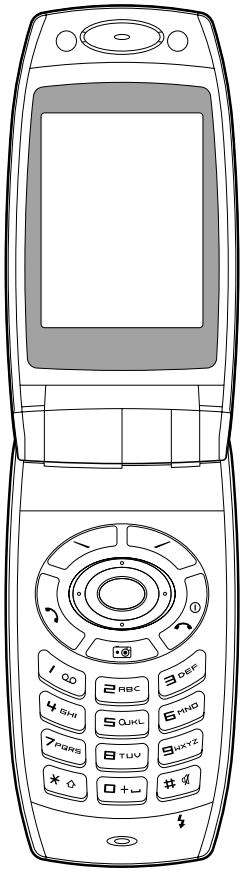
SHARP SERVICE MANUAL

No. SX429TQG250/B



DIGITAL MOBILE PHONE

MODEL GX25

INTERNAL MODEL NAME	SELECTION CODE	DESTINATION	INTERNAL MODEL NAME	SELECTION CODE	DESTINATION
TQG250AB	A	Australia	TQG250LB	L	Malta
TQG250BB	B	Hungary	TQG251PB	PP	Portugal (Prepaid)
TQG250CB	C	Switzerland	TQG250QB	Q	Egypt
TQG250DB	D	Greece	TQG250RB	R	Ireland
TQG250EB	E	U.K.	TQG250SB	S	Spain
TQG251EB	EP	U.K. (Prepaid)	TQG250TB	T	Italy
TQG250GB	G	Germany	TQG250VB	V	Slovenia
TQG251GB	GP	Germany (Prepaid)	TQG250WB	W	Sweden
TQG250HB	H	Netherlands	TQG250ZB	Z	New Zealand

- 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.

CONTENTS

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.

SHARP CORPORATION

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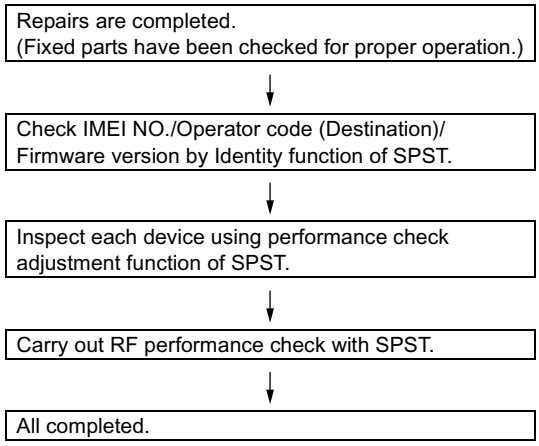
SERVICING CONCERNS

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 external displays. Wear fingerstalls to avoid this.
   Also, ensure not to leave fingerprints on the surface of main and external display panels.
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

This model employs lead-free solder.
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:

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 40ºC 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:	Tri - band (GSM 900 MHz/DCS 1800 MHz/ PCS 1900MHz) GPRS-enabled WAP, MMS, SMS
Dimensions (folded, excluding the aerial) (H x W x D):	92 x 46 x 23.5 mm
Weight:	90 g
Battery operating temperature:	0°C - 40°C
Main display:	Display dimensions: 2.0 inch Resolution: 240 x 320 pixels LCD display: TFT 262,144 colours with backlight LCD back light: LED back light white colour LEDs
External display:	Resolution: 72 x 12 pixels LCD display: STN B/W LCD with back light
Camera:	C-MOS 350K pixels built-in camera Zoom: Wide and zoom mode [Supported 20 (when image size is 160 x 120 pixels) x zoom] Lens: F2.8, f = 3.7 mm
Sound:	40-polyphonic ring melodies
Mobile light:	1 colours
External DC supply voltage:	5.2 V
Battery:	3.7 V, 780 mAh, Li-Ion
Standby time:	Up to 250 hours
Talk time:	Up to 210 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.

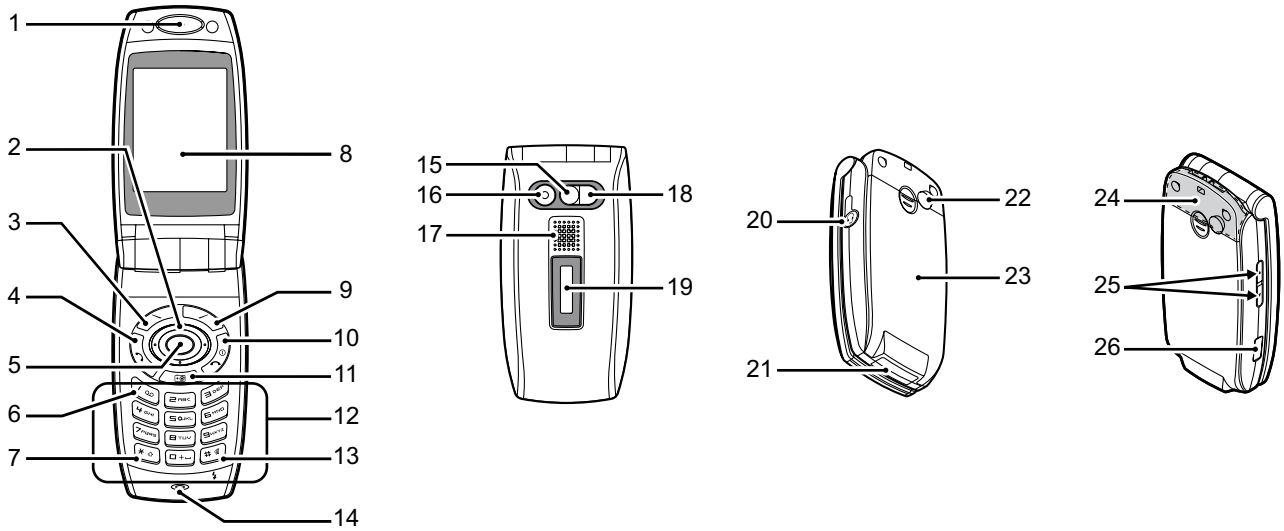
Specifications for this model are subject to change without prior notice.

CP8 PATENT

This product is licensed under the MPEG-4 Visual Patent Portfolio License for the personal and non-commercial use of a consumer to (i) encode video in compliance with the MPEG-4 Video Standard (“MPEG-4 Video”) and/or (ii) decode MPEG-4 Video that was encoded by a consumer engaged in a personal and non-commercial activity and/or was obtained from a licensed video provider. No license is granted or implied for any other use. Additional information may be obtained from MPEG LA. See http://www.mpegla.com.

This product is licensed under the MPEG-4 Systems Patent Portfolio License for encoding in compliance with the MPEG-4 Systems Standard, except that an additional license and payment of royalties are necessary for encoding in connection with (i) data stored or replicated in physical media which is paid for on a title by title basis and/or (ii) data which is paid for on a title by title basis and is transmitted to an end user for permanent storage and/or use. Such additional license may be obtained from MPEG LA, LLC. See http://www.mpegla.com for additional details.

[2] Names of parts

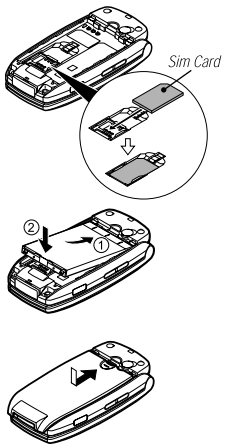


1. **Earpiece**
2. **Navigation Keys (Arrow Keys):**
   Moves cursor to select menu items, etc.
   Up/Down arrow keys: Displays Contacts List entries in standby mode. ▲ and ▼ indicate in this manual these keys.
   Left arrow key: Displays list of Applications in standby mode. ◀ indicates in this manual this key.
   Right arrow key: Displays list of Saved Pictures in standby mode. ▶ indicates in this manual this key.
3. **Left Soft Key:** Executes the function at the bottom left of the screen.
4. **Send Key:** Makes or accepts calls, views the call logs in standby mode.
5. **Centre Key:** Displays Main menu in standby mode and executes functions.
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. Press and hold this key on the text entry screen to shift the text input method between multi-tap and T9 mode.
8. **Main 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 standby mode.
10. **End/Power Key:** Ends a call, turns power on/off.
11. **Camera Key:** Starts the digital camera in standby mode.
12. **Keypad**
13. **#/Silent/Light Key:** Switches symbol screens. Press and hold this key on the text entry screen to display the language options screen. Press and hold this key during standby to switch Profiles settings between Normal and Silent mode. Press ●, then # during standby to turn the *Bluetooth* wireless function on or off.
14. **Microphone**
15. **Self-Portrait Mirror:** For taking a self-portrait.
16. **Camera**
17. **Speaker**
18. **Mobile Light:** Used as an auxiliary light in digital camera/video camera mode, as a battery charge indicator, or notification for incoming calls, data/fax calls or messages.
19. **External Display**
20. **Handsfree Kit Connector**
21. **External Connector:** Used to connect either the charger or USB data cable.
22. **RF Connector**
23. **Battery Cover**
24. **Built-in Aerial:** Warning: Do not cover the hinge area of the phone with your hand when in use as this may interfere with the performance of the built-in aerial.
25. **Side-Up/Side-Down Keys:** Moves cursor to select menu items, adjusts earpiece volume, etc. Press and hold this key during standby to turn the mobile light on or off.
26. **Infrared Port:** Sends and receives data via infrared.

THE SHARP GX25 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 GX25 (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.



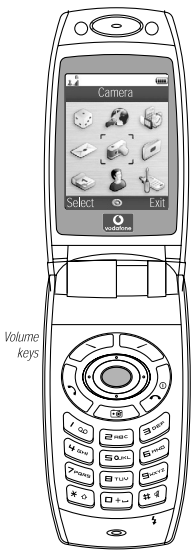
Getting started

1. Insert your SIM card:
Slide 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:
Open the phone, then 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 whichever 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**, ▶ opens **Pictures** and ◀ opens **Applications**.

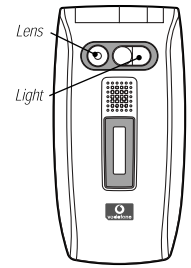
Soft keys: Select the icon or command shown in the bottom left or right of the screen. The ● key selects icons in the middle. In standby mode, goes to **Messages**, connects to **Vodafone live!**.

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: [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 and send a photo or video clip

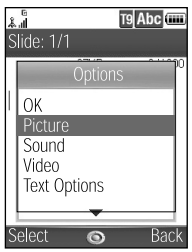
1. Take a photo:
Press the Camera key in standby mode to turn on the camera. Press ● to take the photo.

Tips: use ▲ ▼ for brightness, and ◀ ▶ for zoom (depending on photo size). To change photo size or quality, press [Options]. Press # to turn on the camera light.

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). If necessary, photos will be automatically compressed for sending.

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 ● [ ] 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 as easy to send pictures, video clips and sounds as well! Your GX25 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 1. 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].

5. Address your message:
Press ● (or [Options]/**OK**). Choose to enter a mobile number or an email address (press the 1 key once for a [**.**] and three times for an [**@**] symbol), or add a number or email address from your Contacts list.

6. Send your message:
Press ●, then choose **Send** [●].

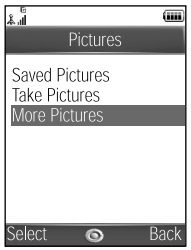
Multimedia messaging tips

Sending a video clip: If you're sending a video clip you may not be able to attach anything else.

Adding a new slide: To add more than one picture, sound or piece of text to your message, choose [Options]/**Add Slide**.

Sending to a mobile: Try sending one to yourself to see how it works – you'll find it in **Messages/Multimedia/Inbox**. If the receiving phone isn't picture or video message compatible, they'll be sent a web address to view your message on.

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/Saved 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.

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

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

Vodafone live!: connect to Vodafone live!.
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).

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.

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, then press ●.

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 # key (in standby mode). Do the same again to return to Normal mode.

2. Handset closed:
Press one of the volume keys to display the time, and again for the date. Press and hold a volume key to turn the camera light on and off.

3. live! Studio:
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 live! Studio**. (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/live! Studio**. You can also log in to your homepage on your local Vodafone website and select the **live! Studio** option. (Note: the Media Album service is not available in every country.)

[4] 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.

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 (Downloader supports Windows 2000/XP only)
  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

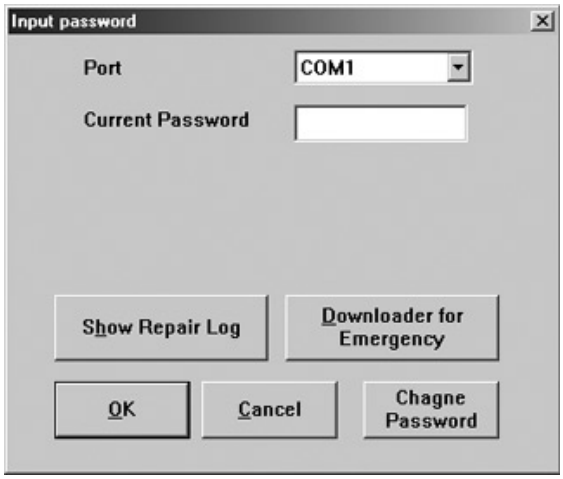
2.2. Installation

1. Use Windows Explorer to execute the “setup.exe” file on the CD-ROM.
2. The SPST GX series 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” — “GX Series“ menu. Start SPST from the shortcuts.

2.3. Starting up

Connect GX series to an operable serial port of the PC with the supplied data cable. Connect the AC charger to the data cable.
Start SPST from the desktop.

1. The Input password dialogue box appears. Enter the password, select GX series from Port list box (a connected port is automatically detected), and click “OK”. If you do not know password, 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".

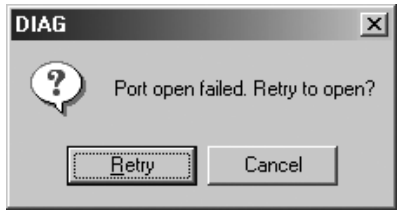


Figure 1

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

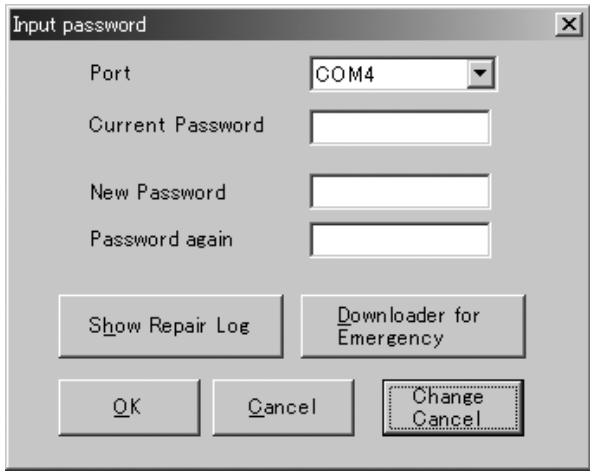


Figure 2

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

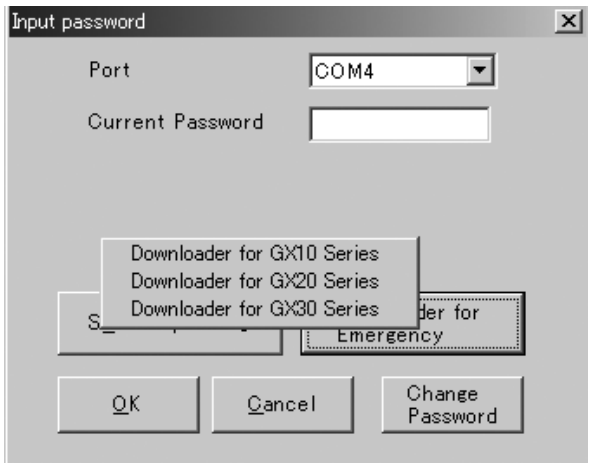


Figure 3

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.

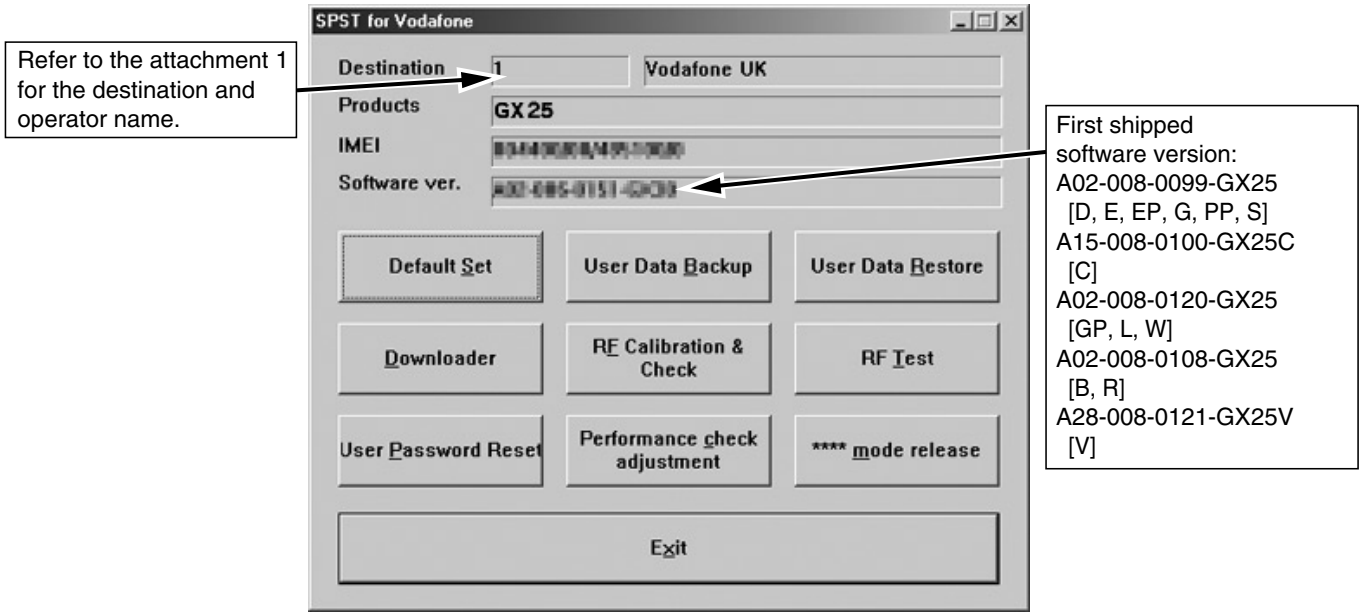


Figure 4

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 2-39)
Exit	End SPST.

Attachment 1 Destination and operator name list

No.	Operator name		Country	Model name
01	Vodafone UK	Post-Paid	UK	TQG250EB
02	Airtel	Post-Paid	Spain	TQG250SB
04	Vodafone Omnitel	Post-Paid	Italy	TQG250TB
05	D2	Post-Paid	Germany	TQG250GB
06	Vodafone NL	Post-Paid	Netherlands (Holland)	TQG250HB
08	Vodafone Ireland	Post-Paid	Ireland	TQG250RB
10	Vodafone Greece	Post-Paid	Greece	TQG250DB
11	Vodafone Hungary	Post-Paid	Hungary	TQG250BB
12	Vodafone Australia	Post-Paid	Australia	TQG250AB
13	Vodafone New Zealand	Post-Paid	New Zealand	TQG250ZB
14	Vodafone Sweden	Post-Paid	Sweden	TQG250WB
15	Vodafone Egypt	Post-Paid	Egypt	TQG250QB
16	Vodafone Malta	Post-Paid	Malta	TQG250LB
17	Swisscom	Post-Paid	Switzerland	TQG250CB
20	Si. Mobil	Post-Paid	Slovenia	TQG250VB
45	D2	Pre-Paid	Germany	TQG251GB
48	Vodafone PT	Pre-Paid	Portugal	TQG251PB
50	Vodafone UK	Pre-Paid	UK	TQG251EB

3. Adjustments for GX25

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

Parts	Temperature adjustment (Camera)	Temperature adjustment (Battery)	Main display flicker adjustment	External display contrast adjustment
TH101	×	○	×	×
Main display unit	×	×	○	×
External 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.

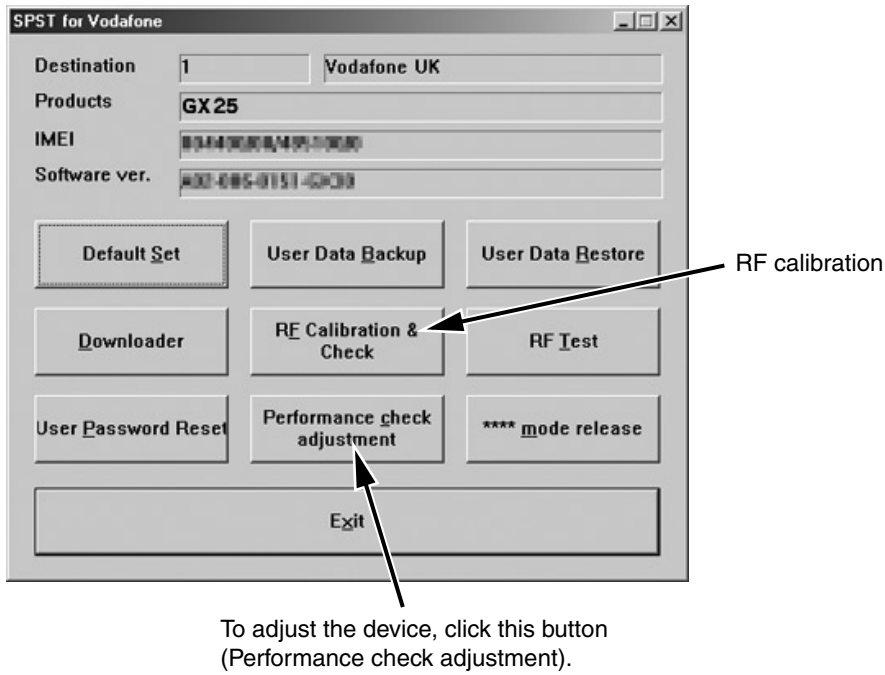


Figure 5

3. The following screen appears.

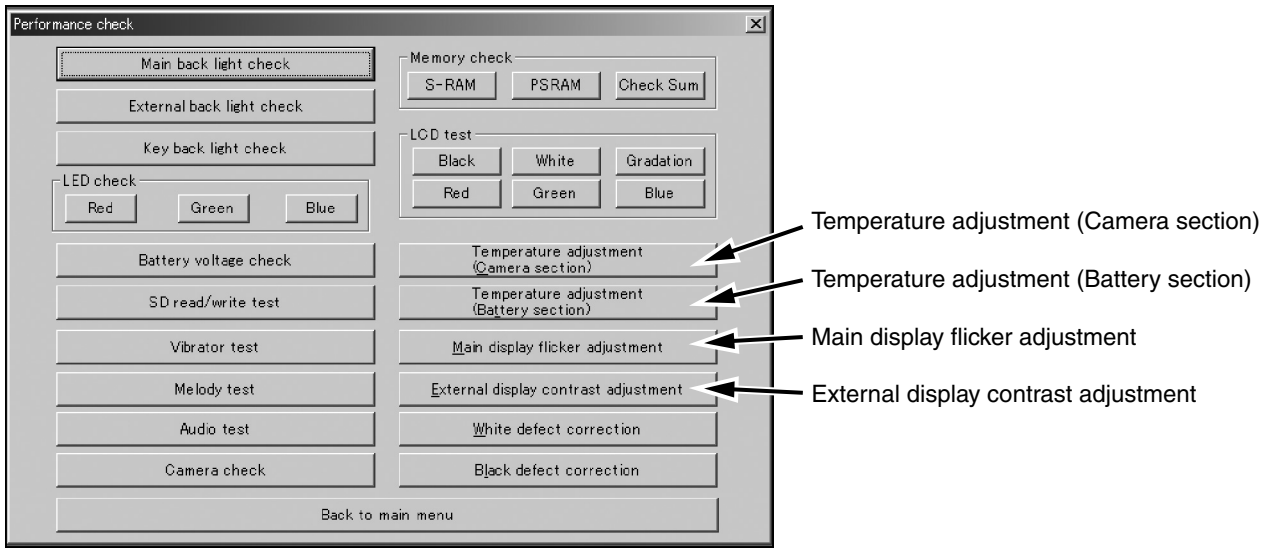


Figure 6

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.

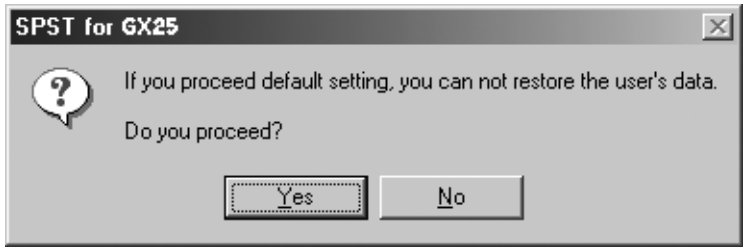


Figure 7

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

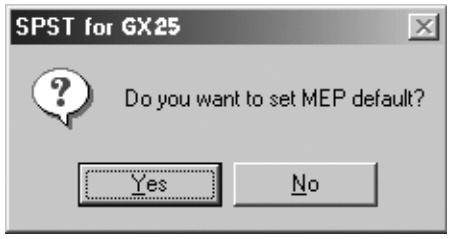


Figure 8

4) Communication starts.

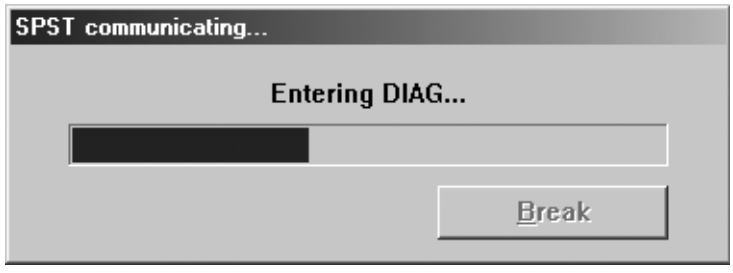


Figure 9

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

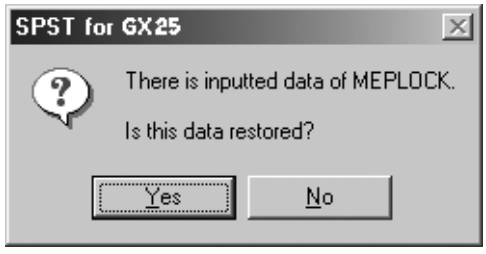


Figure 10

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”.

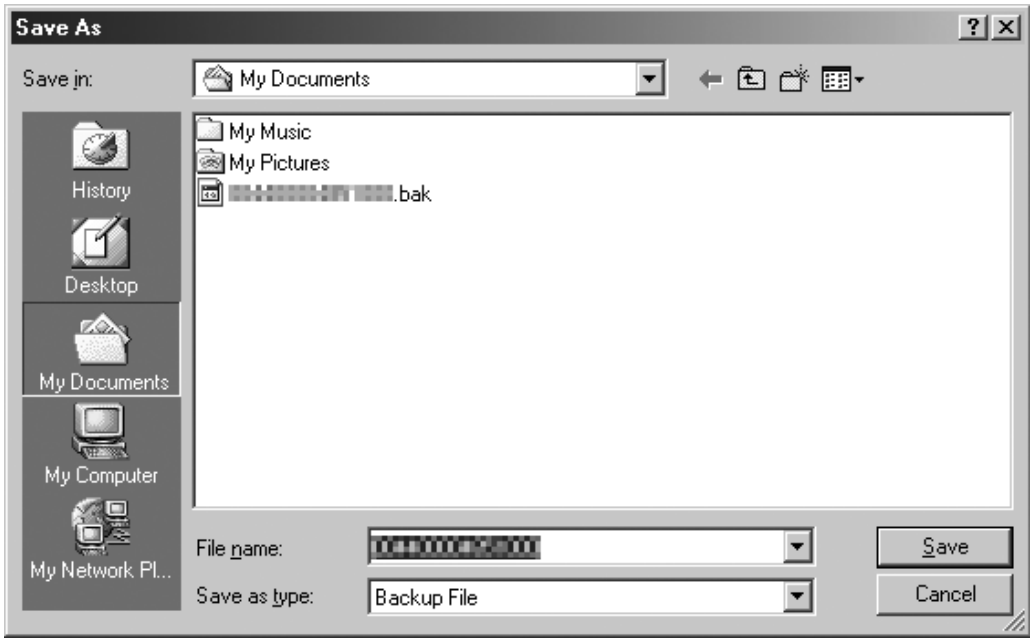


Figure 12

3. The communicating dialogue box appears whilst processing.

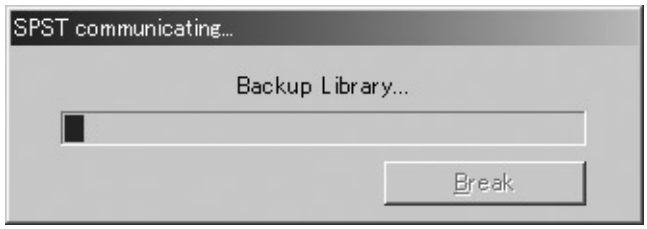


Figure 13

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 “Open”.

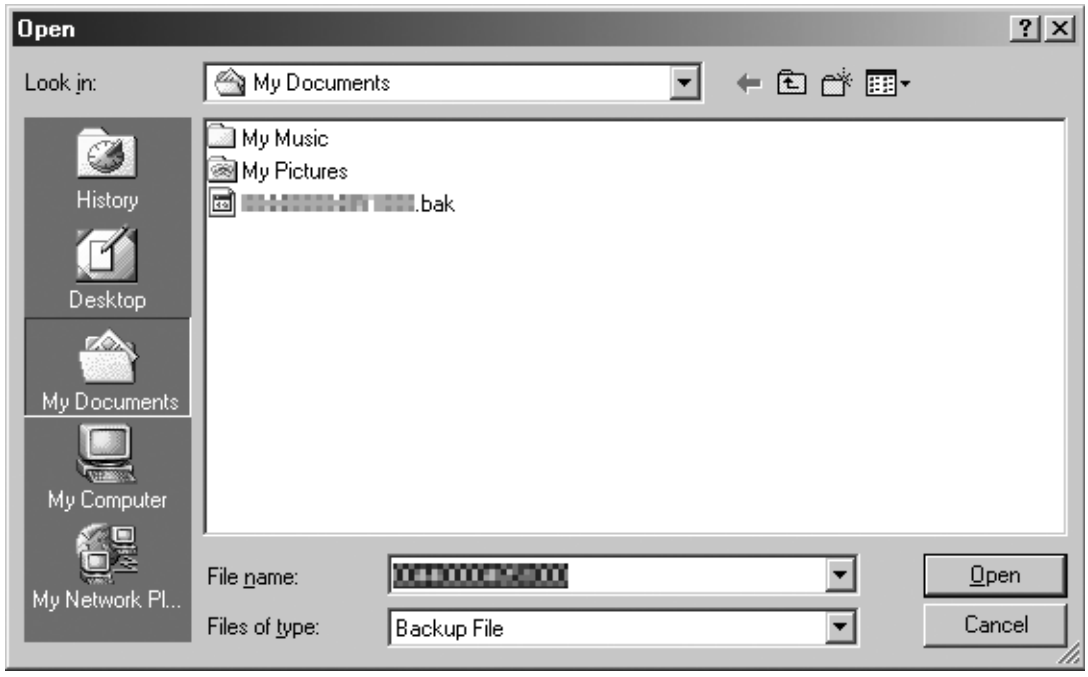


Figure 15

3. The communicating dialogue box appears whilst processing.

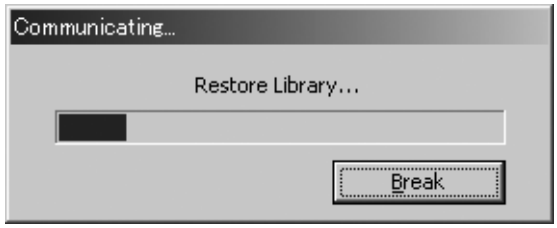


Figure 16

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)
- GX25 handset (phone)

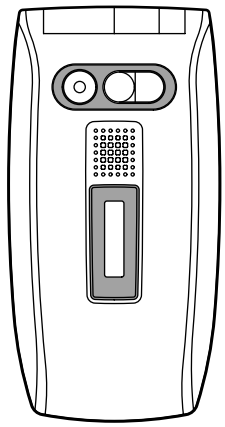
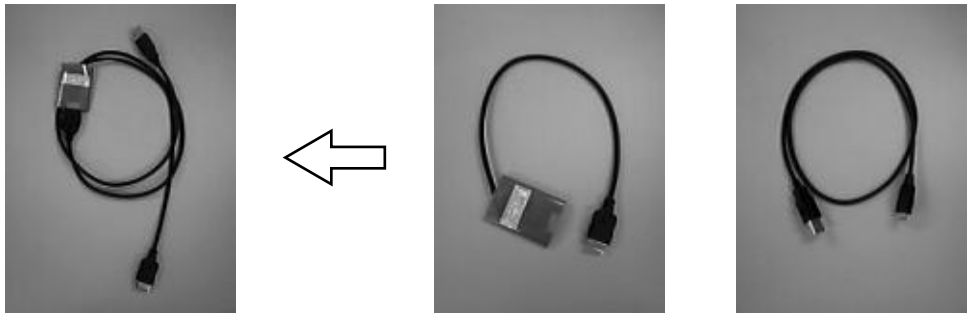


Figure 18

- 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



USB download adaptor cable USB data cable

Figure 20

* The USB download cable consists of the USB download adaptor 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

Please read the following before use.

* This Upgrading Tool is designed for GX25. Make sure that you have chosen the correct handset (phone) and MOT file before you start the download.
  Please note that use with another model may cause damage to handsets (phones).
* When an older version of GX25 Upgrading Tool has already been installed on the PC:
  Remove the GX25 Upgrading Tool through [Add/Remove Programs] in the Control Panel, and then install the latest version.
* Download may fail depending on the version of Windows.
  It is recommended to update Windows to the latest version before you start.
* Make sure to remove the handset (phone) battery.
  (Download must be performed without a battery inserted.)
* Handsets (Phones) may not be recognised depending on the PC.
  Disconnect the USB download cable from the handset (phone) and reconnect it.
  If the handset (phone) is still not recognised, repeat this a few times or disconnect the cable and restart the PC.
* 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.
* When the Upgrading Tool does not work properly, uninstall and reinstall it.

4.4.2 Installation of the device driver

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

1. Connect a PC and GX25 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.)

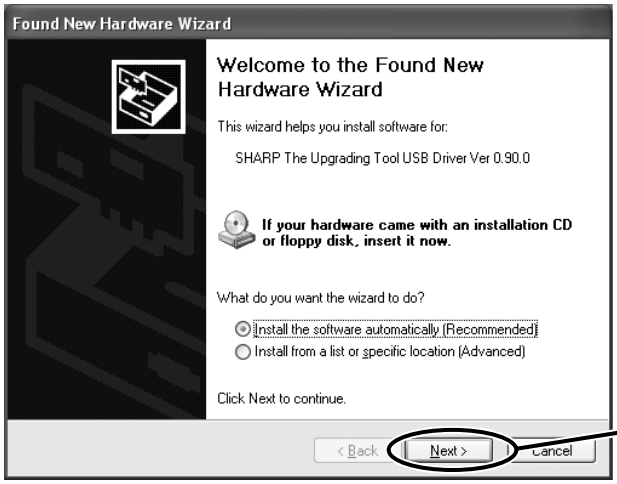
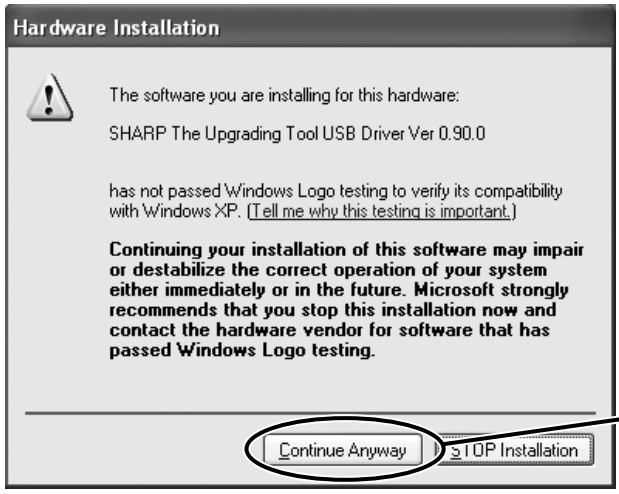
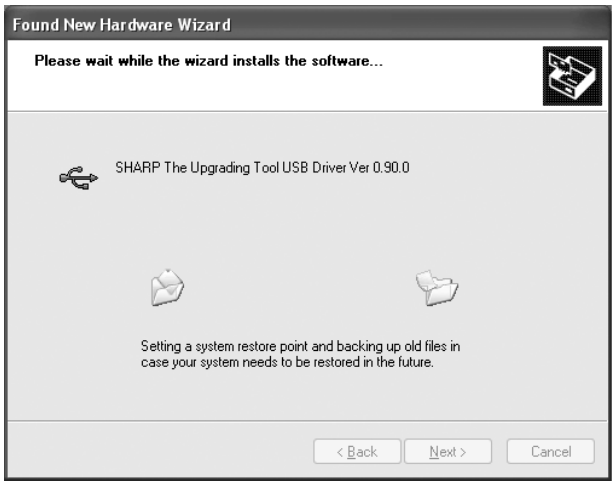


Figure 22



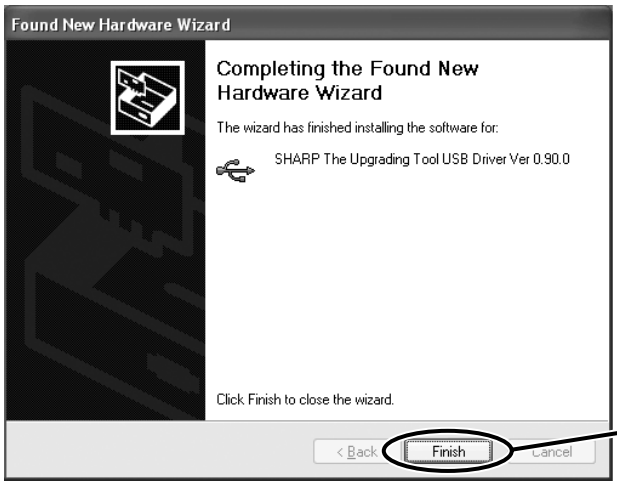
Press "Continue Anyway" button.

Figure 23



Screen during installation.

Figure 24



Press "Finish" button.

Figure 25 Screen after installation

* Install the device driver for each handset connected to a PC.
For example, if five handsets are connected to PC using a USB hub, the install wizard of the device driver will appear five times. Install the device driver each time, following the instruction.

* 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

This section describes how to initialise user data and write data to the handset (phone).

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 GX25 UpgradingTool" from the Start menu.

Figure 26

The download setup screen appears after starting the application.

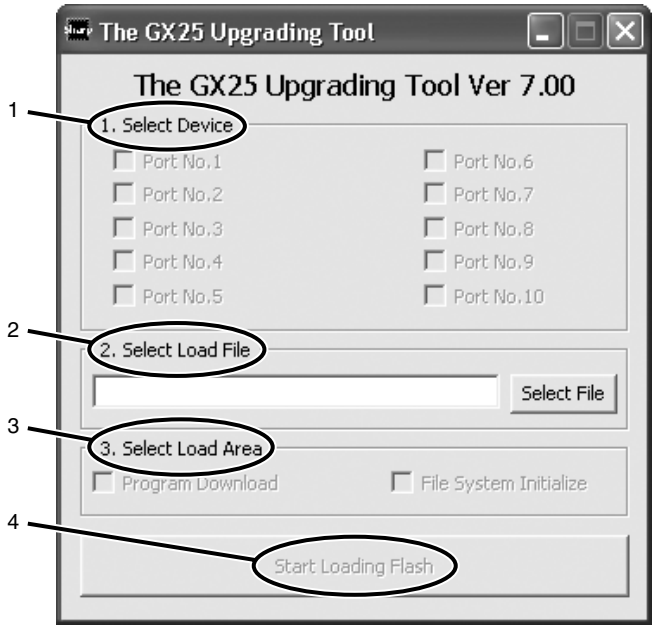


Figure 27

1. Select Device: Displays port numbers assigned to handsets (phones) that are recognised by the PC.
2. Select Load File: Specify a file to download.
3. Select Load Area: Select data area to write an MOT file.
4. Start Loading Flash: Press to start download.

2) Download

<<Make sure the following before starting download>>

- Make sure to download an MOT file to GX25 handset (phone).
- 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 an MOT file
   Select an MOT 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.

• Estimated download time:
Approximately 15 minutes to download the file to one handset (phone).

