PCG-Z505LE/Z505LEK/Z505LS/Z505LSK

SERVICE MANUAL

US Model Canadian Model





NOTEBOOK COMPUTER



9-872-139-11

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CAUTION: Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

CAUTION: The battery pack used in this device may present a fire or chemical burn hazard if mistreated. Do not disassemble, heat above 100° C (212° F) or incinerate. Dispose of used battery promptly.

Keep away from children.

CAUTION: Changing the back up battery.

- Overcharging, short circuiting, reverse charging, multilation or incineration of the cells must be avoided to prevent one or more of the following occurrences; release of toxic materials, release of hydrogen and/or oxygen gas, rise in surface temperature.
- If a cell has leaked or vented, it should be replaced immediately while avoiding to touch it without any protection.

Service and Inspection Precautions

1. Obey precautionary markings and instructions

Labels and stamps on the cabinet, chassis, and components identify areas requiring special precautions. Be sure to observe these precautions, as well as all precautions listed in the operating manual and other associated documents.

2. Use designated parts only

The set's components possess important safety characteristics, such as noncombustibility and the ability to tolerate large voltages. Be sure that replacement parts possess the same safety characteristics as the originals. Also remember that the \triangle mark, which appears in circuit diagrams and parts lists, denotes components that have particularly important safety functions; be extra sure to use only the designated components.

3. Always follow the original design when mounting parts and routing wires

The original layout includes various safety features, such as inclusion of insulating materials (tubes and tape) and the mounting of parts above the printer board. In addition, internal wiring has been routed and clamped so as to keep it away from hot or high-voltage parts. When mounting parts or routing wires, therefore, be sure to duplicate the original layout.

4. Inspect after completing service

After servicing, inspect to make sure that all screws, components, and wiring have been returned to their original condition. Also check the area around the repair location to ensure that repair work has caused no damage, and confirm safety.

5. When replacing chip components...

Never reuse components. Also remember that the negative side of tantalum capacitors is easily damaged by heat.

6. When handling flexible print boards...

- The temperature of the soldering-iron tip should be about 270C.
- Do not apply the tip more than three times to the same pattern.
- Handle patterns with care; never apply force.

Caution: Remember that hard disk drives are easily damaged by vibration. Always handle with care.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFÉS PAR UNE MARQUE A SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈSES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPÉMENTS PUBLIÉS PAR SONY.

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• Abbreviations UC : US model / Canadian model

1-1. Flowchart



- P XX means pages that appears in this manual.
- Remember that hard disk drives are easily damaged by vibration. Always handle with care.
- When the thermal sheet (Part No. 4-645-921-01) of the computer reaches a certain temperature, it becomes soft, which increases the contact. Therefore, it may be difficult to disassemble the fan at room temperature. In this case, use a dryer or soldering iron to heat up the plate metal contacting the fan.

In addition, replace the old thermal sheet with a new one in order to keep the heating performance.

1-2. Main Electrical Parts Location Diagram



1-3.Removal

1. Keyboard Unit



2. Palm Rest Assembly



PCG-Z505LE/Z505LEK/Z505LS/Z505LSK (UC)

3. SWX-47 Board, Touch Pad, and Speaker Unit



4. Modular Jack, Harness (DC Jack), and RO-36 Board



5. HDD, and SWX-48 Board



6. DC Fan



7. IFX-122 Board, CNX-106 Board, and PC Card Connector



8. Main Board Assembly (MBX-42 Board), IFX-123 Board, V/L Rechargeable Battery, and Memory Module



9. Display Assembly



10. Bezel Housing Assembly



11. LEX-20 Board, Inverter Unit, and LCD Unit



2-1. Note

This chapter describes the items to be checked and the self-tests to be performed using the main unit, floppy-disk drive, and CD-ROM drive.

