

SHARP SERVICE MANUAL

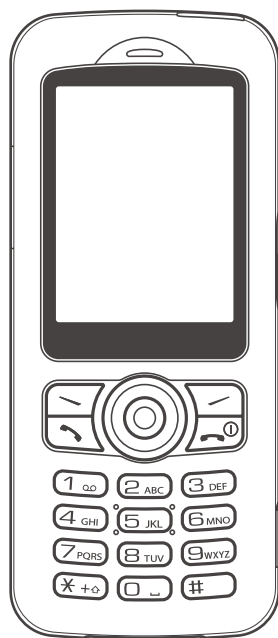
No. S5408TQGXE//

DIGITAL MOBILE PHONE

MODEL GX15

(INTERNAL MODEL NAME:

TQ-GX5E/G/R/T/S/H/EP/PP/W/B/D/A/Z/Q/L/F/U/GP)



E : For U.K.	G : For Germany
R : For Ireland	T : For Italy
S : For Spain	H : For Netherlands
EP: For U.K. (Prepaid)	PP: For Portugal (Prepaid)
W : For Sweden	B : For Hungary
D : For Greece	A : For Australia
Z : For New Zealand	Q : For Egypt
L : For Malta	F : For France
U : For Belgium	GP: For Germany (Prepaid)

• In the interests of user-safety the set should be restored to its original condition and only parts identical to those specified should be used.

• Caution
Risk of explosion if battery is replaced by an incorrect type, dispose of used batteries according to the instruction.

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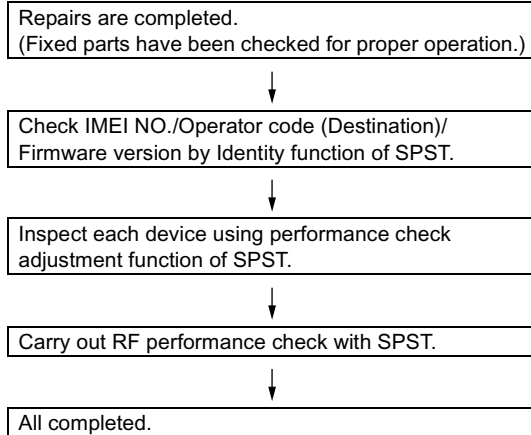
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Parts Guide

Parts marked with "△" are important for maintaining the safety of the set. Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

SERVICING CONCERNS

1. When requested, back up user's handset data using SPST (SHARP Programme Support Tool). Otherwise, before servicing, warn the user that data in the memory may be lost during repairs.
2. Upgrade the firmware to the latest version using SPST before returning the handset to the customer.
3. After repairs, inspect the handset (phone) according to the following flowchart.



4. When storing or transporting a PWB, put it into a conductive bag or wrap it in aluminum foil. (C-MOS IC may be damaged by electrostatic charges.)
5. Do not leave fingerprints, etc. on ornamental parts including a cabinet, especially clear windows for main and sub displays. Wear fingerstalls to avoid this.
Also, ensure not to leave fingerprints on the surface of display panel.
6. To prevent oxidation which causes connection problems, do not touch any terminals on the electric board, microphone, vibrator, earpiece and speaker.
When handling these parts, wear fingerstalls. Should you touch these parts, clean them with a soft dry cloth.
Always wear fingerstalls when handling a shield case on the electric board. Otherwise oxidation may occur causing handset performance deterioration.
7. The FPC is a precision device. Handle it carefully to prevent any damages.
8. Do not expose the moisture sensor to liquids.
If the sheet gets wet, red ink runs. In this case, replace the sheet with a new one.
Be careful about your perspiration.
9. Before you disassemble or reassemble handset, make sure to remove the Li-Ion battery.
10. Be sufficiently careful with static electricity of integrated circuits and other circuits. Wear static electricity prevention bands whilst servicing.

PRECAUTIONS FOR USING LEAD-FREE SOLDER

① Employing lead-free solder

Lead-free solder is used for this model.

This is indicated by the “LF” symbol printed on the PWB and in the service manual.

The suffix letter indicates the alloy type of the solder.

Example:

LFa
Sn-Ag-Cu

Indicates lead-free solder of tin, silver and copper.

② Using lead-free solder

When repairing a PWB with the “LF” symbol, only lead-free solder should be used. (Using normal tin/lead alloy solder may result in cold soldered joints and damage to printed patterns.)

As the melting point of lead-free solder is approximately 40°C higher than tin/lead alloy solder, it is recommended that a dedicated bit is used, and that the iron temperature is adjusted accordingly.

③ Soldering

As the melting point of lead-free solder (Sn-Ag-Cu) is higher and has poorer wettability (flow), to prevent damage to the land of the PWB, extreme care should be taken not to leave the bit in contact with the PWB for an extended period of time.

Remove the bit as soon as a good flow is achieved.

The high content of tin in lead free solder will cause premature corrosion of the bit.

To reduce wear on the bit, reduce the temperature or turn off the iron when it is not required.

Leaving different types of solder on the bit will cause contamination of the different alloys, which will alter their characteristics, making good soldering more difficult.

It will be necessary to clean and replace bits more often when using lead-free solder. To reduce bit wear, care should be taken to clean the bit thoroughly after each use.

CHAPTER 1. GENERAL DESCRIPTION

FOR A COMPLETE DESCRIPTION OF THE OPERATION OF THIS UNIT, PLEASE REFER TO THE OPERATION MANUAL.

[1] Specifications

General: Tti - band (GSM 900 MHz/DCS 1800 MHz/
PCS 1900MHz)
GPRS-enabled
WAP, MMS, SMS

Dimensions
(folded, excluding the aerial)
(H x W x D): 105 x 45 x 17.8 mm
Weight: 84 g

Battery operating temperature: 0°C - 40°C

Display: Display dimensions: 160 x 120 pixels
LCD display: CGS 65,536 colours with backlight
LCD back light: LED back light white colour LEDs

Camera: CMOS 310K pixels built-in camera
Zoom: Wide and zoom mode
[4 x zoom supported (when image size is
160 x 120 pixels)]
Lens: F2.8, f = 3.55 mm

Sound: 40-polyphonic ring melodies

External DC supply voltage: 5.2 V

Battery: 3.7 V, 780 mAh, Li-Ion

Standby time: Up to 230 hours

Talk time: Up to 230 minutes

Others: Side key
Infrared port 1.2 L/P (maximum distance 20 cm)
Connector for AC charger and data cable
Standard hands free connector (ø2.5)

Battery running time depends on the battery and SIM card as well as the network conditions and usage.

Specifications for this model are subject to change without prior notice.

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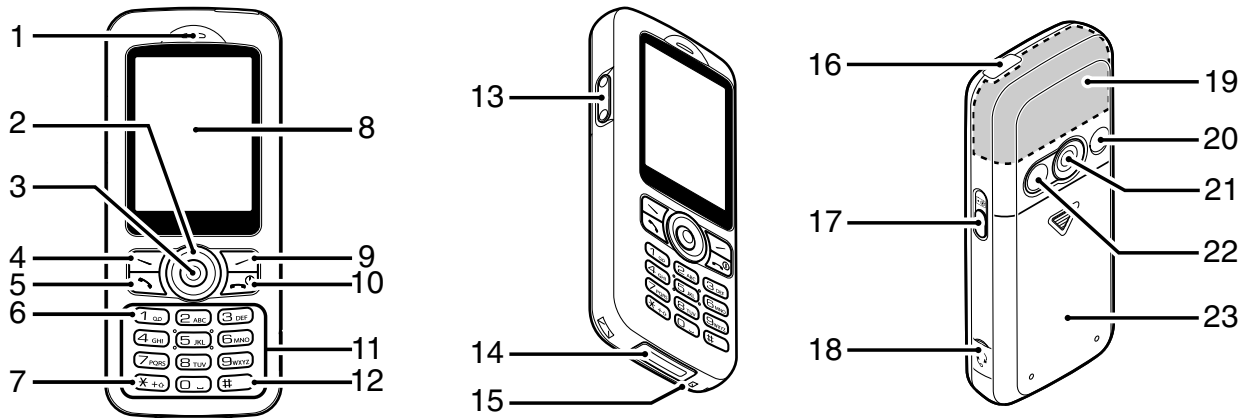
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[2] Names of parts



1. Earpiece

2. Navigation Keys (Arrow Keys):



Moves cursor to select menu items, etc.

Up/Down arrow keys: Displays Contacts List entries in stand-by mode.

Left arrow key: Displays list of Applications in stand-by mode.

Right arrow key: Displays list of Saved Pictures in stand-by mode.

3. Centre Key:



Displays Main menu in stand-by mode and executes functions.

4. Left Soft Key:



Executes the function at the bottom left of the screen.

5. Send Key:



Makes or accepts calls, views the call in stand-by mode.

6. Voice Mail Key:



Press and hold this key to connect to the Voice mail centre automatically. (Depends on the SIM card.)

7. * /Shift Key:



Switches character case among four modes: Abc, ABC, 123 and abc.

8. Display

9. Right Soft Key:



Executes the function at the bottom right of the screen. Used to access "Vodafone live!" by opening the browser in stand-by mode.

10. End/Power Key:



Ends a call, turns power on/off.

11. Keypad

12. # Key:



Switches symbol screens. Press and hold this key on the text entry screen to shift text input method between multi-tap and T9 mode. Press and hold this key during stand-by to switch Profiles settings between Normal and Silent mode. Press , then  during stand-by to activate Voice Recorder.

13. Side-Up/Side-Down Keys:



Moves cursor to select menu items, adjusts earpiece volume, etc.

14. External Connector:

Used to connect either the charger or USB data cable.

15. Microphone

16. Infrared Port:

Sends and receives data via infrared.

17. Camera Key:

Starts the digital camera in stand-by mode. Takes pictures or records videos in viewfinder mode.

18. Handsfree Kit Connector

19. Built-in Aerial:

Warning: Do not cover the top of the phone with your hand when in use as this may interfere with the performance of the built-in aerial.

20. RF Connector

21. Camera

22. Self-Portrait Mirror: For taking a self-portrait.

23. Battery Cover

[3] Operation manual

(Page numbers refer to the user guide)

[Optional Accessories]

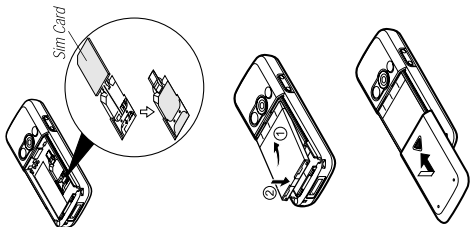
- Li-ion Spare battery (XN-1BT30)
- Cigarette lighter charger (XN-1CL30)
- USB data cable (XN-1DC30)
- AC charger (XN-1QC30, XN-1QC31, XN-1QC32)
- Personal handsfree kit (XN-1ER20)

The above accessories may not be available in all regions.
For details, please contact your dealer.

[Quickstart Guide]

THE SHARP GX15 QUICK START GUIDE

In just a few minutes we'll show you how easy it is to use many of the new features of your Sharp GX15 (customised for Vodafone live!).
You'll see how quickly you can take pictures and video clips with its built-in digital camera, send photos, sounds and video clips in multimedia messages, and connect to Vodafone live!. You'll also be able to personalise your phone by simply downloading new ringtones, games and wallpapers.



Getting started

- 1. Insert your SIM card:**
Slide off the back cover, and remove the battery. Slide your Vodafone SIM card (with the gold contacts facing downwards) into its holder, making sure that the cut-out corner is aligned.
- 2. Insert the battery:**
Insert the battery (gold contact edge first), and slide the cover on until it clicks shut. The battery should be charged for at least 2 hours before you first use your phone.
- 3. Turn it on:**
Press and hold the red  key. (You do the same to turn it off again.)

1. THE PHONE

Keys & navigation

**Centre key:** press to OK an action or select whatever option is highlighted. (In standby mode it opens the main **Menu**.)

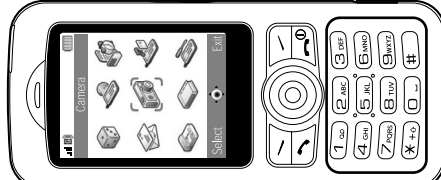
**Navigation:** Use the edge of the centre key to move around icons and item lists. In standby mode  or  opens **Contacts List**,  opens **Saved Pictures** and  opens **Applications**.

**Soft keys:** Select the icon or command shown in the bottom left or right of the screen. The  key selects icons in the middle. In standby mode,  goes to **Messages**,  connects to **Vodafone live!**.

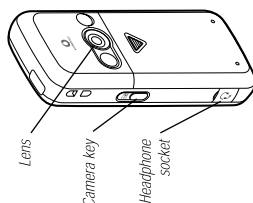
**Call key:** [When ringing] Answers a call. In standby mode it brings up **All Calls** (numbers called, received and missed).

**End key:** [During a call] Ends a call. Press and hold to turn the phone on and off. At all other times it takes you straight back to standby mode.

**Camera key (on side of phone):** [In standby mode] Turns on the camera.



2. THE CAMERA



With the built-in digital camera it's easy to take photos and video clips. These can also be sent to other people as a picture or video message (see next page).

Take a photo or video clip

1. Take a photo:

Press the Camera key in standby mode to turn on the camera. Press (or the Camera key) to take the photo. **Tips:** use for brightness, and for zoom (depending on photo size). To change photo size or quality, press [Options].

2. Save your photo:

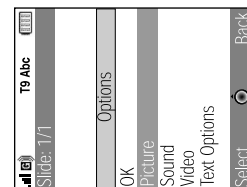
Press [Cancel] to try again, or press [Save] to save it (in **Menu/My Items/Pictures/Saved Pictures**). Or press to save and send it as a **Multimedia** message (see next page). Photos will be automatically compressed for sending if necessary.

3. Take a video clip:

Press in standby mode to go to the main Menu. Press again to select **Camera**, then select **Record Video**. Press (or Camera key) to start, and again to stop. Choose **Save**, **Preview** or **Save and Send** (in a video message).



3. PICTURE AND VIDEO MESSAGING



Predictive text (T9)

To turn T9 off and on while entering text, press and hold the key. Use to cycle through the alternative words, then to select the one you want.

With multimedia messaging (MMS) you don't have to just send a text message. Now it's just as simple to send pictures, video clips and sounds as well! Your GX15 is already enabled to send and receive MMS.

Create and send a new multimedia message

1. Start a new message:

Select **Messages** in the main Menu (or press the key in standby mode). Select **Create Message**, then **Multimedia**.

2. Write your message:

Use the keypad to write your text. **Tips:** to enter punctuation or other characters, press the key and select the symbol you want. For a space, press . Press the key to cycle through capitals, numeric, etc. (shown at the top of the screen).

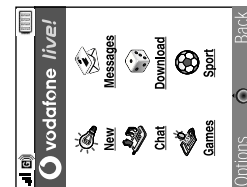
3. Add a photo, sound or video clip:

Press [Options] and select **Picture**, **Sound** or **Video**. Choose **Saved Pictures**, **Saved Sounds** or **Saved Videos**, and select the photo, sound or video clip you want (or record new ones using the **Take Picture**, **Record Voice** or **Record Video** options). Press to attach it, then press again to return to the Create screen.

4. Preview your message:

Press [Options], and select **Preview Message** to see (and hear) your message. Then select [Back].

4. VODAFONE live!



Vodafone live! brings your mobile to life: full of information, downloads, games, music and services. It's easy to use, and the connection can be 'always on' so there's no wait for dialling up.

Connect to Vodafone live!

Simply press (in standby mode) to connect you to the Vodafone live! main menu. To exit, press the key. Or link directly to Vodafone live! services:

In the main Menu, open the **Vodafone live!** section. This page is offline, so you won't be connected until you choose a link. Here are some of the services you can choose:

Games: online fun and games to download...

Ringtones: download music, sounds and ringtones.

Pictures: download images, animations and background wallpaper.

News: get the latest news reports and weather forecasts...

Sport: news, results and latest scores (with pictures).

Find & Seek: get the local information you need, wherever you are.

Chat: chat with others on PCs, PDAs and mobiles.

Tip: Vodafone live! is growing and changing all the time, so these options may vary. Keep checking it out to see what's new.

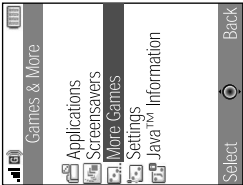
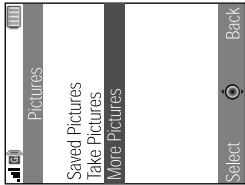
Browsing

Use the navigation keys to highlight the item you want to select, then press to open that page. Press [Back] to go back a page. Press [Options] for the Browser Option menu.



5. DOWNLOADS

Personalise your new phone by downloading new ringtones, images, games and background wallpaper from Vodafone live!. You can download from the Vodafone live! portal or the phone shortcuts (see previous page), or use the **More** menus:



Download more

- 1. Download a new ringtone, video clip or background wallpaper:**
Go main **Menu/My Items**, choose **Sounds**, **Videos** or **Pictures** and then **More Sounds**, **More Videos** or **More Pictures**. Choose a ringtone, video clip or wallpaper image and follow the instructions to download it.

Tips: To activate your ringtone, go to **Menu/Settings/Profiles**, select **Normal**, then choose [Options]/**Personalise/Assign Ringtone/My Sounds**, then select your downloaded ringtone. To set your wallpaper, go to **My Items/Pictures**, select your downloaded image and choose [Options]/**Set as Wallpaper**.
- 2. Download new games:**
To add more arcade quality games to your phone, go to to **Menu/Games & More/More Games**. Choose a game to download, and you'll find it in **Games & More/Applications**. Your phone already comes with some amazing demo games that you can try - and then download the full version.

6. OTHER FEATURES

Postcard

Now you can send a picture message as an actual postcard. Go to **Menu/Messages/Create Message**, and select **Postcard**. Add the picture and text as prompted (up to 200 words), then press **Send**.

Enter the name and address you want to send it to, then press [Options]/**Send**. Vodafone will have it printed on a postcard and sent by mail. **(Note:** the Postcard service is not available in every country.)

- 1. Silent mode:**
To go into Silent mode (if you're in a meeting, say), press and hold the **[Mute]** key (in standby mode). Do the same again to return to Normal mode.
- 2. Keypad lock:**
In standby mode, press the **[Star]** key then **[LockKeys]**. Do the same to use the keypad.
- 3. Album:**
Now you can upload selected pictures to an online album (part of Vodafone live!) where you and your friends can access them remotely. Go to **My Items/Pictures**, select or take the picture you want and choose [Options]/**Send/To Album** (it may be called **live! Studio** in some countries). You can also upload MMS messages from your Inbox or Sent items folder in the **Messages** menu.

To see your album on the Vodafone live! portal, go to **Menu/Messages/Media Album** (or **live! Studio**) You can also log in to your homepage on your local Vodafone website and select the **MML Album** option. (Note: the Media Album service is not available in every country.)

CHAPTER 2. ADJUSTMENTS, PERFORMANCE CHECK, AND FIRMWARE UPGRADE

SPST (SHARP Programme Support Tool) allows you to adjust settings, conduct performance checks, and upgrade the firmware.

[1] SHARP Programme Support Tool (SPST)

1. System requirements

- IBM PC compatible personal computer (standard COM1 115,200 bps serial port and USB required)
Recommended OS: Windows 2000/XP
Operable OS: Windows 98/98SE/ME
Incompatible OS: Windows 95/NT
(English, German, Italian, Spanish, French and Chinese versions)
- Data cable

<During RF adjustment>

- GSM tester: CMU200
- GPIB interface: National Instruments USB-GPIB cable (Model No.: NI GPIB-USB-B)

2. Introduction

2.1. Functions

SPST offers seven key functions:

- 1) Firmware download
- 2) User data transfer (processes all data at once but not individually.)
- 3) RF calibration check and test
- 4) Default setting
- 5) Identification
- 6) Performance check and adjustment
- 7) User password reset

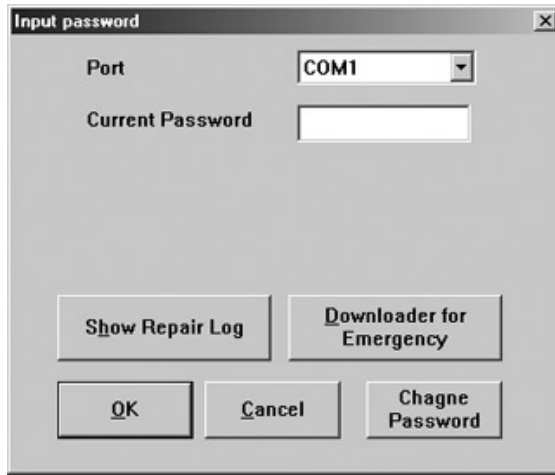
2.2. Installation

1. Use Windows Explorer to execute the "setup.exe" file on the CD-ROM.
2. The SPST GX15 setup wizard appears. Follow the installation instructions.
3. After the installation is complete, shortcuts to SPST are created on the desktop and under the "Start" — "Programs" — "GX15" menu. Start SPST from the shortcuts.

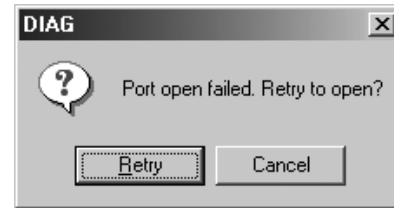
2.3. Starting up

Connect GX15 to an operable serial port of the PC with the supplied data cable. Make sure that the battery is fully charged. Start SPST from the desktop.

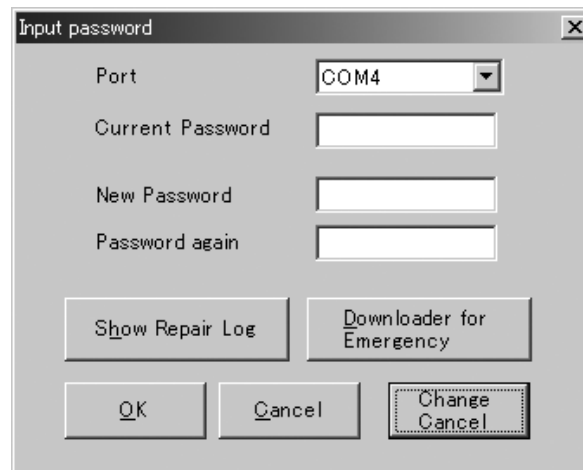
1. The Input password dialogue box appears. Enter the password, select "GX15" from Port list box (a connected port is automatically detected), and click "OK". If you do not know SPC, click "Cancel" to exit.



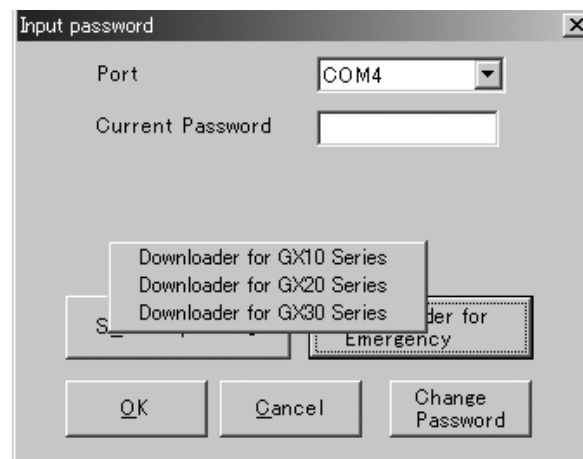
When using SPST for the first time, the driver installation starts and the following dialogue box appears. After the installation is complete, press "Retry".

**Figure 1**

2. To change the password, enter the current password in Figure 1, and then click "Change Password".

**Figure 2**

3. To check the usage status of tools, click "Show Repair Log" in Figure 1.
4. Click "Downloader for Emergency".

**Figure 3**

The above screen appears. Select a model to use and execute the Downloader. (Use this to initialise the flash, etc.)

5. When the password is correct, a connection is established and the following screen appears.

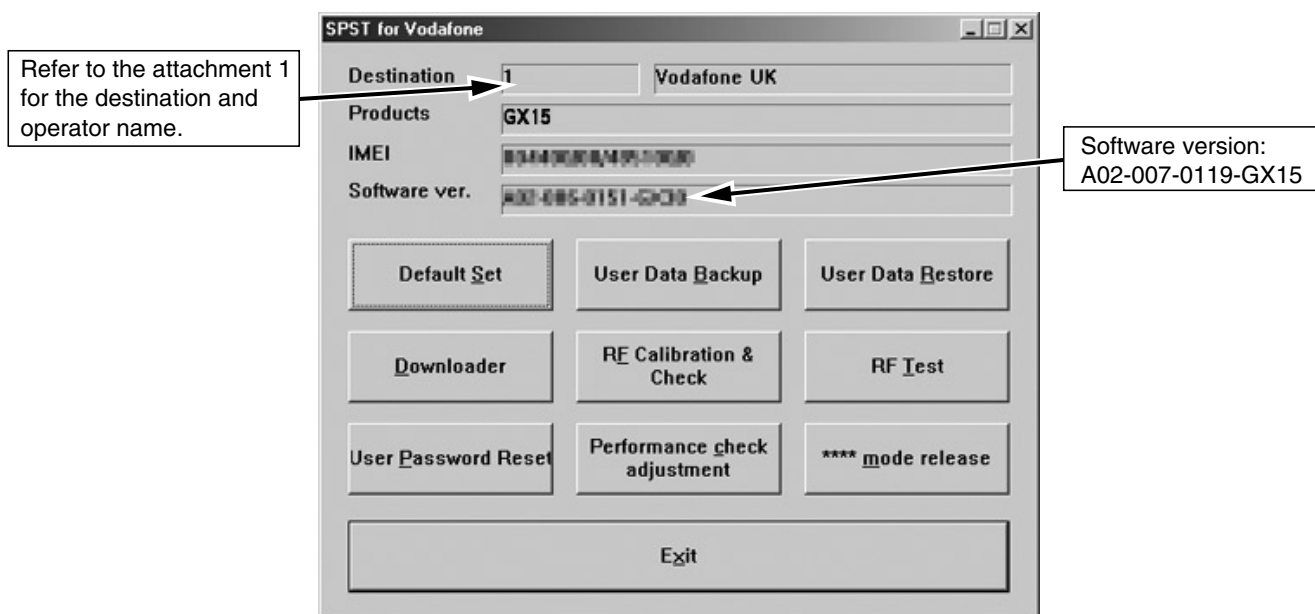


Figure 4

Buttons

Default Set	Refer to "4.1. Default setting". (see page 2-5)
User Data Back-up	Refer to "4.2. User data back-up". (see page 2-6)
User Data Restore	Refer to "4.3. User data restore". (see page 2-7)
Downloader	Refer to "4.4. Downloader". (see page 2-8)
RF Calibration & Check	Refer to "4.5. RF calibration & check". (see page 2-19)
RF Test	Refer to "4.6. RF test tool". (see page 2-27)
User Password Reset	Refer to "4.7. Password reset". (see page 2-33)
Performance check adjustment	Refer to "4.8. Performance check and adjustment". (see page 2-34)
**** mode release	Refer to "4.9. ****mode release". (see page 2-41)
Exit	End SPST.

Attachment 1 Destination and operator name list

No.	Operator name		Country	Model name
01	Vodafone UK	Post-Paid	UK	A4TQGX15E
02	Airtel	Post-Paid	Spain	A4TQGX15S
03	SFR	Post-Paid	France	A4TQGX15F
04	Vodafone Omnitel	Post-Paid	Italy	A4TQGX15T
05	D2	Post-Paid	Germany	A4TQGX15G
06	Vodafone NL	Post-Paid	Netherlands (Holland)	A4TQGX15H
08	Vodafone Ireland	Post-Paid	Ireland	A4TQGX15R
10	Vodafone Greece	Post-Paid	Greece	A4TQGX15D
11	Vodafone Hungary	Post-Paid	Hungary	A4TQGX15B
12	Vodafone Australia	Post-Paid	Australia	A4TQGX15A
13	Vodafone New Zealand	Post-Paid	New Zealand	A4TQGX15Z
14	Vodafone Sweden	Post-Paid	Sweden	A4TQGX15W
15	Vodafone Egypt	Post-Paid	Egypt	A4TQGX15Q
16	Vodafone Malta	Post-Paid	Malta	A4TQGX15L
17	Swisscom	Post-Paid	Switzerland	A4TQGX15C
45	D2	Pre-Paid	Germany	A4TQGX15GP
48	Vodafone PT	Pre-Paid	Portugal	A4TQGX15PP
50	Vodafone UK	Pre-Paid	UK	A4TQGX15EP

3. Adjustments for GX15

1. Adjustments are required after replacing the following parts. (○)

Parts	Temperature adjustment (Camera)	Temperature adjustment (Battery)	Display flicker adjustment	White defect correction	Black defect correction
TH102	○	×	×	×	×
Display unit	×	×	○	×	×
Camera unit	×	×	×	○	○

When replacing other parts in the RF section, carry out RF calibration.

2. Click the buttons on the SPST screen for adjustments.

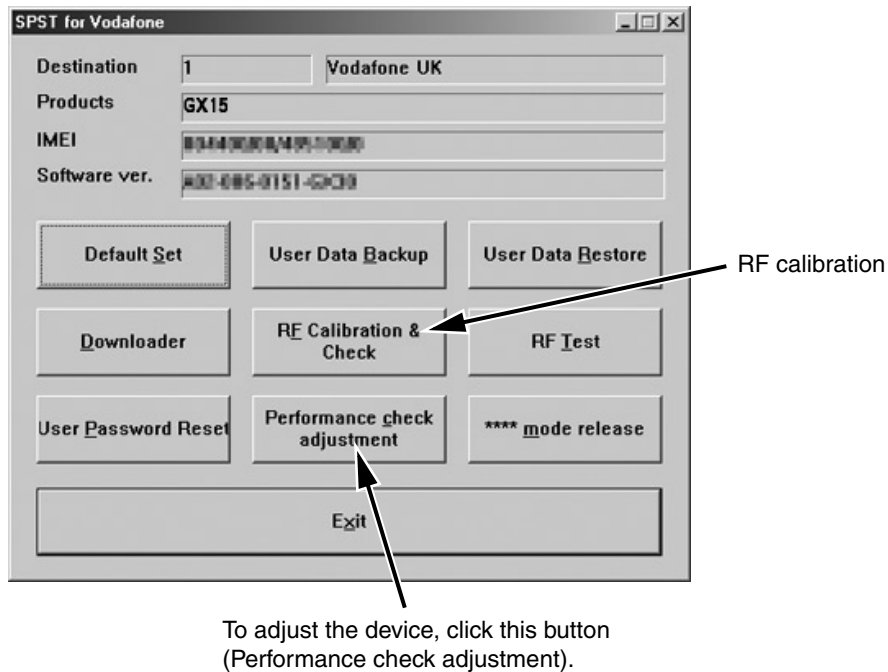


Figure 5

3. The following screen appears.

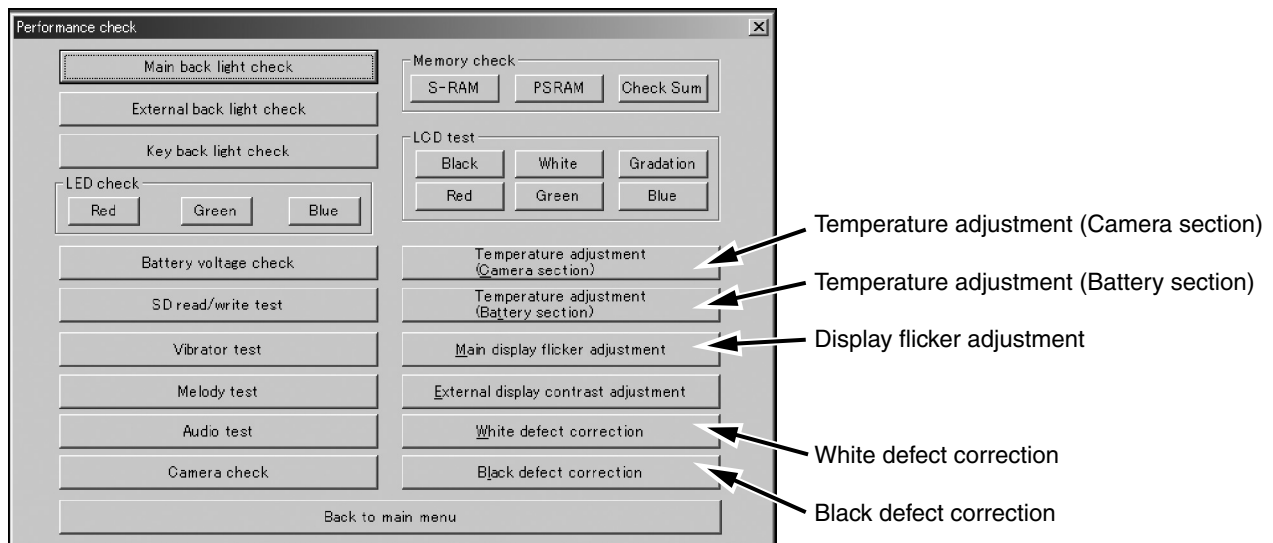


Figure 6

4. Functions

4.1. Default setting

SPST can restore the factory settings.

This function

1. Deletes all user data in the file system;
2. Restores all WAP settings to default; and
3. Restores the values set by the user to default.

(MEPLOCK settings, the destination and operator name do not change.)

<Operation>

- 1) Set the COM port on the SPST initial screen and click "Default Set".
- 2) Click "Yes" to proceed. Click "No" to exit.

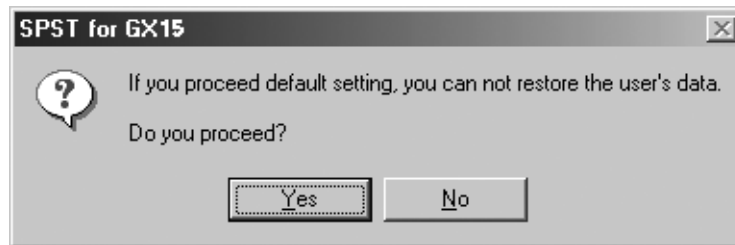


Figure 7

- 3) Click "No" to back-up the MEPLOCK data. Click "Yes" to restore default settings.

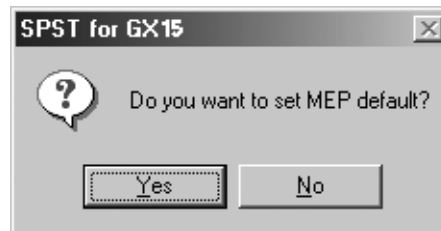


Figure 8

- 4) Communication starts.



Figure 9

- 5) The following appears when you select "Yes" in step 3 and MEPLOCK data exists. Click "Yes" to restore the data.

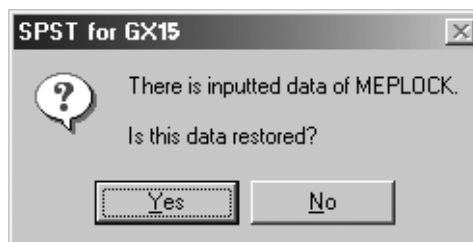


Figure 10

6) After the handset (phone) is turned on, the initialisation is complete.



Figure 11

4.2. User data back-up

SPST saves all the data stored on the handset (phone).

1. Set the COM port on the SPST initial screen and click "User Data Backup".
2. Specify the file name in the following dialogue box and click "Save".

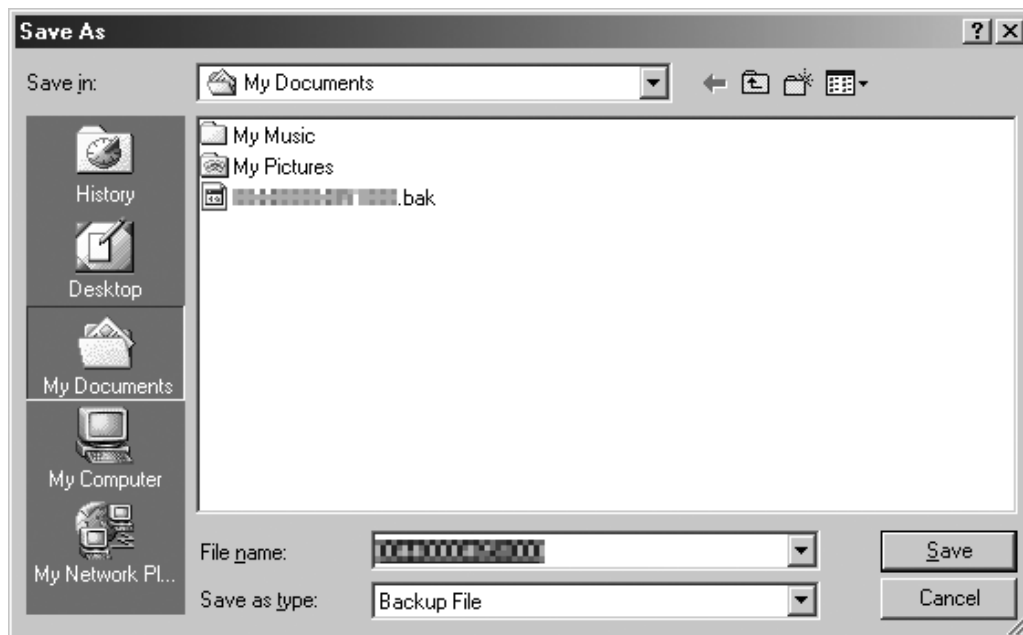


Figure 12

3. The communicating dialogue box appears whilst processing.

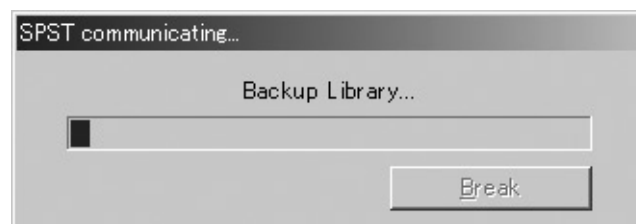


Figure 13

4. When completed, the following message appears. Click "OK".

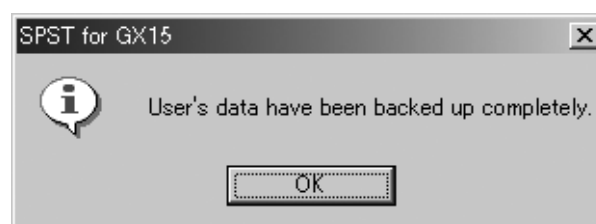


Figure 14

4.3. User data restore

SPST completely restores the backed up data.

1. Set the COM port on the SPST initial screen and click "User Data Restore".
2. Specify the file name in the following dialogue box and click "Save".

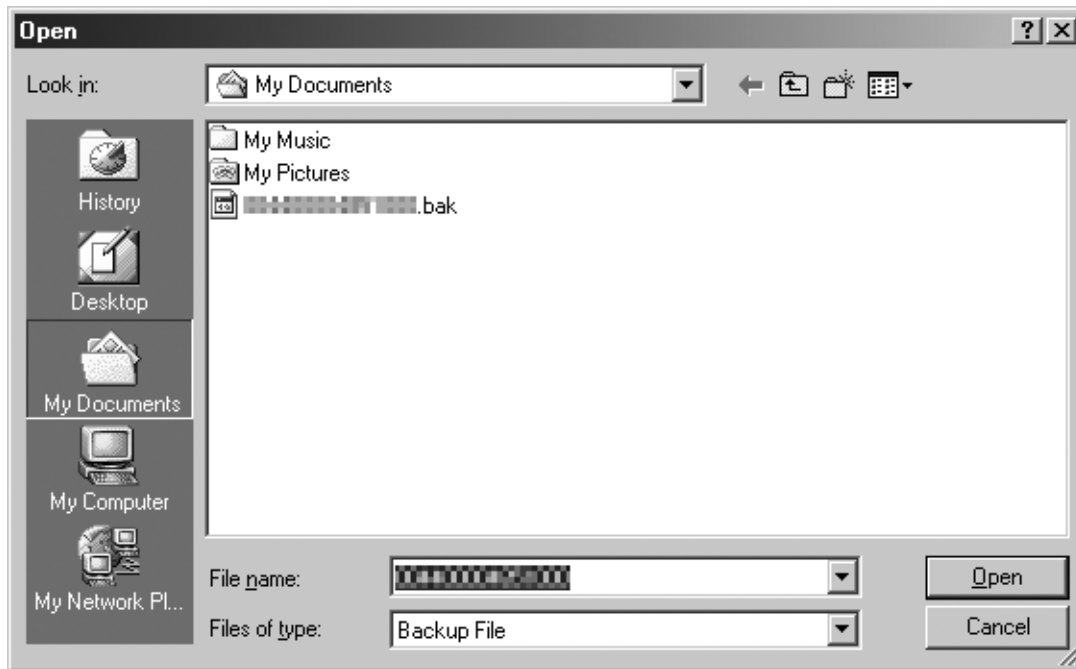


Figure 15

3. The communicating dialogue box appears whilst processing.

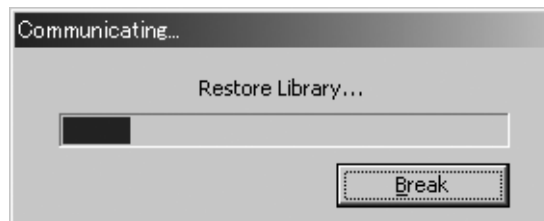


Figure 16

4. When the restore is complete, click "OK".

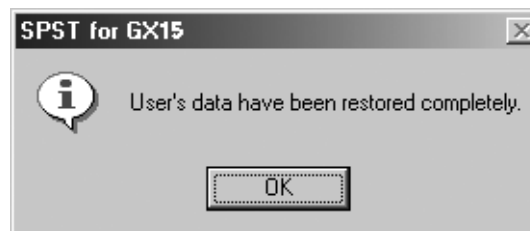


Figure 17

4.4. Downloader

4.4.1 Introduction

Downloader allows you to upgrade the firmware.

1) Required devices

- PC (Operating System: Windows 2000, XP)
- GX15 handset (phone)



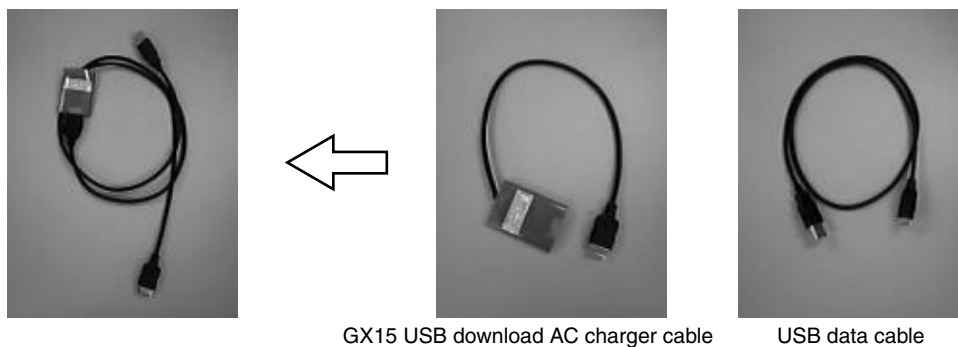
Figure 18

- USB hub
You can use a USB hub to download data to multiple handsets (phones) at a time.
(Recommended product) USB hub from Adaptec: XHUB7PLUS



Figure 19

- USB download cable



GX15 USB download AC charger cable

USB data cable

Figure 20

- * The USB download cable consists of the GX15 USB download AC charger cable and a USB data cable.
- * A USB data cable is not the existing download cable.
- * The USB download cable is exclusively for download, not for any other purpose.

2) Precautions

You can prevent problems from using the GX15 upgrading tool.
Please read the following before use.

- * Download may fail depending on the version of Windows.
It is recommended to update Windows to the latest version before you start.
- * Handsets (Phones) may not be recognised depending on the PC.
Disconnect the USB download cable connected with PC from the handset (phone) and reconnect.
If the handset (phone) is still not recognised, repeat a few times.
- * Make sure to remove the handset (phone) battery.
(Download must be performed without a battery inserted.)
- * Do not start/restart a PC with a handset (phone) connected.
- * If a PC is set to the power saving mode, disable it before download.
- * Whilst using a USB hub for download, do not use the remaining ports for other devices. Download may fail.

4.4.2 Installation of the device driver

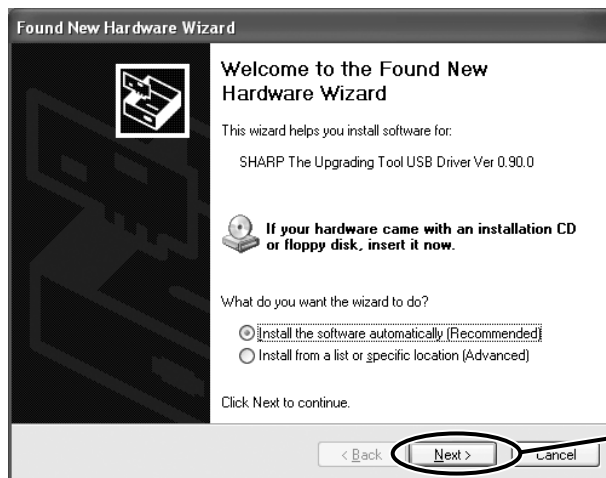
Install the device driver (SHARP The Upgrading Tool USB Device Ver 0.90.0) on your PC.

1. Connect a PC and GX15 handset (phone) with the USB download cable.
[Make sure to remove the handset (phone) battery before connecting them.]



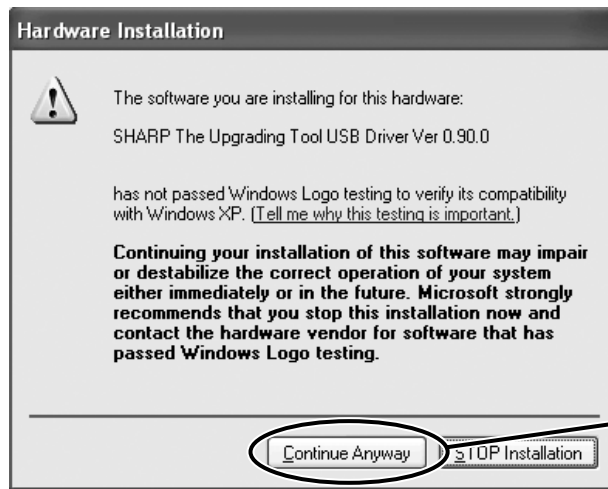
Figure 21

2. Install the device driver following the Hardware Wizard.
(For Windows 2000, the driver is automatically installed.)



Press "Next >" button.

Figure 22



Press "Continue Anyway" button.

Figure 23



Screen during installation.

Figure 24



Press "Finish" button.

Figure 25 Screen after installation

- * Install the device driver for all handsets (phones) connected to the PC (including those via a USB hub).
- * If a handset (phone) is not recognised when connected to a PC:
Disconnect and reconnect the USB download cable.
[If the handset (phone) is still not recognised, repeat a few times.]

4.4.3 Download

1) Application startup and screen descriptions

The icon below is created on your desktop after installation. Double-click it to start the Upgrading tool. You can also start the application by selecting "The GX15 UpgradingTool" from the Start menu.

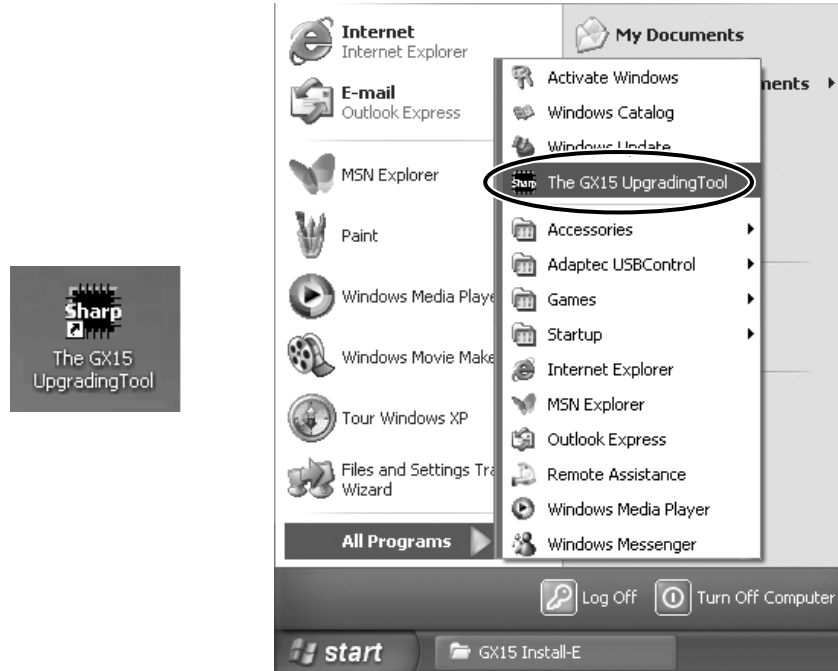


Figure 26

The download setup screen appears after starting the application.

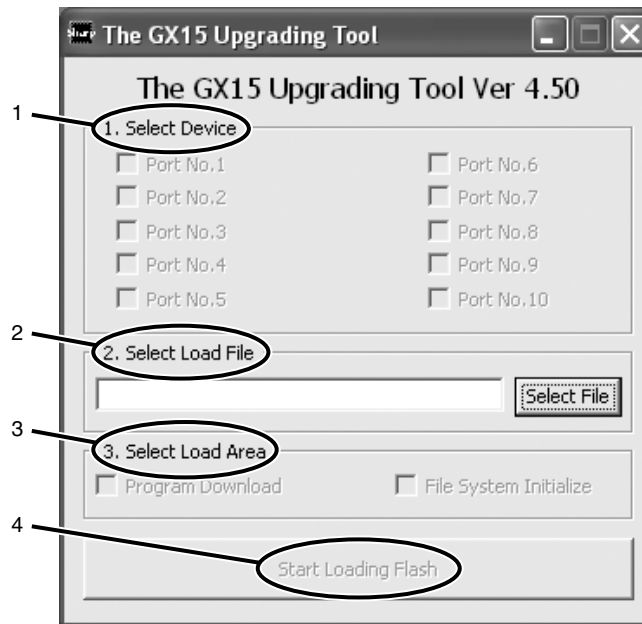


Figure 27

1. Select Device: Shows port numbers of handsets (phones) recognised by the PC.
2. Select Load File: Specify a file to download.
3. Select Load Area: Select data space to store files.
4. Start Loading Flash: Press to start download.

