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TEST MODE

SPECIFICATIONS

- Keyboard
  61 Keys
  3 levels touch sensitivity
  Modes:
  - Whole
  - Adjustable Split point
  - Layer
  - Arranger
  - Piano Style Arranger
  - Manual Drum/SFX

- Sound Source
  Conforms to GM/GS
  64 voice Polyphony
  499 Tones
  12 Drum Sets + 1 SFX Set
  Footage Organ edit
  Transpose (-4, +5)
  Master Tuning

- Effects
  - Reverb (8 types)
  - Chorus (8 types)
  - Sympathetic Resonance, Rotary and 40 other types

- Vocal Effects
  Voice Transformer
  Harmonist
  Digital Eco

- Arranger
  133 Styles x 4 types
  22 Pianist Styles
  Style Converter
  Style Composer
  Melody Intelligence (24 types)

- Composer
  Sequencer: up to 16 tracks
  1 song (30,000 notes)
  30 Rhythm Pattern types
  Graphic Metronome

- Storage
  Floppy Disk Drive
  Max 99 songs on floppy disk
  Max 240,000 notes on floppy disk
  User Programs on Floppy Disk (max 99)
  Load while playing

- Others
  320 x 128 dot backlit LCD / Touchscreen
  Lyrics on display and via MIDI OUT
  Help (English, German, French, Spanish, Japanese)
  Educational Games on display
  One Touch (Piano, Organ, three types), Arranger
  32 internal User Programs
  4 assignable pads

- Controllers
  Volume slider
  Brilliance slider
  Balance slider
  Reverb slider
  Microphone Volume
  Alpha dial
  Pitch bender & Modulation Lever

- Connectors
  Output Jacks (L/Mono, R)
  Microphone Jack
  Headphone Jack (Stereo)
  MIDI IN OUT THR
  Damper, Sostenuto, Soft Jacks

- Amplification
  2 x 10 Watt output power (RMS)
  Two-way stereo system, in bass reflex boxes
  10 cm x 2, 3 cm x 2

- Power supply
  Universal switching (AC 100 ÷ 240 V)

- Power consumption
  37 W (230 V)

- Weight
  14 kg

- Dimensions
  1150(W) x 410(D) x 140(H) mm

- Accessories
  See on page 6.
EXPLODED VIEW

No  PART NAMES                     PART NUMBERS
1   VARN. +SILK. TOP CABINET       7711209000
2   PITCH BENDER SE WICABLE M82+CONN  K32781108
3   WOOFER SPEAKER D.90 MM          K24181117
4   PROTECTING BOX BASE FINVERTER   K2248128
5   INVERTER PCB ASSY              7711203000
6   INVERTER MODULE CXA-M10AL       009000901
7   PROTECTING BOX COVER FINVERTER  K2248127
8   LCD LM320191(SHARP) ASSY        7711210000
9   ANTIDUST F/LCD                 K2248148
10  ANTIDUST COVER PL30N            K2248126
11  POSITION SENSOR ROS-03-ID       01345012
12  LCD CONTROLS PCB ASSY          7711202000
13  CONTROL PCB ASSY               7711201000
14  SWITCHING POWER SUPPLY SWM-30/2 J240910302
15  LEFT GRILL FL. LOUDSPEAKER      K2248124
16  FLOPPY D. DRIVER JU-257 A786P  J2409102
17  BRASS BUSHING                  22165134
18  RUBBER GUIDE BUSHING           22265242
19  61-KEY KEYBOARD ASSY TP/9      762623001
20  RIGHT GRILL FL. LOUDSPEAKER     K2248123
21  AMPLIFIER PCB ASSY             769870000
22  MAIN BOARD PCB ASSY            7711204000
23  OUTPUT PCB ASSY                7711205000

SCREW
A   SELF LOCK.SCREW M3x6 TC TC H6   J2289193
B   SCREW 3,5x16 TCPR TFR H8 BRUN  J2289186
C   SCREW 2,9x10 TC TC PR TROP     J2289125
D   SCREW 2,9x13 TC TC PR TROP     J2289130
E   SELF TAP.SCREW 2,9x10 TCTC     J2289102
F   SCREW 2,9x16 TC TC PR BRUN     J2289118
G   SELF TAP.SCREW 3,5x16 TCTPRBZ  J2289131
H   SELF LOCK.SCREW M3x10 TC TC H6  J2289108
** KEYBOARD PARTS LIST **

<table>
<thead>
<tr>
<th>Ref Code</th>
<th>Description</th>
<th>E-600</th>
</tr>
</thead>
<tbody>
<tr>
<td>7711206000</td>
<td>CONTROL WIRING ASSY</td>
<td></td>
</tr>
<tr>
<td>7711207000</td>
<td>BOTTOM WIRING ASSY</td>
<td></td>
</tr>
</tbody>
</table>

** NOTE:** When you substitute the BOTTOM WIRING ASSY code 7711207000, please replace the "FERRITE CORE VOGT 235 07 857 10 code J2399108" too, because it does not belong to the "BOTTOM WIRING ASSY".

