PRS-T1

SERVICE MANUAL

Ver. 1.0 2011.09

US Model
Canadian Model
AEP Model
UK Model

Note:
Be sure to keep your PC used for service and checking of this unit always updated with the latest version of your anti-virus software.
In case a virus affected unit was found during service, contact your Service Headquarters.

SPECIFICATIONS

Model name

PRS-T1

Power source

Built-in rechargeable battery: 3.7 V DC, 1000mAh
USB powered from a computer or the optional AC Adapter PRSA-AC10/PRSA-AC1A (sold separately) via the supplied USB cable.

Battery life (continuous page turn)

Maximum Battery: Approximately 14,000 continuous page turns when reading only.*

* Measured using a text based content in ePub format and a fully charged battery, consecutive page-turns at approximately one second per page under the recommended operating temperature. Actual battery life may vary based on usage patterns and individual device.

Charging time

Computer-based charging: Approximately 2.5 hours
AC Adapter PRSA-AC10/PRSA-AC1A (sold separately)-based charging: Approximately 2 hours

Internal Memory Capacity (for data storage)

Approximately 1.4 GB after initial setting.
Depending on size of pre-loaded excerpts, available memory capacity may vary.

Operating/Charging temperature

5°C to 35°C (41°F to 95°F)

Dimensions (w/h/d)

Approximately 110 × 173 × 8.9 mm (4 3/8 × 6 7/8 × 3/8 inches)

Mass

Approximately 168 g (5.9 oz.)

Display

152.4 mm (6 inch) diagonal electrophoretic display
600 × 800 pixels, 16-level grayscale

Wi-Fi

Wireless standards: IEEE 802.11b/g/n compliant
Wireless security: WEP (Open System), WEP (Shared Key), WPA-PSK (TKIP), WPA-PSK (AES), WPA2-PSK (TKIP), WPA2-PSK (AES)

Expansion slots

microSD card slot
SD cards are made to standards and are commonly used as storage media for portable devices. microSD and microSDHC cards are members of the SD card family.
The Reader supports the following card types.

- microSD and microSDHC cards
  - Up to 32 GB

microSD cards of up to 32 GB has been tested to work with the Reader; however, not all microSD cards are guaranteed to work.

Supplied items

USB cable × 1
Stylus × 1
Quick Start Guide

Supported File Types

The following files can be managed on the Reader software and transferred to the Reader device.
However, depending on the file size and format, it may not be possible to view/display/play some data.

Books

- EPUB files (.epub)
  - EPUB (OPS version 2.0) supported.
- PDF files (.pdf)
  - Support is based on the PDF 1.6 specification.
- Text files (.txt)

Audio

- MP3 files (.mp3)
- The following specifications should be met in order to import an MP3 file:
  - Bit rate: 8 to 320 kbps
  - Sampling frequency: 8 to 48 kHz
  - File must be unsecured.
- AAC files (.mp4, .m4a)
  Raw AAC is not supported.
- The following specifications should be met in order to import an AAC file:
  - Bit rate: up to 160 kbps
  - Sampling frequency: 8 to 48 kHz
  - File must be unsecured.

Pictures

- JPEG files (.jpg, .jpeg)
- GIF files (.gif)
- PNG files (.png)
- BMP files (.bmp)

Note

- If the size of a picture that you transferred with the Reader software is too large, a thumbnail may not be created on the Reader and the picture may not be displayed in the [Pictures] content list. In this case, delete the picture via the Reader software.
- For an animated GIF file, only the first frame will be shown.

FLEXIBLE CIRCUIT BOARD REPAIRING

- Keep the temperature of soldering iron around 270 °C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

CAUTION
Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type.

DIGITAL BOOK READER

9-893-299-01
2011I33-1

Sony Corporation
Published by Sony Techno Create Corporation

SONY®

SECTION 1
SERVICING NOTES

NOTE THE EACH BOARDS REPAIRING

The mount parts on each boards installed in this set cannot exchange with single. When the each boards are damaged, exchange the entire mounted board.

NOTE OF REPLACING THE COMPLETE MAIN BOARD OR CHASSIS ASSY

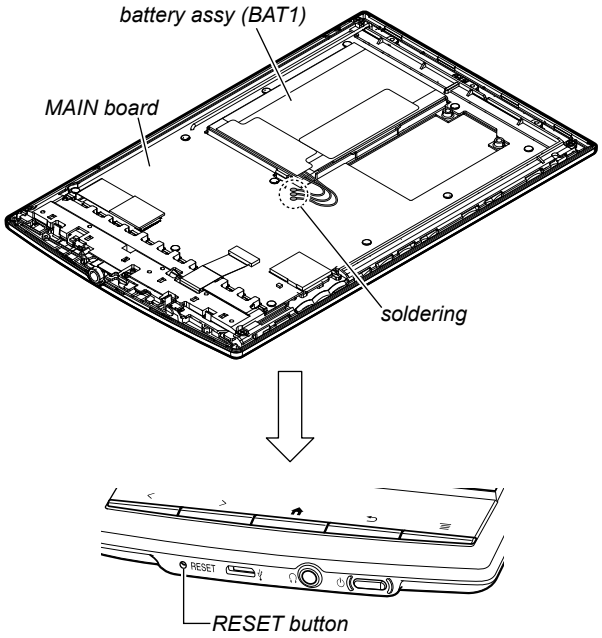
Please do the following work when you exchange complete MAIN board or CHASSIS ASSY.

Note: INK INDICATOR 6inch ELEMENT is included in CHASSIS ASSY.

- REWRITING THE LUT:
  Refer to “9. Update Waveform” on page 9.
- Write VCOM:
  Refer to “14. Write VCOM” on page 11.

ABOUT THE LEAD WIRE OF BATTERY ASSY (BAT1)

Confirm the operation after pressing the button of the main unit bottom without fail when soldering the BATTERY ASSY (BAT1) to the MAIN board.



NOTE OF REPLACING THE WLAN ANTENNA

Please do the following work when you exchange WLAN ANTENNA.

Manually setting a Wi-Fi connection

You can set up a Wi-Fi network connection manually by inputting the required information for connection. Make sure to turn on [Wi-Fi] and tap [Wi-Fi Settings] on the [Wireless Network Settings] screen. Alternatively, you can turn on [Wi-Fi] by tapping the status bar and tapping [Wi-Fi Settings].

1. Tap [Add Wi-Fi Network].

2. Tap [Manual Registration].
3. Tap the [SSID] input area and type in using the on-screen keyboard.
4. Tap the [Security Method] menu (the default value is [Open]), and then tap the supported security type.
5. Tap the [Wachtwoord] input area and type in your password using the on-screen keyboard, and then tap [Gereed] ➔ [Save].
6. Tap the saved network SSID in the [Wi-Fi Networks] list on the [Wi-Fi Settings] screen.
7. If prompted for a password, tap the input area and type in the password using the on-screen keyboard.
8. Tap [Connect].
   The Reader connects to the Wi-Fi network.
   The Wi-Fi connection status is displayed in the status bar.

System Requirements

The Reader software will work with the following operating systems.

Operating System	Details
Microsoft Windows 7 (32/64-bit)	Windows 7 Starter Windows 7 Home Basic Windows 7 Home Premium Windows 7 Professional Windows 7 Ultimate
Microsoft Windows Vista (32/64-bit)	Windows Vista Home Basic with Service Pack 2 or later Windows Vista Home Premium with Service Pack 2 or later Windows Vista Business with Service Pack 2 or later Windows Vista Ultimate with Service Pack 2 or later
Microsoft Windows XP (32-bit only)	Windows XP Home Edition with Service Pack 3 or later Windows XP Professional with Service Pack 3 or later Windows XP Media Center Edition 2004 & 2005 with Service Pack 3 or later
Mac OS X 10.7 (64-bit only)	Mac OS X version 10.7 or later
Mac OS X 10.6 (32/64-bit)	Mac OS X version 10.6.6
Mac OS X 10.5 (32-bit only)	Mac OS X version 10.5.8

The Reader software also requires at minimum the following computing environment.

Requirement	Details
CPU	1 GHz Intel processor
RAM	512 MB
Free space on hard disc	250 MB or more*
Screen	1,024 x 768 display resolution with 24-bit color
Network	Broadband internet connection

* Depending on the content amount, more space may be required.