2-2. Necessary Tools

- PCG-Z505L series main unit
- Floppy-disk drive
- CD-ROM drive
- Battery
- AC adaptor
- CD-ROM for self-diagnostics
- Floppy disk for self-diagnostics (Installs the DOS system.)
- Other tools required for the tests

2-3. Starting up the Service Diagnostics

- The service diagnostics floppy disk and CD disc are prepared for the respective models separately. Insert the service diagnostics floppy disk and CD disc of the desired model, then turn on the main power of the personal computer. The model information that is unique to your personal computer and is stored in ROM, is automatically read and appears on the test menu. If the wrong service diagnostics CD disc that does not support your personal computer is inserted, an error message is displayed.
- 2. The driver software is installed from the CD disc, the necessary ROM information is automatically read and the initial settings are made, then the following self-diagnostics menu appears.

d:PPK test e:GUID (IEEE1394) test f:IEEE1394 Interface test j:IrDA test h:Iog dial test
e:GUID (IEEE1394) test f:IEEE1394 Interface test j:IrDA test h: log dial test
f:IEEE1394 Interface test j:IrDA test h:Iog dial test
:IrDA test
h: log dial test
ii.Jog ulai iest
:Short aging test
:Long aging test
k:Aging test including the HDD test
l:Exit from Diagnostics MENU

3. When the service diagnostics ends with success, the message "Pass" appears. When it ends with failure detecting an error, the message "Fail" appears. Press the "Esc" key to abort the self diagnostics.

2-4. Outline of Service Diagnostics Functions

Check ROM Information...

Displays the model information, serial number, BIOS and other information saved in the BIOS ROM. Does not test whether or not the personal computer is normal.

• Battery test...

Tests the battery as to whether the battery is attached or removed, the main power is supplied from an AC power adapter or not, and the battery is charged or discharged. The test procedure appears on display. Perform the battery test following the messages on display.

Remove and attach the battery \rightarrow Check (Removal and attachment of battery)

Disconnect and connect the AC power \rightarrow Check (Disconnection and connection of AC power)

Remove and attach the battery \rightarrow Check (Discharge and charge of battery)

HDD test...

Tests whether the HDD returns a response when communication is established with the hard disk drive. The HDD can be tested without damaging the HDD data (without formatting the HDD) in this test since the HDD data is tentatively stored in memory during the test.

If the main power is turned off by mistake while the test is under way, the HDD data can be damaged. Tests the following test automatically.

- 1. HDD interface test (Tests whether or not the HDD is recognized)
- 2. HDD seek test
- 3. HDD read test
- 4. HDD write test
- 5. HDD random read test and random write test (It takes about 2 hours for the 18 GB HDD. This time is a guideline and changes depending on the model.)
- 6. Returns to the main menu.
- Keyboard test...

Tests the keyboard. When the "Auto select" menu is selected, the keyboard type in use is recognized from the model information that is written in ROM when shipped from the factory and the test is executed accordingly. When a specific keyboard type is selected such as US, UK, or JP, then the keyboard of the selected type is tested. If the model of your computer is JP and the keyboard type is replaced by either the US type or UK type keyboard, select the keyboard type after it is replaced.

NOTE: The "Fn" key can be checked by pressing the "Fn" and " \rightarrow " keys at the same time. Other keys can be checked by pressing the respective keys.

• LED test...

Tests the LED. This test turns on one LED after another. The person conducting the test must visually check whether each LED is normal or not. The test starts from the front LEDs (from left to right). Then the LEDs in the center are checked (from left to right).

NOTE: The memory stick access test using the LED cannot be run on DOS. Run it on Windows.

• Main Memory test...

Tests the main memory. The Main Memory test contains the following three test menus. Select the desired menu that suits your need. The test is exited automatically when the respective test items end normally.

- Fast : Tests once. (Taking one and half minutes to two minutes)
- Medium: Test ten times.
- Heavy : Test twenty times.

Press the "Esc" key to abort the test.

• Main System test...

Tests the fundamental functions of the CPU, etc. The test is exited automatically when all test items end normally.

• FAN test...

Tests the fan. Tests whether the fan rotates and stops. Listen to the rotating sound or feel the wind of the fan to judge whether the fan rotates and stops. The test procedure appears on display. Perform the FAN test following the messages on display. Press "Y" to resume rotation when the fan comes to stop. Press "Y" when the fan starts rotating indicating that the test ends in success.

• Touch pad test ...

Tests the touch pad. Tests whether the cursor moves, and whether right-clicking and left-clicking function properly. The dialog box appears three times. Move the cursor to the box that appears. The tests are performed in the following order.

- (1) Touch pad
- (2) Right-click button
- (3) Left-click button
- Serial loopback test...

Performs the loopback test of the serial port. Connect the port replicator and the loopback tool to the serial port.

• Parallel loopback test...

Performs the loopback test of the parallel port. Connect the port replicator and loopback tool to the parallel port.

• Video test...

NOTE: Because this test is performed by visual inspection, confirm first the normal video picture, then start the test. Tests the video signal. Several video patterns appear every time the key is pressed. The person conducting the test must visually check whether the patterns appear properly. Press Y when there is no abnormality.