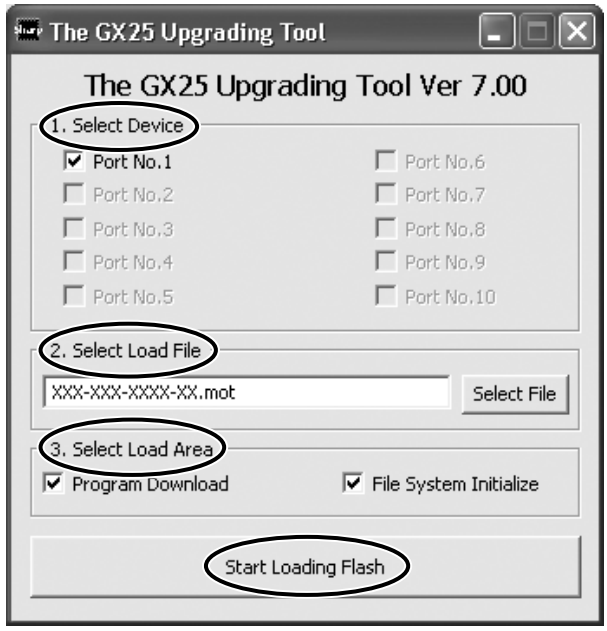


Figure 28

2). 1 Selecting device

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

1. When a handset (phone) and the PC are connected with the USB download cable, the box of port number is automatically checked.
2. If the box remains unchecked, the handset (phone) may not be recognised correctly. Remove the USB download cable and reconnect it to the PC.

2). 2 Selecting MOT file.
Select an MOT file to download.
Make sure to choose an MOT file for GX25.

1. Press “Select File” button in “2. Select Load File”. The file selection screen appears.
2. Select a file to download and press “Open” button.
3. When you select a file, the file name appears in the text box. Proceed to “3. Select Load Area”.

- 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.

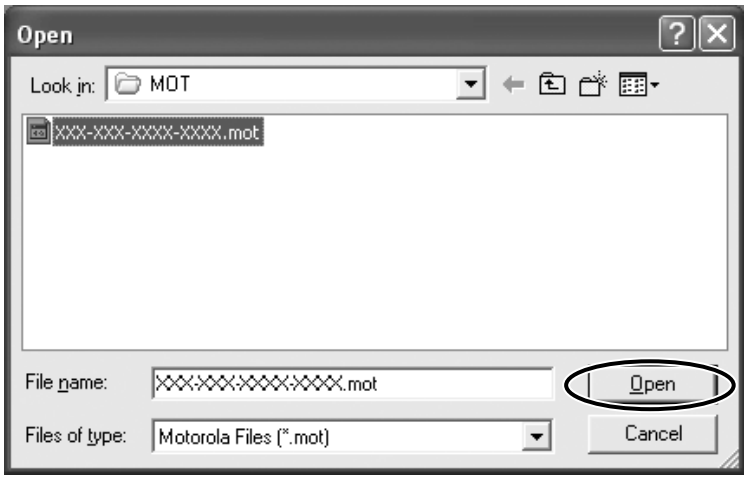


Figure 29 File selection screen

2). 3 Selecting download area
Usually select both “Program Download” and “File System Initialize”.

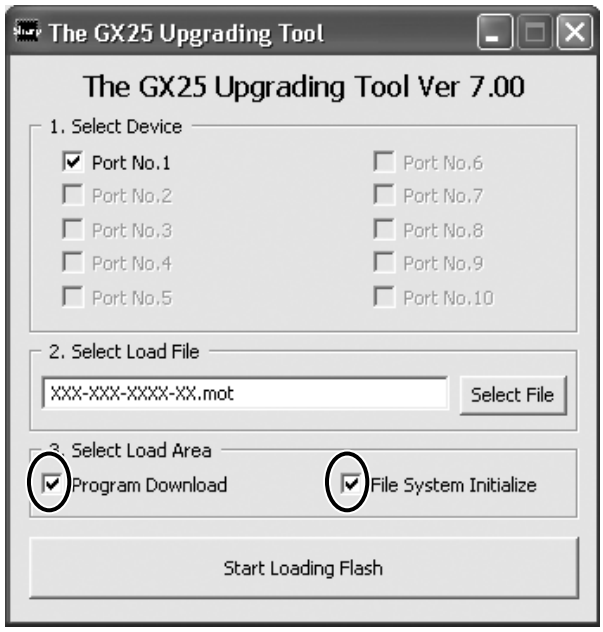


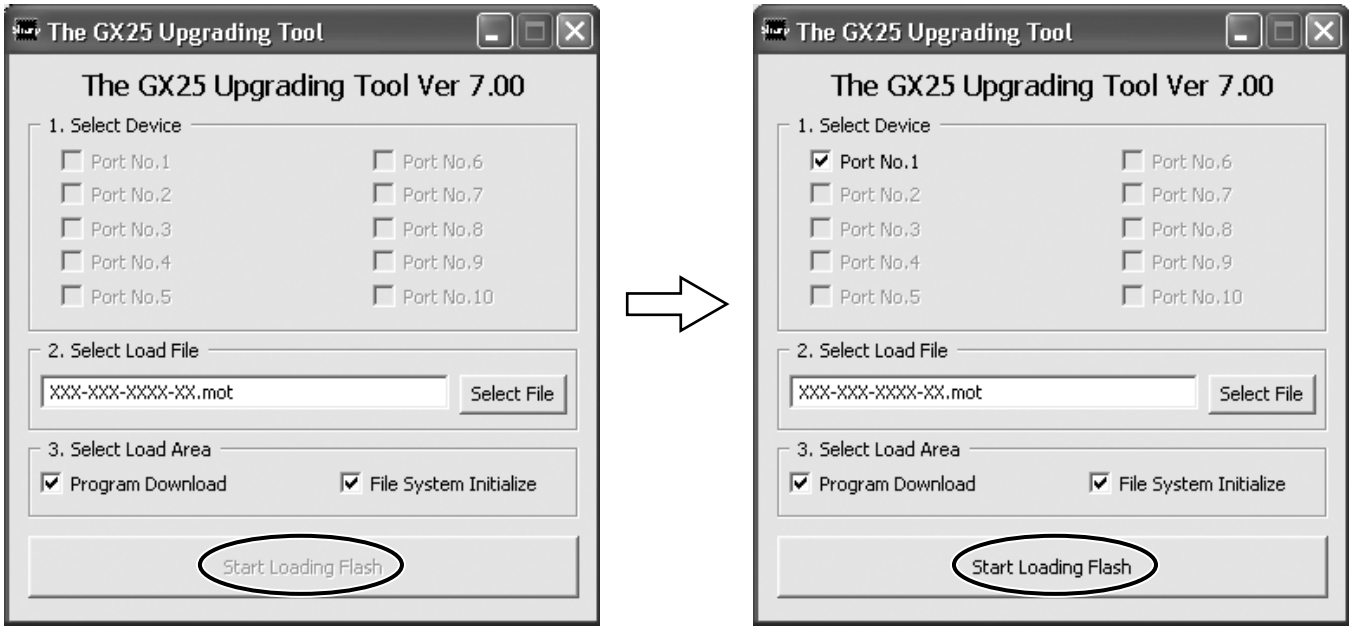
Figure 30

<“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.
Make sure that only GX25 handset(s) [phone(s)] is (are) connected to the PC/USB hub.

- "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.

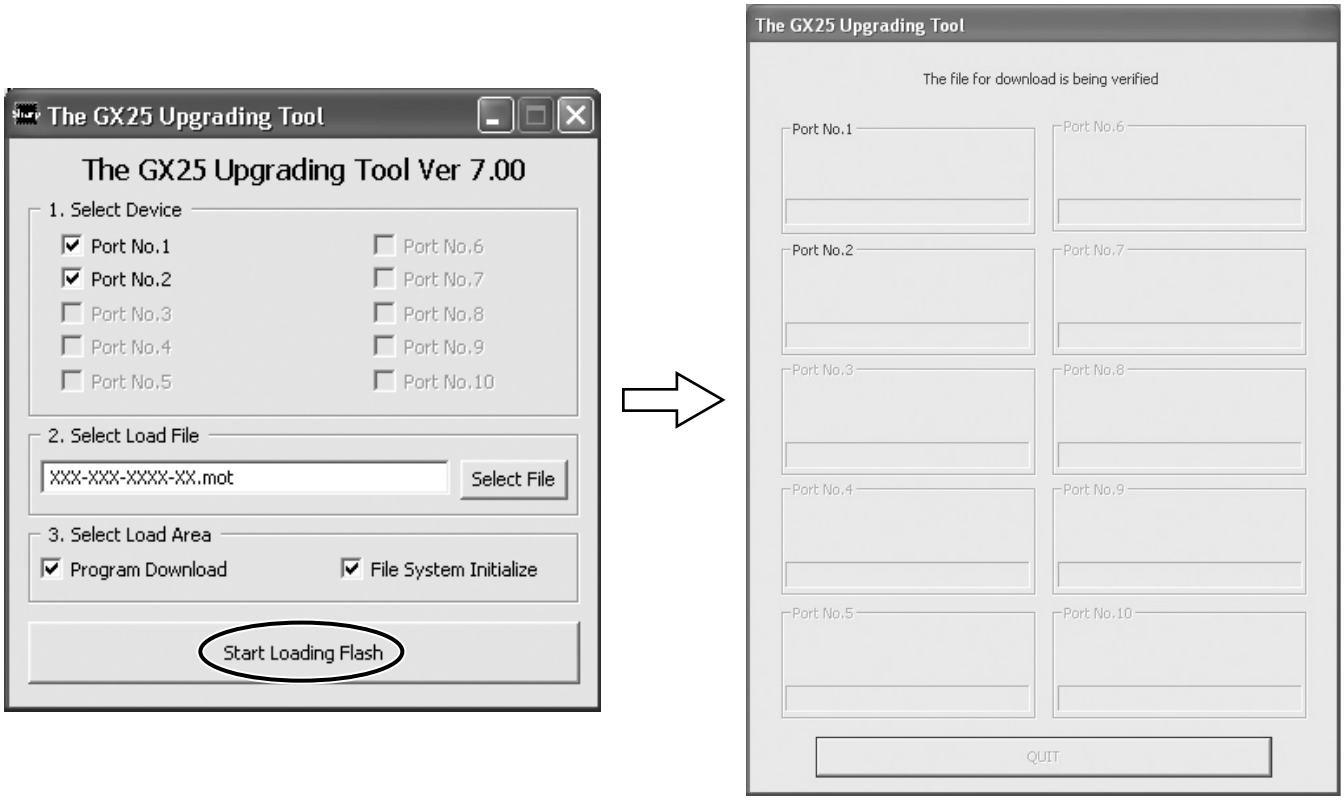
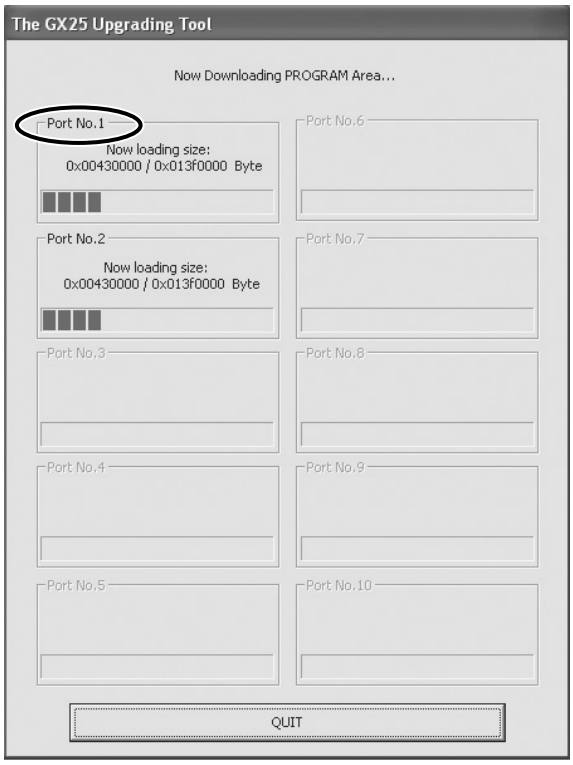
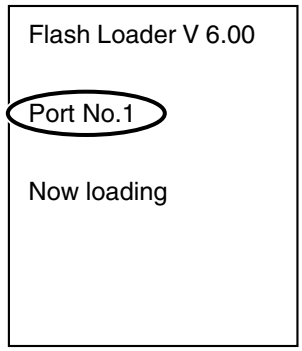


Figure 32

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.

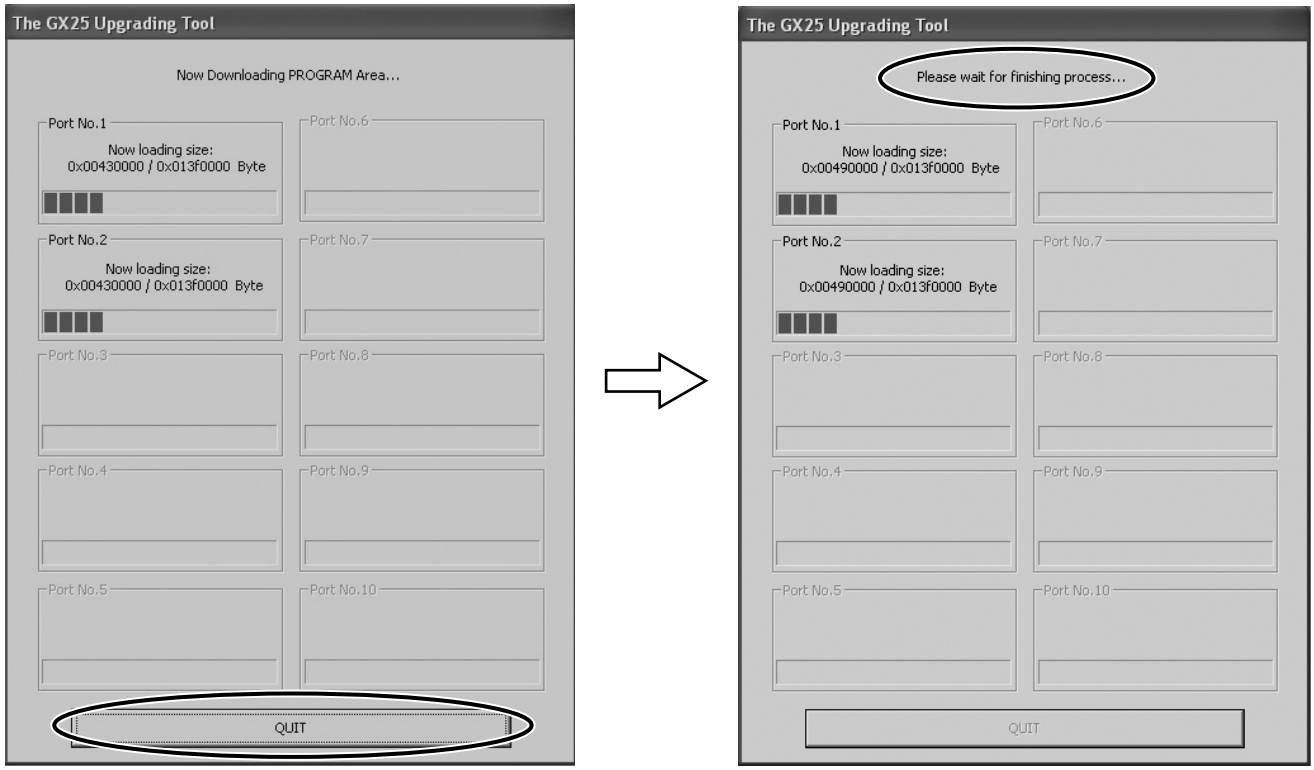


Figure 34

To resume the download after aborting it, make sure to check “File System Initialize” first.

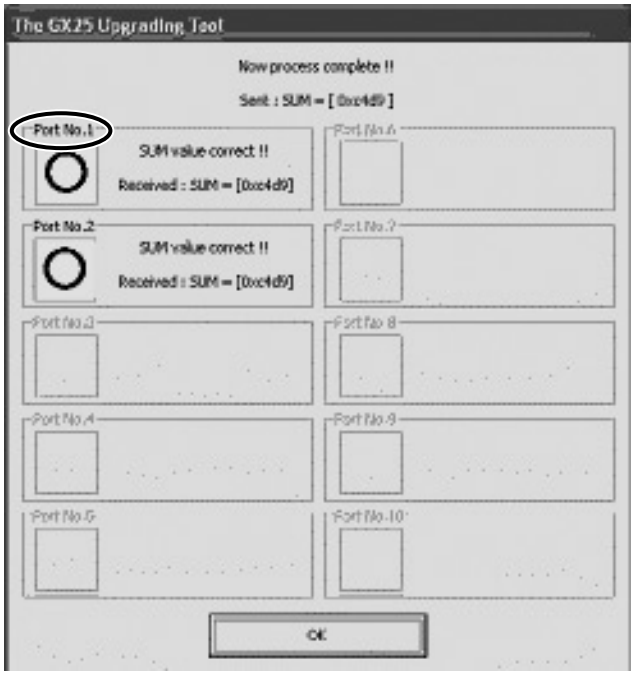
2). 5 Completing download

Press “OK” button.

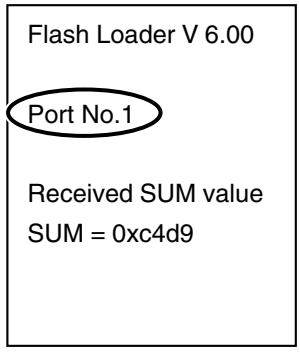
“Please wait for finishing process...” appears in the dialog box. Leave the USB download cable connected until the message disappears.

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



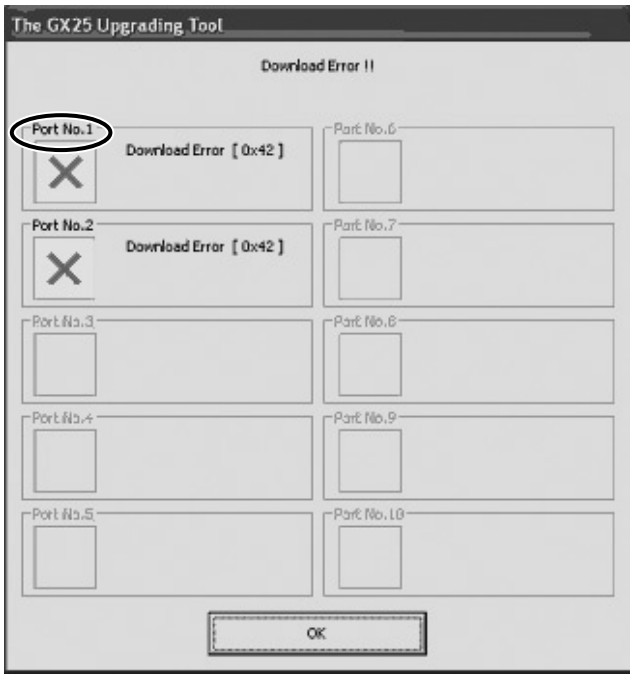
Display on handset (phone)
(Port No. 1)

Figure 35 Screen after download

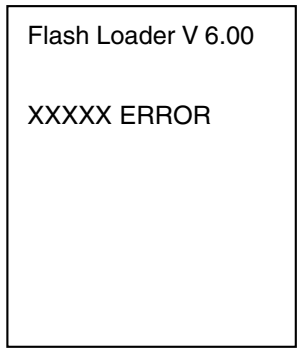
<<Download errors>>

If download fails, a message appears on the PC and handset (phone).

1. Disconnect and reconnect the USB download cable, and try to download again.
2. Before you start the download, check “File System Initialize”.



Display on PC



Display on handset (phone)

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 **4.4.3.3).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).
5. Install the device driver (SHARP The Upgrading Tool USB Driver 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 "**4.4.3.2) 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)

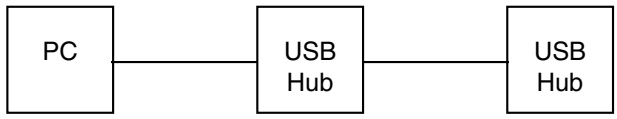


Figure 37

2. Connection in parallel

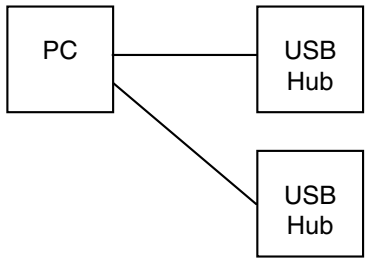


Figure 38

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

4.4.4 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 GX25 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

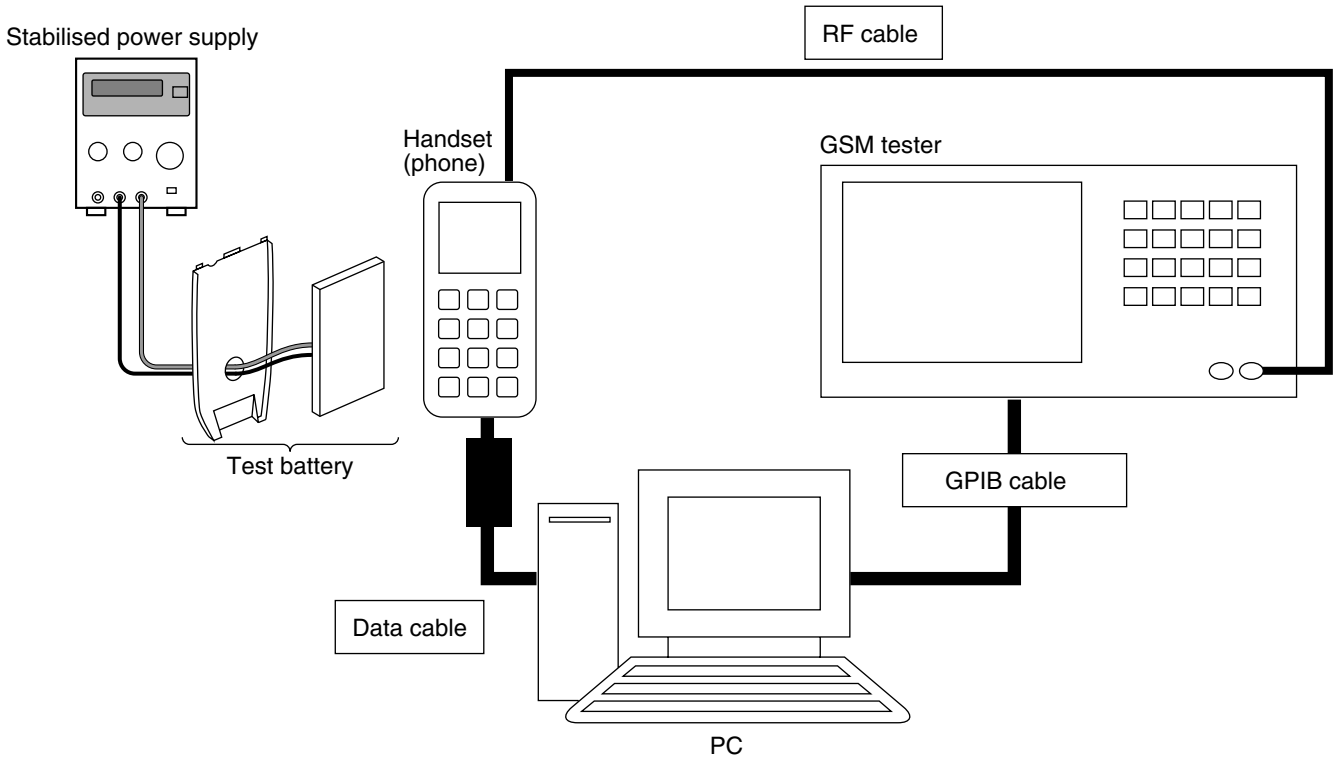


Figure 39

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.

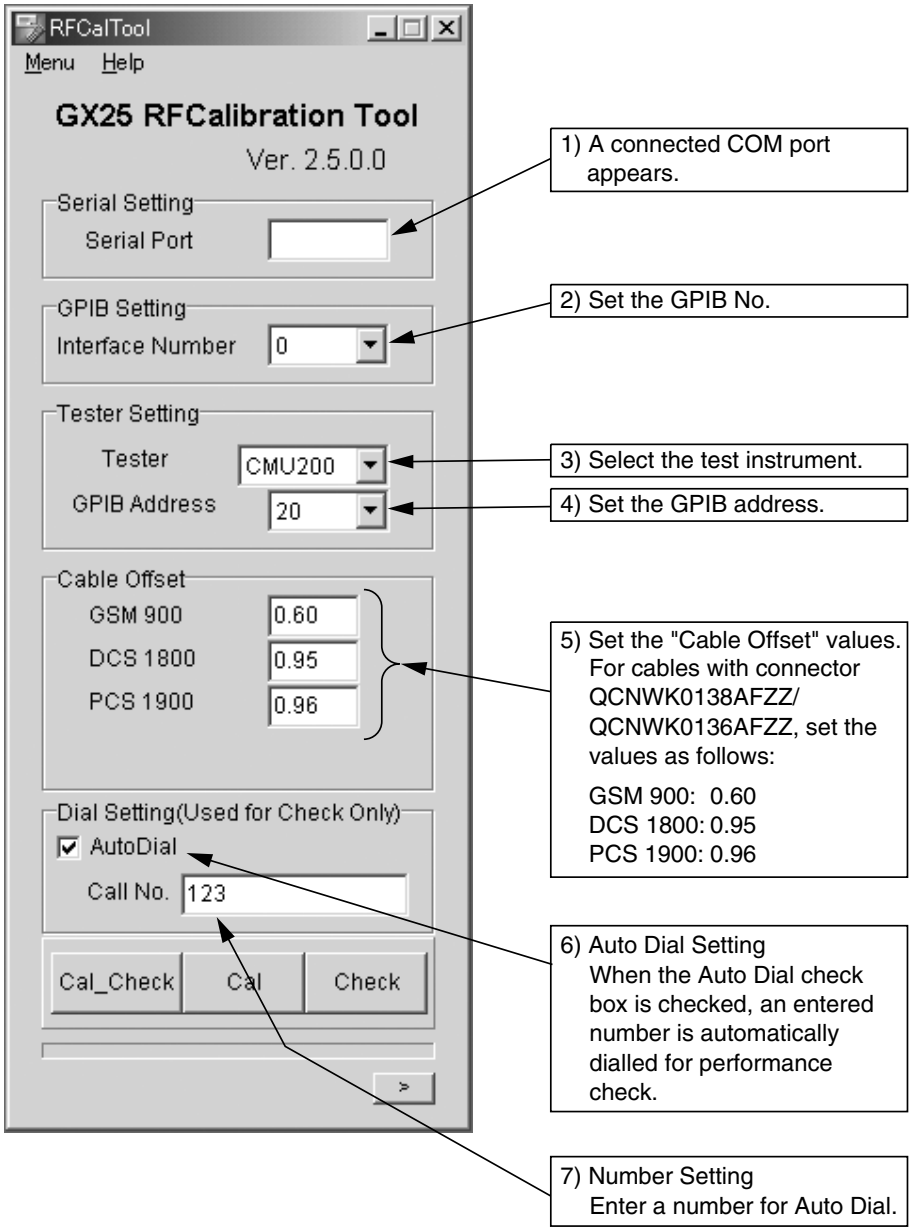


Figure 40

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.)

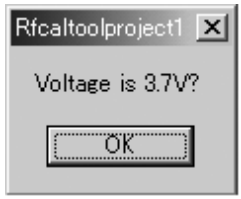


Figure 42

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.)

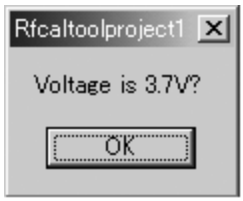


Figure 45

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”.

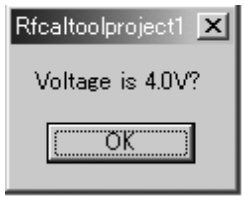


Figure 47

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

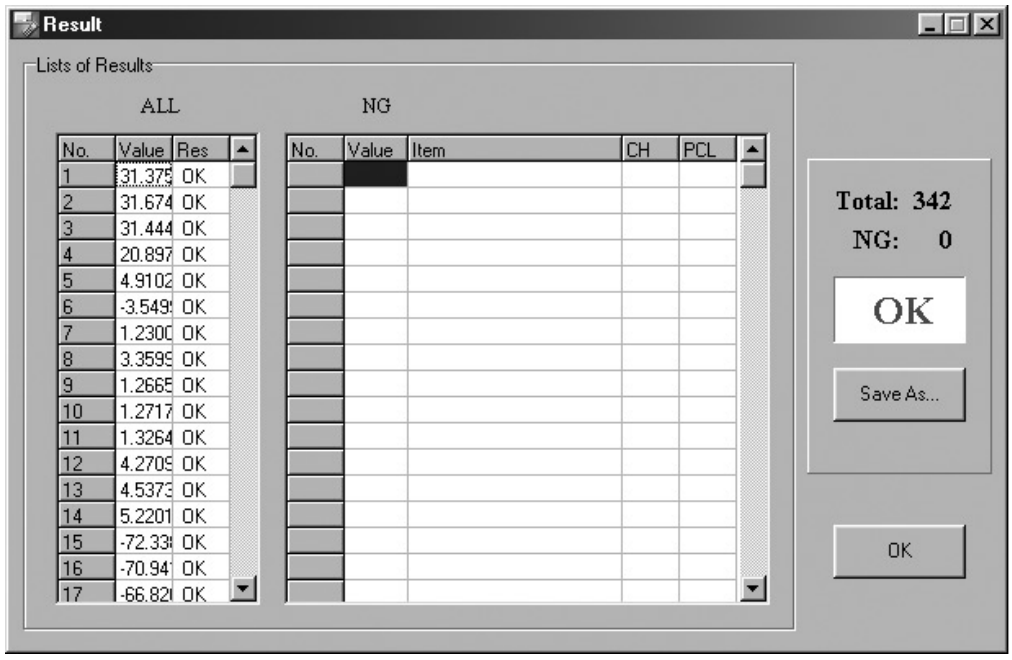


Figure 48

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

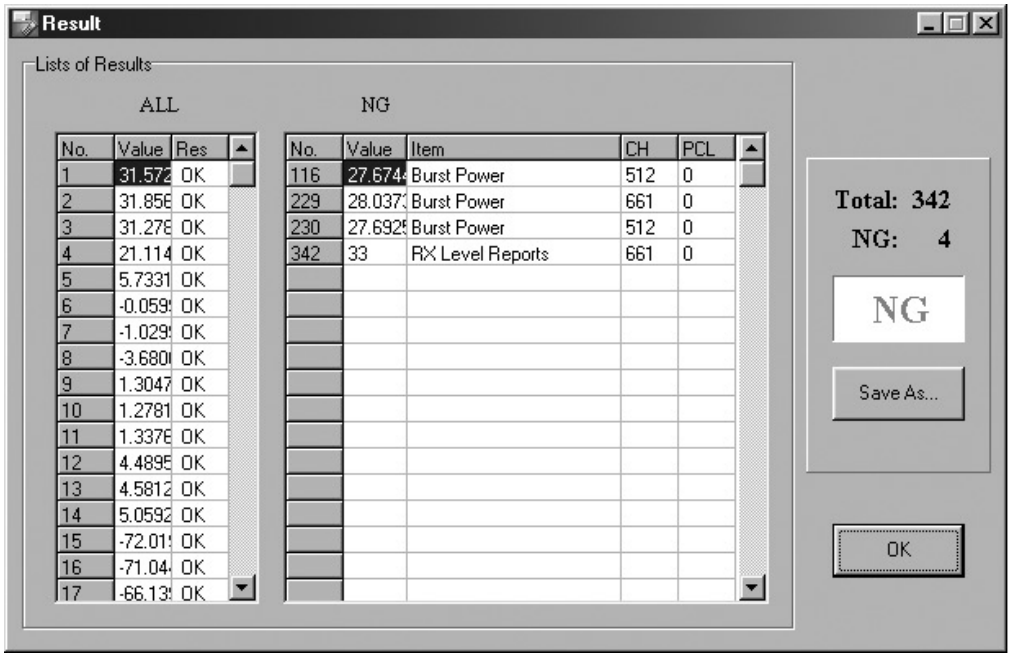


Figure 49

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/ Receive	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
		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
		123	Phase Error (RMS)	699CH	PCL0
		124	Phase Error (RMS)	512CH	PCL0
		125	Phase Error (RMS)	885CH	PCL0
		126	Phase Error (Peak)	699CH	PCL0
		127	Phase Error (Peak)	512CH	PCL0
		128	Phase Error (Peak)	885CH	PCL0
		129	Mod_spectrum –800	699CH	PCL0
		130	Mod_spectrum –600	699CH	PCL0
		131	Mod_spectrum –400	699CH	PCL0
		132	Mod_spectrum –250	699CH	PCL0
		133	Mod_spectrum –200	699CH	PCL0
		134	Mod_spectrum +200	699CH	PCL0
		135	Mod_spectrum +250	699CH	PCL0
		136	Mod_spectrum +400	699CH	PCL0
		137	Mod_spectrum +600	699CH	PCL0
		138	Mod_spectrum +800	699CH	PCL0
		139	Mod_spectrum –800	512CH	PCL0
		140	Mod_spectrum –600	512CH	PCL0
		141	Mod_spectrum –400	512CH	PCL0
		142	Mod_spectrum –250	512CH	PCL0
		143	Mod_spectrum –200	512CH	PCL0
		144	Mod_spectrum +200	512CH	PCL0
		145	Mod_spectrum +250	512CH	PCL0
		146	Mod_spectrum +400	512CH	PCL0
		147	Mod_spectrum +600	512CH	PCL0
		148	Mod_spectrum +800	512CH	PCL0
		149	Mod_spectrum –800	885CH	PCL0
		150	Mod_spectrum –600	885CH	PCL0
		151	Mod_spectrum –400	885CH	PCL0
		152	Mod_spectrum –250	885CH	PCL0
		153	Mod_spectrum –200	885CH	PCL0
		154	Mod_spectrum +200	885CH	PCL0
		155	Mod_spectrum +250	885CH	PCL0
		156	Mod_spectrum +400	885CH	PCL0
		157	Mod_spectrum +600	885CH	PCL0
		158	Mod_spectrum +800	885CH	PCL0
		159	Mod_spectrum –800	699CH	PCL5
		160	Mod_spectrum –600	699CH	PCL5
		161	Mod_spectrum –400	699CH	PCL5
		162	Mod_spectrum –250	699CH	PCL5
		163	Mod_spectrum –200	699CH	PCL5
		164	Mod_spectrum +200	699CH	PCL5
		165	Mod_spectrum +250	699CH	PCL5
		166	Mod_spectrum +400	699CH	PCL5
		167	Mod_spectrum +600	699CH	PCL5
		168	Mod_spectrum +800	699CH	PCL5
		169	Mod_spectrum –800	699CH	PCL15
		170	Mod_spectrum –600	699CH	PCL15
		171	Mod_spectrum –400	699CH	PCL15
		172	Mod_spectrum –250	699CH	PCL15
		173	Mod_spectrum –200	699CH	PCL15
		174	Mod_spectrum +200	699CH	PCL15
		175	Mod_spectrum +250	699CH	PCL15
		176	Mod_spectrum +400	699CH	PCL15
		177	Mod_spectrum +600	699CH	PCL15
		178	Mod_spectrum +800	699CH	PCL15
		179	Switch_Spectrum –1800	699CH	PCL0
		180	Switch_Spectrum –1200	699CH	PCL0
		181	Switch_Spectrum –600	699CH	PCL0
		182	Switch_Spectrum –400	699CH	PCL0
		183	Switch_Spectrum +400	699CH	PCL0
		184	Switch_Spectrum +600	699CH	PCL0
		185	Switch_Spectrum +1200	699CH	PCL0
		186	Switch_Spectrum +1800	699CH	PCL0
		187	Switch_Spectrum –1800	512CH	PCL0
		188	Switch_Spectrum –1200	512CH	PCL0
		189	Switch_Spectrum –600	512CH	PCL0
		190	Switch_Spectrum –400	512CH	PCL0
		191	Switch_Spectrum +400	512CH	PCL0
		192	Switch_Spectrum +600	512CH	PCL0
		193	Switch_Spectrum +1200	512CH	PCL0
		194	Switch_Spectrum +1800	512CH	PCL0
		195	Switch_Spectrum –1800	885CH	PCL0
		196	Switch_Spectrum –1200	885CH	PCL0
		197	Switch_Spectrum –600	885CH	PCL0
		198	Switch_Spectrum –400	885CH	PCL0
		199	Switch_Spectrum +400	885CH	PCL0
		200	Switch_Spectrum +600	885CH	PCL0
		201	Switch_Spectrum +1200	885CH	PCL0
		202	Switch_Spectrum +1800	885CH	PCL0
		203	Switch_Spectrum –1800	699CH	PCL5
		204	Switch_Spectrum –1200	699CH	PCL5
		205	Switch_Spectrum –600	699CH	PCL5
		206	Switch_Spectrum –400	699CH	PCL5
		207	Switch_Spectrum +400	699CH	PCL5
		208	Switch_Spectrum +600	699CH	PCL5
		209	Switch_Spectrum +1200	699CH	PCL5
		210	Switch_Spectrum +1800	699CH	PCL5
		211	Switch_Spectrum –1800	699CH	PCL15
		212	Switch_Spectrum –1200	699CH	PCL15
		213	Switch_Spectrum –600	699CH	PCL15
		214	Switch_Spectrum –400	699CH	PCL15
		215	Switch_Spectrum +400	699CH	PCL15
		216	Switch_Spectrum +600	699CH	PCL15
		217	Switch_Spectrum +1200	699CH	PCL15
		218	Switch_Spectrum +1800	699CH	PCL15
		219	Burst Timing	699CH	PCL0
		220	Burst Timing	512CH	PCL0
		221	Burst Timing	885CH	PCL0
		222	Burst Timing	699CH	PCL5
		223	Burst Timing	699CH	PCL15
	Rx	224	Rx Sensitivity	699CH	PCL0
		225	Rx Sensitivity	512CH	PCL0
		226	Rx Sensitivity	885CH	PCL0
		227	Usable Receiver Level	699CH	PCL0
		228	Rx Level Reports	699CH	PCL0
PCS	Tx	229	Burst Power	661CH	PCL0
		230	Burst Power	512CH	PCL0
		231	Burst Power	810CH	PCL0
		232	Burst Power	661CH	PCL5
		233	Burst Power	661CH	PCL15
		234	Frequency Error	661CH	PCL0
		235	Frequency Error	512CH	PCL0
		236	Frequency Error	810CH	PCL0
		237	Phase Error (RMS)	661CH	PCL0
		238	Phase Error (RMS)	512CH	PCL0
		239	Phase Error (RMS)	810CH	PCL0
		240	Phase Error (Peak)	661CH	PCL0
		241	Phase Error (Peak)	512CH	PCL0
		242	Phase Error (Peak)	810CH	PCL0
		243	Mod_spectrum –800	661CH	PCL0
		244	Mod_spectrum –600	661CH	PCL0
		245	Mod_spectrum –400	661CH	PCL0
		246	Mod_spectrum –250	661CH	PCL0