<table>
<thead>
<tr>
<th>Ref Code</th>
<th>Description</th>
<th>E-600</th>
</tr>
</thead>
<tbody>
<tr>
<td>7711208000</td>
<td>3P CABLE ASSY (8) -2C P2</td>
<td></td>
</tr>
<tr>
<td>K3468206</td>
<td>4P CABLE (44) -2C D/D</td>
<td></td>
</tr>
</tbody>
</table>

** Ref Code | Description | E-600 |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>7698713000</td>
<td>3P CABLE ASSY (78) (W/4PC+4PC)</td>
<td></td>
</tr>
<tr>
<td>K3468155</td>
<td>4P CABLE 2R2N (28) 2C D/R</td>
<td></td>
</tr>
<tr>
<td>K3468154</td>
<td>4P CABLE ASSY (52/58) (W/4PC)</td>
<td></td>
</tr>
<tr>
<td>K3468207</td>
<td>34P FLAT CBL. ASSY (60) -2C+FERR. E-600</td>
<td></td>
</tr>
<tr>
<td>K3468177</td>
<td>16P FLAT CABLE (56) -2C</td>
<td></td>
</tr>
<tr>
<td>K3468166</td>
<td>16P FLAT CABLE (44) -2C</td>
<td></td>
</tr>
</tbody>
</table>
NOTE
- The parts marked 
  \# are new (Initial Parts).
- The parts marked \* are marked Parts for MB used by RJA.
- Use only listed parts for replacement.

replacement should be made on a unit basis. No replacements available for individual parts.

POWER SUPPLY UNIT
- Replace only for a unit.

# 771202000 MAIN BOARD PCB ASSY E-600
# 771205000 OUTPUT PCB ASSY E-600
762400400 RIGHT CONTACT PCB ASSY/RUBBER
764500500 LEFT CONTACT PCB ASSY/RUBBER
E MAIN PCB ASSY

ASSY  7711204000

View from component side

View from solder side
CONTROL PCB ASSY  ASSY  7711201000

View from component side
TEST MODE

Required items:
• MIDI Cable …… 1 (1.5 m)
• Microphone
• Oscilloscope
• KR-575 LCD Calibration sheet (part number 01675978)
• Touch-pen for PMA-5 (part number 00900545)
• 3.5inch Floppy Disk  (formatted by E-600/ 2 HD x 1,2; DD x 1)

Test Main Menu
In order to enter the different tests listed below, press each time the button "Next “ or the button “ Part Volume Accomp “.

1. Calibration of the Touch Panel
2. Display of the Device Check and Rom Version
3. Factory Preset Setting
4. Control of buttons and LEDs
5. Control of the Speaker Panning and of Effect Sound
6. Esp check
7. A/D check
8. Touch Panel A/D check
9. Encoder check
10. MIDI check
11. Microphone check
12. FDD check
13. LCD check
14. LCD contrast check
15. Setup and Destination
16. Audio check

To enter the Test Mode
While pressing both [Track 4] and [Play] buttons, press Part Balance [Accomp]. The following display will appear and you will enter test mode.

1. Calibration of the Touch Panel
Calibrate the position of the Touch Panel this way.
To perform this test, original pen (Touch Pen for PMA-5, P/no. 00900545) and jig (KR-575 Calibration Sheet, P/No. 01675978) are required. Please order these jigs from the local Roland Service Center if necessary.
Place the Calibration sheet on the Touch Panel as shown in the following picture. The side with a notch should become the upper.

After positioning the sheet, the display will appear as follows:
Touch the lower corner of each slit on the sheet with the Touch pen according to the numbering shown in the following picture). When the E-600 recognizes the touch, "+" will change into "O".

This way, the writing "Touch Me" will appear to show the correct order, so please follow this indication. During the Calibration, do not touch any point except *Touch Me*. After touching the four points, the calibration step ends and the display will show :

How to go to the following test.
While you are in test mode, you can go to the following test by pressing the Part Balance [Accomp] button.
When the writing [Next] is displayed at the bottom of the screen, you can go on by touching it ([Next]).

NOTE: Do not play the keyboard while you are in test mode. If there is a malfunction, press the Part Balance [Accomp]button several times until the display "Product Information" will be shown. Then start the test again.

