一番下から一番上まで動かすと、対応するLCDの表示部分が0から127に変化する。
パネル上のボタンを押すと、LCDの左端にボタン名を表示する。

LCDテスト

ENTERとTONE EDIT FUNCTIONを押しながら電源をONする。
＜を押すと、LCDの全セグメントが点灯する。
＞を押すと、LCDの全セグメントが消灯する。
PANEL BOARD
79446300
(pcb 22925585)

MAIN BOARD
79446100
(pcb 22925585)
## MIDI Implementation Chart

<table>
<thead>
<tr>
<th>Function...</th>
<th>Transmitted</th>
<th>Recognized</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Channel</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Mode</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Messages</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Altered</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Note Number</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Velocity</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Note ON</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Note OFF</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>After Key's</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Touch Ch's</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pitch Bender</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prog</td>
<td>*</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Change</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>System Excl</td>
<td>True #</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

### 1. TRANSMITTED DATA

- **Bypassed Message**
  - PG-10 transmits all MIDI IN messages except:
    - MIDI exclusive (FDDI)
      - MIDI OUT (FDDI)
    - MIDI Exclusive Demand (FDDI)
    - MIDI Exclusive Response (FDDI)

- **Note off**
  - Status: OFF
  - Second: 41H (FDDI)
  - Third: 01H

When PG-10 is changing from bypassed to normal, it temporarily changes input source from MIDI in to PARAMETER IN. This would cause PG-10 to receive MIDI messages. Among normal MIDI IN messages, Note off will have crucial impact because the corresponding voice will remain on. To overcome this disadvantage, PG-10 needs Note off on all channels, upon switching to PARAMETER IN input off all notes. Also needs Note off on all channels upon receiving interruption of Active sensing message or message of any type that is expected to come should MIDI connection from the transmitting device is intact. (Provided that PG-10 has received Active sensing message, FDDI)

- **Mode message**
  - All notes off
  - Status: OFF
  - Second: 01H

After sending Note off message, upon detecting input source or upon detecting failure in the MIDI message (see Note off above), PG-10 sends All notes off.

### 2. RECOGNIZED RECEIVE DATA

- **Exclusive**
  - Status: OFF
  - Second: 01H

### 3. EXCLUSIVE COMMUNICATION

- **ONE-WAY COMMUNICATION**
  - REQUEST: R01 11H
  - RESPONSE: R01 X

PG-10 transmits Parameter Request when Menu menu is to be changed to MIDI source; then changes input source from MIDI IN to PARAMETER IN. This message can be transmitted only when PARAMETER IN (switched mode) is being engaged with MIDI cable.

### MODE

- **Status**
  - OFF: System Exclusive
  - 0FF: OFF (End of Exclusive)

### Exclusive

- **Status**
  - OFF: System Exclusive
  - 0FF: OFF (End of Exclusive)

### Active Sensing

- **Status**
  - OFF: System Exclusive
  - 0FF: OFF (End of Exclusive)

A summary of the address, data, and checksum must result in "0" at lower 7 bits.

### Notes

- Address data and checksum must cover the area in which data exist.
- Addresses and size must cover the area in which data exist.

### Mode Selection

- Mode 1: OMNI ON, POLY
- Mode 2: OMNI ON, MONO
- Mode 3: OMNI OFF, POLY
- Mode 4: OMNI OFF, MONO

### Control

- **Change**
  - No change

### System

- **Exclusive**
  - OFF: System Exclusive
  - 0FF: OFF (End of Exclusive)

### System Common

- **Status**
  - OFF: System Exclusive
  - 0FF: OFF (End of Exclusive)

### System Real Time

- **Status**
  - OFF: System Exclusive
  - 0FF: OFF (End of Exclusive)

### Aux Message

- **Status**
  - OFF: System Exclusive
  - 0FF: OFF (End of Exclusive)

### Notes

- This unit transmits all received MIDI messages except Active Sens and Reset.

This unit uses Unit Number for Device ID of System Exclusive message.
### 4. PARAMETER ADDRESS MAP

Addresses are shown in 8-bit hexadecimal.