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Band	Send-ing/ Recei ve	No.	Item to be inspected	Chan-nel	PCL
		247	Mod_spectrum –200	661CH	PCL0
		248	Mod_spectrum +200	661CH	PCL0
		249	Mod_spectrum +250	661CH	PCL0
		250	Mod_spectrum +400	661CH	PCL0
		251	Mod_spectrum +600	661CH	PCL0
		252	Mod_spectrum +800	661CH	PCL0
		253	Mod_spectrum –800	512CH	PCL0
		254	Mod_spectrum –600	512CH	PCL0
		255	Mod_spectrum –400	512CH	PCL0
		256	Mod_spectrum –250	512CH	PCL0
		257	Mod_spectrum –200	512CH	PCL0
		258	Mod_spectrum +200	512CH	PCL0
		259	Mod_spectrum +250	512CH	PCL0
		260	Mod_spectrum +400	512CH	PCL0
		261	Mod_spectrum +600	512CH	PCL0
		262	Mod_spectrum +800	512CH	PCL0
		263	Mod_spectrum –800	810CH	PCL0
		264	Mod_spectrum –600	810CH	PCL0
		265	Mod_spectrum –400	810CH	PCL0
		266	Mod_spectrum –250	810CH	PCL0
		267	Mod_spectrum –200	810CH	PCL0
		268	Mod_spectrum +200	810CH	PCL0
		269	Mod_spectrum +250	810CH	PCL0
		270	Mod_spectrum +400	810CH	PCL0
		271	Mod_spectrum +600	810CH	PCL0
		272	Mod_spectrum +800	810CH	PCL0
		273	Mod_spectrum –800	661CH	PCL5
		274	Mod_spectrum –600	661CH	PCL5
		275	Mod_spectrum –400	661CH	PCL5
		276	Mod_spectrum –250	661CH	PCL5
		277	Mod_spectrum –200	661CH	PCL5
		278	Mod_spectrum +200	661CH	PCL5
		279	Mod_spectrum +250	661CH	PCL5
		280	Mod_spectrum +400	661CH	PCL5
		281	Mod_spectrum +600	661CH	PCL5
		282	Mod_spectrum +800	661CH	PCL5
		283	Mod_spectrum –800	661CH	PCL15
		284	Mod_spectrum –600	661CH	PCL15
		285	Mod_spectrum –400	661CH	PCL15
		286	Mod_spectrum –250	661CH	PCL15
		287	Mod_spectrum –200	661CH	PCL15
		288	Mod_spectrum +200	661CH	PCL15
		289	Mod_spectrum +250	661CH	PCL15
		290	Mod_spectrum +400	661CH	PCL15
		291	Mod_spectrum +600	661CH	PCL15
		292	Mod_spectrum +800	661CH	PCL15
		293	Switch_Spectrum –1800	661CH	PCL0
		294	Switch_Spectrum –1200	661CH	PCL0
		295	Switch_Spectrum –600	661CH	PCL0
		296	Switch_Spectrum –400	661CH	PCL0
		297	Switch_Spectrum +400	661CH	PCL0
		298	Switch_Spectrum +600	661CH	PCL0
		299	Switch_Spectrum +1200	661CH	PCL0
		300	Switch_Spectrum +1800	661CH	PCL0
		301	Switch_Spectrum –1800	512CH	PCL0
		302	Switch_Spectrum –1200	512CH	PCL0
		303	Switch_Spectrum –600	512CH	PCL0
		304	Switch_Spectrum –400	512CH	PCL0
		305	Switch_Spectrum +400	512CH	PCL0
		306	Switch_Spectrum +600	512CH	PCL0
		307	Switch_Spectrum +1200	512CH	PCL0
		308	Switch_Spectrum +1800	512CH	PCL0
		309	Switch_Spectrum –1800	810CH	PCL0
		310	Switch_Spectrum –1200	810CH	PCL0
		311	Switch_Spectrum –600	810CH	PCL0
		312	Switch_Spectrum –400	810CH	PCL0
		313	Switch_Spectrum +400	810CH	PCL0
		314	Switch_Spectrum +600	810CH	PCL0
		315	Switch_Spectrum +1200	810CH	PCL0
		316	Switch_Spectrum +1800	810CH	PCL0
		317	Switch_Spectrum –1800	661CH	PCL5
		318	Switch_Spectrum –1200	661CH	PCL5
		319	Switch_Spectrum –600	661CH	PCL5
		320	Switch_Spectrum –400	661CH	PCL5
		321	Switch_Spectrum +400	661CH	PCL5
		322	Switch_Spectrum +600	661CH	PCL5
		323	Switch_Spectrum +1200	661CH	PCL5
		324	Switch_Spectrum +1800	661CH	PCL5
		325	Switch_Spectrum –1800	661CH	PCL15
		326	Switch_Spectrum –1200	661CH	PCL15
		327	Switch_Spectrum –600	661CH	PCL15
		328	Switch_Spectrum –400	661CH	PCL15
		329	Switch_Spectrum +400	661CH	PCL15
		330	Switch_Spectrum +600	661CH	PCL15
		331	Switch_Spectrum +1200	661CH	PCL15
		332	Switch_Spectrum +1800	661CH	PCL15
		333	Burst Timing	661CH	PCL0
		334	Burst Timing	512CH	PCL0
		335	Burst Timing	810CH	PCL0
		336	Burst Timing	661CH	PCL5
		337	Burst Timing	661CH	PCL15
	Rx	338	Rx Sensitivity	661CH	PCL0
		339	Rx Sensitivity	512CH	PCL0
		340	Rx Sensitivity	810CH	PCL0
		341	Usable Receiver Level	661CH	PCL0
		342	Rx Level Reports	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	TCX801	TCX801	TCX801
	Phase Error	IC801	IC801	IC801
	Mod_spectrum	IC801, TCX801	IC801, TCX801	IC801, TCX801
	Switch_Spectrum	IC801, IC802	IC801, IC802	IC801, IC802
	Burst Timing	IC802	IC802	IC802
Rx	Rx Sensitivity	IC801, FL902, FL803, FL905	IC801, FL902, FL803, FL905	IC801, FL903, FL803, FL905
	Usable Receiver Level	IC801	IC801	IC801
	Rx Level Reports	IC801, FL902, FL803, FL905	IC801, FL902, FL803, FL905	IC801, FL903, FL803, 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
- GX25 data cable
- PWB repair jig
- GSM tester (CMU200)

4.6.2 Setup

1. Install GX25 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.

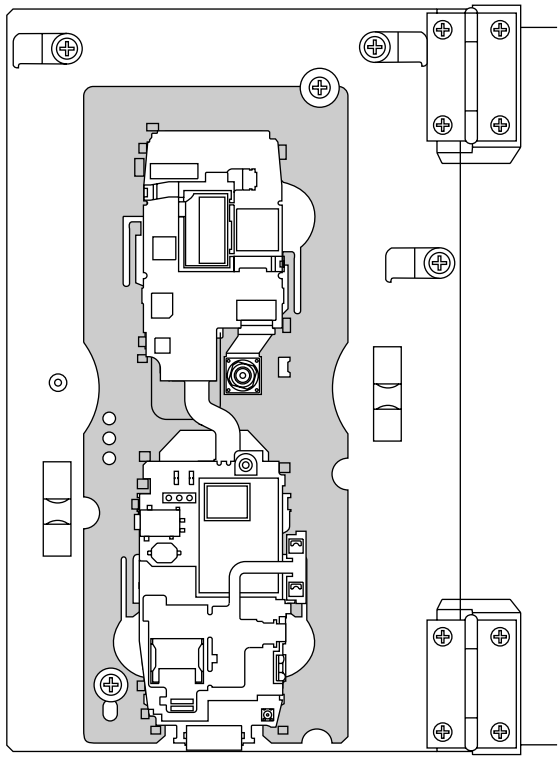


Figure 51 PWB installation

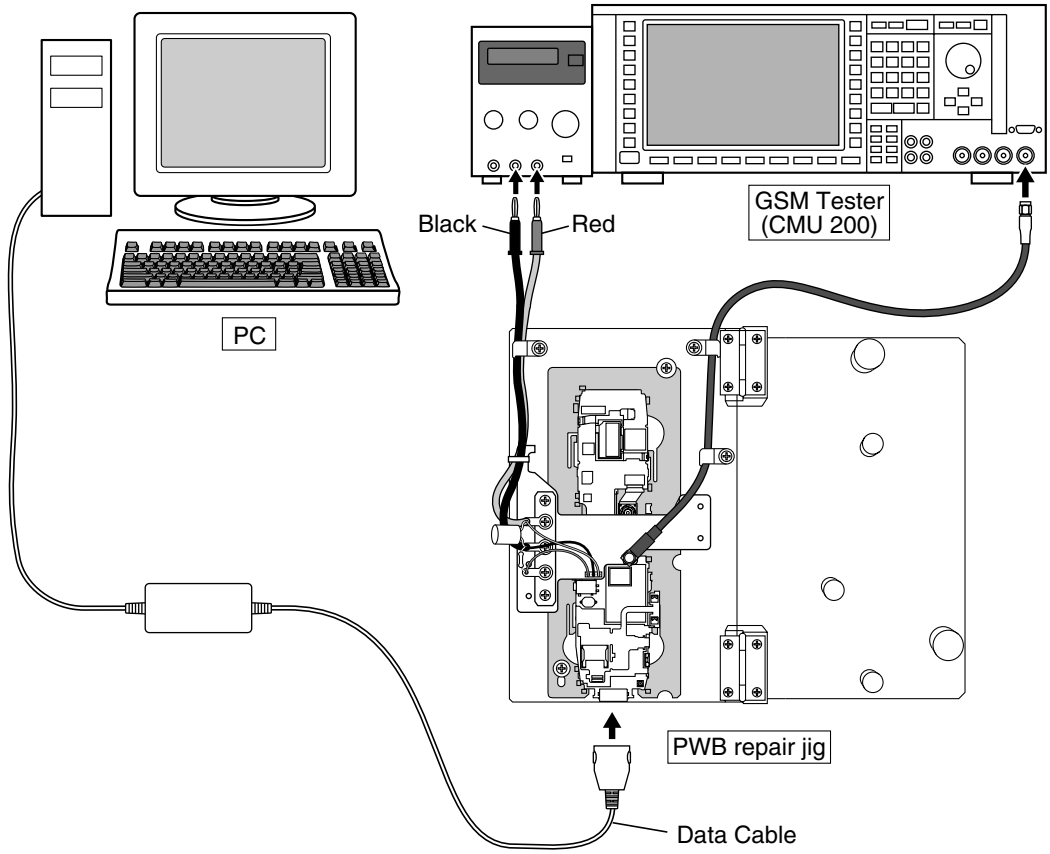


Figure 52 Connections

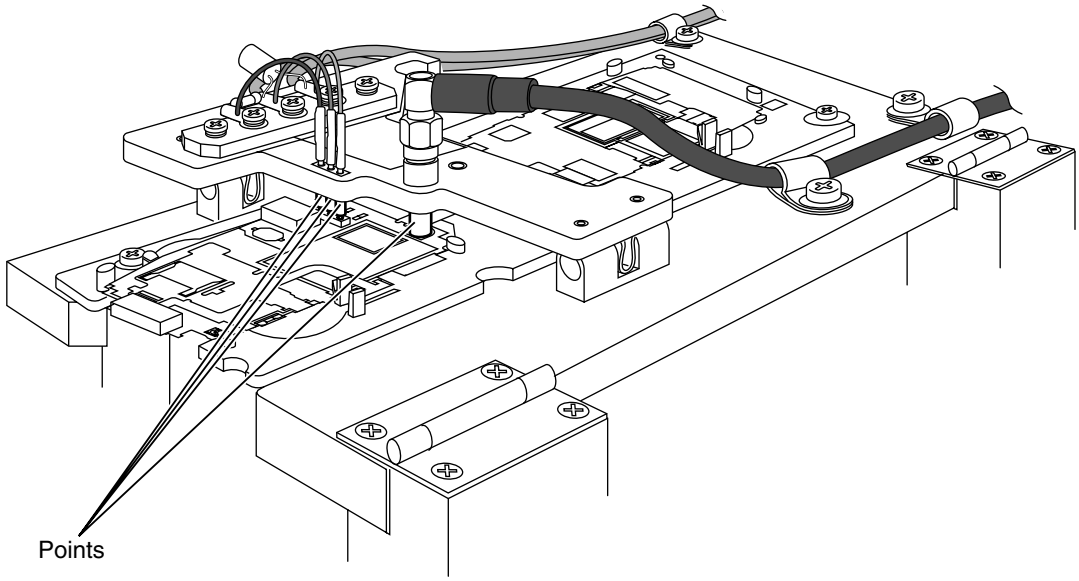


Figure 53 Contact points

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

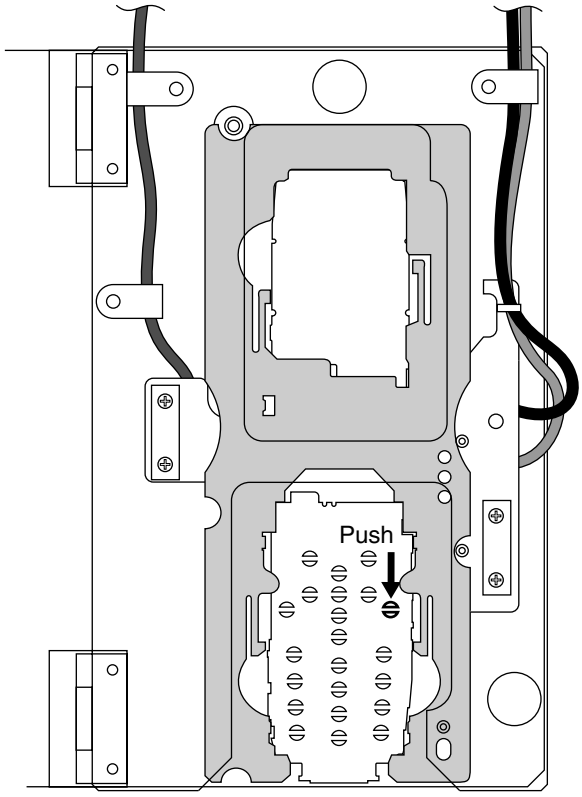


Figure 54 Turning power on

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

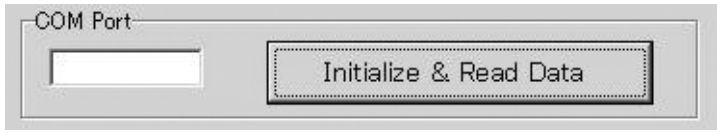


Figure 55

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.

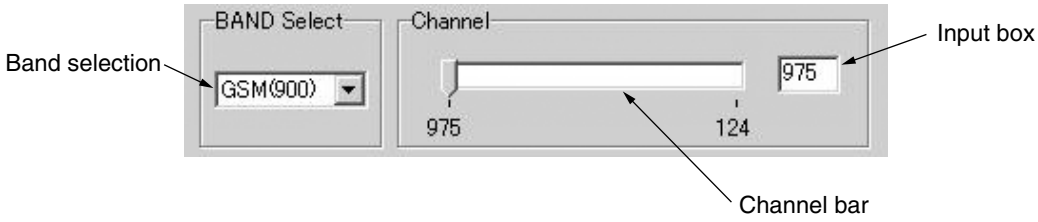


Figure 57

[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.

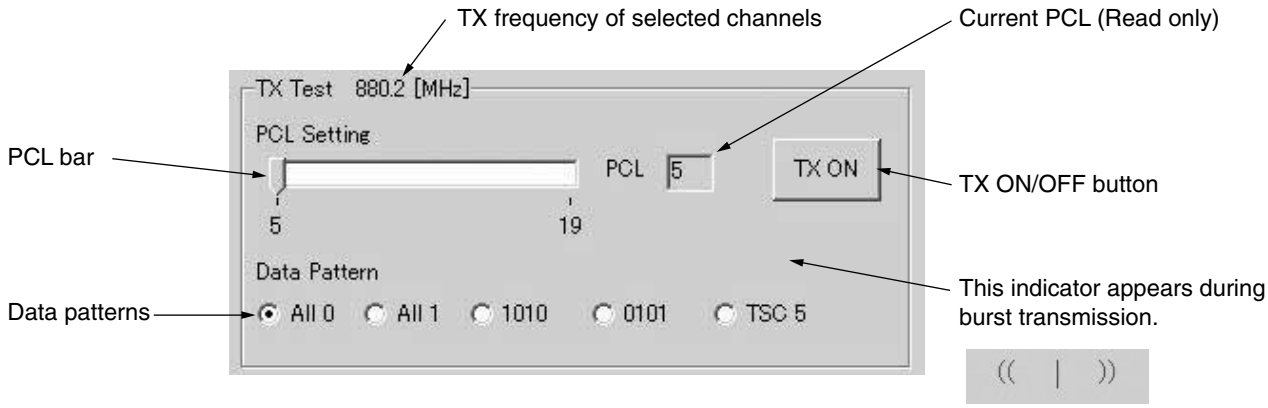


Figure 58

[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.

GX25 TX power Table (25°C, voltage: 3.7[V])

GSM Band

PCL	GSM [dBm]	Tolerance
5	33	+/–2 dB
6	31	+/–3 dB
7	29	+/–3 dB
8	27	+/–3 dB
9	25	+/–3 dB
10	23	+/–3 dB
11	21	+/–3 dB
12	19	+/–3 dB
13	17	+/–3 dB
14	15	+/–3 dB
15	13	+/–3 dB
16	11	+/–5 dB
17	9	+/–5 dB
18	7	+/–5 dB
19	5	+/–5 dB

DCS/PCS Band

PCL	DCS/PCS [dBm]	Tolerance
0	30	+/–2 dB
1	28	+/–3 dB
2	26	+/–3 dB
3	24	+/–3 dB
4	22	+/–3 dB
5	20	+/–3 dB
6	18	+/–3 dB
7	16	+/–3 dB
8	14	+/–3 dB
9	12	+/–4 dB
10	10	+/–4 dB
11	8	+/–4 dB
12	6	+/–4 dB
13	4	+/–4 dB
14	2	+/–5 dB
15	0	+/–5 dB

3) RX test

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

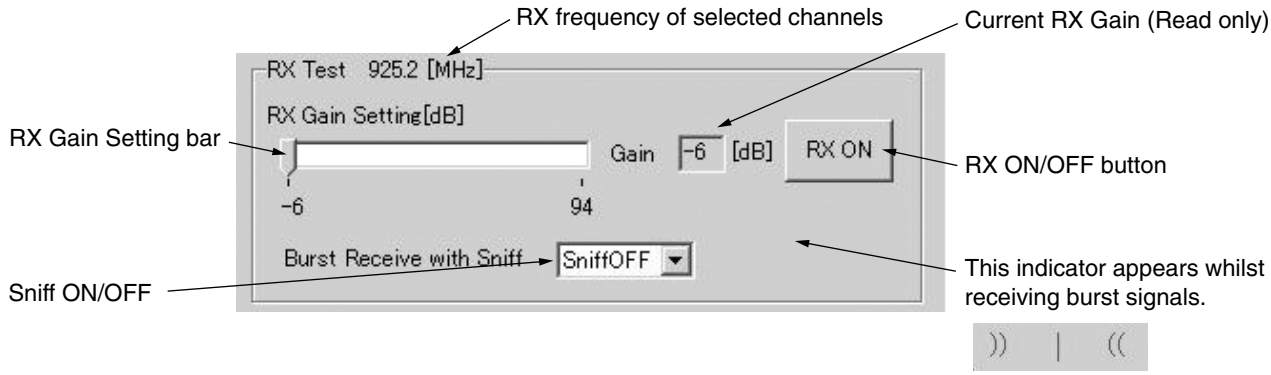


Figure 59

[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.

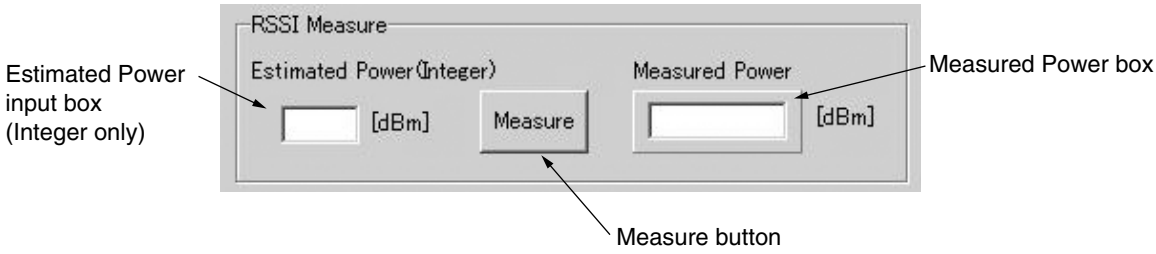


Figure 60

[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.

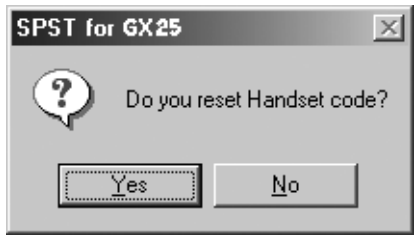


Figure 61

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.

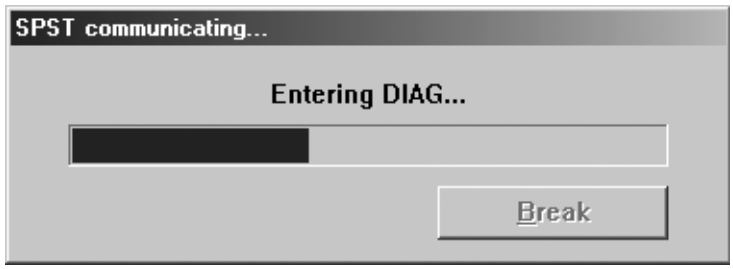


Figure 63

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

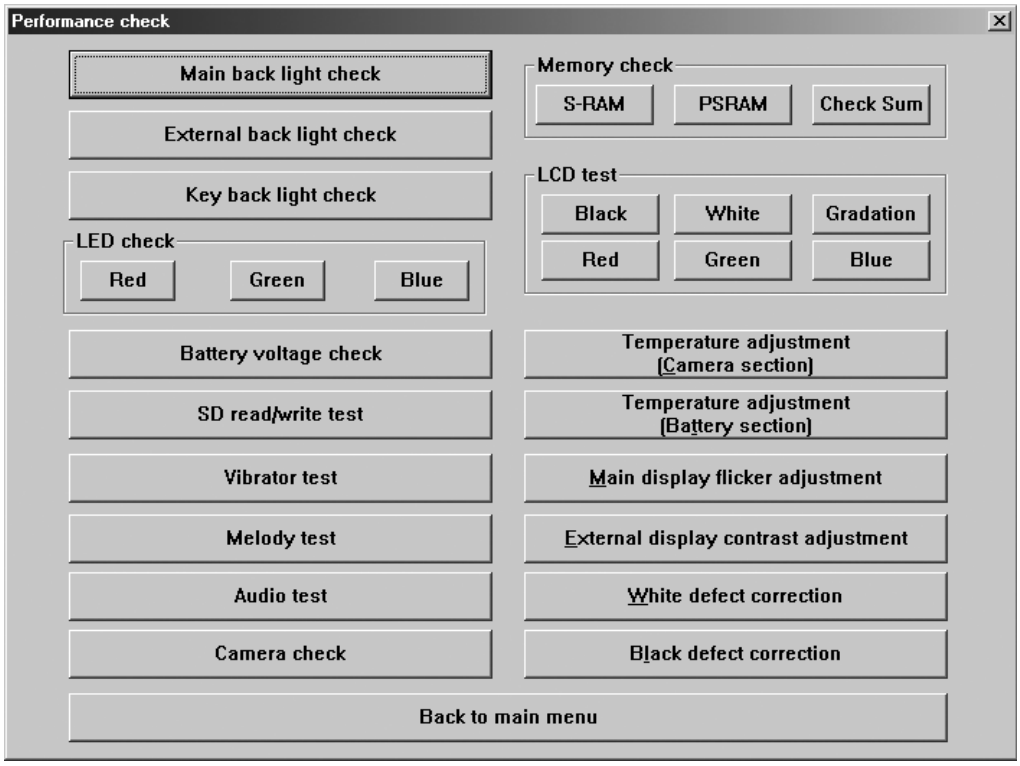


Figure 64

The functions of each button are described below.

4.8.1 Main back light check

The main 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/Mobile Light does not turn on.” in [3] Troubleshooting.

4.8.2 External back light check

The external display back light turns on and the message appears on the PC. Check the back light and press “OK”.
• If a failure occurs, see “9. Back Light/Mobile Light does not turn on.” in [3] Troubleshooting.

4.8.3 Key back light check

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

4.8.4 LED check

The LED lights up in a specified colour and the message appears on the PC. Check the LED and press “OK”.
• If a failure occurs, see “9. Back Light/Mobile Light does not turn on.” in [3] Troubleshooting.

4.8.5 Battery voltage check

Click to display the current battery voltage.
• If a failure occurs, see “1. Power does not turn on.” in [3] Troubleshooting.

4.8.6 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.

4.8.7 Melody test

A message describes test items. Click “Yes” to proceed and “No” to exit.
The order of the test items:
Speaker → Hands free → Hands free (stereo) → Speaker (analogue melody)

Trouble found by SPST		Troubleshooting (based on [3] Troubleshooting)
(1) Speaker		See "7. Speaker does not work."
(2) Hands free	Sound is heard in audio test.	Parts between IC105 pin 10 and IC103 pin 93 are defective, or IC103 is defective.
	No sound is heard in audio test.	See "Hands free kit (monaural headset)" in the section "3. No voice is heard from the earpiece."
(3) Hands free (stereo)	Sound is heard in audio test.	Parts between IC105 pin 10 and IC103 pin 93; IC105 pin 11 and IC103 pin 94 are defective. Otherwise IC103 is defective.
	No sound is heard in audio test.	See "Hands free kit (stereo headset) - Option" in the section "3. No voice is heard from the earpiece."
(4) Speaker (analog melody)		See "8. Video/Voice Recorder playback is impossible." Otherwise parts between IC105 pin 10 and IC103 pin 93 are defective, or IC103 is defective.

4.8.8 Audio test

The following appears.

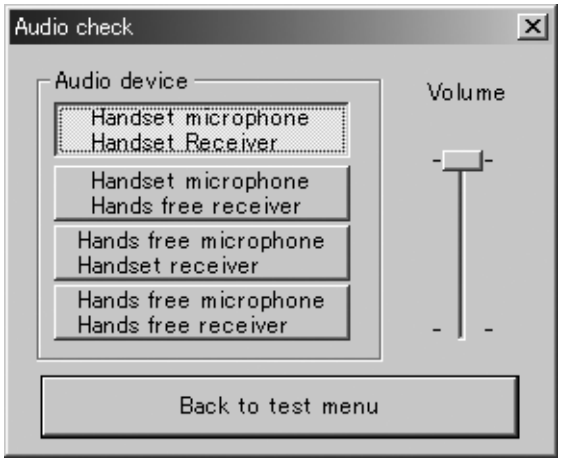
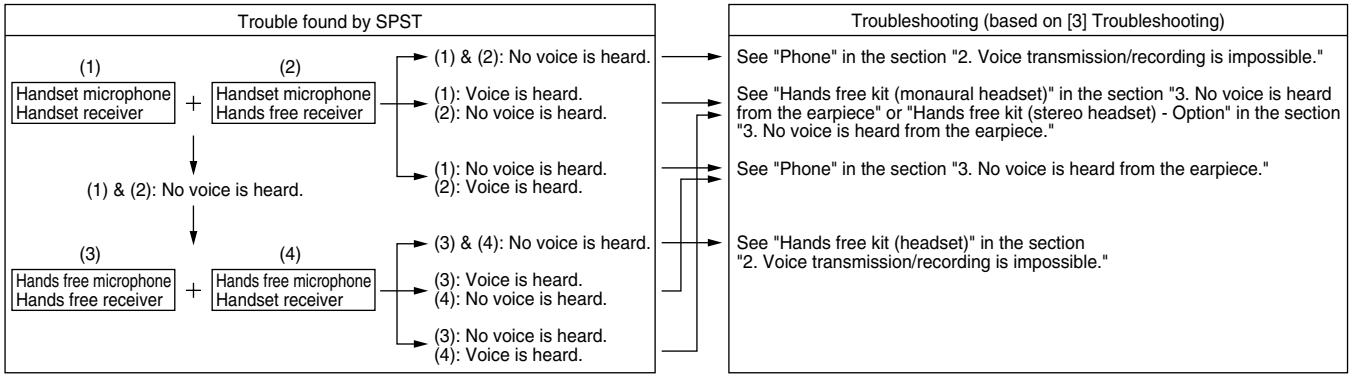


Figure 66

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.



4.8.9 Camera check

The following appears.

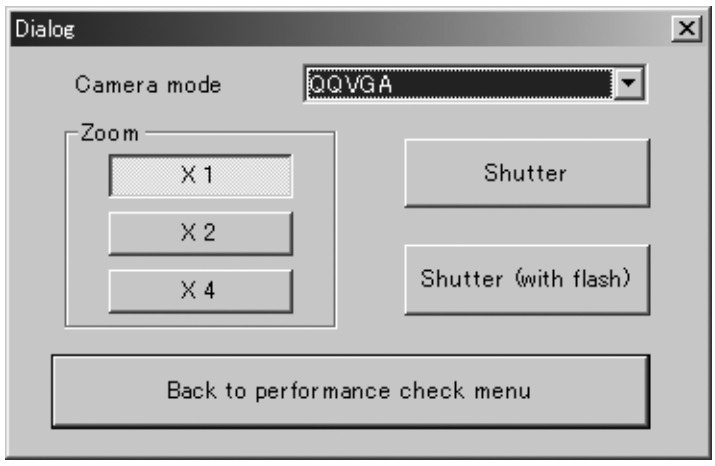


Figure 67

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 “13. Pictures cannot be taken.” in [3] Troubleshooting.

4.8.10 Memory check

Click “S-RAM” and “PSRAM” to see each test result.
For “Check Sum”, the calculation appears after the SPST communicating dialogue box.

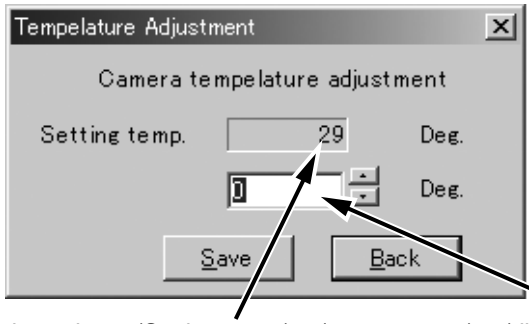
4.8.11 LCD test

Check that the specified colour appears on the main display.
• If a failure occurs, see “11. The display does not appear on Main Display.” and “12. The display does not appear on External Display.“ in [3] Trouble-shooting.

4.8.12 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

4.8.13 Main display flicker adjustment

The following is displayed.

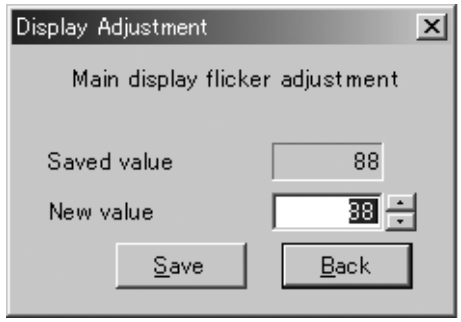
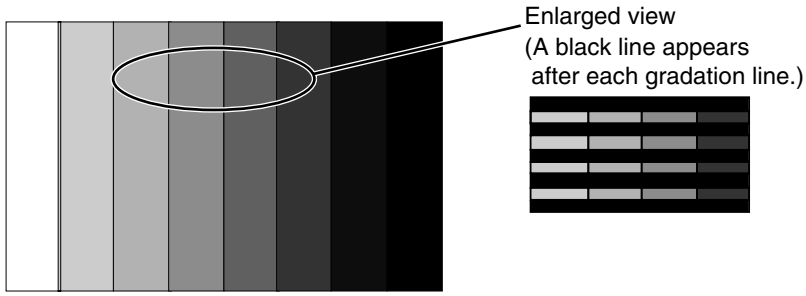


Figure 69

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)

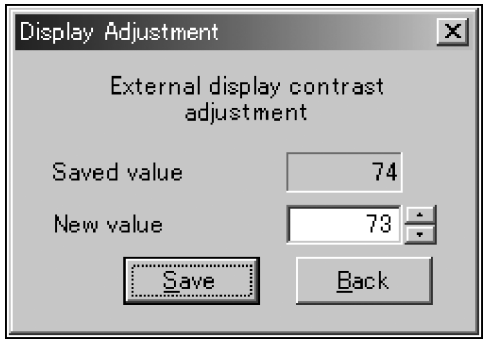


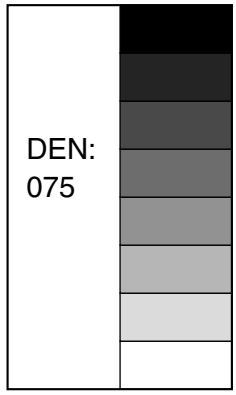
8-level gradation pattern with alternate black and gradation lines (black and white)

Figure 70

4.8.14 External display contrast adjustment

Click the “External display contrast adjustment” button. The following screen appears.





8-level gradation pattern (black & white pattern)

Figure 71

Comparing with an adjusted handset, click “ ▲ ” or “ ▼ ” to adjust the value so that the same gradation pattern is displayed. Click “Save” and confirm the pattern on the external display.

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 72

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 73

3) When complete, the following message appears.

Figure 74

5. Other tests

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

5.1. Bluetooth

1) Connect GX25 to the network and check that a conversation (talking and listening) is possible using a Bluetooth headset.

   Recommended Bluetooth headset:
   PLANTRONICS M3000

2) Connect GX25 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 GX25 and a PC with a USB cable. Check that GX25 is recognised as a device.
If the USB driver for GX25 (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)

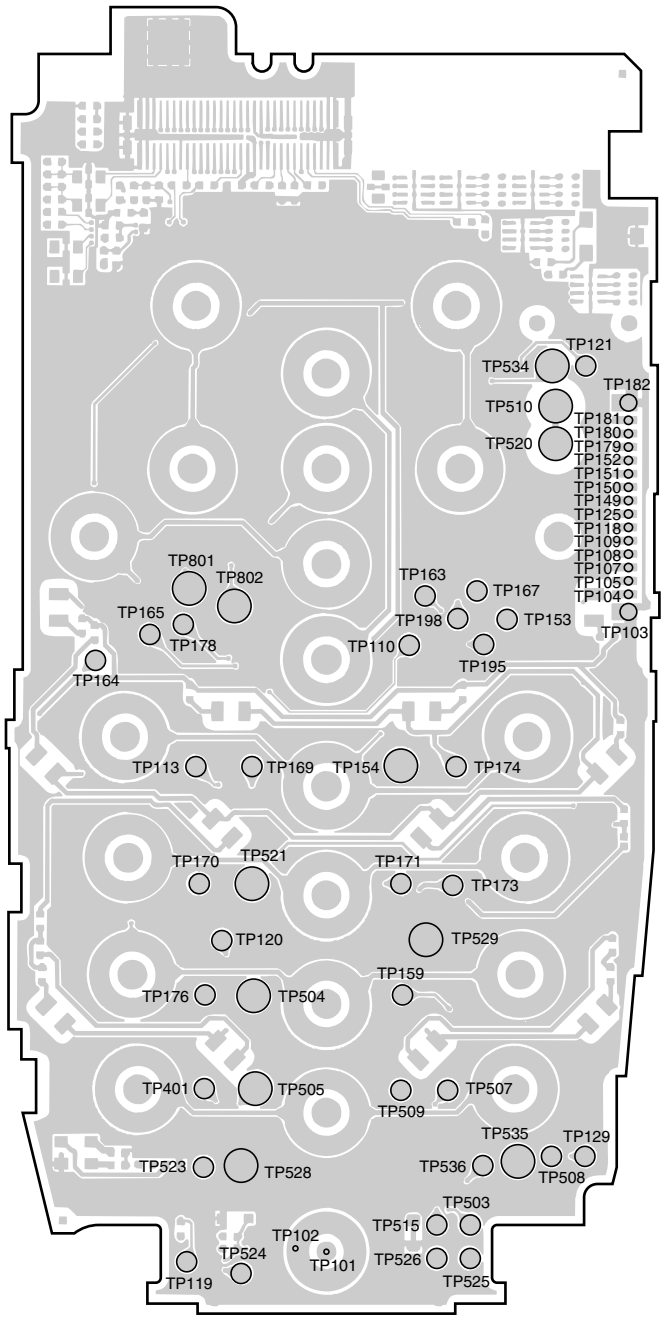


Figure 74 TEST POINT

TP No.	Signal name
TP110	VEXT
TP113	VVIB
TP119	MIC_INP
TP120	AIN2P_C
TP121	JACK_R
TP129	USC [6]
TP153	VPP Flash
TP154	MODE_SELECT
TP159	CHGIN_A (5.2V)
TP163	13MHZ_CLK
TP164	VABB
TP165	LIGHT1
TP167	VRTC (1.8V)
TP169	VSIM (2.85V)
TP170	VMEM (2.93V)
TP171	VCORE (1.8V)
TP173	VINT (3.0V)
TP174	LIGHT3 (KEYLED)
TP176	VMIC
TP178	TEMP
TP195	Terminal for MEMORY adhesion check 1
TP198	Terminal for MEMORY adhesion check 2
TP401	VSCR (3.0V)
TP503	CHGIN
TP504	USC [1]
TP505	USC [2]
TP507	VUSB (3.2V)
TP508	USC [5]
TP509	USC [4]
TP510	BATT
TP515	VBUS_IN
TP520	BATT
TP521	POWERONKEY
TP523	USB D+
TP524	USB D–
TP525	USC [6]
TP526	AUDIO_OUT
TP528	DGND
TP529	DGND
TP534	BATT_SENSE
TP535	Manufacture Specific
TP536	AUDIO_IN
TP801	VTCXO (2.9V)
TP802	VRF (2.9V)

MAIN PWB-A (REAR SIDE)

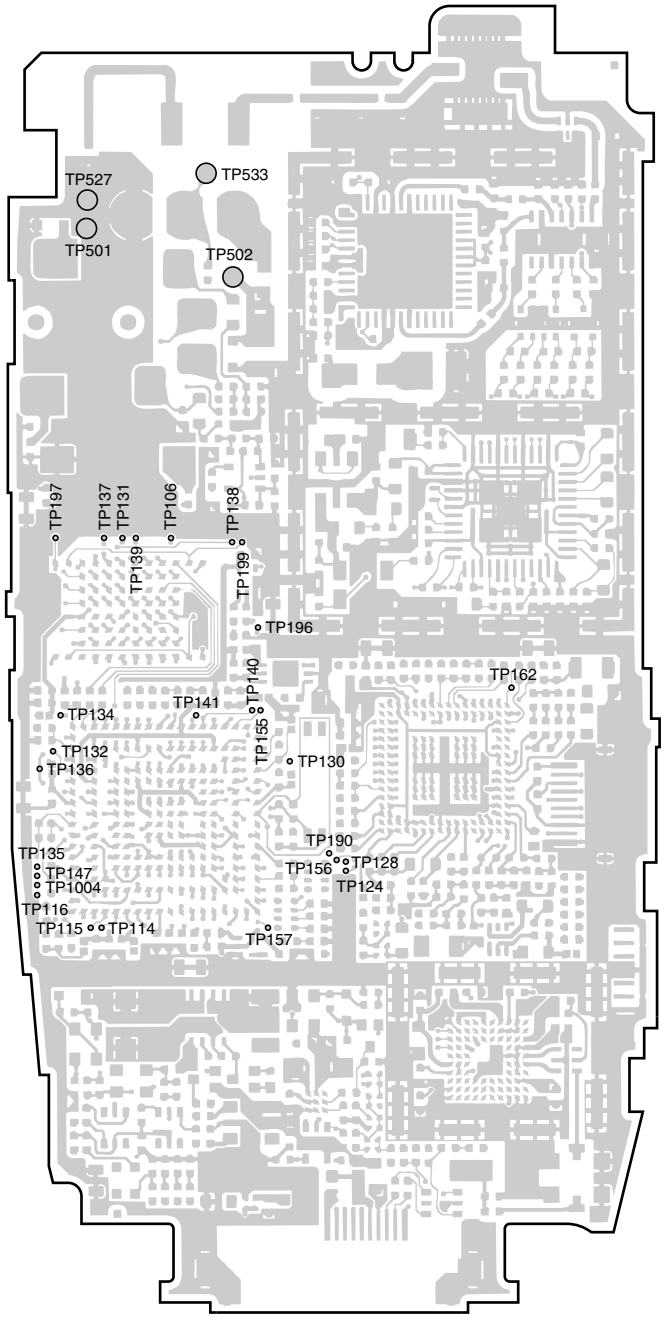
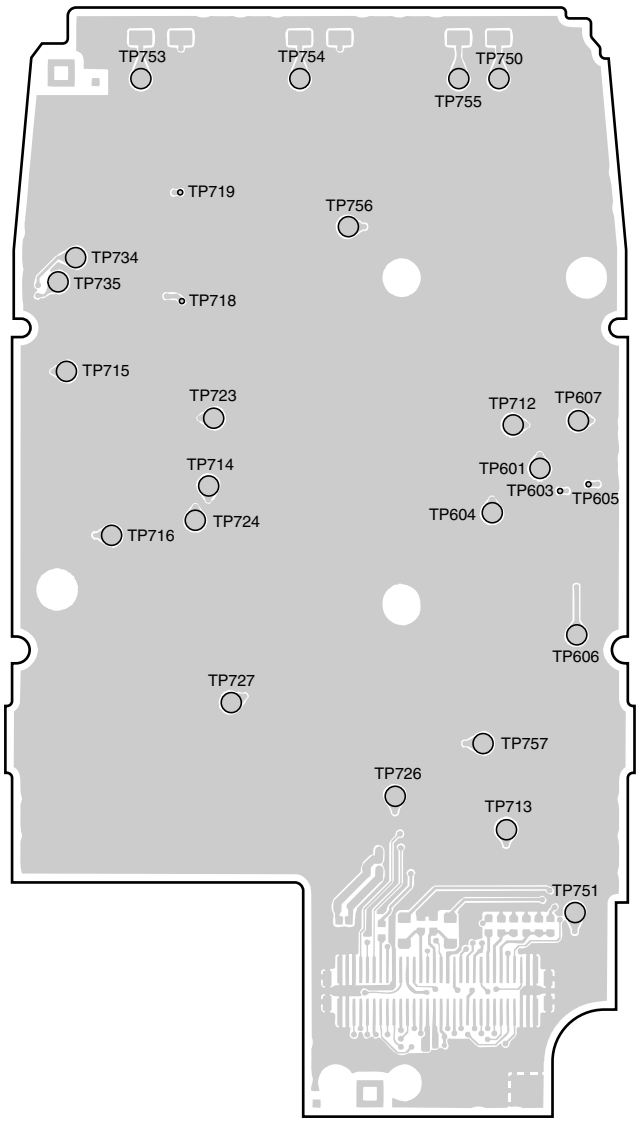