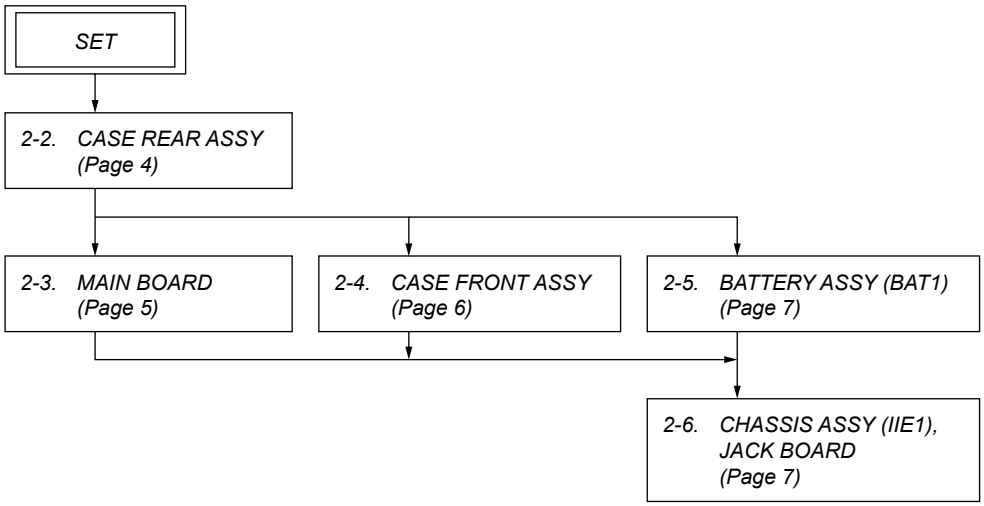
Note

- The Reader software is not supported with the following:
  - An operating system other than those listed above
  - A personally built computer or operating system
  - A multi-boot environment
  - A multi-monitor environment

SECTION 2
DISASSEMBLY

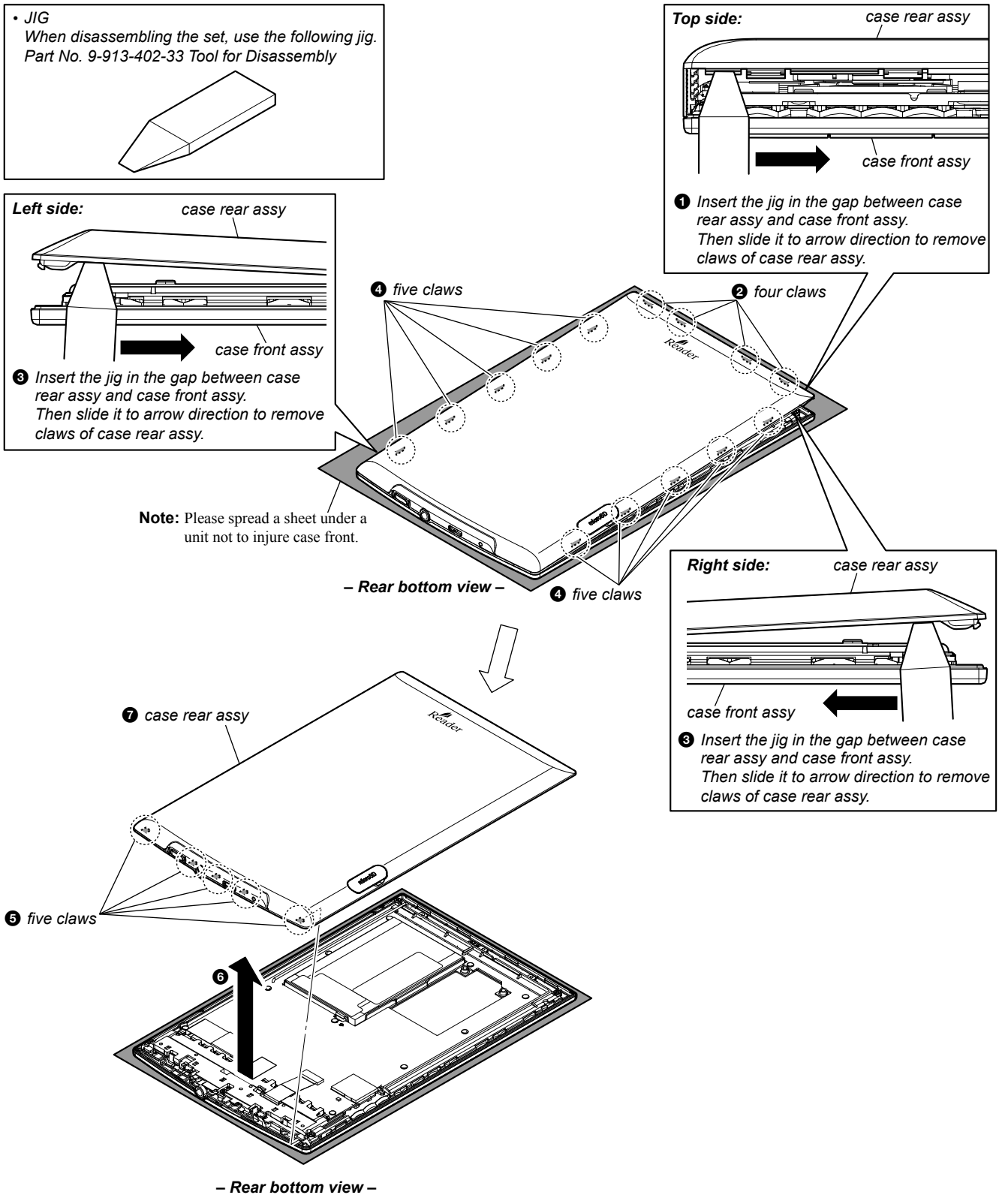
- This set can be disassembled in the order shown below.