<table>
<thead>
<tr>
<th>Address</th>
<th>LSB</th>
<th>MSB</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>80 00 00</td>
<td>000</td>
<td>000</td>
<td>KEY MODE 0-2</td>
</tr>
</tbody>
</table>

#### 4-2 Patch Temporay area

<table>
<thead>
<tr>
<th>Offset address</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>00 00 00 0000</td>
<td>KEY MODE 0-2 (while, dual, split)</td>
</tr>
<tr>
<td>00 01 00 0000</td>
<td>SPLIT POINT (CC4-C47)</td>
</tr>
<tr>
<td>00 02 00 0000</td>
<td>LOWER TONE GROUP 3-3</td>
</tr>
<tr>
<td>00 03 00 0000</td>
<td>LOWER TONE LEVEL 3-3</td>
</tr>
<tr>
<td>00 04 00 0000</td>
<td>UPPER TONE GROUP 3-3</td>
</tr>
<tr>
<td>00 05 00 0000</td>
<td>UPPER TONE LEVEL 3-3</td>
</tr>
<tr>
<td>00 06 00 0000</td>
<td>LOWER KEY SHIFT 0-24</td>
</tr>
<tr>
<td>00 07 00 0000</td>
<td>UPPER KEY SHIFT 0-24</td>
</tr>
<tr>
<td>00 08 00 0000</td>
<td>LOWER FINE TUNE 0-24</td>
</tr>
<tr>
<td>00 09 00 0000</td>
<td>UPPER FINE TUNE 0-24</td>
</tr>
<tr>
<td>00 0A 00 0000</td>
<td>LOWER BENDER RANGE 0-24</td>
</tr>
<tr>
<td>00 0B 00 0000</td>
<td>UPPER BENDER RANGE 0-24</td>
</tr>
<tr>
<td>00 0C 00 0000</td>
<td>LOWER ASSIGN MODE 0-3</td>
</tr>
<tr>
<td>00 0D 00 0000</td>
<td>UPPER ASSIGN MODE 0-3</td>
</tr>
<tr>
<td>00 0E 00 0000</td>
<td>LOWER REVERB SWITCH 0-1</td>
</tr>
<tr>
<td>00 0F 00 0000</td>
<td>UPPER REVERB SWITCH 0-1</td>
</tr>
<tr>
<td>00 10 00 0000</td>
<td>REVERB MODE 0-3 (off, on)</td>
</tr>
<tr>
<td>00 11 00 0000</td>
<td>REVERB TONE 0-3 (on, off)</td>
</tr>
<tr>
<td>00 12 00 0000</td>
<td>REVERB LEVEL 0-3</td>
</tr>
<tr>
<td>00 13 00 0000</td>
<td>U/L BALANCE 0-3</td>
</tr>
<tr>
<td>00 14 00 0000</td>
<td>PATCH LEVEL 0-3</td>
</tr>
<tr>
<td>00 15 00 0000</td>
<td>PATCH NAME CHAR (ASCII CODE)</td>
</tr>
</tbody>
</table>

#### 4-3 Contour parameter

<table>
<thead>
<tr>
<th>Offset address</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>00 16 00 0000</td>
<td>TUNE NAME 1 32-127</td>
</tr>
<tr>
<td>00 17 00 0000</td>
<td>TUNE NAME 10 (AR4)</td>
</tr>
<tr>
<td>00 18 00 0000</td>
<td>Structure of Partial 1-2</td>
</tr>
<tr>
<td>00 19 00 0000</td>
<td>Structure of Partial 3-4</td>
</tr>
<tr>
<td>00 1A 00 0000</td>
<td>PARIAL NOTE (0000-1111)</td>
</tr>
<tr>
<td>00 1B 00 0000</td>
<td>ENV MODE 0-2 (Normal, No susicie)</td>
</tr>
</tbody>
</table>