Figure 75 TEST POINT

TP No.	Signal name
TP501	DGND
TP502	VBAT
TP527	DGND
TP533	BATT_SENSE

DISPLAY PWB-B (FRONT SIDE)



TP No.	Signal name
TP601	VCAM (2.8V)
TP607	VCAMC (1.8V)
TP604	Terminal for CAMERA_IC adhesion check 1
TP606	Terminal for CAMERA_IC adhesion check 2
TP712	CAMCLK
TP713	13MHzCLK
TP714	VLCD (1.8V)
TP715	Terminal for LCDC adhesion check 1
TP716	Terminal for LCDC adhesion check 2
TP723	Terminal for LCDC adhesion check 3
TP724	Terminal for LCDC adhesion check 4
TP727	SP1
TP728	SP2
TP734	RECIVER_OUTN
TP735	RECIVER_OUTP
TP750	VOUT
TP751	P-LED_C
TP753	M-LED1_C
TP754	M-LED2_C
TP755	M-LED3_C
TP756	S-LED_C
TP757	LED

DISPLAY PWB-B (REAR SIDE)

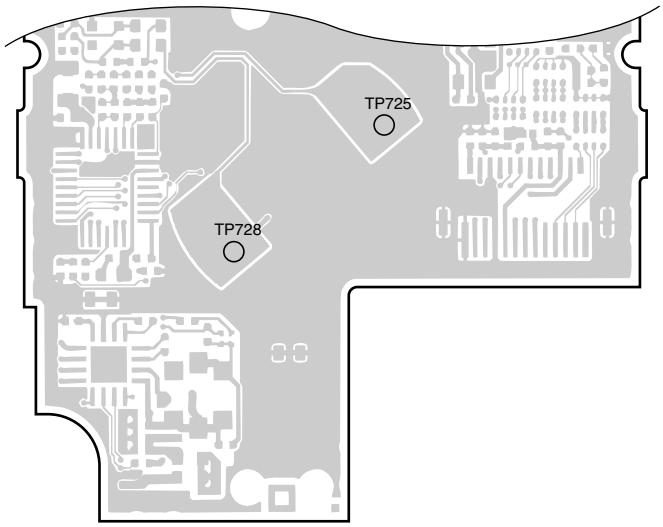
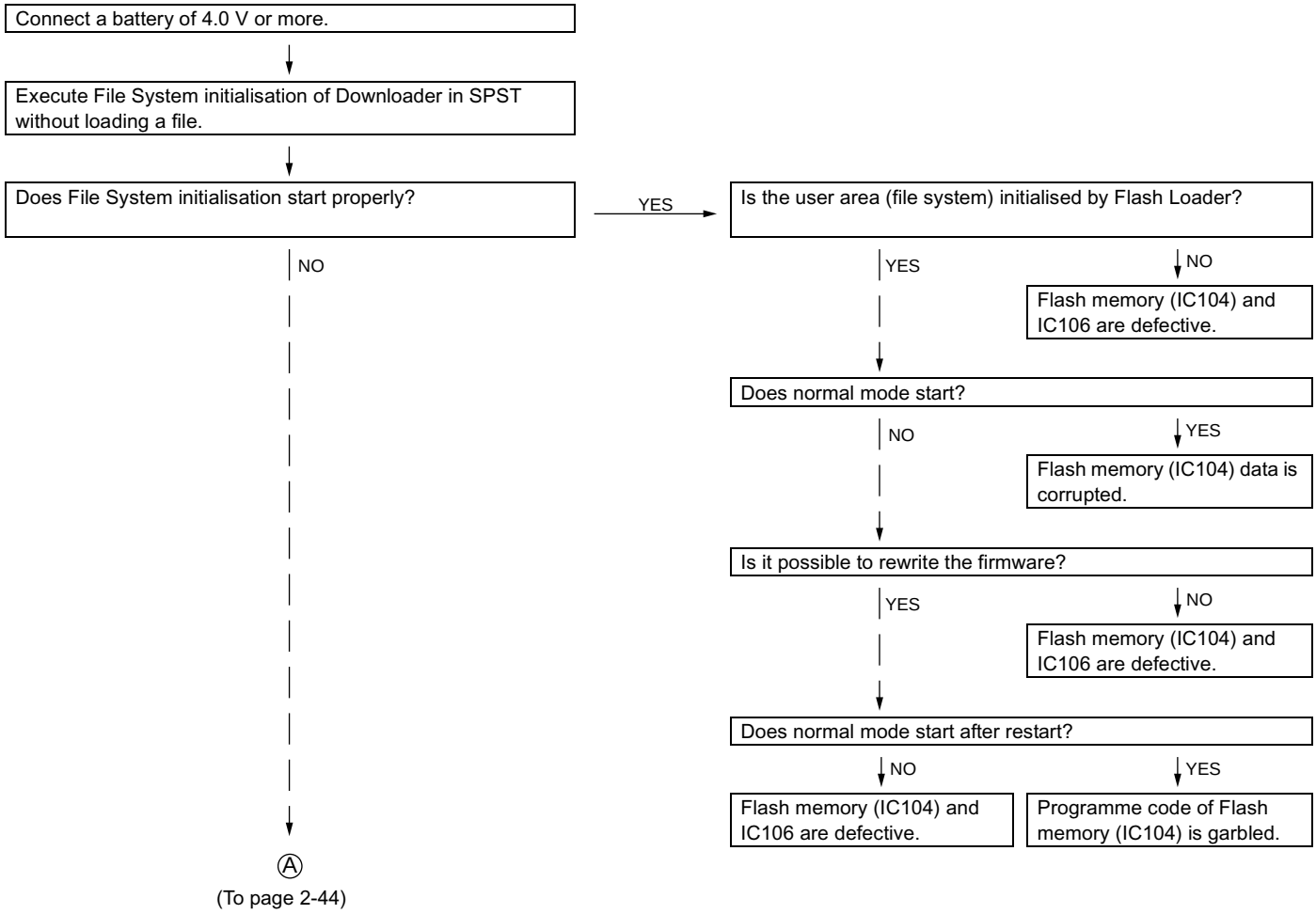


Figure 76 TEST POINT

[3] Troubleshooting

1. Power dose not turn on.



(To page 2-44)

(From page 2-43)

Ⓐ

Is 3.6 V or more applied to BATT terminal (TP520)?
NO → Battery terminals are defective, connector terminal is dirty, or soldering is improper.

YES

Is the voltage 1.2 V or lower on SENSE terminal (TP534)?
NO → The battery is defective or set improperly.

YES

Is there conduction through fuse (FS501)?
NO → Fuse (FS501) is blown.

YES

Is Flash memory (IC104) installed properly?
NO → Flash memory (IC104) is installed improperly.

YES

Are voltages of 3.00, 1.82, and 1.82 V applied to VINT (TP173), VCORE (TP171), and VRTC (TP167) respectively?
NO → IC103 is defective.

YES

Are voltages of 3.00, and 1.80 V applied to VINT (IC703 pin 1 to R717), and VLCD (TP714) respectively?
NO → CN103, CN701, and FPC are defective or mounted improperly.

YES

Is the waveform of signals from R169 connected to X101 (32 kHz) correct?
Are R167, R169, R174A, C176, X101, and IC106 good in appearance and mounted properly?
NO → X101 (32 kHz oscillator), R167, R169, R174A, and C176 are defective or mounted improperly.
Or oscillating circuit of IC106 is defective.

YES

Is the triangular wave of 13 MHz sent from C833?
YES → Ⓑ

NO

Is 2.9 V supplied from VTCXO (TP801)?
NO → Voltage Regulator (IC804) is defective.

YES

IC801 and peripheral circuits are defective.

Ⓑ

Is 13 MHz applied to 13MHzCLK (TP713)?
YES → Is “H“ supplied from CN704 pin 32?
NO → CN103, CN701, FPC, IC704, IC103, IC104, and IC106 are defective or mounted improperly.

YES → CN103, CN701, FPC, IC103, IC104, and IC106 are defective or mounted improperly.

NO

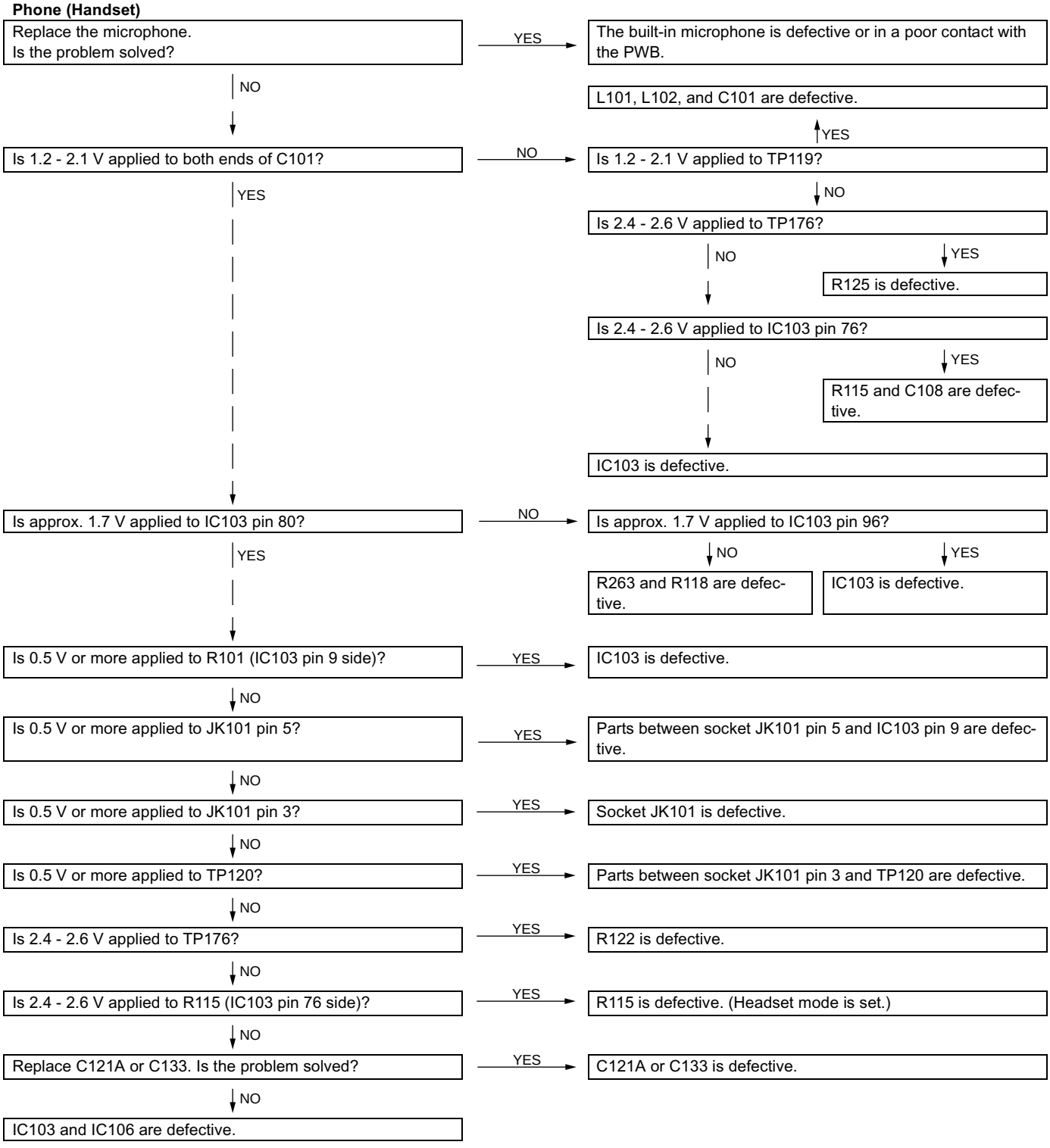
Is 13 MHz applied to R179?
YES → CN103, CN701, and FPC are defective or mounted improperly.

NO

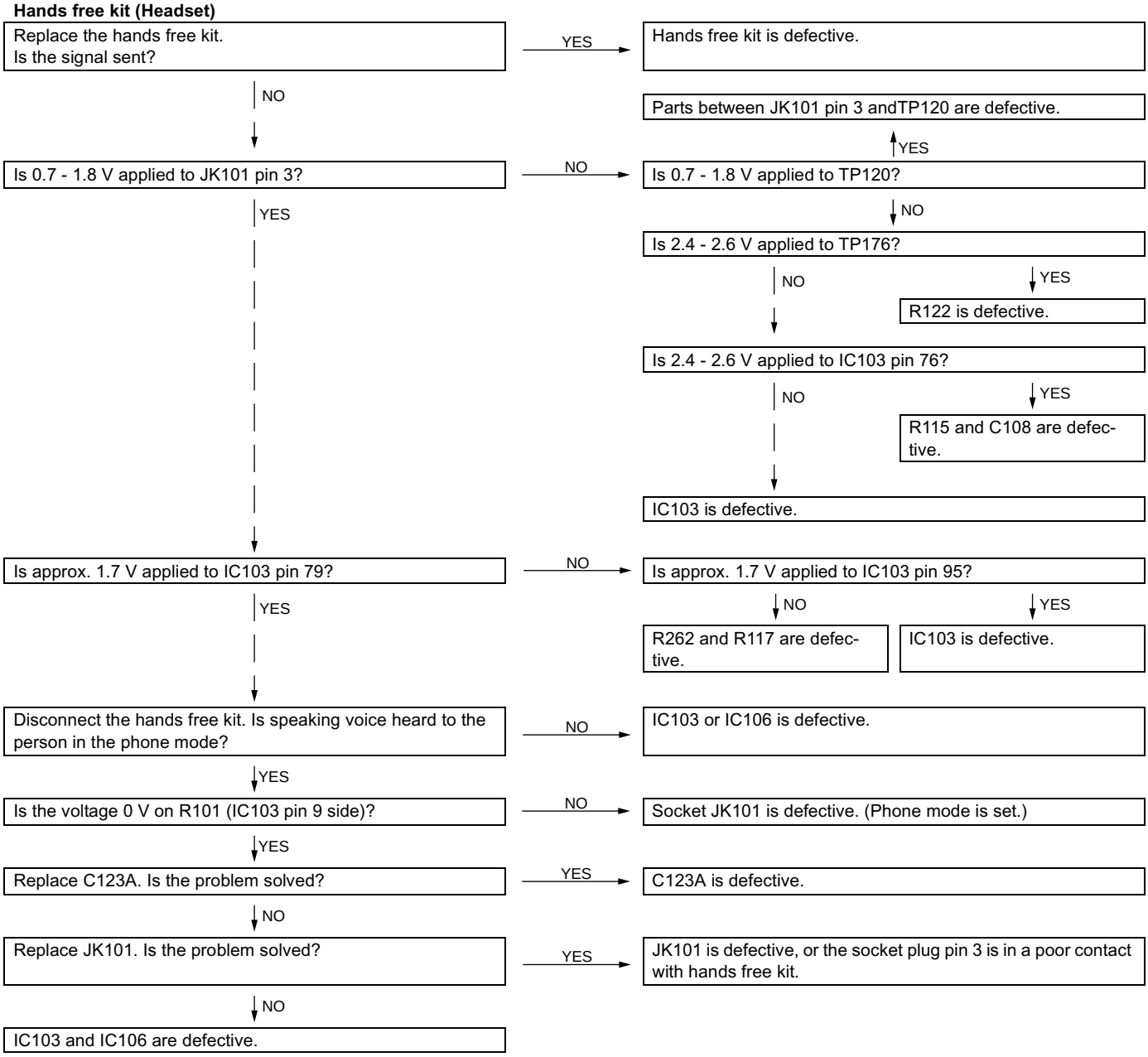
IC108 and IC106 are defective or mounted improperly.

2. Voice transmission/recording is impossible.

Phone (Handset)



Hands free kit (Headset)



3. No voice is heard from the earpiece.

Phone (Handset)

Are signals sent to TP734 and TP735?
- YES → Internal receiver is defective (lead wire breakage, etc.). Or the connector is loose or in poor contact.
- NO ↓

Are signals sent to R233 (both ends) and R234 (both ends).
- YES → Relay FPC, CN101, or CN701 are defective. Or relay FPC is in a poor contact with CN101 and CN701.
- NO ↓

Is the signal sent to both ends of C147?
- YES → R233, R234, L107, L108, C106, and C143 are defective or soldered improperly.
- NO ↓

Is 0.5 V or more applied to R101 (IC103 pin 9 side)?
- YES → IC103 is defective.
- NO ↓

Is 0.5 V or more applied to JK101 pin 5?
- YES → Parts between socket JK101 pin 5 and IC103 pin 9 are defective.
- NO ↓

Is 0.5 V or more applied to JK101 pin 3?
- YES → Socket JK101 is defective.
- NO ↓

Is 0.5 V or more applied to TP120?
- YES → Parts between socket JK101 pin 3 and TP120 are defective.
- NO ↓

Is 2.4 - 2.6 V applied to TP176?
- YES → R122 is defective.
- NO ↓

Is 2.4 - 2.6 V applied to R115 (IC103 pin 76 side)?
- YES → R115 is defective. (Hands free kit mode is set.)
- NO ↓

IC103 is defective.

Hands free kit (Headset)

Replace the hands free kit. Is sound produced?
- YES → The hands free kit is defective.
- NO ↓

Is signal sent to JK101 pin 4?
- YES → Socket JK101 is defective, or the hands free kit is in a poor contact with the socket plug.
- NO ↓

Is signal sent to TP121?
- YES → L103 is defective.
- NO ↓

Is signal sent to both ends of C121?
- YES → V102, C103, C105, and C107 are defective.
- NO ↓

Is signal sent to L124 (IC103 pin 60 side)?
- YES → L124 is defective.
- NO ↓

Disconnect the hands free kit. Is voice heard in phone mode?
- NO → IC103 or IC106 is defective.
- YES ↓

Is the voltage 0 V on R101 (IC103 pin 9 side)?
- YES → IC103 is defective.
- NO ↓

Socket JK101 is defective.

4. Battery does not charge.

Set a battery of 4.0 - 4.2 V. Click the “Performance check adjustment” button on SPST.

* For settings and connections for SPST, refer to the “ADJUSTMENTS, PERFORMANCE CHECK, AND FIRMWARE UPGRADE” on page 2-1.

↓

Click the “Temperature adjustment” button. Is the value of “temp” normal? (Measurement tolerance: ± 5 deg.)
- NO → TH101 and IC103 are defective.
- YES ↓

Click the “Battery voltage check” button. Is the voltage 4.0 - 4.2 V?
- NO → IC103 is defective.
- YES ↓

Set a battery of 3.7 - 3.9 V and start in normal mode.

↓

Connect the AC charger to the external connector. Is the voltage applied to TP503 higher than that of battery?
- NO → Q102, and IC107 are defective.
- YES ↓

When the AC charger is inserted to the external connector, is IC107 pin 1 at “L”?
- NO → IC107 is defective.
- YES ↓

Connect the AC charger to the external connector. After approx. 15 seconds, do the voltages on TP159 and TP502, and TP534 increase by more than 0.05 V?
- NO → Q102, IC107, IC102, Q101, IC103, D101, and D102 are defective.
- YES ↓

The battery is defective, or the battery cycle is shortened.

5. Vibrator does not work.

Are vibrator terminals in contact with the land? Are terminals and the land clean?
- NO → Vibrator is deformed and defective. (When vibrator terminals and the land are dirty, clean or replace them.)
- YES ↓

Hereafter check with vibrator working.

Is rectangular wave of 3 V sent to between vibrator terminals in sync with the vibration pattern?
- YES → Vibrator is defective.
- NO ↓

Is rectangular wave of 3 V sent to between CN103 pin 1 and pin 2 in sync with the vibration pattern?
- YES → SIM FPC is defective, and CN 103 is inserted improperly.
- NO ↓

Is VBAT voltage applied to IC108 pin 4?
- NO → IC108 is soldered improperly.
- YES ↓

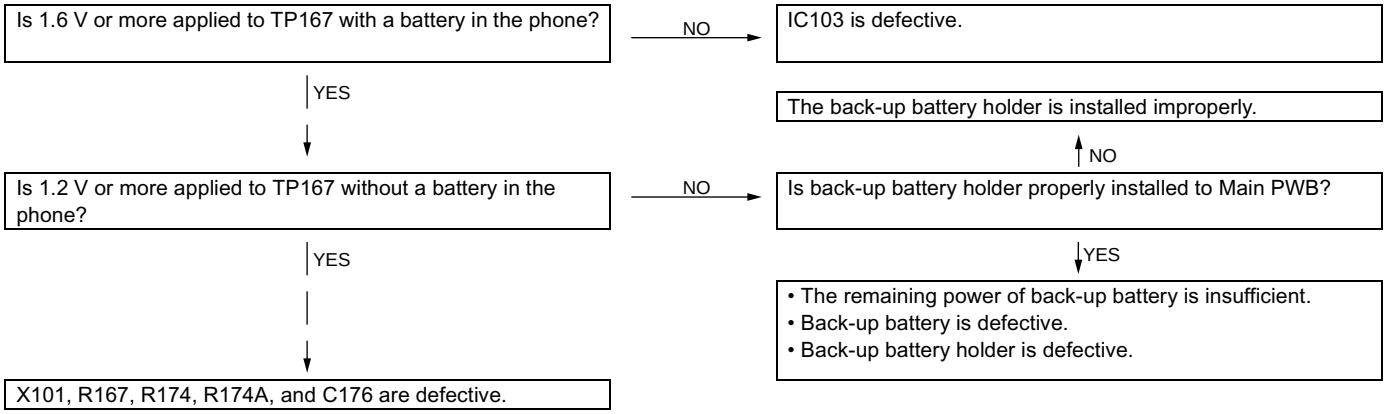
Is signal synchronised with the vibration pattern sent to IC108 pin 3?
- YES → IC108 is defective.
- NO ↓

Is signal synchronised with the vibration pattern sent from IC604 pin 19?
- YES → IC604 is soldered improperly. CN701 and CN101 are defective or mounted improperly. And FPC is defective.
- NO ↓

Do ring tones sound?
- NO → Go to the section “Speaker does not work.” (see page 2-49).
- YES ↓

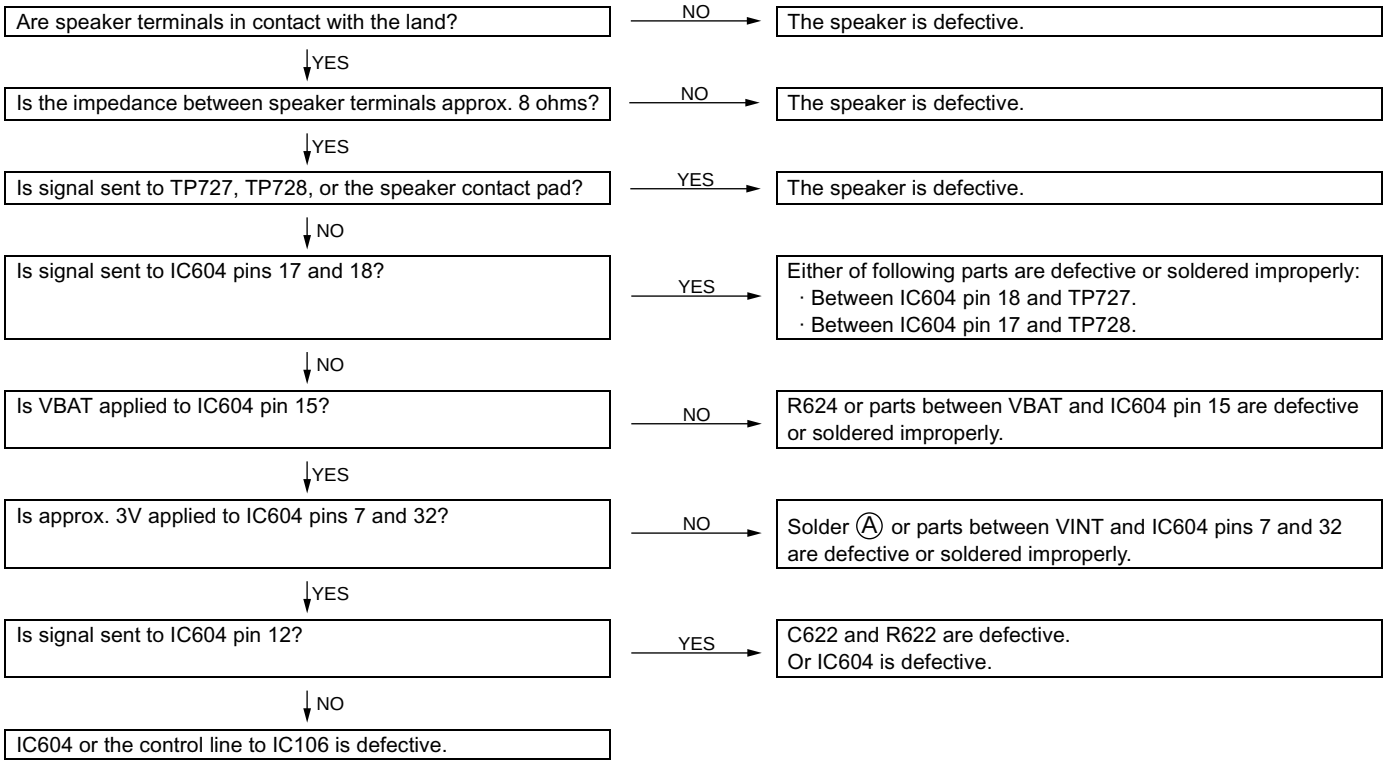
IC604 is defective.

6. Clock Settings are reset.



7. Speaker does not work.

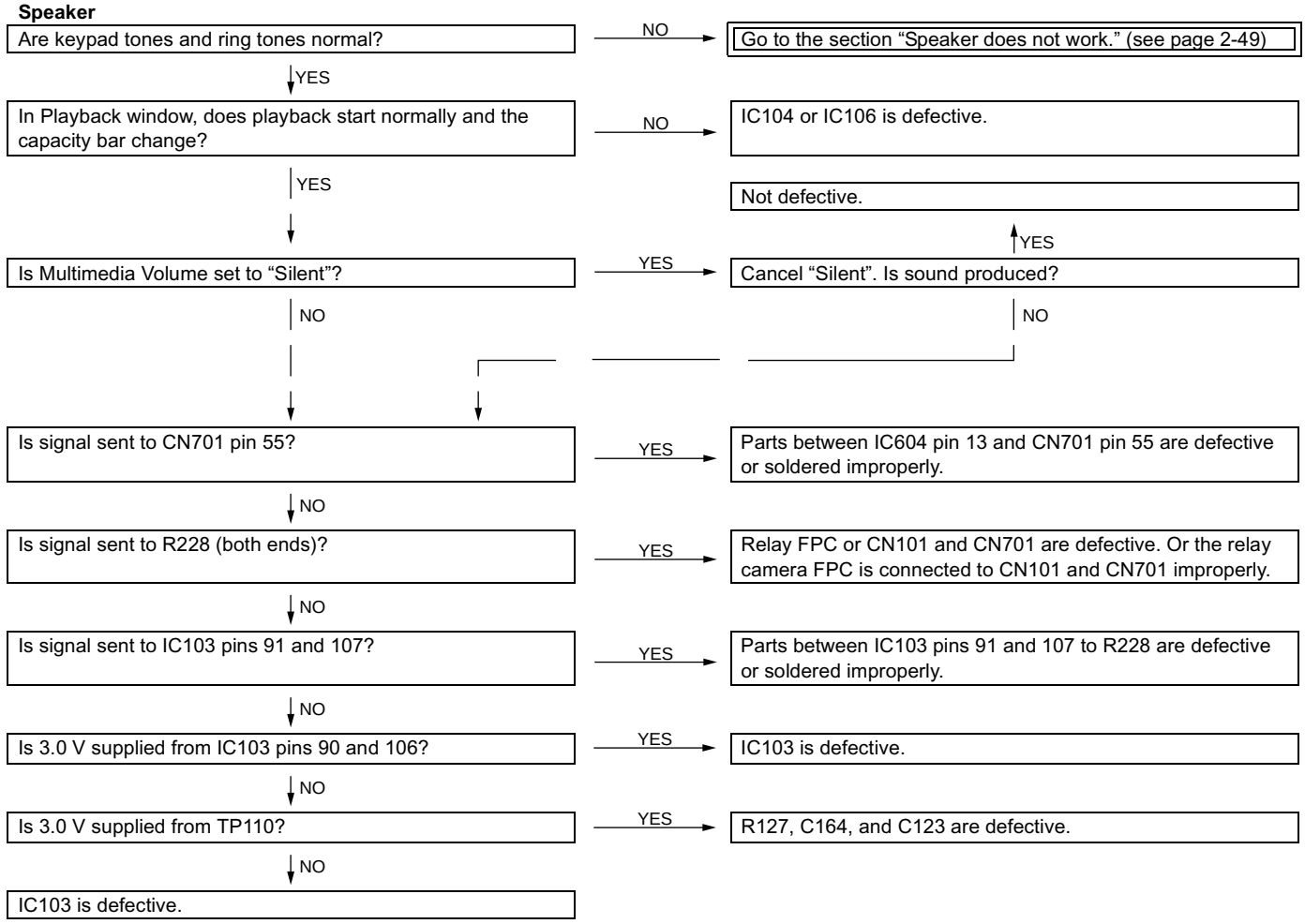
* When ring tones sound, but keypad tones do not, “Keypad Tones” is set to Off.
* When keypad tones and Voice Recorder playback sound are available but ring tones are not, Ringer Volume is set to “Silent”.
* Ring tones sound according to “Ringer Volume” settings.



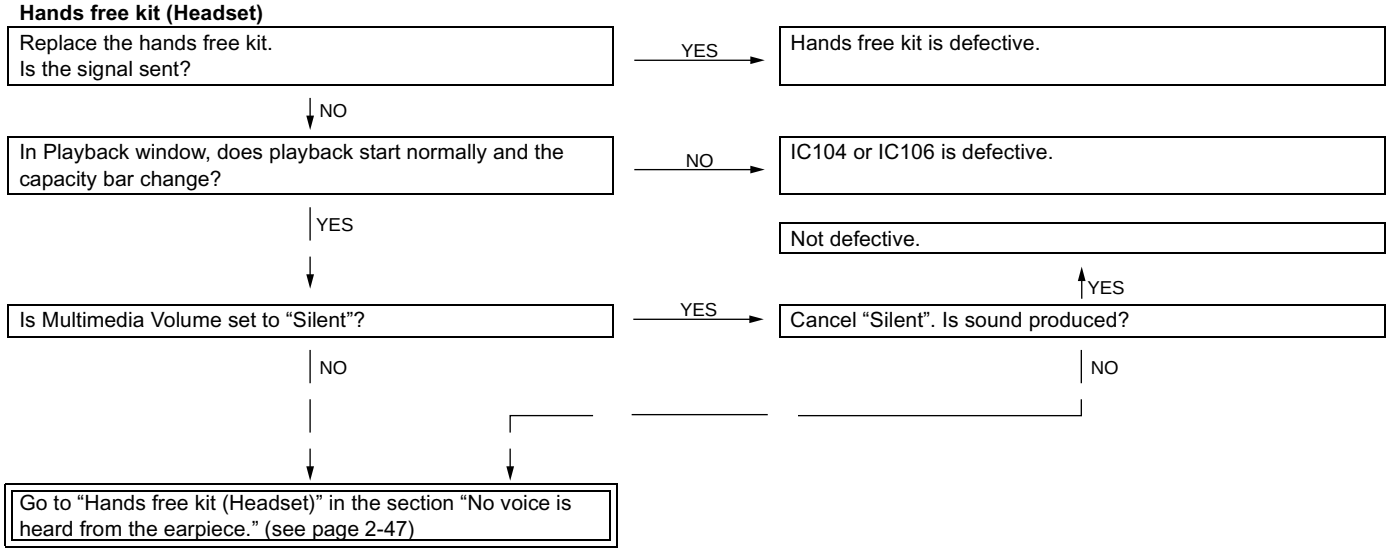
8. Video/Voice Recorder playback is impossible.

* Playback volume of video and Voice Recorder depends on the setting in "Multimedia Volume".

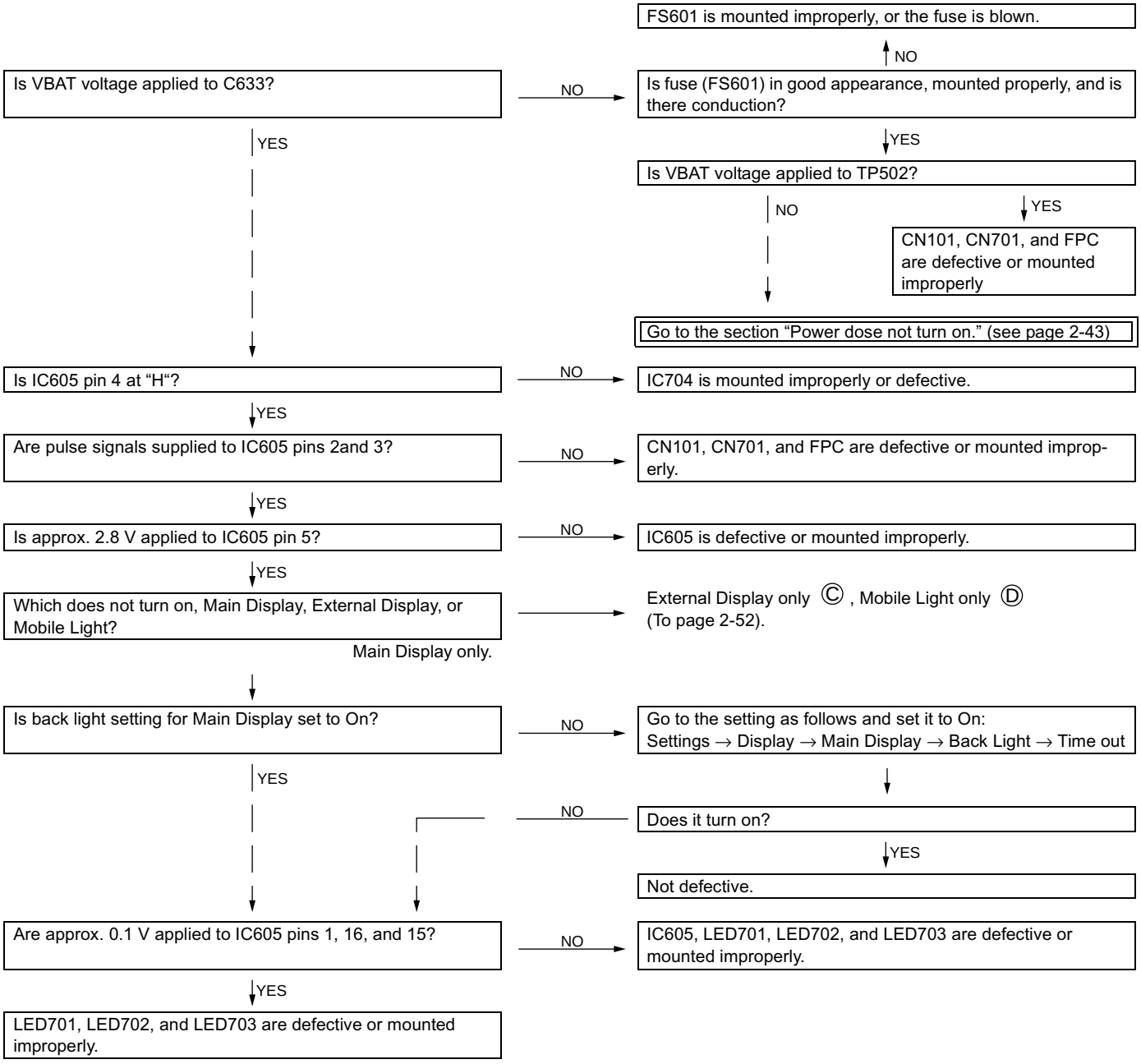
Speaker



Hands free kit (Headset)



9. Back Light/Mobile Light does not turn on.



(From page 2-51)

Ⓒ

Is back light setting for External Display set to On?

NO → Go to the setting as follows and set it to On:
Settings → Display → External Display → Back Light

YES

NO ← Does it turn on?

YES

Not defective.

Is approx. 0.1 V applied to IC605 pins 14?

NO → IC605 and LED704 are defective or mounted improperly.

YES

LED704 is mounted improperly or defective.

(From page 2-51)

Ⓓ

Does Mobile Light turn on when the side key is pressed and held?

YES → Not defective.

NO

IC605, LED751, and Q751 are defective or mounted improperly.

NO

Is R763 at 3.00 V?

YES → Is approx. 0.1 V applied to IC605 pin 13?

NO

YES

LED704 is defective or mounted improperly.

Do ring tones sound?

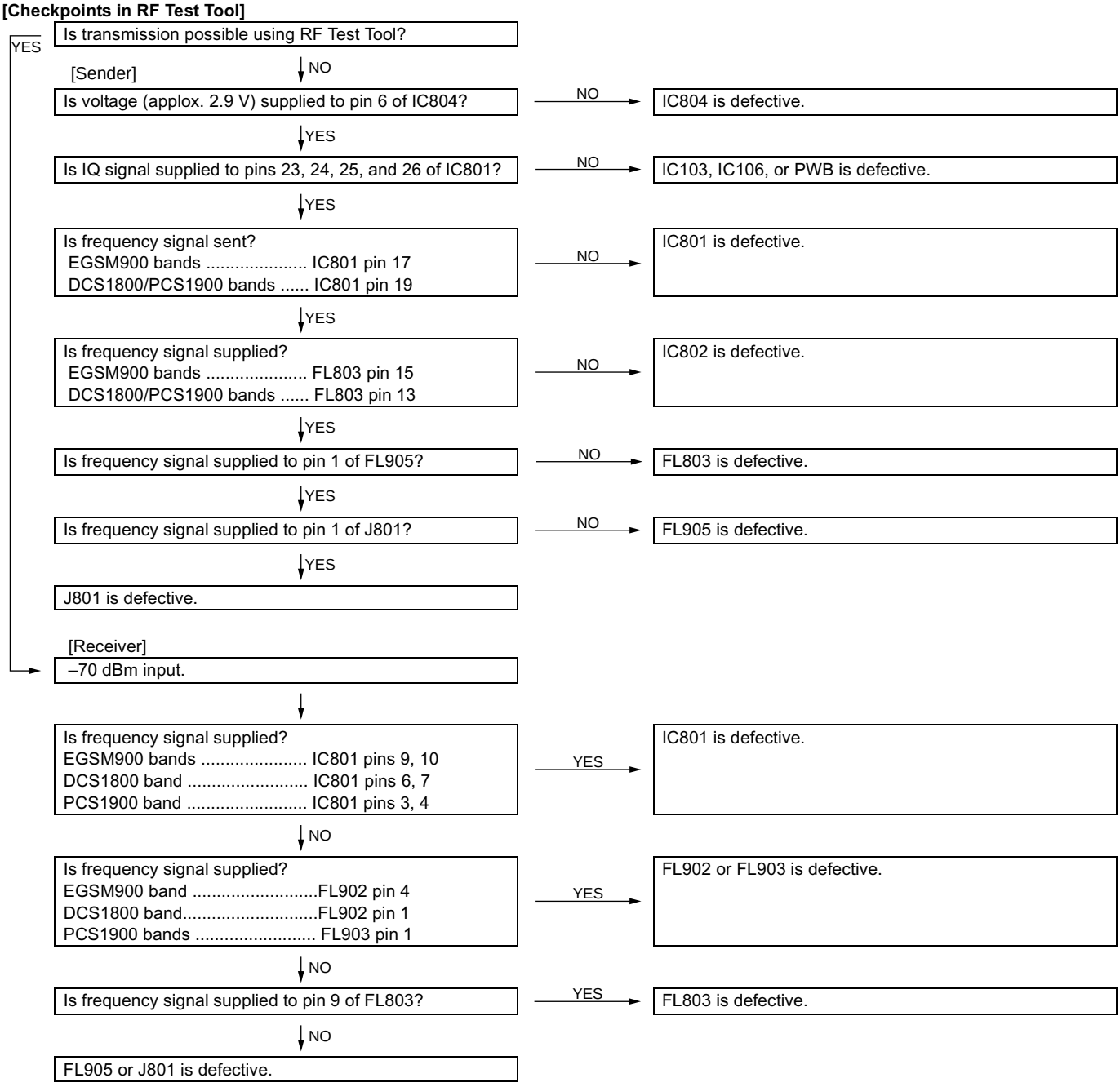
NO → Go to the section “Speaker does not work.” (see page 2-49)

NO

IC604 is defective.