2-1. DISASSEMBLY FLOW

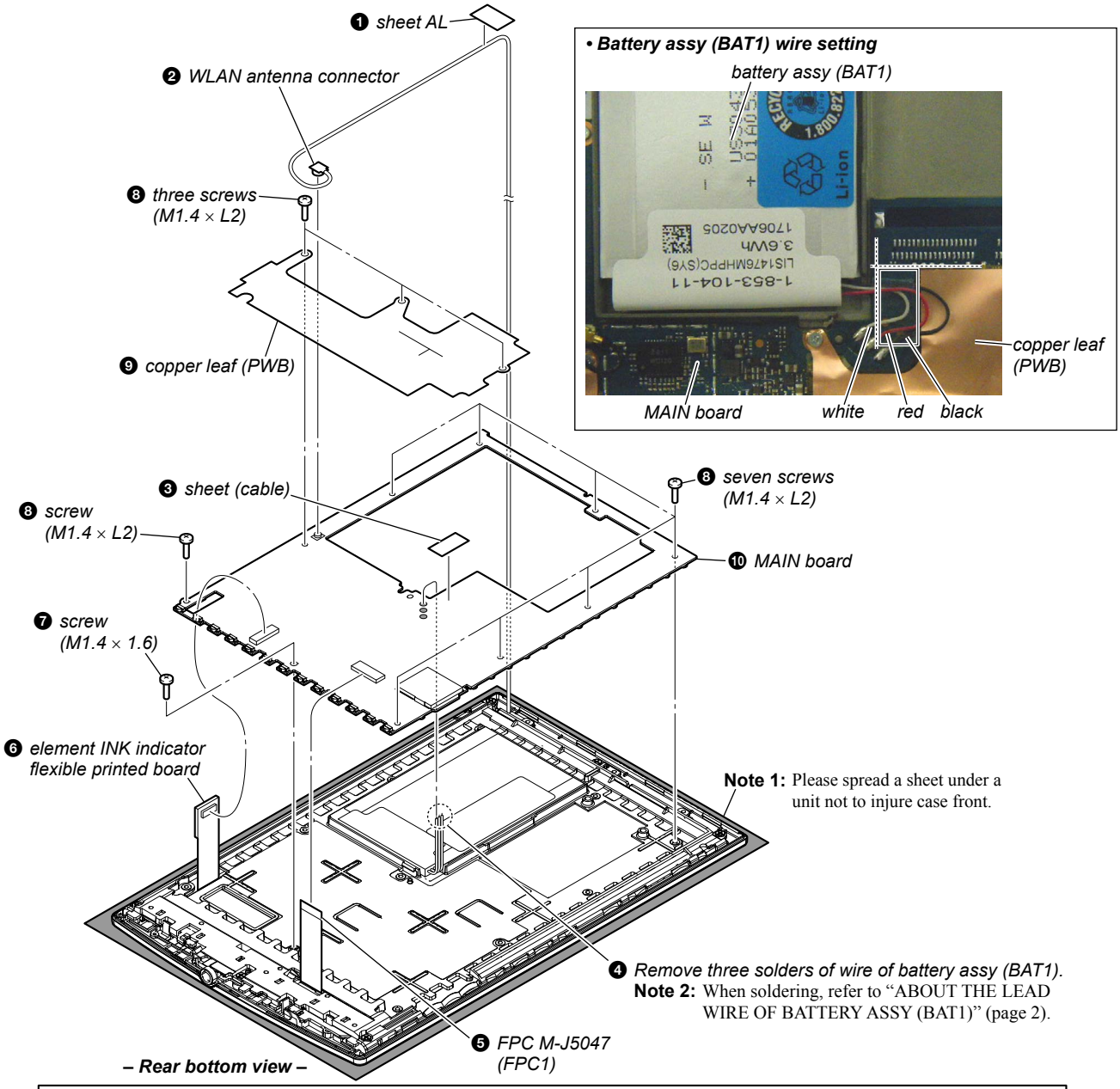


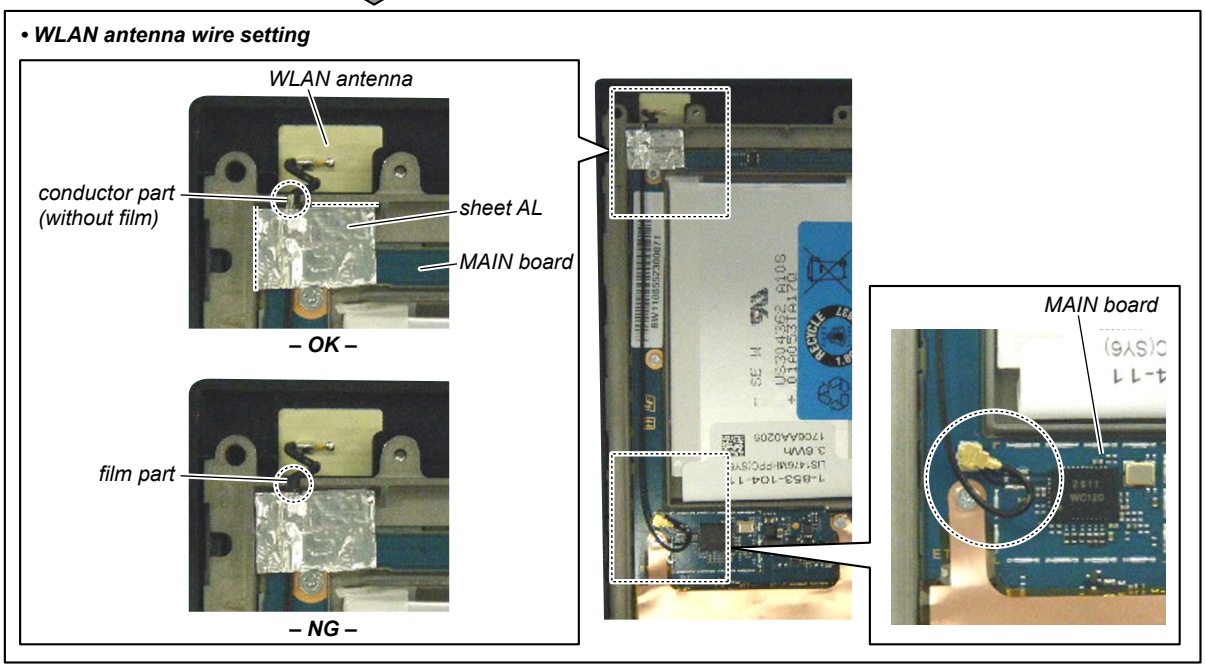
Note: Follow the disassembly procedure in the numerical order given.