2) Download

<<Make sure the following before starting download>>

- The handset (phone) battery is removed.
- The device driver is installed on your PC.
- Handset (Phone) is connected to a PC with the USB download cable.

<< Easy steps for download>>

1. Selecting a handset (phone)
When handset (phone) is recognised as a device, the corresponding Port No. box is checked.
[If the box is unchecked, data will not be downloaded to handset (phone).]
2. Selecting a download file
Select a file to download.
3. Selecting download area
<Example>
Check "Program Download" and "File System Initialize" and start download.
4. Starting download
Press "Start Loading Flash" button to start download.
5. Completing download
When download is successfully completed, "O" appears in the corresponding Port No. boxes. Click "OK" to exit.



Figure 28

2). 1 Selecting device

Check the corresponding Port No. box for the handset (phone) you want to download data to.

[When the handset (phone) is connected to a PC, the corresponding box is checked.]

Make sure the handset (phone) (without a battery) is connected to a PC with the USB download cable.

If the corresponding box cannot be checked, the handset (phone) may not be recognised correctly. Disconnect and reconnect the USB download cable.

2). 2 Selecting download file.

Select a file to download.

Press "Select File" button in "2. Select Load File". The file selection screen appears.

Select a file to download and press "Open" button.

When you select a file, the file name appears in the text box. Proceed to "3. Select Load Area" becomes setting.

- Only Motorola format (.mot) file can be downloaded.
- You can select a file by entering a file name in the text box (without pressing "Select File" button). In this case, enter the file location together.

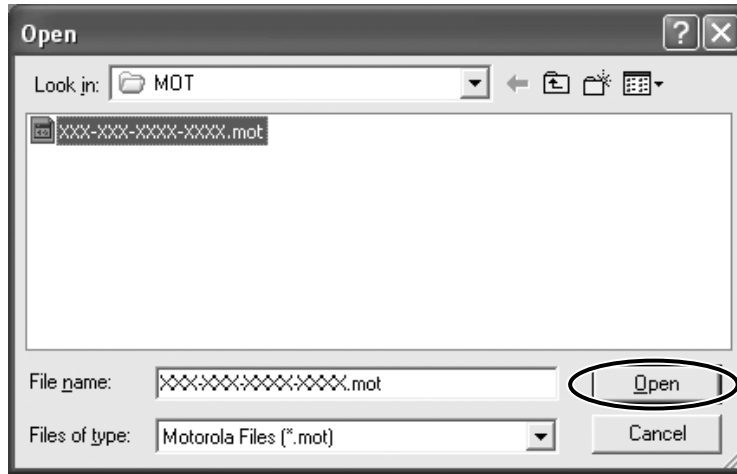


Figure 29 File selection screen

2). 3 Selecting download area

Usually select both "Program Download" and "File System Initialize".

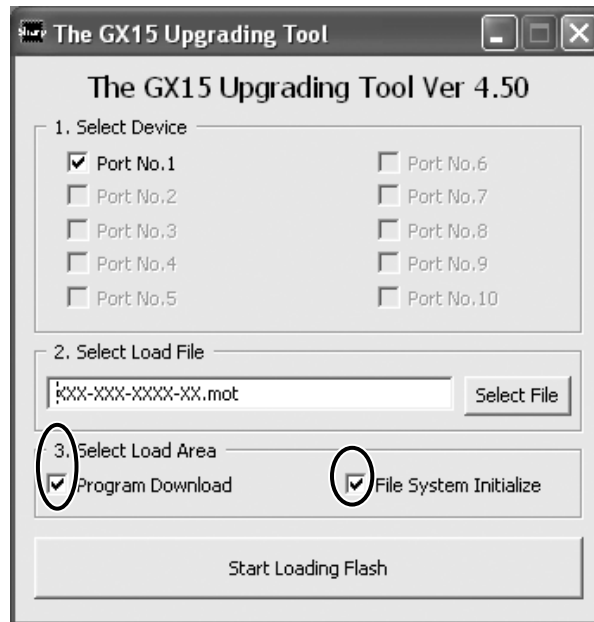


Figure 30

<"Program Download" and "File System Initialize">

When both are selected, programme data is downloaded and user data area is initialised. Note that all the user data will be deleted after initialisation.

2). 4 Starting download

Remove the handset (phone) battery before starting download.

- “Start Loading Flash” button is disabled when handset (phone) is not connected to a PC.
Connect the PC and handset (phone) with the USB download cable.
- If “Start Loading Flash” button is disabled after connecting the handset (phone):
Case 1: Handset (Phone) is not recognised by the PC.
Reconnect the PC and handset (phone) with the USB download cable.
Case 2: Some items are not selected on the download setup screen.
Make sure items of 1 - 3 are checked.



No handsets (phones) are connected.



A handset (phone) is connected.

Figure 31

Press “Start Loading Flash” button to start download.

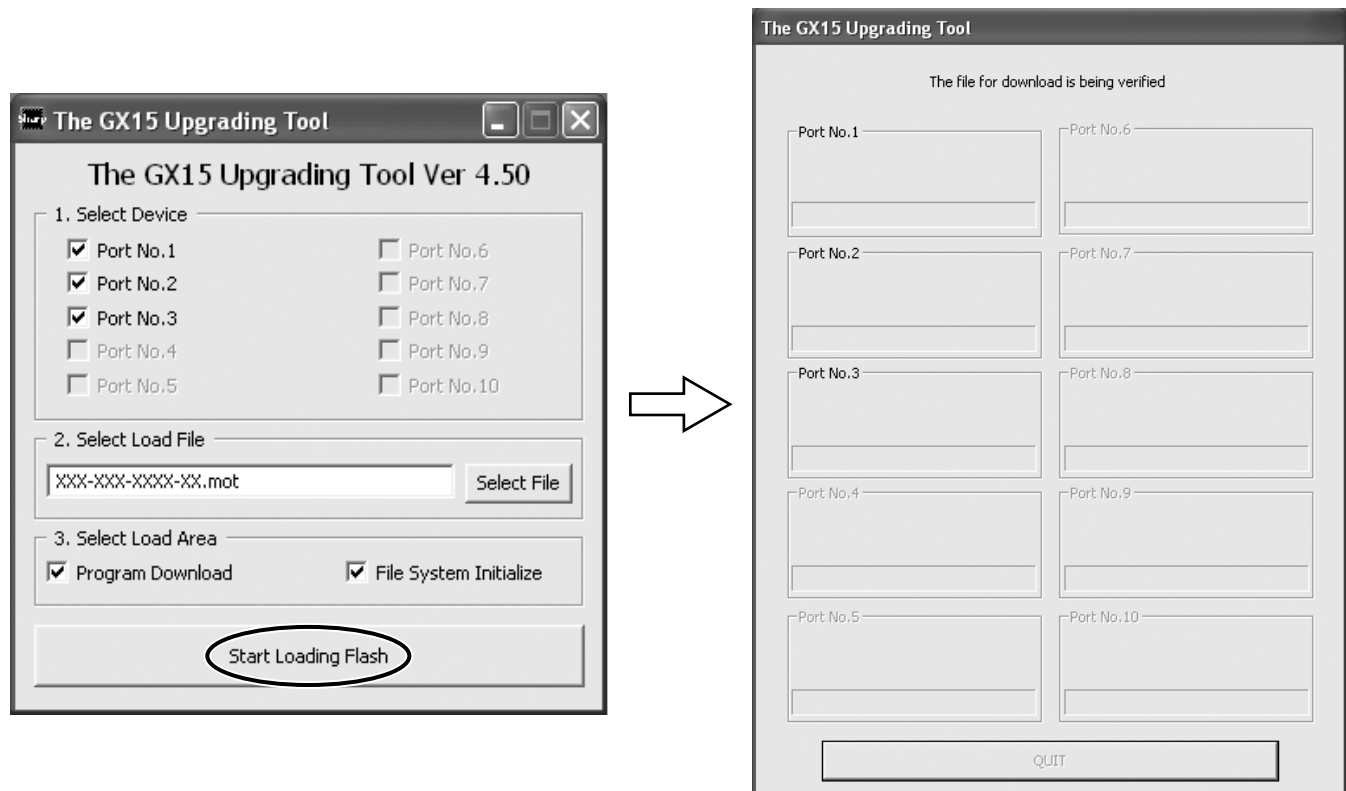
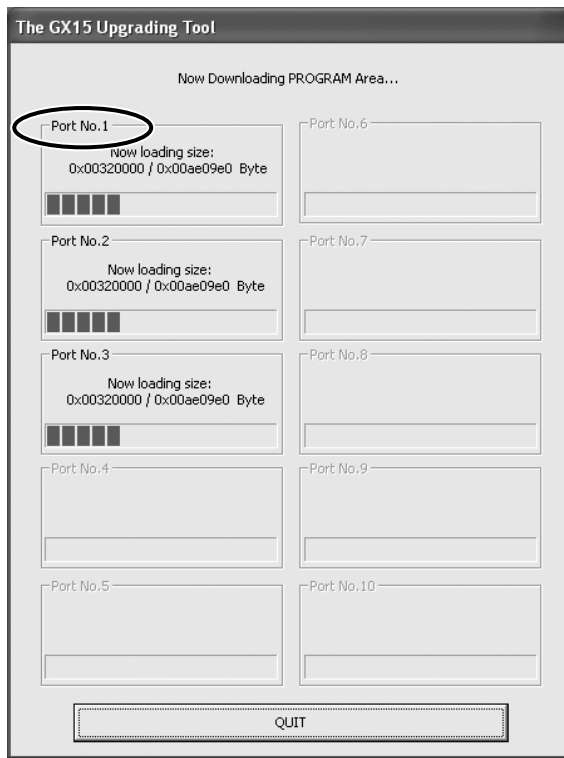
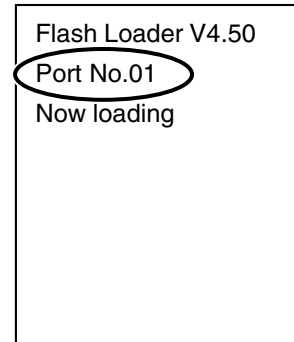


Figure 32

Download progress is shown on the PC and handset (phone).



Display on PC



Display on handset (phone)
(Port No. 1)

Figure 33 Screen during download

<< Aborting download>>

Press "Quit" button on the PC screen to stop download.

"Please wait for finishing process..." is displayed during the process. Do not disconnect the USB download cable until the message disappears.

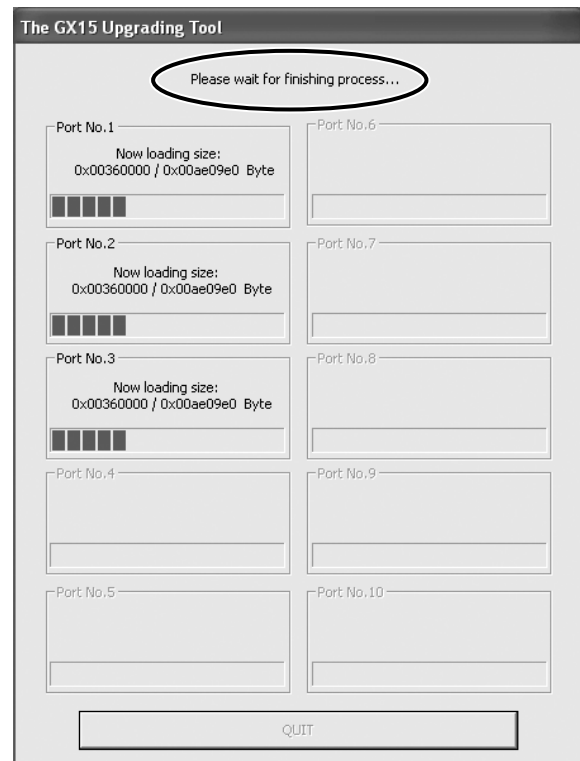
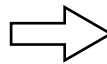
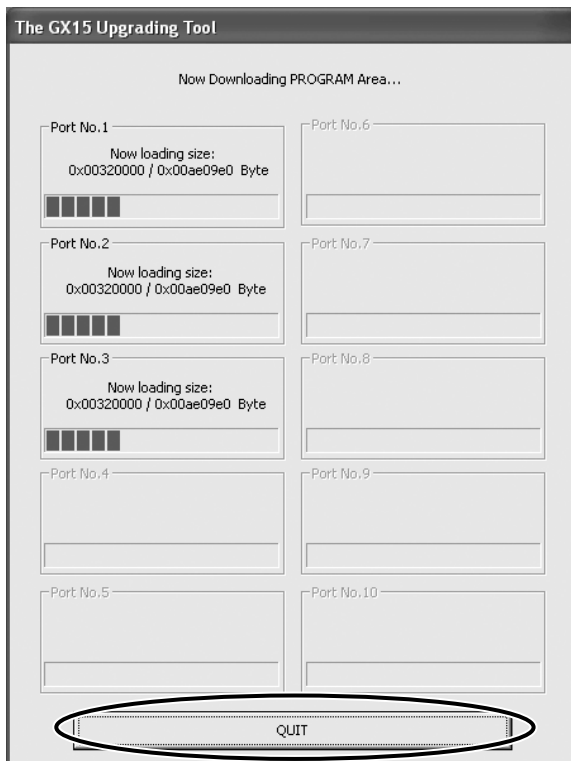


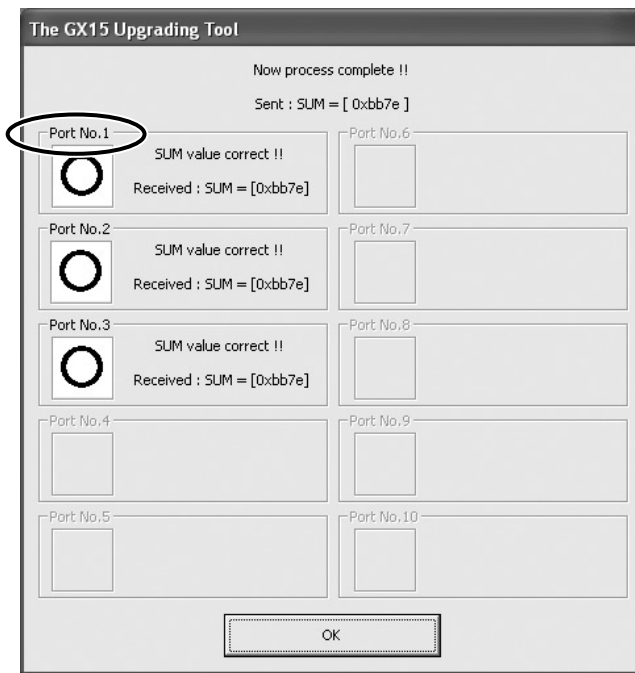
Figure 34

2). 5 Completing download

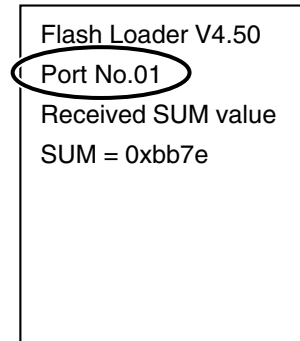
Press "OK" button before disconnecting the handset (phone).

When download is successfully completed, "O" appears as shown below.

In the screen shot, downloaded data are written to the handset (phone) correctly.



Display on PC



Display on handset (phone)
(Port No. 1)

Figure 35 Screen after download

<<Download errors>>

If download fails, "X" appears as shown below.

Disconnect and reconnect the USB download cable, and then retry.

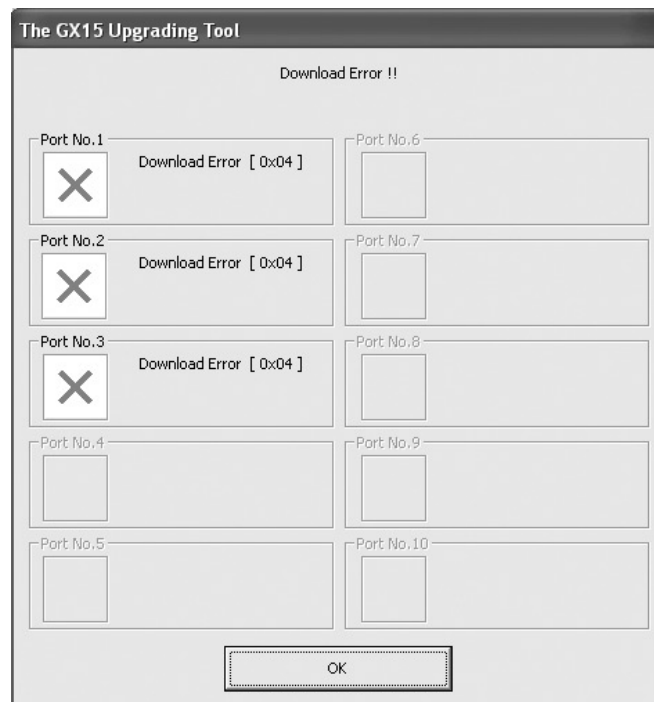


Figure 36

3) Download via a USB hub

Use a USB hub to download data to multiple handsets (phones) at a time.
[Up to 10 handsets (phones) at a time]

* (Recommended product) USB hub from Adaptec: XHUB7PLUS (operation checked)

1. A USB hub is required. Use more according to the number of ports.
*When using more than one hub, connect them as shown in the section 3).1.
2. Connect the USB hub to a PC.
3. Into the USB hub, insert the same number of USB download cables as handsets (phones).
4. Connect the USB download cables to handsets (phones).
* Make sure handset (phone) batteries are removed.
5. Install the device driver (SHARP The Upgrading Tool USB Device Ver 0.90.0).
(For Windows 2000, the driver is automatically installed.)
6. On the download setup screen, port numbers become selectable for recognised handsets (phones).
Refer to the section "2) Download" to perform download.

Note:

Do not connect other devices to the remaining ports during download via a USB hub. Download may fail.

3). 1 Using multiple USB hubs

Connect multiple USB hubs according to the following.

1. Connection in series (recommended)

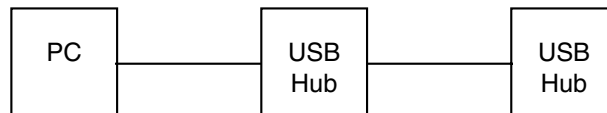


Figure 37

2. Connection in parallel

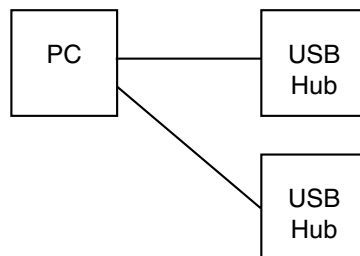


Figure 38

* When using more than one USB hubs, refer to the manuals to interconnect them.

4) Estimated download time

Download takes approximately 10 to 22 minutes when "Program Download" and "File System Initialize" are selected.
[Time depends on the number of handsets (phones) you are downloading data to.]

* Use of a USB 2.0 port will shorten the download time.

4.4.4 Troubleshooting

This section describes error messages, solutions, and other important information.

* Error messages appear on the PC screen.

1) Error message list

No.	Displayed message	Cause/Solution
1	Unable to open file	Failed to open the MOT file to download. The following are possible causes: - The file path contains special characters. Special characters: ~ ¥ / . ; , * ? " < > ~ - The extension of the file is not ".mot". - The file is in use. - The file path contains more than 257 bytes of characters. - There is no drive letter in the file path. - The file path is entered, but the file name is not. - The file cannot be found. - The file is located on a CD-ROM, removal disk, RAM disk or network drive.
2	Unable to Setup Device	Check that the USB download cable is correctly connected to PC and handset (phone).
3	The file you selected is unsuitable for Upgrading.	The file is not downloadable. Select a GX15 MOT file.
4	Download Error !!	- Close running resident programmes. - Close all other running applications. - Reconnect the USB download cable and retry. - Install Windows updates (see "4.4.1.2) Precautions")

* If an error occurs, disconnect and reconnect the USB download cable before you download again.

2) Other important information

- Do not start /restart a PC with a handset (phone) connected.
(PC may freeze depending on the type.)
- If the power saving mode is set on the PC, disable it before download.
(Download fails if the power saving mode is activated during the process and the PC may freeze.)

4.5. RF calibration & check

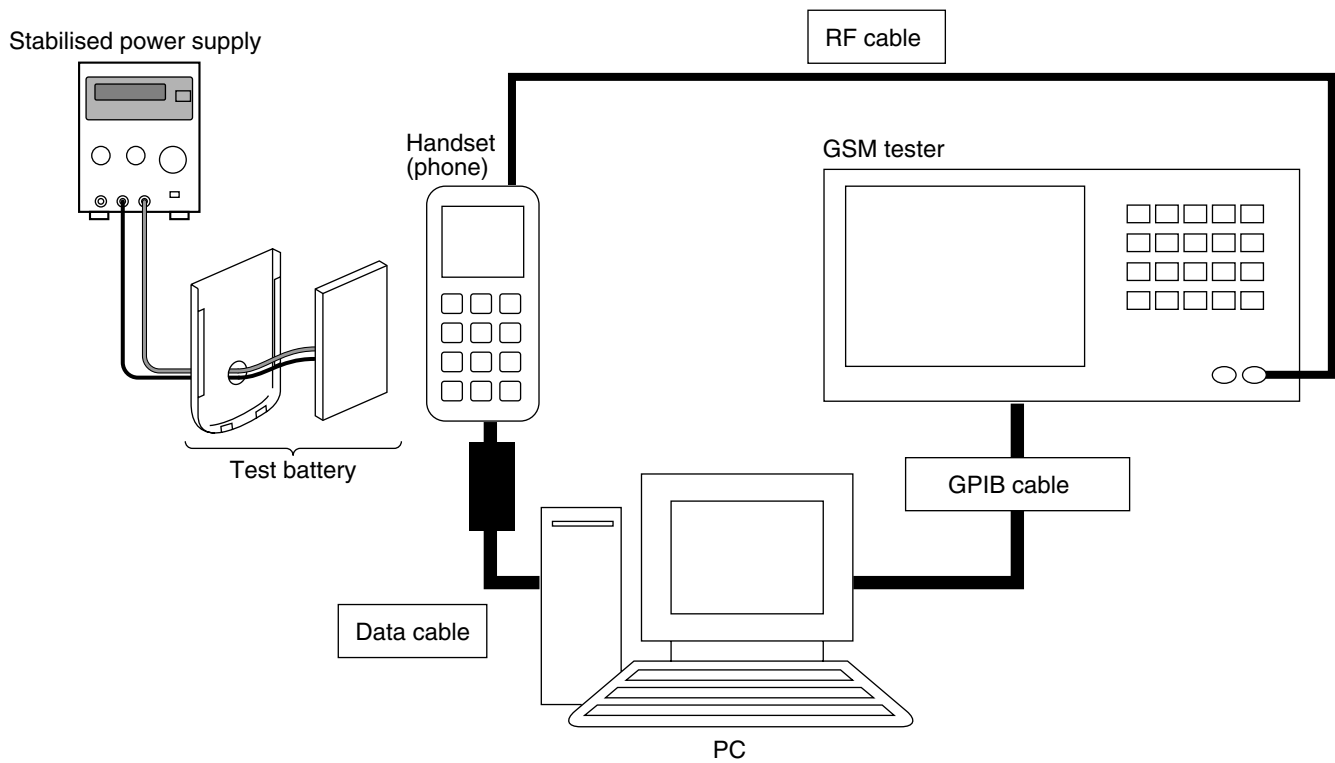


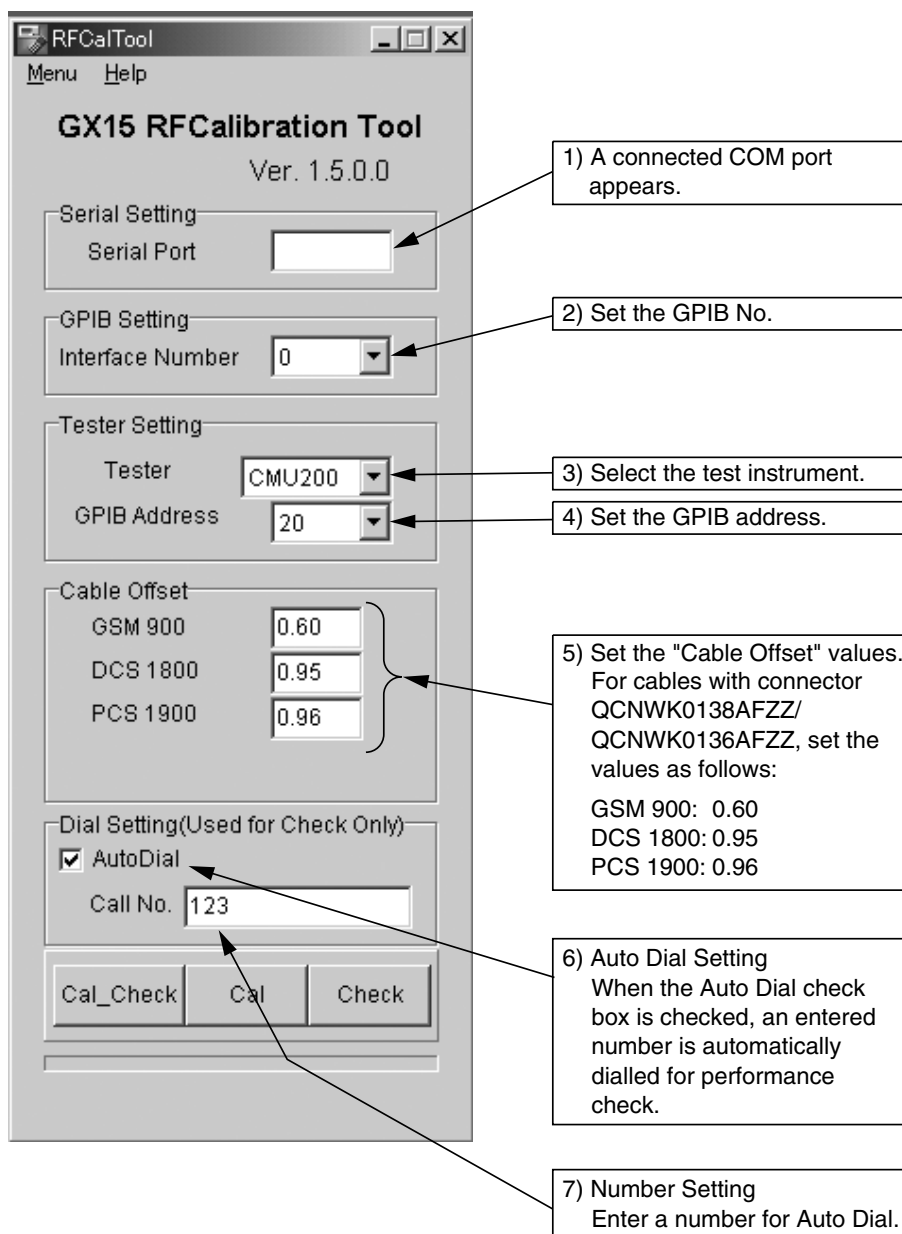
Figure 39

4.5.1 Preparation

- Connect PC and GSM tester with a GPIB cable.
- Connect PC and handset (phone) with a data cable. (Use a test battery or similar.)
- Connect an RF cable of GSM tester to handset (phone).

4.5.2 Default setting for the programme.

- Activate the programme and set defaults.

**Figure 40****4.5.3 RF calibration**

1. Apply 4 V using a stabilised power supply and turn on the handset (phone).
2. Start "RF calibration & check" on SPST and click "Cal".
3. When initialisation is complete, the following message appears. Lower the stabilised power supply voltage to 3.7 V and click "OK".

**Figure 41**

4. Make sure the voltage is set properly and press "OK".
(Calibration starts.)



Figure 42

5. Click "OK".



Figure 43

6. The initial screen returns.

4.5.4 RF performance check

1. Apply 4 V using a stabilised power supply and turn on the handset (phone).
2. Start "RF calibration & check" on SPST and click "Check".
3. When initialisation is complete, the following message appears. Lower the stabilised power supply voltage to 3.7 V and click "OK".



Figure 44

4. Make sure the voltage is set properly and press "OK".
(RF performance check starts.)

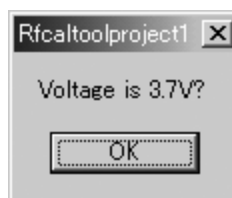


Figure 45

5. The following dialogue box appears after the check. Increase the stabilised power supply voltage to 4.0 V and click "OK".



Figure 46

6. Make sure the voltage is set properly and press "OK".



Figure 47

7. RF performance check is complete. Click "Save As..." and name the file to save the result. Click "OK" to exit.

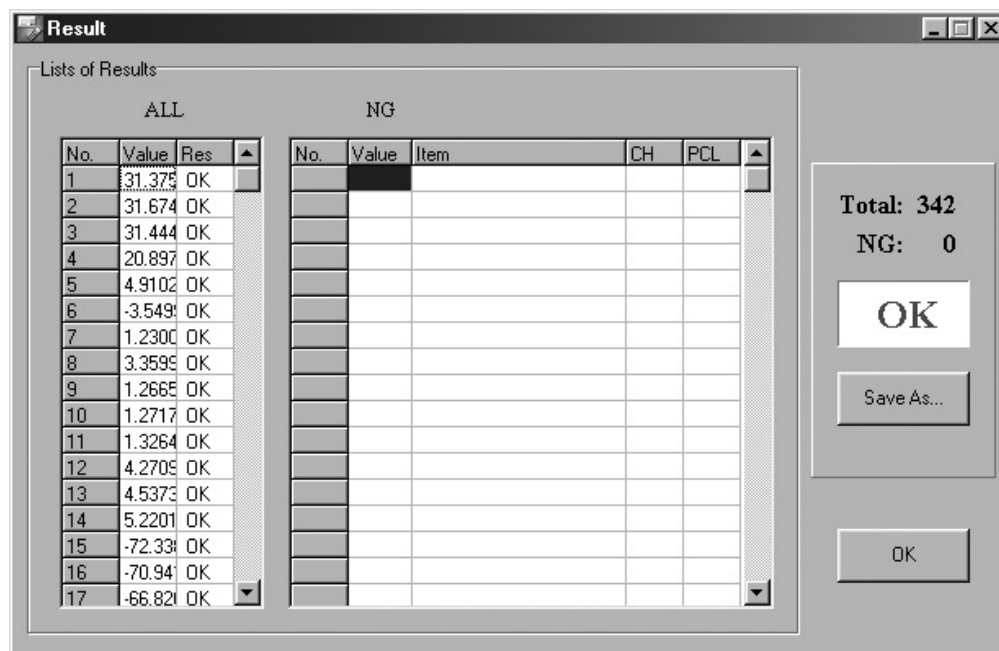


Figure 48

The following will be displayed in case of failure.
See the attachment 2 for troubleshooting.

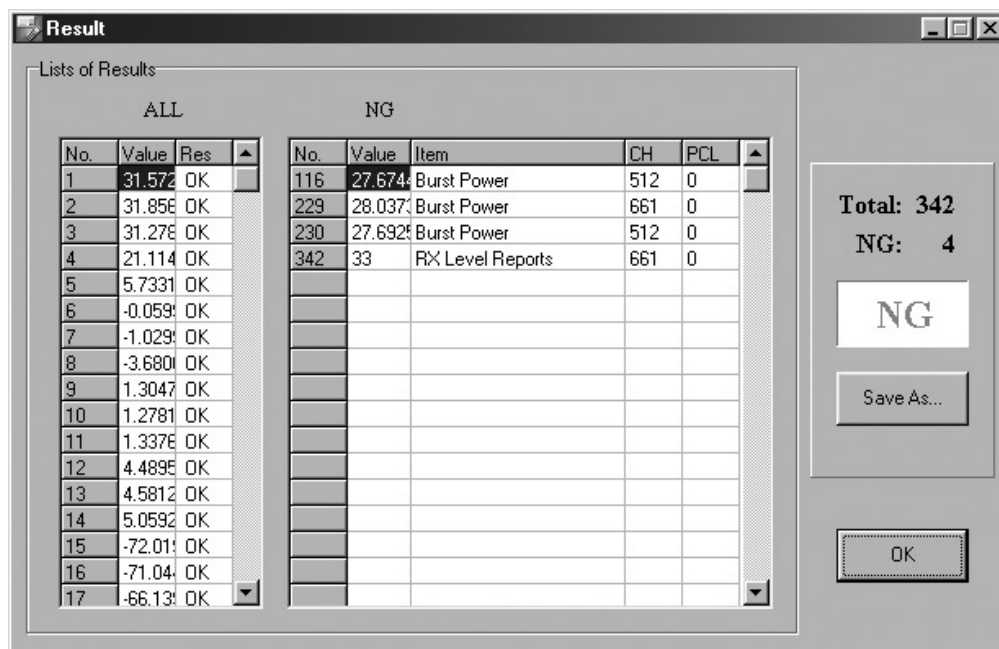


Figure 49

8. Click "OK".



Figure 50

9. The initial screen returns.

Note:

The RF calibration tool allows the calibration but not the check when the terminal fails to catch signals from the GSM tester (unable to access a network with "no service" displayed). There is a possibility that CMU200 did not start properly. Turn off CMU200 and restart.

4.5.5 RF calibration & RF performance check

Pressing the "Cal_Check" button initiates RF calibration and RF performance check in succession.

Since some operations are skipped, this is handier than executing calibration ("Cal" button) and performance check ("Check" button) separately.

1. Set the stabilised power supply voltage to 4 V and turn on the handset (phone).
2. Start "RF calibration & check" on SPST and press "Cal_Check".
3. Lower the stabilised power supply voltage to 3.7 V and press "OK".
4. Make sure the voltage is set properly and press "OK".
5. After the calibration and check, increase the stabilised power supply voltage to 4.0 V and press "OK".
6. Make sure the voltage is set properly and press "OK".
7. To save the results, press "Save As..." and enter a file name. To exit, press "OK".
8. Press "OK".
9. The initial screen returns.

(Steps 1 - 4 and 5 - 9 are respectively equivalent to RF calibration by the "Cal" button and RF performance check by the "Check" button.)

Attachment 2

Whole inspection list by RF performance check.

Band	Sending/Receiving	No.	Item to be inspected	Channel	PCL
GSM	Tx	1	Burst Power	37CH	PCL5
		2	Burst Power	975CH	PCL5
		3	Burst Power	124CH	PCL5
		4	Burst Power	37CH	PCL11
		5	Burst Power	37CH	PCL19
		6	Frequency Error	37CH	PCL5
		7	Frequency Error	975CH	PCL5
		8	Frequency Error	124CH	PCL5
		9	Phase Error (RMS)	37CH	PCL5
		10	Phase Error (RMS)	975CH	PCL5
		11	Phase Error (RMS)	124CH	PCL5
		12	Phase Error (Peak)	37CH	PCL5
		13	Phase Error (Peak)	975CH	PCL5
		14	Phase Error (Peak)	124CH	PCL5
		15	Mod_spectrum -800	37CH	PCL5
		16	Mod_spectrum -600	37CH	PCL5
		17	Mod_spectrum -400	37CH	PCL5
		18	Mod_spectrum -250	37CH	PCL5
		19	Mod_spectrum -200	37CH	PCL5
		20	Mod_spectrum +200	37CH	PCL5
		21	Mod_spectrum +250	37CH	PCL5
		22	Mod_spectrum +400	37CH	PCL5
		23	Mod_spectrum +600	37CH	PCL5
		24	Mod_spectrum +800	37CH	PCL5
		25	Mod_spectrum -800	975CH	PCL5
		26	Mod_spectrum -600	975CH	PCL5
		27	Mod_spectrum -400	975CH	PCL5
		28	Mod_spectrum -250	975CH	PCL5
		29	Mod_spectrum -200	975CH	PCL5
		30	Mod_spectrum +200	975CH	PCL5
		31	Mod_spectrum +250	975CH	PCL5
		32	Mod_spectrum +400	975CH	PCL5
		33	Mod_spectrum +600	975CH	PCL5
		34	Mod_spectrum +800	975CH	PCL5
		35	Mod_spectrum -800	124CH	PCL5
		36	Mod_spectrum -600	124CH	PCL5
		37	Mod_spectrum -400	124CH	PCL5
		38	Mod_spectrum -250	124CH	PCL5
		39	Mod_spectrum -200	124CH	PCL5
		40	Mod_spectrum +200	124CH	PCL5
		41	Mod_spectrum +250	124CH	PCL5
		42	Mod_spectrum +400	124CH	PCL5
		43	Mod_spectrum +600	124CH	PCL5
		44	Mod_spectrum +800	124CH	PCL5
		45	Mod_spectrum -800	37CH	PCL11
		46	Mod_spectrum -600	37CH	PCL11
		47	Mod_spectrum -400	37CH	PCL11
		48	Mod_spectrum -250	37CH	PCL11
		49	Mod_spectrum -200	37CH	PCL11
		50	Mod_spectrum +200	37CH	PCL11
		51	Mod_spectrum +250	37CH	PCL11
		52	Mod_spectrum +400	37CH	PCL11
		53	Mod_spectrum +600	37CH	PCL11
		54	Mod_spectrum +800	37CH	PCL11
		55	Mod_spectrum -800	37CH	PCL19
		56	Mod_spectrum -600	37CH	PCL19
		57	Mod_spectrum -400	37CH	PCL19
		58	Mod_spectrum -250	37CH	PCL19
		59	Mod_spectrum -200	37CH	PCL19
		60	Mod_spectrum +200	37CH	PCL19

Band	Sending/Receiving	No.	Item to be inspected	Channel	PCL
		61	Mod_spectrum +250	37CH	PCL19
		62	Mod_spectrum +400	37CH	PCL19
		63	Mod_spectrum +600	37CH	PCL19
		64	Mod_spectrum +800	37CH	PCL19
		65	Switch_Spectrum -1800	37CH	PCL5
		66	Switch_Spectrum -1200	37CH	PCL5
		67	Switch_Spectrum -600	37CH	PCL5
		68	Switch_Spectrum -400	37CH	PCL5
		69	Switch_Spectrum +400	37CH	PCL5
		70	Switch_Spectrum +600	37CH	PCL5
		71	Switch_Spectrum +1200	37CH	PCL5
		72	Switch_Spectrum +1800	37CH	PCL5
		73	Switch_Spectrum -1800	975CH	PCL5
		74	Switch_Spectrum -1200	975CH	PCL5
		75	Switch_Spectrum -600	975CH	PCL5
		76	Switch_Spectrum -400	975CH	PCL5
		77	Switch_Spectrum +400	975CH	PCL5
		78	Switch_Spectrum +600	975CH	PCL5
		79	Switch_Spectrum +1200	975CH	PCL5
		80	Switch_Spectrum +1800	975CH	PCL5
		81	Switch_Spectrum -1800	124CH	PCL5
		82	Switch_Spectrum -1200	124CH	PCL5
		83	Switch_Spectrum -600	124CH	PCL5
		84	Switch_Spectrum -400	124CH	PCL5
		85	Switch_Spectrum +400	124CH	PCL5
		86	Switch_Spectrum +600	124CH	PCL5
		87	Switch_Spectrum +1200	124CH	PCL5
		88	Switch_Spectrum +1800	124CH	PCL5
		89	Switch_Spectrum -1800	37CH	PCL11
		90	Switch_Spectrum -1200	37CH	PCL11
		91	Switch_Spectrum -600	37CH	PCL11
		92	Switch_Spectrum -400	37CH	PCL11
		93	Switch_Spectrum +400	37CH	PCL11
		94	Switch_Spectrum +600	37CH	PCL11
		95	Switch_Spectrum +1200	37CH	PCL11
		96	Switch_Spectrum +1800	37CH	PCL11
		97	Switch_Spectrum -1800	37CH	PCL19
		98	Switch_Spectrum -1200	37CH	PCL19
		99	Switch_Spectrum -600	37CH	PCL19
		100	Switch_Spectrum -400	37CH	PCL19
		101	Switch_Spectrum +400	37CH	PCL19
		102	Switch_Spectrum +600	37CH	PCL19
		103	Switch_Spectrum +1200	37CH	PCL19
		104	Switch_Spectrum +1800	37CH	PCL19
		105	Burst Timing	37CH	PCL5
		106	Burst Timing	975CH	PCL5
		107	Burst Timing	124CH	PCL5
		108	Burst Timing	37CH	PCL11
		109	Burst Timing	37CH	PCL19
	Rx	110	Rx Sensitivity	37CH	PCL5
		111	Rx Sensitivity	975CH	PCL5
		112	Rx Sensitivity	124CH	PCL5
		113	Usable Receiver Level	37CH	PCL5
		114	Rx Level Reports	37CH	PCL5
DCS	Tx	115	Burst Power	699CH	PCL0
		116	Burst Power	512CH	PCL0
		117	Burst Power	885CH	PCL0
		118	Burst Power	699CH	PCL5
		119	Burst Power	699CH	PCL15
		120	Frequency Error	699CH	PCL0
		121	Frequency Error	512CH	PCL0
		122	Frequency Error	885CH	PCL0

Band	Sending/ Receive	No.	Item to be inspected	Channel	PCL	Band	Sending/ Receive	No.	Item to be inspected	Channel	PCL
		123	Phase Error (RMS)	699CH	PCL0			185	Switch_Spectrum +1200	699CH	PCL0
		124	Phase Error (RMS)	512CH	PCL0			186	Switch_Spectrum +1800	699CH	PCL0
		125	Phase Error (RMS)	885CH	PCL0			187	Switch_Spectrum -1800	512CH	PCL0
		126	Phase Error (Peak)	699CH	PCL0			188	Switch_Spectrum -1200	512CH	PCL0
		127	Phase Error (Peak)	512CH	PCL0			189	Switch_Spectrum -600	512CH	PCL0
		128	Phase Error (Peak)	885CH	PCL0			190	Switch_Spectrum -400	512CH	PCL0
		129	Mod_spectrum -800	699CH	PCL0			191	Switch_Spectrum +400	512CH	PCL0
		130	Mod_spectrum -600	699CH	PCL0			192	Switch_Spectrum +600	512CH	PCL0
		131	Mod_spectrum -400	699CH	PCL0			193	Switch_Spectrum +1200	512CH	PCL0
		132	Mod_spectrum -250	699CH	PCL0			194	Switch_Spectrum +1800	512CH	PCL0
		133	Mod_spectrum -200	699CH	PCL0			195	Switch_Spectrum -1800	885CH	PCL0
		134	Mod_spectrum +200	699CH	PCL0			196	Switch_Spectrum -1200	885CH	PCL0
		135	Mod_spectrum +250	699CH	PCL0			197	Switch_Spectrum -600	885CH	PCL0
		136	Mod_spectrum +400	699CH	PCL0			198	Switch_Spectrum -400	885CH	PCL0
		137	Mod_spectrum +600	699CH	PCL0			199	Switch_Spectrum +400	885CH	PCL0
		138	Mod_spectrum +800	699CH	PCL0			200	Switch_Spectrum +600	885CH	PCL0
		139	Mod_spectrum -800	512CH	PCL0			201	Switch_Spectrum +1200	885CH	PCL0
		140	Mod_spectrum -600	512CH	PCL0			202	Switch_Spectrum +1800	885CH	PCL0
		141	Mod_spectrum -400	512CH	PCL0			203	Switch_Spectrum -1800	699CH	PCL5
		142	Mod_spectrum -250	512CH	PCL0			204	Switch_Spectrum -1200	699CH	PCL5
		143	Mod_spectrum -200	512CH	PCL0			205	Switch_Spectrum -600	699CH	PCL5
		144	Mod_spectrum +200	512CH	PCL0			206	Switch_Spectrum -400	699CH	PCL5
		145	Mod_spectrum +250	512CH	PCL0			207	Switch_Spectrum +400	699CH	PCL5
		146	Mod_spectrum +400	512CH	PCL0			208	Switch_Spectrum +600	699CH	PCL5
		147	Mod_spectrum +600	512CH	PCL0			209	Switch_Spectrum +1200	699CH	PCL5
		148	Mod_spectrum +800	512CH	PCL0			210	Switch_Spectrum +1800	699CH	PCL5
		149	Mod_spectrum -800	885CH	PCL0			211	Switch_Spectrum -1800	699CH	PCL15
		150	Mod_spectrum -600	885CH	PCL0			212	Switch_Spectrum -1200	699CH	PCL15
		151	Mod_spectrum -400	885CH	PCL0			213	Switch_Spectrum -600	699CH	PCL15
		152	Mod_spectrum -250	885CH	PCL0			214	Switch_Spectrum -400	699CH	PCL15
		153	Mod_spectrum -200	885CH	PCL0			215	Switch_Spectrum +400	699CH	PCL15
		154	Mod_spectrum +200	885CH	PCL0			216	Switch_Spectrum +600	699CH	PCL15
		155	Mod_spectrum +250	885CH	PCL0			217	Switch_Spectrum +1200	699CH	PCL15
		156	Mod_spectrum +400	885CH	PCL0			218	Switch_Spectrum +1800	699CH	PCL15
		157	Mod_spectrum +600	885CH	PCL0			219	Burst Timing	699CH	PCL0
		158	Mod_spectrum +800	885CH	PCL0			220	Burst Timing	512CH	PCL0
		159	Mod_spectrum -800	699CH	PCL5			221	Burst Timing	885CH	PCL0
		160	Mod_spectrum -600	699CH	PCL5			222	Burst Timing	699CH	PCL5
		161	Mod_spectrum -400	699CH	PCL5			223	Burst Timing	699CH	PCL15
		162	Mod_spectrum -250	699CH	PCL5		Rx	224	Rx Sensitivity	699CH	PCL0
		163	Mod_spectrum -200	699CH	PCL5			225	Rx Sensitivity	512CH	PCL0
		164	Mod_spectrum +200	699CH	PCL5			226	Rx Sensitivity	885CH	PCL0
		165	Mod_spectrum +250	699CH	PCL5			227	Usable Receiver Level	699CH	PCL0
		166	Mod_spectrum +400	699CH	PCL5			228	Rx Level Reports	699CH	PCL0
		167	Mod_spectrum +600	699CH	PCL5	PCS	Tx	229	Burst Power	661CH	PCL0
		168	Mod_spectrum +800	699CH	PCL5			230	Burst Power	512CH	PCL0
		169	Mod_spectrum -800	699CH	PCL15			231	Burst Power	810CH	PCL0
		170	Mod_spectrum -600	699CH	PCL15			232	Burst Power	661CH	PCL5
		171	Mod_spectrum -400	699CH	PCL15			233	Burst Power	661CH	PCL15
		172	Mod_spectrum -250	699CH	PCL15			234	Frequency Error	661CH	PCL0
		173	Mod_spectrum -200	699CH	PCL15			235	Frequency Error	512CH	PCL0
		174	Mod_spectrum +200	699CH	PCL15			236	Frequency Error	810CH	PCL0
		175	Mod_spectrum +250	699CH	PCL15			237	Phase Error (RMS)	661CH	PCL0
		176	Mod_spectrum +400	699CH	PCL15			238	Phase Error (RMS)	512CH	PCL0
		177	Mod_spectrum +600	699CH	PCL15			239	Phase Error (RMS)	810CH	PCL0
		178	Mod_spectrum +800	699CH	PCL15			240	Phase Error (Peak)	661CH	PCL0
		179	Switch_Spectrum -1800	699CH	PCL0			241	Phase Error (Peak)	512CH	PCL0
		180	Switch_Spectrum -1200	699CH	PCL0			242	Phase Error (Peak)	810CH	PCL0
		181	Switch_Spectrum -600	699CH	PCL0			243	Mod_spectrum -800	661CH	PCL0
		182	Switch_Spectrum -400	699CH	PCL0			244	Mod_spectrum -600	661CH	PCL0
		183	Switch_Spectrum +400	699CH	PCL0			245	Mod_spectrum -400	661CH	PCL0
		184	Switch_Spectrum +600	699CH	PCL0			246	Mod_spectrum -250	661CH	PCL0

Troubleshooting list				
	Test item	Check parts for GSM	Check parts for DCS	Check parts for PCS
Tx	Burst Power	IC802, FL803, FL905	IC802, FL803, FL905	IC802, FL803, FL905
	Frequency Error	—	—	—
	Phase Error	—	—	—
	Mod_spectrum	—	—	—
	Switch_Spectrum	IC802	IC802	IC802
	Burst Timing	IC802	IC802	IC802
Rx	Rx Sensitivity	FL803, FL902, FL905	FL803, FL902, FL905	FL803, FL903, FL905
	Usable Receiver Level	—	—	—
	Rx Level Reports	FL803, FL902, FL905	FL803, FL902, FL905	FL803, FL903, FL905

4.6. RF test tool

4.6.1 Requirements

For repairs, this test checks the condition of an electric board (especially the RF section).

- PC with USB port
- GX15 data cable
- PWB repair jig
- GSM tester (CMU200)

4.6.2 Setup

1. Install GX15 USB driver from CD-ROM, if it is not installed.
2. Set PWB and make connections as shown in Figures 51 and 52.
Make sure connections are correct at the points shown in Figure 53.