PPK test...

The computer cannot perform this test.

GUID test...

This test is not required normally. Displays the GUID (I-link ID value), and judges whether the value on the display is appropriate.

• IEEE 1394 Interface test...

Performs the 1394 communication test. Another personal computer to communicate with is necessary for this test. The models released from the year 2000 have already been confirmed that they do not cause any problems regarding the IEEE1394 interface. Even models released before 2000 will cause no problem if the same type of IEEE1394 interface IC chip (the IC chip used in the iLink block connected to the PCI bus) is used in both personal computers that are connected. In other combinations, the IEEE1394 interface test is not confirmed. (Use of the models released from the year 2000 is recommended.)

- 1. Connect the iLink cable.
- 2. Start up the personal computer at the other end of the IEEE1394 interface test connection using the tool floppy disk that must be created beforehand by copying programs from the service diagnostics CD disc. (Prepare a floppy disk that is formatted to contain the DOS system. Create a tool floppy disk by copying the entire TOOL folder of the CD disc to a floppy disk.)
- 3. Select the 1394 test from the menu at the connected computer to enter the reception state.
- 4. After the connected personal computer has entered the reception state, select the 1394 test at the personal computer to be tested. The IEEE1394 interface test then starts. Send and receive of the random data are repeated five times (i.e., this test is repeated five times.)

IrDA test...

Performs the IrDA communication test. Another personal computer to communicate with is necessary for this test. The models released from the year 2000 have already been confirmed that they do not cause any problems regarding the IrDA communication. Even models released before 2000 will cause no problem if the same type of IrDA communication IC chip (the IC chip used in the SIE block connected to the Extend I/O bus) is used in both personal computers that are connected. In other combinations, the IrDA communication test is not confirmed. (Use of the models released from the year 2000 is recommended.)

- 1. Place the two computers so that their IrDA transmitter and receiver ports face each other.
- 2. Start up the personal computer at the other end of the IrDA communication test connection using the tool floppy disk that must be created beforehand by copying programs from the service diagnostics CD disc. (Prepare a floppy disk that is formatted to contain the DOS system. Create a tool floppy disk by copying the entire TOOL folder of the CD disc to a floppy disk.)
- 3. Select the IrDA communication test from the menu at the connected computer to enter the reception state.
- 4. After the connected personal computer has entered the reception state, select the IrDA communication test at the personal computer to be tested. The IrDA communication test then starts.

• Jog dial test...

Tests the revolution and clicking of the jog dial. Angle brackets <> appear when the jog dial test is selected. Rotate the jog dial clockwise (upwards) until it moves to the mark (^_^) then press the jog dial. The mark (^_^) appear will on the top of the screen. Then rotate the jog dial counter-clockwise (downwards) until it moves to the mark (^_^) then press the jog dial.

• Short aging test.../Long aging test...

Performs the aging test. The short aging test ends when all test items have been performed once. The long aging test checks the machine for about 10 hours by repeating the test items.

• Aging test including the HDD...

NOTE: Note that this test destroys the entire contents of the user's hard disk drive.

Perform this test only when destructive testing of HDD is desired.

The aging test is performed first, then read and write tests of the hard disk are implemented following the aging test. There are two tests; LONG and SHORT. Contents of the LONG aging test are the same as those the "Long aging test..." of the previous test item. Contents of the SHORT aging test are the same of the "Short aging test..." too. The test starts immediately when the menu item is selected.

• Exit from Diagnostics MENU

Quits the service diagnostics program and the DOS prompt appears. If you exit the service diagnostics program by mistake, start up the program again.

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PCG-Z505LE/Z505LEK/Z505LS/Z505LSK (UC)

2-5. Inspecting Windows

The Windows inspection contains the following two types of inspection.

Audio Modem

Before starting inspections, create a floppy disk from the service diag CD to be serviced.

The files to be used for inspection are stored in the following sub directory inside the CD. Copy all the files in the folder to the floppy disk.

Audio \windiag\wave Modem \windiag\modem

• Audio

A microphone and headphones are required for this inspection. Double-click "t_auw01" icon (MS-DOS icon) in the floppy disk that is created in advance. The display of the DOS prompt opens and the inspection starts. Once inspection starts, follow the instructions on the display to inspect the audio.