While you are in test mode (except in Device Check mode), you can adjust the LCD contrast by rotating the Rotary Encoder keeping the Part Balance [Keyboard] button pressed.
Note: The calibration set will be memorized at the point "3 " Factory Preset Setting" of the Test mode.
When the calibration fails, the following display will appear:

You have to carry out the calibration again.
Press the Part Balance [Accomp] button to go to the next test.

2. Display of the Device Check and Rom Version

Note: After the calibration, turn down the general volume so as to avoid hearing the audio noise.
This control starts automatically after the calibration step. The display may change as follows:

When no problem is found, "OK" will be shown on the top of the display.
On the contrary, the following error message will appear:

The devices and contents checked are as follows:

<table>
<thead>
<tr>
<th>DEVICE</th>
<th>CONTENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROGRAM ROM</td>
<td>checks the Checksum</td>
</tr>
<tr>
<td>DRAM</td>
<td>checks the working of the DRAM for CPU</td>
</tr>
<tr>
<td>Wave rom</td>
<td>checks the Checksum</td>
</tr>
<tr>
<td>DSP RAM</td>
<td>checks the RAM for XPDSP</td>
</tr>
<tr>
<td>ESP RAM</td>
<td>checks the RAM for ESP</td>
</tr>
<tr>
<td>DATA ROM TYPE</td>
<td>checks the type of DATA ROM</td>
</tr>
<tr>
<td>FDC Ex Port</td>
<td>checks the FDC port</td>
</tr>
</tbody>
</table>

When the Device Check ends, touch "Next" on the screen or press the Part Balance [Accomp] button to go to the next test.

3. Factory Preset Setting

The following display will appear:

Touch "Go" on the screen or press Part Balance [Accomp] to start the loading of the Factory Preset Setting in the internal memory.
For not loading the Factory preset setting in the memory, touch "Skip" on the screen.

4. Buttons and LEDs check

All the LEDs light up and the following display appears:

A piano sound should be heard and the LED corresponding to each pressed button turns off.
When you press the [Metronome], [Song] and [Page] buttons, the Beat indicators turn off.
When you press the buttons without LEDs the relative name indicated on the LCD disappears.
NOTE: If you press the Part Balance [Accomp] button first, you will go on to the following test. Once you begin the checking process for this kind of test, it is not possible to go to the following one before checking all the buttons. Press the Part Balance [Accomp] button in the end and you will go on to the following test.

5. Speaker Panning and Effect Sound check.

The following display will appear:

Press the following buttons to check the effects and the pannings:

<table>
<thead>
<tr>
<th>BUTTON</th>
<th>OUTPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pop Sound</td>
<td>PIANO 1 Direct sound</td>
</tr>
<tr>
<td>Piano Style</td>
<td>PIANO 1 CHORUS sound</td>
</tr>
<tr>
<td>Ballad</td>
<td>PIANO 1 REVERB sound</td>
</tr>
<tr>
<td>Rock</td>
<td>PIANO 1 RESONANCE sound</td>
</tr>
<tr>
<td>Oldies</td>
<td>Sine wave from the LEFT speaker.</td>
</tr>
<tr>
<td>Country</td>
<td>Square wave from the RIGHT speaker.</td>
</tr>
<tr>
<td>Band/Swing</td>
<td>Sine wave from both speakers.</td>
</tr>
</tbody>
</table>

Once the check ends, touch [Next] on the screen or press Part Balance [Accomp] to go on in the test mode.
6. Esp check
The following display will appear:

When you press the following buttons, a corresponding sound will be heard.

<table>
<thead>
<tr>
<th>BUTTON</th>
<th>OUTPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pop</td>
<td>Sawtooth wave from the LEFT speaker</td>
</tr>
<tr>
<td>Piano Style</td>
<td>Triangular wave from the RIGHT speaker</td>
</tr>
</tbody>
</table>

Note: You can adjust the output volume by rotating the Rotary Encoder.
You cannot change the volume by moving the [volume] slider, instead.

7. A/D Check
The following display will appear:

When you press the pedals or move the potentiometers indicated on the display, the value will change from 0 to 9 and you will hear a Sine wave per time, except for the values "0" and "9". At value "0", you will hear no sound; at value "9" you will hear a Metronome sound. With the [Balance] potentiometer and the Bender level you will hear no sound even at value 5. At the end of the test, when the value has increased from "0" to "9", the asterisk mark will disappear.
Once this check ends, you can go on to the following step.

8. Touch Panel A/D Check
The following display will appear:

Move the Touch pen from the upper side of the Touch panel to the lower one and make sure that the values of the "X= " change from "0" to "9" and that the asterisk has disappeared. Then move the pen from the right side of the Touch Panel to the left one and make sure that the values of the "Ys= " change from "0" to "9" and that the asterisk has disappeared. When both the asterisks have disappeared, you can go on to the following step.