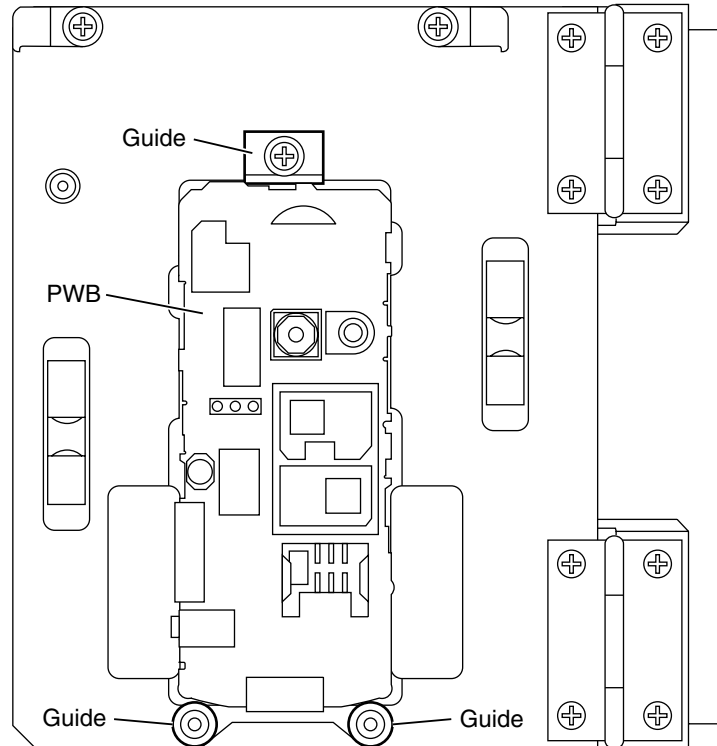
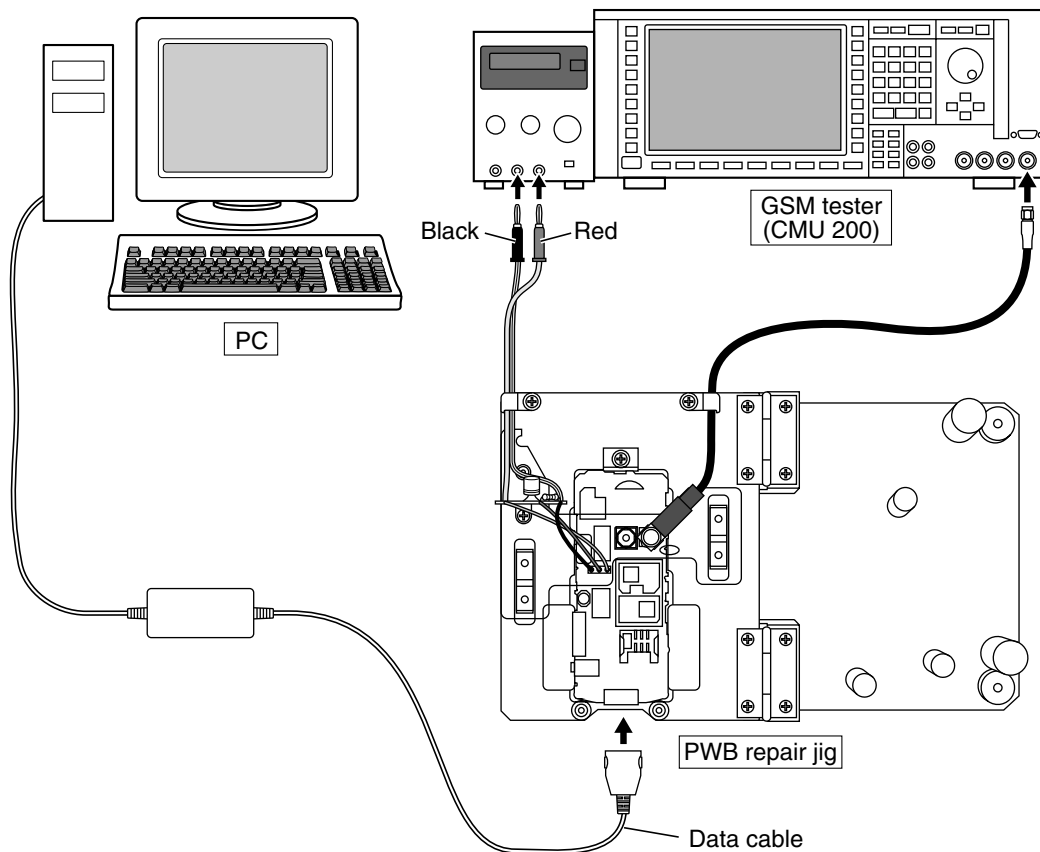
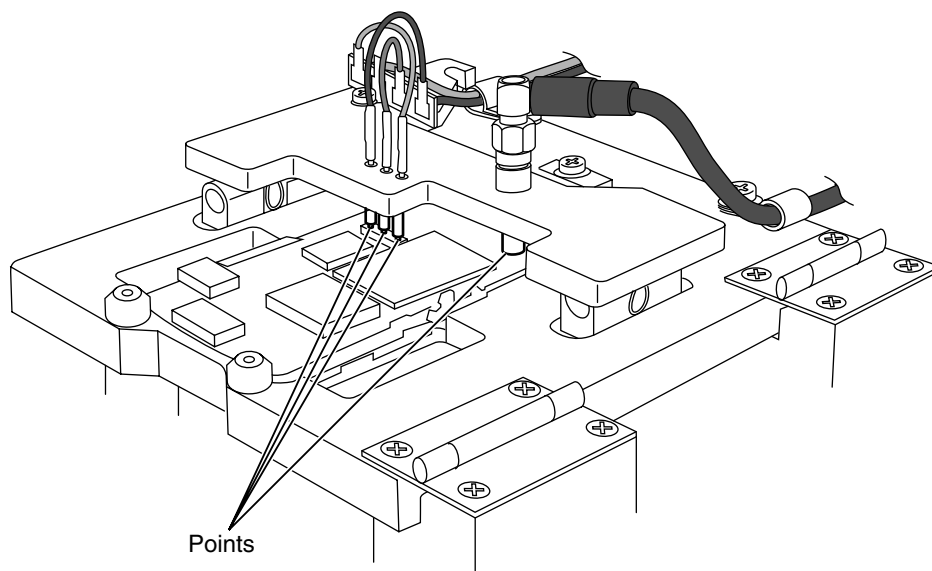


Figure 51 PWB installation

**Figure 52 Connections****Figure 53 Contact points**

3. Apply 4 V using a stabilised power supply and turn on the handset (phone).

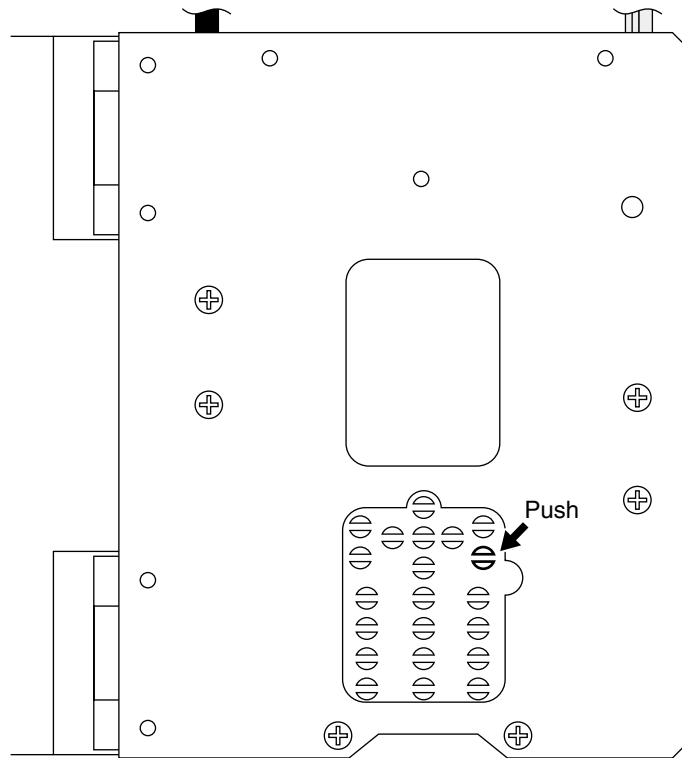


Figure 54 Turning power on

4. Start RF test tool.
5. Press the "Initialize & Read Data" button. (COM port is automatically selected.)

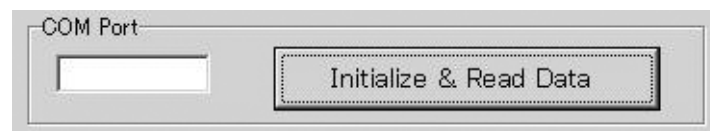


Figure 55

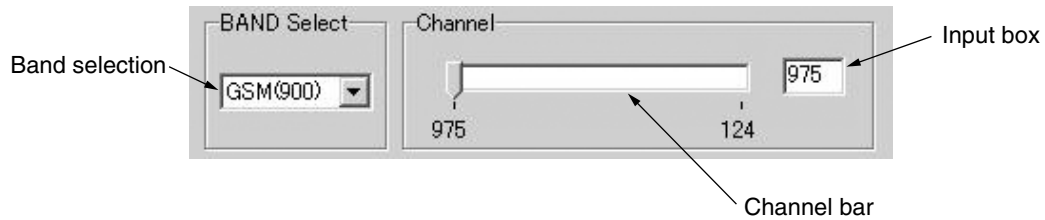
6. Change the voltage, if you need.
7. Click "OK" to proceed.



Figure 56

4.6.3 Tests**1) BAND Select & Channel**

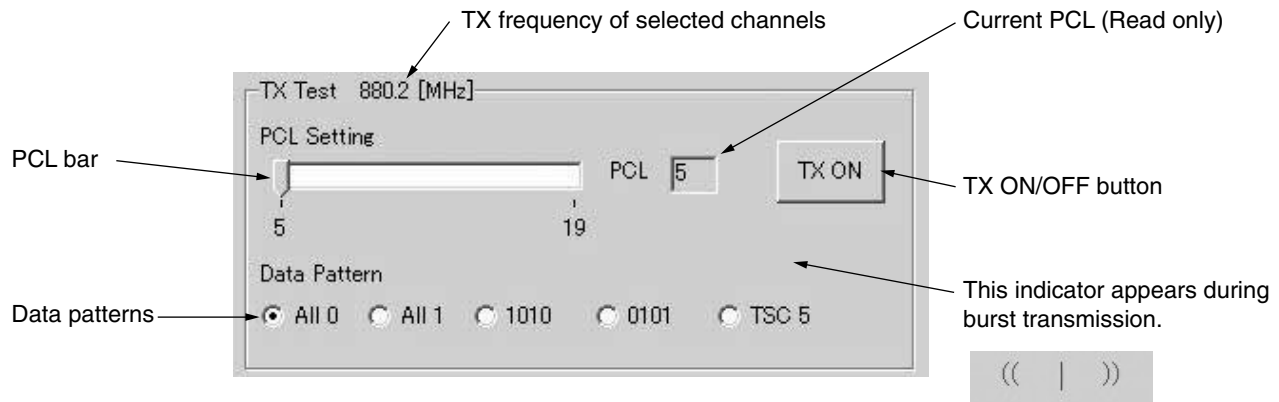
Select a band and a channel to test. Settings are applied to all tests.

**Figure 57****[Procedure]**

1. Select a band. (GSM, DCS or PCS)
2. Select or enter a channel using channel bar or input box.

2) TX test

Test burst transmission.

**Figure 58****[Procedure]**

1. Select a band and channel. [see 4.6.3.1]
2. Select PCL (Power Control Level) using PCL bar.
3. Select a data pattern.
4. Click TX ON to start burst transmission.
(You can check each part in this state.)
5. Click TX OFF to end burst transmission.

* Data pattern (TSC 5) includes Training Sequence GSM 5, and other part is pseudo random data.

GX15 TX power Table (25°C, voltage: 3.7[V])

GSM Band			DCS/PCS Band		
PCL	GSM [dBm]	Tolerance	PCL	DCS/PCS [dBm]	Tolerance
5	33	+/-2 dB	0	30	+/-2 dB
6	31	+/-3 dB	1	28	+/-3 dB
7	29	+/-3 dB	2	26	+/-3 dB
8	27	+/-3 dB	3	24	+/-3 dB
9	25	+/-3 dB	4	22	+/-3 dB
10	23	+/-3 dB	5	20	+/-3 dB
11	21	+/-3 dB	6	18	+/-3 dB
12	19	+/-3 dB	7	16	+/-3 dB
13	17	+/-3 dB	8	14	+/-3 dB
14	15	+/-3 dB	9	12	+/-4 dB
15	13	+/-3 dB	10	10	+/-4 dB
16	11	+/-5 dB	11	8	+/-4 dB
17	9	+/-5 dB	12	6	+/-4 dB
18	7	+/-5 dB	13	4	+/-4 dB
19	5	+/-5 dB	14	2	+/-5 dB
			15	0	+/-5 dB

3) RX test

The handset (phone) receives burst signals in this test.

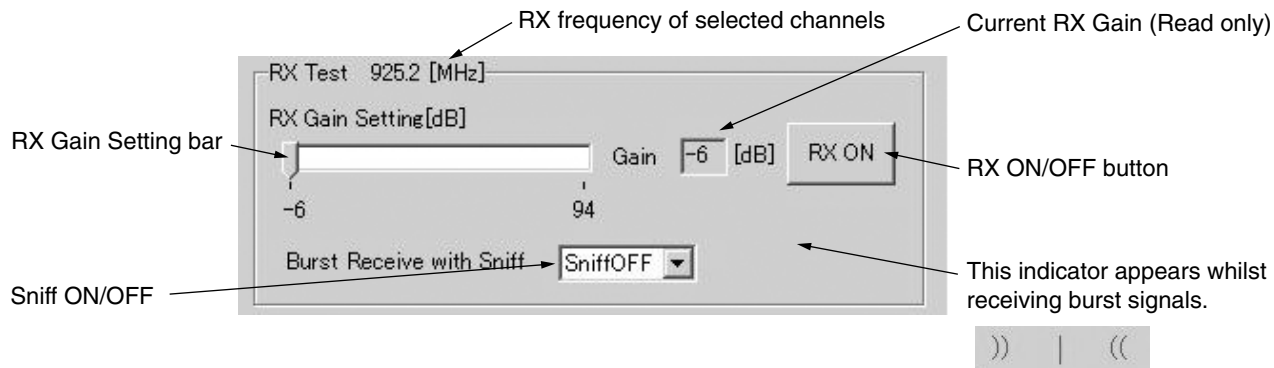


Figure 59

[Procedure]

1. Select a channel and band. [see 4.6.3.1]
2. Select RX Gain using RX Gain Setting bar.
3. Choose Sniff ON or OFF.
4. Click "RX ON" to receive burst signals.
5. From GSM tester, send burst signals in the specified channel.

(You can check each part in this state.)

6. Click "RX OFF" to stop burst signals.

* In this test, the reception timing cannot be synchronised with burst signals from Signal Generator or GSM tester.

* The standard RX Gain Setting is:
 (Input power at the aerial connector of the handset (phone)) + (RX Gain) = -16 dBm
 Excessive input power or RX Gain may cause damage to the handset (phone).

4) RSSI Measure

The handset (phone) notifies you of input power value at the aerial connector.

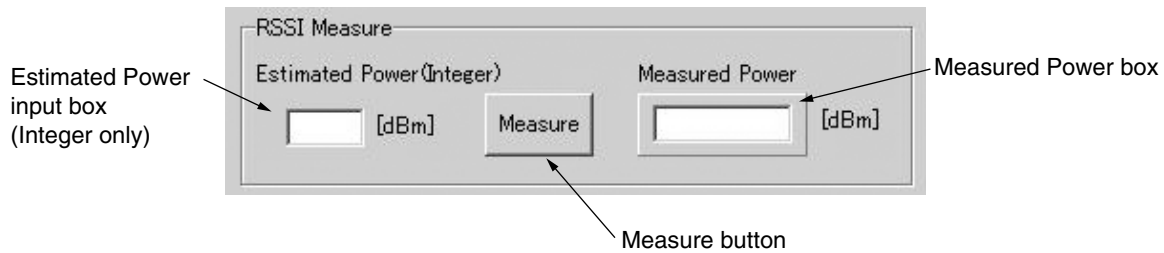


Figure 60

[Procedure]

1. Connect the handset (phone) and GSM tester (or Signal Generator) with RF cable.
2. Select a band and channel. [see 4.6.3.1]
3. Send signals (*) from GSM tester.
4. Enter the value of input power from GSM tester in integers (from -10 to -110) considering RF cable loss.
5. Press the "Measure" button.
6. The result appears in Measured Power box.

* The signal type from GSM tester must be either of the following:

1. Continuous sine wave (without modulation) with the following frequency.
(Frequency of the measured channel) + 67.708 kHz
(e.g. channel: GSM 37ch → the result: 942.467708 MHz)
Power: -110 to -10 dBm
2. BCCH signal of the measured channel
Power: -110 to -10 dBm

Result

When the handset (phone) is properly calibrated, the error between "Estimated Power" and "Measured Power" is less than 3 dB.

4.6.4 Termination

Turn off the handset (phone) to ensure proper operations.

4.6.5 Trouble information

When switching DCS and PCS, change the channel number as well. Or the band does not change properly.

Example: If you change DCS 512 CH to PCS 512 CH, the band remains DCS.

4.7. Password reset

SPST resets the password [handset (phone) code is set to "0000"].

<Operation>

- 1) Set the COM port on the SPST initial screen and click "User Password Reset". Click "Yes" to reset. Click "No" to exit.



Figure 61

- 2) When completed, the following appears.



Figure 62

4.8. Performance check and adjustment

With this function, SPST checks the performance of the handset (phone) and makes adjustments.

<Operation>

- 1) Set the COM port on the SPST initial screen and click “Performance check and adjustment”. The following dialogue box appears whilst processing.



Figure 63

- 2) When completed, the following is displayed. Click “Back to main menu” to exit.

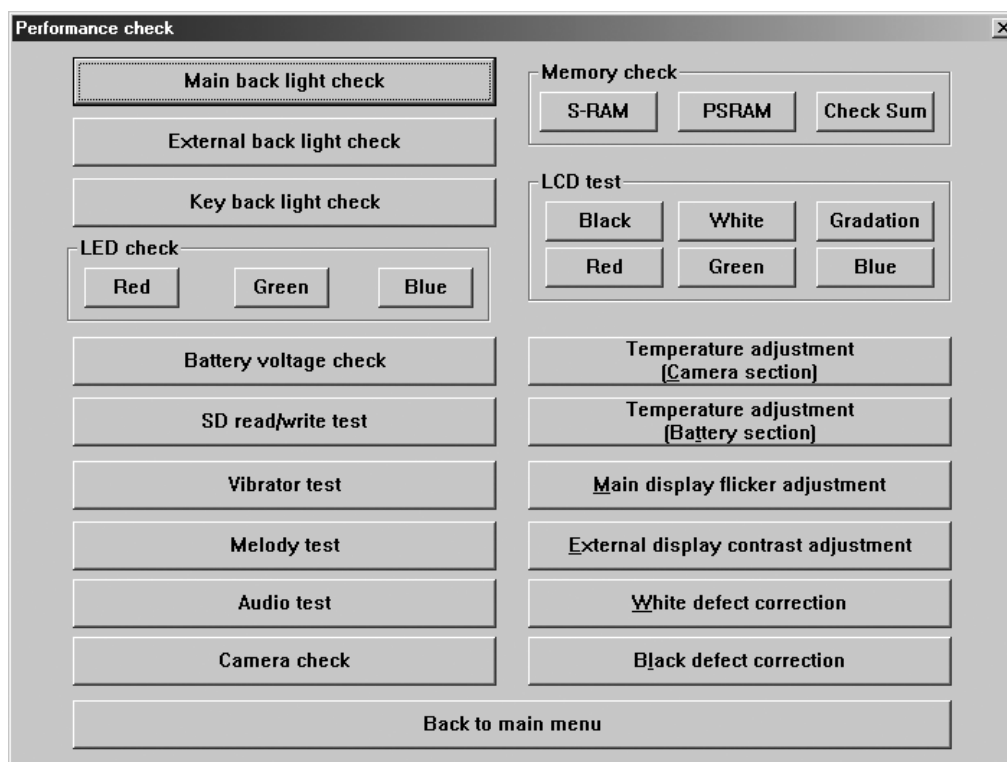


Figure 64

The functions of each button are described below.

4.8.1 Back light check

The display back light turns on and the message appears on the PC.

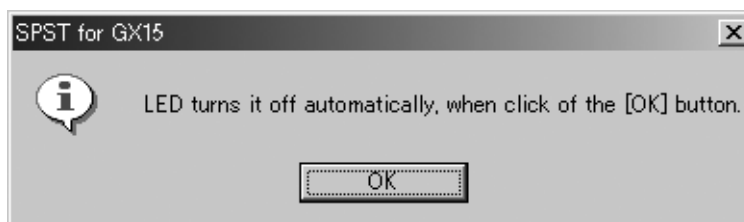


Figure 65

Check the back light and press “OK”.

- If a failure occurs, see “9. Back Light does not turn on.” in [3] Troubleshooting.

4.8.2 Key back light check

The keypad back light turns on and the message appears on the PC. Check the back light and press "OK".

4.8.3 Battery voltage check

Click to display the current battery voltage.

- If a failure occurs, see "1. Power does not turn on." in [3] Troubleshooting.

4.8.4 Vibrator test

Click to vibrate the handset (phone). Click "OK" to exit.

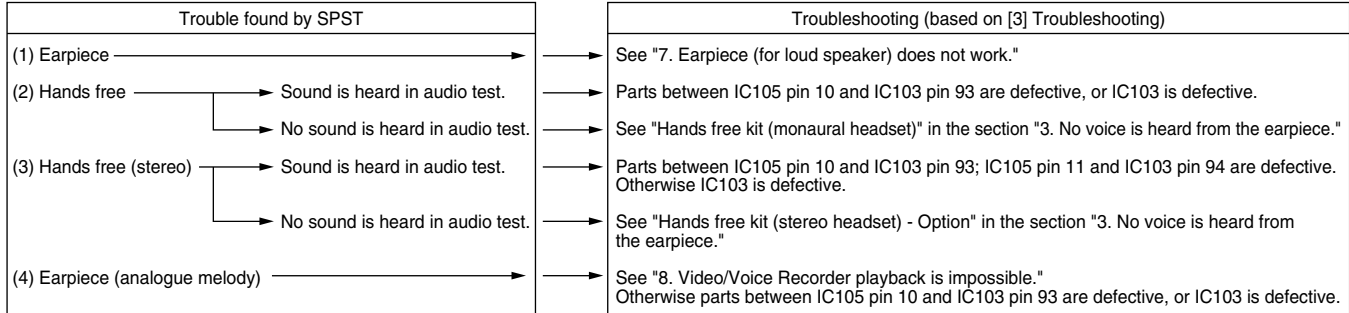
- If a failure occurs, see "5. Vibrator does not work." in [3] Troubleshooting.

4.8.5 Melody test

A message describes test items. Click "Yes" to proceed and "No" to exit.

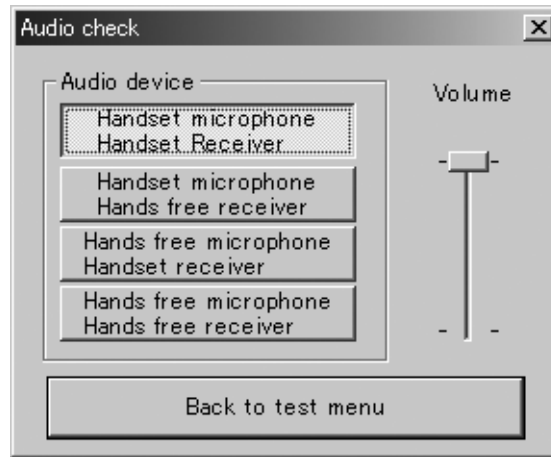
The order of the test items:

Earpiece → Hands free → Hands free (stereo) → Earpiece (analogue melody)

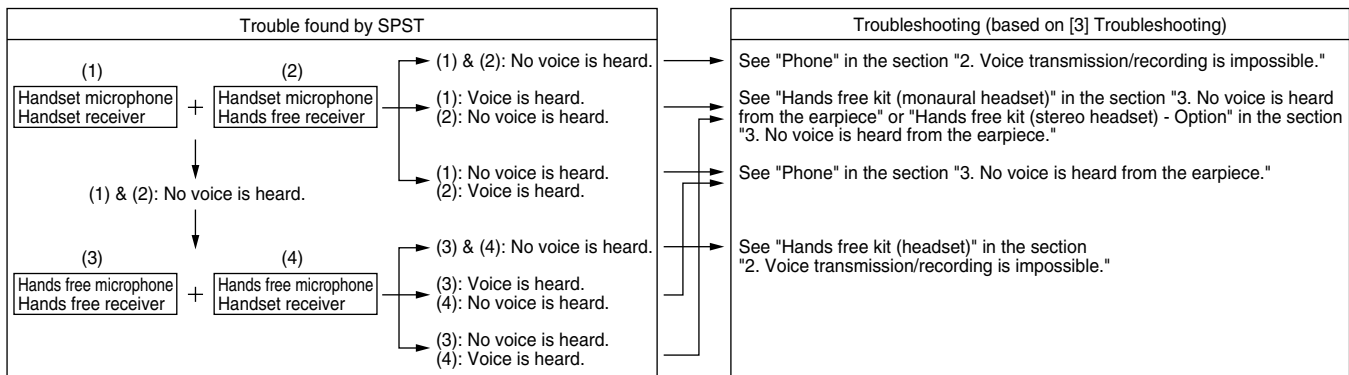


4.8.6 Audio test

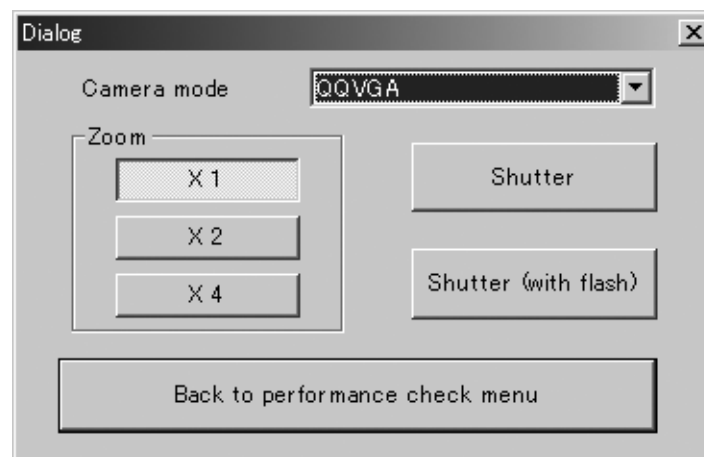
The following appears.

**Figure 66**

Select a test item from Audio device. Check the output sound from the receiver by speaking to the microphone, etc. Click "Back to test menu" to return to the previous screen.

**4.8.7 Camera check**

The following appears.

**Figure 67**

Select a Camera mode from the list box. Click "Shutter" to check that the camera operates properly. Click "Back to performance check menu" to return to the previous screen.

- If a failure occurs, see "12. Pictures cannot be taken." in [3] Troubleshooting.

4.8.8 Memory check

Click "S-RAM" and "PSRAM" to see each test result.

For "Check Sum", the calculation appears after the SPST communicating dialogue box.

4.8.9 LCD test

Check that the specified colour appears on the main display.

- If a failure occurs, see “10. The display does not appear on Display.” in [3] Troubleshooting.

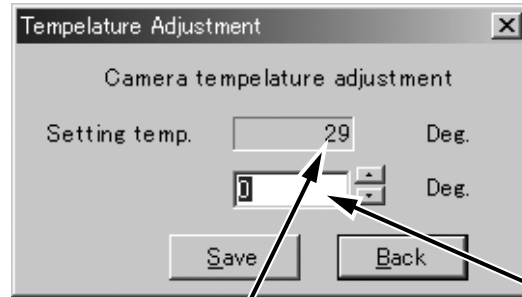
4.8.10 Temperature adjustment

The following appears.

Setting temp. indicates the current temperature. The relative temperature is displayed in the text box below.

(Only the relative temperature is adjustable.)

If displayed Setting temp. value differs from the current temperature, click “▲” or “▼” to set a correction value in the range of –99 to +99 and click “Save”.



Correction value = (Setting temp.) – (current temp.) + (displayed correction value)

Figure 68

4.8.11 Display flicker adjustment

The following is displayed.

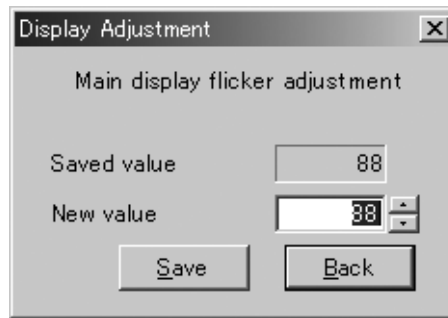
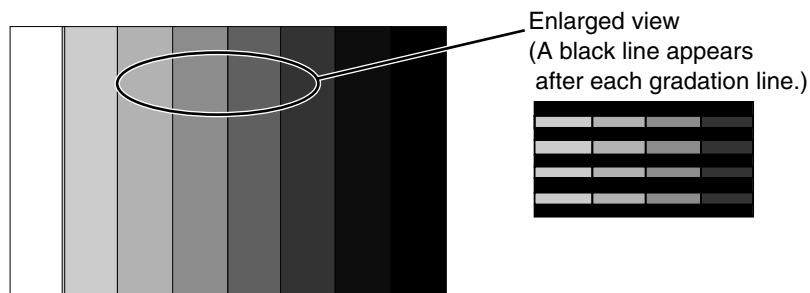


Figure 69

Check a main display visually within a distance of 20 cm from a fluorescent light, and adjust the value to minimise flicker on the display with the “▲” and “▼” buttons. Click “Save” and confirm that the main display does not flicker.

(Fine adjustment for DC voltage between display electrodes)



8-level gradation pattern with alternate black and gradation lines (black and white)

Figure 70

4.8.12 White defect correction

* White defect correction:

Defective pixels in a camera light sensor appear as bright points in the display even when light is blocked completely (display is all black). Perform white defect correction to eliminate errors in these pixels.

1. Protect the handset (phone) camera from light completely with a black cover.
2. Click the "White defect correction" button. The following screen appears.

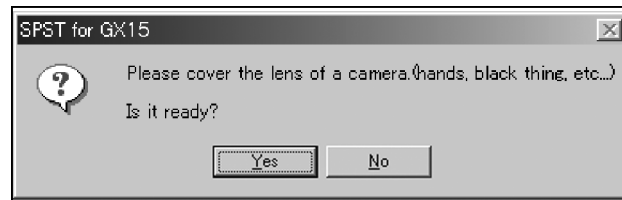


Figure 71

Click the "Yes" button and leave it for about 20 seconds. When completed, the following message appears.

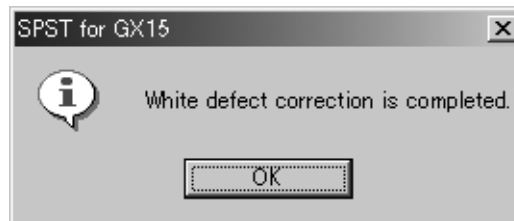


Figure 72

When an error occurs, the corresponding message appears. Solve the problem according to "Solution".

- Error 1
Error message: "There are too many white cracks."
Cause: The light is not sufficiently blocked.
Solution: Block the light completely and perform white defect correction again.
- Error 2
Error message: "There are many white cracks."
Cause: The light is not sufficiently blocked.
Solution: Block the light completely and perform white defect correction again.
- Error 3
Error message: "There are too many white cracks cannot be rectified."
Cause: There is a hardware error.
Solution: Replace the camera unit.

4.8.13 Black defect correction

*Black defect correction:

Defective pixels in a camera light sensor appear as black points in the display even when a captured image is completely white (display is all white). Perform black defect correction to eliminate errors in these pixels.

1) Requirements

- Desk top type of fluorescent lamp
- Black defect correction sheet



Figure 73

- Illuminance meter

2) Procedure

1. Cover the camera section with the black defect correction sheet as shown in Figure 74.

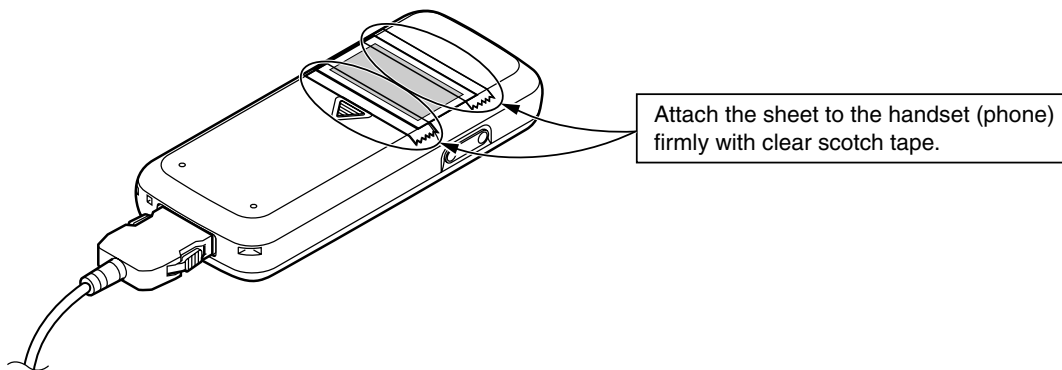


Figure 74

2. Check the distance from the fluorescent lamp by using an illuminance meter.
In the proper position for black defect correction, illuminance is between 8,000 and 10,000 lux.

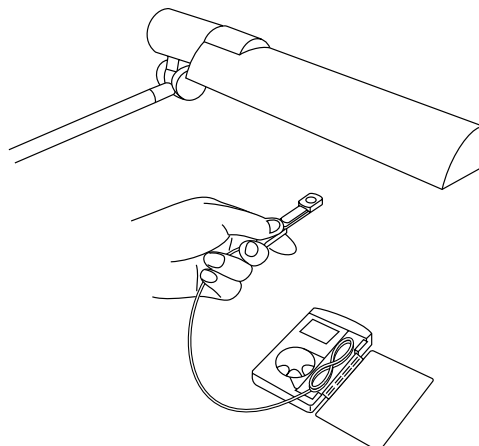


Figure 75

3. Hold the handset (phone) in the proper position.

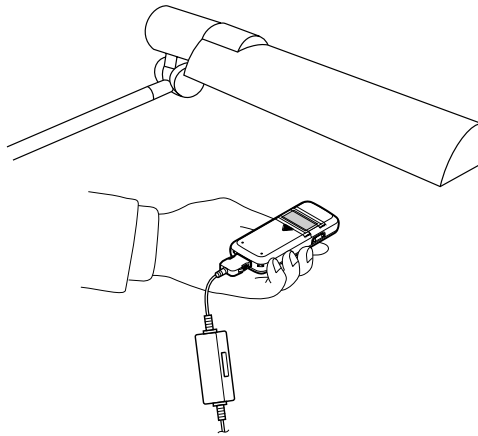


Figure 76

4. Click the "Black defect correction" button.
The following message is displayed.

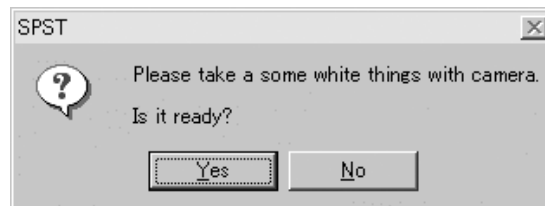


Figure 77

5. Click the "Yes" button. Communication starts.

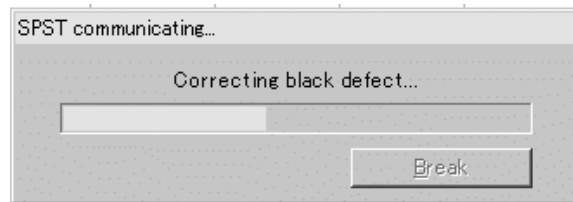


Figure 78

6. The result is displayed within a minute as follows.

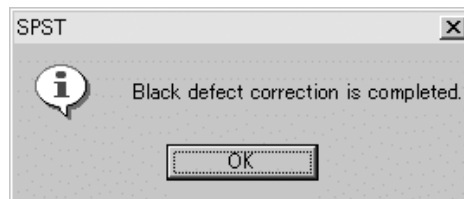


Figure 79

When an error occurs, the corresponding message appears. Solve the problem according to "Solution".

- Error 1
Error message: "There are too many black cracks."
Cause: The light is too weak or strong.
Solution: At the proper distance from the light source (8,000 - 10,000 lux), perform black defect correction again.
- Error 2
Error message: "There are many black cracks."
Cause: The light is too weak or strong.
Solution: At the proper distance from the light source (8,000 - 10,000 lux), perform black defect correction again.
- Error 3
Error message: "There are too many black cracks cannot be rectified."
Cause: There is a hardware error.
Solution: Replace the camera unit.

4.9. ****mode release

When the handset (phone) does not turn on and enter the normal mode, use this function to change ****mode to the normal mode.

<Operation>

- 1) Select the COM port on the SPST initial screen and click "****mode release". The following dialogue box appears.



Figure 80

- 2) If SPST cannot communicate with the handset (phone), the following message is displayed. Make sure the handset (phone) is turned on and click "Retry". To exit, click "Cancel".



Figure 81

- 3) When complete, the following message appears.

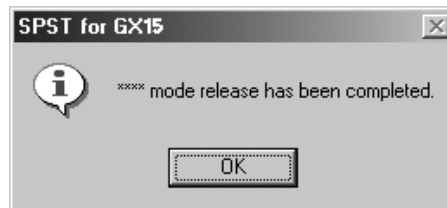


Figure 82

5. Other tests

SPST does not provide tests of Bluetooth/USB communication. Check them according to the following instructions.

5.1. Bluetooth

- 1) Connect GX15 to the network and check that a conversation (talking and listening) is possible using a Bluetooth headset.

Recommended Bluetooth headset:

JABRA BT200

PLANTRONICS M1000

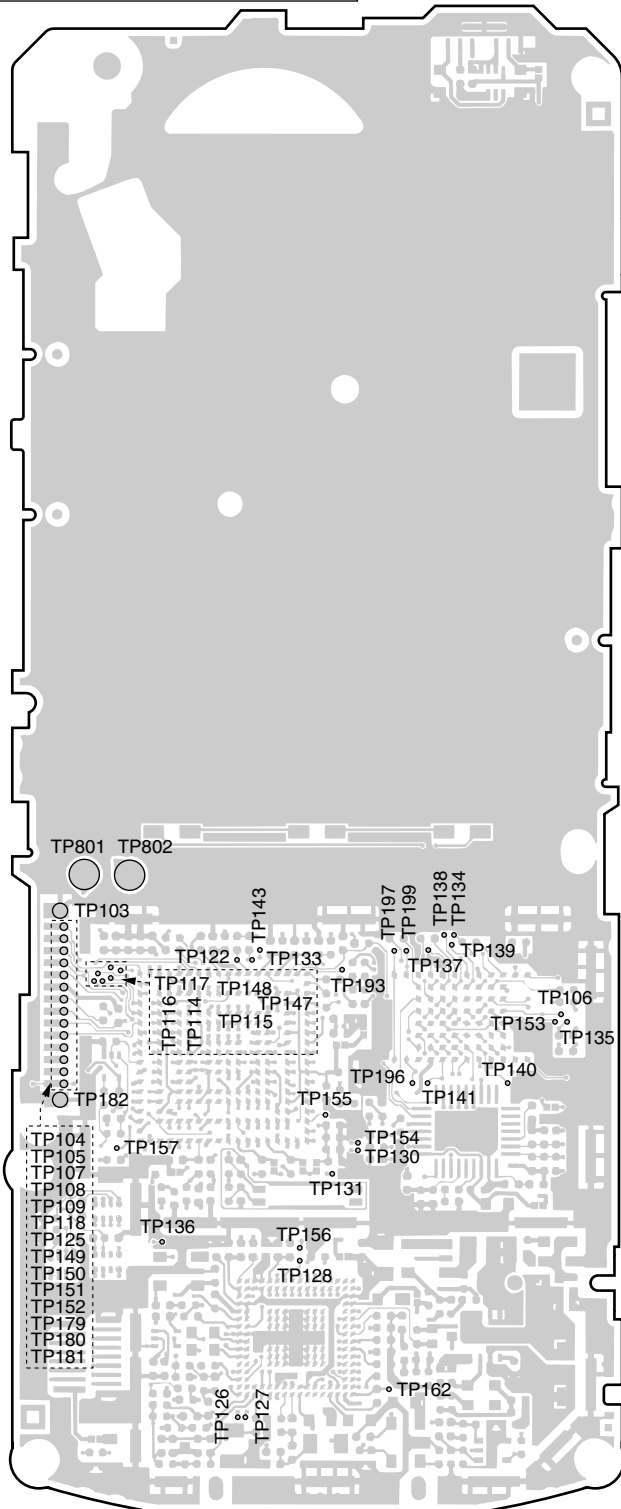
PLANTRONICS M3000

- 2) Connect GX15 to another Bluetooth built-in handset (phone) or PC and check that text data can be transmitted and received properly via Bluetooth.

5.2. USB

Connect GX15 and a PC with a USB cable. Check that GX15 is recognised as a device.

If the USB driver for GX15 (SHARP GSM GPRS USB Driver) is not installed on the PC, "Found New Hardware" window appears and "Found New Hardware Wizard" starts [the handset (phone) is recognised].

[2] Test points**MAIN PWB-A (FRONT SIDE)**

TP No.	Signal name
TP801	VTCXO (2.9V)
TP802	VRF (2.9V)

Figure 83 TEST POINT

MAIN PWB-A (REAR SIDE)

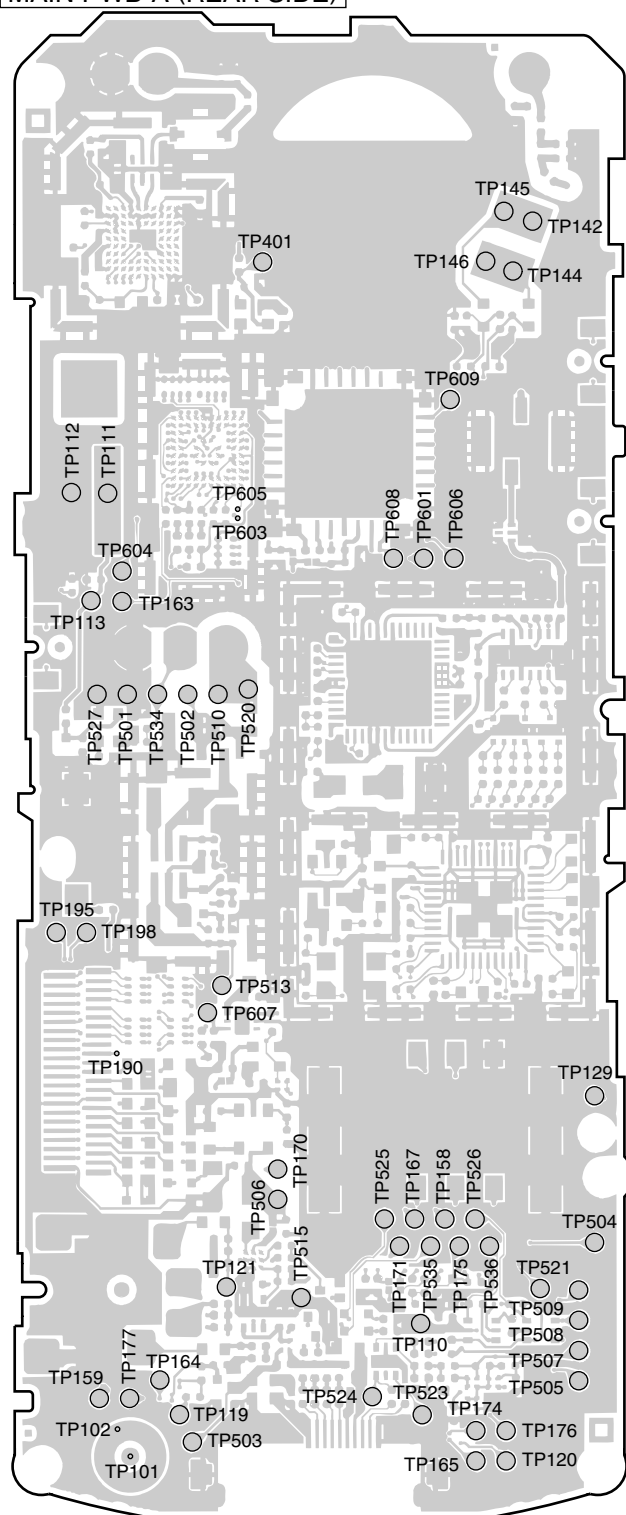
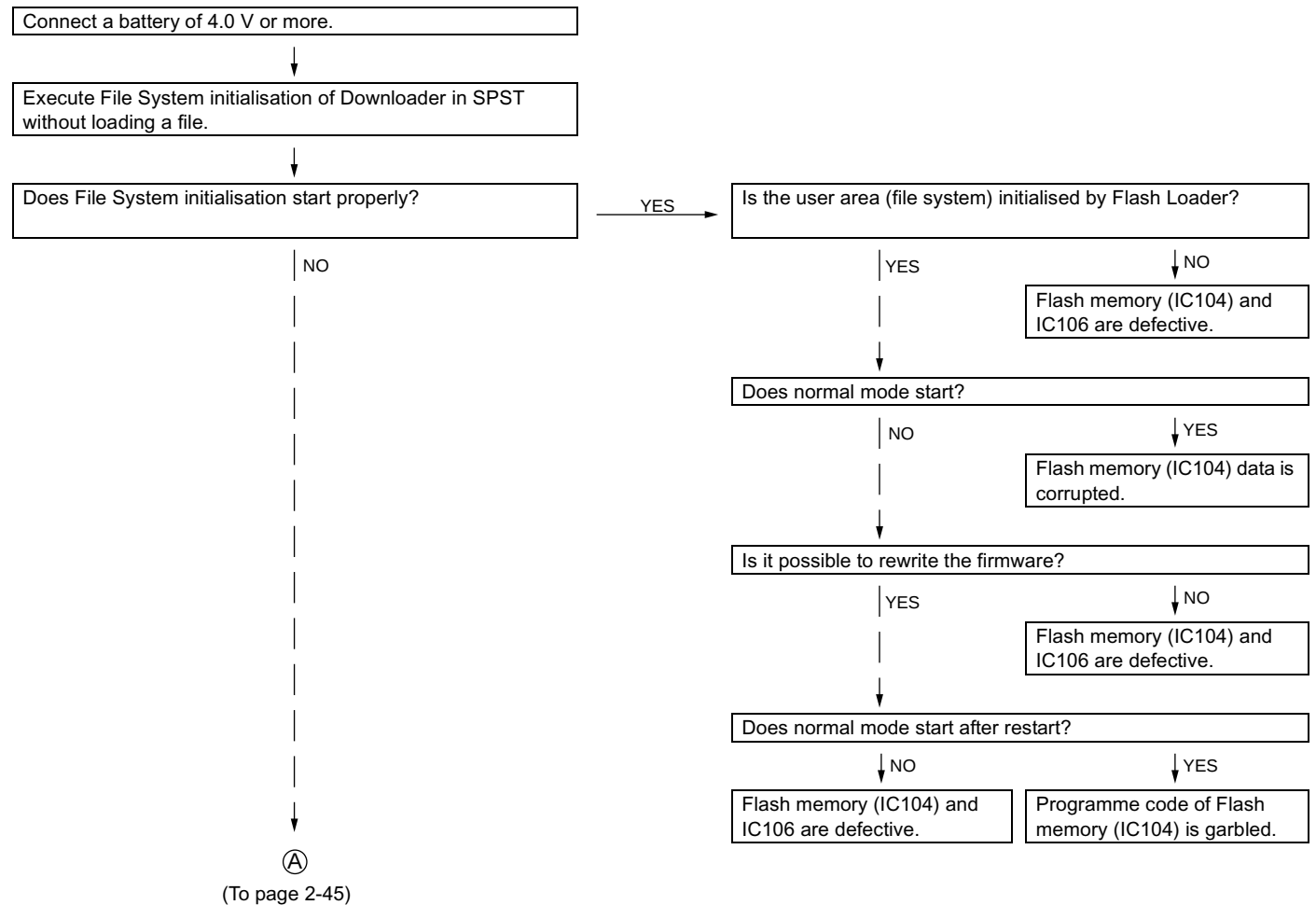


Figure 84 TEST POINT

TP No.	Signal name
TP110	VEXT
TP111	VVIB
TP112	DGND
TP113	VVIB
TP119	MIC_INP
TP120	AIN2P_C
TP121	RECEIVER_OUT
TP129	USC [6]
TP142	SPEAKER/RECIVER1
TP144	SPEAKER/RECIVER2
TP145	SPEAKER/RECIVER1
TP146	SPEAKER/RECIVER2
TP158	MODE_SELECT
TP159	CHGIN_A (5.2V)
TP163	13MHZ_CLK
TP164	VABB
TP165	LIGHT1 (KEYLED2)
TP167	VRTC (1.8V)
TP170	VMEM (2.93V)
TP171	VCORE (1.8V)
TP174	LIGHT3 (KEYLED)
TP175	SIM_POWER
TP176	VMIC
TP177	AUXADC1
TP195	Terminal for MEMORY adhesion check 1
TP198	Terminal for MEMORY adhesion check 2
TP401	VSCR (3.0V)
TP501	DGND
TP502	VBAT
TP503	CHGIN
TP504	USC [1]
TP505	USC [2]
TP506	VBAT
TP507	VUSB (3.2V)
TP508	USC [5]
TP509	USC [4]
TP510	BATT
TP513	Flexible PWB insert check terminal 1
TP515	Flexible PWB insert check terminal 2
TP520	BATT
TP521	POWERONKEY
TP523	RXD
TP524	TXD
TP525	GENIE RX
TP526	GENIE TX
TP527	DGND
TP534	BATT_SENSE
TP535	Manufacture Specific
TP536	AUDIO_IN
TP601	VCAM (2.8V)
TP604	Terminal for CAMERA_IC adhesion check 1
TP606	Terminal for CAMERA_IC adhesion check 2
TP607	VCAM (1.8V)
TP608	DOUT6
TP609	DOUT0