Modem

A modem and a line simulator are required for this inspection. Double-click "modem" icon (MS-DOS icon) in the floppy disk that is created in advance. The display of the DOS prompt opens and the inspection starts.

CHAPTER 3.

BLOCK DIAGRAM



3-2 (END)

CHAPTER 4.

FRAME HARNESS DIAGRAM



CHAPTER 5.

Ref.<u>No.</u> Part No.

A-8047-813-A

A-8047-815-A

A-8066-284-A A-8066-283-A A-8066-286-A

A-8066-452-A

4-645-772-01

X-4622-597-1 1-418-841-12

1-529-660-11 1-772-529-31 1-763-483-12

A-8048-397-A

1

1

2

4

5

10

Description

(Z505LS/Z505LSK)... MBX-42 (P3 750SS) A (S)

(Z505LE/Z505LEK)... MBX-42 (P3 650SS) C (S)

COMPLETE PWB IFX-123 (JUCE)

COMPLETE PWB CNX-106 COMPLETE PWB SWX-48 COMPLETE PWB SWX-47

ESCUTCHEON (POW)

SPEAKER, (2.0CM)

KEY BOARD UNIT (US)

LID (PR) ASSY

1-528-984-11 BATTERY, V/L RECHARGEABL

PAD, TOUCH

EXPLODED VIEWS AND PARTS LIST

The components identified by mark A or

dotted line with mark A are critical for safety.

Les composants identifiés par une marque

Ne les remplacer que par une pièce portant

Replace only with part number specified.

▲ sont critiques pour la sécurité.

le numéro spécifié.

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- · When two or more parts are shown in parallel, use the part described first as the main part.



	33 34 35 36 37	$\begin{array}{r} \hline 4-645-376-01\\ 4-641-434-03\\ 4-641-435-04\\ 4-641-435-04\\ 4-641-437-11\\ 4-645-553-01 \end{array}$	ESCUTCHEON (F) ESCUTCHEON (PAD) BUTTON (PAD) KNOB (POWER) KNOB (BL)
	38 42 43 44 45	$\begin{array}{c} 4-645-554-01\\ 4-641-444-11\\ 4-641-445-12\\ 4-641-446-01\\ 4-645-407-01 \end{array}$	KNOB (BR) HOLDER (SW) PLATE (SW) WINDOW LENS (F)
	47 * 48 * 49 * 50 51	4-645-524-02 4-645-404-01 4-645-405-01 4-645-350-01 X-4622-804-1	FOOT (F) BRACKET (HDDF) BRACKET (HDDR) BRACKET (CPU) ESCUTCHEON (MG) ASSY
E) RE)	* 53 54 55 58 62	4-649-239-01 4-641-469-11 4-641-779-01 4-645-525-02 4-644-492-11	INSULATING SHEET (BOTTOM) INSULATING SHEET (PAD) SPRING (BT), COMPRESSION COIL FOOT (R) ACE (M2), LOCK
	63 64 65 66 72	$\begin{array}{c} 4-644-493-11\\ 7-682-145-01\\ 4-635-952-01\\ 4-641-442-02\\ 4-642-443-01 \end{array}$	ACE (M2.6), LOCK SCREW +P 3X4 INSULATING SHEET (WJ) HOLDER (WIRE) CUSHION (T3)
	73 77 81 90 94	4-642-444-01 4-645-016-11 1-790-699-13 4-643-107-01 4-645-016-21	CUSHION (T4) ACE (M2) (DIA.4.6), LOCK FPC (CNX-73) TAPE (PAD) ACE (M2) (DIA.4.6), LOCK
	201 202 203 * 204 205	1-960-830-11 1-757-416-11 A-8066-454-A 4-645-909-01 A-8066-426-A	HARNESS, RJ-45 INTERNAL (4 PIN) FFC (IFX-CNX) 24P COMPLETE PWB IFX-122 (W) BRACKET SPK (R) COMPLETE PWB RO-38 (Z)
	* 206 207 208	4-645-406-01 1-677-887-11 8-759-665-57	BRACKET SPK (L) PWB, FLEXIBLE PRINT (IRDA) (Z505LS/Z505LSK) IC HYM71V65M1601LTX-10S (128MB/100MHz) (Z505LE/Z505LEK)
	209	4-645-556-01	IC KMM464S924BT1-FL (64MB/100MHz) TAPE (SP), DOUBLE STICK
	211 212 213 * 214 215	$\begin{array}{r} 4-643-832-12\\ 4-645-374-01\\ 4-645-378-01\\ 4-645-679-03\\ 4-649-226-21\end{array}$	DUMMY CARD ESCUTCHEON (D) ESCUTCHEON (MU) RADIATION (NN) (Z505LE)LABEL (ID)
	215 215 215 216 217	4-649-226-31 4-649-226-41 4-649-226-51 4-645-920-01 4-645-921-01	(Z505LS)LABEL (ID) (Z505LEK)LABEL (ID) (Z505LSK)LABEL (ID) SHEET (N), THERMAL SHEET (C), THERMAL (Refer to page 1-1.)
	218 219 221 222 225	4-646-146-01 4-646-288-01 4-646-800-01 7-621-772-18 4-646-935-01	TAPE, DOUBLE STICK CUSHION (RO) CUSHION (BB) SCREW +B 2X4 GASKET (A)
	226 227 228 229 230	$\begin{array}{c} 4-646-978-01\\ 4-646-981-01\\ 4-647-013-01\\ 4-648-307-01\\ 4-648-384-01 \end{array}$	TAPE (ETHER) GASKET (C) CUSHION (IFX) SHEET (FAN) GASKET (MU)
	231 232 233 234 235	4-641-838-01 1-680-073-11 4-649-384-01 4-649-385-01 4-649-954-01	CUSHION (SP) PWB, FLEXIBLE PRINT CUSHION (MODEM) CUSHION (CONNECTOR) TAPE (SPL)