9. Encoder Check
The following display will appear:

Rotate the encoder in clockwise direction and make sure that the value increases until 30.
Then rotate the encoder in anticlockwise direction and make sure that the value goes back to 0.
When the value will be back to "0", you can go on to the following step.

10. MIDI check
The following display will appear:

- MIDI check
Connect the (In / Out) MIDI sockets by a MIDI cable and check that the test output is "OK". If you take away one of the two plugs of the cable, the result is "--", meaning "Connection failed". If the MIDI cable has been connected properly but the test result is not "OK", there must be some functional problems in the board.

- MIDI Thru
Always during the MIDI check, take another MIDI cable and connect one of its plugs to the E-600 "Thru " socket left and the other one to a MIDI " In " socket of another instrument. By playing the keyboard of the E-600, you should hear the notes played from the other instrument. This proves that the E-600 Thru socket works properly.

11. Microphone check
The following display will appear:

Make sure that the writing [Input Low] appears when there are no input sounds or when their level is low or when the Level potentiometer is at minimum.
Make sure that the writing [Input High] appears when the input sounds level is high.
After finishing this test, touch "Next" on the screen or press the Part Balance [Accomp] button to go on to the following test.
12. FDD check

The following display will appear:

To make this test you need 3,5" disks (HD or DD kind), formatted by E-600.

Note: When you make this test, the data contained in the floppy disk will be damaged.

Insert a 2DD floppy disk, which is write protected and check that the note "2DD Protected" will appear on the display. Then insert an unprotected 2DD floppy disk and check that the note "2DD:OK" will appear on the display. In the same way, insert an unprotected 2HD floppy disk and check that the note "2HD:OK" will appear on the display.

When you insert an unformatted disk the note "Unformatted" will appear on the display.

If there are some problems, the writing "NG" will appear on the display.

When this test is completed, touch "Next" on the screen or press the Part Balance [Accomp] button to go on to the following test.

13. LCD Check

The following display will appear:

Press the One Touch Program [Piano] button and make sure that all the LCD dots lighten (White).

Then press the One Touch Program [Arranger] button and be sure that all the LCD dots turn off (Blue).

After this, press the Part Balance [Accomp] button. The following display will appear:

Notice if the vertical lines are shown clearly.

Then press the following buttons and verify the ON and OFF conditions of the display:

One Touch Program [Piano] : ON (LCD with lines)  
One Touch Program [Arranger] : OFF (LCD Blue)

At the end of this test, press the Part Balance [Accomp] button to go to the following check.

14. LCD Contrast test

The following display will appear:

Rotate the encoder completely and make sure that the number indicated on the display changes from 0 to 9 and that the contrast changes according to the value indicated. Make also sure that the character is recognizable even at value "0".

At the end of this test, touch "Next" on the screen or press the Part Balance [Accomp] button so as to go to the following verification.

15. Destination setup

The following display will appear:

Touch the button corresponding to the destination indicated on the Touch Panel or press the corresponding button, as follows:

<table>
<thead>
<tr>
<th>Display</th>
<th>Destination</th>
<th>Button</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOM</td>
<td>100V</td>
<td>One Touch Program [Piano]</td>
</tr>
<tr>
<td>EXP</td>
<td>230V/240V</td>
<td>One Touch Program [Organ]</td>
</tr>
<tr>
<td>US</td>
<td>117V</td>
<td>One Touch Program [Arranger]</td>
</tr>
</tbody>
</table>

Then touch "Write" on the screen or press the Part Balance [Accomp] button to start the destination setup.

When the setup ends, you will go automatically to the following step.

The following display will appear:

Turn off the instrument to exit the test mode.
16. Audio Test

When you turn on the instrument while pressing the buttons "Intro / Ending" 1 and 2 you enter Audio Test. The display will visualize:

You will hear a sine sound going out from both right and left loudspeakers. The "Volume" potentiometer must be in Max position. Calibrate the trimmers of the amplifier channels (P1 c.dx and P2 c. sx) so as the tension at the loudspeakers is 8.2 Vpp.

Turn off the instrument to exit Audio Test.

How to update the Flash Memory

Since E-600 has a Flash Memory for the recording of the Main Program, you can update it by floppy disk.

Items required:

- E-600 VERSION UP DISK (code:7711211000)

After inserting the disk in the FDD, turn on the instrument while pressing the [Start/Stop] and [Metronome] buttons contemporarily.

All the LEDs flash and the loading of the program begins.

When the loading ends, the writing "Finished" will appear on the display.