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

[Checkpoints in RF Test Tool]



11. The display does not appear on Main Display.

Is Main Display unit fully inserted to CN704?
NO → Improperly inserted to the connector.
YES ↓

Clean the contact point of CN704 and insert the unit again. Does the display appear?
YES → The contact point of the connector is dirty.
NO ↓

Replace Main Display. Does the display appear?
YES → Main Display unit is defective.
NO ↓

Is 3.6 or more voltage applied to VBAT2 terminal (FS601) and VBAT1 terminal (IC601 pin 1)?
NO → Go to the section “Power is not turned on.” (see page 2-43)
YES ↓

Is 2.8 ± 0.1 V applied to TP170?
NO → Go to the section “Power is not turned on.” (see page 2-43)
YES ↓

Is 3.0 ± 0.1 V or more applied to TP173?
NO → Go to the section “Power is not turned on.” (see page 2-43)
YES ↓

Regulator IC703 is defective.
↑ NO

Is 1.8 ± 0.1 V or more applied to TP714?
NO → Is 3.0 ± 0.1 V applied to IC703 pin 1? Is C728 good in appearance and mounted properly?
YES ↓ (from Is 3.0 ± 0.1 V applied to IC703 pin 1?)

YES ↓

Are CN701 and CN101 good in appearance and mounted properly?
YES → (to Is 1.8 ± 0.1 V or more applied to TP714?)
NO ↓

CN701 and CN101 are defective or mounted improperly. And FPC is defective.

Is 13 MHz applied to clock TP713?
NO → Go to the section “Power is not turned on.” (see page 2-43)
YES ↓

Is 3.0 ± 0.1 V supplied from LCD_RST (L749)? Are L749, C736, R771, R773, CN701, and CN771 good in appearance and mounted properly?
NO → L749, C736, R771, R773, CN701, and CN771 are defective or mounted improperly.
YES ↓

Is 3.0 V ± 0.1 V applied to CN704 pins 29, 30, and 31? Is C730 good in appearance and mounted properly?
NO → CN704 and C730 are defective or mounted improperly.
YES ↓

Is 3.0 ± 0.1 V applied to the LCD reset (CN704 pin 32 and C720)? Is C720 good in appearance and mounted properly?
NO → Display controller IC (IC704) and C720 are defective or mounted improperly.
YES ↓

Are pulse signals sent to pins 26, 27 and 28 of CN704? Are R719, R720, and CN771 good in appearance and mounted properly?
NO → Display controller IC (IC704), R719, R720, and CN771 are defective or mounted improperly.
YES ↓

Is the signal of approx. 6.5 MHz present on CN704 pin 21? Are R711 and C717 good in appearance and mounted properly?
NO → Display controller IC (IC704), R711, and C717 are defective or mounted improperly.
YES ↓

Ⓔ

(To page 2-55)

(From page 2-54)

Ⓔ

Is the signal of approx. 70 Hz present on CN704 pin 23?

NO → Display controller IC (IC704) is defective or mounted improperly.

YES

Main Display unit is defective, or connector CN704 is mounted improperly.

12. The display does not appear on External Display.

Does the display appear on Main Display?

NO → Go to the section “Power is not turned on.” (see page 2-43)

YES

Is External Display unit fully inserted to CN771?

NO → Improperly inserted to the connector.

YES

Clean the contact point of the connector CN771 and insert the unit again. Does the display appear?

YES → The contact point of the connector is dirty.

NO

Is 3 ± 0.1 V applied to CN771 pin 6?
Are D771 and C771 good in appearance and mounted properly?

NO → D771 and C771 are defective or mounted improperly.

YES

Are CN701 and CN101 good in appearance and mounted properly?

NO → CN701 and CN101 are defective or mounted improperly.
And FPC is defective.

YES

Is 3.0 ± 0.1 V supplied from LCD_RST (CN771 pin 5, R771, and R773)?

NO → IC106, R771, and R773 are defective or mounted improperly.

YES

Are R727, R728, R720, and R719 good in appearance and mounted properly?

NO → R727, R728, R720, and R719 are defective or mounted improperly.

YES

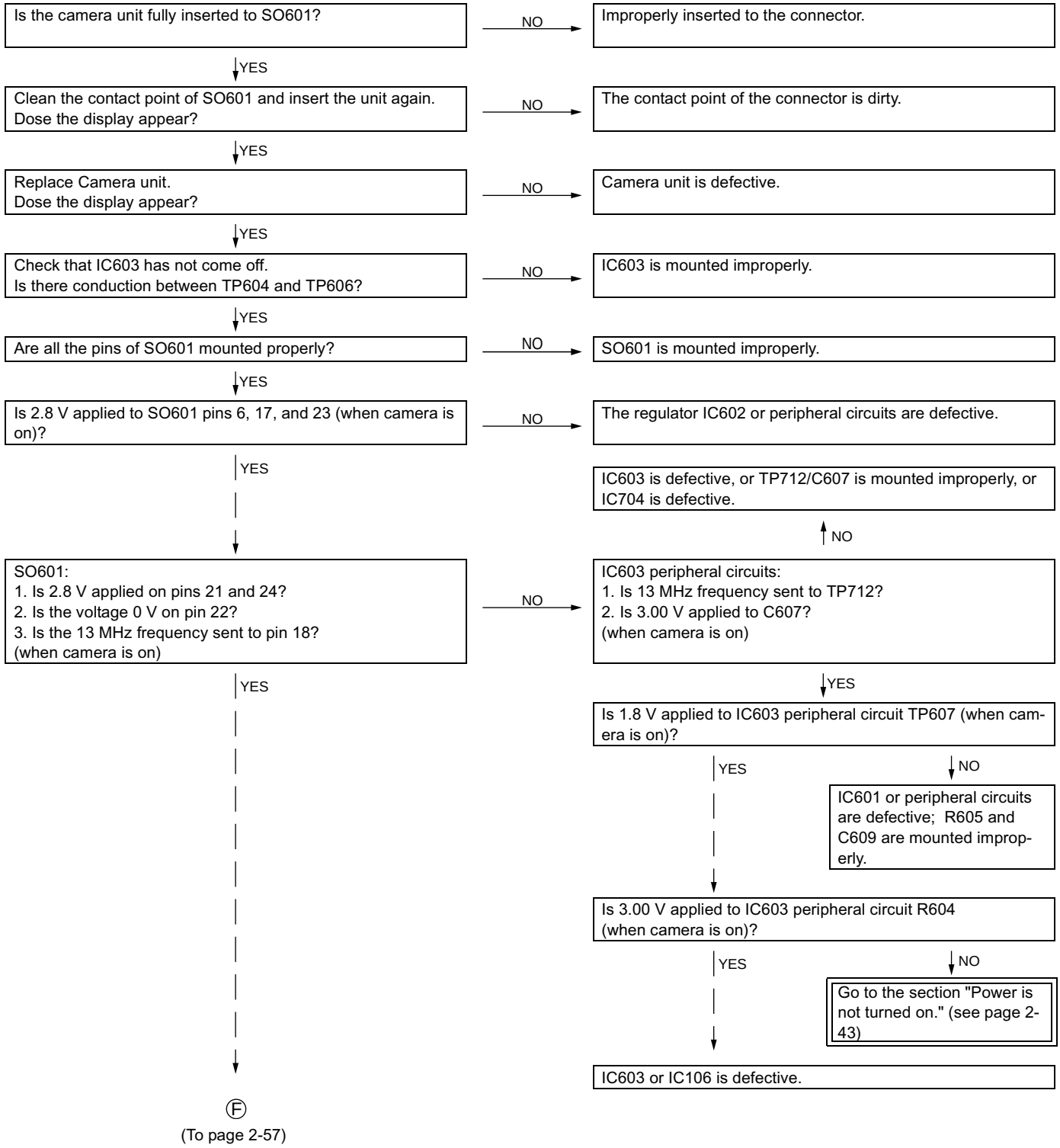
Are pulse signals sent to R727, R728, R720, and R719?

NO → IC704, R727, R728, R720, and R719 are defective or mounted improperly.

YES

External Display unit is defective.

13. Pictures cannot be taken.



(To page 2-57)

(From page 2-56)

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SO601:
1. Is 2.8 V applied on pins 14 and 16 (when camera is on)?
2. Are voltages of pins 14 and 16 within the range 0 to 2.8 V (when camera being activated)?

NO → Is 2.8 V applied to IC603 peripheral circuit R606 (when camera is on)?

NO → IC602, R606, and C610 are mounted improperly or defective.

YES → IC603 is defective.

YES

SO601:
Are voltages of the following pins within the range 0 to 2.8 V (when camera is on)?
1. pins 2 - 5, 7 - 8, 10, and 12
2. pins 11, 13, and 15

NO → R611, R612, R613, and IC603 are mounted improperly.

YES

IC603 is defective.

14. SIM card is not recognised.

Replace the SIM card. Is it recognised?

YES → SIM card is defective or not the one specified.

NO

Hereafter, check the signal waveform of each SIM when the power is turned on without a SIM card inserted.
(SIM signal waveform appears for approx. 70 ms after the power is turned on.)

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 → C159 is defective.

Is 2.85 V applied to CN103 pin 6?

NO → Is C159 good in appearance and mounted properly?

NO

YES → IC103 is defective.

YES → R170 is defective.

Is 2.85 V applied to CN103 pin 5?

NO → Is R170 good in appearance and mounted properly?

NO

YES → IC106 is defective.

YES → R169 is defective.

Is periodic pulse wave sent from CN103 pin 4?

NO → Is R169 good in appearance and mounted properly?

NO

YES → IC106 is defective.

YES → R168 is defective.

Is 2.85 V supplied from CN103 pin 7?

NO → Is R168 good in appearance and mounted properly?

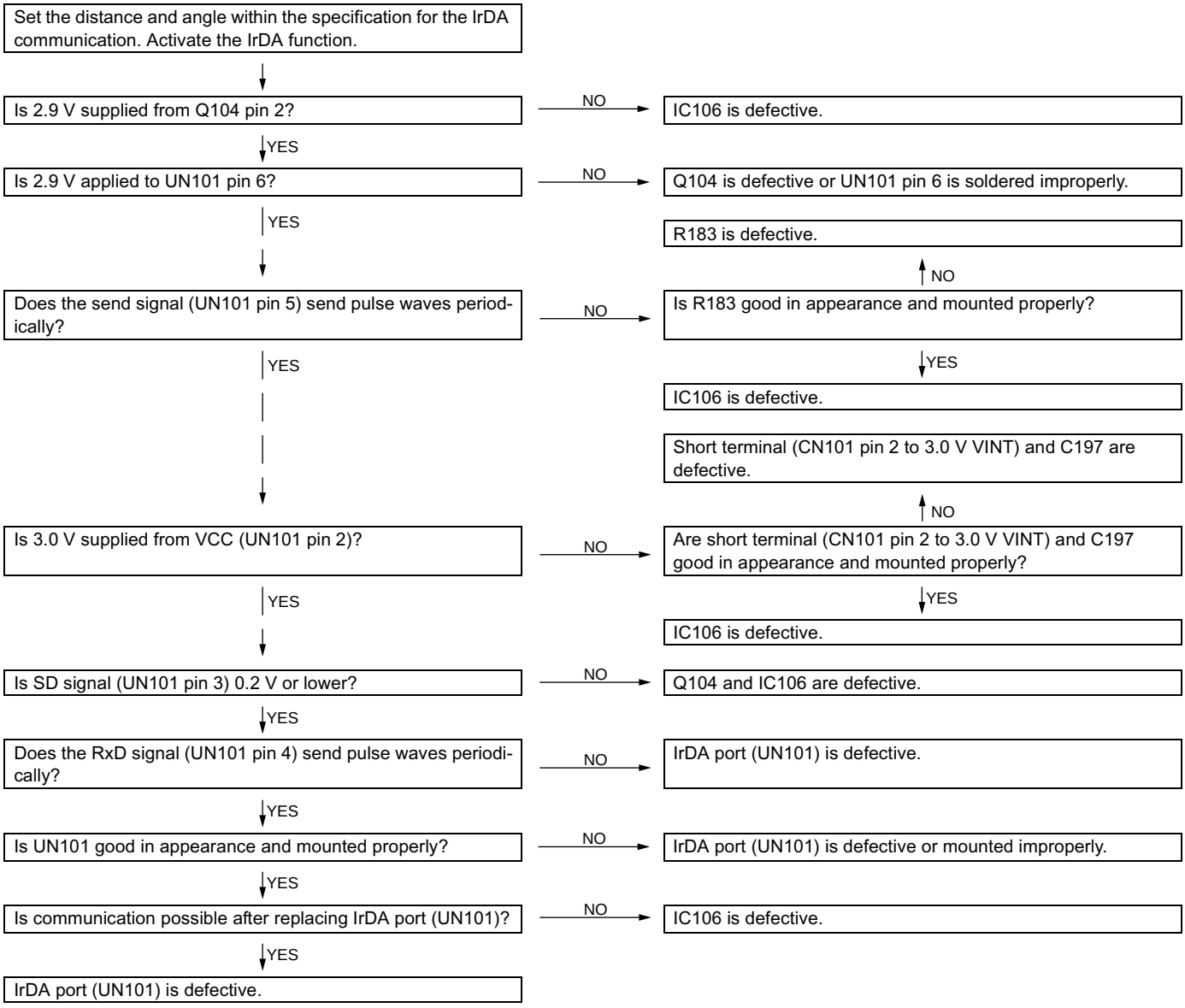
NO

YES → IC106 is defective.

YES

SIM FPC and SIM card connector are defective.

15. IrDA (Infrared) communication is impossible.



16. Bluetooth communication is impossible.

A connection cannot be established via Bluetooth.

↓

Is 3 V supplied from IC403 pin 3? — NO → IC403 or C402, C409 is defective.

↓YES

Is IC402 pin 34 (RESET signal) always at “H”? — NO → Parts (between IC106 pin 100 and IC402 pin 34) are defective.

↓YES

Are pulse signals sent to IC402 pin 74 (BT_TXD signal)? — NO → IC402 is defective.

↓YES

IC106 is defective.

Phone can be connected to Bluetooth headset, but sound is not heard.

↓

Is waveform of PCMCLK signal (approx. 256 kHz clock) sent from R188? — NO → IC106 is defective.

↓YES

Are pulse signals sent to BT_PCMOUT signal side of R199? — NO → IC402 is defective.

↓YES

IC106 or IC402 is defective.

17. USB connection is impossible.

Connect a properly working phone to the PC/USB cable that is not recognised. Is it recognised? — NO → Reinstall the driver and replace the USB cable to connect the phone.

↓YES

Connect to a PC with the USB cable.

↓

Is 5 V or more applied to TP515? — NO → CN502 is connected improperly.

↓YES

Is Q503 pin 3 at “L”? — NO → Q503 is defective.

↓YES

Is 3 V or more applied to TP507? — NO → IC501 or IC106 is defective.

↓YES

Is 3 V or more applied to TP523? — NO → Q504, Q506, and R512 are defective.

↓YES

IC106 is defective.

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 (Key)/ Front Cabinet (Key) • Back Cabinet (Display)/ Front Cabinet (Display)	16.6 ± 2 N • cm (1.7 ± 0.2 Kgf • cm)

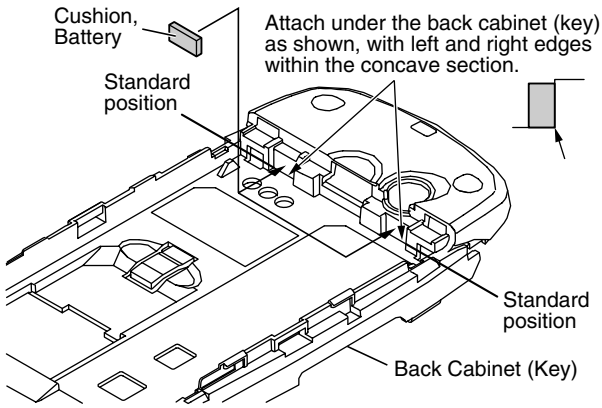
The reference value is measured when an electric screwdriver (HIOS CL4000) is used.

- **SOLDERING SPECIFICATION**

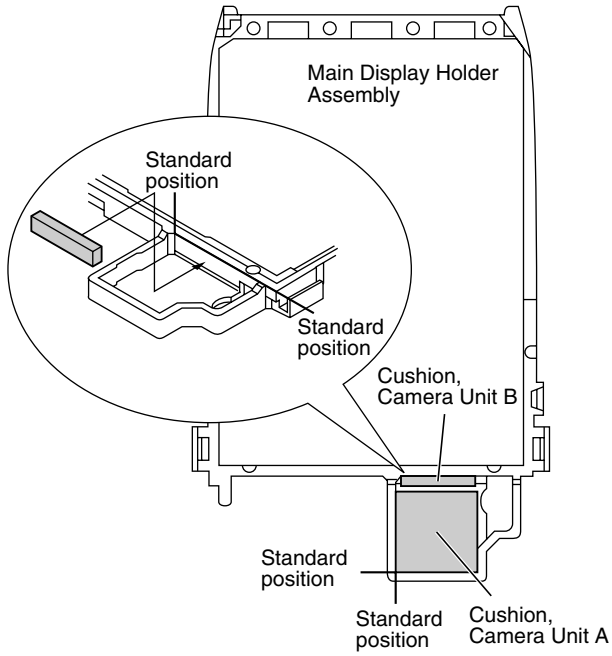
Soldering iron must be set to 380° C for 5 seconds.

- **STANDARD POSITION OF ATTACHMENT**

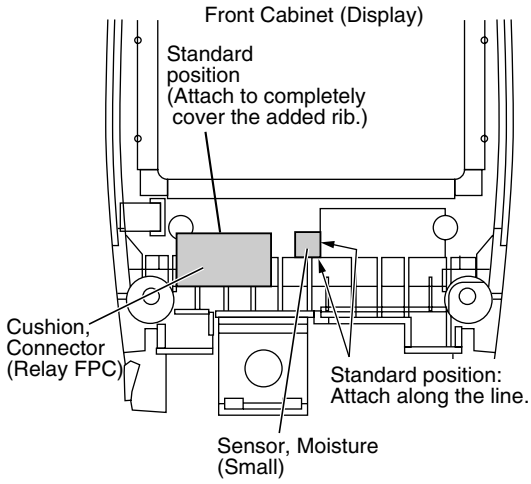
When replacing the following labels (marked with ▭), be sure to place new ones on the specified positions.



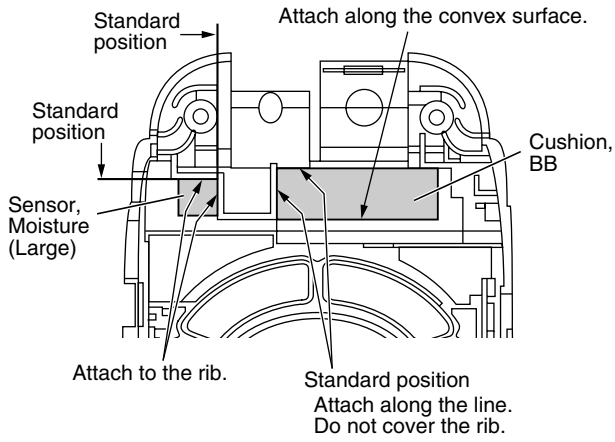
[Cushion, Battery]



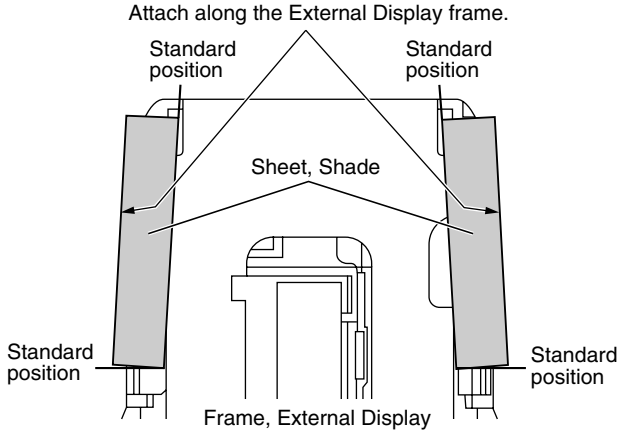
[Cushion, Camera Unit A/Cushion, Camera Unit B]



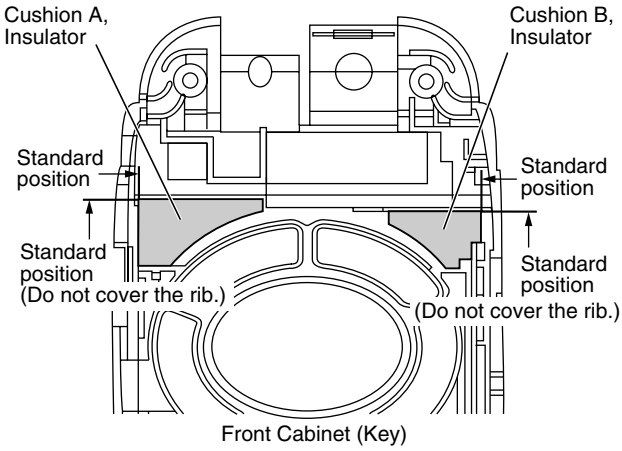
[Cushion, Connector (Relay FPC)/Sensor, Moistue (Small)]



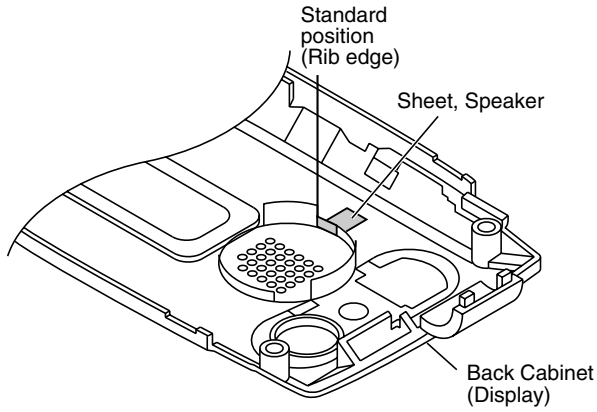
[Sensor, Moistue (Large)/Cushion, BB]



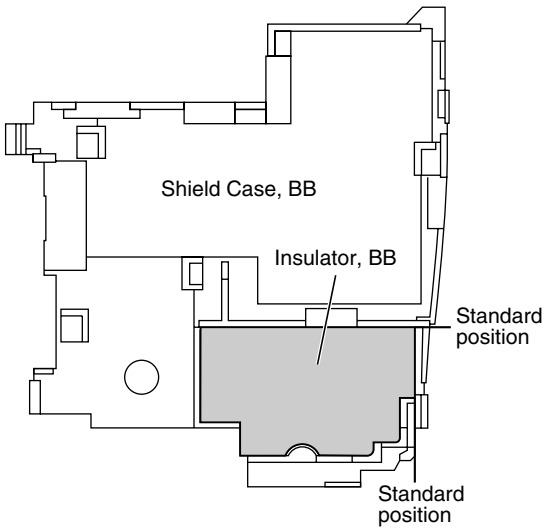
[Sheet, Shade]



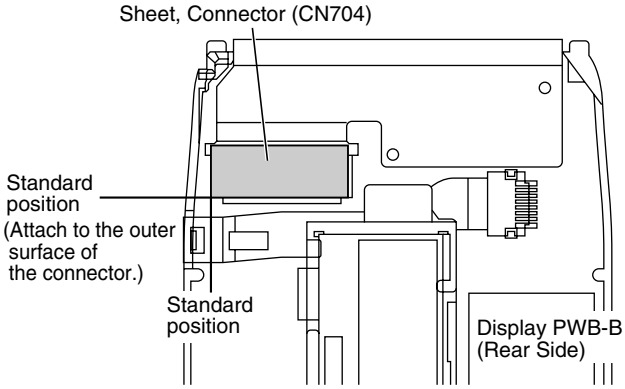
[Cushion A, Insulator/Cushion B, Insulator]



[Sheet, Speaker]



[Insulator, BB]



[Sheet, Connector (CN704)]

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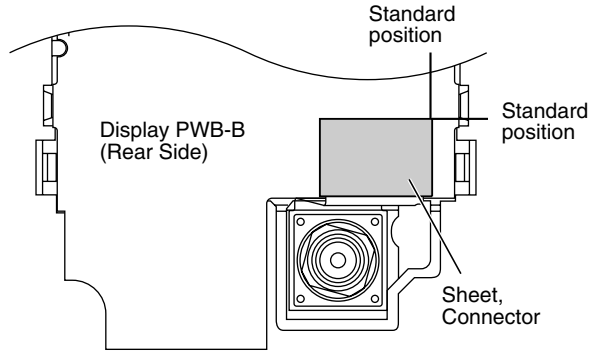
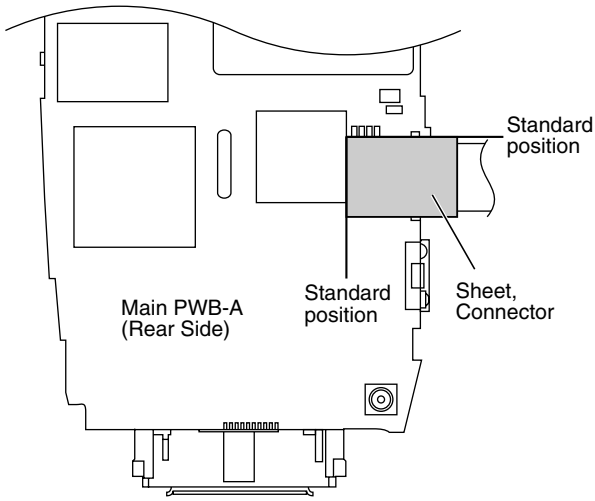
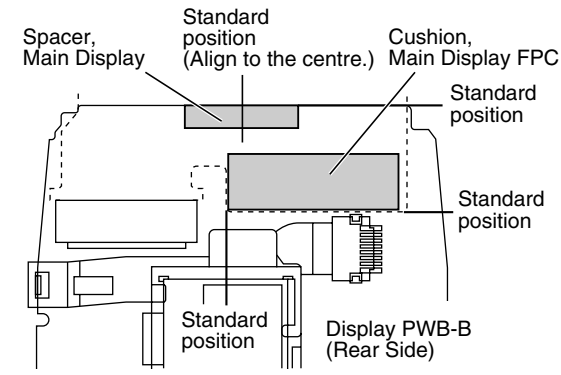
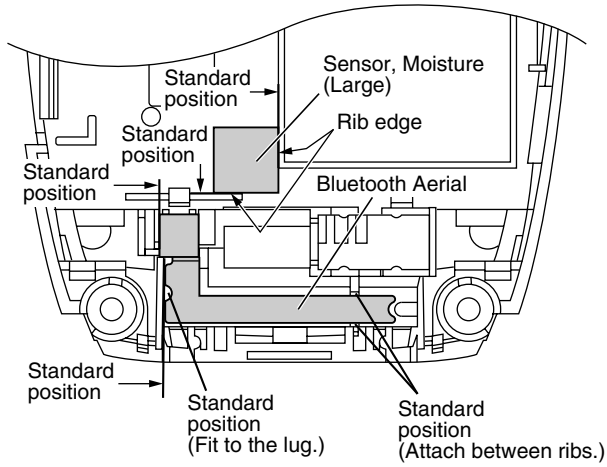




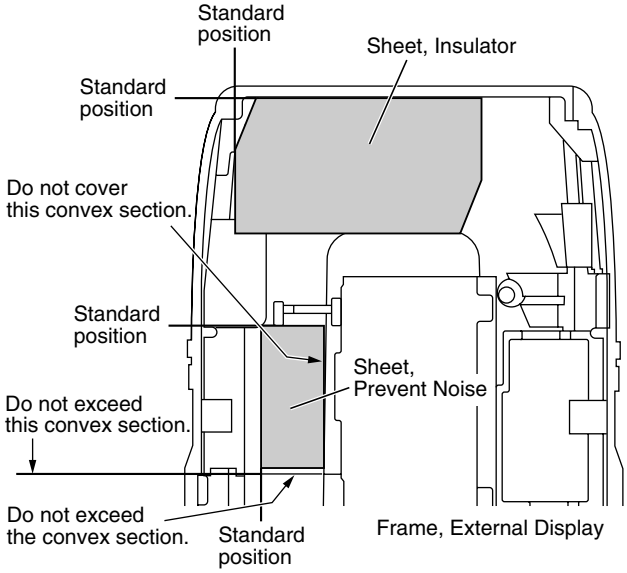
[Sheet, Connector]



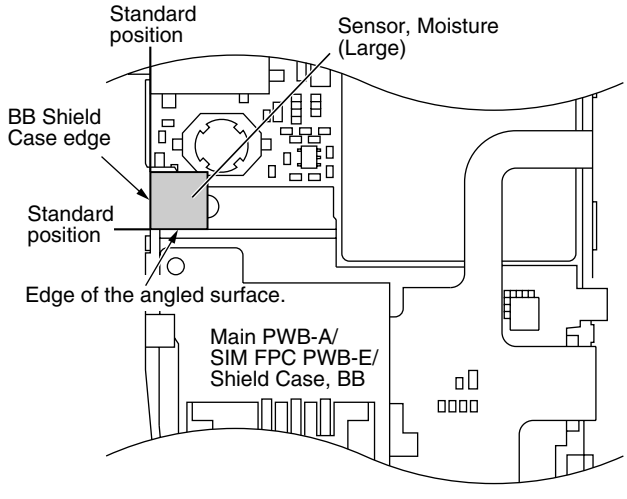
[Spacer, Main Display/Cushion, Main Display FPC]



[Sensor, Moistue (Large)/Bluetooth Aerial]



[Sheet, Insulator/Sheet, Prevent Noise]



[Sensor, Moistue (Large)]

[2] Disassembly and reassembly

- To reassemble, reverse the procedure.

STEP	REMOVAL	PROCEDURE		FIGURE
1	Side Cover C, D	1.Battery Cover.....	(A1)x1	1
		2.Li-Ion Battery.....	(A2)x1	
		3.Key Screw Cover..	(A3)x2	
		4.Screw.....	(A4)x4	
		5.Hook.....	(A5)x12	2
2	Back Cabinet (Key) Assembly	1.Hook.....	(B1)x4	3
		2.Hook.....	(B2)x1	
3	Main PWB-A	1.Hook.....	(C1)x8	4
		2.Socket.....	(C2)x1	
		3.Solder.....	(C3)x1	
		4.Flat Cable.....	(C4)x1	

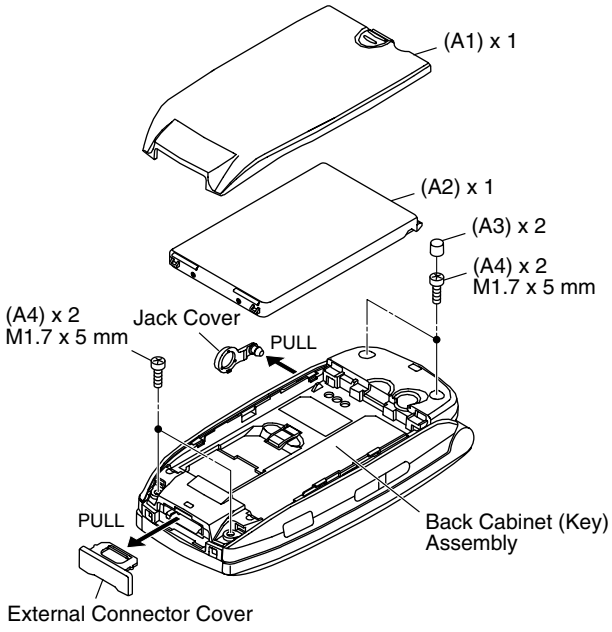
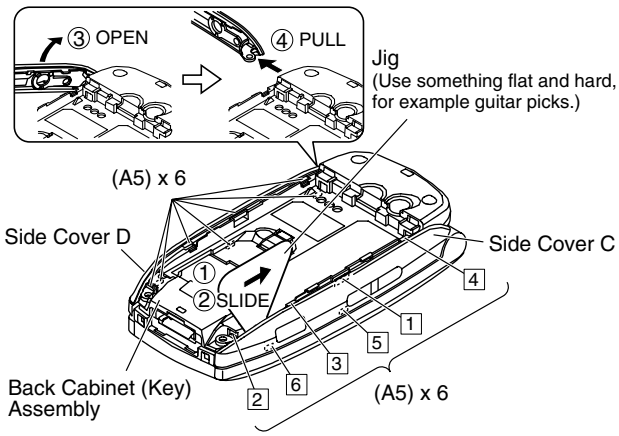


Figure 1



① Insert a jig between the side cover C and back cabinet (key) assembly to make space.

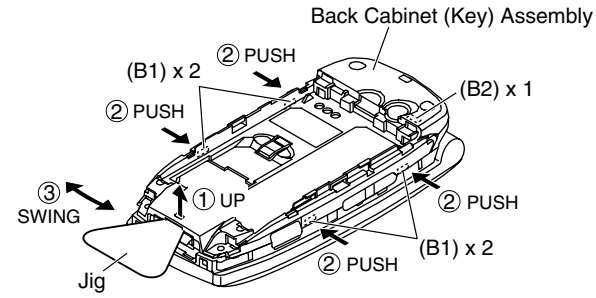
② Insert a jig into the space.
Slide the jig to remove the hooks (A5) at six positions.

③ Open the side cover C.

④ Pull the side cover C to remove.

Remove the side cover D in the same way.

Figure 2

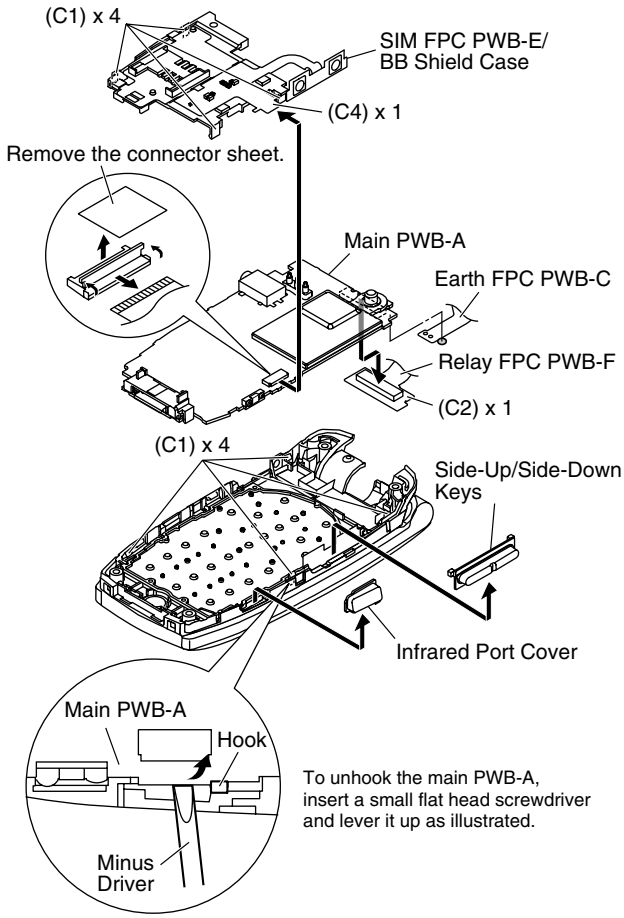


① Remove the external connector cover. (Figure 1)
Insert a jig into the slot and slightly lift up the back cabinet (key) assembly.

② Press the back cabinet (key) assembly to release 4 hooks (B1).

③ Move the cabinet assembly gently from side to side to release the other hook (B2).

Figure 3



To unhook the main PWB-A, insert a small flat head screwdriver and lever it up as illustrated.

Figure 4

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STEP	REMOVAL	PROCEDURE	FIGURE
4	Side Cover A, B	Open the handset (phone) 1.Display Screw Cover..... (D1)x4 2.Screw..... (D2)x4 Close the handset (phone) 3.Hook..... (D3)x12 4.Hook..... (D4)x2	5 6
5	Back Cabinet (Display) Assembly	1.Hook..... (E1)x5 2.Hook..... (E2)x1	7
6	Display PWB-B/Display Holder Assembly/External Display Flame Assembly	Open the handset (phone) 1.Socket..... (F1)x1 2.Hook..... (F2)x4	8 9

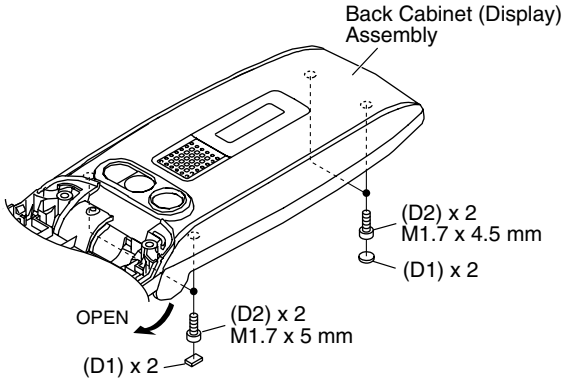
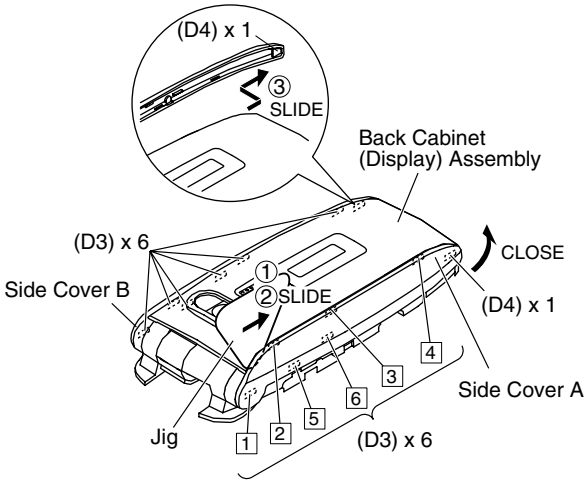


Figure 5



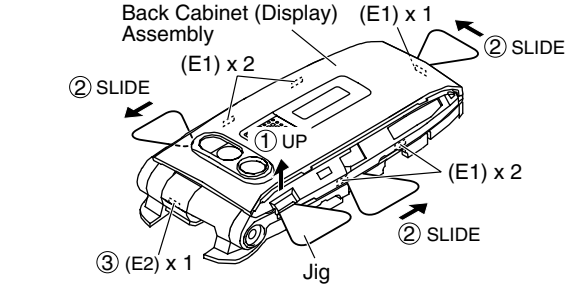
① Insert a jig between the side cover A and back cabinet (display) assembly to make space.

② Insert a jig into the space.
Slide the jig to remove the hooks (D3) at six positions.

③ Slide the side cover A to remove the hook (D4).

Remove the side cover B in the same way.

Figure 6



① Insert a jig into the gap and slightly lift up the back cabinet (display) assembly.

② Insert jig into the space.
Slide them in the direction of the arrow to release 5 hooks (E1).

③ Being careful with the claw, release the hook (E2).

Figure 7

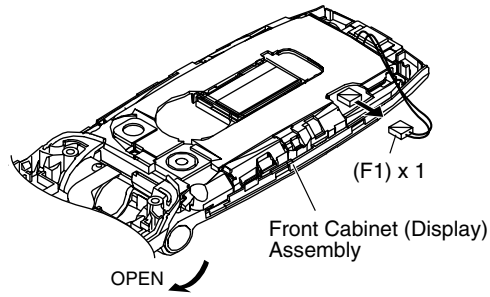
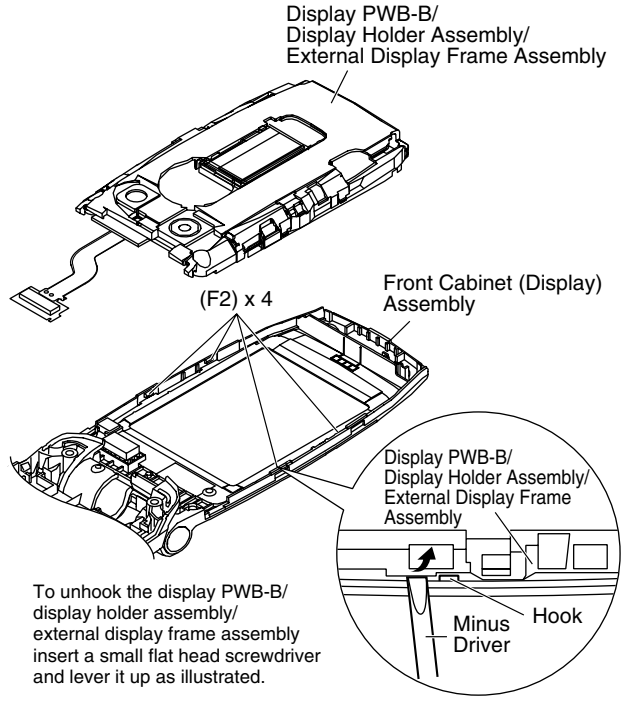


Figure 8



To unhook the display PWB-B/ display holder assembly/ external display frame assembly insert a small flat head screwdriver and lever it up as illustrated.