2-2. CASE REAR ASSY

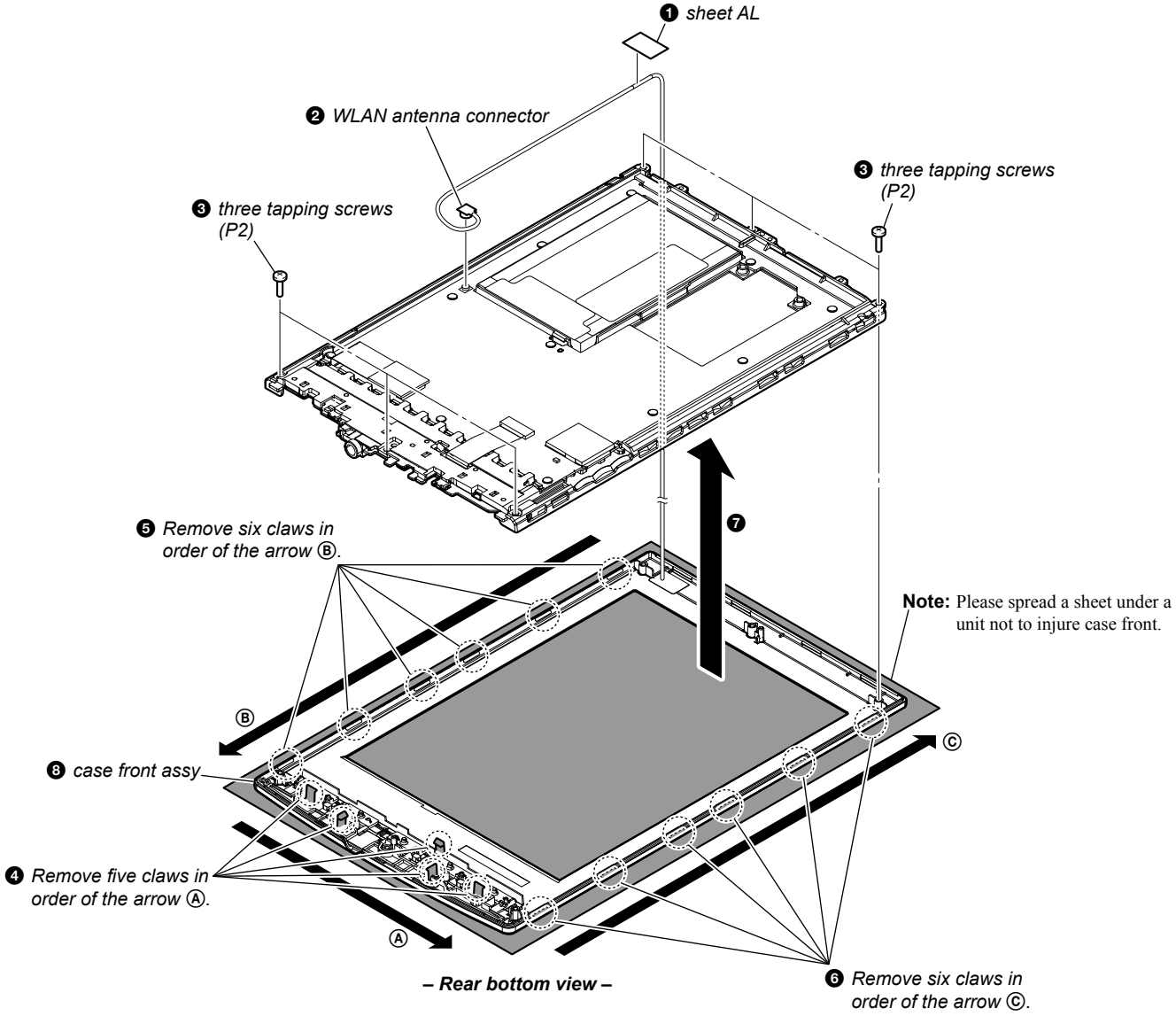


2-3. MAIN BOARD

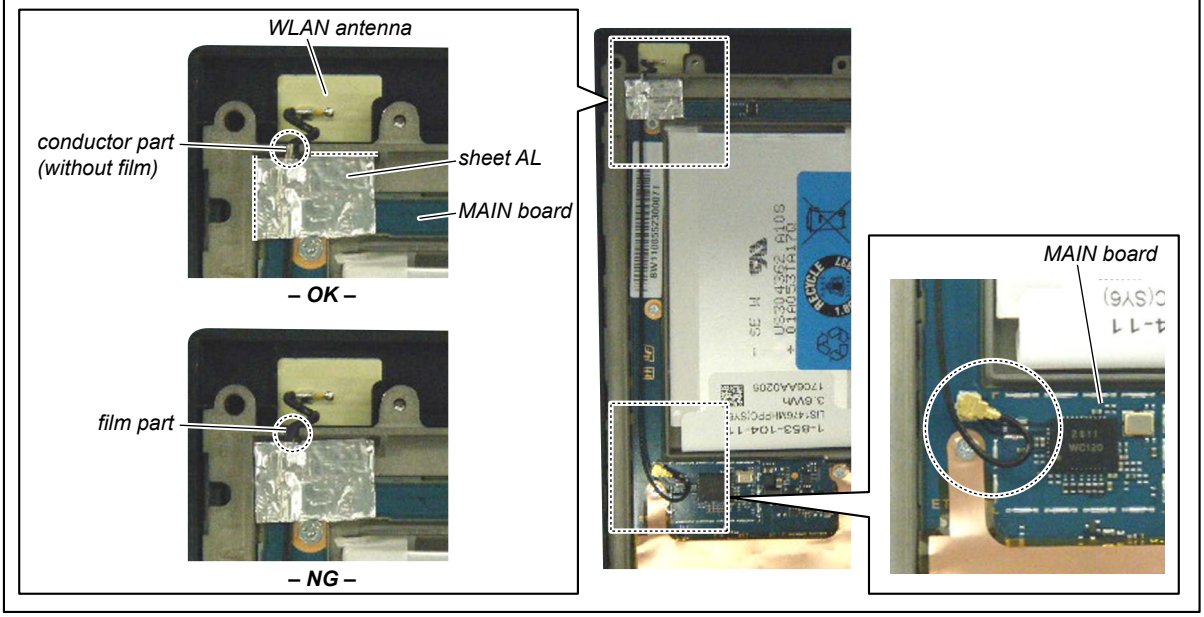




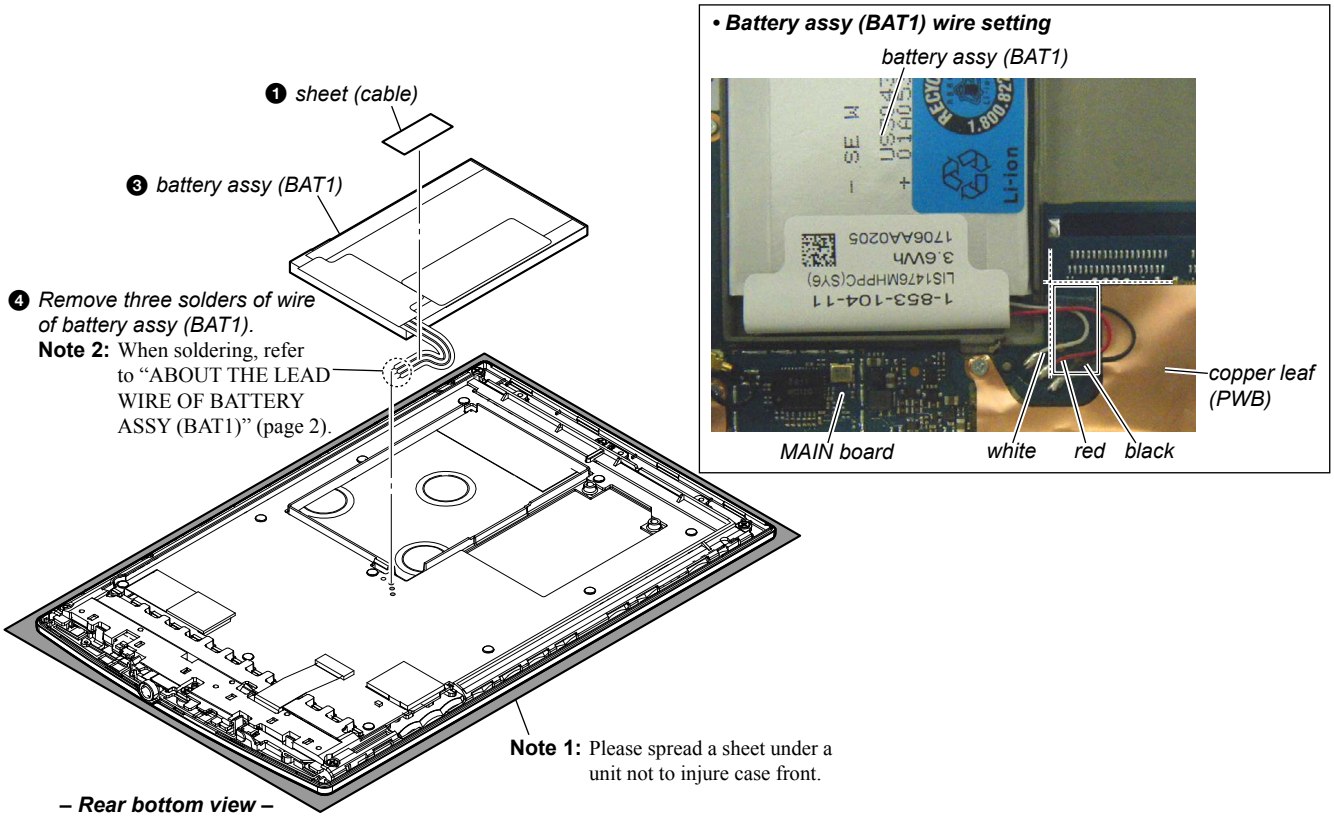
2-4. CASE FRONT ASSY



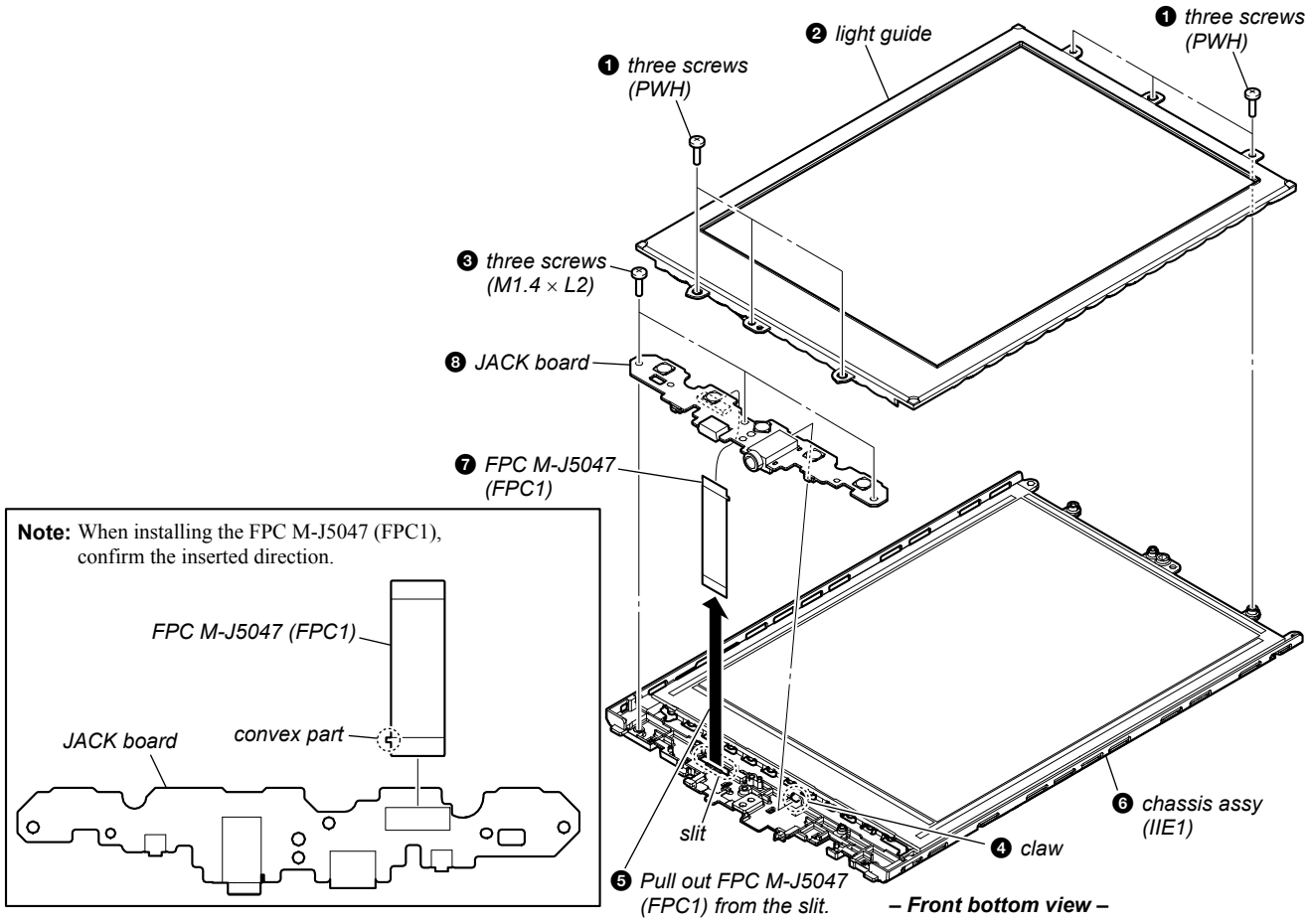
• WLAN antenna wire setting



2-5. BATTERY ASSY (BAT1)



2-6. CHASSIS ASSY (IIE1), JACK BOARD



SECTION 3
TEST MODE

PREPARATION OF THE TEST MODE

Prepare the following before executing the test mode.

- PC
- USB cable for PC connection (MICRO B)
- File for the test mode

Note: Confirm the method of obtaining the file for test mode to each service headquarters.

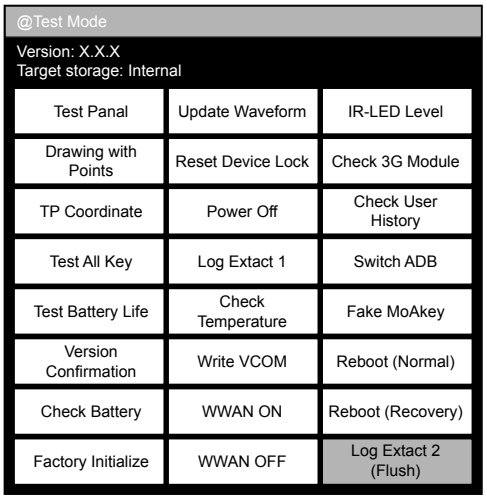
HOW TO ENTER THE TEST MODE

Procedure:

1. Press the [⏻] key to turn the power on.
2. Confirm the HOME menu was completely displayed, and connect this unit to PC by the USB cable (MICRO B).
3. Confirm the USB connection screen displayed, and touch the "Data Transfer Mode".
4. Confirm the "READER" drive of this unit is recognized.
5. Copy the file for the test mode from PC to directly under the "READER" drive of this unit.
6. Remove this unit and USB cable (MICRO B) from PC.
7. Confirm the HOME menu was completely displayed, and press the key as following order.

   [>] → [⮌] → [<] → [⮌]

8. After a while, the test mode menu is displayed, and this unit enters the test mode.



(Screen display)

RELEASING THE TEST MODE

Procedure:

1. Press the [⮌] key, and confirm the HOME menu was completely displayed.
2. Connect this unit to PC by the USB cable (MICRO B).
3. Confirm the USB connection screen displayed, and touch the "Data Transfer Mode".
4. Confirm the "READER" drive of this unit is recognized.
5. Delete the file for the test mode from directly under the "READER" drive of this unit.
6. Remove this unit and USB cable (MICRO B) from PC.
7. Confirm the HOME menu was completely displayed, and press the key as following order, and confirm that the test mode does not enter.

   [>] → [⮌] → [<] → [⮌]

8. Press the [⏻] key for 5 seconds or more, and touch the "Yes" to turn the power off.

Note: Never forget to delete the file for the test mode.

OPERATION OF EACH MODE

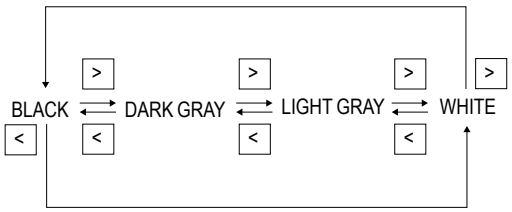
1. Test Panel

The panel can be checked.

Procedure:

1. Touch the "Test Panel" in the test mode menu.