| Ref.No. Part No.

Description

Confidential 5-2 PCG-Z505LE/Z505LEK/Z505LS/Z505LSK (UC)

5-2. LCD Section – Made by HI –



4-641-454-02 4-641-455-01 4-641-456-01 4-641-457-01	CUSHION (T) BLIND (A), HOLE BLIND (B), HOLE BLIND (C), HOLE	LOOK AT EXPLO
4-649-172-01 4-641-459-11 4-641-460-03 4-641-828-02 7-621-772-18	BRACKET (LCD-R) LEVER (LATCH) HOLDER (LATCH) CUSHION (DC) SCREW +B 2X4	305 PC
4-644-492-41 7-621-772-20 4-644-493-11 4-639-778-02 A-8066-285-A	ACE (M2), LOCK SCREW +B 2X5 ACE (M2.6), LOCK CUSHION (LATCH) COMPLETE PWB LEX-20	Battery Pack
4-649-171-01 4-649-386-01 4-650-201-01 4-650-927-01 4-651-303-01	BRACKET (LCD-L) SPACER (LCD) TAPE (LCR) CUSHION (LCDB) GASKET (LA)	202
4-651-304-01	GASKET (LB)	Floppy Disk Drive
		303 USB Converter-adap

Ref.No. Part No.

Ŵ

Description

ACCESSORIES

Ref.No. Part No.

101 102 103

104

105

106 107

110

111 112

135

136

137

Description

X-4622-569-4 HOUSING (DISPLAY) ASSY

A-8048-165-A LCD UNIT (12TFT XGA) (S)

X-4623-047-2 HOUSING (BEZEL) ASSY

4-639-623-01 SPRING (LATCH), COIL

X-4622-146-2 COVER (DC) ASSY

1-418-398-21 INVERTER UNIT

1-960-865-12 HARNESS, LCD 4-639-580-01 KNOB (LATCH)

4-641-415-02 TILT UNIT (L) 4-641-416-02 TILT UNIT (R)

4-649-225-01 CUSHION (LCD)

301 1-528-983-51 PACK, LITHIUM ION BATTERY 302 A-8046-288-A FDD ASSY (S) 1-782-614-11 CORD, POWER 1-790-777-11 CABLE, USB CONVERSION 303 ₫304 1-476-342-11 ADAPTOR, AC 4-650-662-11 4-650-664-11 4-650-666-11 WELCOME MAT Z505 USER GUIDE Z505 QUICK START Z505 ODED VIEWS OF THE PART CGA-UPR5 304 AC Adaptor 305 i.LINK Port Replicator (PCGA-UPR5) • The Port Replicator itself does not have the Part No. otor Refer to the Exploded Views of PCGA-UPR5 Service 7 manual (9-872-032-11). The components identified by Les composants identifiés par mark A or dotted line with mark une marque A sont critiques \triangle are critical for safety. pour la sécurité. Replace only with part number Ne les remplacer que par une

pièce portant le numéro spécifié.

specified.

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