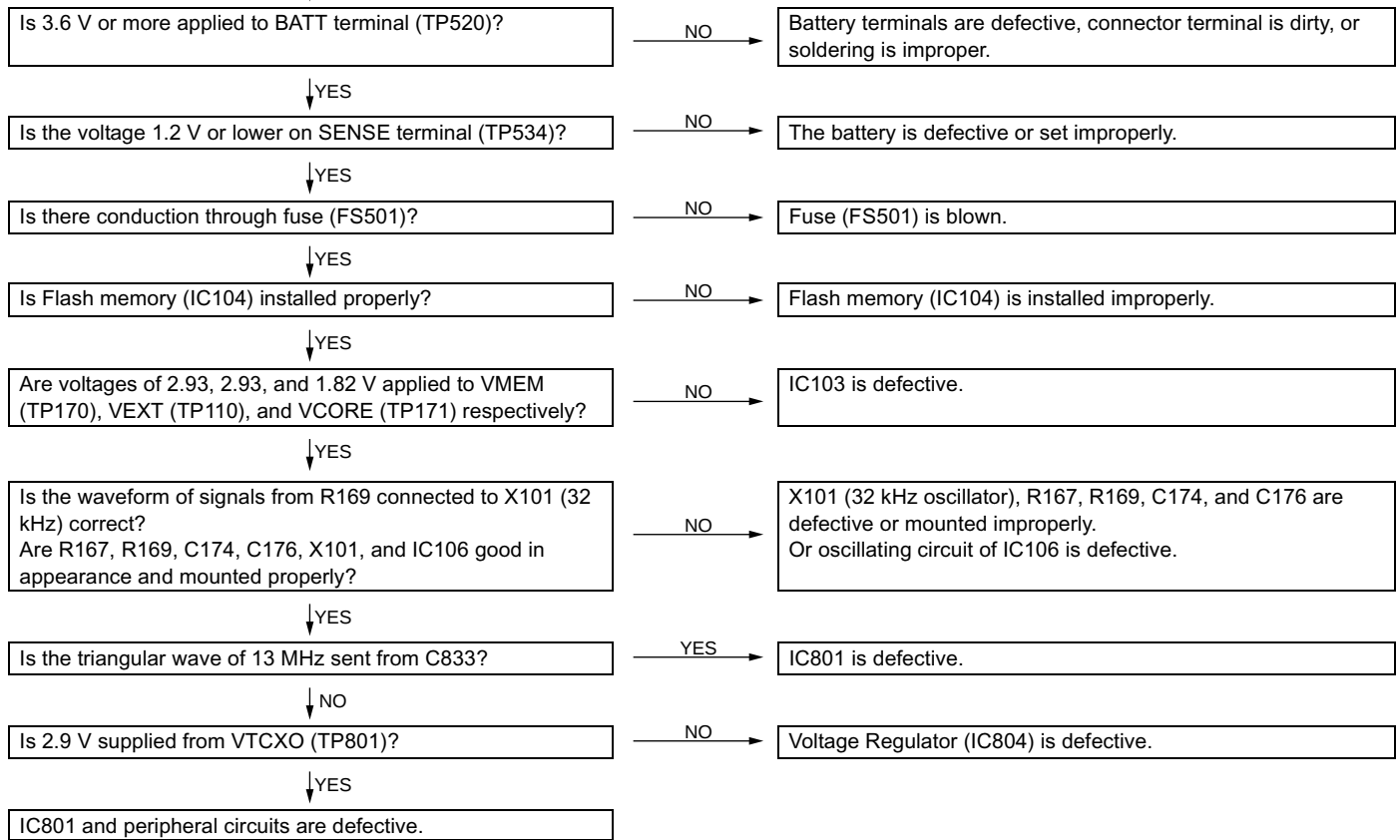
[3] Troubleshooting

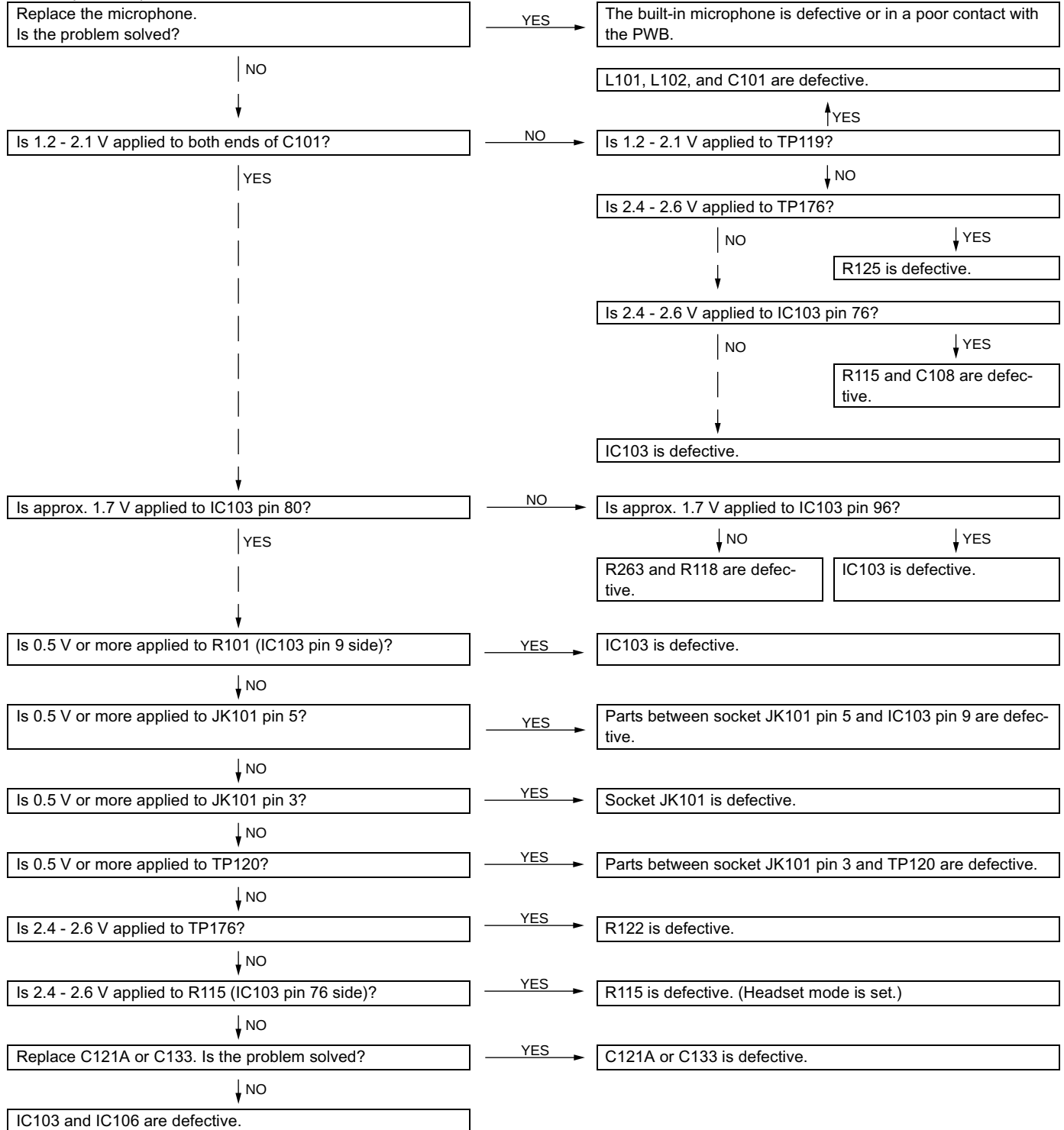
1. Power dose not turn on.	See page 2-44
2. Voice transmission/recording is impossible.	See page 2-46
3. No voice is heard from the earpiece.	See page 2-48
4. Battery does not charge.	See page 2-49
5. Vibrator does not work.	See page 2-49
6. Clock Settings are reset.	See page 2-50
7. Earpiece (for loud speaker) does not work.	See page 2-50
8. Video/Voice Recorder playback is impossible.	See page 2-51
9. Back Light does not turn on.	See page 2-52
10. Out of range and incoming/outgoing calls are impossible.	See page 2-53
11. The display does not appear on Display.	See page 2-54
12. Pictures cannot be taken.	See page 2-55
13. SIM card is not recognised.	See page 2-56
14. IrDA (Infrared) communication is impossible.	See page 2-57
15. Bluetooth communication is impossible.	See page 2-58
16. USB connection is impossible.	See page 2-58

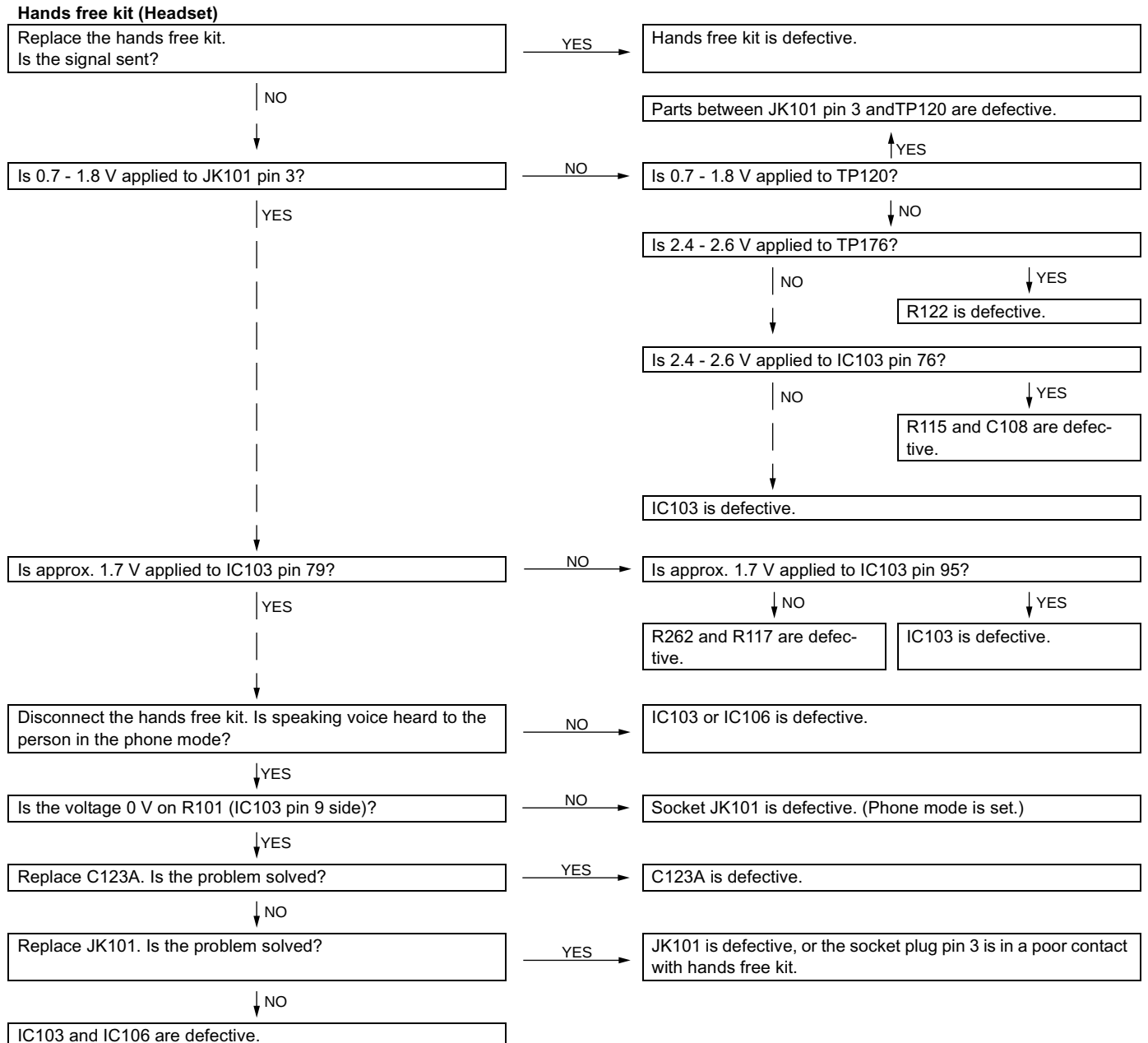
1. Power dose not turn on.

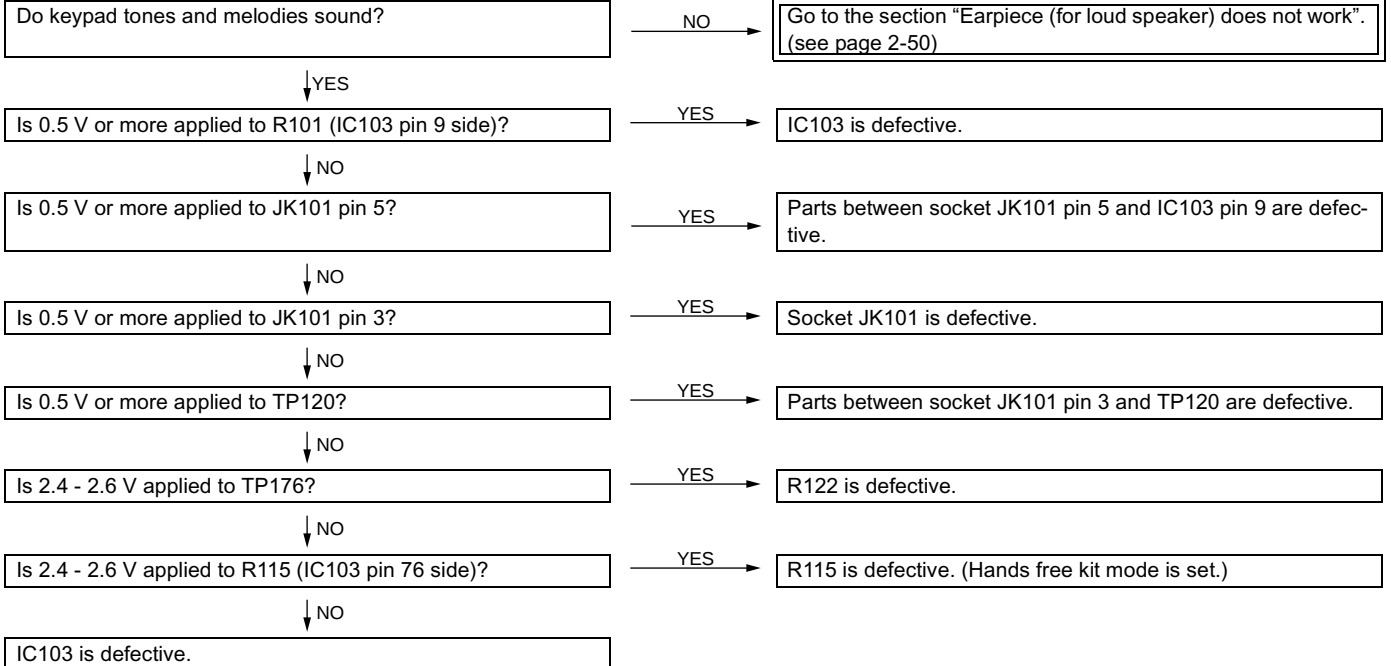
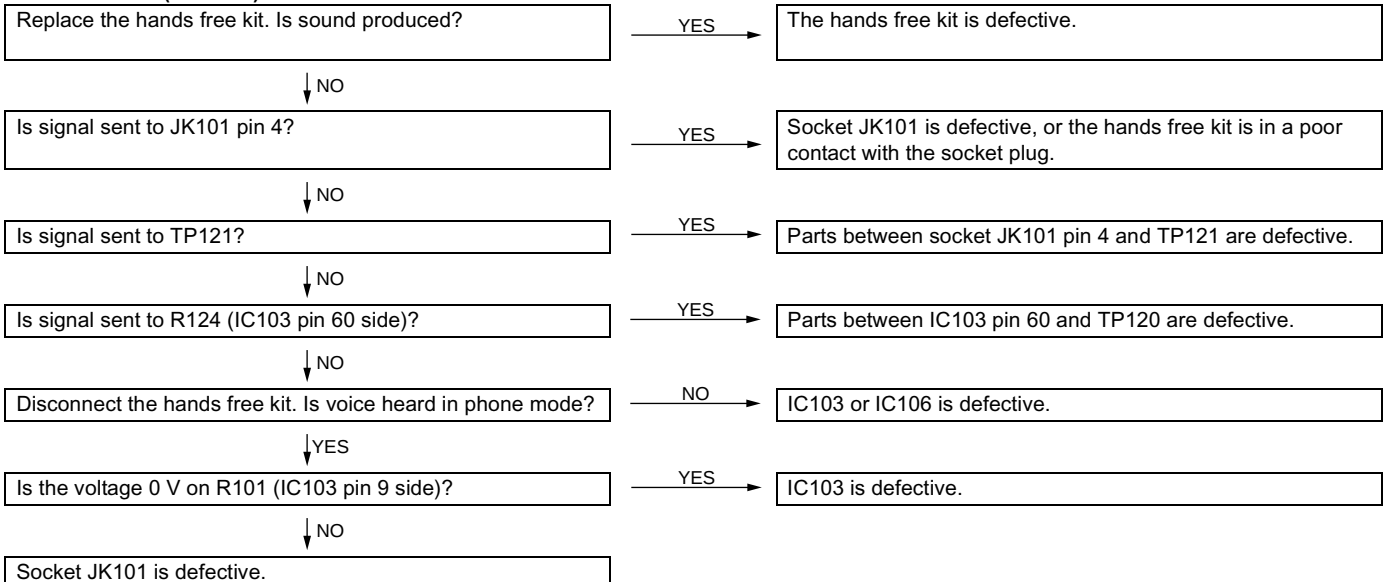
(From page 2-44)

Ⓐ

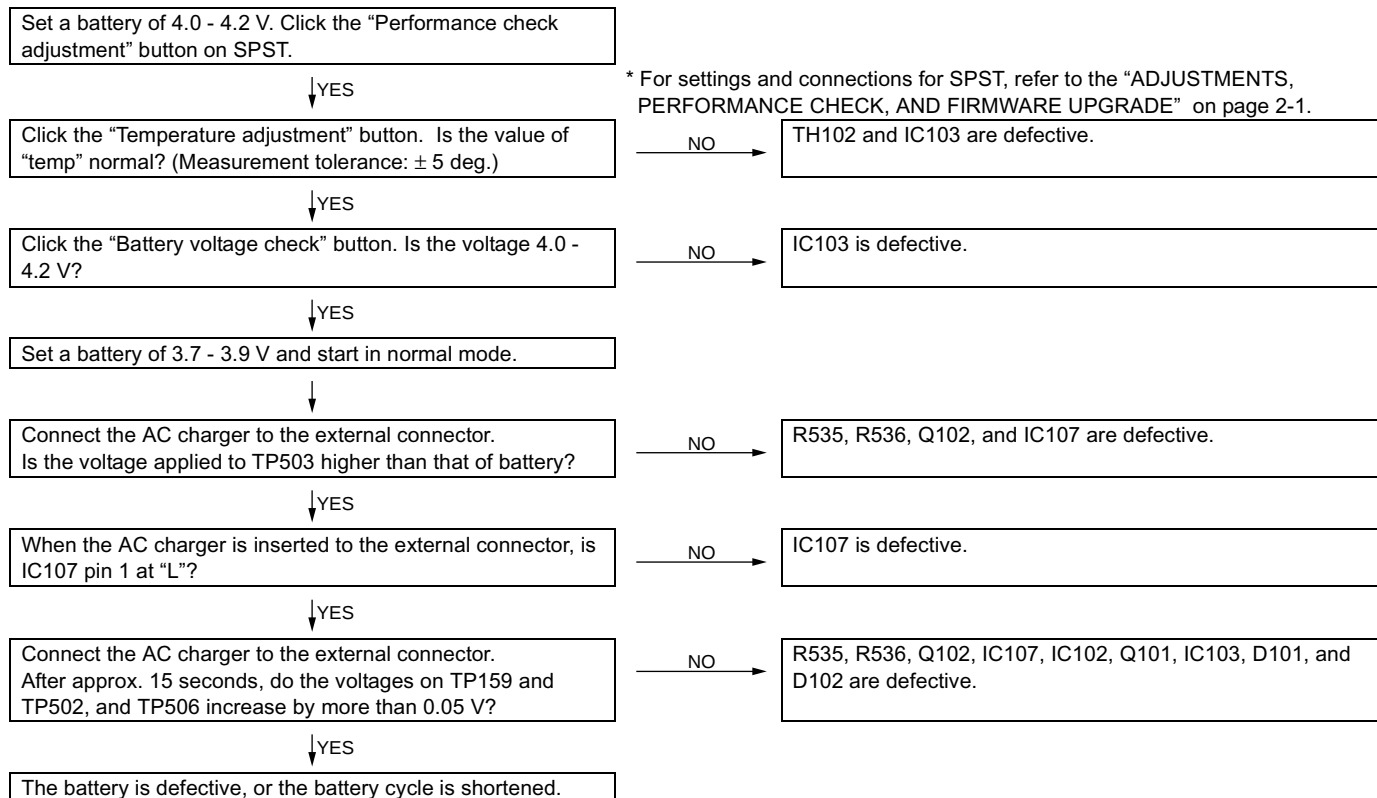


2. Voice transmission/recording is impossible.**Phone (Handset)**

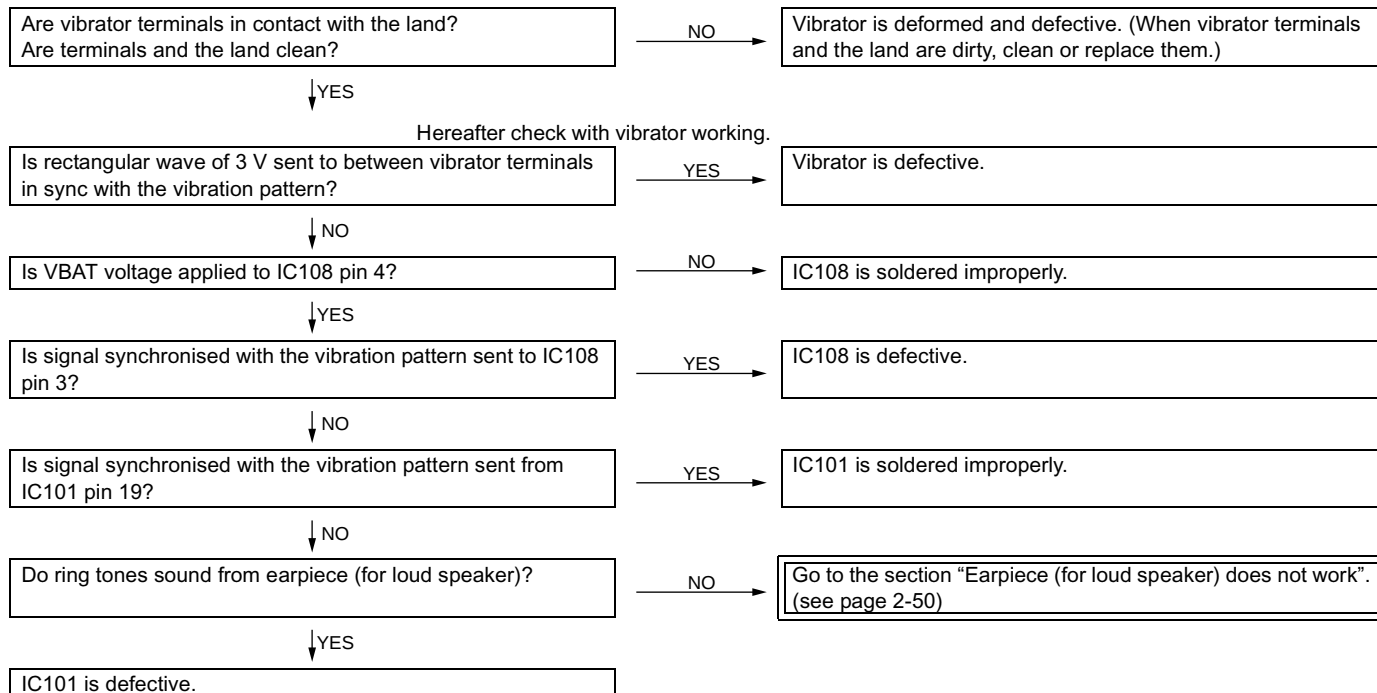


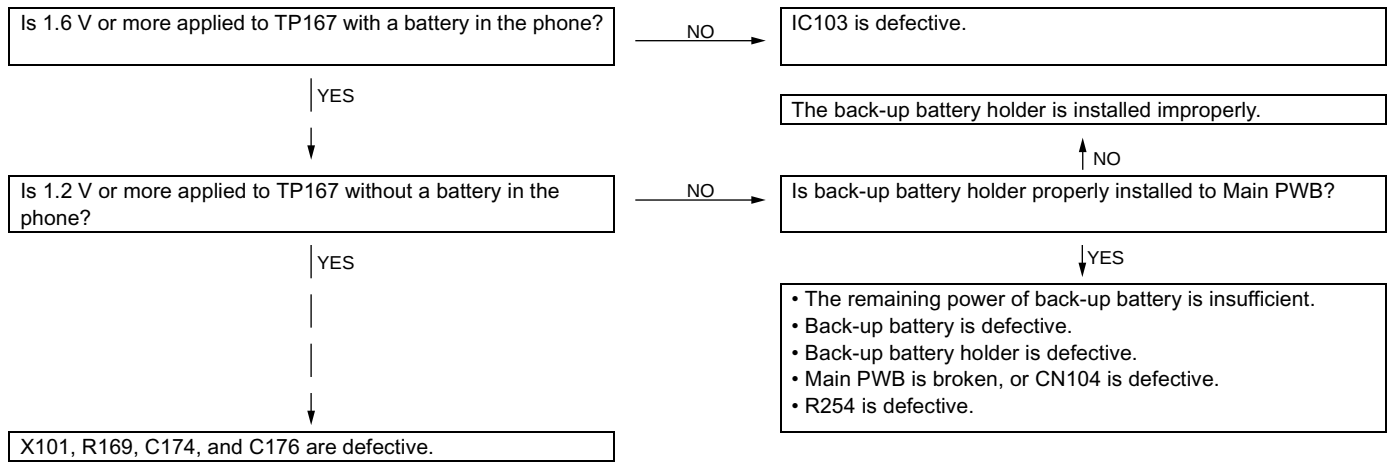
3. No voice is heard from the earpiece.**Phone (Handset)****Hands free kit (Headset)**

4. Battery does not charge.

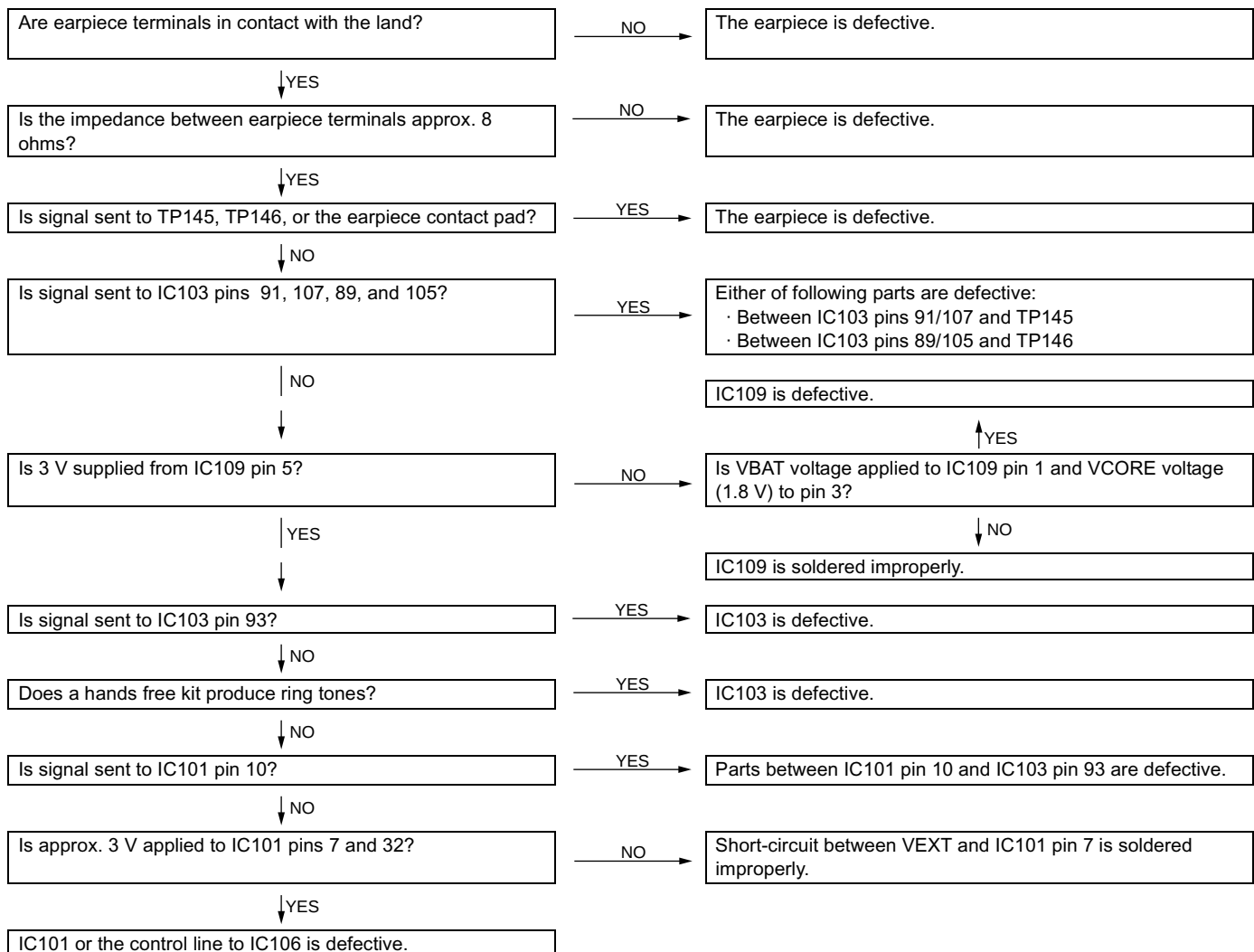


5. Vibrator does not work.



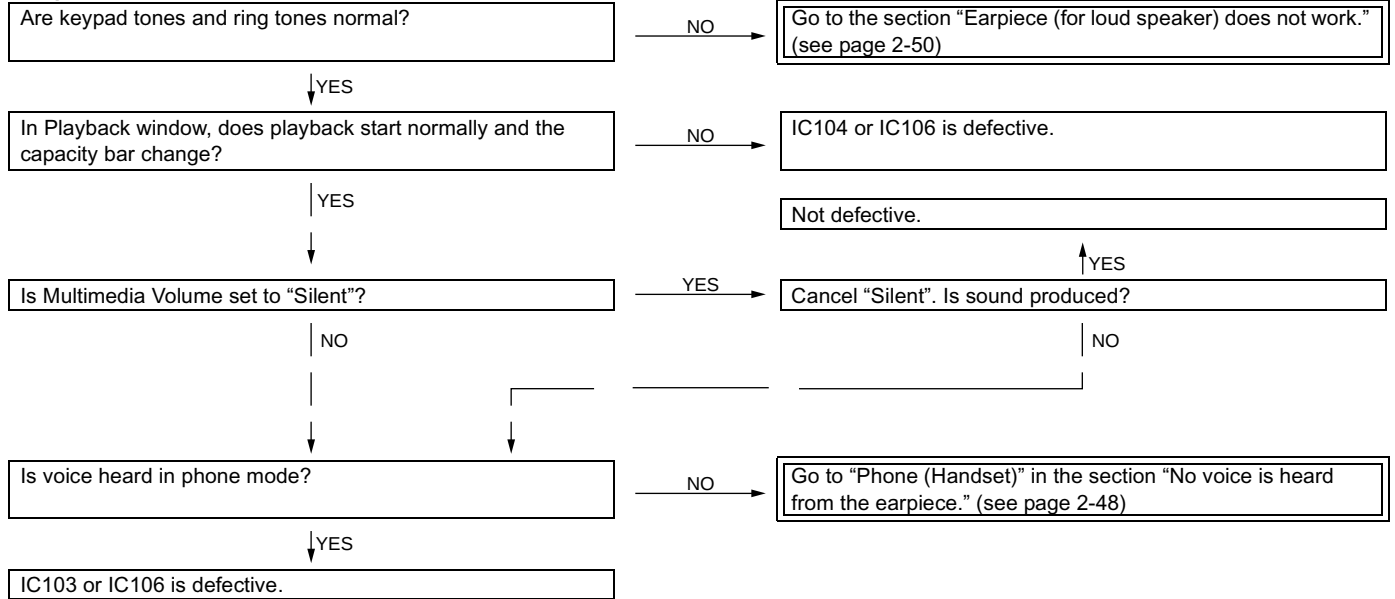
6. Clock Settings are reset.**7. Earpiece (for loud speaker) does not work.**

- * When ring tones sound, but keypad tones do not, "Keypad Tones" is set to Off.
- * When only ring tones do not sound, "Ringer Volume" is set to "Silent".
- * Ring tones sound according to "Ringer Volume" settings.

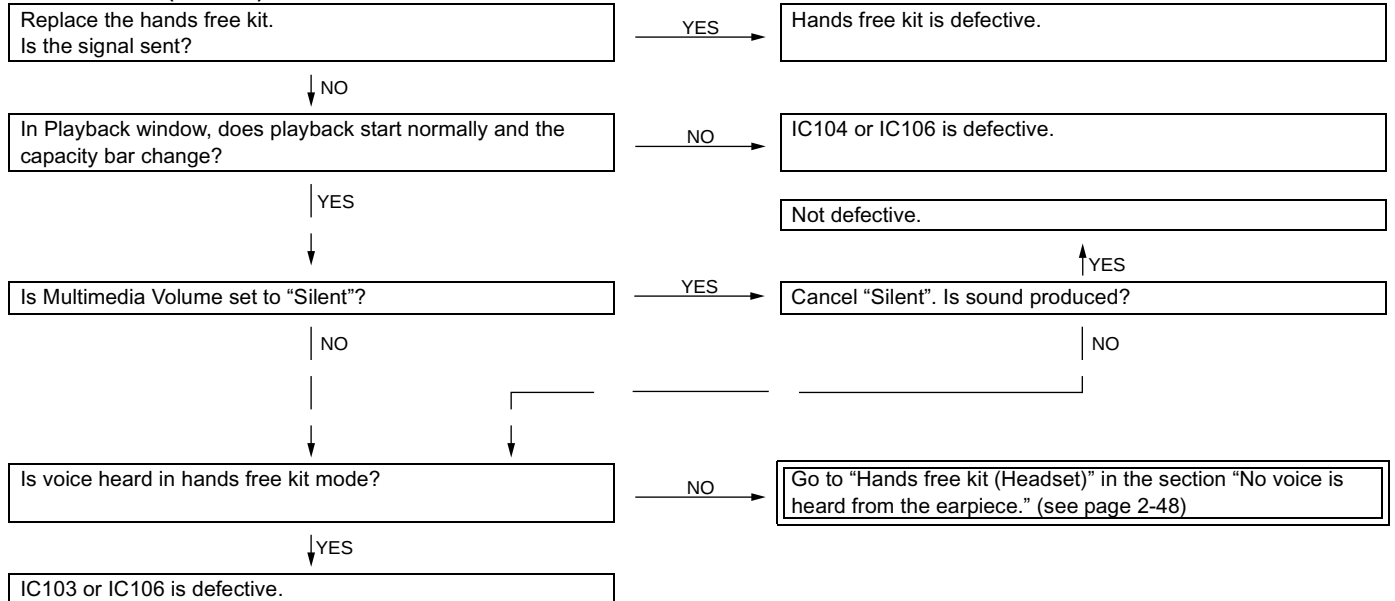


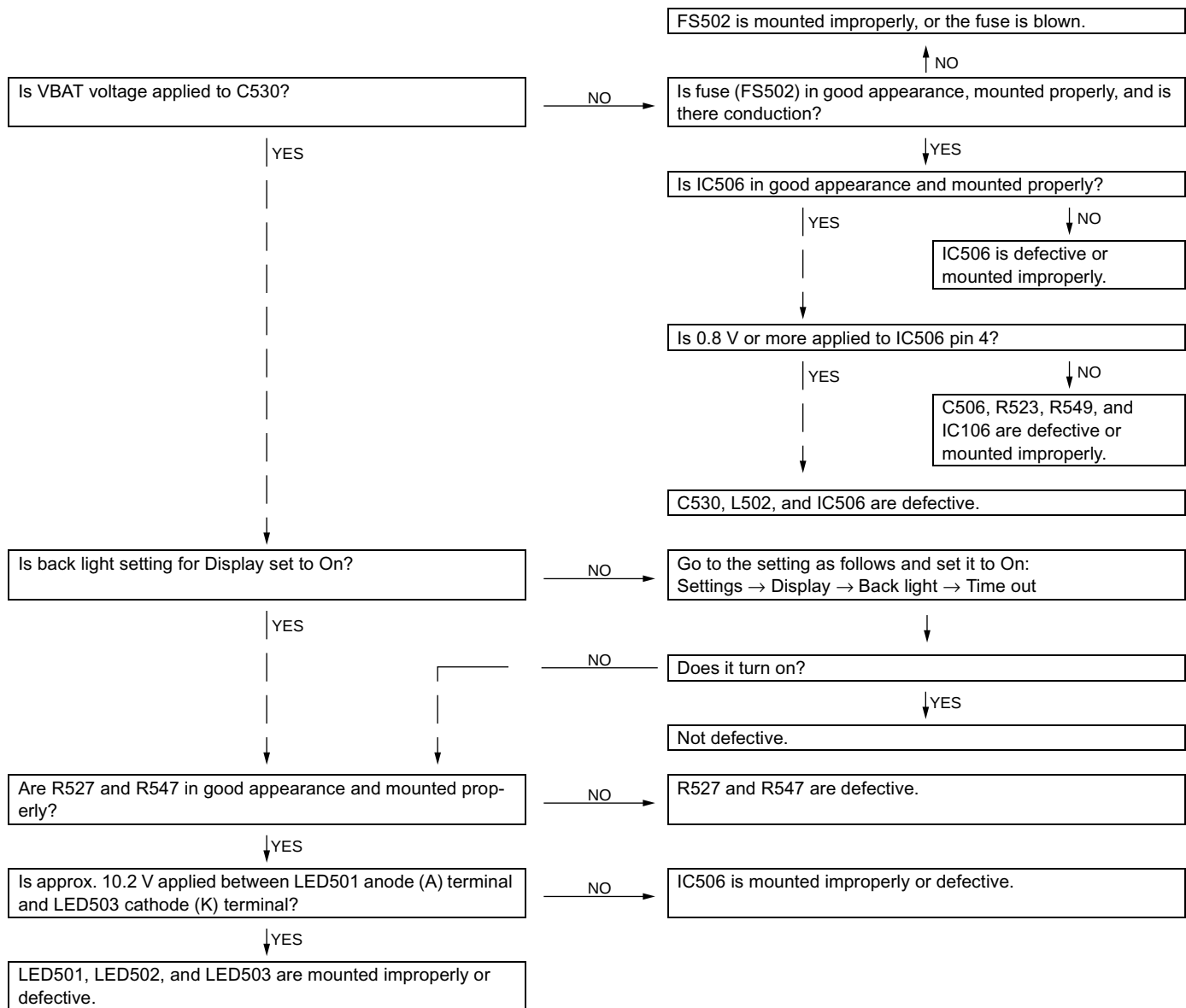
8. Video/Voice Recorder playback is impossible.

Earpiece



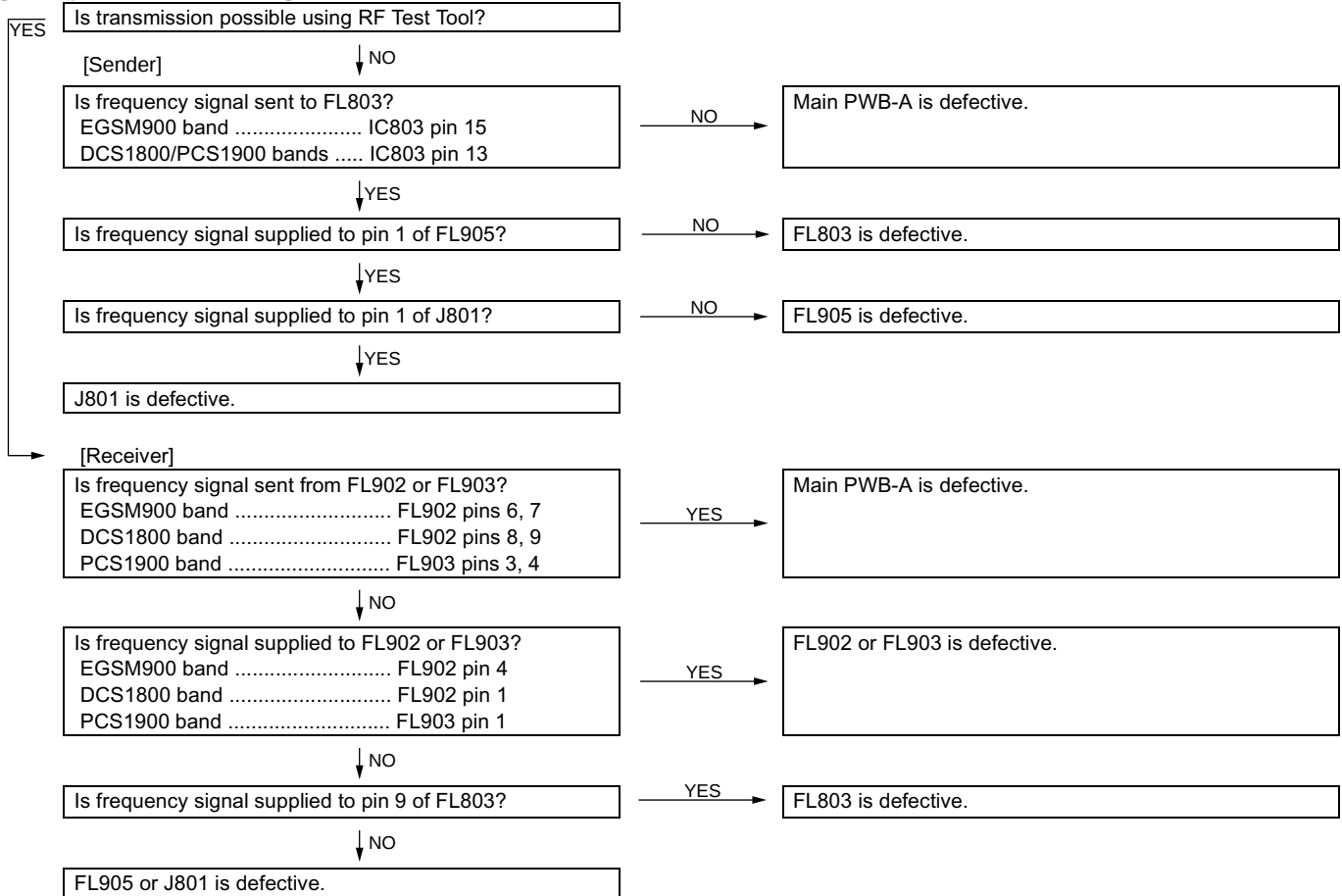
Hands free kit (Headset)

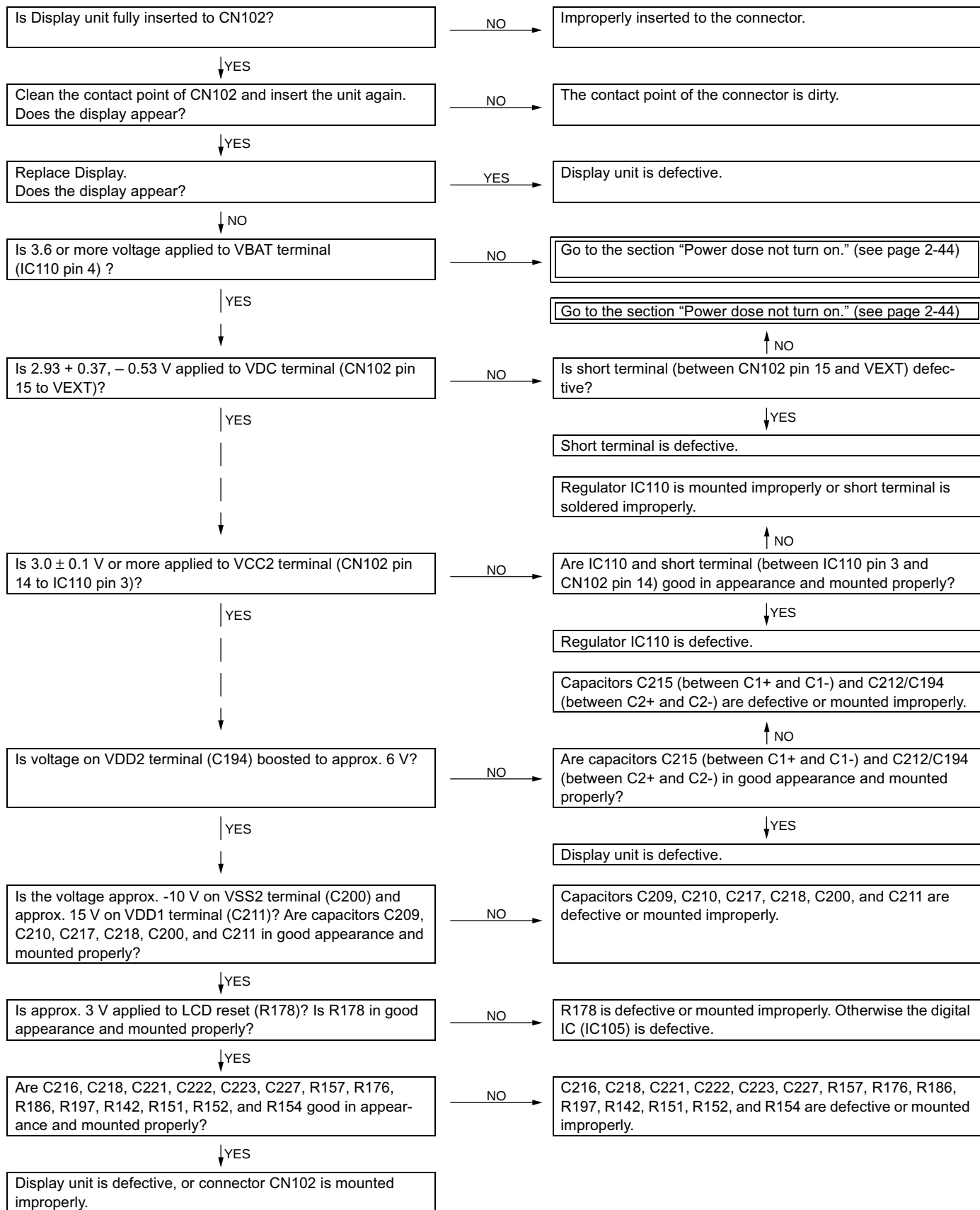


9. Back Light does not turn on.

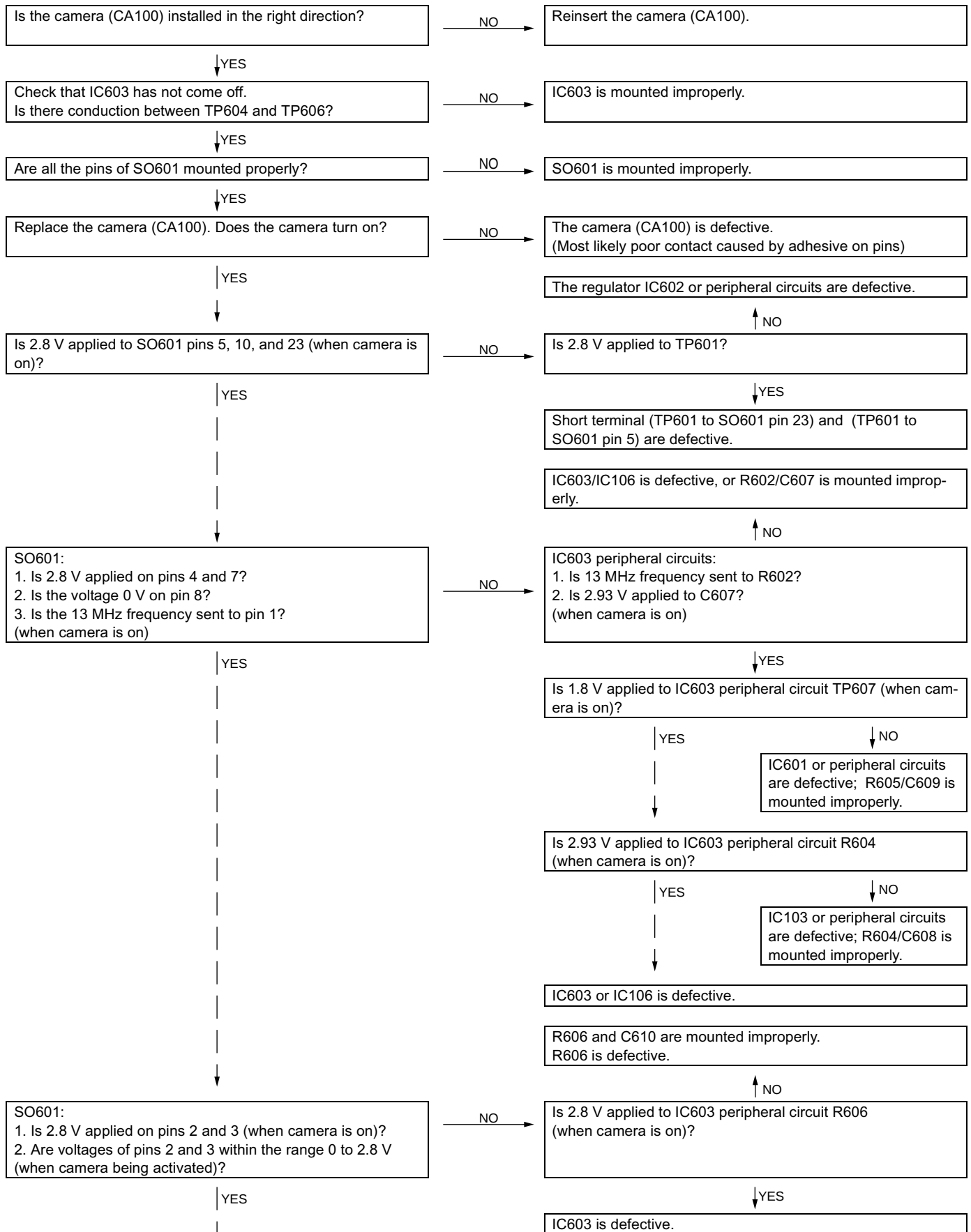
10. Out of range and incoming/outgoing calls are impossible.

[Checkpoints in RF Test Tool]



11. The display does not appear on Display.

12. Pictures cannot be taken.



(To page 2-56)

(From page 2-55)

②

SO601:
Are voltages of the following pins within the range 0 to 2.8 V
(when camera is on)?
1. pins 11 - 18
2. pins 20 - 22

NO

R611, R612, and R613 are mounted improperly.

YES

IC603 is defective.

13. SIM card is not recognised.

Replace the SIM card. Is it recognised?

YES

SIM card is defective or not the one specified.

NO

Is 2.85 V supplied from pins 1, 2, and 6 of the SIM card?
And is periodic pulse wave (3.25 MHz) sent from pin 3 of the
SIM card?

YES

The contact point of the SIM card connector is deformed or dirty.

NO

Is 2.85 V applied to CN101 pin 1?

NO

Are R110 and C131 good in appearance and mounted properly?

YES

R110 or C131 is defective.

↑ NO

IC103 is defective.