2. The image file is displayed (image files of in the directly as "/testmode/images/").
   The format that can be treated is ".bmp", ".jpeg" , ".gif" and ".png".
   The all image files are transformed into the 600 x 800 size, and the linear interpolation processing of pixel is done.
3. Press the [<]/[>] keys, the image files are chenged.

Note: If there are no image files, the screen changes into grayscale color. Press the [<]/[>] keys, the grayscale color changes sequentially as shown in the figure below.



Releasing method:

Press the [⮌] key, return to the test mode menu.

2. Drawing with Points

This mode is not used in servicing.

3. TP Coordinate

This mode is not used in servicing.

4. Test All Key

This mode is not used in servicing.

5. Test Battery Life

This mode is not used in servicing.

6. Version confirmation

This mode is not used in servicing.

7. Check Battery

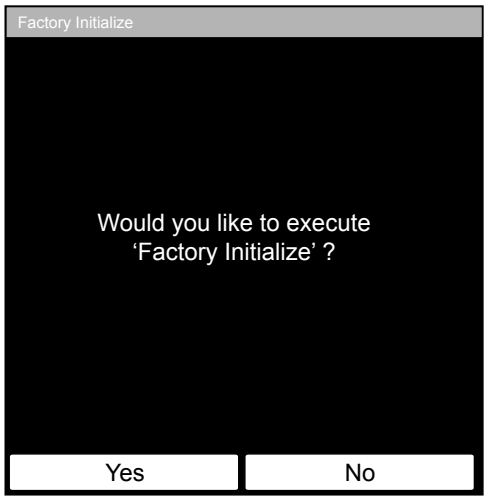
This mode is not used in servicing.

8. Factory Initialize

This unit can be returned to the state of the factory shipment.

Procedure:

1. Touch the “Factory Initialize” in the test mode menu.



(Screen display)

2. When “Yes” is touched, the deletion of all histories and reset of all settings are executed, then this unit turn the power off.

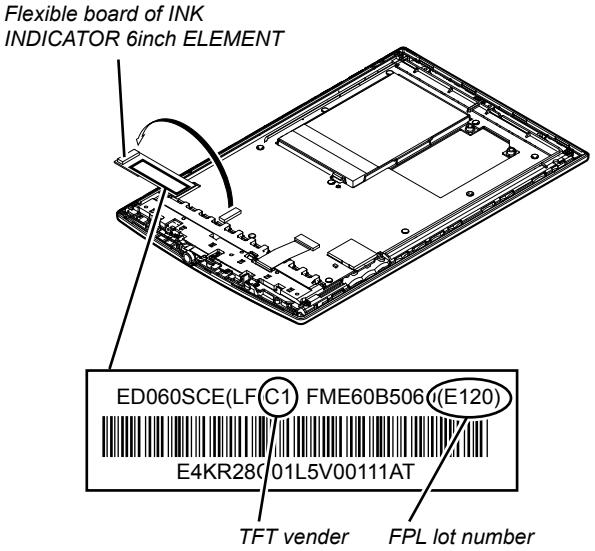
9. Update Waveform

LUT rewriting and the LUT update confirmation can be executed.
As for INK INDICATOR 6inch ELEMENT, the parameter that rewrites the screen of each FPL lot number and TFT vender are different. This parameter is called LUT (Look Up Table).
Therefor, you need to rewrite the LUT when replacing the complete MAIN board or CHASSIS ASSY (including INK INDICATOR 6inch ELEMENT).
However, rewriting is not required if the FPL lot number and TFT vender are the same.
Note 1: LUT is written in IC2001 on the MAIN board.

Procedure:

1. The LUT confirm method is different according to replaced parts.

   When the complete MAIN board is replaced:
   Disassemble this unit until the FPL lot number and TFT vender are seen (Refer to “2. DISASSEMBLY” (pages 3 to 7)), and confirm the FPL lot number and TFT vender referring to the figure below. Record the confirmed the FPL lot number and TFT vender by taking the memo etc..