Figure 9

STEP	REMOVAL	PROCEDURE		FIGURE
7	Display PWB-B	1.Hook.....	(G1)x2	10
		2.Hook.....	(G2)x2	
		3.Socket.....	(G3)x1	11
		4.Solder.....	(G4)x1	
		5.Hook.....	(G5)x6	
		6.Flat Cable.....	(G6)x3	
8	Front Cabinet (Key)/ Front Cabinet (Display)	1.Hinge.....	(H1)x2	12

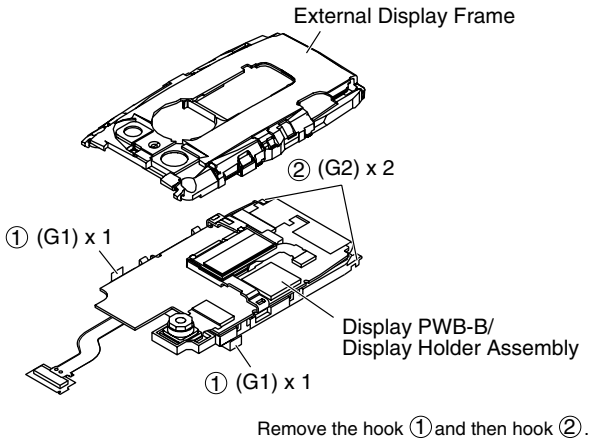


Figure 10

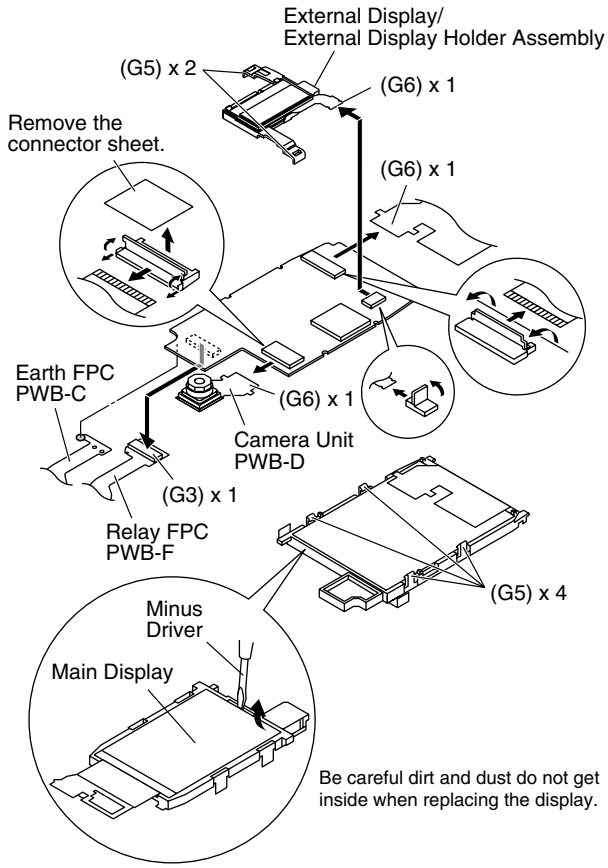


Figure 11

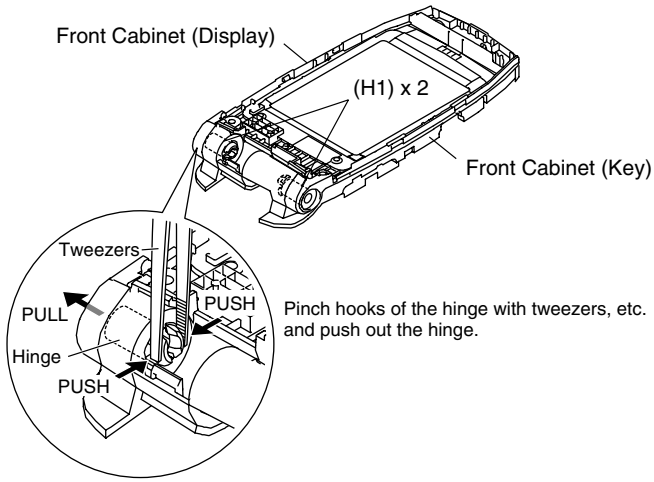


Figure 12

CHAPTER 4. DIAGRAMS

[1] Block diagram

[Main]

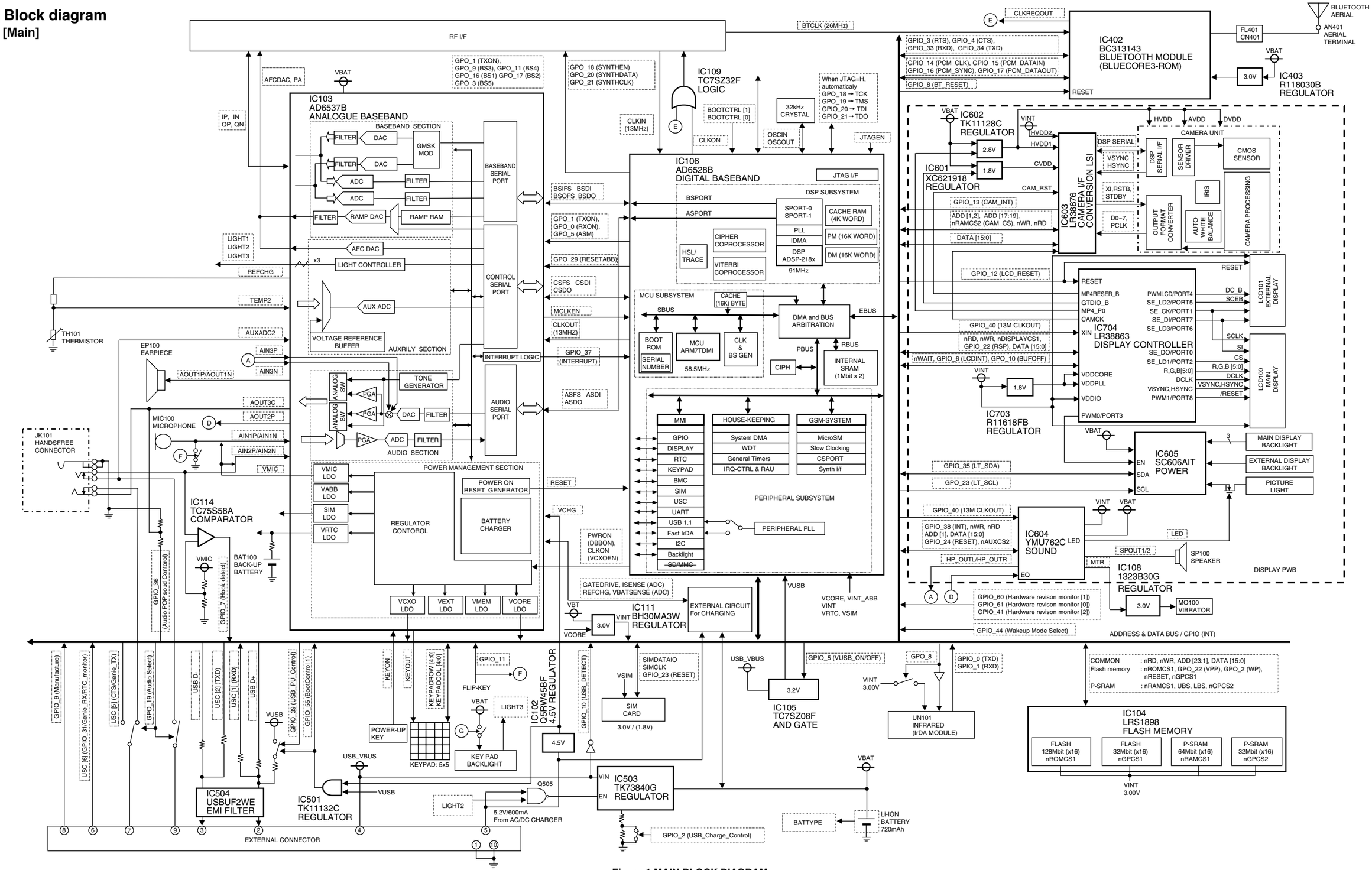


Figure 1 MAIN BLOCK DIAGRAM

[RF]

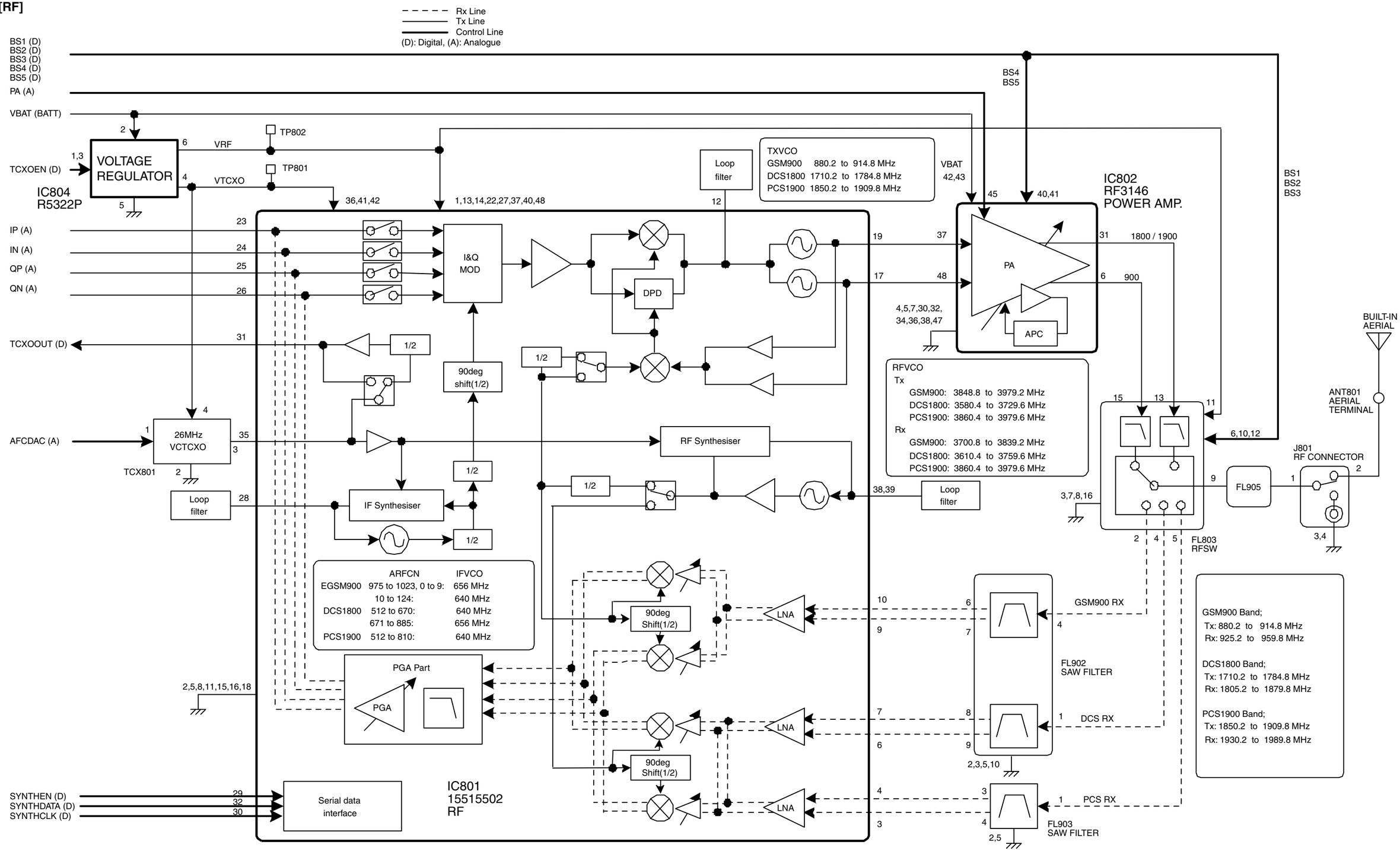


Figure 2 RF BLOCK DIAGRAM

[Power Supply]

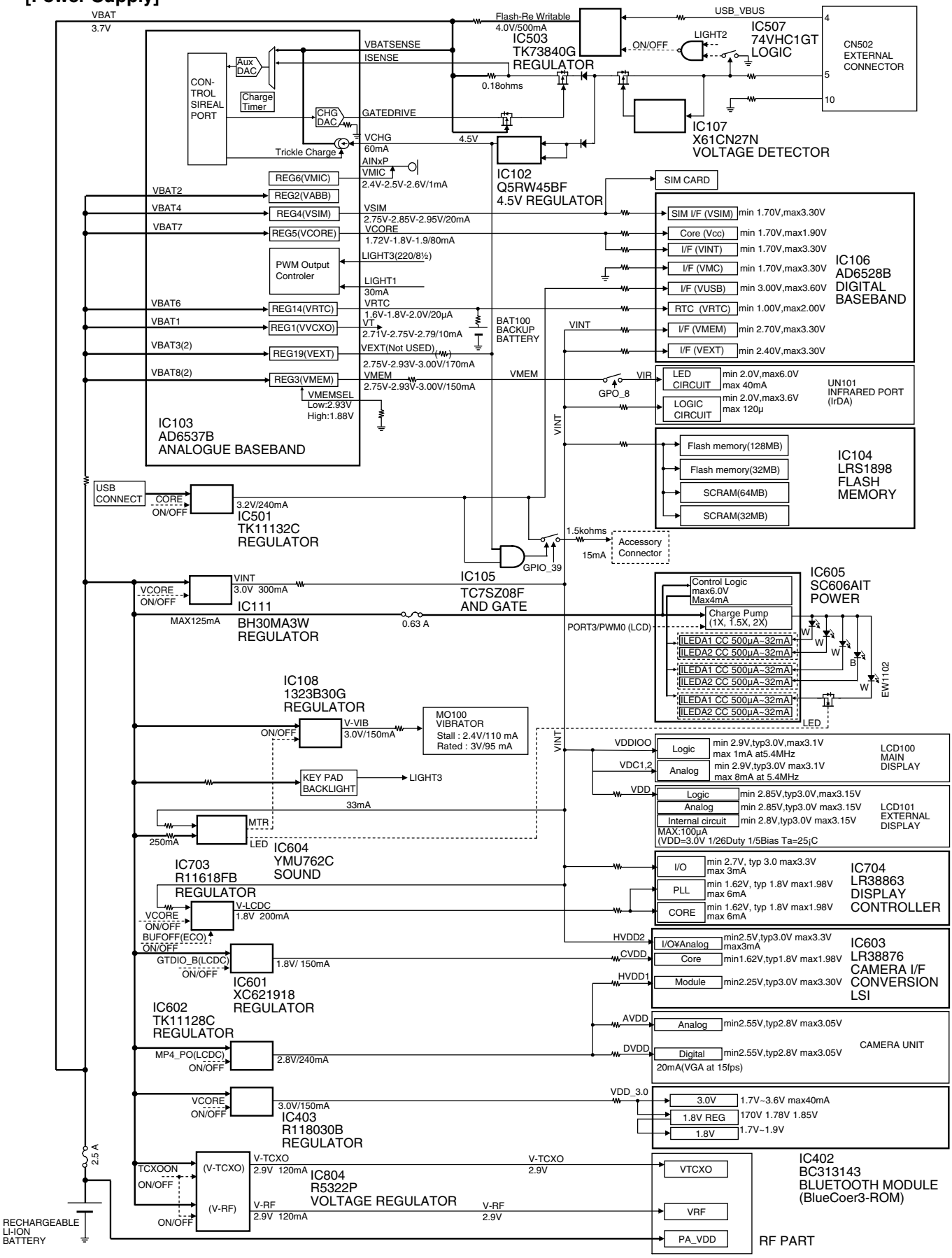


Figure 3 POWER SUPPLY BLOCK DIAGRAM

CHAPTER 5. SCHEMATIC DIAGRAM AND WIRING SIDE OF P.W.BOARD

[1] Notes on schematic diagram

- Resistor:

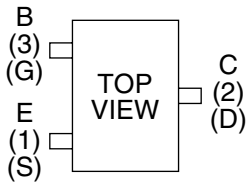
  Letters K and M are prefixed to ohm (unit of resistance).
  K means 1000 ohms and M means 1000 kohms.

- Capacitor:

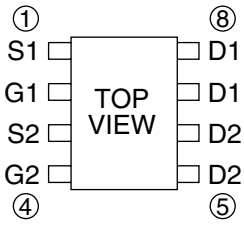
  P is an abbreviation for “pico” and a farad (unit of capacitance) without P means “microfarad”. Expressions “capacitance/withstand voltage” are used for electrolytic capacitors.
  (CH), (RH), (UJ): Temperature compensation
  (ML): Mylar type
  (S): Styrol type
  (PP): Polypropylene type

- 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.

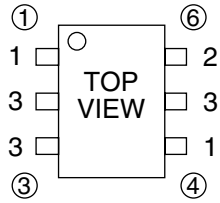
[2] Types of transistor and LED



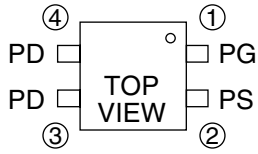
2SK3019
DC114 YETG



ECH8603

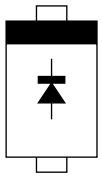


NSBC143 TP



EC4301 C
EC4401 C

TOP VIEW

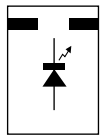


1SS388F
RB160M30
RB52030T
RB52130T
MA2SD31

TOP VIEW

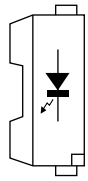
RSB6.8S

TOP VIEW



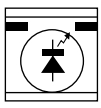
YPY1105C

TOP VIEW



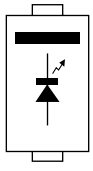
EW008BB5
NSCB215T

TOP VIEW



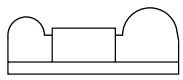
PY1103CF

TOP VIEW



EW1102AT

TOP VIEW

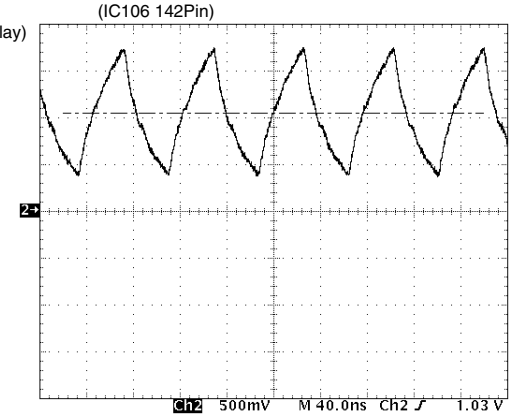


2W0110VY

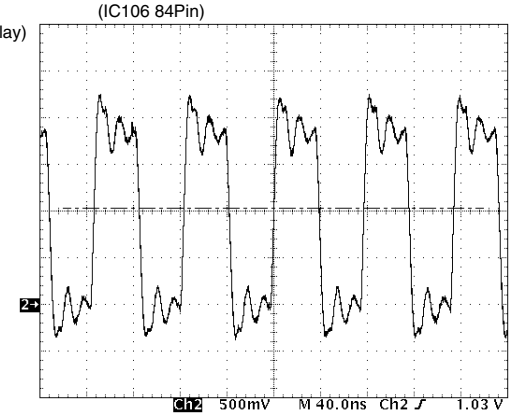
CONFIDENTIAL

[3] Waveforms of circuit

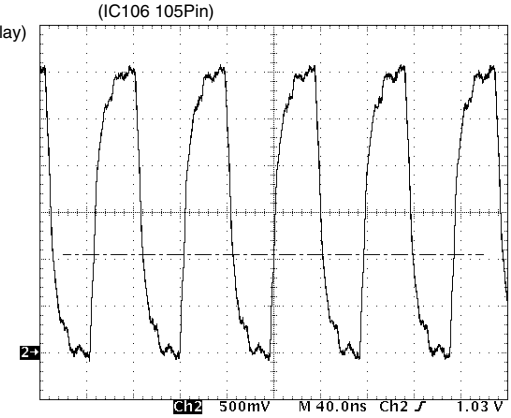
1 13M-IN (CLKIN) (Items on Main display)
C833 (IC106 142Pin)



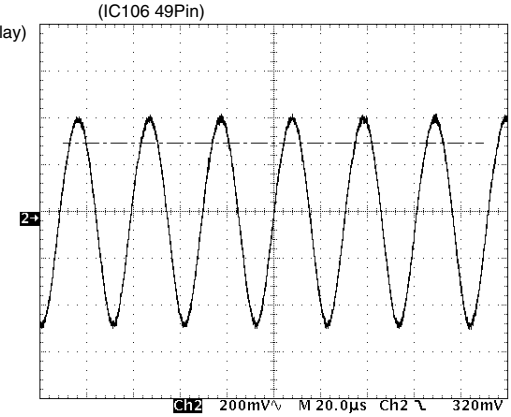
2 13M-OUT_T (Items on Main display)
R166 (IC106 84Pin)



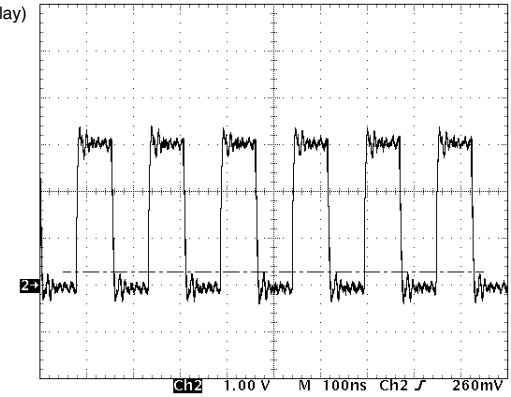
3 13M-OUT_L (Items on Main display)
R179 (IC106 105Pin)



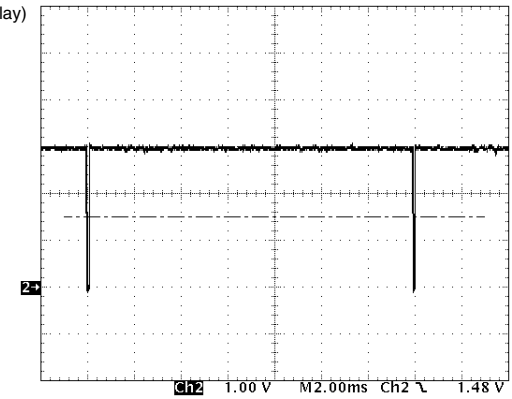
4 32K_IN (Items on Main display)
R174A (IC106 49Pin)



5 DCLK (Items on Main display)
R711 or C717



6 VSYNC (Items on Main display)
CN704 23Pin



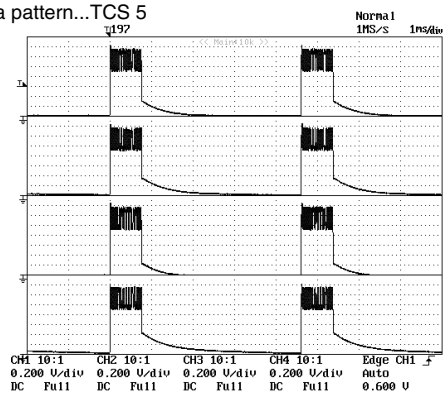
RF Test Tool
Tx test
Data pattern...TCS 5

7 IP
C811
(IC801 23Pin)

8 IN
C811
(IC801 24Pin)

9 QP
C812
(IC801 25Pin)

10 QN
C812
(IC801 26Pin)



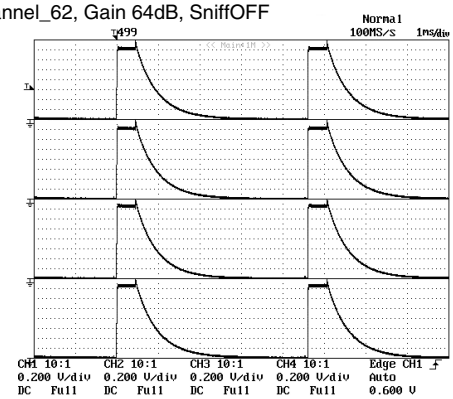
RF Test Tool
Rx test
channel_62, Gain 64dB, SniffOFF

7 IP
C811
(IC801 23Pin)

8 IN
C811
(IC801 24Pin)

9 QP
C812
(IC801 25Pin)

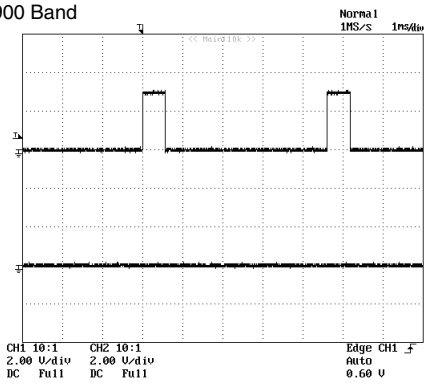
10 QN
C812
(IC801 26Pin)



RF Test Tool
Tx test
GSM900 Band

⓫ BS4
R1863
(IC802 41Pin)

⓬ BS5
C1863
(IC802 40Pin)

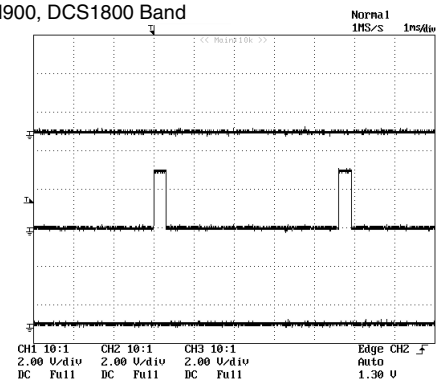


RF Test Tool
Rx test
GSM900, DCS1800 Band

⓭ BS3
C872
(FL803 12Pin)

⓮ BS1
C870
(FL803 10Pin)

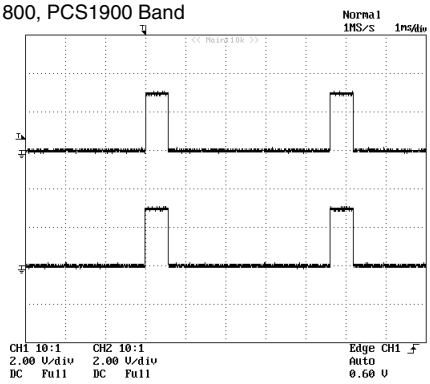
⓯ BS2
C871
(FL803 6Pin)



RF Test Tool
Tx test
DCS1800, PCS1900 Band

⓫ BS4
R1863
(IC802 41Pin)

⓬ BS5
C1863
(IC802 40Pin)

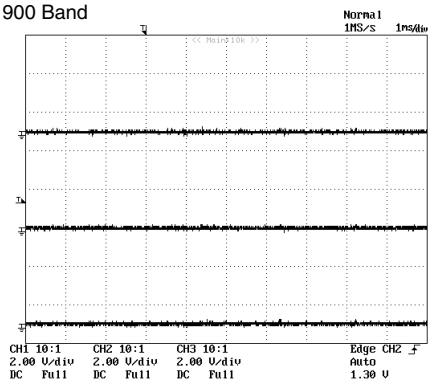


RF Test Tool
Rx test
PCS1900 Band

⓭ BS3
C872
(FL803 12Pin)

⓮ BS1
C870
(FL803 10Pin)

⓯ BS2
C871
(FL803 6Pin)

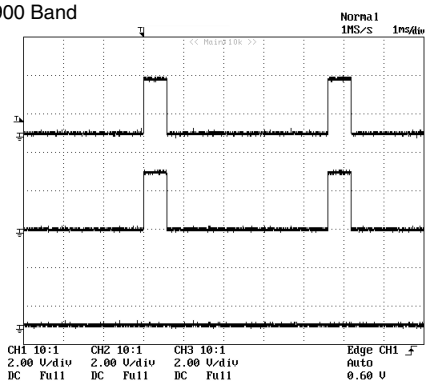


RF Test Tool
Tx test
GSM900 Band

⓭ BS3
C872
(FL803 12Pin)

⓮ BS1
C870
(FL803 10Pin)

⓯ BS2
C871
(FL803 6Pin)

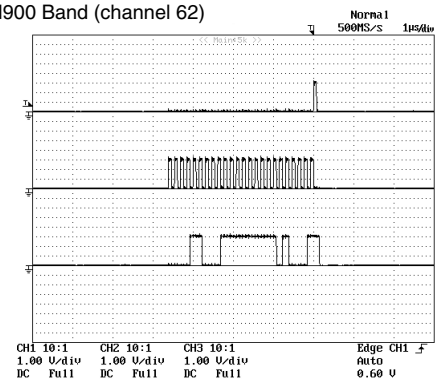


RF Test Tool
Rx test
GSM900 Band (channel 62)

⓰ SYNTHEN
IC801 29Pin

⓱ SYNTHCLK
IC801 30Pin

⓲ SYNTHDATA
IC801 32Pin

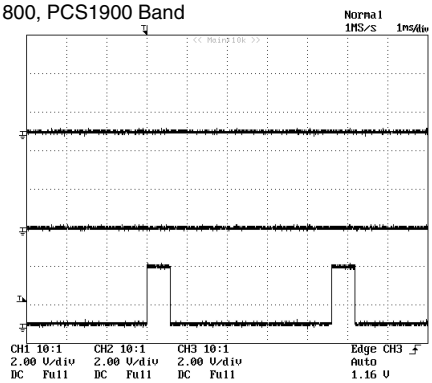


RF Test Tool
Tx test
DCS1800, PCS1900 Band

⓭ BS3
C872
(FL803 12Pin)

⓮ BS1
C870
(FL803 10Pin)

⓯ BS2
C871
(FL803 6Pin)

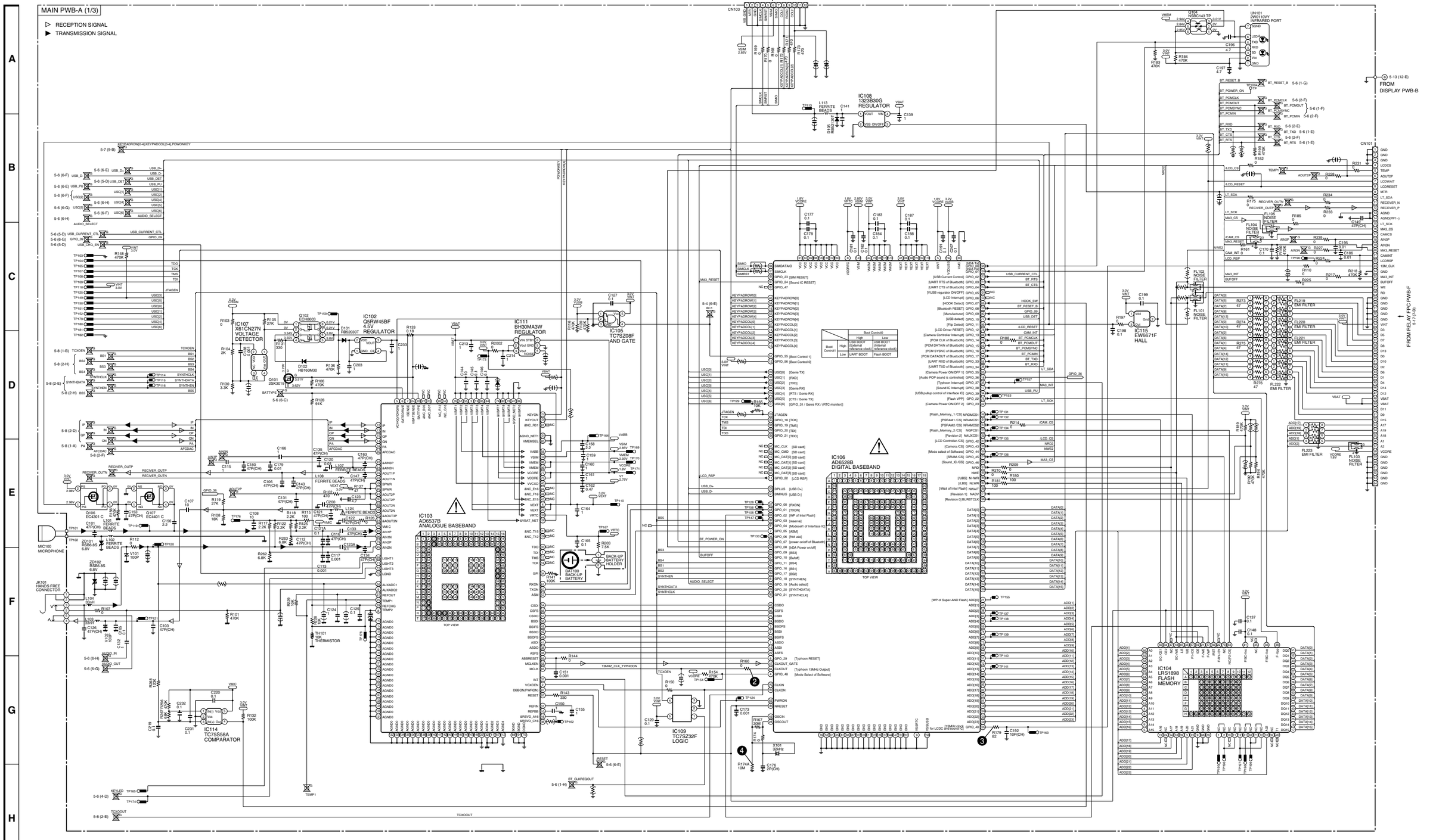


[4] Schematic diagram/Wiring side of P.W.Board

MAIN PWB-A (1/3)

▷ RECEPTION SIGNAL

▶ TRANSMISSION SIGNAL



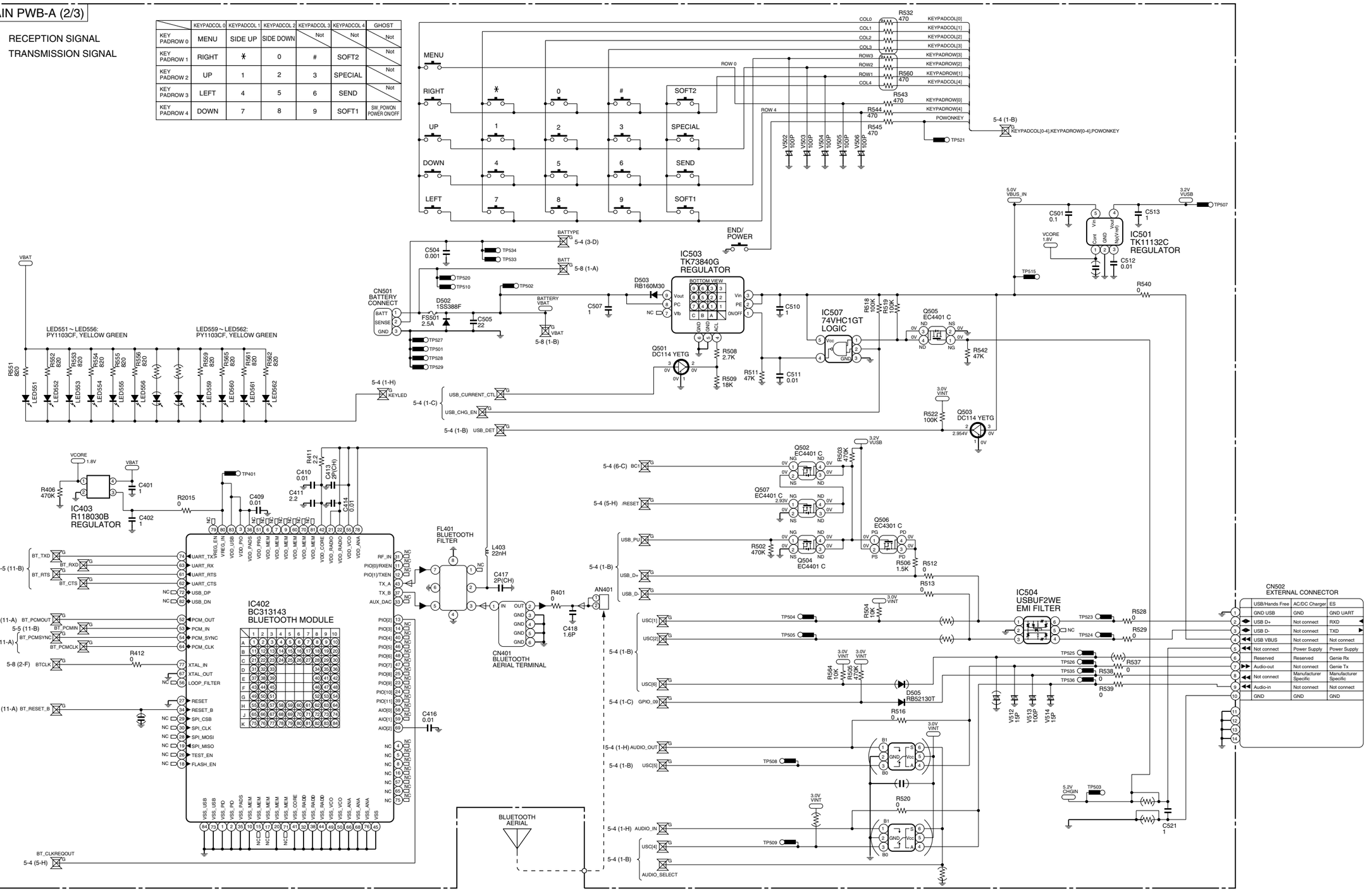
- NOTES ON SCHEMATIC DIAGRAM can be found on page 5-1.
- ( ) : Not Mount
- Waveform numbers of ❷ to ❹ are shown on page 5-2.

Figure 1 SCHEMATIC DIAGRAM (1/6)

MAIN PWB-A (2/3)

▷ RECEPTION SIGNAL
▶ TRANSMISSION SIGNAL

	KEYPADCOL 0	KEYPADCOL 1	KEYPADCOL 2	KEYPADCOL 3	KEYPADCOL 4	GHOST
KEY PADROW 0	MENU	SIDE UP	SIDE DOWN	Not	Not	Not
KEY PADROW 1	RIGHT	*	0	#	SOFT2	Not
KEY PADROW 2	UP	1	2	3	SPECIAL	Not
KEY PADROW 3	LEFT	4	5	6	SEND	Not
KEY PADROW 4	DOWN	7	8	9	SOFT1	SW_POWON POWER ON/OFF



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

• ( ) : Not Mount

Figure 2 SCHEMATIC DIAGRAM (2/6)

MAIN PWB-A (3/3) ▷ RECEPTION SIGNAL ▶ TRANSMISSION SIGNAL

5-4 (1-E) PA
5-6 (6-C) BATT
5-4 (1-D) TCXOEN
5-6 (5-C) VBAT
5-4 (1-D) IP, IN, QP, QN
5-4 (1-D) SYNTHEN, SYNTHCLK
5-4 (1-H) TCXOOUT
5-4 (1-D) SYNTHDATA
5-6 (1-F) BTCLK
5-4 (1-E) AFCDAC
5-4 (1-D) BS1, BS2, BS3, BS4, BS5

IC804
R5322P
VOLTAGE REGULATOR
CE1 VOUT1 VDD GND CE2 VOUT2

IC801
15515502
RF

IC802
RF3146
POWER AMP.

FL803
RF SWITCH

FL902
SAW FILTER

FL903
SAW FILTER

FL905
ESD DEVICE

J801
RF CONNECTOR

TCX801
26MHz
VCTCXO

BUILT-IN
AERIAL

ANT801
ANT802

POWER AMP		
	BS4	BS5
GSM	HIGH	LOW
DCS	HIGH	HIGH
PCS	HIGH	HIGH

RF-SWITCH				
		BS1	BS2	BS3
GSM	TX	HIGH	LOW	HIGH
	RX	HIGH	LOW	LOW
DCS	TX	LOW	HIGH	LOW
	RX	HIGH	LOW	LOW
PCS	TX	LOW	HIGH	LOW
	RX	LOW	LOW	LOW

		BS1	BS2	BS3	BS4	BS5
GSM 900	TX	HIGH	LOW	HIGH	HIGH	LOW
	RX	HIGH	LOW	LOW	LOW	LOW
DCS 1800	TX	LOW	HIGH	LOW	HIGH	HIGH
	RX	HIGH	LOW	LOW	LOW	LOW
PCS 1900	TX	LOW	HIGH	LOW	HIGH	HIGH
	RX	LOW	LOW	LOW	LOW	LOW

• NOTES ON SCHEMATIC DIAGRAM can be found on page 5-1.
• ( ) : Not Mount
• Waveform numbers of ❶, ❼ to ⓲ are shown on pages 5-2, 5-3.