↓ YES

Short terminal (CN101 pin 1 to IC106 pin 195) is defective.

↑ NO

Is 2.85 V applied to CN101 pin 2?

NO

Is short terminal (CN101 pin 1 to IC106 pin 195) good in appearance and mounted properly?

YES

IC106 is defective.

↓ YES

R164 is defective.

↑ NO

Is periodic pulse wave sent from CN101 pin 3?

NO

Is R164 good in appearance and mounted properly?

YES

IC106 is defective.

↓ YES

Replace R163, R113, or short terminal (CN101 pin 6 to R163).

↑ NO

Is 2.85 V supplied from CN101 pin 6?

NO

Are R163, R113, and short terminal (CN101 pin 6 to R163) good in appearance and mounted properly?

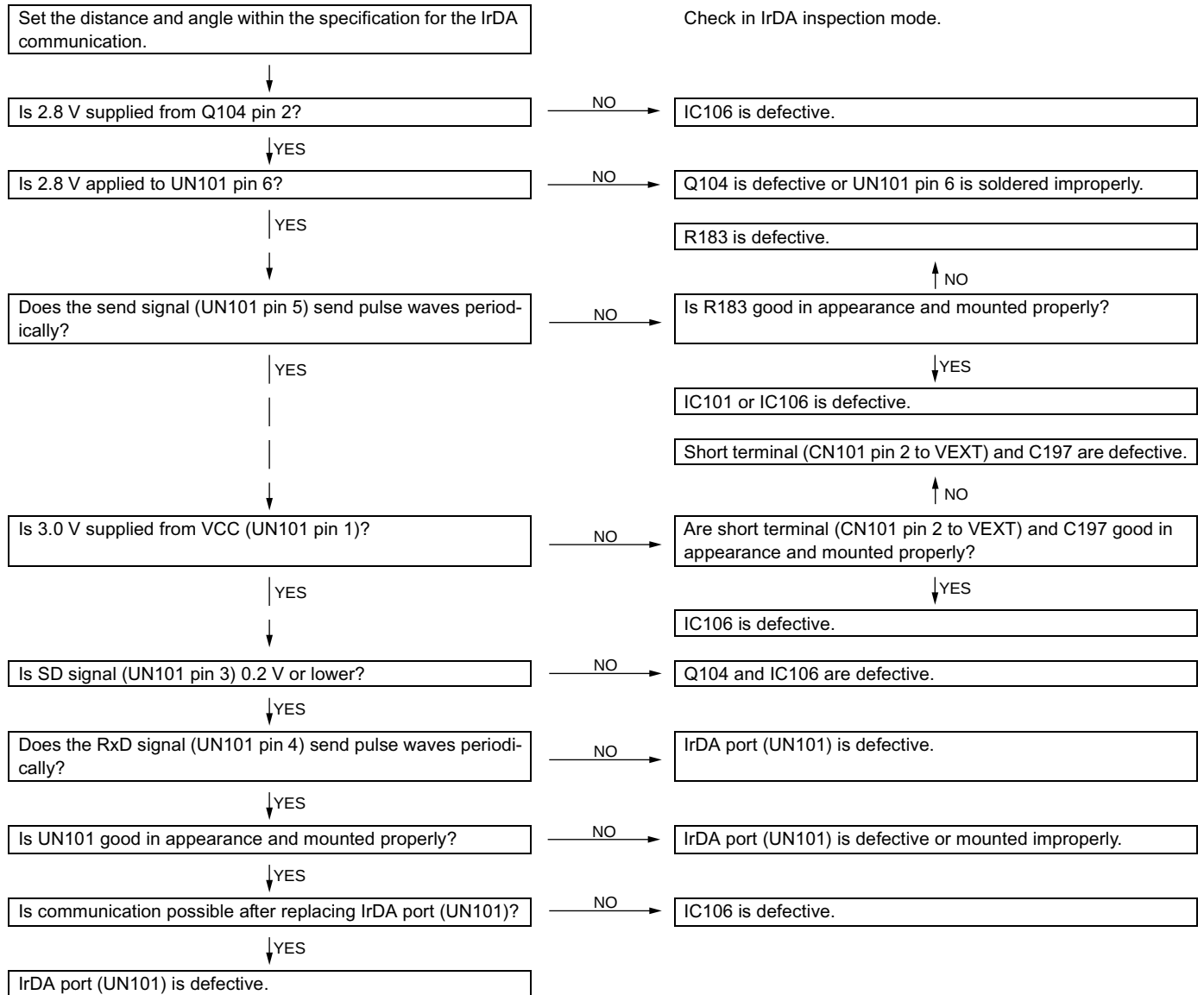
YES

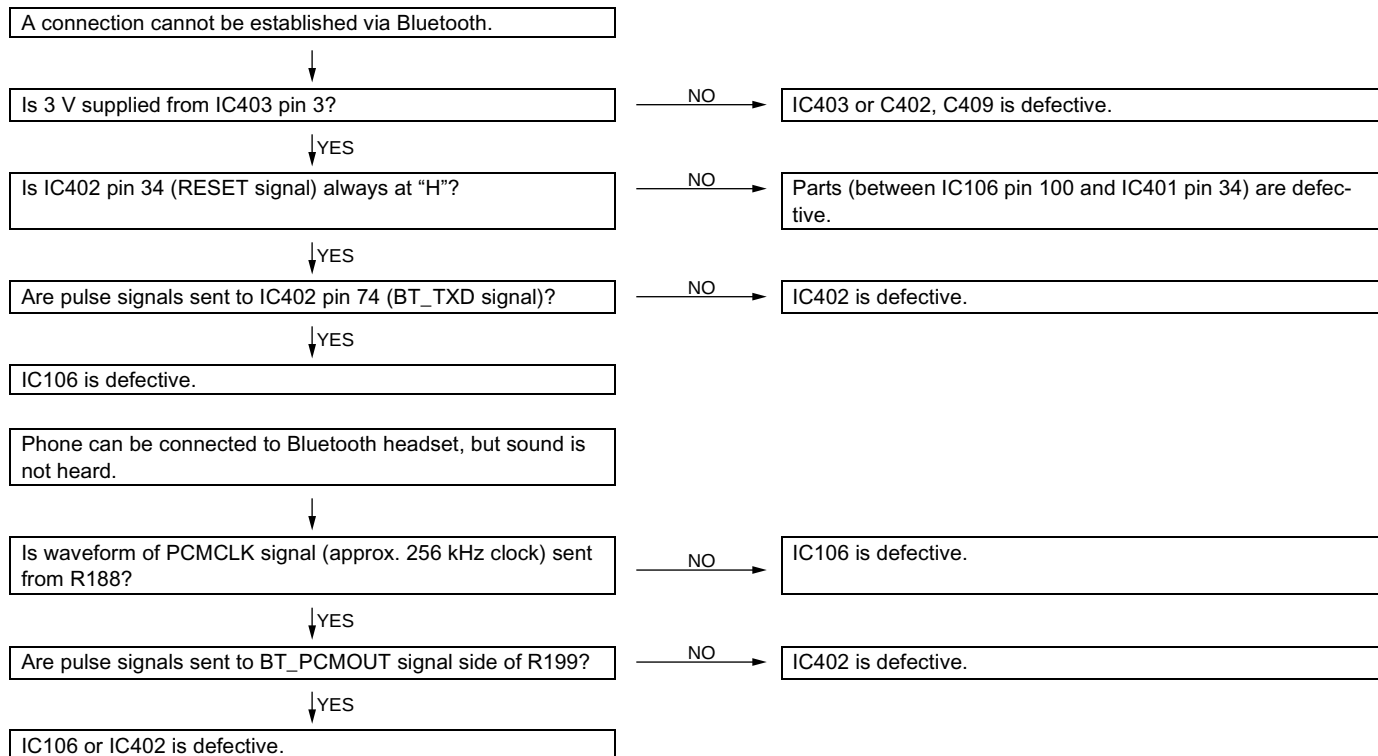
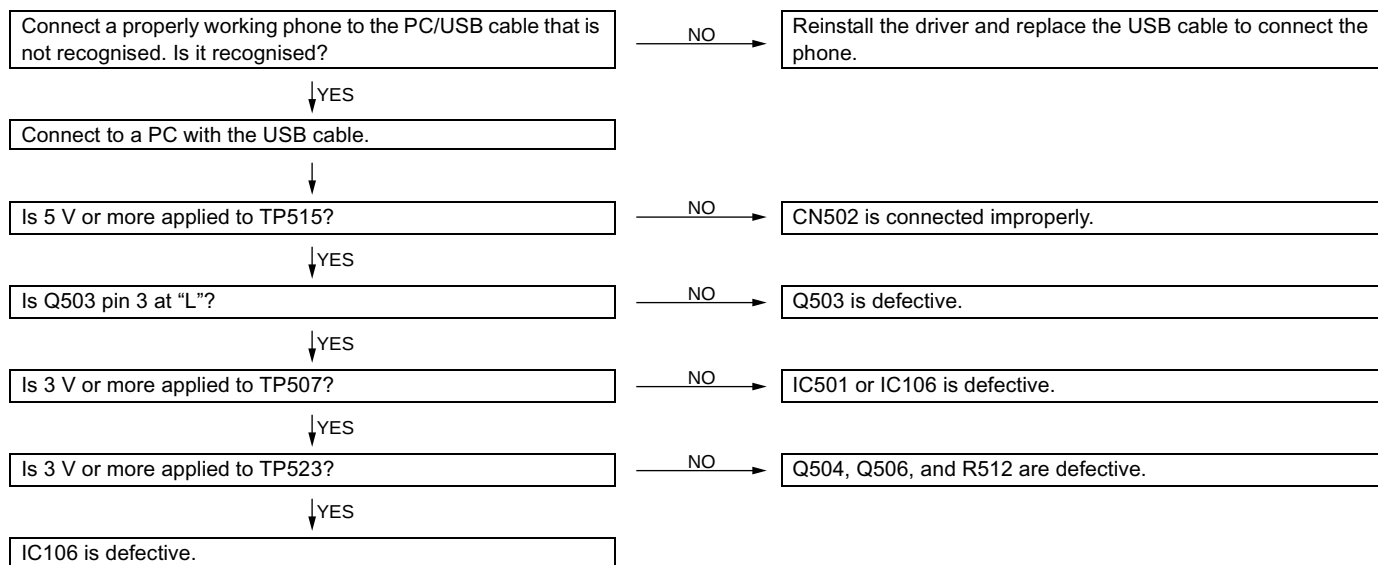
CN101 is defective.

↓ YES

IC106 is defective.

14. IrDA (Infrared) communication is impossible.



15. Bluetooth communication is impossible.**16. USB connection is impossible.**

CHAPTER 3. DISASSEMBLY AND REASSEMBLY**[1] Servicing Concerns****1. For disassembling**

1. Do not remove the board of baseband section by pulling external interface connector not to damage the board.
2. Shield case is attached on shield case holder with no space.
Do not remove together with shield case holder. If you do, you cannot attach it again because they are soldered and in such a case, you should take the electric pattern on the board as well.

2. For reassembling

1. Make sure that all ornamental parts have no scratch and clean.
2. Make sure that you can open and close handset (phone) smoothly and hear hinges click.
3. Make sure that display panel is placed in a proper position without inclination.
4. Make sure that all three battery terminals protrude evenly.
5. Make sure that the pawl of aerial is upside.

• FASTENING TORQUE (Referential Value)

• Back Cabinet / Front Cabinet	$15.7 \pm 1 \text{ N} \cdot \text{cm}$ ($1.6 \pm 0.1 \text{ Kg} \cdot \text{cm}$)
• Key PWB / Back Cabinet	$13.7 \pm 1 \text{ N} \cdot \text{cm}$ ($1.4 \pm 0.1 \text{ Kg} \cdot \text{cm}$)

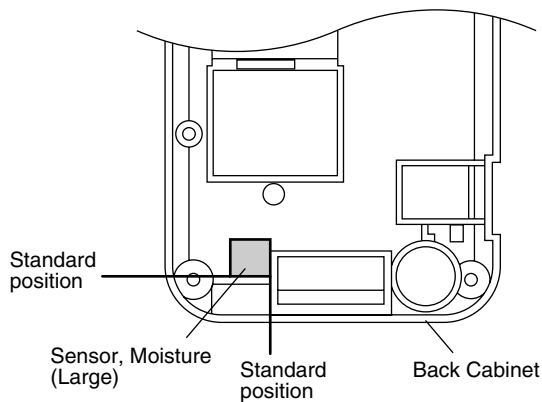
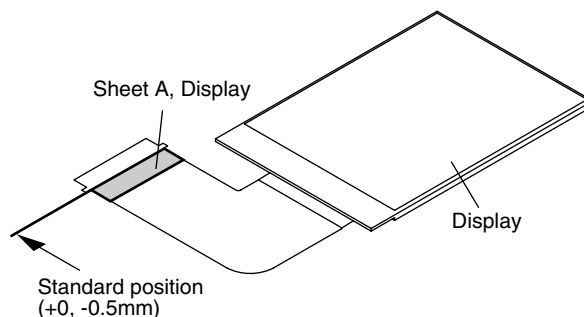
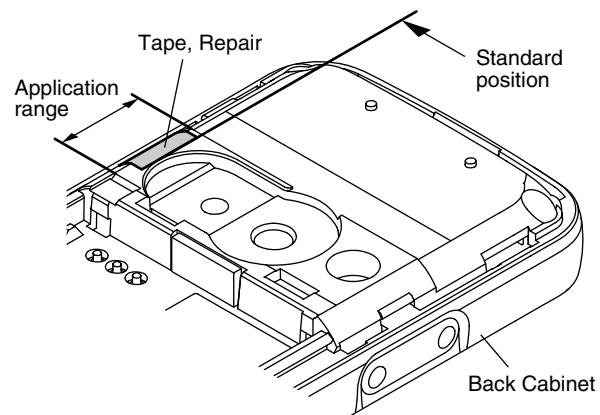
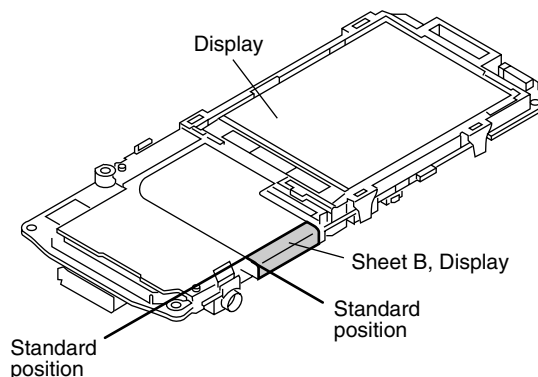
The reference value is measured when an electric screwdriver (HIOS CL4000) is used.

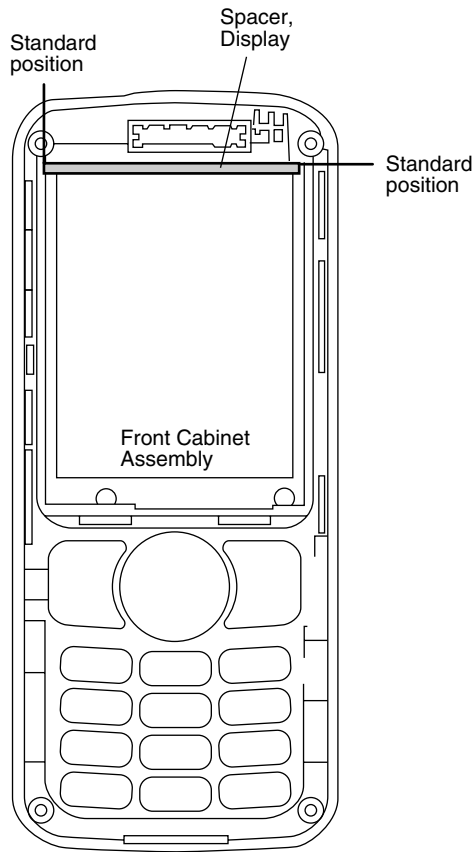
• SOLDERING SPECIFICATION

Soldering iron must be set to 350° C for 5 seconds.

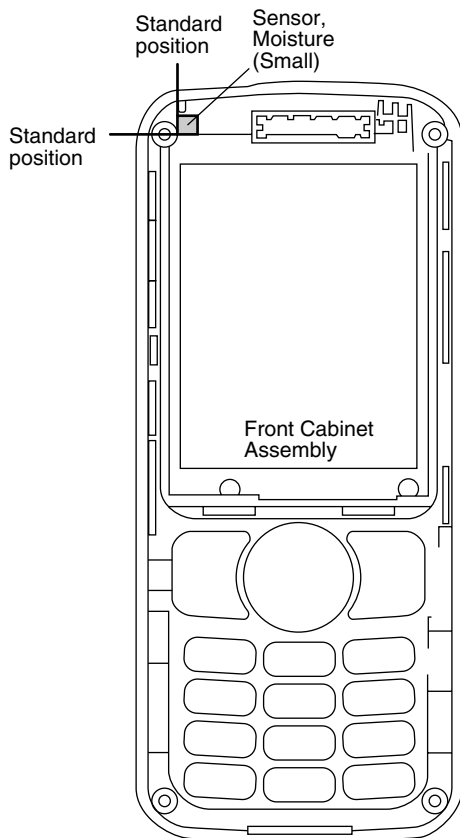
• STANDARD POSITION OF ATTACHMENT

When replacing the following labels (marked with ), be sure to place new ones on the specified positions.

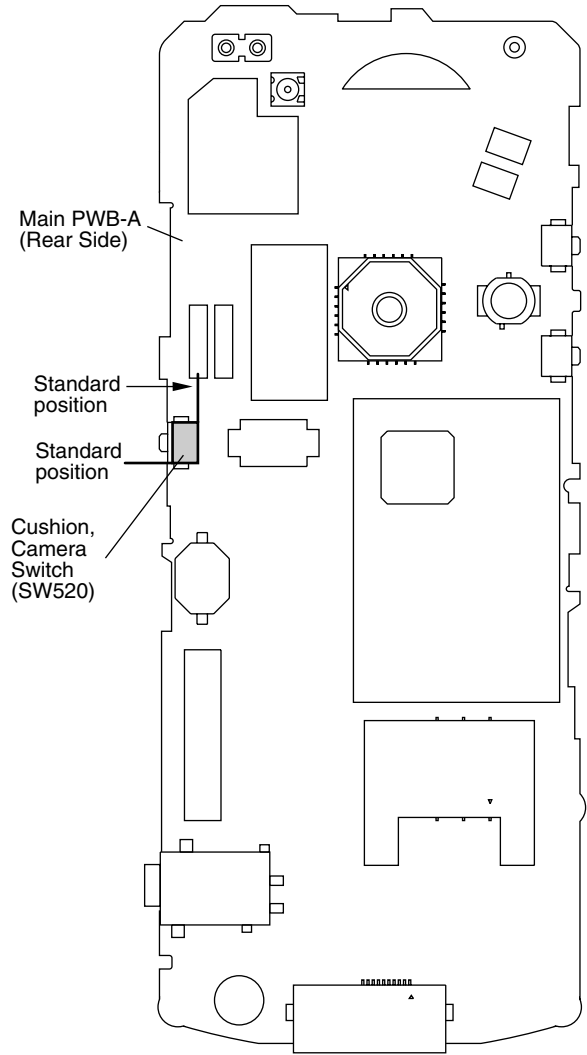
**[Sensor, Moisture (Large)]****[Sheet A, Display]****[Tape, Repair]****[Sheet B, Display]**



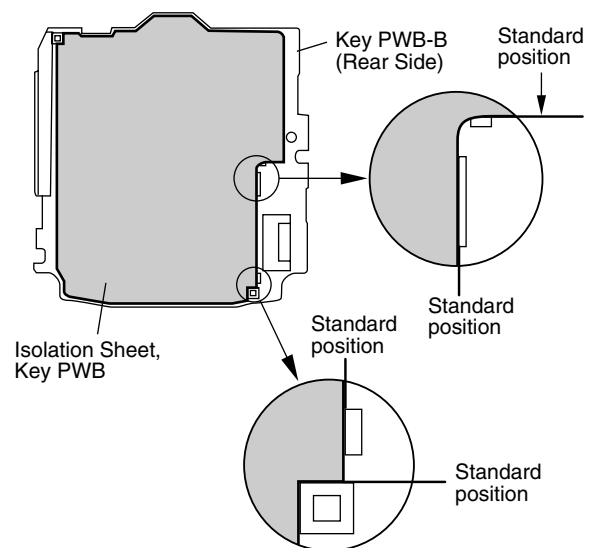
[Spacer, Display]



[Sensor, Moisture (Small)]



[Cushion, Camera Switch (SW520)]

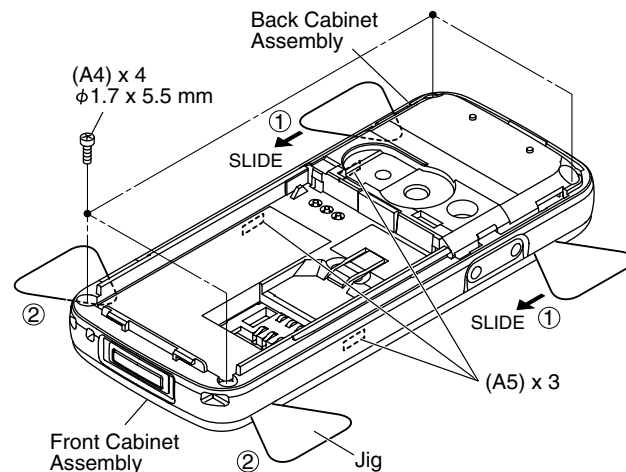
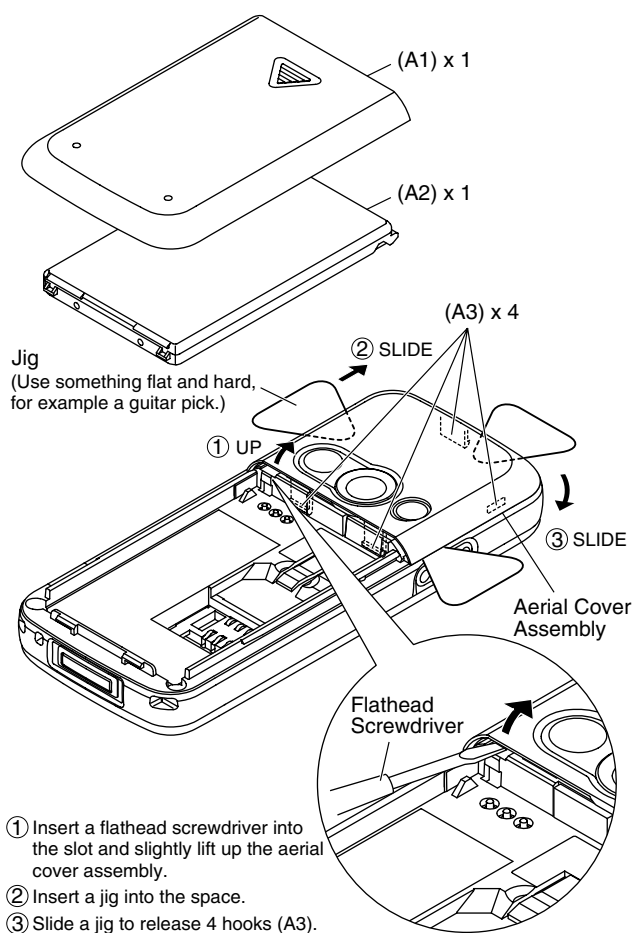
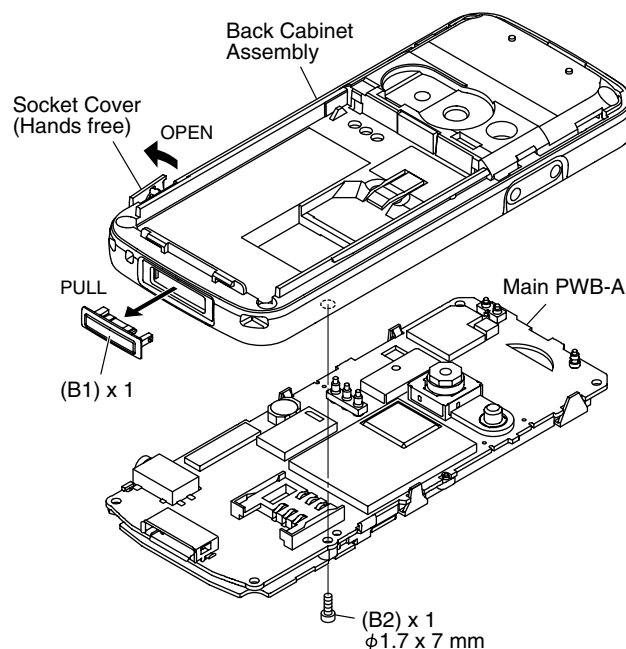
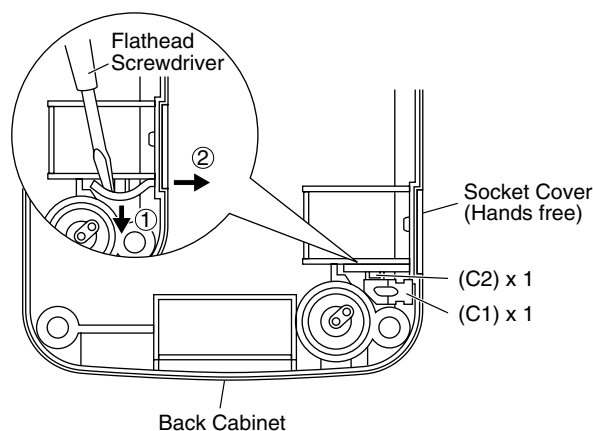


[Isolation Sheet, Key PWB]

[2] Disassembly and reassembly

- To reassemble, reverse the procedure.

STEP	REMOVAL	PROCEDURE	FIGURE
1	Front Cabinet Assembly	1.Battery Cover..... (A1)x1 2.Li-Ion Battery..... (A2)x1 3.Hook..... (A3)x4 4.Screw..... (A4)x4 5.Hook..... (A5)x3	1 2
2	Back Cabinet Assembly	1.Open the Socket Cover (Hands free) 2.External Connector Cover... (B1)x1 3.Screw..... (B2)x1	3
3	Socket Cover (Hands free)	1.Socket Spacer..... (C1)x1 2.Hook..... (C2)x1	4

**Figure 2****Figure 1****Figure 3****Figure 4**

STEP	REMOVAL	PROCEDURE	FIGURE
4	Key PWB-B	1.Hook..... (D1)x2 2.Flat Cable..... (D2)x1	5
5	Display Assembly	1.Flat Cable..... (E1)x1 2.Hook..... (E2)x4	5
6	Main PWB-A	1.Hook..... (F1)x2	6

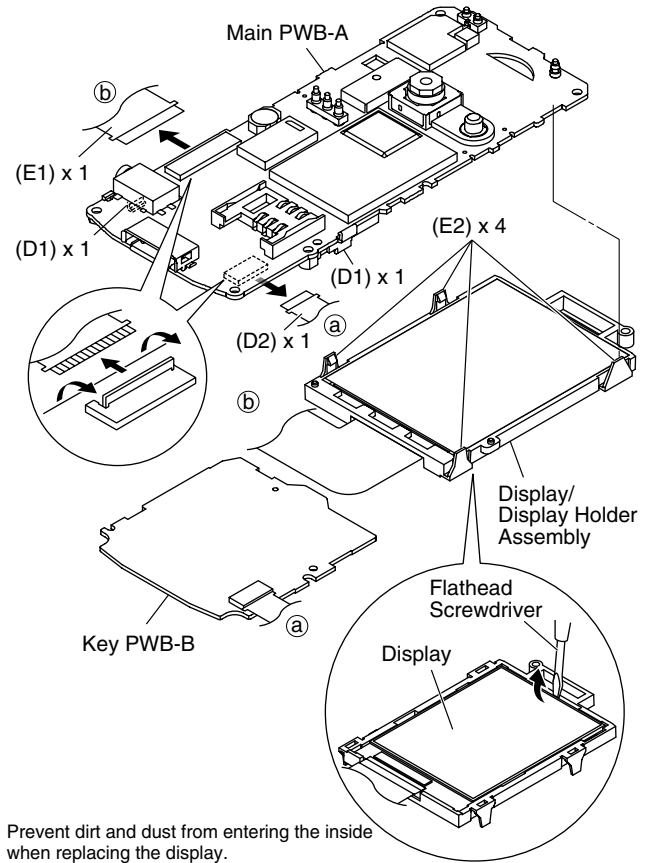


Figure 5

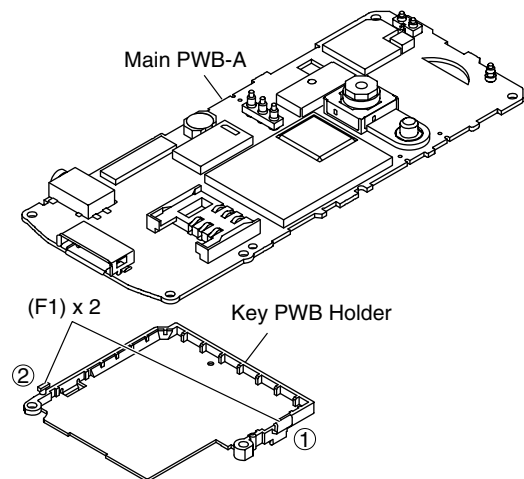


Figure 6

[1] Block diagram

[Main]

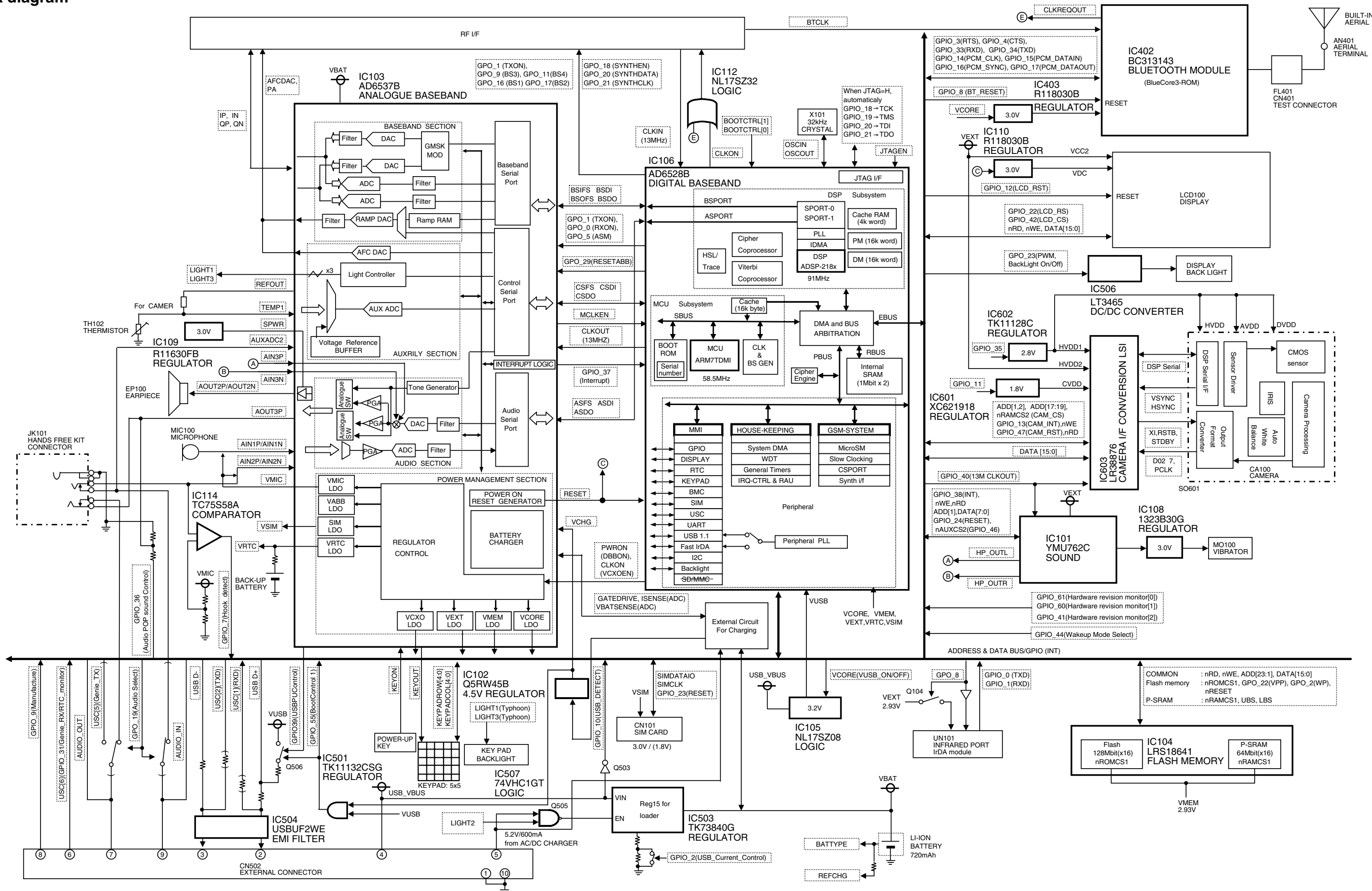


Figure 1 MAIN BLOCK DIAGRAM

[RF]

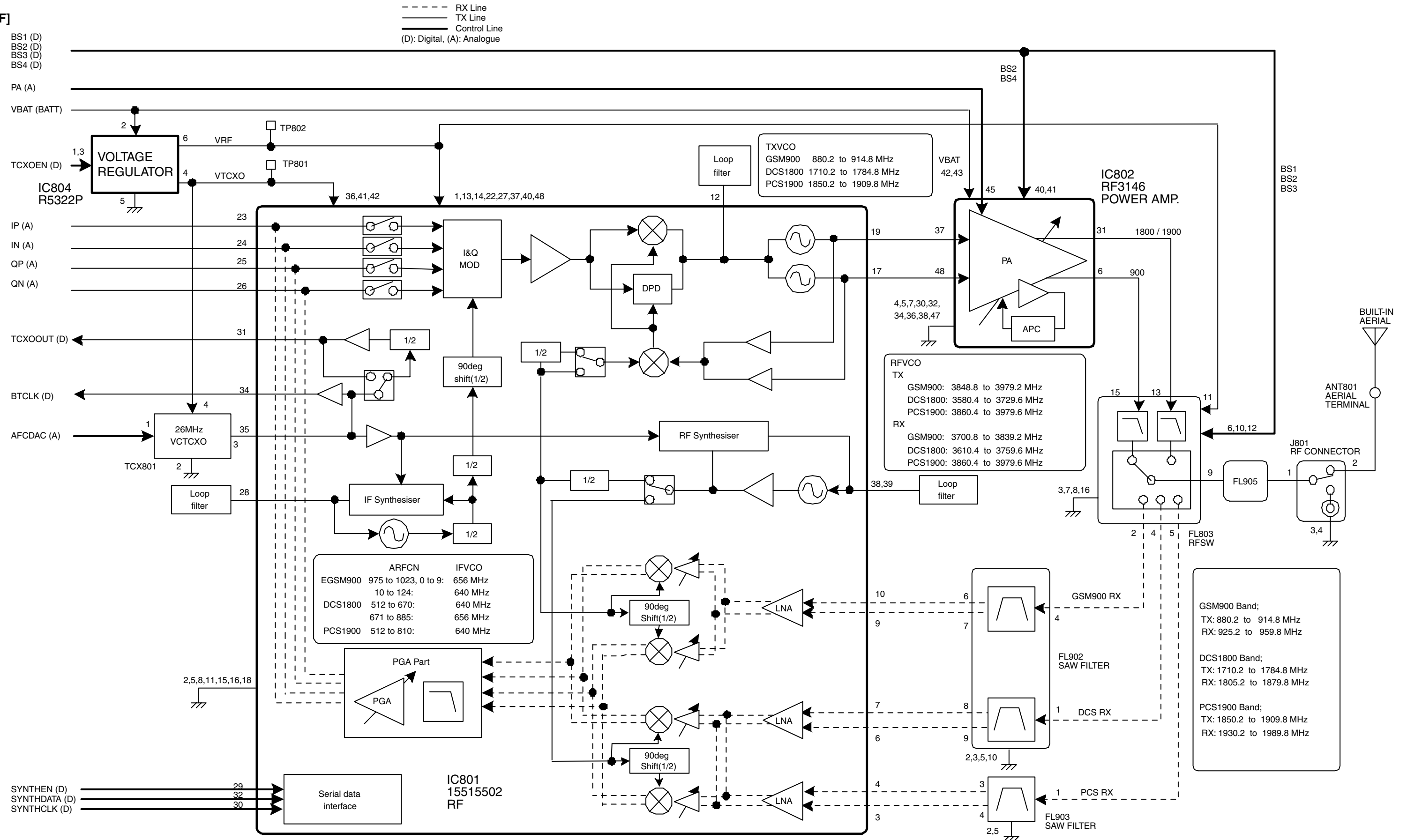


Figure 2 RF BLOCK DIAGRAM

[Power Supply]

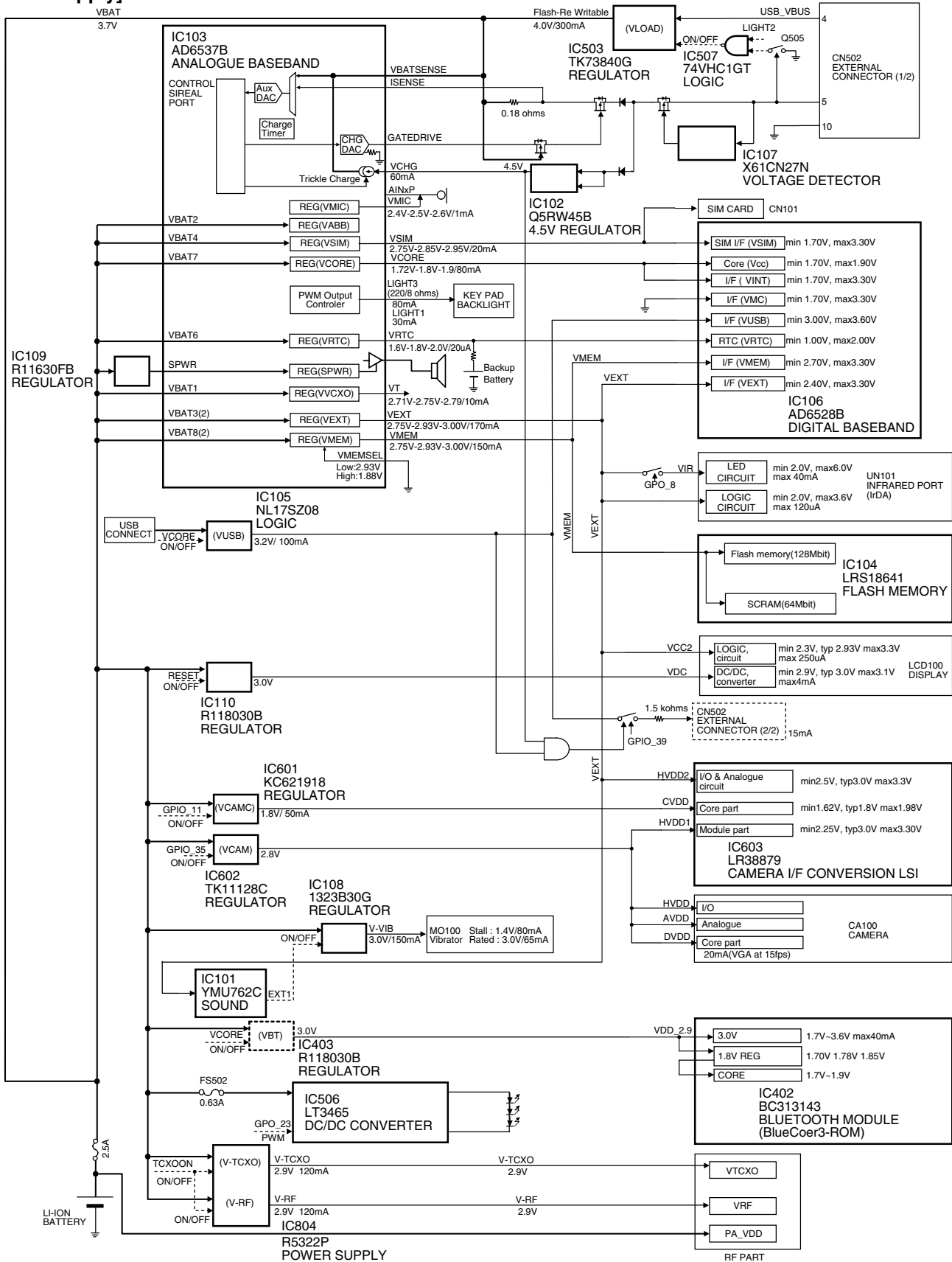


Figure 3 POWER SUPPLY BLOCK DIAGRAM

CHAPTER 5. SCHEMATIC DIAGRAM AND WIRING SIDE OF P.W.BOARD**[1] Notes on schematic diagram**

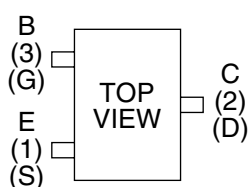
• Resistor:

Letters K and M are prefixed to ohm (unit of resistance).
K means 1000 ohms and M means 1000 kohms.

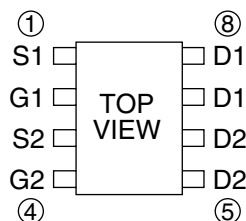
• Capacitor:

P is an abbreviation for "pico" and a farad (unit of capacitance) without P means "microfarad". Expressions "capacitance/withstand voltage" are used for electrolytic capacitors.
(CH), (RH), (UJ): Temperature compensation
(ML): Mylar type
(S): Styrol type
(PP): Polypropylene type

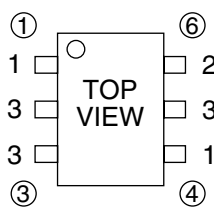
- The voltage of each section is obtained by measuring between the section and chassis using a digital multimeter [handset (phone) out of range].
- Conditions: SIM card inserted, power on, in stand-by mode (opened)
- Schematic diagram and Wiring Side of P.W. Board for this model are subject to change for improvement without prior notice.
- Parts marked with "△" are important for maintaining the safety of the set. Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

[2] Types of transistor and LED

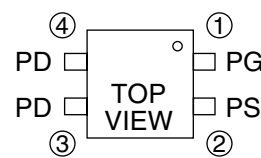
2SK3019
DTC114 YET



ECH8603

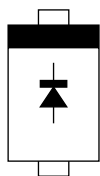


NSBC143 TP



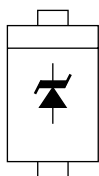
EC4301 C
EC4401 C

TOP VIEW



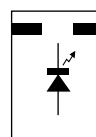
1SS388
RB160M30
RB52030T
RB52130T

TOP VIEW



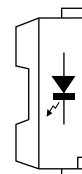
RSB6.8S

TOP VIEW



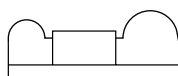
YPY1105C

TOP VIEW



ECW008B2

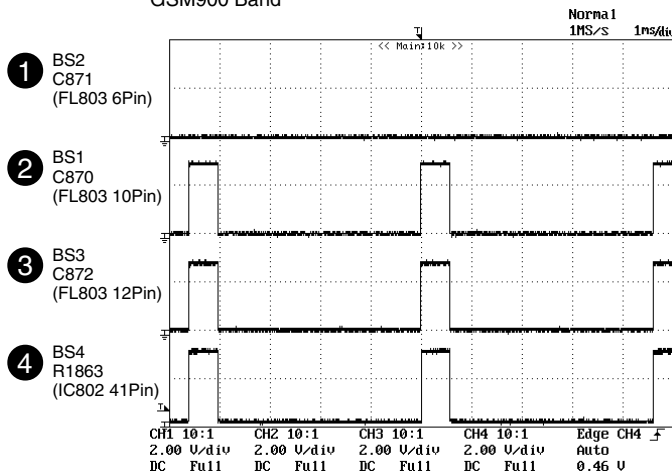
TOP VIEW



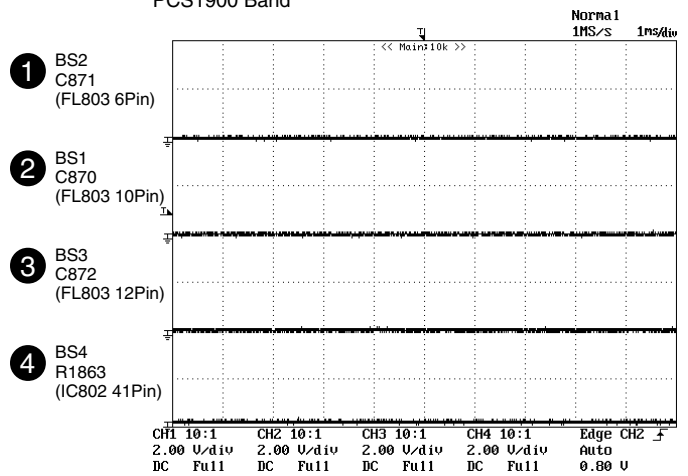
2W0110VY

[3] Waveforms of circuit

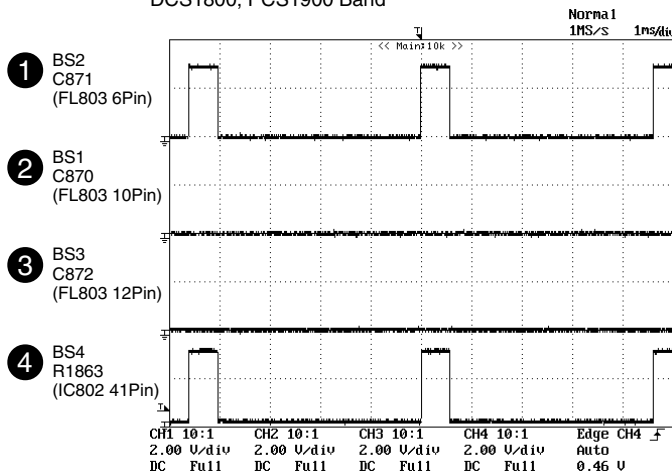
RF Test Tool
Tx test
GSM900 Band



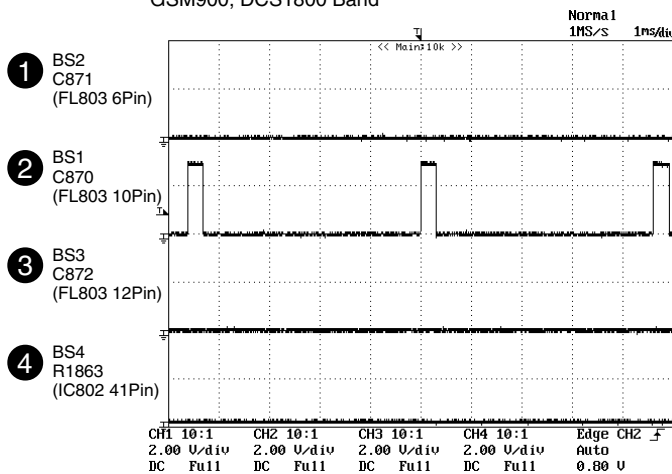
RF Test Tool
Rx test
PCS1900 Band



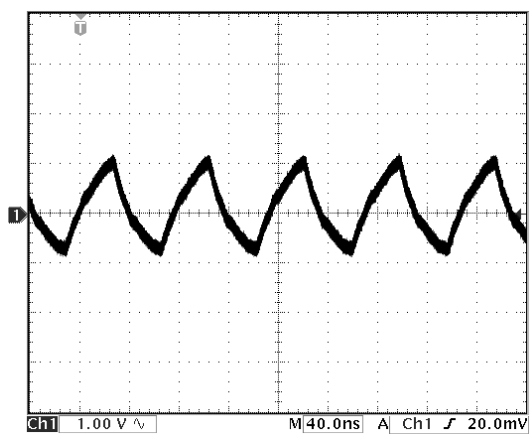
RF Test Tool
Tx test
DCS1800, PCS1900 Band



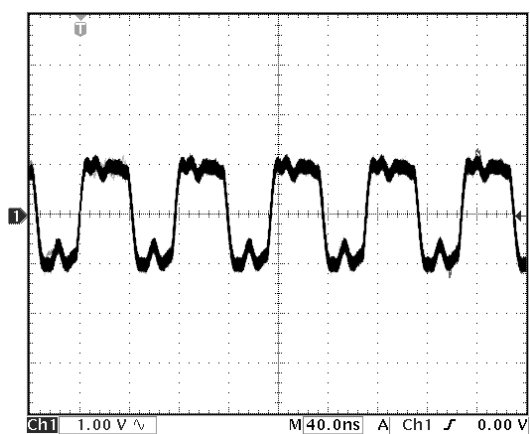
RF Test Tool
Rx test
GSM900, DCS1800 Band



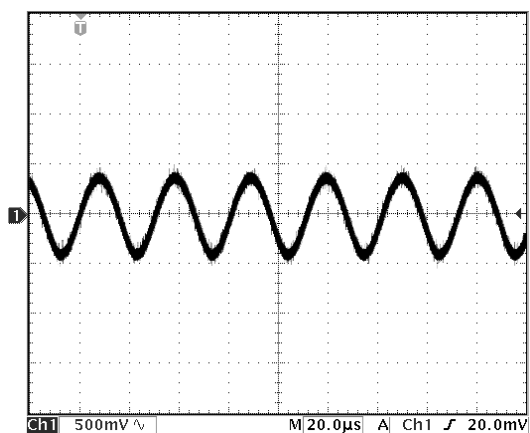
- 5 13M-IN (CLKIN) C833
(Stand-by) (IC106 142Pin)



- 6 13M-OUT (CLKOUT) R166
(Stand-by) (IC106 84Pin)



- 7 OSCIN (32 kHz) R174A
(Stand-by) (IC106 49Pin)



[4] Schematic diagram/Wiring side of P.W.Board

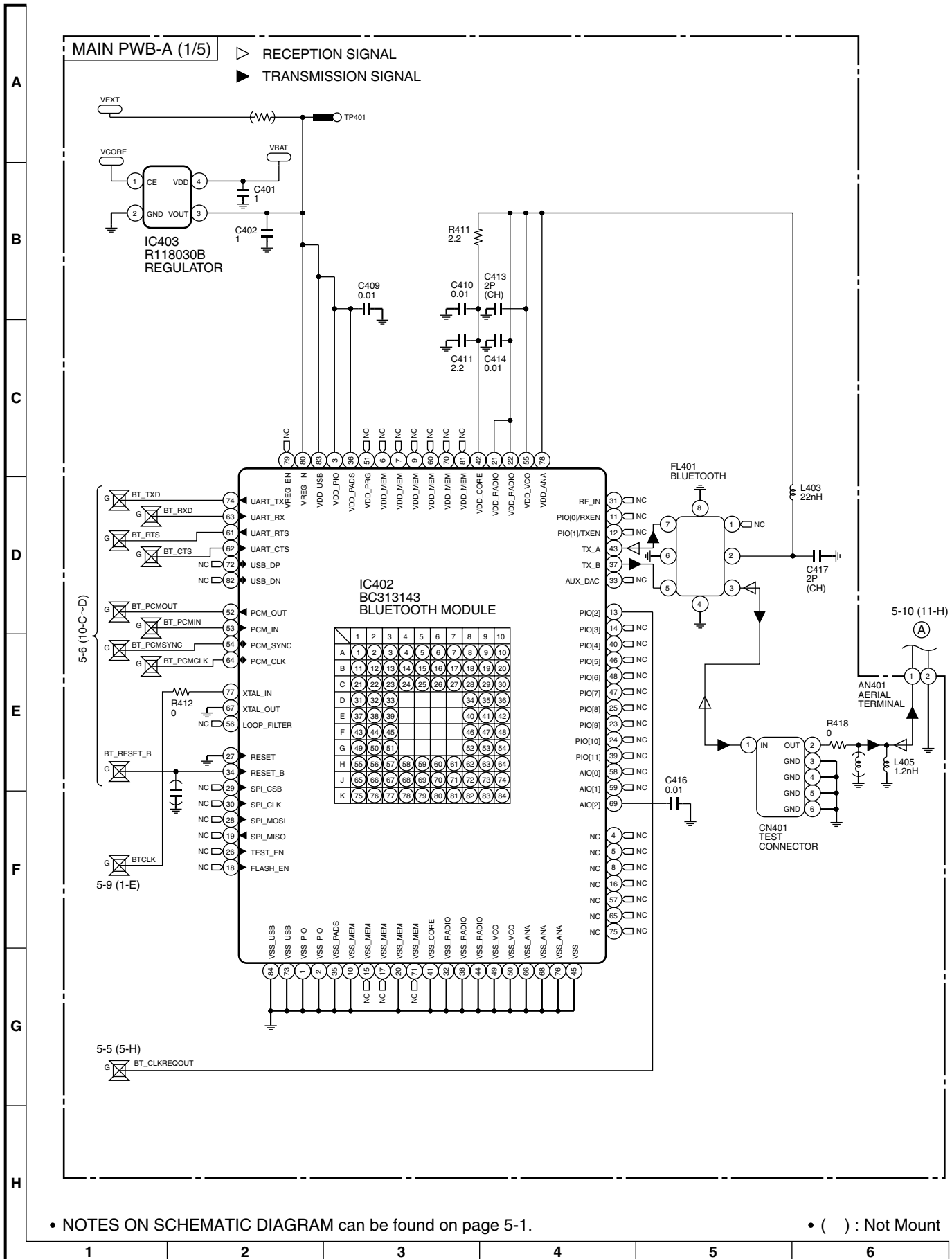
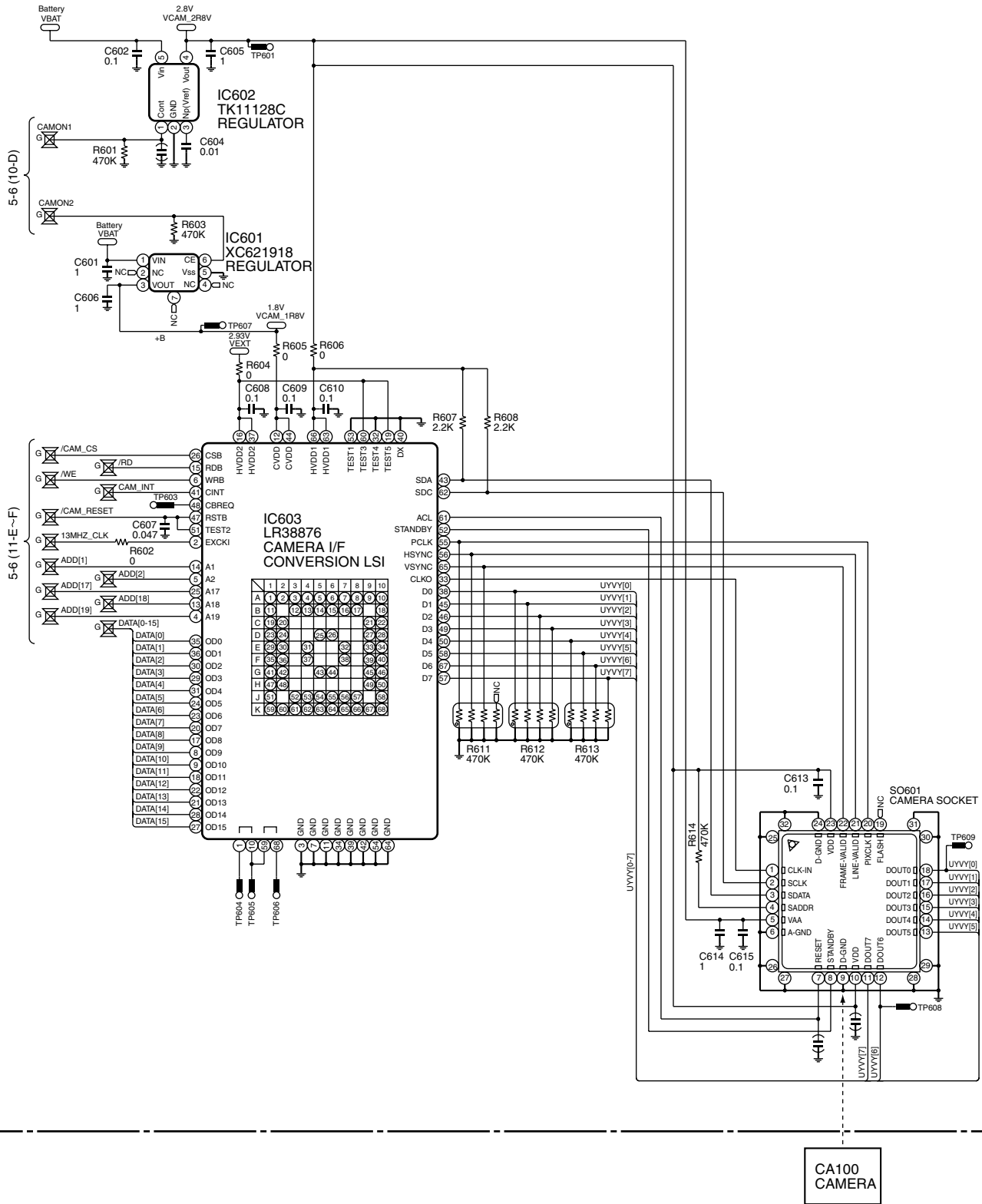


Figure 1 SCHEMATIC DIAGRAM (1/6)





MAIN PWB-A (4/5)



• NOTES ON SCHEMATIC DIAGRAM can be found on page 5-1.