   When the CHASSIS ASSY (including INK INDICATOR 6inch ELEMENT) is replaced:
   Confirm the FPL lot number and TFT vender described on the label of new CHASSIS ASSY (including INK INDICATOR 6inch ELEMENT). Record the confirmed the FPL lot number and TFT vender by taking the memo etc..

2. Replace complete MAIN board or CHASSIS ASSY (including INK INDICATOR 6inch ELEMENT) for new parts, and assemble this unit.
3. Confirm the following data to the service headquarters.

   - WF file corresponding to the recorded FPL lot number and TFT vender
   - WF file translation tool (wwv_parser.exe)

4. Copy the file and the tool obtained in step 3 to directly under the C drive of PC (Windows XP or more is recommended).

5. Start the command prompt, and execute the following commands.

   "c:\wwv_parser.exe -o c:\lut.bin c:\" + "(file name of WF file)"

Example of inputting command:

```
c:\wwv_parser.exe -o c:\lut.bin c:\V220_C036_60_WQ0303_ED060SC7C1_BTC.wbf
```

"c:\wwv_parser.exe -o c:\lut.bin c:\" is invariable. "wwv_parser.exe" is a name of provided WF file translation tool. "lut.bin" is a file converted into the form that can be stored in the device.

Input the provided WF file name to this part.

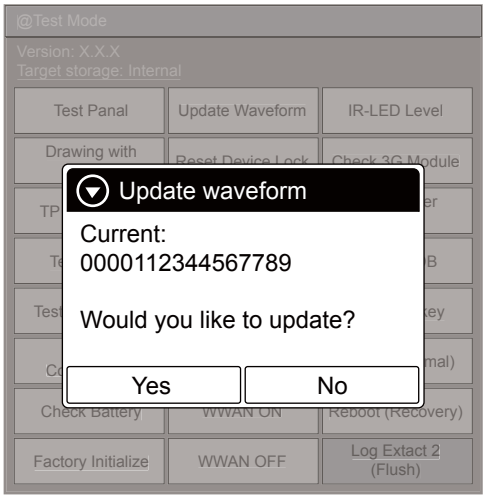
   The "lut.bin" file is generated to directly under the C drive.
6. Press the [⏻] key to turn the power on.
7. Confirm the HOME menu was completely displayed, and connect this unit to PC by the USB cable (MICRO B).
8. Confirm the USB connection screen displayed, and touch the "Data Transfer Mode".
9. Confirm the "READER" drive of this unit is recognized.
10. Make the following folder under the "READER" drive of this unit.

    /testmode/data/

11. Copy the "lut.bin" file made in step 5 to the "data" folder made in step 10.
12. Copy the file for the test mode from PC to directly under the "READER" drive of this unit.

Note 2: When the file for the test mode already exists directly under the "READER" drive of this unit, the file for the test mode need not be newly copied.

13. Remove this unit and USB cable (MICRO B) from PC.
14. Enter the test mode (Refer to "HOW TO ENTER THE TEST MODE" (page 8)).
15. Touch the "Update Waveform" in the test mode menu, and confirm current (unrenewed) LUT version is displayed (Example: "0000112344567789" in the figure below).



(Example of displaying current (unrenewed) LUT version)

16. Touch the "Yes", it starts rewriting LUT version.
17. After about 10 seconds, screen changes into all white.
18. Press [RESET] key and reboot this unit.
19. Enter the test mode again, and confirm LUT version has been updated.

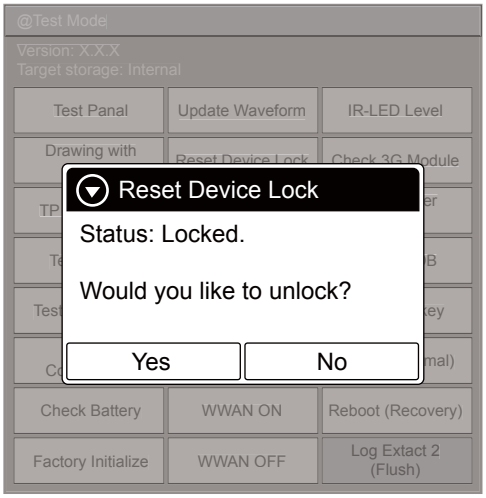
10. Reset Device Lock

When the Device Lock is effective, it can be released.

Note: When this mode is performed, it is necessary to reboot this unit and to validate the settings. Touch the "Reboot (Normal)" in the test mode menu.

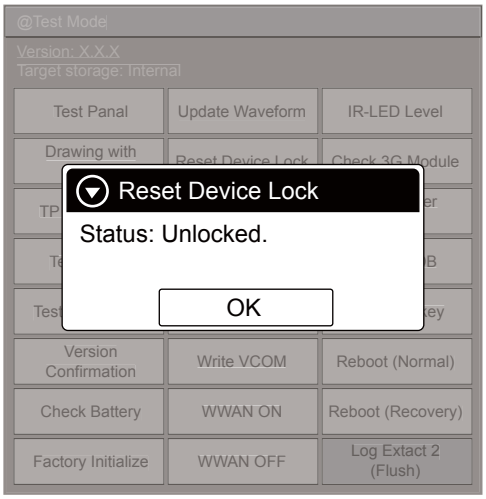
Procedure:

1. Touch the "Reset Device Lock" in the test mode menu.
2. When the Device Lock is effective, the following screen is displayed. Touch the "Yes", the Device Lock becomes invalid. It returns to the test mode menu when "No" is touched.



(Screen display)

When the Device Lock is not effective, the following screen is displayed. Touch the "OK", return to the test mode menu.



(Screen display)

11. Power Off

This mode is not used in servicing.

12. Log Extract 1

This mode is not used in servicing.

13. Check Temperature

This mode is not used in servicing.

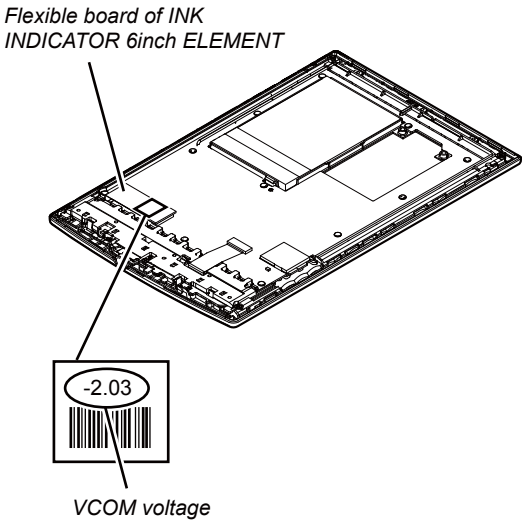
14. Write VCOM

In this mode, the VCOM voltage can be rewritten.
The VCOM voltage for INK INDICATOR 6inch ELEMENT is individually different.
Therefor, when replacing the complete MAIN board or CHASSIS ASSY (including INK INDICATOR 6inch ELEMENT) you need to rewrite the VCOM voltage.

Procedure:

1. The VCOM voltage confirm method is different according to replaced parts.

   When the complete MAIN board is replaced:
   Disassemble this unit until the VCOM voltage is seen (Refer to "2. DISASSEMBLY" (pages 3 to 7)), and confirm the VCOM voltage referring to the figure below. Record the confirmed the VCOM voltage by taking the memo etc..



   When the CHASSIS ASSY (including INK INDICATOR 6inch ELEMENT) is replaced:
   Confirm the VCOM voltage described on the label of new CHASSIS ASSY (including INK INDICATOR 6inch ELEMENT). Record the confirmed the VCOM voltage by taking the memo etc..

2. Replace complete MAIN board or CHASSIS ASSY (including INK INDICATOR 6inch ELEMENT) for new parts, and assemble this unit.
3. Make the text file on PC, and write the VCOM voltage confirmed in step 1.

Note 1: The VCOM voltage is described by the unit of mV that omits minus (Example: Write "2030" when it is printed on the label as "–2.03 V").