Figure 3 SCHEMATIC DIAGRAM (3/6)

MAIN PWB-A (FRONT SIDE)

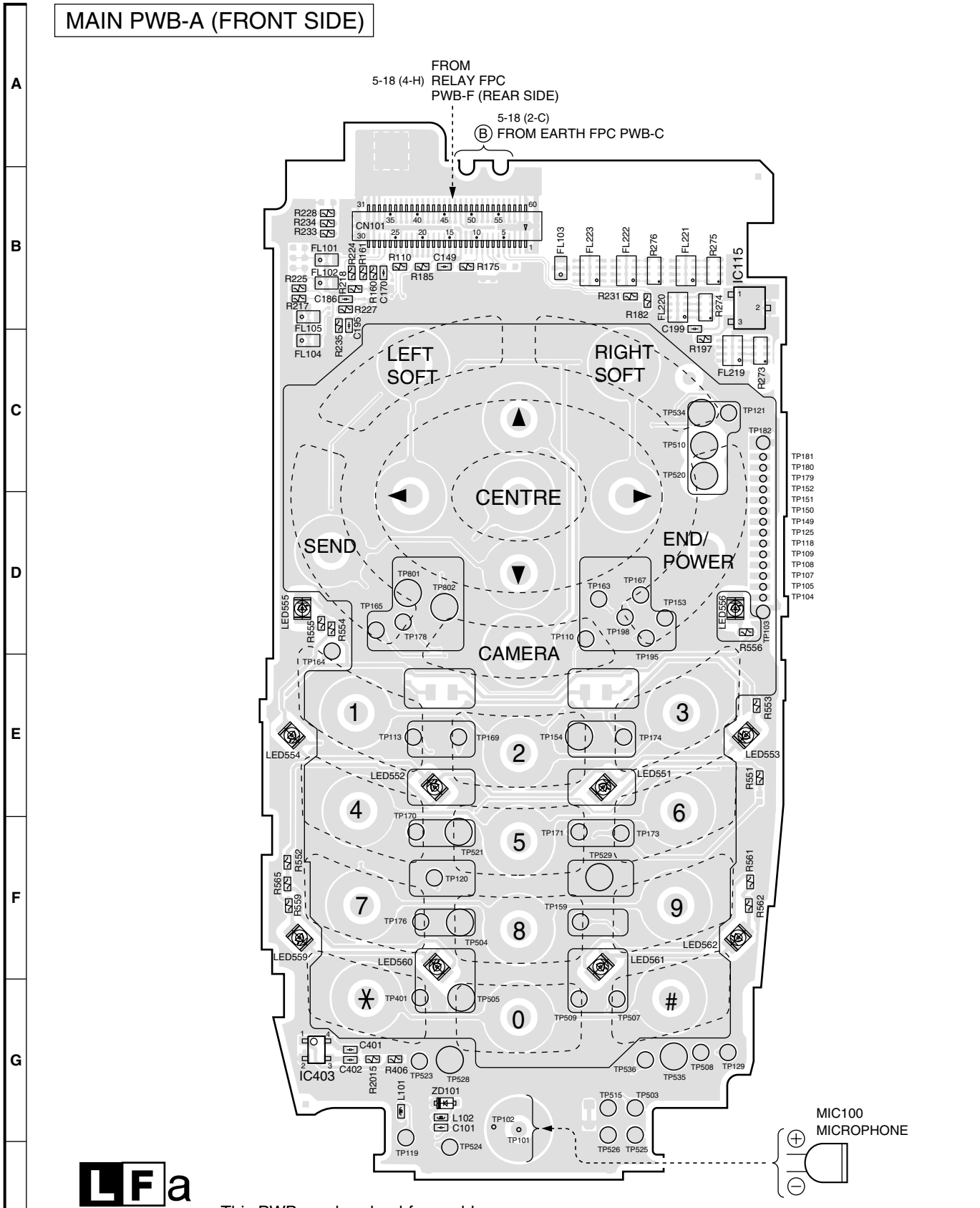
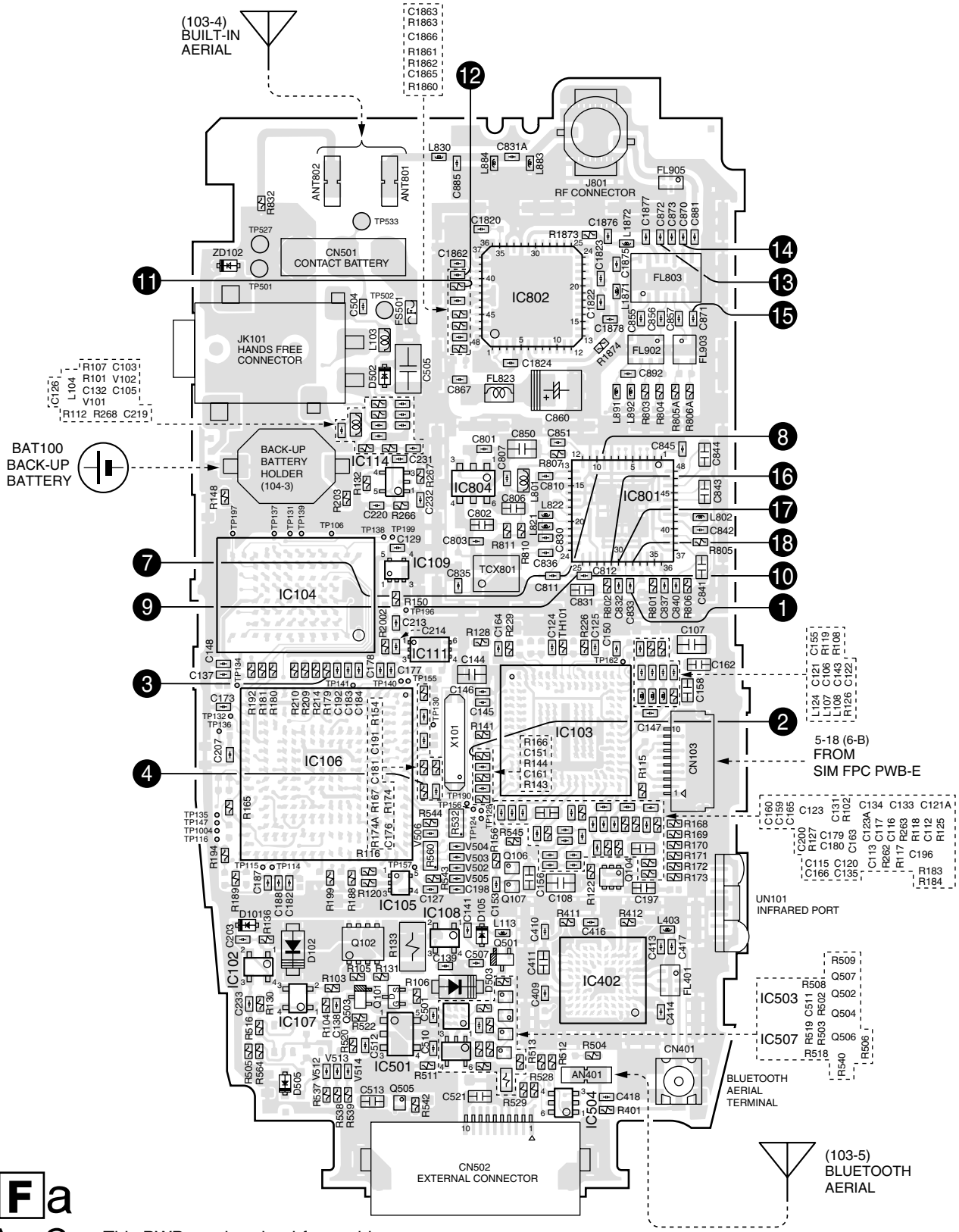


Figure 4 WIRING SIDE P.W.BOARD (1/5)

MAIN PWB-A (REAR SIDE)



LFa
Sn-Ag-Cu This PWB employs lead-free solder.

• Waveform numbers of ❶ to ❹, ❼ to ⓲ are shown on pages 5-2, 5-3.

7	8	9	10	11	12

Figure 5 WIRING SIDE P.W.BOARD (2/5)

DISPLAY PWB-B

▷ RECEPTION SIGNAL
▶ TRANSMISSION SIGNAL
≫ SPEAKER SIGNAL

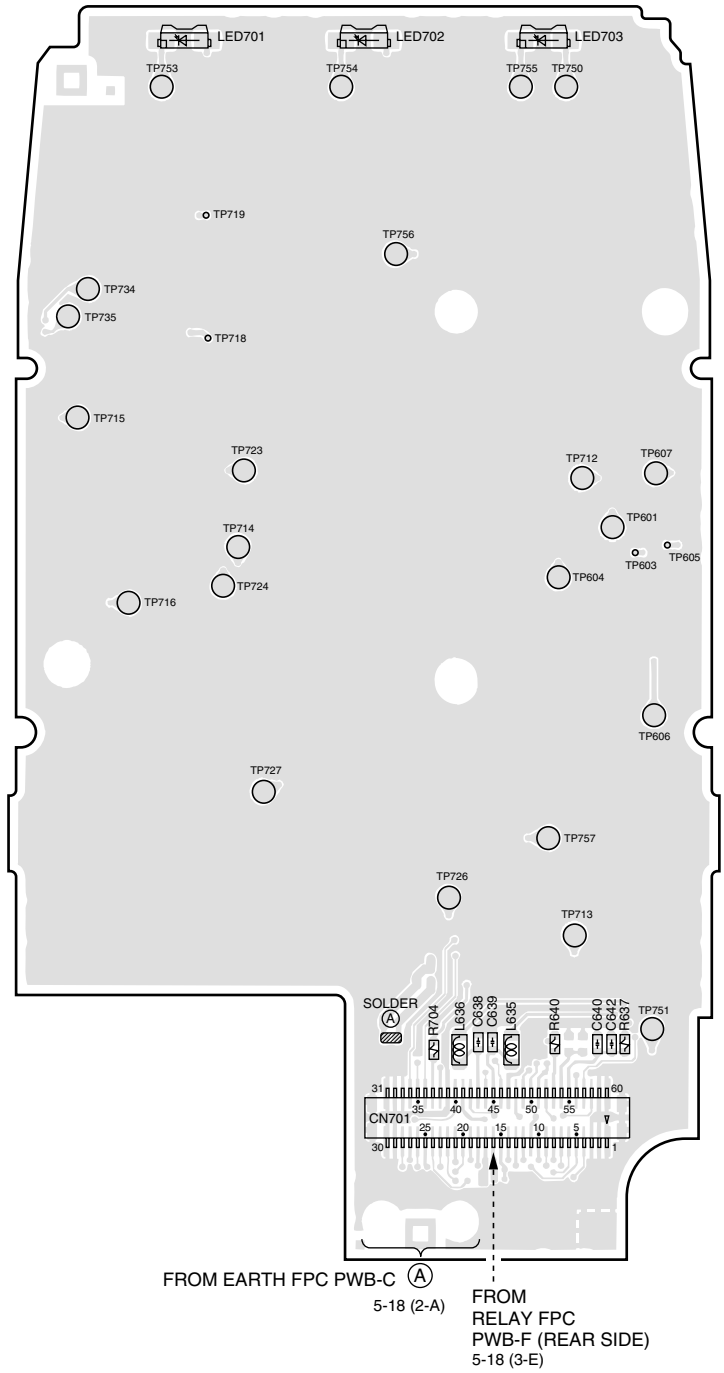
IC601 XC621918 REGULATOR
IC602 TK11128C REGULATOR
IC603 LR38876 CAMERA I/F CONVERSION LSI
IC604 YMU762C SOUND
IC605 SC606AIT POWER
IC703 R1618FB REGULATOR
IC704 LR38863 DISPLAY CONTROLLER

SP100 SPEAKER
EP100 EARPEACE
CAMERA UNIT PWB-D
LCD101 EXTERNAL DISPLAY
LCD100 MAIN DISPLAY
EARTH FPC PWB-C
FROM RELAY FPC PWB-F 5-17 (12-D)
TO MAIN PWB-A (1/3) 5-5 (12-A)

• NOTES ON SCHEMATIC DIAGRAM can be found on page 5-1.
• ( ) : Not Mount
• Waveform numbers of ❺, ❻ are shown on page 5-2.

Figure 6 SCHEMATIC DIAGRAM (4/6)

DISPLAY PWB-B (FRONT SIDE)

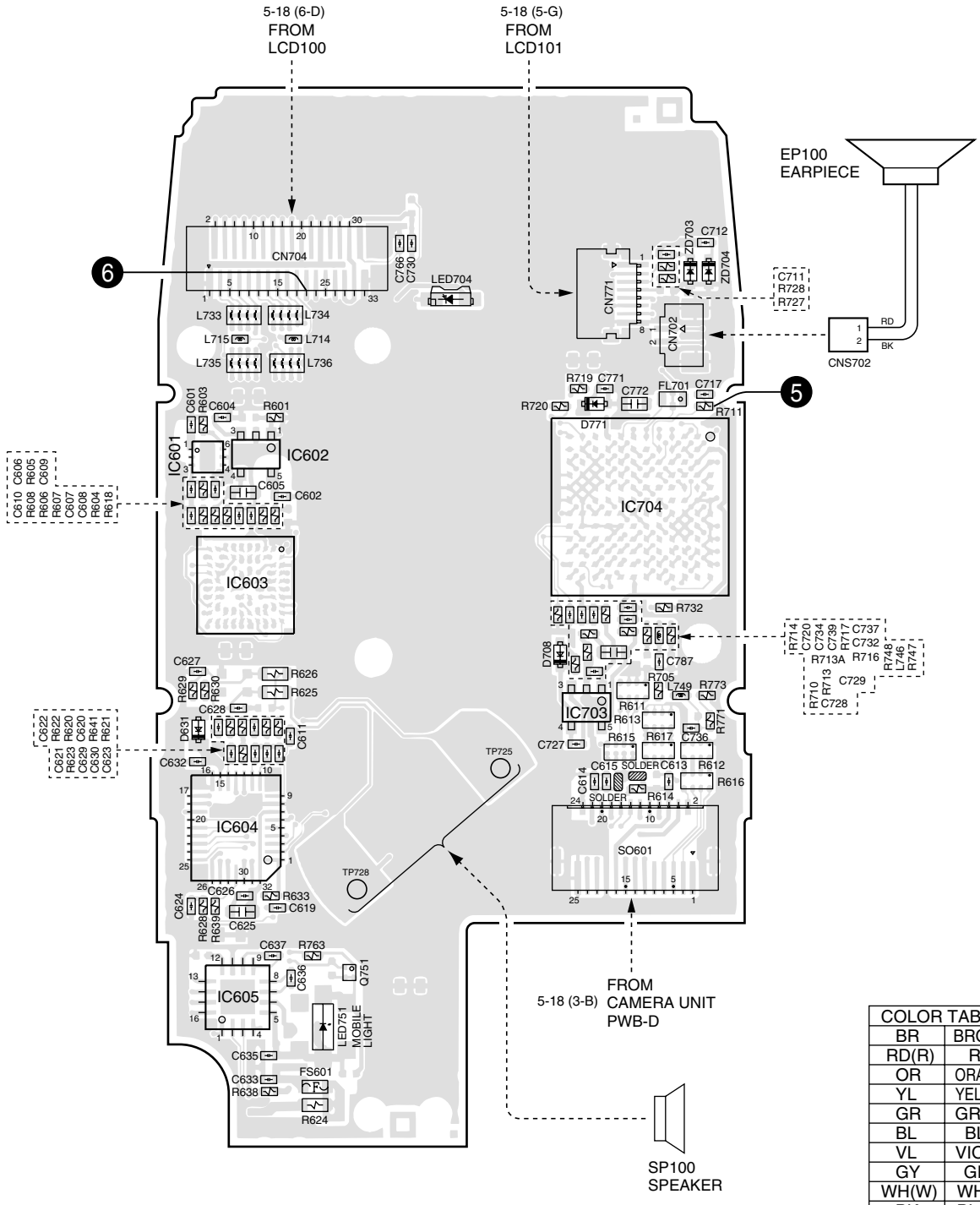


LFa
Sn-Ag-Cu

This PWB employs lead-free solder.

Figure 7 WIRING SIDE P.W.BOARD (3/5)

DISPLAY PWB-B (REAR SIDE)



COLOR TABLE	
BR	BROWN
RD(R)	RED
OR	ORANGE
YL	YELLOW
GR	GREEN
BL	BLUE
VL	VIOLET
GY	GRAY
WH(W)	WHITE
BK	BLACK
PK	PINK

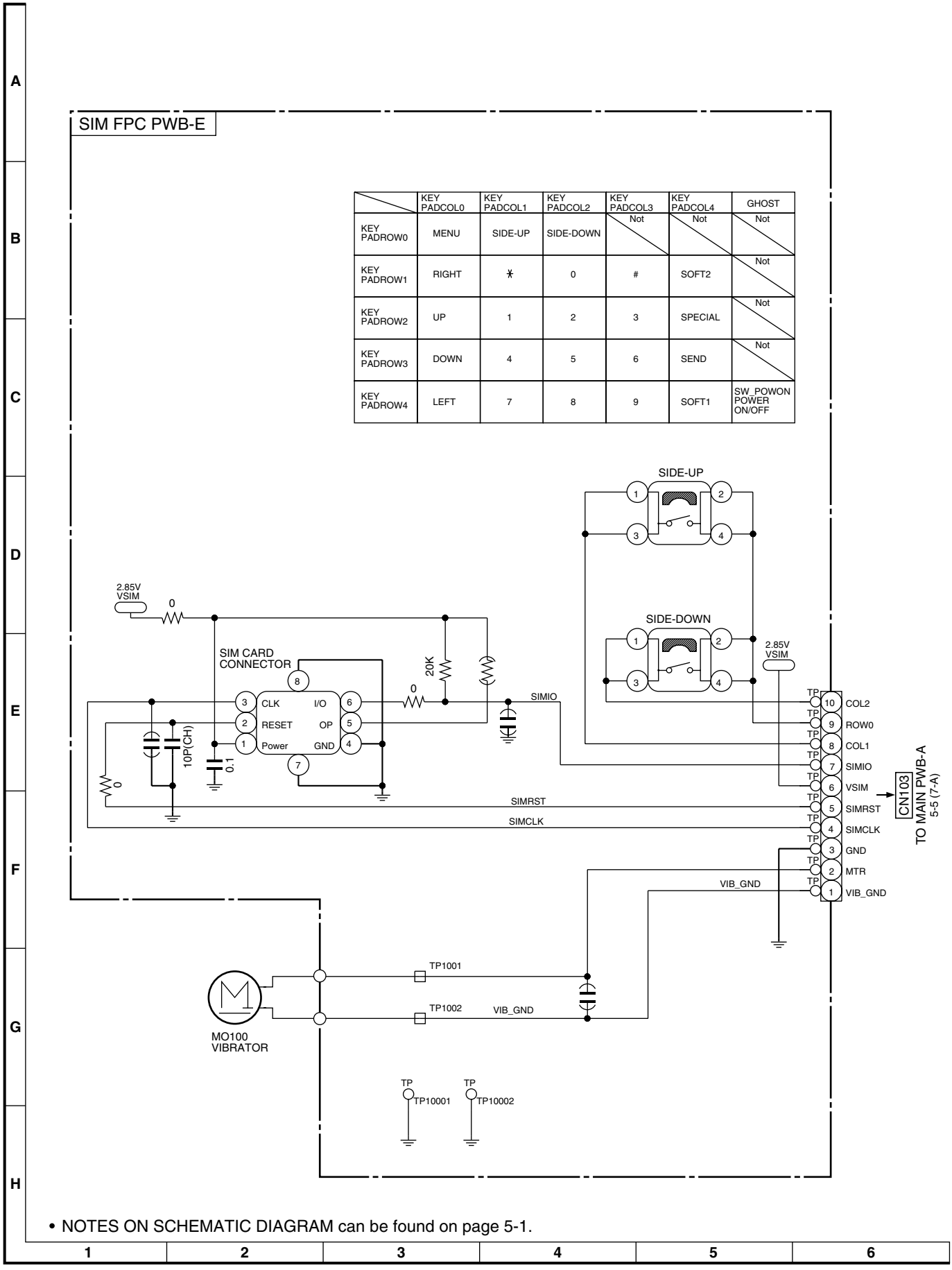
LFa
Sn-Ag-Cu

This PWB employs lead-free solder.

• Waveform numbers of ❺, ❻ are shown on pages 5-2.

7	8	9	10	11	12

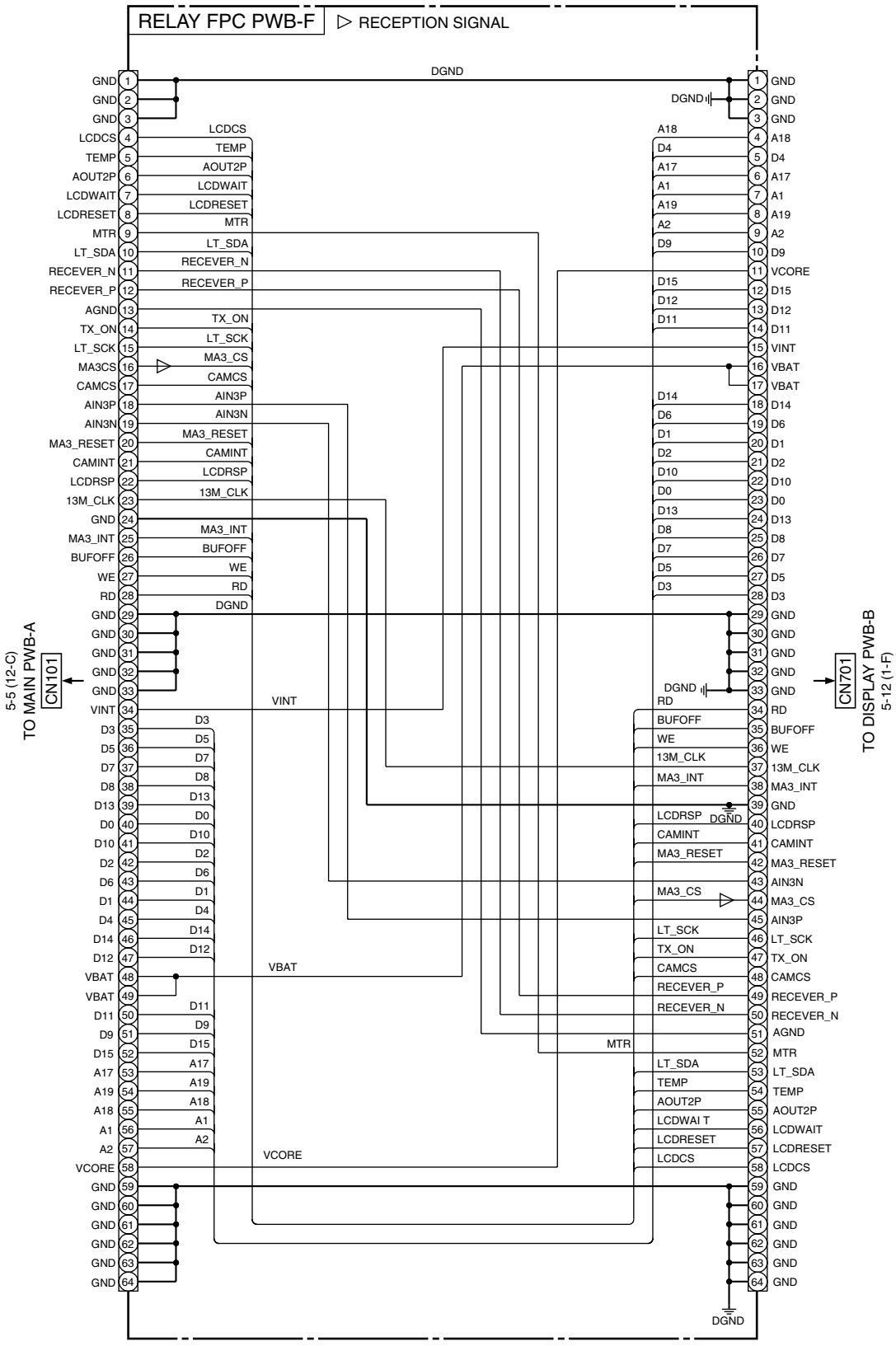
Figure 8 WIRING SIDE P.W.BOARD (4/5)



	KEY PADCOL0	KEY PADCOL1	KEY PADCOL2	KEY PADCOL3	KEY PADCOL4	GHOST
KEY PADROW0	MENU	SIDE-UP	SIDE-DOWN	Not	Not	Not
KEY PADROW1	RIGHT	*	0	#	SOFT2	Not
KEY PADROW2	UP	1	2	3	SPECIAL	Not
KEY PADROW3	DOWN	4	5	6	SEND	Not
KEY PADROW4	LEFT	7	8	9	SOFT1	SW_POWON POWER ON/OFF

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

Figure 9 SCHEMATIC DIAGRAM (5/6)



• ( ) : Not Mount

7	8	9	10	11	12

Figure 10 SCHEMATIC DIAGRAM (6/6)

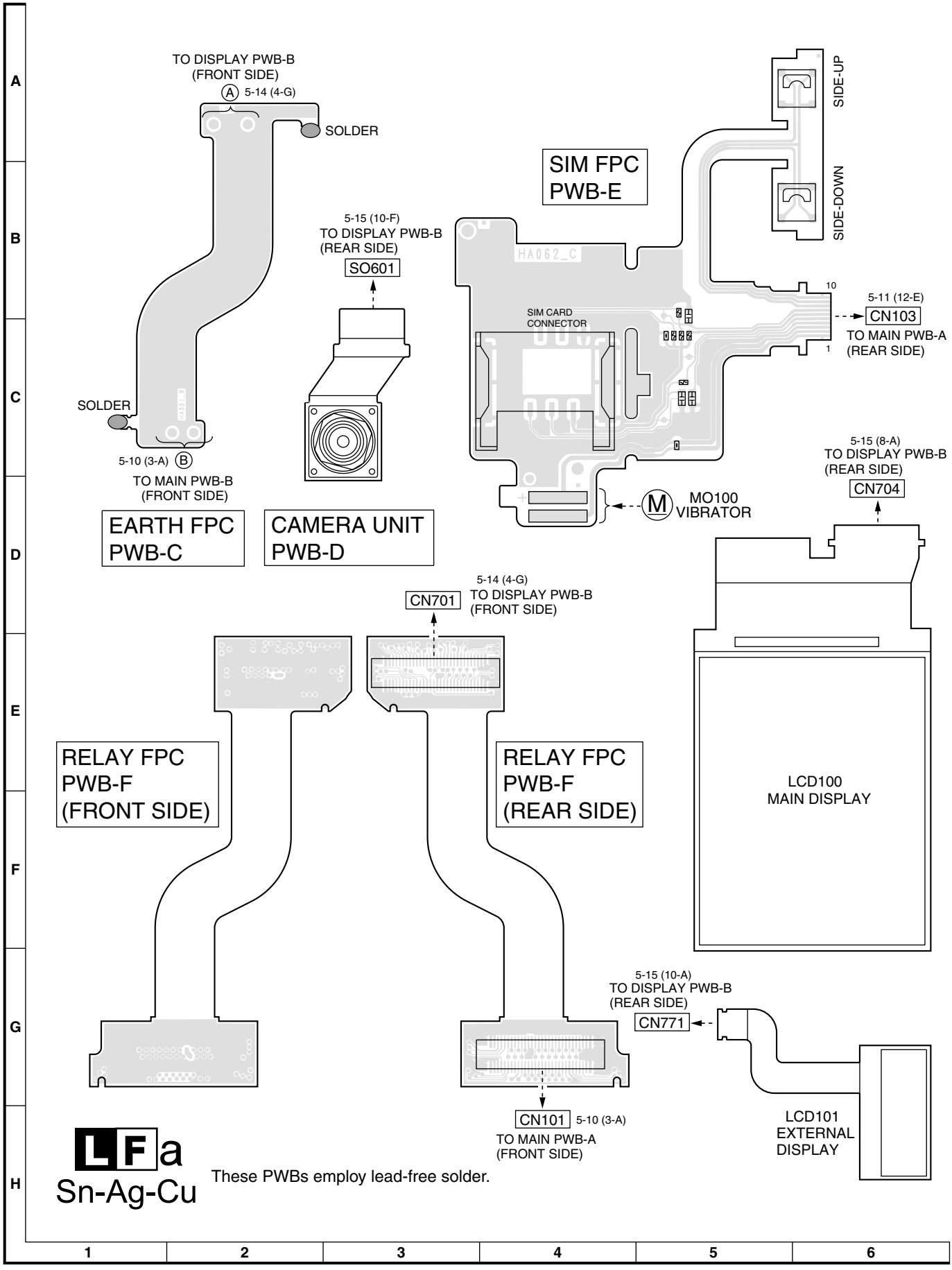


Figure 11 WIRING SIDE P.W.BOARD (5/5)

Conditions: SIM card inserted, power on (3.8V battery), in stand-by mode (opened)
Measuring instrument: Digital multimeter
———: Unmeasurable

IC102	
PIN NO.	VOLTAGE
1	0V
2	0.18V
3	———
4	0.18V

IC105	
PIN NO.	VOLTAGE
1	0.04V
2	———
3	———
4	0V
5	2.98V

IC107	
PIN NO.	VOLTAGE
1	0.003V
2	0.002V
3	NC
4	0.002V

IC108	
PIN NO.	VOLTAGE
1	0V
2	0V
3	0V
4	3.80V

IC109	
PIN NO.	VOLTAGE
1	3.02V
2	2.98V
3	0V
4	2.98V
5	2.98V

IC111	
PIN NO.	VOLTAGE
1	3.8V
2	2.98V
3	2.98V
4	1.25V
5	0V
6	1.81V

IC114	
PIN NO.	VOLTAGE
1	0V
2	0V
3	0V
4	2.77V
5	0V

IC115	
PIN NO.	VOLTAGE
1	2.98V
2	0V
3	2.98V

IC501	
PIN NO.	VOLTAGE
1	1.81V
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	3.79V
9	3.77V

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

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

IC601	
PIN NO.	VOLTAGE
1	3.79V
2	NC
3	0V
4	NC
5	0V
6	0V

IC602	
PIN NO.	VOLTAGE
1	0V
2	0V
3	0V
4	0V
5	3.79V

IC604	
PIN NO.	VOLTAGE
1	1.49V
2	0V
3	2.98V
4	2.98V
5	NC
6	0V
7	2.98V
8	0V
9	0V
10	0V
11	0V
12	0V
13	0V
14	0V
15	3.8V
16	0V
17	0.02V
18	0.02V
19	0.17V
20	———
21	———
22	———
23	———
24	———
25	———
26	———
27	———
28	2.97V
29	2.98V
30	2.86V
31	2.86V
32	2.98V

IC605	
PIN NO.	VOLTAGE
1	0.12V
2	2.98V
3	2.98V
4	2.97V
5	2.92V
6	3.79V
7	———
8	3.99V
9	0V
10	———
11	0V
12	0.22V
13	0.20V
14	0.74V
15	0.14V
16	0.14V
17	0V

IC703	
PIN NO.	VOLTAGE
1	2.97V
2	0V
3	1.81V
4	2.97V
5	1.79V

IC801	
PIN NO.	VOLTAGE
1	2.89V
2	0V
3	0V
4	0V
5	0V
6	0V
7	0V
8	0V
9	0V
10	0V
11	0V
12	0V
13	2.98V
14	2.98V
15	0V
16	0V
17	0V
18	0V
19	0V
20	0V
21	0V
22	2.98V
23	0.21V
24	0.21V
25	0.21V
26	0.21V
27	2.89V
28	0.27V
29	0V
30	0V
31	1.14V
32	0V
33	0V
34	0V
35	1.82V
36	2.89V
37	2.89V
38	0.26V
39	0V
40	2.89V
41	2.89V
42	2.89V
43	2.89V
44	2.87V
45	2.87V
46	2.87V
47	2.87V
48	2.89V
49	0V

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

Conditions: SIM card inserted, power on (3.8V battery), in stand-by mode (opened)
Measuring instrument: Digital multimeter
———: Unmeasurable

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

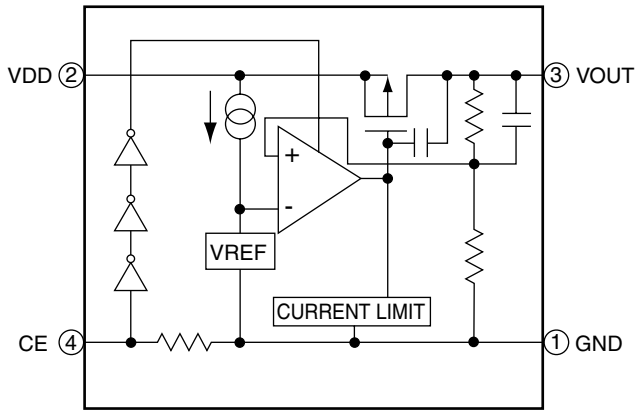
• NOTES ON SCHEMATIC DIAGRAM can be found on page 5-1.

CHAPTER 6. OTHERS

[1] Function table of IC

IC102 VHIQ5RW45BF-1L (Q5RW45BF): 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	SPWR supply
5	VCHG	Input	Charge supply
6	GATEDRIVE	Output	Charge DAC (FET) output control
7	ISENSE	Input	Charge current sense input
8	TEMP2	Input	Temperature sensor input
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	SPWR supply
21*	NC_B05	–	Not used
22	BATTYPE	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	REFIN	Output	Voltage reference
32	AGND1	–	Analogue earth for voltage reference
33*	TDO	Output	Not used
34	GPI	Input	Pull down

Pin No.	Terminal name	Input/Output	Description of terminal
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
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	Headset receiver audio positive output
60	AOUT3P	Output	External audio output (positive)
61	RXON	Input	Baseband receive section control
62	TXON	Input	Baseband transmit section control
63	AOUT1N	Output	Headset receiver audio negative output
64	AOUT3N	Output	External audio output (negative)
65	MCLK	Input	Master clock
66	CSFS	Input	Control serial port framing signal
67	AGND3	–	Analogue audio earth
68	LIGHT1	Output	LED control
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

Pin No.	Terminal name	Input/Output	Description of terminal
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
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.

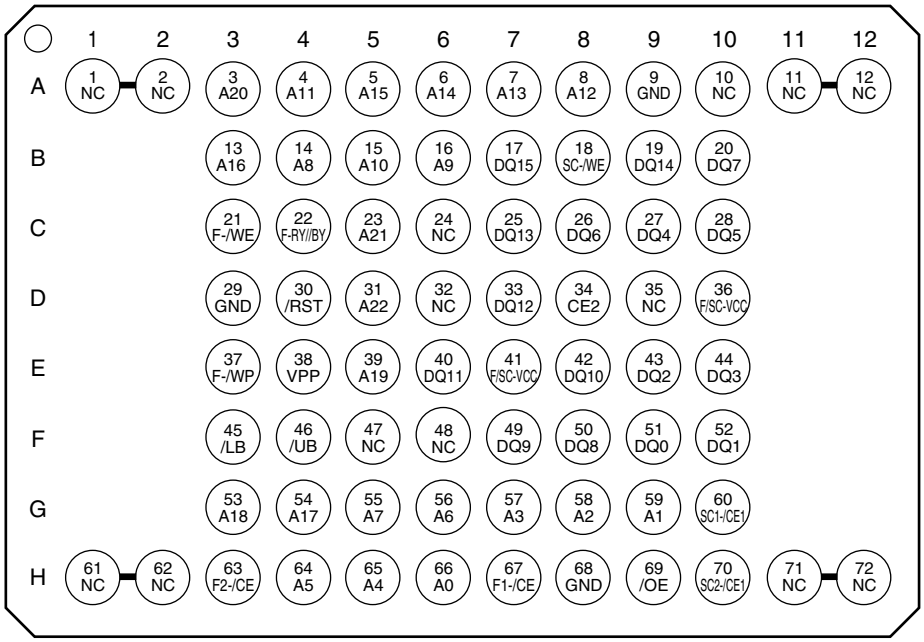
IC104 (LRS1898): FLASH MEMORY

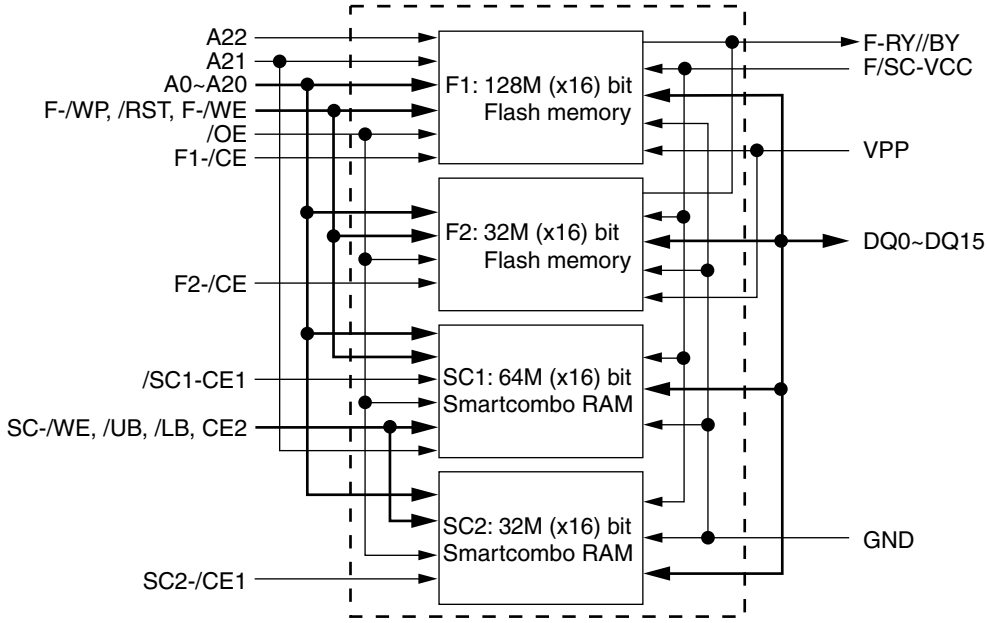
Pin No.	Terminal name	Input/Output	Description of terminal
1*	NC	–	Not used
2*	NC	–	Not used
3	A20	Input	Address input (common)
4	A11	Input	Address input (common)
5	A15	Input	Address input (common)
6	A14	Input	Address input (common)
7	A13	Input	Address input (common)
8	A12	Input	Address input (common)
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 (Flash1, smartcombo RAM)
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 input (Flash) When deleting/writing block: VIH When reading: VIH Reset: VIL
31	A22	Input	Address input (Flash1)
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*	NC	–	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	SC1-/CE1	Input	Chip enable input (Smartcombo RAM1)
61*	NC	–	Not used
62*	NC	–	Not used
63	F2-/CE	Input	Chip enable input (Flash2)
64	A5	Input	Address input (common)
65	A4	Input	Address input (common)
66	A0	Input	Address input (common)
67	F1-/CE	Input	Chip enable input (Flash1)
68	GND	–	Earth
69	/OE	Input	Output enable input (common)
70	SC2-/CE1	Input	Chip enable input (Smartcombo RAM2)
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.