• () : Not Mount

Figure 4 SCHEMATIC DIAGRAM (4/6)

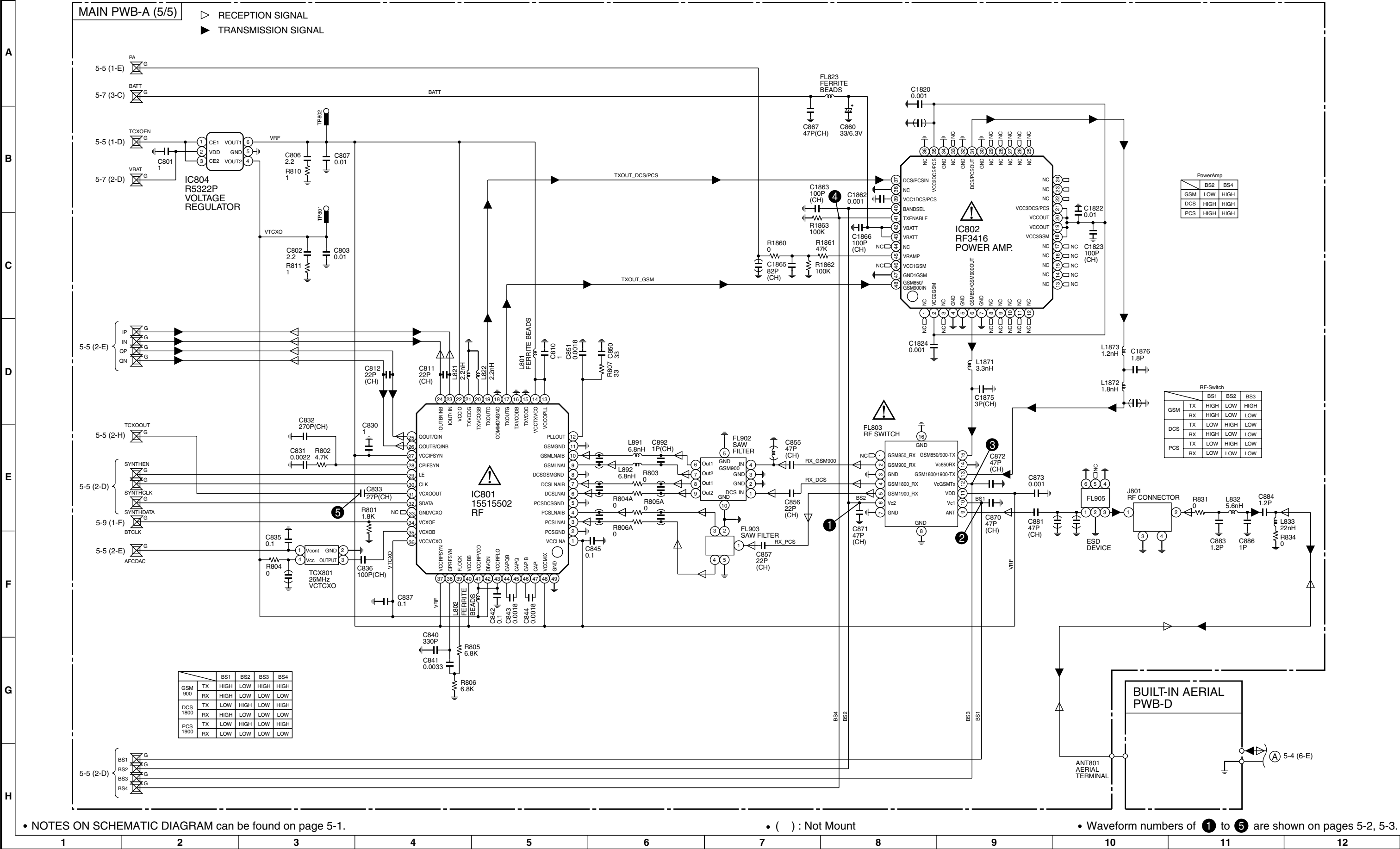


Figure 5 SCHEMATIC DIAGRAM (5/6)

A
B
C
D
E
F
G
H

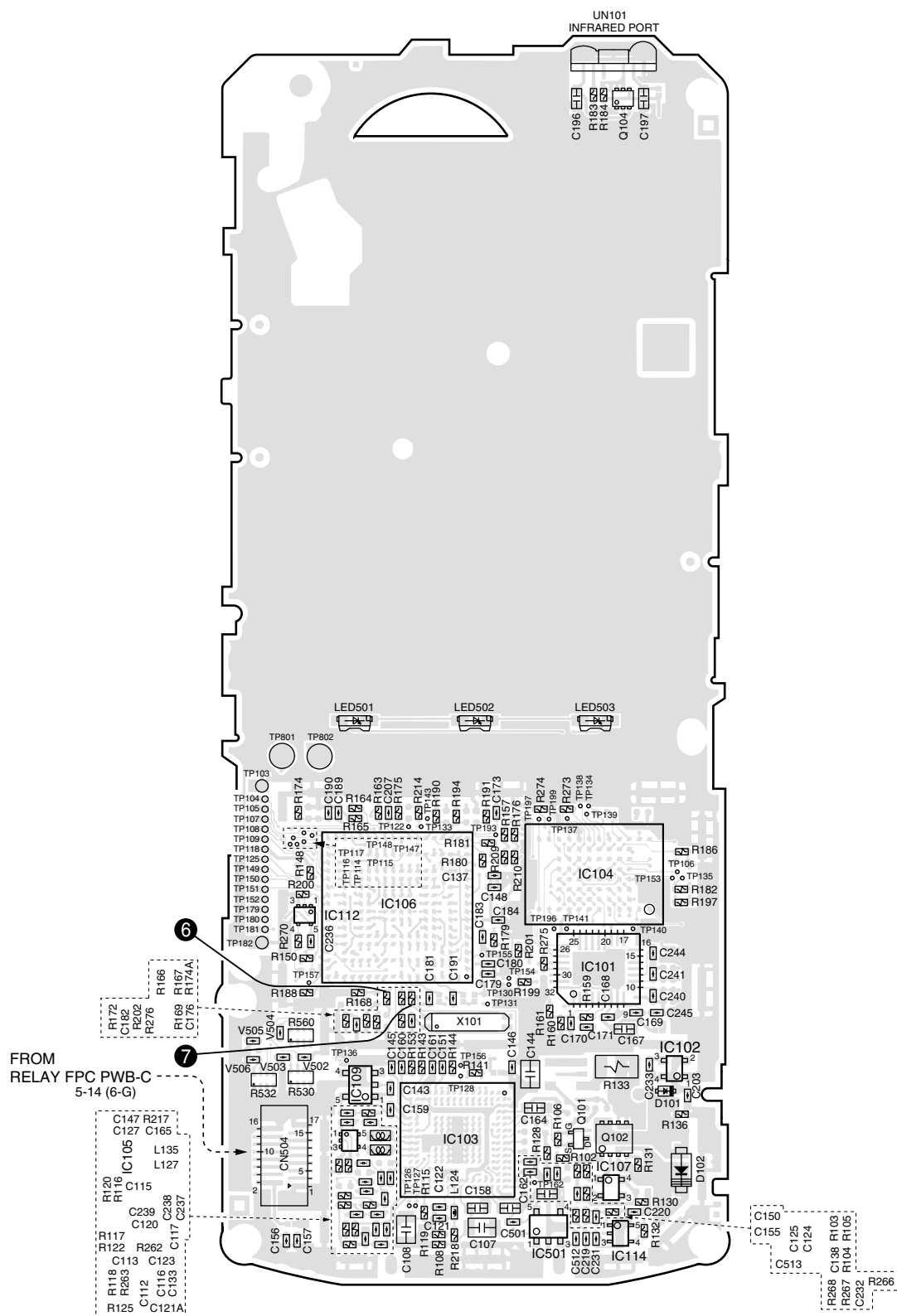


Figure 6 WIRING SIDE P.W.BOARD (1/3)

The diagram illustrates the internal layout of a mobile phone, showing the placement of various components. Key components include:

- AN401 AERIAL TERMINAL**: Located at the top left.
- ANT801 AERIAL TERMINAL**: Located at the top right.
- EP100 EARPIECE**: Located at the top right.
- CA100 CAMERA**: Located at the top right.
- MO100 VIBRATOR**: Located at the top left.
- LCD100 DISPLAY**: Located on the left side.
- BAT100 BACK-UP BATTERY**: Located in the center.
- IC402**, **IC403**, **IC603**, **IC802**, **IC804**, **IC801**, **IC506**, **IC507**, **IC508**, **IC509**, **IC510**, **IC511**, **IC512**, **IC513**, **IC514**, **IC515**, **IC516**, **IC517**, **IC518**, **IC519**, **IC520**, **IC521**, **IC522**, **IC523**, **IC524**, **IC525**, **IC526**, **IC527**, **IC528**, **IC529**, **IC530**, **IC531**, **IC532**, **IC533**, **IC534**, **IC535**, **IC536**, **IC537**, **IC538**, **IC539**, **IC540**, **IC541**, **IC542**, **IC543**, **IC544**, **IC545**, **IC546**, **IC547**, **IC548**, **IC549**, **IC550**, **IC551**, **IC552**, **IC553**, **IC554**, **IC555**, **IC556**, **IC557**, **IC558**, **IC559**, **IC560**, **IC561**, **IC562**, **IC563**, **IC564**, **IC565**, **IC566**, **IC567**, **IC568**, **IC569**, **IC570**, **IC571**, **IC572**, **IC573**, **IC574**, **IC575**, **IC576**, **IC577**, **IC578**, **IC579**, **IC580**, **IC581**, **IC582**, **IC583**, **IC584**, **IC585**, **IC586**, **IC587**, **IC588**, **IC589**, **IC590**, **IC591**, **IC592**, **IC593**, **IC594**, **IC595**, **IC596**, **IC597**, **IC598**, **IC599**, **IC600**, **IC601**, **IC602**, **IC603**, **IC604**, **IC605**, **IC606**, **IC607**, **IC608**, **IC609**, **IC610**, **IC611**, **IC612**, **IC613**, **IC614**, **IC615**, **IC616**, **IC617**, **IC618**, **IC619**, **IC620**, **IC621**, **IC622**, **IC623**, **IC624**, **IC625**, **IC626**, **IC627**, **IC628**, **IC629**, **IC630**, **IC631**, **IC632**, **IC633**, **IC634**, **IC635**, **IC636**, **IC637**, **IC638**, **IC639**, **IC640**, **IC641**, **IC642**, **IC643**, **IC644**, **IC645**, **IC646**, **IC647**, **IC648**, **IC649**, **IC650**, **IC651**, **IC652**, **IC653**, **IC654**, **IC655**, **IC656**, **IC657**, **IC658**, **IC659**, **IC660**, **IC661**, **IC662**, **IC663**, **IC664**, **IC665**, **IC666**, **IC667**, **IC668**, **IC669**, **IC670**, **IC671**, **IC672**, **IC673**, **IC674**, **IC675**, **IC676**, **IC677**, **IC678**, **IC679**, **IC680**, **IC681**, **IC682**, **IC683**, **IC684**, **IC685**, **IC686**, **IC687**, **IC688**, **IC689**, **IC690**, **IC691**, **IC692**, **IC693**, **IC694**, **IC695**, **IC696**, **IC697**, **IC698**, **IC699**, **IC700**, **IC701**, **IC702**, **IC703**, **IC704**, **IC705**, **IC706**, **IC707**, **IC708**, **IC709**, **IC710**, **IC711**, **IC712**, **IC713**, **IC714**, **IC715**, **IC716**, **IC717**, **IC718**, **IC719**, **IC720**, **IC721**, **IC722**, **IC723**, **IC724**, **IC725**, **IC726**, **IC727**, **IC728**, **IC729**, **IC730**, **IC731**, **IC732**, **IC733**, **IC734**, **IC735**, **IC736**, **IC737**, **IC738**, **IC739**, **IC740**, **IC741**, **IC742**, **IC743**, **IC744**, **IC745**, **IC746**, **IC747**, **IC748**, **IC749**, **IC750**, **IC751**, **IC752**, **IC753**, **IC754**, **IC755**, **IC756**, **IC757**, **IC758**, **IC759**, **IC760**, **IC761**, **IC762**, **IC763**, **IC764**, **IC765**, **IC766**, **IC767**, **IC768**, **IC769**, **IC770**, **IC771**, **IC772**, **IC773**, **IC774**, **IC775**, **IC776**, **IC777**, **IC778**, **IC779**, **IC780**, **IC781**, **IC782**, **IC783**, **IC784**, **IC785**, **IC786**, **IC787**, **IC788**, **IC789**, **IC790**, **IC791**, **IC792**, **IC793**, **IC794**, **IC795**, **IC796**, **IC797**, **IC798**, **IC799**, **IC800**, **IC801**, **IC802**, **IC803**, **IC804**, **IC805**, **IC806**, **IC807**, **IC808**, **IC809**, **IC810**, **IC811**, **IC812**, **IC813**, **IC814**, **IC815**, **IC816**, **IC817**, **IC818**, **IC819**, **IC820**, **IC821**, **IC822**, **IC823**, **IC824**, **IC825**, **IC826**, **IC827**, **IC828**, **IC829**, **IC830**, **IC831**, **IC832**, **IC833**, **IC834**, **IC835**, **IC836**, **IC837**, **IC838**, **IC839**, **IC840**, **IC841**, **IC842**, **IC843**, **IC844**, **IC845**, **IC846**, **IC847**, **IC848**, **IC849**, **IC850**, **IC851**, **IC852**, **IC853**, **IC854**, **IC855**, **IC856**, **IC857**, **IC858**, **IC859**, **IC860**, **IC861**, **IC862**, **IC863**, **IC864**, **IC865**, **IC866**, **IC867**, **IC868**, **IC869**, **IC870**, **IC871**, **IC872**, **IC873**, **IC874**, **IC875**, **IC876**, **IC877**, **IC878**, **IC879**, **IC880**, **IC881**, **IC882**, **IC883**, **IC88**

- Waveform numbers of ① to ⑦ are shown on pages 5-2, 5-3.

7	8	9	10	11	12
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Figure 7 WIRING SIDE P.W.BOARD (2/3)

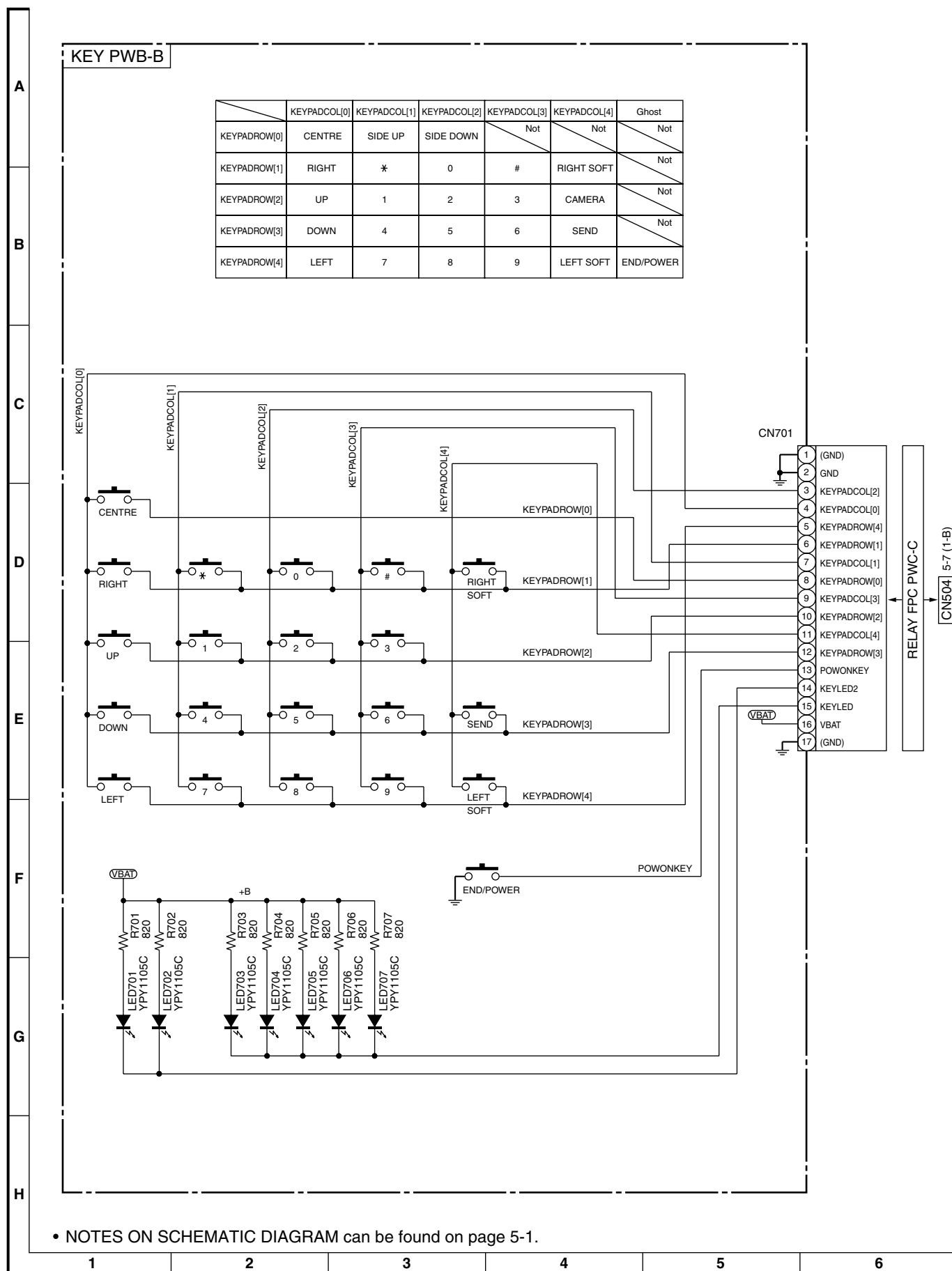
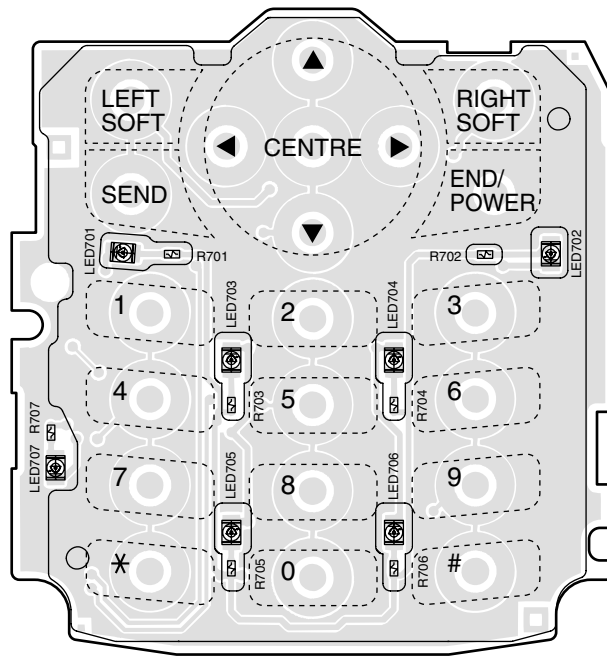
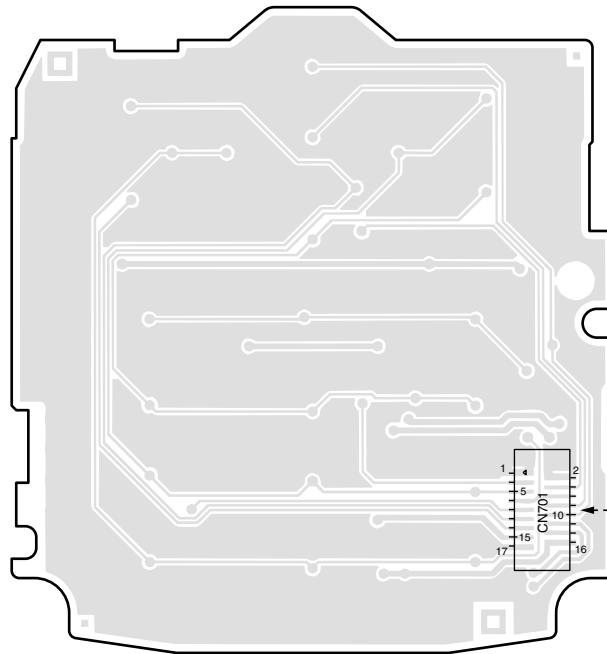


Figure 8 SCHEMATIC DIAGRAM (6/6)

KEY PWB-B (FRONT SIDE)



KEY PWB-B (REAR SIDE)



RELAY FPC
PWB-C

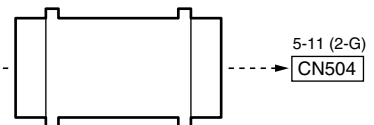


Figure 9 WIRING SIDE P.W.BOARD (3/3)

Conditions: SIM card inserted, power on (3.7V battery), in stand-by mode (opened)

Measuring instrument: Digital multimeter

——: Unmeasurable

IC101	
PIN NO.	VOLTAGE
1	1.57V
2	NC
3	2.91V
4	2.91V
5	NC
6	0V
7	2.91V
8	0V
9	0V
10	——
11	——
12	——
13	NC
14	NC
15	NC
16	NC
17	NC
18	NC
19	0V
20	——
21	——
22	——
23	——
24	——
25	——
26	——
27	——
28	2.84V
29	2.92V
30	2.71V
31	2.75V
32	2.89V

IC102	
PIN NO.	VOLTAGE
1	0V
2	0.14V
3	——
4	0.15V

IC105	
PIN NO.	VOLTAGE
1	0V
2	——
3	——
4	0V
5	2.9V

IC107	
PIN NO.	VOLTAGE
1	0.005V
2	0.005V
3	NC
4	0.003V

IC108	
PIN NO.	VOLTAGE
1	0V
2	0V
3	0V
4	3.69V

IC109	
PIN NO.	VOLTAGE
1	3.69V
2	0V
3	1.82V
4	——
5	3V

IC110	
PIN NO.	VOLTAGE
1	2.93V
2	0V
3	3.01V
4	3.69V

IC112	
PIN NO.	VOLTAGE
1	2.9V
2	2.9V
3	0V
4	2.9V
5	2.9V

IC114	
PIN NO.	VOLTAGE
1	0V
2	0V
3	0V
4	——
5	0V

IC403	
PIN NO.	VOLTAGE
1	1.81V
2	0V
3	3V
4	3.7V

IC501	
PIN NO.	VOLTAGE
1	0V
2	0V
3	0V
4	0V
5	0V

IC503	
PIN NO.	VOLTAGE
1	0V
2	0V
3	0V
4	0V
5	0V
6	0V
7	NC
8	3.69V
9	3.67V

IC504	
PIN NO.	VOLTAGE
1	0V
2	0V
3	0V
4	0V
5	0V
6	0V

IC506	
PIN NO.	VOLTAGE
1	3.59V
2	——
3	——
4	——
5	3.7V
6	——

IC507	
PIN NO.	VOLTAGE
1	0V
2	0V
3	0V
4	0V
5	0V

IC601	
PIN NO.	VOLTAGE
1	3.69V
2	NC
3	0V
4	NC
5	0V
6	0V

IC602	
PIN NO.	VOLTAGE
1	0V
2	0V
3	0V
4	0.02V
5	3.69V

IC802	
PIN NO.	VOLTAGE
1	0V
2	0V
3	0V
4	0V
5	0V
6	0V
7	0V
8	0V
9	0V
10	0V
11	0V
12	0V
13	0V
14	0V
15	0V
16	0V
17	0V
18	0V
19	0V
20	0V
21	0V
22	0V
23	0V
24	0V
25	0V
26	0V
27	0V
28	0V
29	0V
30	0V
31	0V
32	0V
33	0V
34	0V
35	0V
36	0V
37	0V
38	0V
39	0V
40	0V
41	0V
42	3.69V
43	3.69V
44	0V
45	0V
46	0V
47	0V
48	0V

IC804	
PIN NO.	VOLTAGE
1	2.96V
2	3.80V
3	2.96V
4	2.89V
5	0V
6	2.89V

• NOTES ON SCHEMATIC DIAGRAM can be found on page 5-1.

1 2 3 4 5 6

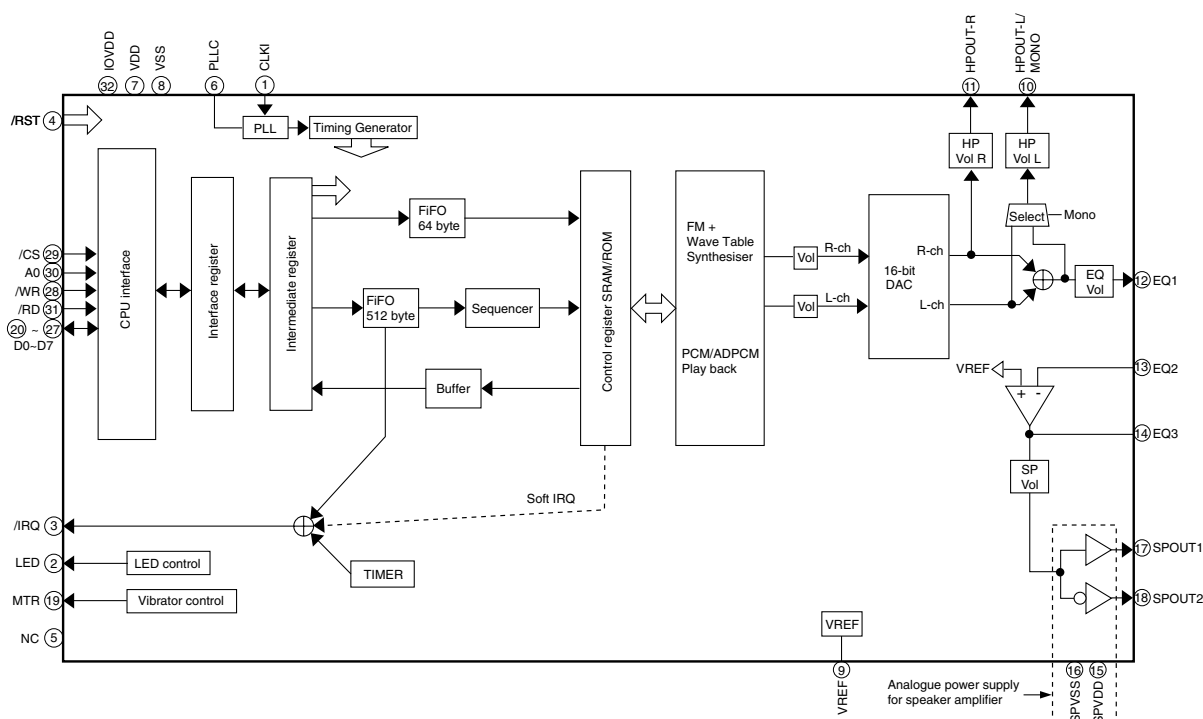
CHAPTER 6. OTHERS

[1] Function table of IC

IC101 VHIYMU762C+-1L (YMU762C): SOUND

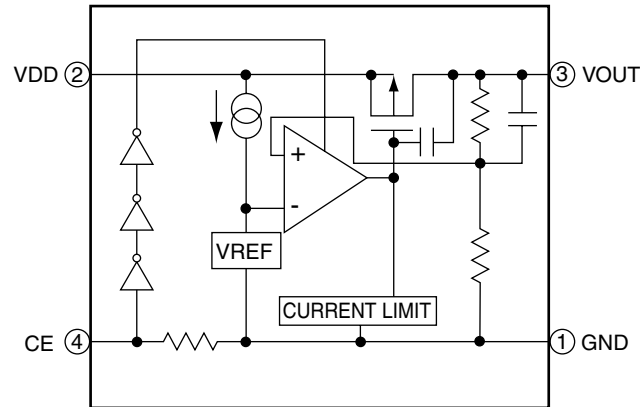
Pin No.	Terminal name	Input/Output	Description of terminal
1	CLKI	Input	Clock input terminal
2*	LED (NC)	Output	External LED control terminal (Not used)
3	/IRQ	Output	Interrupt output terminal
4	/RST	Input	Hardware reset input terminal
5*	NC	—	Not used
6	PLLC	—	Built-in PLL capacitor terminal
7	VDD	—	Power supply (Typ + 3.0 V)
8	VSS	—	Earth
9	VREF	—	Analogue reference voltage terminal
10	HPOUT-L/MONO	Output	Headphone output L-ch
11	HPOUT-R	Output	Headphone output R-ch
12	EQ1	—	Equaliser terminal 1
13*	EQ2 (NC)	—	Equaliser terminal 2 (Not used)
14*	EQ3 (NC)	—	Equaliser terminal 3 (Not used)
15*	SPVDD (NC)	—	Analogue power supply for speaker amplifier (Typ + 3.6 V) (Not used)
16*	SPVSS (NC)	—	Analogue earth for speaker amplifier (Not used)
17*	SPOUT1 (NC)	Output	Speaker terminal 1 (Not used)
18*	SPOUT2 (NC)	Output	Speaker terminal 2 (Not used)
19	MTR	Output	External motor control terminal
20	D7	Input/Output	CPU I/F data bus 7
21	D6	Input/Output	CPU I/F data bus 6
22	D5	Input/Output	CPU I/F data bus 5
23	D4	Input/Output	CPU I/F data bus 4
24	D3	Input/Output	CPU I/F data bus 3
25	D2	Input/Output	CPU I/F data bus 2
26	D1	Input/Output	CPU I/F data bus 1
27	D0	Input/Output	CPU I/F data bus 0
28	/WR	Input	CPU I/F write enable
29	/CS	Input	CPU I/F chip select input
30	A0	Input	CPU I/F address signal
31	/RD	Input	CPU I/F read enable
32	IOVDD	—	Power supply for terminal

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.



IC102 VHIQ5RW45BF-1L (Q5RW45B): 4.5 V REGULATOR

Pin No.	Terminal name	Input/Output	Description of terminal
1	GND	–	Earth
2	VDD	–	Power supply
3	VOUT	Output	Output
4	CE	Input	Chip enable

**IC103 (AD6537B): ANALOGUE BASEBAND**

Pin No.	Terminal name	Input/Output	Description of terminal
1*	TDI	Input	Not used
2	VCXOEN	Input	VCXO supply
3	VBAT3	Input	External interface regulator input
4	VEXT	Output	External interface supply
5	VCHG	Input	Charge supply
6	GATEDRIVE	Output	Charge DAC (FET) output control
7	ISENSE	Input	Charge current sense input
8*	TEMP2	Input	Not used
9	AUXADC2	Input	Auxiliary ADC input for hands free kit (earphone) detection
10	REFBB	Output	Baseband transmit & receive voltage reference
11	AGND2	–	Analogue baseband earth
12	IP	Input/Output	I-channel positive input/output
13	IN	Input/Output	I-channel negative input/output
14	QN	Input/Output	Q-channel positive input/output
15	QP	Input/Output	Q-channel negative input/output
16*	NC_A16	–	Not used
17*	TMS	Input	Not used
18*	TCK	Input	Not used
19	VBAT3	Input	External interface regulator input
20	VEXT	Output	External interface supply
21*	NC_B05	–	Not used
22	BATTTYPE	Input	Battery type identification input
23*	NC_B07	–	Not used
24	VBATSENSE	Input	Battery voltage sense input
25	TEMP1	Input	Temperature sensor input
26	AUXADC1	Input	Auxiliary ADC input for temp. sensor adjustment
27	REFOUT	Output	Voltage reference output
28	PA	Output	Power amplifier control output
29	AGND0	–	Analogue earth
30	AFCDAC	Output	Automatic frequency control DAC output
31	REF	Output	Voltage reference
32	AGND1	–	Analogue earth for voltage reference
33*	TDO	Output	Not used
34*	GPI	Input	Not used (Pull down)
35	VBAT1	Input	Voltage controlled crystal oscillator regulator input
36*	NC_C16	–	Not used
37	INT	Output	Digital BB interrupt
38	ASDO	Output	Audio serial port data output
39	REFCHG	Output	Voltage reference output

Pin No.	Terminal name	Input/Output	Description of terminal
40	VVCXO	Output	Voltage controlled crystal oscillator supply 2.71 - 2.79 V (VT)
41	ASDI	Input	Audio serial port data input
42	BSDO	Output	Baseband serial port data output
43*	NC_E15	–	Not used
44*	NC_E16	–	Not used
45	BSIFS	Input	Baseband serial port input framing signal
46	ASFS	Output	Audio serial port framing signal
47	GND_NET2	–	Earth
48*	NC_F16	–	Not used
49	BSOFS	Output	Baseband serial port output framing signal
50	BSDI	Input	Baseband serial port data input
51	VBAT2	Input	Analogue baseband regulator input
52*	NC_G16	–	Not used
53	CSDO	Output	Control serial port data output
54	CSDI	Input	Control serial port data input
55	VBAT2	Input	Analogue baseband regulator input
56	VABB	Output	Analogue baseband supply
57	ASM	Input	Advanced state machine
58	MCLKEN	Output	Master clock enable
59*	AOUT1P	Output	Not used
60	AOUT3P	Output	Headset receiver audio positive output
61	RXON	Input	Baseband receive section control
62	TXON	Input	Baseband transmit section control
63*	AOUT1N	Output	Not used
64	AOUT3N	Output	Headset receiver audio negative output
65	MCLK	Input	Master clock
66	CSFS	Input	Control serial port framing signal
67	AGND3	–	Analogue audio earth
68	LIGHT1	Output	Key-pad LED control 2
69	ABBRESET	Input	Reset input
70	DGND	–	Digital earth
71	LIGHT2	Output	USB charge enable
72	LIGHT3	Output	Key-pad LED control 1
73	VCORE	Output	Digital core supply 1.72 - 1.9 V
74	VBAT7	Input	Digital core regulator input
75	LGND	–	Light driver earth
76	VMIC	Output	Microphone supply 2.4 - 2.6 V
77	VCORE	Output	Digital core supply 1.72 - 1.9 V
78	VBAT8	Input	Memory interface regulator input
79	AIN2P	Input	Headset mic audio positive input
80	AIN1P	Input	Mic audio positive input
81*	NC_R01	–	Not used
82	VBAT8	Input	Memory interface regulator input
83	VMEMSEL	Input	Memory supply voltage selection
84	VBAT5	Input	Back-up battery regulator input
85	VBAT4	Input	SIM interface regulator input
86	VBAT6	Input	Real-time clock regulator input
87	DBBON	Input	Digital BB supply regulator on signal
88	SGND	–	AOUT2P/N supply earth
89	AOUT2N	Output	Speaker with receiver positive output
90	SPWR	Input	AOUT2P/N supply regulator input
91	AOUT2P	Output	Speaker with receiver negative output
92*	NC_R12	–	Not used
93	AIN3P	Input	Sound IC audio positive input
94	AIN3N	Input	Sound IC audio negative input
95	AIN2N	Input	Headset mic audio negative input
96	AIN1N	Input	Mic audio negative input
97	RESET	Output	Reset output
98	VMEM	Output	Memory interface supply 2.75 - 3.05 V
99	VMEM	Output	Memory interface supply 2.75 - 3.05 V
100	VBAT_NET	Input	VBAT supply input
101	GND_NET1	–	Earth
102	VSIM	Output	SIM interface supply 2.75 - 2.95 V
103	VRTC	Output	Real-time clock supply 1.6 - 2.0 V

Pin No.	Terminal name	Input/Output	Description of terminal
104	SGND	–	AOUT2P/N supply earth
105	AOUT2N	Output	Speaker with receiver positive output
106	SPWR	Input	AOUT2P/N supply regulator input
107	AOUT2P	Output	Speaker with receiver negative output
108*	NC_T12	–	Not used
109	KEYOUT	Output	Power-on key output
110	KEYON	Input	Power-on key input
111*	NC_T15	–	Not used
112	AGND4	–	Power management analogue earth
113	AGND0	–	Thermal earth for power supply
114	AGND0	–	Thermal earth for power supply
115	AGND0	–	Thermal earth for power supply
116	AGND0	–	Thermal earth for power supply
117	AGND0	–	Thermal earth for power supply
118	AGND0	–	Thermal earth for power supply
119	AGND0	–	Thermal earth for power supply
120	AGND0	–	Thermal earth for power supply
121	AGND0	–	Thermal earth for power supply
122	AGND0	–	Thermal earth for power supply
123	AGND0	–	Thermal earth for power supply
124	AGND0	–	Thermal earth for power supply
125	AGND0	–	Thermal earth for power supply
126	AGND0	–	Thermal earth for power supply
127	AGND0	–	Thermal earth for power supply
128	AGND0	–	Thermal earth for power supply
129	AGND0	–	Thermal earth for power supply
130	AGND0	–	Thermal earth for power supply
131	AGND0	–	Thermal earth for power supply
132	AGND0	–	Thermal earth for power supply
133	AGND0	–	Thermal earth for power supply
134	AGND0	–	Thermal earth for power supply
135	AGND0	–	Thermal earth for power supply
136	AGND0	–	Thermal earth for power supply
137	AGND0	–	Thermal earth for power supply
138	AGND0	–	Thermal earth for power supply
139	AGND0	–	Thermal earth for power supply
140	AGND0	–	Thermal earth for power supply
141	AGND0	–	Thermal earth for power supply
142	AGND0	–	Thermal earth for power supply
143	AGND0	–	Thermal earth for power supply
144	AGND0	–	Thermal earth for power supply
145	AGND0	–	Thermal earth for power supply
146	AGND0	–	Thermal earth for power supply
147	AGND0	–	Thermal earth for power supply
148	AGND0	–	Thermal earth for power supply

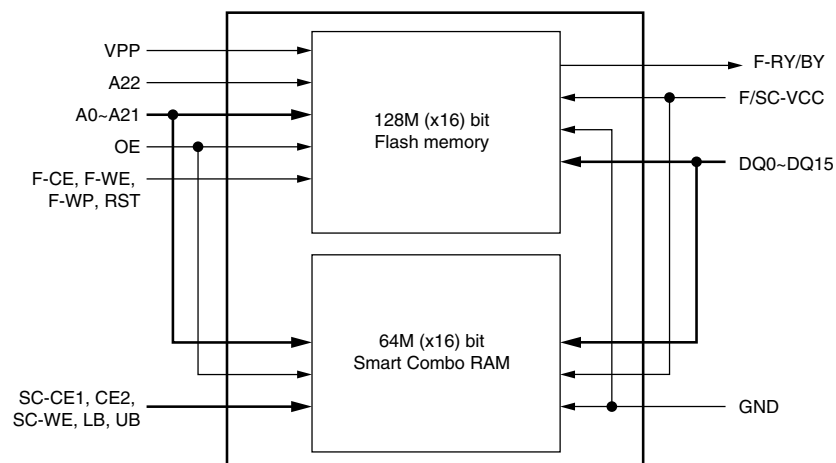
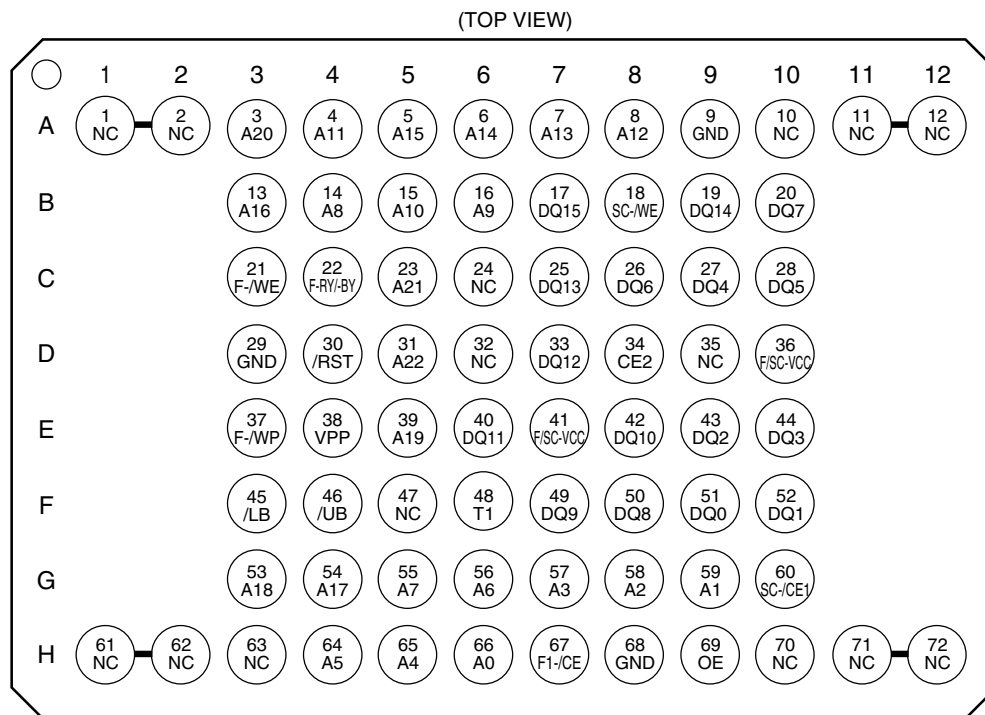
In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

IC104 (LRS18641): FLASH MEMORY

Pin No.	Terminal name	Input/Output	Description of terminal
1*	NC	—	Not used
2*	NC	—	Not used
3	A20	Input	Address input (common)
4	A11	Input	Address input (common)
5	A15	Input	Address input (common)
6	A14	Input	Address input (common)
7	A13	Input	Address input (common)
8	A12	Input	Address input (common)
9	GND	—	Earth
10*	NC	—	Not used
11*	NC	—	Not used
12*	NC	—	Not used
13	A16	Input	Address input (common)
14	A8	Input	Address input (common)
15	A10	Input	Address input (common)
16	A9	Input	Address input (common)
17	DQ15	Input/Output	Data input/output (common)
18	SC-/WE	Input	Write enable input (Smartcombo RAM)
19	DQ14	Input/Output	Data input/output (common)
20	DQ7	Input/Output	Data input/output (common)
21	F-/WE	Input	Write enable input (Flash)
22*	F-RY/-BY (NC)	Output	Ready busy output (Flash) When deleting/writing: VOL When interrupting block delete/write: High-Z (High impedance) (Not used)
23	A21	Input	Address input (common)
24*	NC	—	Not used
25	DQ13	Input/Output	Data input/output (common)
26	DQ6	Input/Output	Data input/output (common)
27	DQ4	Input/Output	Data input/output (common)
28	DQ5	Input/Output	Data input/output (common)
29	GND	—	Earth
30	/RST	Input	Reset power down input (Flash) When deleting/writing block: VIH When reading: VIH Reset power down: VIL
31	A22	Input	Address input (Flash)
32*	NC	—	Not used
33	DQ12	Input/Output	Data input/output (common)
34	CE2	Input	Sleep state input (Smartcombo RAM)
35*	NC	—	Not used
36	F/SC-VCC	—	Power (common)
37	F-/WP	Input	Write protect input (Flash) When F-/WP is set to VIL, it is prohibited to cancel lock bit of the block that has lock bit down set. Deletion and programme operation are executable for the block that has neither lock bit nor lock down bit set. Disable lock down bit by setting F-/WP to VIH.
38	VPP	Input	Power voltage detect terminal (Flash) When deleting/writing: VPP = VPPH
39	A19	Input	Address input (common)
40	DQ11	Input/Output	Data input/output (common)
41	F/SC-VCC	—	Power (common)
42	DQ10	Input/Output	Data input/output (common)
43	DQ2	Input/Output	Data input/output (common)
44	DQ3	Input/Output	Data input/output (common)
45	/LB	Input	Byte enable input: DQ0 – DQ7 (Smartcombo RAM)
46	/UB	Input	Byte enable input: DQ8 – DQ15 (Smartcombo RAM)
47*	NC	—	Not used
48*	T1 (NC)	—	Test pin (all open) (Not used)
49	DQ9	Input/Output	Data input/output (common)
50	DQ8	Input/Output	Data input/output (common)
51	DQ0	Input/Output	Data input/output (common)
52	DQ1	Input/Output	Data input/output (common)
53	A18	Input	Address input (common)
54	A17	Input	Address input (common)
55	A7	Input	Address input (common)

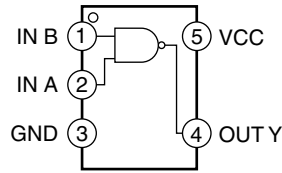
Pin No.	Terminal name	Input/Output	Description of terminal
56	A6	Input	Address input (common)
57	A3	Input	Address input (common)
58	A2	Input	Address input (common)
59	A1	Input	Address input (common)
60	SC-/CE1	Input	Chip enable input (Smartcombo RAM)
61*	NC	—	Not used
62*	NC	—	Not used
63*	NC	—	Not used
64	A5	Input	Address input (common)
65	A4	Input	Address input (common)
66	A0	Input	Address input (common)
67	F-/CE	Input	Chip enable input (Flash)
68	GND	—	Earth
69	/OE	Input	Output enable input (common)
70*	NC	—	Not used
71*	NC	—	Not used
72*	NC	—	Not used

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.