#### 4-4 Partial parameter

<table>
<thead>
<tr>
<th>Offset address</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>00 1C 00 0000</td>
<td>WC PITCH ORANGE 0-96 (C1, C#1, C#1)</td>
</tr>
<tr>
<td>00 1D 00 0000</td>
<td>WC PITCH FINE 0-100</td>
</tr>
<tr>
<td>00 1E 00 0000</td>
<td>WC PITCH KEYFOLLOW (L/1, L/2, L/3, R/1, R/2, R/3)</td>
</tr>
<tr>
<td>00 1F 00 0000</td>
<td>WC PITCH BENDER SW 0-100 (off, on)</td>
</tr>
<tr>
<td>00 20 00 0000</td>
<td>WC WAVEFORM/PCM BANK (E-3, G2C-1/1, G2C-2/2, 0-100)</td>
</tr>
<tr>
<td>00 21 00 0000</td>
<td>WC POLY WAVE 4 0-127</td>
</tr>
<tr>
<td>00 22 00 0000</td>
<td>WC PULSE WAVE 0-100</td>
</tr>
<tr>
<td>00 23 00 0000</td>
<td>WC FM VELO SENS 0-127 (1-7)</td>
</tr>
<tr>
<td>00 24 00 0000</td>
<td>WC ENV DEPTH 0-100</td>
</tr>
<tr>
<td>00 25 00 0000</td>
<td>WC ENV LEVEL 1 0-100</td>
</tr>
<tr>
<td>00 26 00 0000</td>
<td>WC ENV LEVEL 2 0-100</td>
</tr>
<tr>
<td>00 27 00 0000</td>
<td>WC ENV LEVEL 3 0-100</td>
</tr>
<tr>
<td>00 28 00 0000</td>
<td>WC ENV LEVEL 4 0-100</td>
</tr>
</tbody>
</table>

Total size = 00 03 0EH

#### 4-5 System area

<table>
<thead>
<tr>
<th>Offset address</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>00 29 00 0000</td>
<td>dummy</td>
</tr>
<tr>
<td>00 2A 00 0000</td>
<td>dummy</td>
</tr>
<tr>
<td>00 2B 00 0000</td>
<td>dummy</td>
</tr>
<tr>
<td>00 2C 00 0000</td>
<td>dummy</td>
</tr>
<tr>
<td>00 2D 00 0000</td>
<td>dummy</td>
</tr>
</tbody>
</table>

Total size = 00 05 08H

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May, 1988
Address | Block | Sub-Block | Reference
--- | --- | --- | ---
03 00 00 | Tide Temp. | | Part 1
| | | 4-1
03 06 00 | Patch Temp. | | Part 6
| | | 4-2
04 00 00 | Tone Temp. | | Part 7
| | | 4-3
| | | Part 8
10 00 00 | System Area | | 4-4
40 00 00 | Write Request | | 4-5

**4-4-1**
Partial reserves must be for a total number of reserves must be less than 30.

**4-4-5**
Write Request

**Other address Description**

<table>
<thead>
<tr>
<th>Address</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>00 00 00</td>
<td>User area Tone Write (part 1/upper) 0-63 (01-64) 6, 1 (Internal, Card)</td>
</tr>
<tr>
<td>00 01 00</td>
<td>User area Tone Write (part 2/upper)</td>
</tr>
<tr>
<td>00 02 00</td>
<td>User area Tone Write (part 2/lower)</td>
</tr>
<tr>
<td>01 05 00</td>
<td>User area Tone Write 6-127 (ALL-BMK) 6, 1 (Internal, Card)</td>
</tr>
<tr>
<td>01 06 00</td>
<td>User area Tone Write</td>
</tr>
<tr>
<td>01 07 00</td>
<td>User area Tone Write (part 2)</td>
</tr>
<tr>
<td>01 08 00</td>
<td>User area Tone Write (part 3)</td>
</tr>
<tr>
<td>01 09 00</td>
<td>User area Tone Write (part 4)</td>
</tr>
<tr>
<td>02 00 00</td>
<td>User area Patch Write 0-63 4-4-5-2 (11-90)</td>
</tr>
<tr>
<td>02 01 00</td>
<td>User area Patch Write (part 1) 6, 1 (Internal, Card)</td>
</tr>
<tr>
<td>02 02 00</td>
<td>User area Patch Write (part 2) 6-127 4-4-5-3 (ALL-BMK) 6, 1 (Internal, Card)</td>
</tr>
<tr>
<td>02 03 00</td>
<td>User area Patch Write (part 3)</td>
</tr>
<tr>
<td>10 00 00</td>
<td>User area Result 0-5 4-4-5-4 0=Function Completed 1=Card Not Ready 2=Write Protected 3=Incorrect Mode</td>
</tr>
</tbody>
</table>

**With PARAMETER IN connected to MMR cable:**
1. Enter into Write access, PC-10 changes input from MMR IN to PARAMETER IN.

**4-4-5-2**
Sends when PC-10 is D-110 mode.

**4-4-5-3**
Sends when PC-10 is D-10/20 mode.

**4-4-5-4**
(With PARAMETER IN connected to MMR cable): Upon receiving this message, PC-10 returns input source to MMR IN.
(With PARAMETER IN disconnected) PC-10 cannot receive this message even if it has sent Write Request and will remain receiving information from MMR IN.