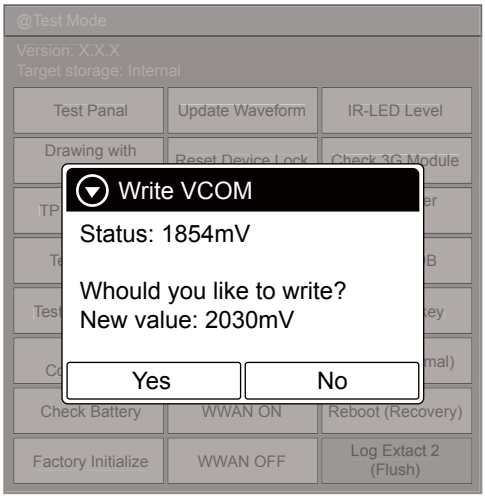
4. Press the [⏻] key to turn the power on.
5. Confirm the HOME menu was completely displayed, and connect this unit to PC by the USB cable (MICRO B).
6. Confirm the USB connection screen displayed, and touch the "Data Transfer Mode".
7. Confirm the "READER" drive of this unit is recognized.
8. Make the following folder under the "READER" drive of this unit.

   /testmode/data/

9. Copy the text file made in step 3 to the "data" folder made in step 8. Then, change the file name to "Vcom.dt".
10. Copy the file for the test mode from PC to directly under the "READER" drive of this unit.

Note 2: When the file for the test mode already exists directly under the "READER" drive of this unit, the file for the test mode need not be newly copied.

11. Remove this unit and USB cable (MICRO B) from PC.
12. Enter the test mode (Refer to "HOW TO ENTER THE TEST MODE" (page 8)).
13. Touch the "Write VCOM" in the test mode menu, and confirm current (unrenewed) VCOM voltage is displayed (Example: -1854 mV in the figure below).



(Example of displaying current (unrenewed) VCOM voltage)

14. Touch the "Yes", it starts rewriting the VCOM voltage.
15. Confirm the VCOM voltage has been updated.

15. WWAN ON

This mode is not used in servicing.

16. WWAN OFF

This mode is not used in servicing.

17. IR-LED Level

This mode is not used in servicing.

18. Check 3G Module

This mode is not used in servicing.

19. Check User History

This mode is not used in servicing.

20. Switch ADB

This mode is not used in servicing.

21. Fake MoAkey

This mode is not used in servicing.

22. Reboot (Normal)

This mode is not used in servicing.

23. Reboot (Recovery)

This mode is not used in servicing.

24. Log Extact 2 (Flush)

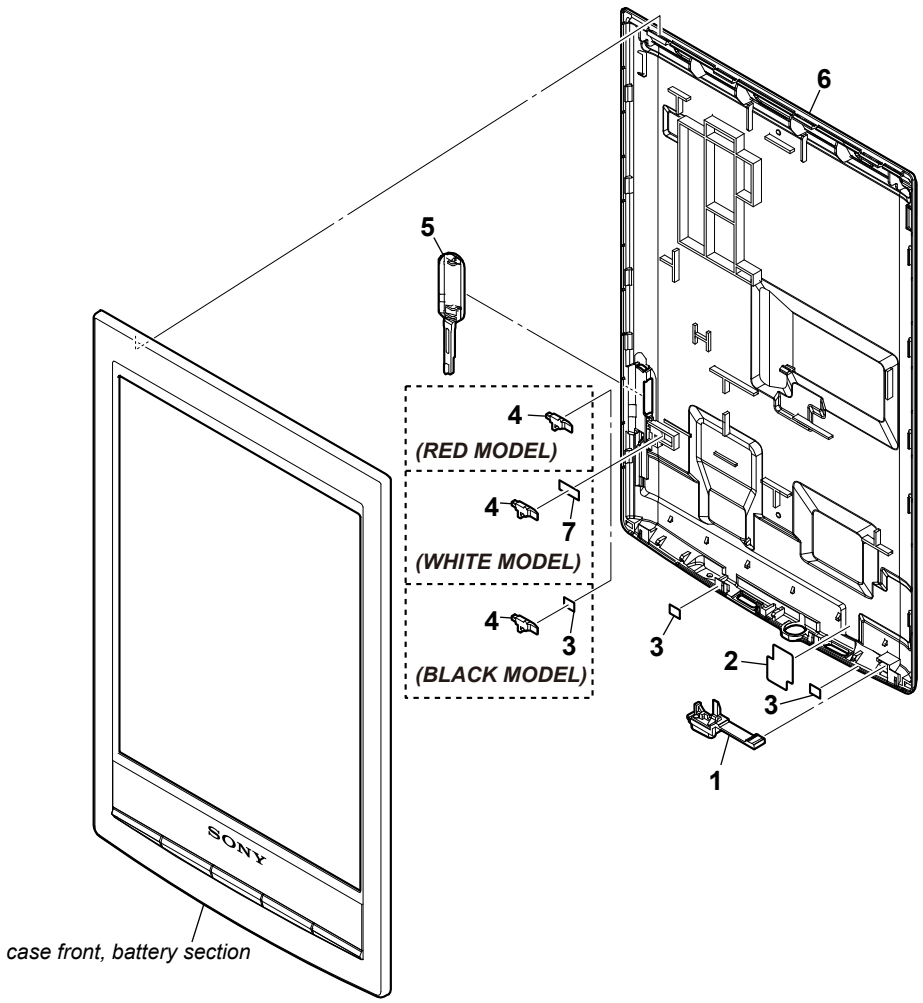
This mode is not used in servicing.

SECTION 4
EXPLODED VIEWS

Note:

- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Color Indication of Appearance Parts Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ Parts Color ↑ Cabinet's Color

4-1. CASE REAR SECTION

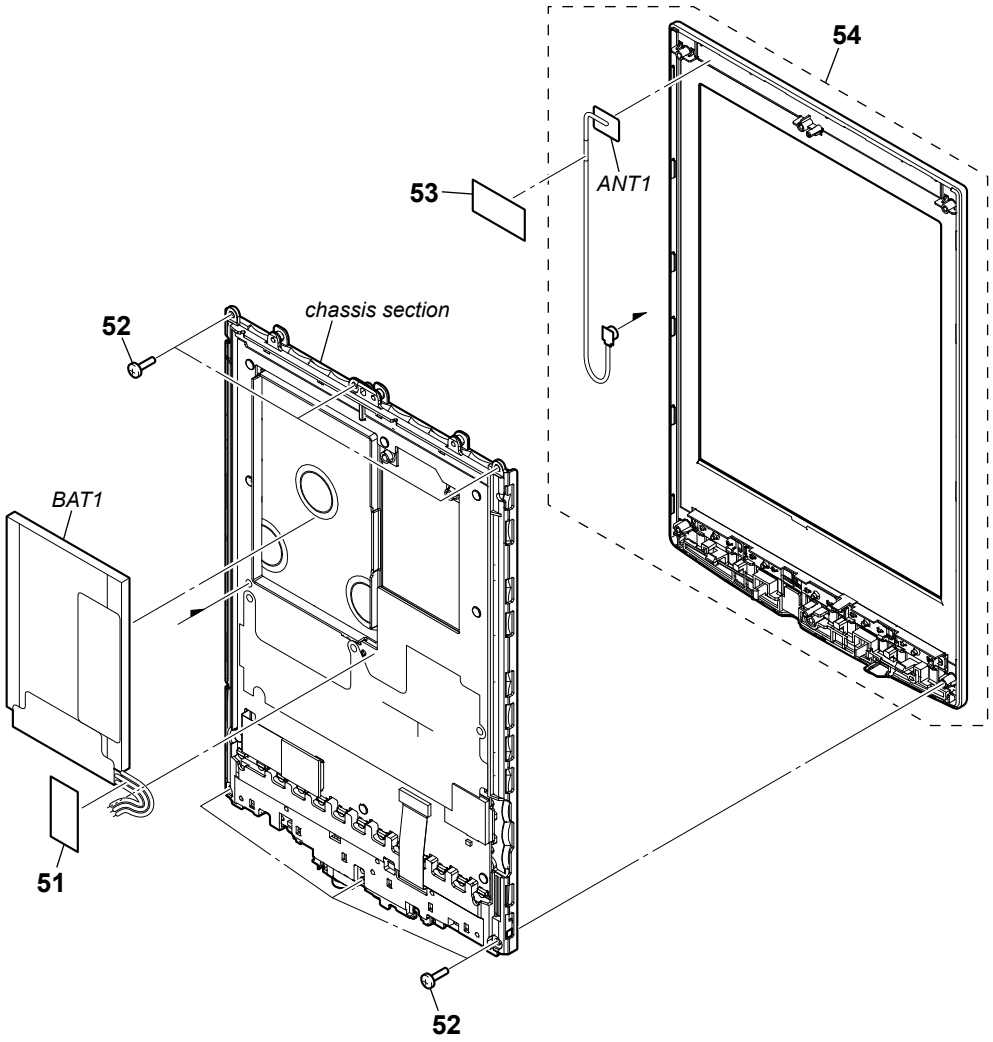


Ref. No.	Part No.	Description	Remark
1	4-283-803-01	BUTTON POWER (WHITE)	
1	4-283-803-11	BUTTON POWER (BLACK)	
1	4-283-803-21	BUTTON POWER (RED)	
2	4-292-694-01	SHEET (POWER LED)	
3	4-408-115-01	SHEET (4X3), ADHESIVE	
4	4-283-802-01	WINDOW ACCESS	
5	4-283-800-01	COVER SLOT (WHITE)	