IC105 VHINL17SZ08-1L (NL17SZ08): LOGIC
IC507 VHI74VHC1GT-1L (74VHC1GT): LOGIC

Pin No.	Terminal name	Input/Output	Description of terminal
1	IN B	Input	Input
2	IN A	Input	Input
3	GND	—	Earth
4	OUT Y	Output	Output
5	VCC	—	Power supply



IC106 (AD6528B): DIGITAL BASEBAND

Pin No.	Terminal name	Input/Output	Description of terminal
1	ASDO	Output	Audio serial port data output to analogue BB
2	BSDI	Input	Baseband serial port data input from analogue BB
3	BSOFS	Output	Baseband serial port output framing signal output to analogue BB
4*	GPIO_48	Output	Not used
5	VINT	Input	Analogue BB interface power supply 1.7 - 3.3 V (VCORE)
6	GPO_29	Output	Analogue BB reset output (ABBRESET)
7	GPO_5	Output	Advance state machine of analogue BB
8	VDDRRTC	Input	RTC power supply 1.0 - 1.9 V (VRTC)
9	VSSRTC	—	RTC earth
10*	MC_DAT[0]	Output	Not used
11	GPIO_22	Output	RSP for main LCD controller
12	GPIO_56	Input	Boot control 0
13	KEYPADCOL[4]	Output	KEYIN signal output 4
14	KEYPADCOL[1]	Output	KEYIN signal output 1
15	KEYPADROW[4]	Input	KEYIN signal input 4
16	KEYPADROW[2]	Input	KEYIN signal input 2
17	GPIO_38	Input	Interrupt input from sound generator IC
18	GPIO_36	Output	AOUT3 bias control
19	ASDI	Input	Audio serial port data input from analogue BB
20	GPIO_35	Output	Camera power control 1
21*	ADD[0]	Output	Not used
22	ASFS	Input	Audio serial port framing signal input from analogue BB
23	BSIFS	Input	Baseband serial port input framing signal input from analogue BB
24	BSDO	Output	Baseband serial port data output to analogue BB
25	CSDI	Input	Control serial port data input from analogue BB
26*	GPO_6	Output	Not used
27	GPO_0	Output	Analogue baseband receive section control (RXON)
28	OSCOUT	Output	32.768 kHz crystal oscillator output
29*	MC_DAT[2]	Output	Not used
30	VMC	Input	Pull down resistor
31	VCC	Input	Core power supply 1.7 - 1.9 V (VCORE)
32	KEYPADCOL[3]	Output	KEYIN signal output 3
33	KEYPADCOL[2]	Output	KEYIN signal output 2
34	GPIO_39	Output	USB PU control
35	GPIO_37	Input	Interrupt input from analogue BB
36	GPIO_34	Output	UART_TXD for Bluetooth module
37	ADD[4]	Output	Processor address bus 4
38	ADD[2]	Output	Processor address bus 2
39	GND	—	Earth
40	KEYPADROW[0]	Input	KEYIN signal input 0
41	VEXT	Input	System interface power supply 2.4 - 3.3 V (VINT)
42	GPO_23	Output	Backlight ON/OFF with PWM
43	ADD[7]	Output	Processor address bus 7
44	VMEM	Input	Memory power supply 2.7 - 3.3 V (VMEM)
45	ADD[1]	Output	Processor address bus 1

Pin No.	Terminal name	Input/Output	Description of terminal
46	CSDO	Output	Control serial port data output to analogue BB
47	CLKOUT_GATE	Input	Master clock enable from analogue BB (MCLKEN)
48	GPO_1	Output	Analogue baseband transmit section control (TXON)
49	OSCIN	Input	32.768 kHz crystal oscillator input
50*	MC_CMD	Output	Not used
51	GPIO_55	Input	Boot control 1
52	GND	—	Earth
53	KEYPADROW[3]	Input	KEYIN signal input 3
54	KEYPADROW[1]	Input	KEYIN signal input 1
55	GPIO_33	Input	UART_RXD for Bluetooth module
56	GPIO_17	Output	PCM data output for Bluetooth module
57	ADD[11]	Output	Processor address bus 11
58	ADD[9]	Output	Processor address bus 9
59	ADD[5]	Output	Processor address bus 5
60	ADD[3]	Output	Processor address bus 3
61	GND	—	Earth
62	VCC	Input	Core power supply 1.7 - 1.9 V (VCORE)
63	PWRON	Output	System power control for analogue BB
64*	MC_DAT[1]	Output	Not used
65	GND	—	Earth
66	VEXT	Input	System interface power supply 2.4 - 3.3 V (VINT)
67	KEYPADCOL[0]	Output	KEYIN signal output 0
68	VEXT	Input	System interface power supply 2.4 - 3.3 V (VINT)
69	GPIO_15	Input	PCM data input for Bluetooth module
70	GPIO_16	Output	PCM SYNC output for Bluetooth module
71	ADD[13]	Output	Processor address bus 13
72	ADD[12]	Output	Processor address bus 12
73	ADD[8]	Output	Processor address bus 8
74	ADD[6]	Output	Processor address bus 6
75	GPO_22	Output	VPP control for flash memory 1
76	GPIO_14	Output	PCM clock output for Bluetooth module
77	GPIO_10	Input	USB detection
78	GPIO_12	Output	Reset output for LCD module
79	VMEM	Input	Memory power supply 2.7 - 3.3 V (VMEM)
80	ADD[14]	Output	Processor address bus 14
81	GND	—	Earth
82	VCC	Input	Core power supply 1.7 - 1.9 V (VCORE)
83	ADD[10]	Output	Processor address bus 10
84	CLKOUT	Output	13 MHz clock output for analogue BB (CLKOUT)
85*	MC_DAT[3]	Output	Not used
86	GND	—	Earth
87	GND	—	Earth
88	GPIO_13	Input	Interrupt input from camera controller
89	GPIO_7	Input	Hands free kit (earphone) hooking switch detection
90	GPIO_9	Input	Manufacture specific input from I/O connector
91	ADD[19]	Output	Processor address bus 19
92	ADD[17]	Output	Processor address bus 17
93	ADD[18]	Output	Processor address bus 18
94	ADD[15]	Output	Processor address bus 15
95	ADD[16]	Output	Processor address bus 16
96	CSFS	Output	Control serial port framing signal output to analogue BB
97*	MC_CLK	Output	Not used
98	VCC	Input	Core power supply 1.7 - 1.9 V (VCORE)
99	GPIO_11	Output	Camera power control 2
100	GPIO_8	Output	Reset output for Bluetooth module
101*	GPIO_5	Output	Not used
102	GPIO_6	Input	Bluetooth clock request
103	ADD[22]	Output	Processor address bus 22
104	ADD[21]	Output	Processor address bus 21
105	GPIO_40	Output	13 MHz clock output for camera controller & Sound generator IC
106	ADD[20]	Output	Processor address bus 20
107	GND	—	Earth
108	ADD[23]	Output	Processor address bus 23
109	GND	—	Earth

Pin No.	Terminal name	Input/Output	Description of terminal
110	VEXT	Input	System interface power supply 2.4 - 3.3 V (VINT)
111	GND	–	Earth
112	GPIO_4	Output	UART_CTS for Bluetooth module
113	GPIO_2	Output	USB charge current control
114	GPIO_3	Input	UART_RTS for Bluetooth module
115	DATA[2]	Input/Output	Processor data bus 2
116	DATA[0]	Input/Output	Processor data bus 0
117	DATA[5]	Input/Output	Processor data bus 5
118	DATA[1]	Input/Output	Processor data bus 1
119	DATA[3]	Input/Output	Processor data bus 3
120	VCC	Input	Core power supply 1.7 - 1.9 V (VCORE)
121	DMINUS	Input	USB D-
122	GPIO_18	Output	JTAG TCK
123	GND	–	Earth
124	GPIO_1	Input	IrDA receive data
125	USC[5]	Output	USC pin (Ginie_TX)
126	GPIO_0	Output	IrDA transmit data
127	DATA[4]	Input/Output	Processor data bus 4
128	VMEM	Input	Memory power supply 2.7 - 3.3 V (VMEM)
129	GND	–	Earth
130	VCC	Input	Core power supply 1.7 - 1.9 V (VCORE)
131	USC[6]	Input	USC pin (RTC monitor/Ginie_RX)
132	VCC	Input	Core power supply 1.7 - 1.9 V (VCORE)
133	USC[2]	Input	USC pin (TXD)
134	USC[4]	Output	Reserve
135	DATA[7]	Input/Output	Processor data bus 7
136	DATA[6]	Input/Output	Processor data bus 6
137	GND	–	Earth
138	DATA[9]	Input/Output	Processor data bus 9
139	DATA[13]	Input/Output	Processor data bus 13
140	NROMCS1	Output	Chip select for flash memory 1
141	GPIO_42	Output	Chip select for LCD module
142	CLKIN	Input	13 MHz clock input
143	VSIM	Input	SIM power supply 1.7 - 3.3 V (VSIM)
144	GND	–	Earth
145	USC[3]	Input	Pull up to VEXT
146	USC[1]	Input	USC pin (RXD)
147	GND	–	Earth
148	USC[0]	Output	USC pin (Ginie_TX)
149	DATA[10]	Input/Output	Processor data bus 10
150	DATA[8]	Input/Output	Processor data bus 8
151	NRD	Output	Processor read strobe
152	DATA[14]	Input/Output	Processor data bus 14
153	GND	–	Earth
154	NRAMCS2	Output	Chip select for camera controller
155	GPIO_44	Input	Wakeup mode select (Pull up to VEXT)
156	VSSUSB	–	USB earth
157	GPIO_47	Output	Camera controller reset
158	GPIO_20	Output	JTAG TDI
159	CLKON	Output	13 MHz oscillator power control signal (VCXOEN)
160	VCC	Input	Core power supply 1.7 - 1.9 V (VCORE)
161	GPO_18	Output	SYNTH enable for RF (SYNTHEN)
162	GPO_21	Output	SYNTH clock output for RF (SYNTHCLK)
163	DATA[12]	Input/Output	Processor data bus 12
164	DATA[11]	Input/Output	Processor data bus 11
165	NWE	Output	Processor write strobe
166	VEXT	Input	System interface power supply 2.4 - 3.3 V (VINT)
167	GPO_11	Output	Band select 4 for RF (BS4)
168	GPO_20	Output	SYNTH data output for RF (SYNTHDATA)
169	DATA[15]	Input/Output	Processor data bus 15
170	VMEM	Input	Memory power supply 2.7 - 3.3 V (VMEM)
171	NADV	Output	Hardware version select 1
172	NGPCS1	Output	Chip select for flash memory 2
173	VMEM	Input	Memory power supply 2.7 - 3.3 V (VMEM)

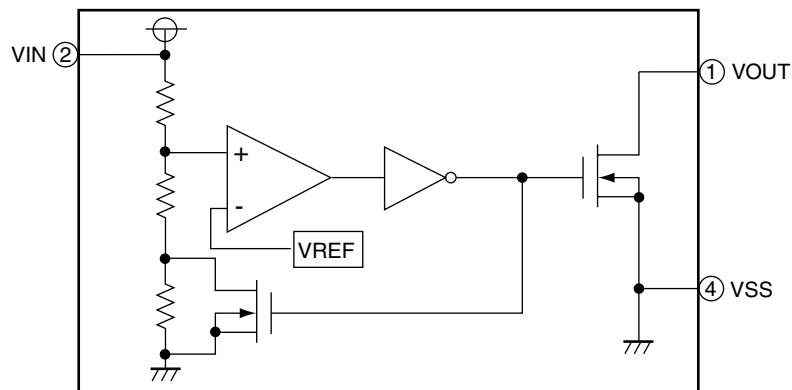
Pin No.	Terminal name	Input/Output	Description of terminal
174*	GPIO_45	Output	Chip select for SRAM (Not used)
175	GPIO_46	Output	Chip select for sound generator IC
176	DPLUS	Input	USB D+
177	SIMCLK	Output	SIM interface clock output
178	JTAGEN	Input	JTAG enable
179	VEXT	Input	System Interface power supply 2.4 - 3.3 V (VINT)
180*	GPO_3	Output	Not used
181*	GPO_4	Output	Not used
182*	GPO_7	Output	Not used
183	GPO_16	Output	Band select 1 for RF (BS1)
184	GPO_17	Output	Band select 2 for RF (BS2)
185	NHWR/NUSB	Output	Processor high write strobe
186	GPO_19	Output	Audio select for accessories connector
187	NLWR/NLSB	Output	Processor low write strobe
188*	NWAIT	Input	Not used
189	NRESET	Input	System reset input
190	BURSTCLK	Output	Hardware version select 0
191	NRAMCS1	Output	Chip select for PSRAM 1
192	NAUXCS1	Output	Hardware version select 2
193*	GPIO_43	Output	Not used
194	VDDUSB	Input	USB power supply 2.8 - 3.3 V (VUSB)
195	GPIO_23	Output	SIM interface reset
196	SIMDATAIO	Input/Output	SIM interface data input/output
197	GPIO_24	Output	Sound generator IC reset
198	GPIO_19	Output	JTAG TMS
199	GPIO_21	Output	JTAG TDO
200	GPO_2	Output	Write protect control for flash memory 1
201	GND	—	Earth
202	GPO_8	Output	IrDA power ON/OFF control
203	GPO_9	Output	Band select 3 for RF (BS3)
204*	GPO_10	Output	Not used

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

IC107 VHIX61CN27N-1L (X61CN27N): VOLTAGE DETECTOR

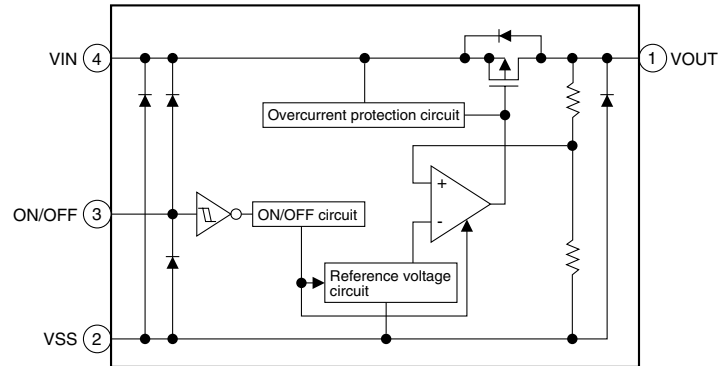
Pin No.	Terminal name	Input/Output	Description of terminal
1	VOUT	Output	Voltage output
2	VIN	Input	Voltage input
3*	NC	—	Not used
4	VSS	—	Earth

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.



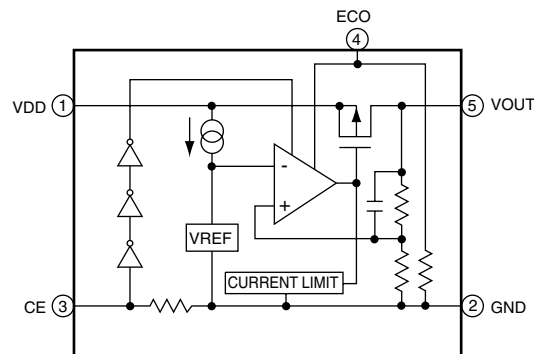
IC108 VHI1323B30G-1R (1323B30G): REGULATOR

Pin No.	Terminal name	Input/Output	Description of terminal
1	VOUT	Output	Voltage output
2	VSS	–	Earth
3	ON/OFF	Input	Power off
4	VIN	Input	Voltage input



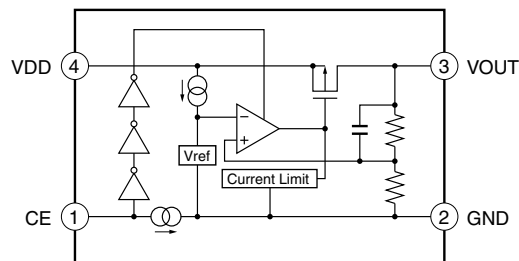
IC109 VHIR11630FB-1L (R11630FB): REGULATOR

Pin No.	Terminal name	Input/Output	Description of terminal
1	VDD	Input	Input
2	GND	–	Earth
3	CE	Input	Chip enable
4	ECO	Input	High speed/low consumption selector switch
5	VOUT	Output	Output



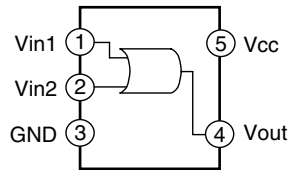
IC110/IC403 VHIR118030B-1L (R118030B): REGULATOR

Pin No.	Terminal name	Input/Output	Description of terminal
1	CE	Input	Chip enable
2	GND	–	Earth
3	VOUT	Output	Output
4	VDD	Input	Input

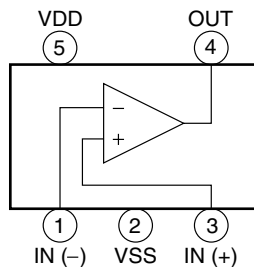


IC112 VHINL17SZ32-1L(NL17SZ32): LOGIC

Pin No.	Terminal name	Input/Output	Description of terminal
1	VIN1	Input	Input power
2	VIN2	Input	Input power
3	GND	–	Earth
4	VOUT	Output	Logic value output
5	VCC	Input	VCC for VRF

**IC114 VHITC75S58A-1L (TC75S58A): COMPARATOR**

Pin No.	Terminal name	Input/Output	Description of terminal
1	IN (–)	Input	Input
2	VSS	–	Earth
3	IN (+)	Input	Input
4	OUT	Output	Output
5	VDD	–	Power supply

**IC402 (BC313143): BLUETOOTH MODULE**

Pin No.	Terminal name	Input/Output	Description of terminal
1	VSS_PIO	–	Earth connections for PIO and AUX DAC
2	VSS_PIO	–	Earth connections for PIO and AUX DAC
3	VDD_PIO	Input	Positive supply for PIO and AUX DAC (Positive supply for PIO [3:0] and PIO[11:8])
4*	NC	–	Not used
5*	NC	–	Not used
6*	VDD_MEM (NC)	Input	Positive supply for ROM memory and AIO ports (Not used)
7*	VDD_MEM (NC)	Input	Positive supply for ROM memory and AIO ports (Not used)
8*	NC	–	Not used
9*	VDD_MEM (NC)	Input	Positive supply for ROM memory and AIO ports (Not used)
10	VSS_MEM	–	Earth connections for ROM memory and AIO ports
11*	PIO[0]/RXEN (NC)	Input/Output	Control output for external LNA (if fitted) (Not used)
12*	PIO[1]/TXEN (NC)	Input/Output	Control output for external PA, class 1 only (Not used)
13	PIO[2]	Input/Output	Programmable input/output line
14*	PIO[3] (NC)	Input/Output	Programmable input/output line (Not used)
15*	VSS_MEM	–	Earth connections for ROM memory and AIO ports (Not used)
16*	NC	–	Not used
17*	VSS_MEM	–	Earth connections for ROM memory and AIO ports (Not used)
18*	FLASH_EN	Input	Pull high to VDD_MEM (Not used)
19*	SPI_MISO	Output	Serial peripheral interface data output (Not used)
20	VSS_MEM	–	Earth connections for ROM memory and AIO ports
21	VDD_RADIO	Input	Positive supply for RF circuitry
22	VDD_RADIO	Input	Positive supply for RF circuitry
23*	PIO[9]	Input/Output	Programmable input/output line (Not used)
24*	PIO[10]	Input/Output	Programmable input/output line (Not used)
25*	PIO[8]	Input/Output	Programmable input/output line (Not used)
26*	TEST_EN	Input	For test purposes only (leave unconnected) (Not used)

Pin No.	Terminal name	Input/Output	Description of terminal
27	RESET	Input	Reset if high. Input debounced, so must be high for >5ms to cause a reset
28*	SPI_MOSI	Input	Serial peripheral interface data input (Not used)
29*	SPI_CSB	Input	Chip select for Serial Peripheral Interface, active low (Not used)
30*	SPI_CLK	Input	Serial peripheral interface clock (Not used)
31*	RF_IN (NC)	Input	Single-ended receiver input (Not used)
32	VSS_RADIO	—	Earth connections for RF circuitry
33*	AUX_DAC (NC)	Output	Voltage DAC output (Not used)
34	RESET_B	Input	Reset if low. Input debounced, so must be low for >5ms to cause a reset
35	VSS_PADS	—	Earth connections for input/output
36	VDD_PADS	Input	Positive supply for all other digital input/output ports (Positive supply for SPI/PCM ports and PIO[7:4])
37	TX_B	Output	Complement of TX_A
38	VSS_RADIO	—	Earth connections for RF circuitry
39*	PIO[11]	Input/Output	Programmable input/output line (Not used)
40*	PIO[4]	Input/Output	Programmable input/output line (Not used)
41	VSS_CORE	—	Earth connection for internal digital circuitry
42	VDD_CORE	Input	Positive supply for Internal digital circuitry
43	TX_A	Input/Output	Transmitter output/switched receiver input
44	VSS_RADIO	—	Earth connections for RF circuitry
45	VSS	—	Earth connection for internal package shield
46*	PIO[5]	Input/Output	Programmable input/output line (Not used)
47*	PIO[7]	Input/Output	Programmable input/output line (Not used)
48*	PIO[6]	Input/Output	Programmable input/output line (Not used)
49	VSS_VCO	—	Earth connections for VCO and synthesiser
50	VSS_VCO	—	Earth connections for VCO and synthesiser
51*	VDD_PRG (NC)	Input	Positive supply for battery backed memory (Not used)
52	PCM_OUT	Output	Synchronous data output
53	PCM_IN	Input	Synchronous data input
54	PCM_SYNC	Input/Output	Synchronous data sync
55	VDD_VCO	Input	Positive supply for VCO and synthesiser circuitry
56*	LOOP_FILTER	—	Connection to external PLL loop filter (Do not connect) (Not used)
57*	NC	—	Not used
58*	AIO[0]	Input/Output	Programmable input/output line (Not used)
59*	AIO[1]	Input/Output	Programmable input/output line (Not used)
60*	VDD_MEM (NC)	Input	Positive supply for ROM memory and AIO ports (Not used)
61	UART_RTS	Output	UART request to send active low
62	UART_CTS	Input	UART clear to send active low
63	UART_RX	Input	UART data input active high
64	PCM_CLK	Input/Output	Synchronous data clock
65*	NC	—	Not used
66	VSS_ANA	—	Earth connections for analogue circuitry
67	XTAL_OUT	Output	Drive for crystal
68	VSS_ANA	—	Earth connections for analogue circuitry
69	AIO[2]	Input/Output	Programmable input/output line
70*	VDD_MEM (NC)	Input	Positive supply for ROM memory and AIO ports (Not used)
71*	VSS_MEM	—	Earth connections for ROM memory and AIO ports (Not used)
72*	USB_DP	Input/Output	USB data plus with selectable internal 1.5k ohms pull-up resistor (Not used)
73	VSS_USB	—	Earth connections for UART/USB ports
74	UART_TX	Output	UART data output active high
75*	NC	—	Not used
76	VSS_ANA	—	Earth connections for analogue circuitry
77	XTAL_IN	Input	For crystal or external clock input
78	VDD_ANA	Output	Positive supply for analogue circuitry and 1.8 V regulated output
79*	VREG_EN (NC)	Input	If not connected regulator enabled connect to VSS to disable regulator (Not used)
80	VREG_IN	Input	2.2-3.6 V voltage input
81*	VDD_MEM (NC)	Input	Positive supply for ROM memory and AIO ports (Not used)
82*	USB_DN	Input/Output	USB data minus (Not used)
83	VDD_USB	Input	Positive supply for UART/USB ports
84	VSS_USB	—	Earth connections for UART/USB ports

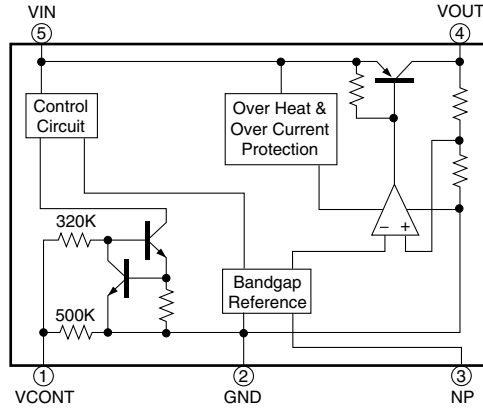
In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.



IC501 (TK11132CS-G): REGULATOR

IC602 VHITK11128C-1R (TK11128C): REGULATOR

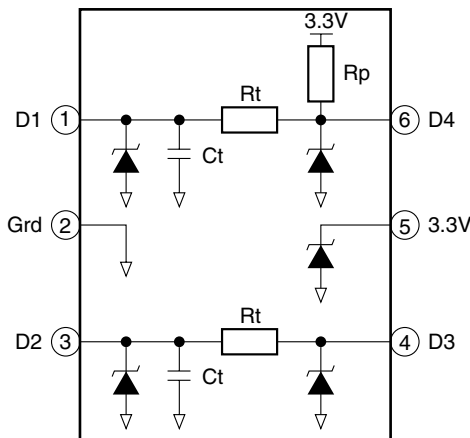
Pin No.	Terminal name	Input/Output	Description of terminal
1	VCONT	Input	Control
2	GND	–	Earth
3	NP	–	Capacitor (Vref)
4	VOUT	Output	Output
5	VIN	Input	Input



IC504 VHIUSBUF2WE-1L (USBUF2WE): EMI FILTER

Pin No.	Terminal name	Input/Output	Description of terminal
1	D1	Input/Output	Data Input/Output
2	GND	–	Earth
3	D2	Input/Output	Data Input/Output
4	D3	Input/Output	Data Input/Output
5*	NC	–	Not used
6	D4	Input/Output	Data Input/Output

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.



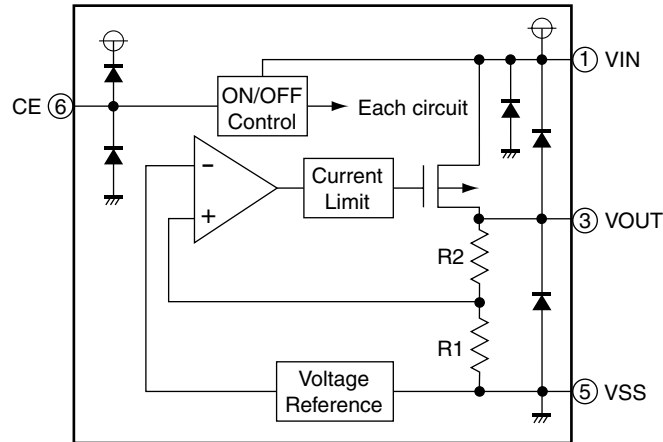
IC506 VHILT3465+-1R (LT3465): DC-DC CONVERTER

Pin No.	Terminal name	Input/Output	Description of terminal
1	VOUT	Output	Output
2	GND	–	Earth
3	FB	Input	Feedback
4	CTRL	Input	Dimming control and shutdown
5	VIN	Input	Input supply
6	SW	Output	Switch

IC601 VHXC621918-1L (XC621918): REGULATOR

Pin No.	Terminal name	Input/Output	Description of terminal
1	VIN	Input	Input
2*	NC	—	Not used
3	VOUT	Output	Output
4*	NC	—	Not used
5	VSS	—	Earth
6	CE	Input	ON/OFF Control

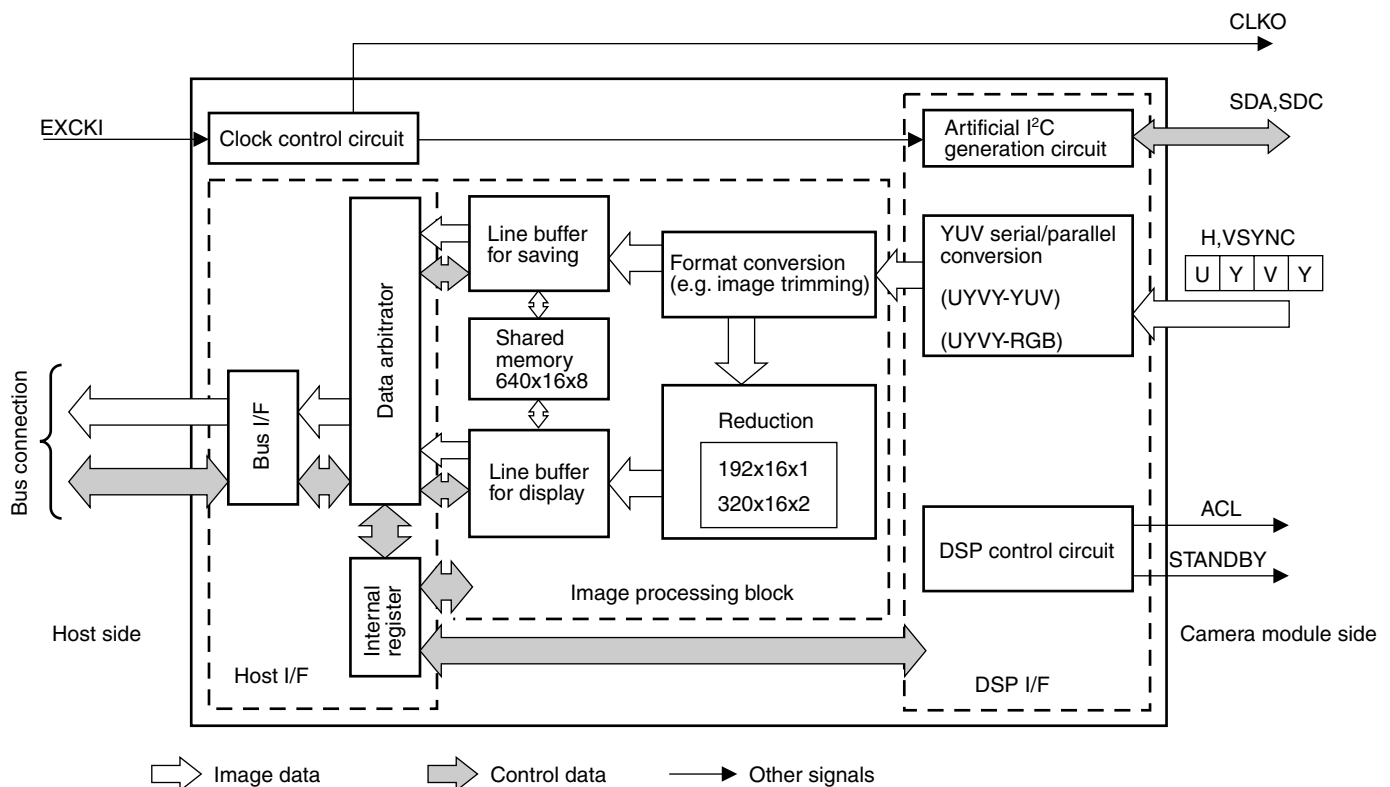
In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

**IC603 (LR38876): CAMERA I/F CONVERSION LSI**

Pin No.	Terminal name	Input/Output	Description of terminal
1*	—	—	Continuity test terminal (Not used)
2	EXCKI	Input	System clock input
3	GND	—	Earth
4	A19	Input	CPU I/F address
5	A2	Input	CPU I/F address
6	WRB	Input	CPU I/F write signal input
7	GND	—	Earth
8	OD9	Input/Output	CPU I/F data bus, bit 9
9	OD10	Input/Output	CPU I/F data bus, bit 10
10*	—	—	Continuity test terminal (Not used)
11	GND	—	Earth
12	CVDD	—	Internal core power supply (+1.8 V)
13	A18	Input	CPU I/F address
14	A1	Input	CPU I/F address
15	RDB	Input	CPU I/F read signal input
16	HVDD2	—	External digital power supply 2 (+1.8/3.0 V)
17	OD8	Input/Output	CPU I/F data bus, bit 8
18	OD11	Input/Output	CPU I/F data bus, bit 11
19	TEST5	Input	Test terminal 5
20	OD7	Input/Output	CPU I/F data bus, bit 7
21	OD13	Input/Output	CPU I/F data bus, bit 13
22	OD12	Input/Output	CPU I/F data bus, bit 12
23	OD6	Input/Output	CPU I/F data bus, bit 6
24	OD5	Input/Output	CPU I/F data bus, bit 5
25	A17	Input	CPU I/F address
26	CSB	Input	CPU I/F chip select input
27	OD15	Input/Output	CPU I/F data bus, bit 15
28	OD14	Input/Output	CPU I/F data bus, bit 14
29	OD3	Input/Output	CPU I/F data bus, bit 3
30	OD2	Input/Output	CPU I/F data bus, bit 2
31	OD4	Input/Output	CPU I/F data bus, bit 4
32	TEST4	Input	Test terminal 4 (use Low input)
33	CLKO	Output	Output clock to camera module
34	GND	—	Earth
35	OD0	Input/Output	CPU I/F data bus, bit 0

Pin No.	Terminal name	Input/Output	Description of terminal
36	OD1	Input/Output	CPU I/F data bus, bit 1
37	HVDD2	–	External digital power supply 2 (+1.8/3.0 V)
38	D0	Input	Image I/F input data, bit 0
39	GND	–	Earth
40	DX	Input	Test terminal (use Low input)
41	CINT	Output	CPU/ I/F interrupt output
42	GND	–	Earth
43	SDA	Input/Output	Artificial I ² C I/F data line
44	CVDD	–	Internal core power supply (+1.8 V)
45	D1	Input	Image I/F input data, bit 1
46	D2	Input	Image I/F input data, bit 2
47	RSTB	Input	Reset input
48*	CBREQ	Output	CPU I/F DMA request output (Not used)
49	D3	Input	Image I/F input data, bit 3
50	D4	Input	Image I/F input data, bit 4
51	TEST2	Input	Test terminal 2
52	STANDBY	Output	Stand-by signal output to camera module
53	TEST1	Input	Test terminal 1
54	GND	–	Earth
55	PCLK	Input	Input pixel clock from camera module
56	HSYNC	Input	Horizontal synchronous signal
57	D7	Input	Image I/F input data, bit 7
58	D5	Input	Image I/F input data, bit 5
59*	–	–	Continuity test terminal (Not used)
60	TEST3	Input	Test terminal 3
61	ACL	Output	Reset signal output to camera module
62	SDC	Input/Output	Artificial I ² C I/F clock line
63	HVDD1	–	External digital power supply 1 (+3.0 V)
64	GND	–	Earth
65	VSYN	Input	Vertical synchronous signal
66	HVDD1	–	External digital power supply 1 (+3.0 V)
67	D6	Input	Image I/F input data, bit 6
68*	–	–	Continuity test terminal (Not used)

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.



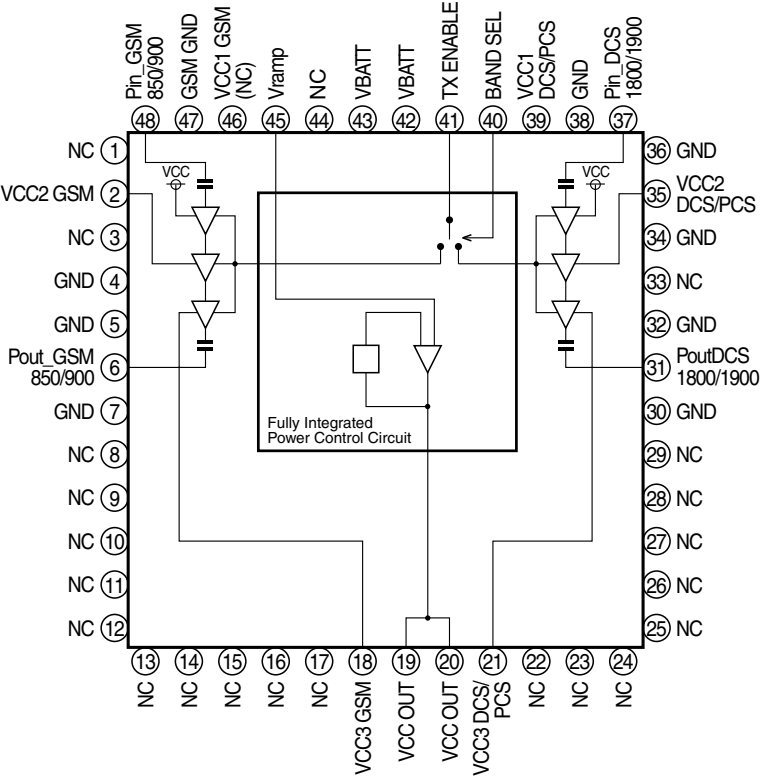
Pin No.	Terminal name	Input/Output	Description of terminal
1	VCCLNA	Input	VCC for LNA transistor and LNA Bias
2	PCSGND	–	Earth for emitter of LNA transistor (PCS)
3	PCSLNAI	Input	Positive input for LNA transistor (PCS)
4	PCSLNAIB	Input	Negative input for LNA transistor (PCS)
5	PCSDCSGND	–	Earth for emitter of LNA transistor (PCS, DCS)
6	DCSLNAI	Input	Positive input for LNA transistor (DCS)
7	DCSLNAIB	Input	Negative input for LNA transistor (DCS)
8	DCSGSMGND	–	Earth for emitter of LNA transistor (DCS, GSM)
9	GSMLNAI	Input	Positive input for LNA transistor (GSM)
10	GSMLNAIB	Input	Negative input for LNA transistor (GSM)
11	GSMGND	–	Earth for emitter of LNA transistor (GSM)
12	PLLOUT	Output	Current output to control and modulate TXVCO
13	VCCOPLL	Input	VCC for OPLL and phase comparator
14	VCCTXVCO		VCC for TXVCO
15	GNDTXVCOD	–	Earth for DCS/PCS TxVCO
16	GNDTXVCODB	–	Earth for DCS/PCS TxVCO
17	TXOUTG	Output	Tx output for GSM
18	COMMONGND	–	Earth for common
19	TXOUTD	Output	Tx output for DCS/PCS
20	TXVCOGB	Input	Negative TxVCO output for GSM
21	TXVCOG	Input	Positive TxVCO output for GSM
22	VCCIQ	Input	VCC for IQ modulator
23	IOUT/IIN	Input/Output	Positive output/input of I channel/modulator
24	IOUTB/IINB	Input/Output	Negative output/input of I channel/modulator
25	QOUT/QIN	Input/Output	Positive output/input of Q channel/modulator
26	QOUTB/QIN	Input/Output	Negative output/input of Q channel/modulator
27	VCCIFSYN	Input	VCC for IFVCO buffer and divider, and IF synthesiser
28	CPIFSYN	Output	Charge pump output of IF synthesiser
29	LE	Input	Load enable for serial data
30	CLK	Input	Clock for serial data
31	VCXOOUT	Output	Output for VCXO
32	SDATA	Input	Serial data
33*	GNDVCXO (NC)	–	Earth for VCXO (Not used)
34	VCXOE	–	Emitter of VCXO transistor
35	VCXOB	Input	Base of VCXO transistor
36	VCCVCXO	Input	VCC for VCXO
37	VCCRFSYN	Input	VCC for RF synthesiser
38	CPRFSYN	Output	Charge pump output of RF synthesiser
39	FLOCK	Output	Fast lock control for RF synthesiser
40	VCCBB	Input	VCC for baseband and state logic
41	VCCRFVCO	Input	VCC for RF VCO
42	DIVON	Output	VCXOOUT divider control input
43	VCCRFLO	Input	VCC for RF local buffer and divider
44	CAPQB	Output	Capacitor for Q channel LPF (Negative output)
45	CAPQ	Output	Capacitor for Q channel LPF (Positive output)
46	CAPIB	Output	Capacitor for I channel LPF (Negative output)
47	CAPI	Output	Capacitor for I channel LPF (Positive output)
48	VCCMIX	Input	VCC for direct conversion mixer
49	GNDLNA	–	Earth for LNA bias

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

IC802 VHIRF3146++-1L (RF3146): POWER AMP.

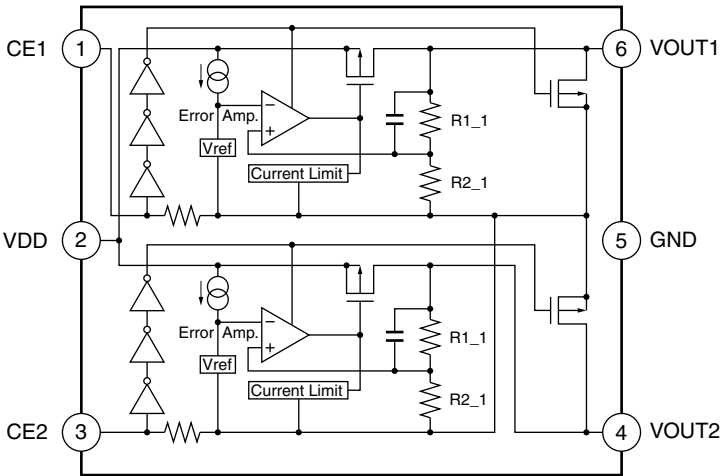
Pin No.	Terminal name	Input/Output	Description of terminal
1*	NC	—	Not used
2	VCC2 GSM	Input	Controlled voltage input the GSM driver stage
3*	NC	—	Not used
4	GND	—	Earth
5	GND	—	Earth
6	Pout_GSM850/900	Output	Output power (GSM850/900)
7	GND	—	Earth
8*	NC	—	Not used
9*	NC	—	Not used
10*	NC	—	Not used
11*	NC	—	Not used
12*	NC	—	Not used
13*	NC	—	Not used
14*	NC	—	Not used
15*	NC	—	Not used
16*	NC	—	Not used
17*	NC	—	Not used
18	VCC3 GSM	Input	Controlled voltage input the GSM driver stage
19	VCC OUT	Output	Controlled voltage output to feed VCC
20	VCC OUT	Output	Controlled voltage output to feed VCC
21	VCC3 DCS/PCS	Input	Controlled voltage input the DCS/PCS driver stage
22*	NC	—	Not used
23*	NC	—	Not used
24*	NC	—	Not used
25*	NC	—	Not used
26*	NC	—	Not used
27*	NC	—	Not used
28*	NC	—	Not used
29*	NC	—	Not used
30	GND	—	Earth
31	PoutDCS1800/1900	Output	Output power (DCS/PCS)
32	GND	—	Earth
33*	NC	—	Not used
34	GND	—	Earth
35	VCC2 DCS/PCS	Input	Controlled voltage input the DCS/PCS driver stage
36	GND	—	Earth
37	Pin_DCS1800/1900	Input	Input power from TXVCO (DCS/PCS)
38	GND	—	Earth
39	VCC1 DCS/PCS	Input	Controlled voltage input the DCS/PCS driver stage
40	BAND SEL	Input	Band select voltage
41	TX ENABLE	Input	This signal enables the PA module
42	VBATT	Input	Power supply
43	VBATT	Input	Power supply
44*	NC	—	Not used
45	Vramp	Input	Power control voltage
46*	VCC1 GSM (NC)	Input	Controlled voltage input the GSM driver stage (Not used)
47	GSM GND	—	Earth
48	Pin_GSM850/900	Input	Input power from TXVCO (GSM850/900)

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.



IC804 VHIR5322P++-1L (R5322P): VOLTAGE REGULATOR

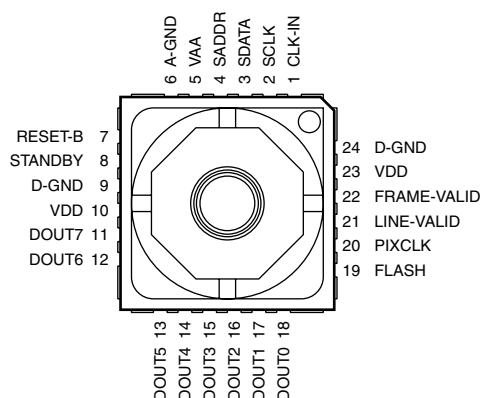
Pin No.	Terminal name	Input/Output	Description of terminal
1	CE1	Input	Chip enable1
2	VDD	Input	Power supply
3	CE2	Input	Chip enable2
4	VOUT2	Output	VCC for VRF
5	GND	—	Earth
6	VOUT1	Output	VCC for VTCXO



[2] Function table of Camera

CA100 RUNTZA021AFPZ: CAMERA UNIT

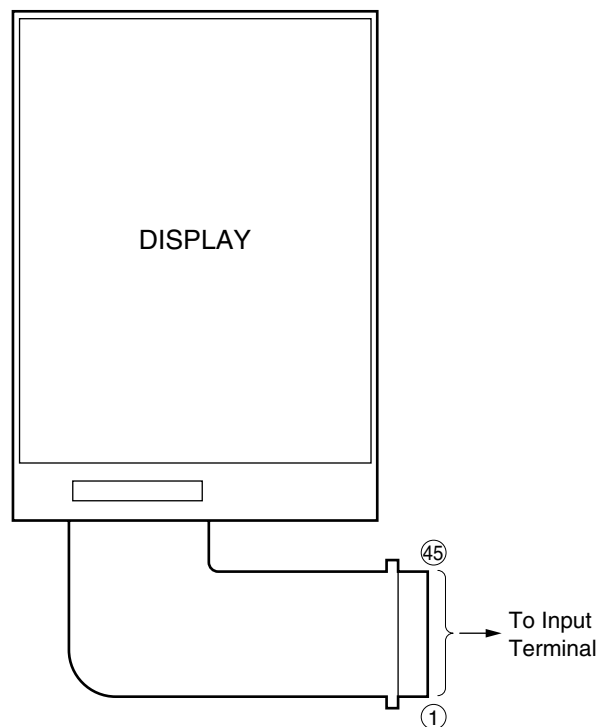
Pin No.	Terminal name	Input/Output	Description of terminal
1	CLK-IN	Input	Master clock into sensor. Default is 12 MHz (27 MHz maximum)
2	SCLK	Input	IIC Serial clock
3	SDATA	Input/Output	IIC Serial data I/O
4	SADDR	Input	Serial interface address select: Reg0xB8 when HIGH (default). Reg0x90 when LOW
5	VAA	Input	Analogue power (2.8 V)
6	A-GND	—	Analogue earth
7	RESET-B	Input	Asynchronous reset of sensor when LOW. All registers assume factory defaults
8	STANDBY	Input	When HIGH disables the imager
9	D-GND	—	Digital earth
10	VDD	Input	Digital power (2.8 V)
11	DOUT7	Output	CCIR656/RGB data bit 7 (MSB)
12	DOUT6	Output	CCIR656/RGB data bit 6
13	DOUT5	Output	CCIR656/RGB data bit 5
14	DOUT4	Output	CCIR656/RGB data bit 4
15	DOUT3	Output	CCIR656/RGB data bit 3
16	DOUT2	Output	CCIR656/RGB data bit 2
17	DOUT1	Output	CCIR656/RGB data bit 1
18	DOUT0	Output	Digital power (2.8 V)
19	FLASH	Output	Flash strobe
20	PIXCLK	Output	Pixel clock out Pixel data output are valid during rising edge of this clock Frequency = Master Clock
21	LINE-VALID	Output	Active HIGH during line of selectable valid pixel data (see Reg0x20 for options)
22	FRAME-VALID	Output	Active HIGH during frame of valid pixel data
23	VDD	Input	Digital power (2.8 V)
24	D-GND	—	Digital earth



[3] Function table of Display

LCD100 RLCUBA001AFPZ: DISPLAY

Pin No.	Terminal name	Input/Output	Description of terminal
1	VSS4	Output	DC-DC converter output
2	VSS4	Output	DC-DC converter output
3	VSS2	Output	DC-DC converter output
4	C4-	-	Booster capacitor connection terminal
5	C4+	-	Booster capacitor connection terminal
6	C3-	-	Booster capacitor connection terminal
7	C3+	-	Booster capacitor connection terminal
8	VDD1	Output	DC-DC converter output
9	C2-	-	Booster capacitor connection terminal
10	C2+	-	Booster capacitor connection terminal
11	C1-	-	Booster capacitor connection terminal
12	C1+	-	Booster capacitor connection terminal
13	VDD2	Output	DC-DC converter output
14	VDC	-	DC-DC converter reference power supply
15	VCC2	-	CPU/RGB interface power supply
16	VSS	-	Earth
17	VSS	-	Earth
18	VS	Output	Regulator output
19	VR	Output	Regulator output
20	COMH	Output	Common high level power supply
21	COML	Output	Common low level power supply
22	OSCOU	Output	Oscillation signal
23	OSCIN	Input	Oscillation signal
24	VCC1	-	Logic power
25	/RD	Input	Read control signal input
26	/WR	Input	Write control signal input
27	RS	Input	Input for command/display data identification signal
28	RESET	Input	Reset signal input
29	/CS	Input	Chip select signal input
30	D15	Input/Output	Data input/output
31	D14	Input/Output	Data input/output
32	D13	Input/Output	Data input/output
33	D12	Input/Output	Data input/output
34	D11	Input/Output	Data input/output
35	D10	Input/Output	Data input/output
36	D09	Input/Output	Data input/output
37	D08	Input/Output	Data input/output
38	D07	Input/Output	Data input/output
39	D06	Input/Output	Data input/output
40	D05	Input/Output	Data input/output
41	D04	Input/Output	Data input/output
42	D03	Input/Output	Data input/output
43	D02	Input/Output	Data input/output
44	D01	Input/Output	Data input/output
45	D00	Input/Output	Data input/output



SHARP PARTS GUIDE

No. S5408TQGX5E//

DIGITAL MOBILE PHONE

MODEL GX15

CONTENTS

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| [1] INTEGRATED CIRCUITS | [9] ARRAY PARTS |
| [2] TRANSISTORS | [10] CAPACITORS |
| [3] DIODES | [11] RESISTORS |
| [4] FILTERS | [12] OTHER CIRCUITRY PARTS |
| [5] COILS | [13] CABINET PARTS |
| [6] VARIABLE RESISTORS | [14] ACCESSORIES/PACKING PARTS |
| [7] VIBRATORS | [15] P.W.B. ASSEMBLY |
| [8] THERMISTOR | |

Parts marked with "△" are important for maintaining the safety of the set. Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
[1] INTEGRATED CIRCUITS					
△	iC101	VHiYMU762C+-1L	AX		Sound,YMU762C
	iC102	VHiQ5RW45BF-1L	AD		4.5V Regulator,Q5RW45B
△	iC103	-----	-		This Parts is Supplied with Cabinet Parts 104
	iC104	-----	-		This Parts is Supplied with Cabinet Parts 104
	iC105	VHiNL17SZ08-1L	AC		Logic,NL17SZ08
△	iC106	-----	-		This Parts is Supplied with Cabinet Parts 104
	iC107	VHiX61CN27N-1L	AD		Voltage Detector,X61CN27N
	iC108	VHi1323B30G-1R	AD		Regulator,1323B30G
	iC109	VHiR11630FB-1L	AD		Regulator,R11630FB
	iC110	VHiR118030B-1L	AD		Regulator,R118030B
	iC112	VHiNL17SZ32-1L	AC		Logic,NL17SZ32
	iC114	VHiTC75S58A-1L	AE		Comparator,TC75S58A
	iC402	-----	-		This Parts is Supplied with Cabinet Parts 104
	iC403	VHiR118030B-1L	AD		Regulator,R118030B
	iC501	-----	-		This Parts is Supplied with Cabinet Parts 104
	iC503	VHiTK73840G-1L	AF		Regulator,TK73840G
	iC504	VHiUSBUF2WE-1L	AF		EMI Filter,USBUF2WE
	iC506	VHiLT3465+-1R	AL		DC-DC Converter,LT3465
	iC507	VHi74VHC1GT-1L	AC		Logic,74VHC1GT
	iC601	VHiXC621918-1L	AD		Regulator,XC621918
	iC602	VHiTK11128C-1R	AD		Regulator,TK11128C
	iC603	-----	-		This Parts is Supplied with Cabinet Parts 104
△	iC801	-----	-		This Parts is Supplied with Cabinet Parts 104
△	iC802	VHiRF3146+-1L	AT		Power Amp.,RF3146
	iC804	VHiR5322P+-1L	AE		Voltage Regulator,R5322P
[2] TRANSISTORS					
	Q101	VS2SK3019//--1+	AC		FET,2SK3019
	Q102	VSECH8603+-1L	AF		FET,ECH8603
	Q104	VSNSBC143TP-1R	AB		Digital,NPN/PNP,NSBC143 TP
	Q501	VSDTC114YET-1L	AB		Digital,NPN,DTC114 YET
	Q502	VSEC4401C+-1L	AB		FET,EC4401 C
	Q503	VSDTC114YET-1L	AB		Digital,NPN,DTC114 YET
	Q504	VSEC4401C+-1L	AB		FET,EC4401 C
	Q505	VSEC4401C+-1L	AB		FET,EC4401 C
	Q506	VSEC4301C+-1L	AB		FET,EC4301 C
	Q507	VSEC4401C+-1L	AB		FET,EC4401 C
[3] DIODES					
	D101	VHDRB52030T-1L	AB		Silicon,RB52030T
	D102	VHDRB160M30-1L	AC		Silicon,RB160M30
	D104	VHDRB52030T-1L	AB		Silicon,RB52030T
	D105	VHDRB52130T-1L	AB		Silicon,RB52130T
	D108	VHDRB52030T-1L	AB		Silicon,RB52030T
	D109	VHD1SS388F+-1L	AB		Silicon,1SS388F
	D502	VHD1SS388F+-1L	AB		Silicon,1SS388F
	D503	VHDRB160M30-1L	AC		Silicon,RB160M30
	D505	VHDRB52130T-1L	AB		Silicon,RB52130T
	D507	VHD1SS388F+-1L	AB		Silicon,1SS388F
	LED501	VHPECW008B2-1L	AG		LED,ECW008B2
	LED502	VHPECW008B2-1L	AG		LED,ECW008B2
	LED503	VHPECW008B2-1L	AG		LED,ECW008B2
	LED701	VHPYPY1105C-1L	AC		LED,Green,YPY1105C
	LED702	VHPYPY1105C-1L	AC		LED,Green,YPY1105C
	LED703	VHPYPY1105C-1L	AC		LED,Green,YPY1105C
	LED704	VHPYPY1105C-1L	AC		LED,Green,YPY1105C
	LED705	VHPYPY1105C-1L	AC		LED,Green,YPY1105C
	LED706	VHPYPY1105C-1L	AC		LED,Green,YPY1105C
	LED707	VHPYPY1105C-1L	AC		LED,Green,YPY1105C
	UN101	VHP2W0110VY-1R	AH		Infrared Port
	ZD101	VHERSB6R8S+-1L	AC		Zener,6.8V,RSB6.8S
[4] FILTERS					
	FL401	RFiLRA017AFPZL	AE		Filter,Bluetooth
△	FL803	RFiLRA006AFZZL	AF		RF Switch
	FL823	RFiLNO020AFZZN	AB		Ferrite Beads
	FL902	RFiLRA015AFPZL	AG		SAW Filter
	FL903	RFiLRA014AFPZL	AF		SAW Filter
	FL905	RFiLR0256AFZZL	AE		ESD DEVICE
[5] COILS					
	L101	VPCAMS33J0000-	AA		33 nH
	L102	VPCAMS33J0000-	AA		33 nH
	L103	VPBFMS33JR65MT	AB		33 nH
	L104	VPBFMS33JR65MT	AB		33 nH
	L110	RCiLZA008AFZZN	AB		Ferrite Beads
	L113	RCiLZ1088YCZZ-	AC		Ferrite Beads
	L124	RCiLZ1088YCZZ-	AC		Ferrite Beads
	L127	VPBFMS33JR65MT	AB		33 nH
	L135	VPBFMS33JR65MT	AB		33 nH
	L149	VPBFMS56J1R0MT	AB		56 nH
	L204	VPBFMS56J1R0MT	AB		56 nH
	L403	VPBZNS22J0000-	AA		22 nH
	L405	VPCAMT12S0000-	AB		1.2 nH

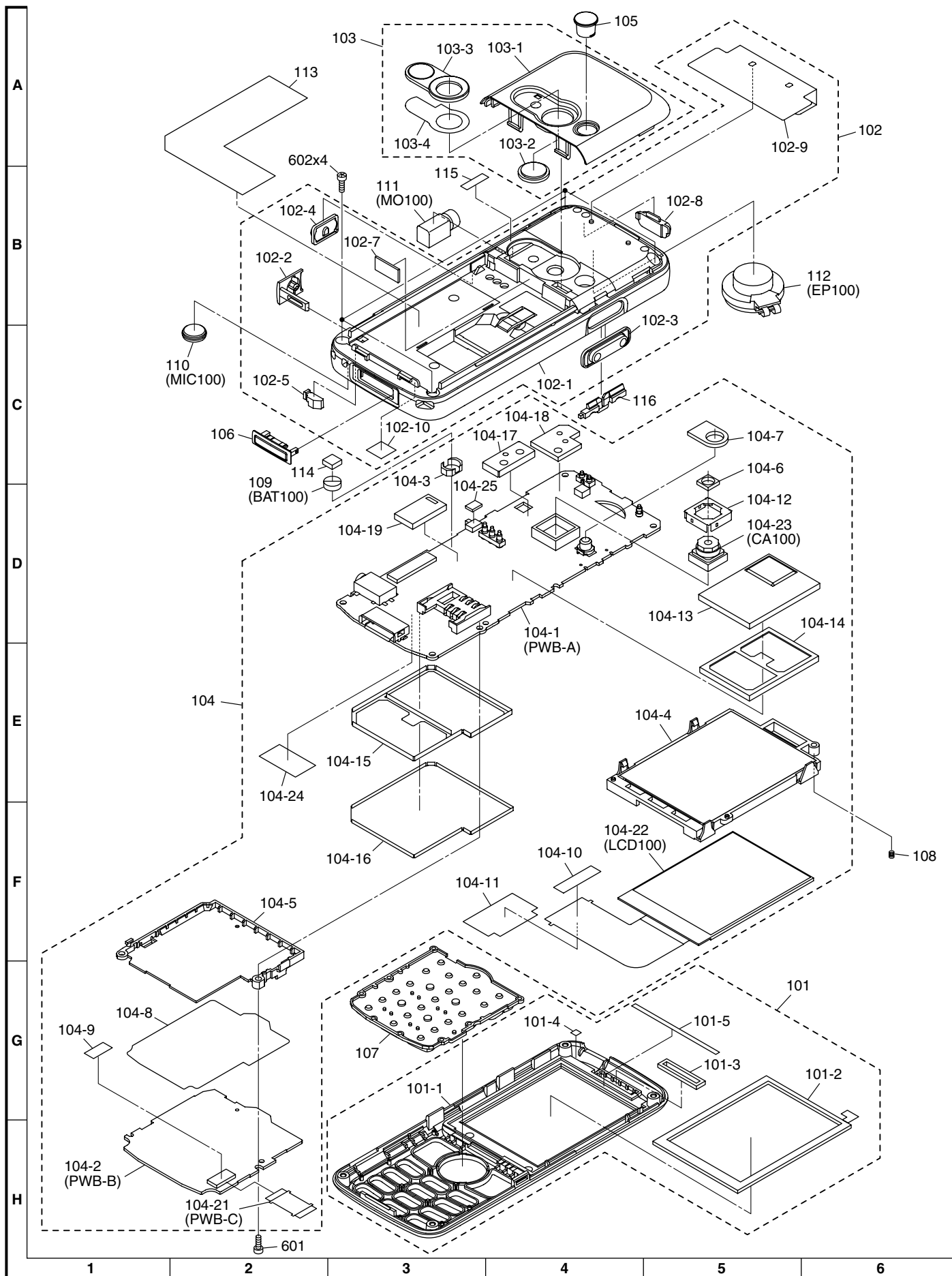
NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
[5] COILS					
L502	RCiLZ0346AFZZN	AC			22 μ H
L801	RCiLZ1103YCZZ-	AB			Ferrite Beads
L802	RCiLZA005AFZZN	AB			Ferrite Beads
L821	VPCAMT22S0000-	AC			2.2 nH
L822	VPCAMT22S0000-	AC			2.2 nH
L832	VPCAMT56S0000-	AA			5.6 nH
L833	VPCAMS22J0000-	AA			22 nH
L891	VPCAMT68J0000-	AA			6.8 nH
L892	VPCAMT68J0000-	AA			6.8 nH
L1871	VPCAMT33S0000-	AA			3.3 nH
L1872	VPCAMT18S0000-	AA			1.8 nH
L1873	VPCAMT12S0000-	AB			1.2 nH
[6] VARIABLE RESISTORS					
V101	VHV10080MBB-1N	AB			Varistor,100 pF,8V
V102	VHV10080MBB-1N	AB			Varistor,100 pF,8V
V502	VHV10080MBB-1N	AB			Varistor,100 pF,8V
V503	VHV10080MBB-1N	AB			Varistor,100 pF,8V
V504	VHV10080MBB-1N	AB			Varistor,100 pF,8V
V505	VHV10080MBB-1N	AB			Varistor,100 pF,8V
V506	VHV10080MBB-1N	AB			Varistor,100 pF,8V
V512	VHV10270MBB-1N	AB			Varistor,15 pF,27V
V513	VHV10080MBB-1N	AB			Varistor,100 pF,8V
V514	VHV10270MBB-1N	AB			Varistor,15 pF,27V
[7] VIBRATORS					
TCX801	RTC0XA002AFZZL	AN			VCTCXO,26 MHz
X101	RCRSC0065AFZZL	AF			Crystal,32 kHz
[8] THERMISTOR					
TH102	RH-HXA001AFZZN	AF			Thermistor,10 kohm
[9] ARRAY PARTS					
R142	RCiLZA017AFPZN	AC			Array,Ferrite Beads
R151	RCiLZA017AFPZN	AC			Array,Ferrite Beads
R152	RCiLZA017AFPZN	AC			Array,Ferrite Beads
R154	RCiLZA017AFPZN	AC			Array,Ferrite Beads
R530	RMPTR4471ACZZN	AA			Array,470 ohms
R532	RMPTR4471ACZZN	AA			Array,470 ohms
R560	RMPTR4471ACZZN	AA			Array,470 ohms
R611	RMPTR4474ACZZN	AB			Array,470 kohms
R612	RMPTR4474ACZZN	AB			Array,470 kohms
R613	RMPTR4474ACZZN	AB			Array,470 kohms
[10] CAPACITORS					
C101	VCCCCZ1EH470JT	AB			47 pF (CH),25V
C105	VCKYCZ1AB104KT	AA			0.1 μ F,10V
C106	VCKYCZ0JB105KT	AB			1 μ F,6.3V
C107	RC-KZ1315AFZZN	AC			10 μ F,6.3V
C108	RC-KZ1315AFZZN	AC			10 μ F,6.3V
C109	VCCCCZ1EH470JT	AB			47 pF (CH),25V
C110	VCCCCZ1EH470JT	AB			47 pF (CH),25V
C112	VCCCCZ1EH470JT	AB			47 pF (CH),25V
C113	VCKYCZ1EB102KT	AB			0.001 μ F,25V
C115	VCKYCZ0JB105KT	AB			1 μ F,6.3V
C116	VCCCCZ1EH470JT	AB			47 pF (CH),25V
C117	VCKYCZ1EB102KT	AB			0.001 μ F,25V
C120	VCKYCZ1CB103KT	AB			0.01 μ F,16V
C121	VCCCCZ1EH470JT	AB			47 pF (CH),25V
C121A	VCKYCZ1AB104KT	AA			0.1 μ F,10V
C122	VCCCCZ1EH470JT	AB			47 pF (CH),25V
C123	VCKYCZ1AB104KT	AA			0.1 μ F,10V
C124	VCKYCZ0JB105KT	AB			1 μ F,6.3V
C125	VCKYCZ1AB104KT	AA			0.1 μ F,10V
C127	VCKYCZ1AB104KT	AA			0.1 μ F,10V
C131	VCKYCZ1AB104KT	AA			0.1 μ F,10V
C132	VCKYCZ0JB105KT	AB			1 μ F,6.3V
C133	VCCCCZ1EH470JT	AB			47 pF (CH),25V
C137	VCKYCZ1AB104KT	AA			0.1 μ F,10V
C138	VCKYCZ1EB102KT	AB			0.001 μ F,25V
C139	VCKYCZ0JB105KT	AB			1 μ F,6.3V
C141	VCKYCZ0JB105KT	AB			1 μ F,6.3V
C143	VCKYCZ0JB105KT	AB			1 μ F,6.3V
C144	RC-KZ1315AFZZN	AC			10 μ F,6.3V
C145	VCKYCZ1AB104KT	AA			0.1 μ F,10V
C146	VCKYCZ1AB104KT	AA			0.1 μ F,10V
C147	VCKYCZ0JB105KT	AB			1 μ F,6.3V
C148	VCKYCZ1AB104KT	AA			0.1 μ F,10V
C150	VCKYCZ0JB105KT	AB			1 μ F,6.3V
C151	VCKYCZ1EB102KT	AB			0.001 μ F,25V
C155	VCKYCZ0JB105KT	AB			1 μ F,6.3V
C156	VCCCCZ1EH470JT	AB			47 pF (CH),25V
C157	VCCCCZ1EH470JT	AB			47 pF (CH),25V
C158	VCKYCY0JB225KT	AC			2.2 μ F,6.3V

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
[10] CAPACITORS					
C159	VCKY CZ0JB105KT	AB			1 μ F,6.3V
C160	VCKY CZ0JB105KT	AB			1 μ F,6.3V
C161	VCKY CZ0JB105KT	AB			1 μ F,6.3V
C162	VCKY CY1AB474KT	AC			0.47 μ F,10V
C164	VCKY CY0JB105KT	AC			1 μ F,6.3V
C165	VCKY CZ1AB104KT	AA			0.1 μ F,10V
C167	RC-KZ1308AFZZT	AD			4.7 μ F,6.3V
C168	VCKY CZ1AB104KT	AA			0.1 μ F,10V
C169	VCKY CZ1AB104KT	AA			0.1 μ F,10V
C170	VCKY CZ1AB104KT	AA			0.1 μ F,10V
C171	VCKY CZ1EB102KT	AB			0.001 μ F,25V
C173	VCKY CZ1EB102KT	AB			0.001 μ F,25V
C176	VCCCCZ1EH2R0CT	AB			2 pF (CH),25V
C179	VCKY CZ0JB105KT	AB			1 μ F,6.3V
C180	VCKY CZ1EB102KT	AB			0.001 μ F,25V
C181	VCKY CZ1AB104KT	AA			0.1 μ F,10V
C182	VCKY CZ1AB104KT	AA			0.1 μ F,10V
C183	VCKY CZ1EB102KT	AB			0.001 μ F,25V
C184	VCKY CZ0JB105KT	AB			1 μ F,6.3V
C189	VCKY CZ0JB105KT	AB			1 μ F,6.3V
C190	VCKY CZ1EB102KT	AB			0.001 μ F,25V
C191	VCKY CZ1AB104KT	AA			0.1 μ F,10V
C194	VCKY CY1AB225KT	AB			2.2 μ F,10V
C196	RC-KZ1308AFZZT	AD			4.7 μ F,6.3V
C197	RC-KZ1308AFZZT	AD			4.7 μ F,6.3V
C200	RC-KZ1317AFZZN	AB			1 μ F,16V
C203	VCKY CZ0JB105KT	AB			1 μ F,6.3V
C207	VCKY CZ1AB104KT	AA			0.1 μ F,10V
C209	RC-KZ1313AFZZN	AA			1 μ F,10V
C210	RC-KZ1313AFZZN	AA			1 μ F,10V
C211	RC-KZ1311AFZZN	AC			1 μ F,25V
C212	VCKY CY0JB225KT	AC			2.2 μ F,6.3V
C215	VCKY CY0JB225KT	AC			2.2 μ F,6.3V
C216	RC-KZ1308AFZZT	AD			4.7 μ F,6.3V
C217	RC-KZ2000AFZZT	AC			4.7 μ F,10V
C218	VCKY CY1AB225KT	AB			2.2 μ F,10V
C219	VCKY CZ1AB104KT	AA			0.1 μ F,10V
C220	VCKY CZ1AB104KT	AA			0.1 μ F,10V
C221	VCKY CY1AB225KT	AB			2.2 μ F,10V
C222	VCKY CY0JB225KT	AC			2.2 μ F,6.3V
C223	RC-KZ1308AFZZT	AD			4.7 μ F,6.3V
C227	VCKY CY0JB225KT	AC			2.2 μ F,6.3V
C231	VCKY CZ1AB104KT	AA			0.1 μ F,10V
C232	VCKY CZ1AB104KT	AA			0.1 μ F,10V
C233	VCKY CZ0JB105KT	AB			1 μ F,6.3V
C236	VCKY CZ1AB104KT	AA			0.1 μ F,10V
C237	VCCCCZ1EH470JT	AB			47 pF (CH),25V
C238	VCKY CZ1CB103KT	AB			0.01 μ F,16V
C239	VCKY CZ0JB105KT	AB			1 μ F,6.3V
C240	VCCCCZ1EH470JT	AB			47 pF (CH),25V
C241	VCCCCZ1EH470JT	AB			47 pF (CH),25V
C244	VCCCCZ1EH470JT	AB			47 pF (CH),25V
C245	VCCCCZ1EH470JT	AB			47 pF (CH),25V
C401	VCKY CZ0JB105KT	AB			1 μ F,6.3V
C402	VCKY CZ0JB105KT	AB			1 μ F,6.3V
C409	VCKY CZ1CB103KT	AB			0.01 μ F,16V
C410	VCKY CZ1CB103KT	AB			0.01 μ F,16V
C411	VCKY CY1AB225KT	AB			2.2 μ F,10V
C413	VCCCCZ1EH2R0CT	AB			2 pF (CH),25V
C414	VCKY CZ1CB103KT	AB			0.01 μ F,16V
C416	VCKY CZ1CB103KT	AB			0.01 μ F,16V
C417	VCCCCZ1EH2R0CT	AB			2 pF (CH),25V
C501	VCKY CZ1AB104KT	AA			0.1 μ F,10V
C504	VCKY CZ1EB102KT	AB			0.001 μ F,25V
C505	RC-KZ1321AFZZN	AD			22 μ F,6.3V
C506	VCKY CZ1AB104KT	AA			0.1 μ F,10V
C507	VCKY CZ0JB105KT	AB			1 μ F,6.3V
C510	VCKY CZ0JB105KT	AB			1 μ F,6.3V
C511	VCKY CZ1CB103KT	AB			0.01 μ F,16V
C512	VCKY CZ1CB103KT	AB			0.01 μ F,16V
C513	VCKY CY1AB105KT	AB			1 μ F,10V
C528	VCKY TV1EB224KT	AB			0.22 μ F,25V
C530	VCKY CZ0JB105KT	AB			1 μ F,6.3V
C601	VCKY CZ0JB105KT	AB			1 μ F,6.3V
C602	VCKY CZ1AB104KT	AA			0.1 μ F,10V
C604	VCKY CZ1CB103KT	AB			0.01 μ F,16V
C605	VCKY CY1AB105KT	AB			1 μ F,10V
C606	VCKY CZ0JB105KT	AB			1 μ F,6.3V
C607	VCKY CZ1AB473KT	AB			0.047 μ F,10V
C608	VCKY CZ1AB104KT	AA			0.1 μ F,10V
C609	VCKY CZ1AB104KT	AA			0.1 μ F,10V
C610	VCKY CZ1AB104KT	AA			0.1 μ F,10V
C613	VCKY CZ1AB104KT	AA			0.1 μ F,10V
C614	VCKY CZ0JB105KT	AB			1 μ F,6.3V
C615	VCKY CZ1AB104KT	AA			0.1 μ F,10V

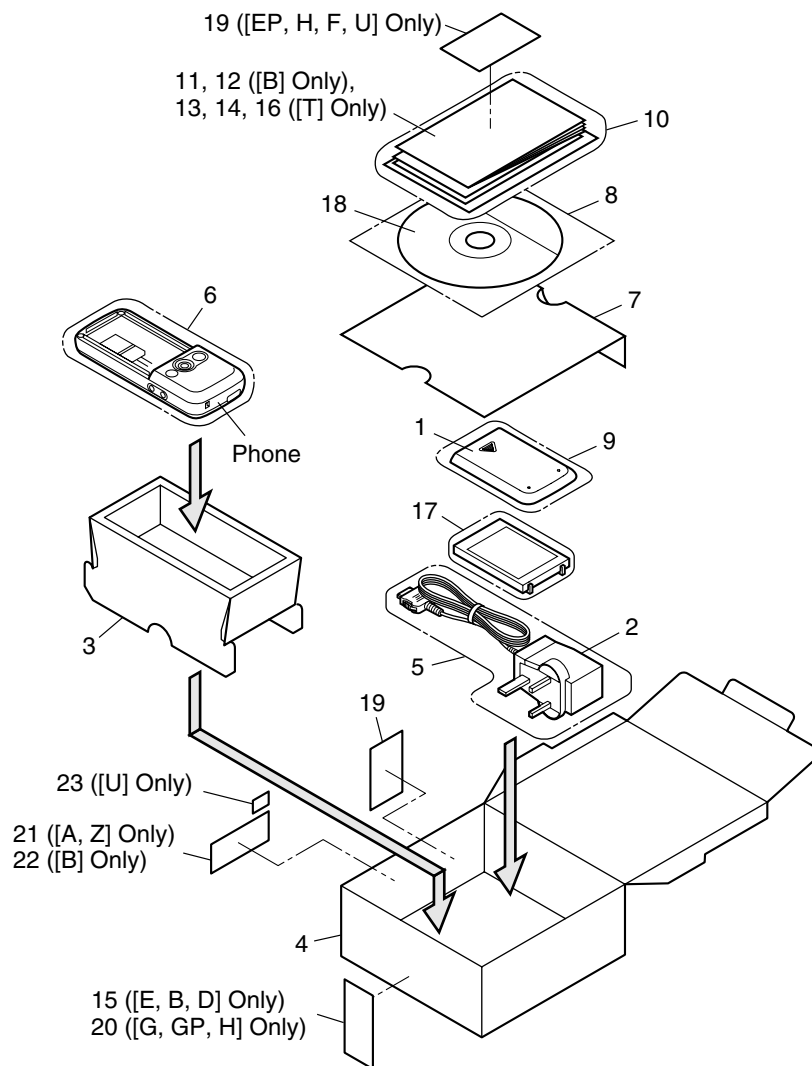
NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
[10] CAPACITORS					
C801	VCKYCY0JB105KT	AB			1 μ F,6.3V
C802	VCKYCY0JB225KT	AC			2.2 μ F,6.3V
C803	VCKYCY0JB103KT	AB			0.01 μ F,16V
C806	VCKYCY0JB225KT	AC			2.2 μ F,6.3V
C807	VCKYCY0JB103KT	AB			0.01 μ F,16V
C810	VCKYCY0JB105KT	AB			1 μ F,6.3V
C811	VCCCCZ1EH220JT	AA			22 pF (CH),25V
C812	VCCCCZ1EH220JT	AA			22 pF (CH),25V
C830	VCKYCY0JB105KT	AB			1 μ F,6.3V
C831	RC-KZ3009AFZZN	AA			0.0022 μ F,50V
C832	VCCCCZ1EH271JT	AA			270 pF (CH),25V
C833	VCCCCZ1EH270JT	AA			27 pF (CH),25V
C835	VCKYCY1AB104KT	AA			0.1 μ F,10V
C836	VCCCCZ1EH101JT	AB			100 pF (CH),25V
C837	VCKYCY1AB104KT	AA			0.1 μ F,10V
C840	VCKYCY1EB331KT	AA			330 pF,25V
C841	RC-KZ3010AFZZN	AB			0.0033 μ F,50V
C842	VCKYCY1AB104KT	AA			0.1 μ F,10V
C843	RC-KZ3011AFZZN	AA			0.0018 μ F,50V
C844	RC-KZ3011AFZZN	AA			0.0018 μ F,50V
C845	VCKYCY1AB104KT	AA			0.1 μ F,10V
C850	RC-CZ3001AFZZN	AB			33 μ F,6.3V
C851	VCKYCY1EB182KT	AA			0.0018 μ F,25V
C855	VCCCCZ1EH470JT	AB			47 pF (CH),25V
C856	VCCCCZ1EH220JT	AA			22 pF (CH),25V
C857	VCCCCZ1EH220JT	AA			22 pF (CH),25V
C860	RC-SZ3001AFZZL	AE			33 μ F,6.3V,Tantalum,Electrolytic
C867	VCCCCZ1EH470JT	AB			47 pF (CH),25V
C870	VCCCCZ1EH470JT	AB			47 pF (CH),25V
C871	VCCCCZ1EH470JT	AB			47 pF (CH),25V
C872	VCCCCZ1EH470JT	AB			47 pF (CH),25V
C873	VCKYCY1EB102KT	AB			0.001 μ F,25V
C881	VCCCCZ1EH470JT	AB			47 pF (CH),25V
C883	RC-CZ0062CFZZN	AB			1.2 pF,16V
C884	RC-CZ0062CFZZN	AB			1.2 pF,16V
C886	RC-CZ0060CFZZN	AB			1 pF,16V
C892	VCCCCZ1EH1R0CT	AA			1 pF (CH),25V
C1820	VCKYCY1EB102KT	AB			0.001 μ F,25V
C1822	VCKYCY1CB103KT	AB			0.01 μ F,16V
C1823	VCCCCZ1EH101JT	AB			100 pF (CH),25V
C1824	VCKYCY1EB102KT	AB			0.001 μ F,25V
C1862	VCKYCY1EB102KT	AB			0.001 μ F,25V
C1863	VCCCCZ1EH101JT	AB			100 pF (CH),25V
C1865	VCCCCZ1EH820JT	AA			82 pF (CH),25V
C1866	VCCCCZ1EH101JT	AB			100 pF (CH),25V
C1875	VCCCCZ1EH3R0CT	AA			3 pF (CH),25V
C1876	RC-CZ0066CFZZN	AB			1.8 pF,16V
[11] RESISTORS					
R101	VRS-CZ1JB474JT	AB			470 kohms,1/16W
R102	VRS-CZ1JB103DT	AB			10 kohm,1/16W
R103	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R104	VRS-CZ1JB202DT	AA			2 kohms,1/16W
R105	VRS-CZ1JB273JT	AA			27 kohms,1/16W
R106	VRS-CZ1JB474JT	AB			470 kohms,1/16W
R107	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R108	VRS-CZ1JB183JT	AB			18 kohms,1/16W
R112	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R113	VRS-CZ1JB203JT	AA			20 kohms,1/16W
R115	VRS-CZ1JB101JT	AB			100 ohm,1/16W
R116	VRS-CZ1JB474JT	AB			470 kohms,1/16W
R117	VRS-CZ1JB222JT	AB			2.2 kohms,1/16W
R118	VRS-CZ1JB222JT	AB			2.2 kohms,1/16W
R119	VRS-CZ1JB273JT	AA			27 kohms,1/16W
R120	VRS-CZ1JB474JT	AB			470 kohms,1/16W
R122	VRS-CZ1JB222JT	AB			2.2 kohms,1/16W
R125	VRS-CZ1JB222JT	AB			2.2 kohms,1/16W
R126	VRS-CZ1JB474JT	AB			470 kohms,1/16W
R128	VRS-CZ1JB913JT	AA			91 kohms,1/16W
R130	VRS-CZ1JB332DT	AA			3.3 kohms,1/16W
R131	VRS-CZ1JB271JT	AA			270 ohms,1/16W
R132	VRS-CZ1JB104JT	AA			100 kohm,1/16W
R133	RR-NZ1103AFZZN	AC			0.18 ohms,1/2W
R136	VRS-CZ1JB474JT	AB			470 kohms,1/16W
R141	VRS-CZ1JB104JT	AA			100 kohm,1/16W
R143	VRS-CZ1JB331JT	AB			330 ohms,1/16W
R144	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R148	VRS-CZ1JB474JT	AB			470 kohms,1/16W
R150	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R153	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R157	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R159	VRS-CZ1JB332JT	AA			3.3 kohms,1/16W
R160	VRS-CZ1JB474JT	AB			470 kohms,1/16W
R161	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R163	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
[11] RESISTORS					
R164	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R165	VRS-CZ1JB103JT	AA			10 kohm,1/16W
R166	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R167	VRS-CZ1JB206JT	AA			20 Mohms,1/16W
R168	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R169	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R172	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R174	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R174A	VRS-CZ1JB106JT	AA			10 Mohm,1/16W
R175	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R176	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R178	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R179	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R180	VRS-CZ1JB101JT	AB			100 ohm,1/16W
R181	VRS-CZ1JB101JT	AB			100 ohm,1/16W
R182	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R183	VRS-CZ1JB474JT	AB			470 kohms,1/16W
R184	VRS-CZ1JB474JT	AB			470 kohms,1/16W
R186	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R188	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R190	VRS-CZ1JB474JT	AB			470 kohms,1/16W
R191	VRS-CZ1JB474JT	AB			470 kohms,1/16W
R193	VRS-CZ1JB474JT	AB			470 kohms,1/16W
R194	VRS-CZ1JB474JT	AB			470 kohms,1/16W
R197	VRS-CZ1JB333JT	AB			33 kohms,1/16W
R199	VRS-CZ1JB474JT	AB			470 kohms,1/16W
R200	VRS-CZ1JB474JT	AB			470 kohms,1/16W
R201	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R202	VRS-CZ1JB474JT	AB			470 kohms,1/16W
R203	VRS-CZ1JB752JT	AA			7.5 kohms,1/16W
R205	VRS-CZ1JB474JT	AB			470 kohms,1/16W
R209	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R210	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R214	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R217	VRS-CZ1JB1R0JT	AA			1 ohm,1/16W
R218	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R262	VRS-CZ1JB682JT	AA			6.8 kohms,1/16W
R263	VRS-CZ1JB682JT	AA			6.8 kohms,1/16W
R266	VRS-CZ1JB474DT	AA			470 kohms,1/16W
R267	VRS-CZ1JB683DT	AA			68 kohms,1/16W
R268	VRS-CZ1JB124JT	AB			120 kohms,1/16W
R270	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R273	VRS-CZ1JB101JT	AB			100 ohm,1/16W
R274	VRS-CZ1JB101JT	AB			100 ohm,1/16W
R275	VRS-CZ1JB101JT	AB			100 ohm,1/16W
R276	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R411	VRS-CZ1JB2R2JT	AA			2.2 ohms,1/16W
R412	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R418	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R502	VRS-CZ1JB474JT	AB			470 kohms,1/16W
R503	VRS-CZ1JB474JT	AB			470 kohms,1/16W
R504	VRS-CZ1JB103JT	AA			10 kohm,1/16W
R505	VRS-CZ1JB474JT	AB			470 kohms,1/16W
R506	VRS-CZ1JB152JT	AA			1.5 kohms,1/16W
R508	VRS-CZ1JB272JT	AA			2.7 kohms,1/16W
R509	VRS-CZ1JB183JT	AB			18 kohms,1/16W
R511	VRS-CZ1JB473JT	AA			47 kohms,1/16W
R512	VRS-CZ1JB4R7JT	AA			4.7 ohms,1/16W
R513	VRS-CZ1JB4R7JT	AA			4.7 ohms,1/16W
R516	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R518	VRS-CZ1JB104JT	AA			100 kohm,1/16W
R519	VRS-CZ1JB104JT	AA			100 kohm,1/16W
R520	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R522	VRS-CZ1JB104JT	AA			100 kohm,1/16W
R523	VRS-CZ1JB472JT	AB			4.7 kohms,1/16W
R527	VRS-CZ1JB9R1JT	AA			9.1 ohms,1/16W
R528	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R529	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R535	VRS-CY1JB000JT	AA			0 ohm,Jumper,0.8x1.55mm,Green
R536	VRS-CY1JB000JT	AA			0 ohm,Jumper,0.8x1.55mm,Green
R537	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R538	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R539	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R540	VRS-CY1JB000JT	AA			0 ohm,Jumper,0.8x1.55mm,Green
R542	VRS-CZ1JB473JT	AA			47 kohms,1/16W
R547	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R549	VRS-CZ1JB474JT	AB			470 kohms,1/16W
R564	VRS-CZ1JB103JT	AA			10 kohm,1/16W
R601	VRS-CZ1JB474JT	AB			470 kohms,1/16W
R602	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R603	VRS-CZ1JB474JT	AB			470 kohms,1/16W
R604	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R605	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R606	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R607	VRS-CZ1JB222JT	AB			2.2 kohms,1/16W

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
[11] RESISTORS					
R608	VRS-CZ1JB222JT	AB			2.2 kohms,1/16W
R614	VRS-CZ1JB474JT	AB			470 kohms,1/16W
R701	VRS-CZ1JB821JT	AA			820 ohms,1/16W
R702	VRS-CZ1JB821JT	AA			820 ohms,1/16W
R703	VRS-CZ1JB821JT	AA			820 ohms,1/16W
R704	VRS-CZ1JB821JT	AA			820 ohms,1/16W
R705	VRS-CZ1JB821JT	AA			820 ohms,1/16W
R706	VRS-CZ1JB821JT	AA			820 ohms,1/16W
R707	VRS-CZ1JB821JT	AA			820 ohms,1/16W
R801	VRS-CZ1JB182JT	AA			1.8 kohms,1/16W
R802	VRS-CZ1JB472JT	AB			4.7 kohms,1/16W
R803	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R804	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R804A	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R805	VRS-CZ1JB682JT	AA			6.8 kohms,1/16W
R805A	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R806	VRS-CZ1JB682JT	AA			6.8 kohms,1/16W
R806A	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R807	VRS-CZ1JB330JT	AA			33 ohms,1/16W
R810	VRS-CZ1JB1R0JT	AA			1 ohm,1/16W
R811	VRS-CZ1JB1R0JT	AA			1 ohm,1/16W
R831	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R834	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R1860	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R1861	VRS-CZ1JB473JT	AA			47 kohms,1/16W
R1862	VRS-CZ1JB104JT	AA			100 kohm,1/16W
R1863	VRS-CZ1JB104JT	AA			100 kohm,1/16W
[12] OTHER CIRCUITRY PARTS					
AN401	QCNTAA013AFPZN	AF			Terminal Aerial
ANT801	QCNTAA012AFPZN	AE			Terminal Aerial
BAT100	RDNTLA002AFPZ	AF			Battery,Back-up
CA100	RUNTZA021AFPZ	BC			Camera
CN101	QSOCZA003AFPZL	AH			Connector,SIM Card
CN102	QCNCWUF45AFZZL	AL			Socket,45Pin
CN401	QCNCW947FAFZZL	AF			TEST Connector
CN501	QCNTAA007AFPZN	AF			Contact,Battery
CN502	QSOCNA002AFPZL	AM			Connector,External
CN504	QCNCWTL17AFZZL	AG			Socket,17Pin
CN701	QCNCWTL17AFZZL	AG			Socket,17Pin
EP100	RSP-ZA002AFPZ	AM			Earpiece
FS501	QFS-L252EAFNZN	AC			Fuse,2.5A
FS502	QFS-L631EAFNZN	AC			Fuse,0.63A
J801	QCNCW927AAFZZR	AG			RF Connector
JK101	QJAKM0223AFZZL	AE			Connector,Handsfree Kit
LCD100	RLCUBA001AFPZ	BN			Display
MIC100	RMIC00213AFPZ	AL			Microphone
MO100	RMOTV0557AFZZ	AM			Vibrator
SO601	QCNCWA013AF24L	AG			Socket,Camera
SW501	QSW-KA008AFPZL	AD			Switch,Key Type [Side-Up]
SW502	QSW-KA008AFPZL	AD			Switch,Key Type [Side-Down]
SW520	QSW-KA008AFPZL	AD			Switch,Key Type [Camera]

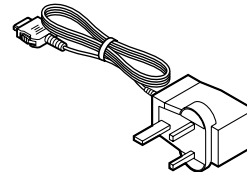
[13] CABINET PARTS

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
[13] CABINET PARTS					
101	DCABAW142AFSP	AY			Front Cabinet Assembly [U]
101	DCABAW142AFSQ	AY			Front Cabinet Assembly [F]
101	DCABAW142AFS1	AY			Front Cabinet Assembly (Except for [F,U])
101- 1	-----	-			Front Cabinet (Not Replacement Item)
101- 2	PCUSSA072AFZZ	AL			Cushion,Display
101- 3	PSHEZA094AFZZ	AC			Mesh,Earpiece
101- 4	TLABZ2783AFZZ	AA			Sensor,Moisture (Small)
101- 5	PSHEZA295AFZZ	AB			Spacer,Display
102	DCABBW142AFS1	AW			Back Cabinet Assembly
102- 1	-----	-			Back Cabinet (Not Replacement Item)
102- 2	GCOVHA006AFSA	AD			Cover,Jack (Handsfree)
102- 3	JKNBZA011AFSA	AF			Keys,Side-Up/Side-Down
102- 4	JKNBZA012AFSA	AG			Key,Camera
102- 5	LHLDZA100AFZZ	AC			Spacer,Handsfree Connector
102- 7	PCUSSA073AFZZ	AA			Cushion,Battery
102- 8	PFI LWA001AFZZ	AD			Port,Infrared
102- 9	QPWBHA040AFPZ	AG			Built-in Aerial (PWB-D)
102-10	TLABZ2595AFZZ	AA			Sensor,Moisture (Large)
103	DCABCW142AFSP	AT			Aerial Cover Assembly [U]
103	DCABCW142AFSQ	AT			Aerial Cover Assembly [F]
103	DCABCW142AFS1	AT			Aerial Cover Assembly (Except for [F,U])
103- 1	-----	-			Aerial Cover (Not Replacement Item)
103- 2	GCOVDA001AFSA	AE			Lens,Camera
103- 3	HPNLZA006AFSA	AF			Mirror,Camera
103- 4	PSHEZA095AFZZ	AC			Tape,Camera Mirror
104	DKENDW142AFSA	CG			Board Unit [W]
104	DKENDW142AFSB	CG			Board Unit [B]
104	DKENDW142AFSC	CG			Board Unit [Z]
104	DKENDW142AFSD	CG			Board Unit [D]
104	DKENDW142AFSE	CG			Board Unit [Q]
104	DKENDW142AFSF	CG			Board Unit [L]
104	DKENDW142AFSG	CG			Board Unit [GP]
104	DKENDW142AFSP	CG			Board Unit [U]
104	DKENDW142AFSQ	CG			Board Unit [F]
104	DKENDW142AFS1	CG			Board Unit [E]
104	DKENDW142AFS2	CG			Board Unit [G]
104	DKENDW142AFS3	CG			Board Unit [A]
104	DKENDW142AFS4	CG			Board Unit [EP]
104	DKENDW142AFS5	CG			Board Unit [R]
104	DKENDW142AFS6	CG			Board Unit [T]
104	DKENDW142AFS7	CG			Board Unit [PP]
104	DKENDW142AFS8	CG			Board Unit [S]
104	DKENDW142AFS9	CG			Board Unit [H]
104- 1	-----	-			Main (Not Replacement Item) (PWB-A)
104- 2	-----	-			Key (Not Replacement Item) (PWB-B)
104- 3	LHLDB1190AFZZL	AE			Holder,Back-up Battery
104- 4	LHLDZA027AF01	AQ			Display Holder Assembly
104- 5	LHLDZA028AFZZ	AE			Holder,Key PWB
104- 6	PCUSSA074AFZZ	AB			Cushion,Camera
104- 7	PCUSSA111AFZZ	AC			Cushion,Aerial
104- 8	PSHEZA176AFZZ	AB			Isolation Sheet,Key PWB
104- 9	PSHEZA177AFZZ	AB			Sheet,Connector (CN701)
104-10	PSHEZA246AFZZ	AC			SheetA,Display
104-11	PSHEZA247AFZZ	AC			SheetB,Display
104-12	PSLDCA006AFZZ	AD			Shield Case (For Camera)
104-13	PSLDMA015AFZZ	AE			Cover,Shield Case (RF)
104-14	PSLDMA016AFZZL	AE			Frame,RF Shield
104-15	PSLDMA026AFPZL	AF			Frame,PP Shield
104-16	PSLDMA027AFPZ	AF			Cover,Shield Case (BB)
104-17	PSLDMA039AFPZL	AD			Case,Camera IC Shield
104-18	PSLDMA048AFPZL	AD			Case,Bluetooth Shield
104-19	PSLDMA050AFPZL	AD			Case,IC501 Shield
104-21	QPWBHA039AFPZ	AF			Relay FPC (PWB-C)
104-22	RLCUBA001AFPZ	BN			Display (LCD100)
104-23	RUNTZA021AFPZ	BC			Camera (CA100)
104-24	PSHEZA290AFZZ	AB			Sheet,BB
104-25	PCUSSA173AFZZ	AB			Cushion,Camera Switch (SW520)
105	GCOVAA024AFSA	AC			Cap,Aerial
106	GCOVHA025AFSA	AD			Cover,External Connector
107	JKNBZA010AFSA	AT			Button,10Key
108	MSPRCA002AFZZ	AB			Spring,Earth
109	RDNTLA002AFPZ	AF			Battery,Back-up (BAT100)
110	RMiCC0213AFPZ	AL			Microphone (MIC100)
111	RMOTV0557AFZZ	AM			Vibrator (MO100)
112	RSP-ZA002AFPZ	AM			Earpiece (EP100)
113	TSPC-A031AFZZ	DE			Label,Specifications (Except for [A,Z])
113	TSPC-A116AFZZ	DE			Label,Specifications [A,Z]
114	PCUSSA174AFZZ	AB			Cushion,Back-up Battery (BAT100)
115	PSHEZA291AFZZ	AB			Tape,Repair
116	LHLDZA101AFZZ	AC			Spacer,Side-Up/Side-Down Keys
601	LX-EZA003AFZZ	AA			Screw (1.7x7)
602	LX-EZ0196AFFN	AB			Screw (1.7x5.5)

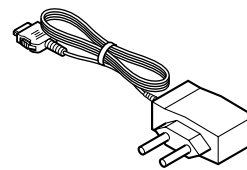
[14] ACCESSORIES/PACKING PARTS

AC Charger

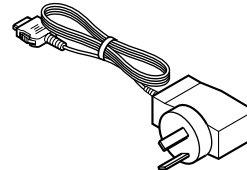
RADPAA007AF01



RADPAA008AF01



RADPAA009AF01



NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
[14] ACCESSORIES/PACKING PARTS					
1	GFTABA011AFSA	AP			Cover, Battery
2	RADPAA007AF01	**			AC Charger [E, EP, R, L] (XN-1QC05)
2	RADPAA008AF01	**			AC Charger [G, GP, T, PP, S, H, W, B, D, Q, F, U] (XN-1QC06)
2	RADPAA009AF01	**			AC Charger [A, Z] (XN-1QC07)
3	SPAKAA007AFZZ	AG			Packing Add.
4	SPAKCA079AFZZ	AL			Packing Case [E, G, GP, A, Z, R, T, H, PP, S, W, B, D, L]
4	SPAKCA083AFZZ				Packing Case [EP, Q, F]
4	SPAKCA166AFZZ				Packing Case [U]
5	SPAKP1252AFZZ	AC			Polyethylene Bag, AC Charger
6	SPAKPA014AFZZ	AC			Polyethylene Bag, Phone
7	SPAKXA098AFZZ	AD			Spacer
8	SSAKA0233AFZZ	AD			Polyethylene Bag, CD-ROM
9	SSAKH0329AFZZ	AA			Polyethylene Bag, Battery Cover
10	SSAKA0021AFZZ	AA			Polyethylene Bag, User Guide [U]
10	SSAKH0337AFZZ	AB			Polyethylene Bag, User Guide (Except for [U])
11	TCADHA006AFZZ	AE			Quick Start Guide [E, EP, L, Q, R, A, Z]
11	TCADHA027AFZZ	AE			Quick Start Guide [G, GP]
11	TCADHA029AFZZ				Quick Start Guide [T]
11	TCADHA030AFZZ	AL			Quick Start Guide [H]
11	TCADHA031AFZZ	AF			Quick Start Guide [S]
11	TCADHA032AFZZ	AL			Quick Start Guide [PP]
11	TCADHA033AFZZ	AG			Quick Start Guide [D]
11	TCADHA034AFZZ	AL			Quick Start Guide [W]
11	TCADHA035AFZZ	AL			Quick Start Guide [B]
12	TCADZA050AFZZ	AD			DOC Copy [B Only]
13	TGANEA001AFZZ	AE			Guarantee [L, Q]
13	TGANEA009AFZZ	AB			Guarantee [E, EP]
13	TGANEA010AFZZ	AE			Guarantee [R]
13	TGANEA011AFZZ	AE			Guarantee [A, Z]
13	TGANiA002AFZZ	AC			Guarantee [T]
13	TGANZA012AFZZ	AE			Guarantee [PP]

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
[14] ACCESSORIES/PACKING PARTS					
13	TGANZA013AFZZ	AC			Guarantee [D]
13	TGANZA014AFZZ	AD			Guarantee [W]
13	TGANZA017AFZZ	AE			Guarantee [H]
13	TGANZA018AFZZ	AE			Guarantee [S]
13	TGANZA026AFZZ	AC			Guarantee [U]
14	TiNSEA015AFZZ	AG			User Guide [E,EP,L,Q,R]
14	TiNSEA027AFZZ	AH			User Guide [A,Z]
14	TiNSEA039AFZZ	AK			User Guide (English) [U]
14	TiNSFA013AFZZ	AK			User Guide [F]
14	TiNSFA015AFZZ	AK			User Guide (French) [U]
14	TiNSGA007AFZZ	AG			User Guide [G,GP]
14	TiNSHA009AFZZ	AN			User Guide [H]
14	TiNSHA010AFZZ	AK			User Guide (Dutch) [U]
14	TiNSiA008AFZZ				User Guide [T]
14	TiNSPA011AFZZ	AN			User Guide [PP]
14	TiNSSA010AFZZ	AH			User Guide [S]
14	TiNSWA012AFZZ	AN			User Guide [W]
14	TiNSZA014AFZZ	AK			User Guide [D]
14	TiNSZA016AFZZ	AN			User Guide [B]
15	TLABZ2793AFZZ	AA			Sheet,Security ([E,B,D] Only)
16	TCADZ0263AFZZ	AC			Card,Free Service ([T] Only)
△	17	UBATiA004AFZZ	**		Rechargeable Li-ion Battery (XN-1BT30)
	18	UDSKAA009AF01	AK		CD-ROM
	19	-----	-		Label,Case
	20	TLABZA044AFZZ	AC		Sheet Transparent ([G,GP,H] Only)
	21	TLABZA053AFZZ	AB		Label,ATIC ([A,Z] Only)
	22	TLABZA055AFZZ	AB		Label,Hungary ([B] Only)
	23	TLABZA061AFZZ			Label,Battery ([U] Only)
[15] P.W.B. ASSEMBLY					
△	PWB-A	-----	-		Main (Not Replacement Item)
△	PWB-B	-----	-		Key (Not Replacement Item)
	PWB-C	QPWBHA039AFPZ	AF		Relay FPC
△	PWB-D	QPWBHA040AFPZ	AG		Built-in Aerial

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