Ref. No.	Part No.	Description	Remark
5	4-283-800-11	COVER SLOT (BLACK)	
5	4-283-800-21	COVER SLOT (RED)	
6	4-283-799-01	CASE REAR (WHITE)	
6	4-283-799-11	CASE REAR (BLACK)	
6	4-283-799-21	CASE REAR (RED)	
7	4-411-916-01	SHEET (CARD LED) (for WHITE)	

4-2. CHASSIS SECTION

• Rear side view



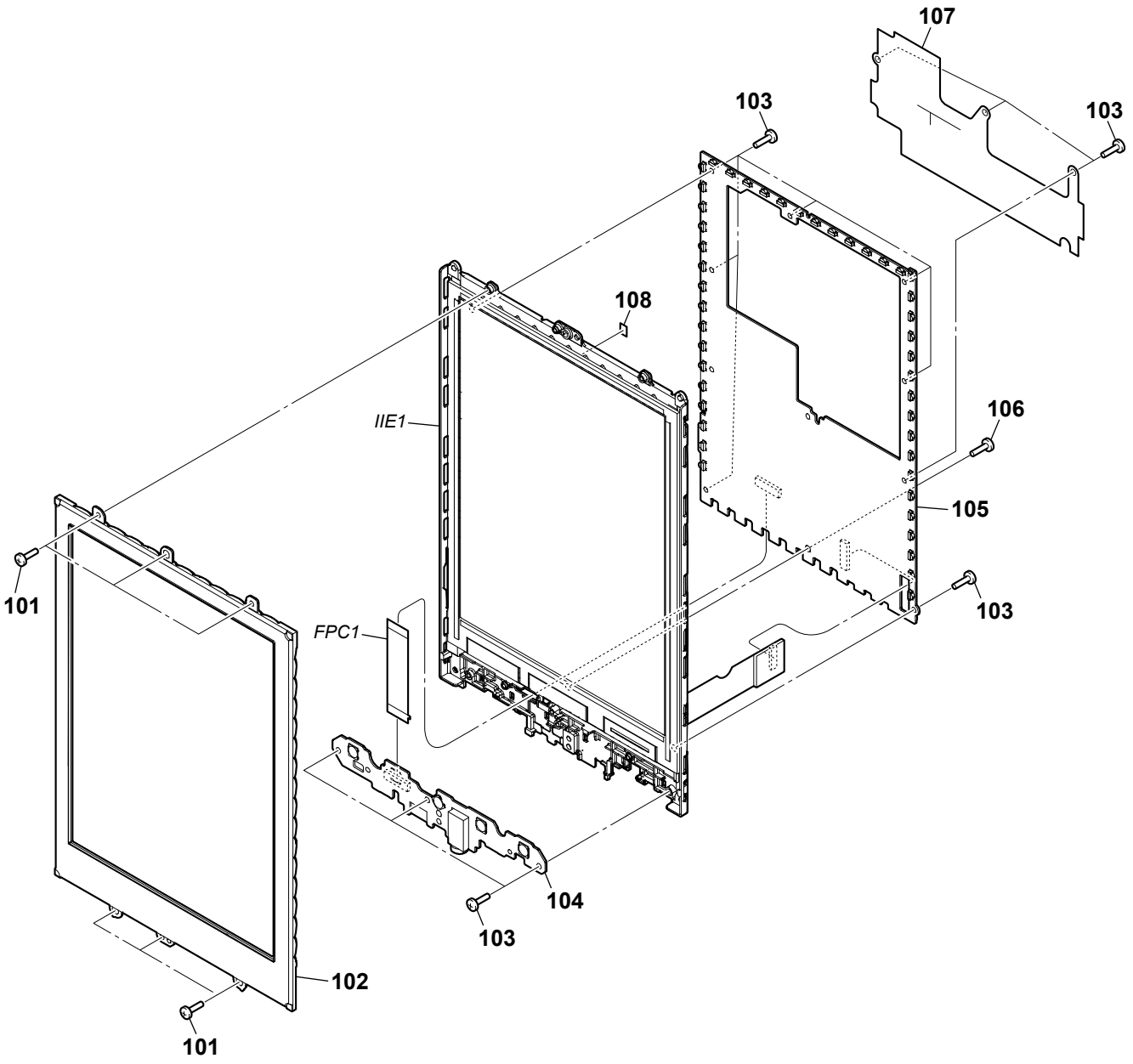
Note 1: Confirm the operation after pressing the button of the main unit bottom without fail when soldering the BATTERY ASSY (BAT1) to the MAIN board.

Note 2: When replacing the WLAN antenna (ANT1), refer to "NOTE OF REPLACING THE WLAN ANTENNA" (page 2).

Ref. No.	Part No.	Description	Remark
51	4-287-952-01	SHEET (CABLE)	
52	3-080-204-11	SCREW, TAPPING, P2	
53	4-287-942-01	SHEET AL	
54	A-1832-979-A	CASE FRONT ASSY (WHITE)	
54	A-1833-201-A	CASE FRONT ASSY (BLACK)	

Ref. No.	Part No.	Description	Remark
54	A-1833-206-A	CASE FRONT ASSY (RED)	
ANT1	1-754-788-11	ANTENNA, WLAN	
BAT1	A-1832-983-A	BATTERY ASSY	

4-3. ORNAMENT SECTION



Note: When replacing the MAIN board or CHASSIS ASSY (IIE1), refer to "NOTE OF REPLACING THE COMPLETE MAIN BOARD OR CHASSIS ASSY" (page 2).

Ref. No.	Part No.	Description	Remark
101	2-587-733-01	SCREW (PWH)	
102	4-283-797-01	LIGHT GUIDE	
103	4-292-680-01	SHAFT (M1.4XL2)	
104	A-1832-986-A	JACK BOARD, COMPLETE	
105	X-2582-657-1	MAIN BOARD, COMPLETE (for SERVICE)	
106	4-264-211-21	SCREW, 0+Z M1.4X1.6	

Ref. No.	Part No.	Description	Remark
107	4-287-943-01	LEAF (PWB), COPPER	
108	4-408-115-01	SHEET (4X3), ADHESIVE	
FPC1	1-884-637-11	FPC M-J5047	
IIE1	A-1832-982-A	CHASSIS ASSY (Including INK INDICATOR 6 inch ELEMENT)	

SECTION 5
ACCESSORIES

Ref. No.	Part No.	Description	Remark
	1-839-534-11	CABLE, USB (MICRO B) (USB cable)	
	4-288-610-12	QUICK START GUIDE (PAPER) (ENGLISH, FRENCH)	
	4-288-610-22	QUICK START GUIDE (PAPER) (GERMAN, DUTCH) (AEP, UK)	
	4-288-610-32	QUICK START GUIDE (PAPER) (SPANISH, ITALIAN) (AEP, UK)	
	4-288-610-41	QUICK START GUIDE (PAPER) (FINNISH, SWEDISH) (AEP, UK)	
	4-288-610-51	QUICK START GUIDE (PAPER) (DANISH, NORWEGIAN) (AEP, UK)	
	X-2582-530-1	STYLUS ASSY (Stylus)	

REVISION HISTORY

Checking the version allows you to jump to the revised page.
Also, clicking the version at the top of the revised page allows you to jump to the next revised page.

Ver.	Date	Description of Revision
1.0	2011.09	New