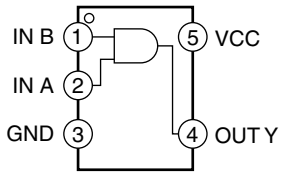
(TOP VIEW)





IC105 VHITC7SZ08F-1L (TC7SZ08F): AND GATE
IC109 VHITC7SZ32F-1L (TC7SZ32F): 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	Input	Mode select of software (Pull up)
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	VDDRTC	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 display 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	Input/Output	DC/DC IC SDA
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	DC/DC IC SCK
43	ADD[7]	Output	Processor address bus 7
44	VMEM	Input	Memory power supply 2.7 - 3.3 V (VMEM)

Pin No.	Terminal name	Input/Output	Description of terminal
45	ADD[1]	Output	Processor address bus 1
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 main display controller/external display driver
79	VMEM	Input	Memory power supply 2.7 - 3.3 V (VINT)
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	Input	Flip switch detection
100	GPIO_8	Output	Reset output for Bluetooth module
101*	GPIO_5	Output	Not used
102*	GPIO_6	Output	Not used
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 display controller & Sound generator IC
106	ADD[20]	Output	Processor address bus 20
107	GND	–	Earth
108	ADD[23]	Output	Processor address bus 23

Pin No.	Terminal name	Input/Output	Description of terminal
109	GND	–	Earth
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 (VINT)
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 display controller
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	Output	Not used
156	VSSUSB	–	USB earth
157*	GPIO_47	Output	Not used
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	Input	Hardware version select 1
172	NGPCS1	Output	Chip select for flash memory 2

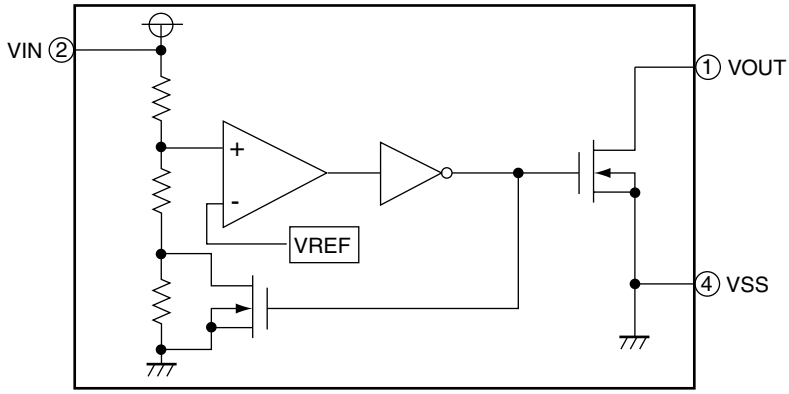
Pin No.	Terminal name	Input/Output	Description of terminal
173	VMEM	Input	Memory power supply 2.7 - 3.3 V (VMEM)
174	GPIO_45	Output	Chip select for PSRAM2
175	GPIO_46	Output	Chip select for sound generator IC
176	DPLUS	Input	USB D+
177	SIMCLK	Output	SIM interface clock output
178	JTAGEN	Input	JTAG enable
179	VEXT	Input	System Interface power supply 2.4 - 3.3 V (VINT)
180	GPO_3	Output	Band select 3 for RF (BS5)
181*	GPO_4	Output	Not used
182*	GPO_7	Output	Not used (BT_POWER_ON)
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	Processor wait input
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	BUF OFF for main display controller

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

IC107 VHIX61CN27N-1L (X61CN27N): VOLTAGE DETECTOR

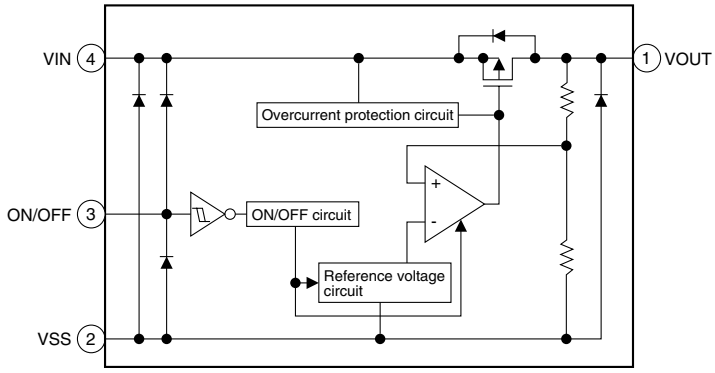
Pin No.	Terminal name	Input/Output	Description of terminal
1	VOUT	Output	Voltage output
2	VIN	Input	Voltage input (VDD)
3*	NC	–	Not used
4	VSS	–	Earth

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



IC108 VHI1323B30G-1R (1323B30G): REGULATOR

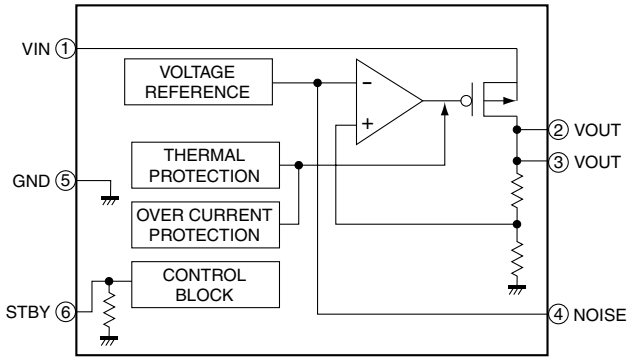
Pin No.	Terminal name	Input/Output	Description of terminal
1	VOUT	Output	Voltage output
2	VSS	–	Earth
3	ON/OFF	Input	Power off
4	VIN	Input	Voltage input



IC111 VHIBH30MA3W-1R (BH30MA3W): REGULATOR

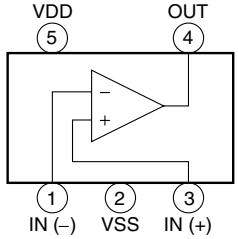
Pin No.	Terminal name	Input/Output	Description of terminal
1	VIN	Input	Input power supply
2	VOUT	Output	Output voltage
3	VOUT	Output	Output voltage
4*	NOISE	–	Noise capacitor (Not used)
5	GND	–	Earth
6	STBY	Output	ON/OFF control (Hight: ON, Low: OFF)

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



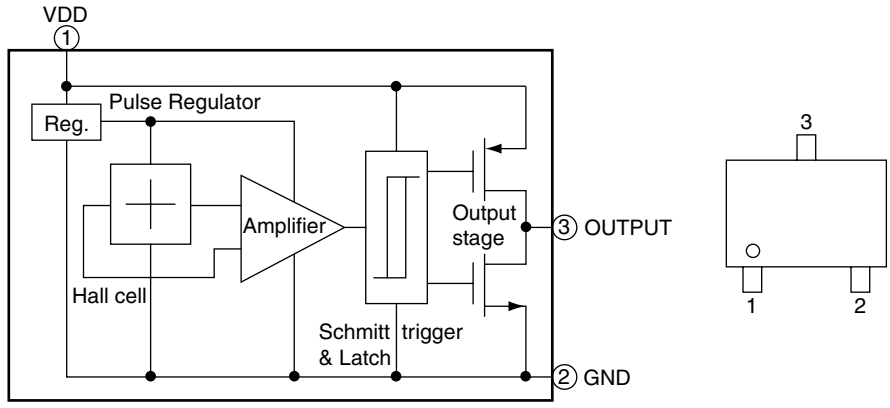
IC114 VHITC75S58A-1L (TC75S58A): COMPARATOR

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



IC115 VHIEW6671F+-1R (EW6671F): HALL

Pin No.	Terminal name	Input/Output	Description of terminal
1	VDD	Input	Input
2	GND	–	Earth
3	OUT	Output	Output



IC402 VHIBC313143-1L (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)
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)

Pin No.	Terminal name	Input/Output	Description of terminal
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 circutry
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

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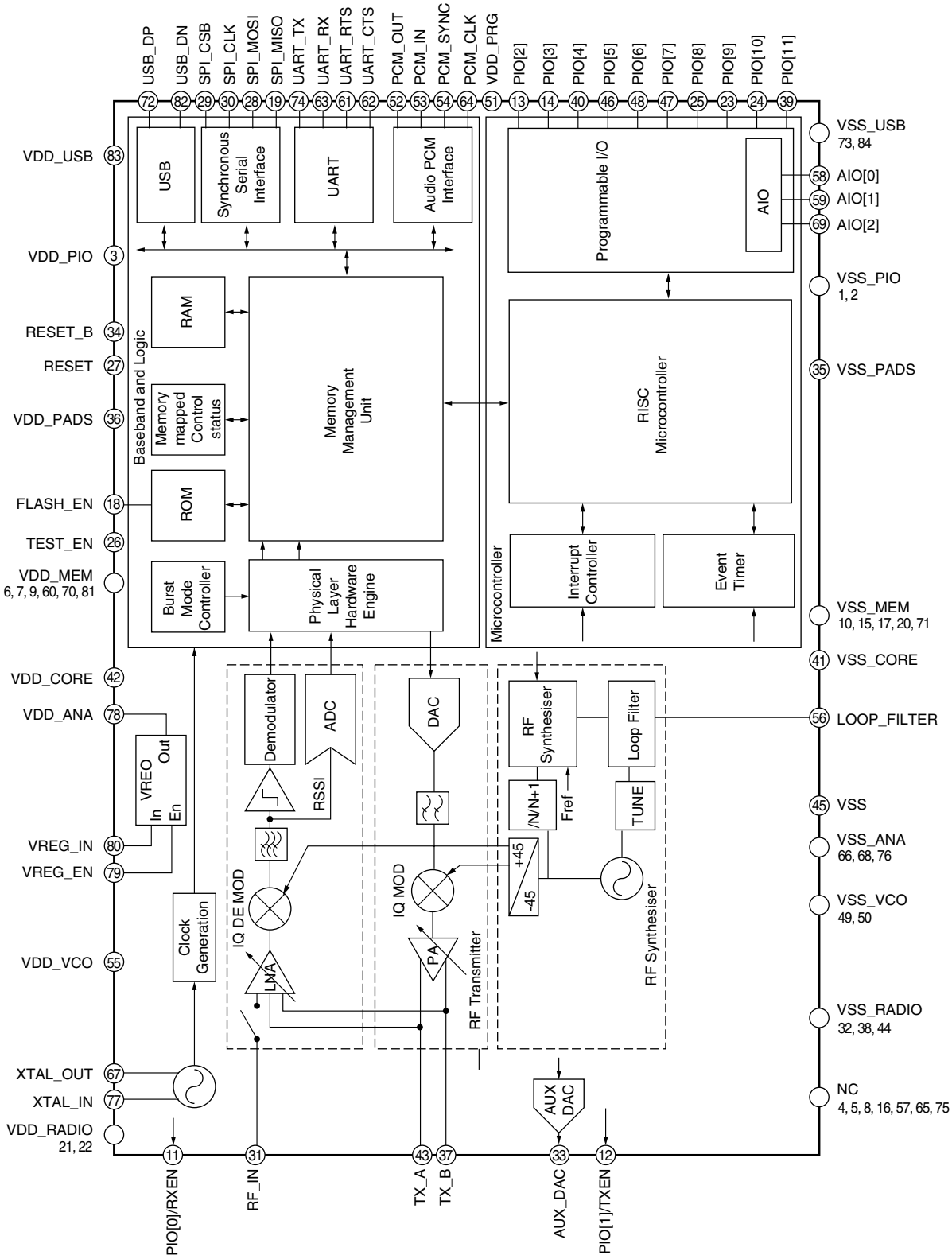
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TX_B 37
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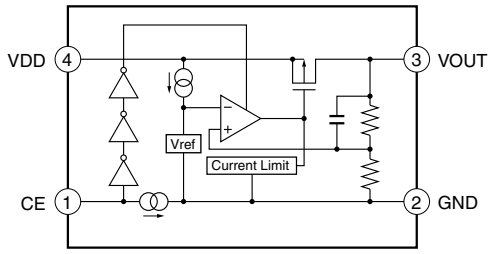
USB
Synchronous Serial Interface
UART
Audio PCM Interface
Programmable I/O
AIO
Baseband and Logic
RAM
Memory mapped Control status
ROM
Burst Mode Controller
Memory Management Unit
Physical Layer Hardware Engine
Microcontroller
RISC Microcontroller
Interrupt Controller
Event Timer
VREO
Out
In
En
Demodulator
ADC
RSSI
DAC
RF Synthesiser
Loop Filter
/N/N+1
Fref
TUNE
+45
-45
IQ DE MOD
IQ MOD
LNA
PA
RF Transmitter
RF Synthesiser
Clock Generation
AUX DAC

CONFIDENTIAL

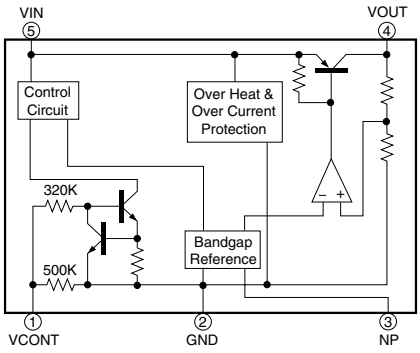
IC403 VHIR118030B-1L (R118030B): REGULATOR

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



IC501 VHITK11132C-1R (TK11132C): REGULATOR
IC602 VHITK11128C-1R (TK11128C): REGULATOR

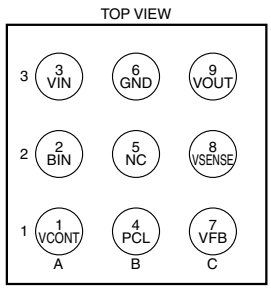
Pin No.	Terminal name	Input/Output	Description of terminal
1	VCONT	Input	Control
2	GND	–	Earth
3	NP	–	Capacitor (Vref)
4	VOUT	Output	Output
5	VIN	Input	Input

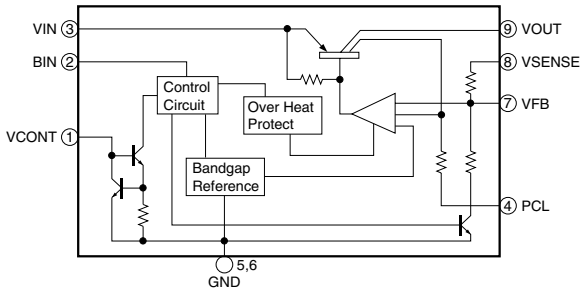


IC503 VHITK73840G-1L (TK73840G): REGULATOR

Pin No.	Terminal name	Input/Output	Description of terminal
1	VCONT (ON/OFF)	Input	Power control
2	BIN (PE)	Input	Power enable
3	VIN (Vin)	Input	Power supply
4	PCL (ACL)	Input	Current setting
5	NC (GND)	–	Earth
6	GND (GND)	–	Earth
7*	VFB (Vfb)	Input	Not used
8	VSENSE (PC)	Output	Power output
9	VOUT (Vout)	Output	Power output

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

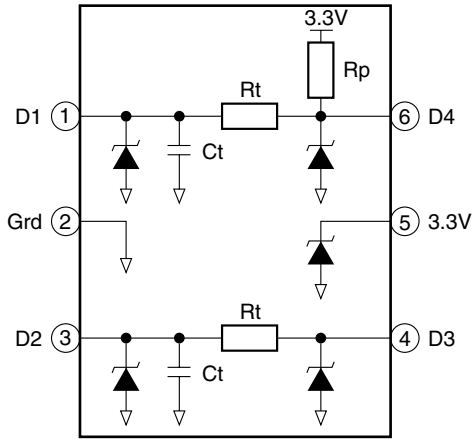




IC504 VHIUSBUF2WE-1L (USBUF2WE): EMI FILTER

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

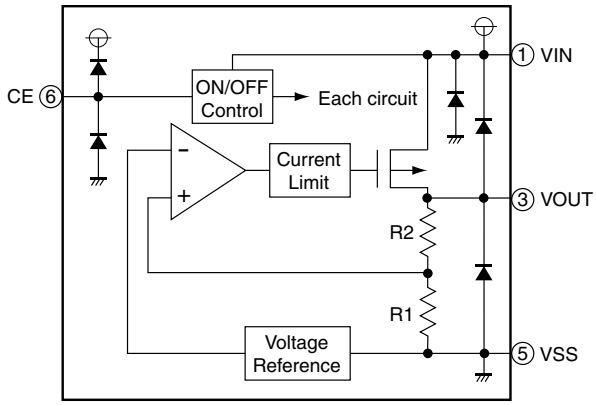
In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.



IC601 VHIXC621918-1L (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.

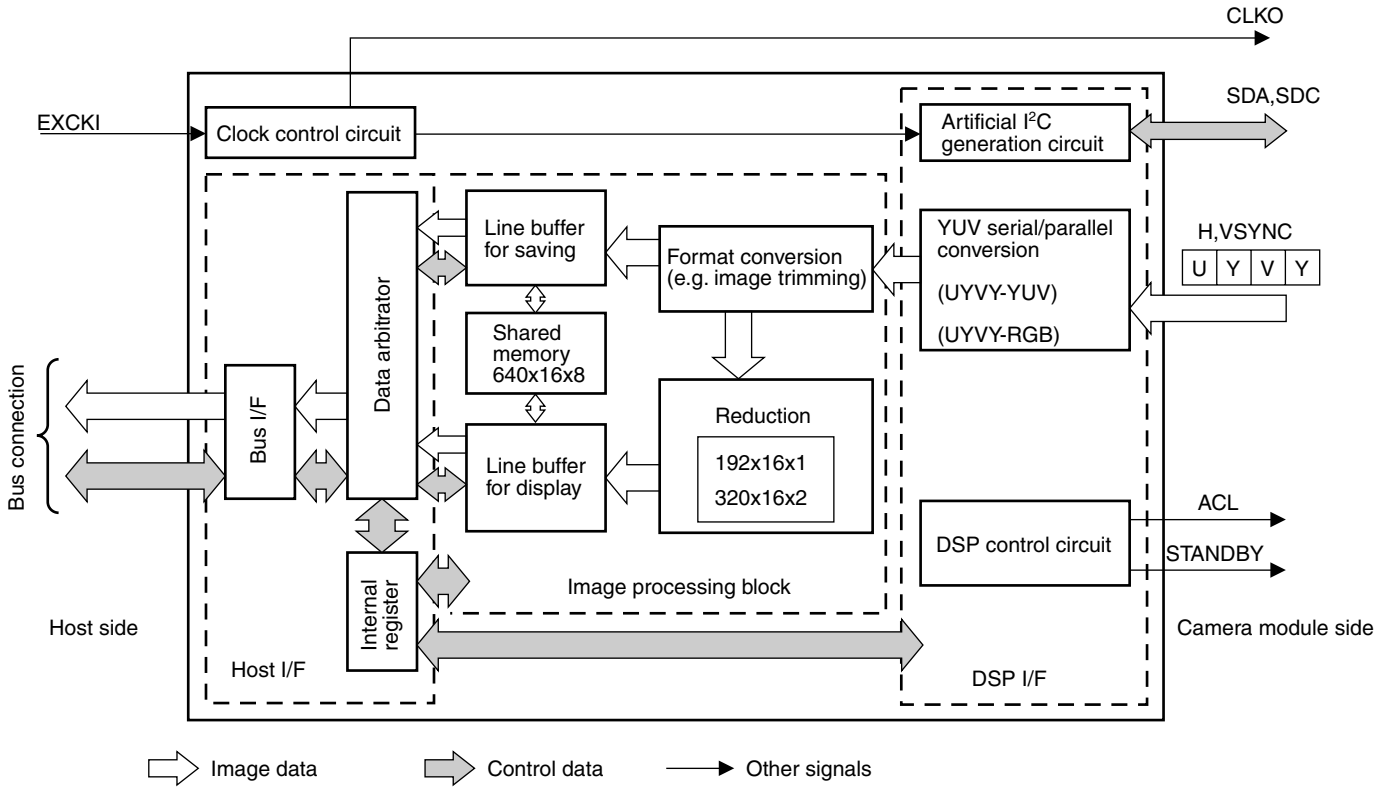


IC603 RH-IXA020AFPZL (LR38876): CAMERA I/F CONVERSION LSI

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
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^2C 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^2C I/F clock line
63	HVDD1	–	External digital power supply 1 (+3.0 V)

Pin No.	Terminal name	Input/Output	Description of terminal
64	GND	–	Earth
65	VSYNC	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.



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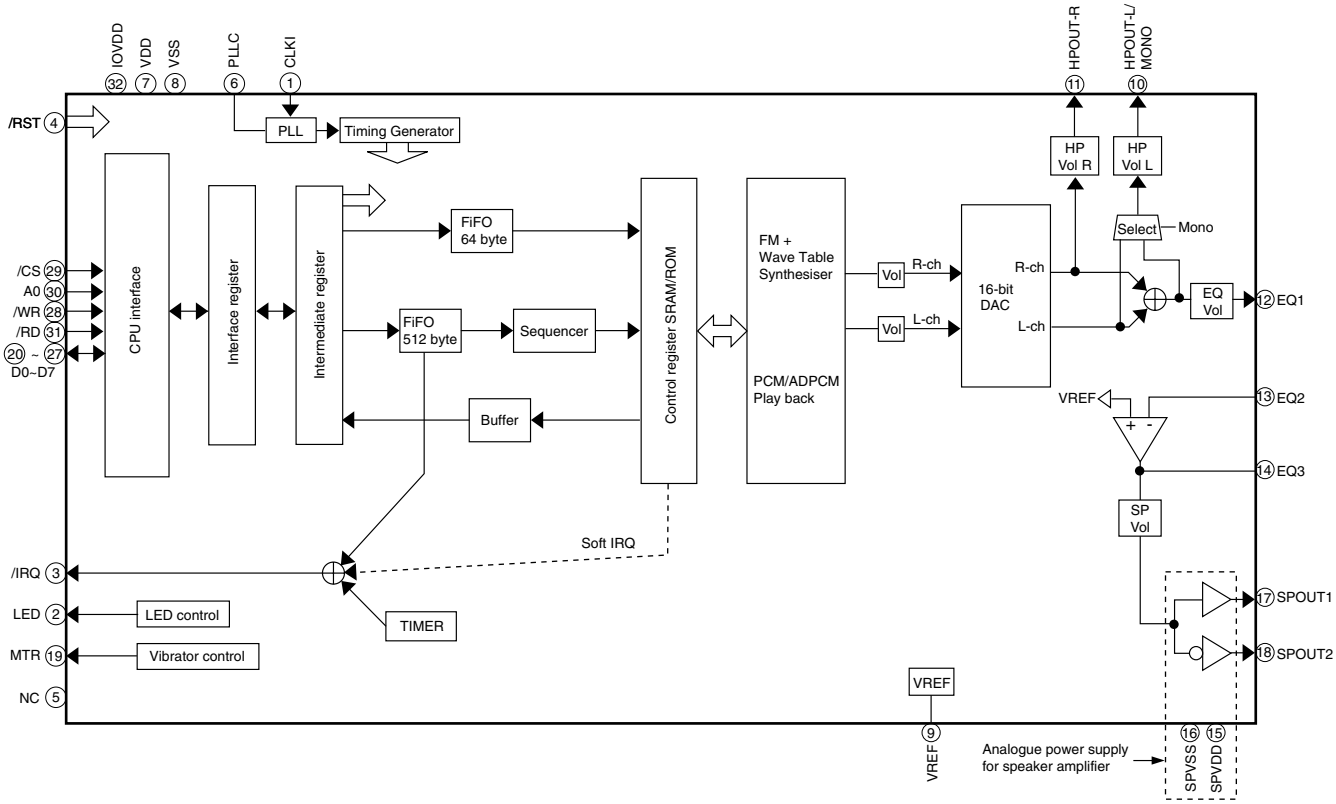
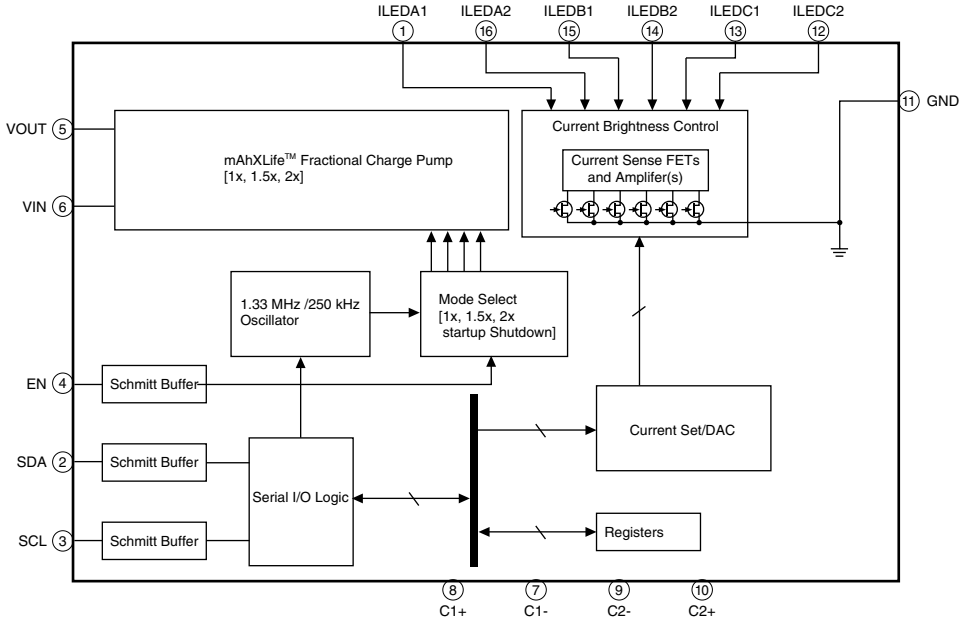
IC604 VHIYMU762C+-1L (YMU762C): SOUND

Pin No.	Terminal name	Input/Output	Description of terminal
1	CLKI	Input	Clock input terminal
2	LED	Output	External LED control terminal
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	–	Equaliser terminal 2
14	EQ3	–	Equaliser terminal 3
15	SPVDD	–	Analogue power supply for speaker amplifier (Typ + 3.6 V)
16	SPVSS	–	Analogue earth for speaker amplifier
17	SPOUT1	Output	Speaker terminal 1
18	SPOUT2	Output	Speaker terminal 2
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



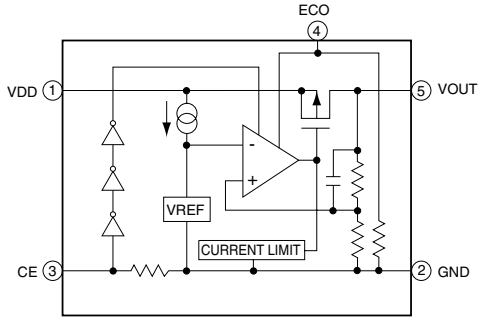
IC605 VHISC606AIT-1L (SC606AIT): POWER

Pin No.	Terminal name	Input/Output	Description of terminal
1	ILEDA1	Output	Current sink for LEDA1 [If not in use, pin may be left open of earth]
2	SDA	Input	Bi-directional serial data line
3	SCL	Input	Serial bus clock input
4	EN	Input	Active high enable Bias current is typically 0.1 μA with EN is low
5	VOUT	Output	Output of the charge pump Connect a 1μF capacitor from VOUT to earth
6	VIN	Input	Input voltage ranging from 2.85 V to 5.5 V
7	C1-	Input/Output	Negative terminal of bucket capacitor 1
8	C1+	Input/Output	Positive terminal of bucket capacitor 1
9	C2-	Input/Output	Negative terminal of bucket capacitor 2
10	C2+	Input/Output	Positive terminal of bucket capacitor 2
11	GND	–	Earth
12	ILEDC2	Output	Current sink for LEDC2 [If not in use, pin may be left open of earth]
13	ILEDC1	Output	Current sink for LEDC1 [If not in use, pin may be left open of earth]
14	ILEDB2	Output	Current sink for LEDB2 [If not in use, pin may be left open of earth]
15	ILEDB1	Output	Current sink for LEDB1 [If not in use, pin may be left open of earth]
16	ILEDA2	Output	Current sink for LEDA2 [If not in use, pin may be left open of earth]



IC703 VHIR11618FB-1L (R11618FB): 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



IC704 (LR38863): DISPLAY CONTROLLER

Pin No.	Terminal name	Input/Output	Description of terminal
1	DUMMY4	–	Dummy 4
2	VDDPLL	–	PLL Power supply 1.8 V (1.6 V~ 2.0 V)
3	PLLGND	–	PLL Earth
4	PLLDIV0	Input	PLL multiply switching signal
5	PLLDIV1	Input	PLL multiply switching signal
6	HSD0	Input/Output	Data bus for high-speed serial transfer
7	HSD1	Input/Output	Data bus for high-speed serial transfer
8	HSD2	Input/Output	Data bus for high-speed serial transfer
9	HSWRD	Input/Output	Read/Write determination signal for high-speed serial transfer
10	HSEN	Input/Output	High-speed serial data effective signal High is active
11	HSCK	Input/Output	Standard clock for high-speed serial transfer (5 to 33 MHz)
12	DUMMY3	–	Dummy 3
13	PWM1/PORT8	Output	PWM output 1 General-purpose PORT output (default)
14	PLLDIV2	Input	PLL multiply switching signal
15	VDDCORE	–	CORE Power supply 1.8 V (1.6 V~ 2.0 V)
16	GND	–	Logic earth
17*	SUBWR_B	Input/Output	Light signal for External display (Not used)
18	GND	–	Logic earth
19	VDDCORE	–	CORE Power supply 1.8 V (1.6 V~ 2.0 V)
20	PWM0/PORT3	Output	PWM output 0 General-purpose PORT output (default)
21*	SUBCS_B	Input/Output	Chip select signal for External display (Not used)
22	CS_B	Input/Output	Device select signal (Display is active when CS_B is “Low”)
23	VDDIO	–	IO Power supply 3.0 V (2.7 V~ 3.3 V)
24*	LCDINT	Output	External interrupt signal (Starting varies when interruption occurs.) (Not used)
25	GTDIO_B	Output	MPEG4ASIC internal core power-cut signal (“Low” is active.)
26	VDDIO	–	IO Power supply 3.0 V (2.7 V~ 3.3 V)
27*	SUBDB1	Input/Output	Data bus for External display (Not used)
28	BDATA[5] (B5)	Output	Display panel B output signa
29	BDATA[5] (B4)	Output	Display panel B output signa
30	BDATA[5] (B3)	Output	Display panel B output signa
31	GND	–	Logic earth
32	TESTI	Input	Test terminal (Connected to GND normally)
33	BSHS_B	Input/Output	External Bit Stream horizontal synchronization signal (“Low” is active)
34	WR_B	Input/Output	Host write strobe signal
35*	SUBRS	Input/Output	Data determination signal for External display (Not used)
36	MP4 RESET_B	Output	MPEG4ASIC reset control signal (“Low” is active)
37	HSD6	Input/Output	Data bus for high-speed serial transfer
38	BDATA[2] (B2)	Output	Display panel B output signal
39	BDATA[2] (B1)	Output	Display panel B output signal
40	BDATA[2] (B0)	Output	Display panel B output signal
41*	EXCS_B1	Input/Output	Chip select output 1 (internal decode output) (Not used)
42*	XOUT	Output	Oscillation circuit output (Not used)
43	VDDIO	–	IO Power supply 3.0 V (2.7 V~ 3.3 V)
44	GND	–	Logic earth
45	SCANEN	Input	Full scan effective signal “High” is active (Connected to GND normally)
46	RD_B	Input/Output	Host read strobe signal
47	RSP	Input/Output	Register selection signal HOST_IF section : RSP = Low...Display access RSP = High...Control access Hyper_Serial section : RSP = Low...Control acces RSP = High...Display access
48	GND	–	Logic earth
49	HSD3	Input/Output	Data bus for high-speed serial transfer
50	DCLK	Input/Output	Data sampling clock (display clock)
51	VSYNC	Input/Output	Vertical synchronization signal
52	HSYNC	Input/Output	Horizontal synchronization signal
53*	EXCS_B3	Input/Output	Chip select output 3 (internal decode output) (Not used)
54	XIN	Input	Oscillation circuit input/External clock input signal Clock input for full scan
55*	SUBDB6	Input/Output	Data bus for External display (Not used)
56	RESET_B	Input	Master reset (All registers are initialized when Low is activated)

Pin No.	Terminal name	Input/Output	Description of terminal
57*	SUBDB0	Input/Output	Data bus for External display (Not used)
58*	SUBDB2	Input/Output	Data bus for External display (Not used)
59	HSD5	Input/Output	Data bus for high-speed serial transfer
60	DB0	Input/Output	Data bus
61	HSD4	Input/Output	Data bus for high-speed serial transfer
62*	EXCS_B2	Input/Output	Chip select output 2 (internal decode output) (Not used)
63	GDATA[5] (G5)	Output	Display panel G output signal
64	GDATA[4] (G4)	Output	Display panel G output signal
65	GDATA[3] (G3)	Output	Display panel G output signal
66*	SUBDB3	Input/Output	Data bus for External display (Not used)
67*	SUBDB4	Input/Output	Data bus for External display (Not used)
68	HSD7	Input/Output	Data bus for high-speed serial transfer
69	DB1	Input/Output	Data bus
70	DB2	Input/Output	Data bus
71	DB3	Input/Output	Data bus
72	DB4	Input/Output	Data bus
73	STKCHK	Input	Setting BS-related output terminal to Hi-z when a stack is installed (Connected to GND normally)
74	VDDCORE	–	CORE Power supply 1.8 V (1.6 V~ 2.0 V)
75	GND	–	Logic earth
76	VDDIO	–	IO Power supply 3.0 V (2.7 V~ 3.3 V)
77	GDATA[2] (G2)	Output	Display panel G output signal
78*	SUBDB5	Input/Output	Data bus for External display (Not used)
79	BSCLK	Input/Output	External Bit Stream data clock
80*	SUBCK	Output	Clock for External display (Not used)
81	DB5	Input/Output	Data bus
82	VDDIO	–	IO Power supply 3.0 V (2.7 V~ 3.3 V)
83	GND	–	Logic earth
84	VDDCORE	–	CORE Power supply 1.8 V (1.6 V~ 2.0 V)
85	CAMCK	Output	Clock for camera operation
86	GDATA[1] (G1)	Output	Display panel G output signal
87	GDATA[0] (G0)	Output	Display panel G output signal
88	RDATA[5] (R5)	Output	Display panel R output signal
89	RDATA[4] (R4)	Output	Display panel R output signal
90	VDDCORE	–	CORE Power supply 1.8 V (1.6 V~ 2.0 V)
91	PWMLCD/PORT4	Output	PWM LCD output General-purpose PORT output (default)
92	BSBLK_B	Input/Output	External Bit Stream data effective signal (“High” is active when transferring the data)
93	DB6	Input/Output	Data bus
94	DB7	Input/Output	Data bus
95	DB8	Input/Output	Data bus
96	DB9	Input/Output	Data bus
97	VDDIO	–	IO Power supply 3.0 V (2.7 V~ 3.3 V)
98	RDATA[3] (R3)	Output	Display panel R output signal
99	RDATA[2] (R2)	Output	Display panel R output signal
100	RDATA[1] (R1)	Output	Display panel R output signal
101	RDATA[0] (R0)	Output	Display panel R output signal
102*	MP4_P0	Output	MPEG4 control
103*	EXCS_B0	Input/Output	Chip select output 0 (internal decode output) (Not used)
104	BSPIXEL7	Input/Output	External Bit Stream data bus
105	BSVS_B	Input/Output	External Bit Stream vertical synchronization signal (“Low” is active)
106	DB10	Input/Output	Data bus
107	DB11	Input/Output	Data bus
108	DB12	Input/Output	Data bus
109*	MP4_PLLCK	Output	MPEG4ASIC clock 15.36 MHz/CPU supply XIN clock (Not used)
110*	SUBDB7	Input/Output	Data bus for External display (Not used)
111	GND	–	Logic earth
112	DA0	Input/Output	Address input for chip select decode
113	BSPIXEL0	Input/Output	External Bit Stream data bus
114	DCS_B	Input	Chip select input dedicated for chip select decode
115	VDDIO	–	IO Power supply 3.0 V (2.7 V~ 3.3 V)
116	BSPIXEL6	Input/Output	External Bit Stream data bus
117	SE_DO/PORT0	Output	Data output for 4-wire serial IF (default) General-purpose PORT output
118	DB13	Input/Output	Data bus

Pin No.	Terminal name	Input/Output	Description of terminal
119	DB14	Input/Output	Data bus
120	DB15	Input/Output	Data bus
121	WAIT_B	Output	External wait signal (“Low” is active)
122	SUBFLMIN	Input	Driver FLM signal input for External display
123*	SUBCKS	Output	Clock switching signal for External display (Not used)
124	DA1	Input/Output	Address input for chip select decode
125	BSPIXEL1	Input/Output	External Bit Stream data bus
126	BSPIXEL4	Input/Output	External Bit Stream data bus
127	GND	–	Logic earth
128	BSPIXEL5	Input/Output	External Bit Stream data bus
129	SE_CK/PORT1	Output	Control clock for 4-wire serial IF (default) General-purpose PORT output
130	SE_LD2/PORT5	Output	Load signal 2 for 4-wire serial IF General-purpose PORT output (default)
131	BUFOFF_B	Input	Buffer Gated switching signal for I/O through current prevention (High when Host_IF signal is activated)
132	VDDIO	–	IO Power supply 3.0 V (2.7 V~ 3.3 V)
133	DUMMY2	–	Dummy 2
134*	SE_LD3/PORT6	Output	Load signal 3 for 4-wire serial IF General-purpose PORT output (default) (Not used)
135	VDDIO	–	IO Power supply 3.0 V (2.7 V~ 3.3 V)
136	SUBLPIN	Input	Driver LP input External display
137	BSPIXEL2	Input/Output	External Bit Stream data bus
138	BSPIXEL3	Input/Output	External Bit Stream data bus
139	VDDCORE	–	CORE Power supply 1.8 V (1.6 V~ 2.0 V)
140	SE_DI/PORT7	Input/Output	4-wire serial input (default) General-purpose PORT output
141	SE_LD1/PORT2	Output	Load signal 1 for 4-wire serial IF (default) General-purpose PORT output
142	GND	–	Logic earth
143	VDDCORE	–	CORE Power supply 1.8 V (1.6 V~ 2.0 V)
144	DUMMY1	–	Dummy 1Dummy 4

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

IC801 VHI15515502-1L (15515502): RF

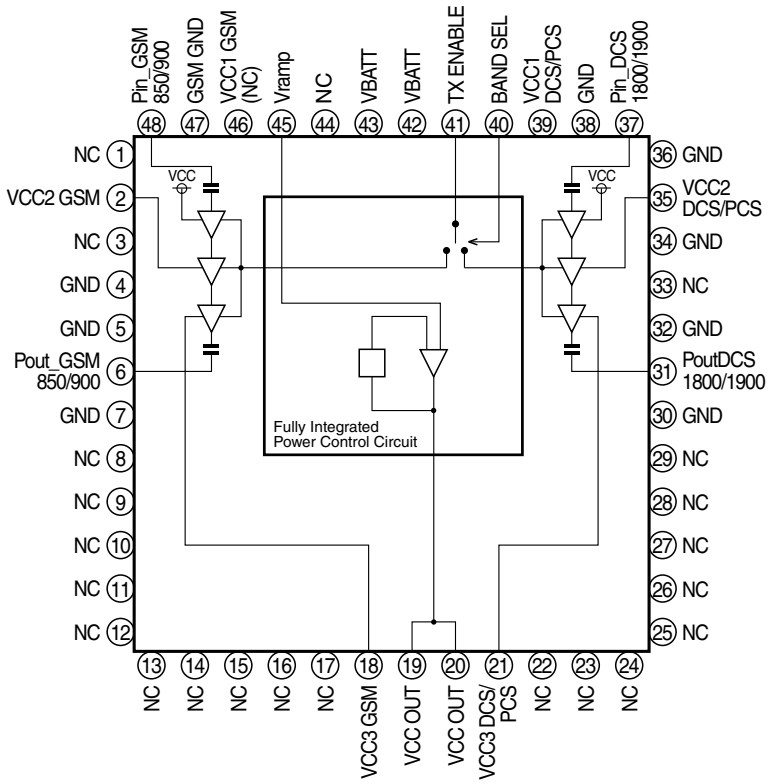
Pin No.	Terminal name	Input/Output	Description of terminal
1	VCCLNA	Input	VCC for LNA transistor and LNA Bias
2	PCSGND	–	Earth for emitter of LNA transistor (PCS)
3	PCSLNAI	Input	Positive input for LNA transistor (PCS)
4	PCSLNAIB	Input	Negative input for LNA transistor (PCS)
5	PCSDCSGND	–	Earth for emitter 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.

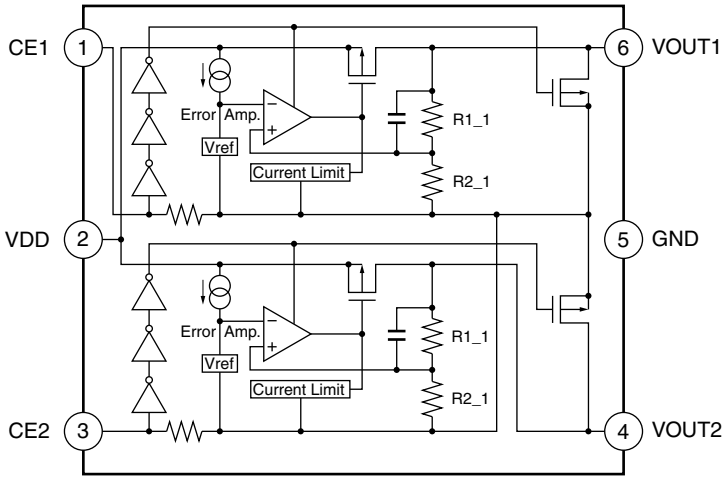
Pin No.	Terminal name	Input/Output	Description of terminal
1*	NC	–	Not used
2	VCC2 GSM	Input	Controlled voltage input the GSM driver stage
3*	NC	–	Not used
4	GND	–	Earth
5	GND	–	Earth
6	Pout_GSM850/900	Output	Output power (GSM850/900)
7	GND	–	Earth
8*	NC	–	Not used
9*	NC	–	Not used
10*	NC	–	Not used
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

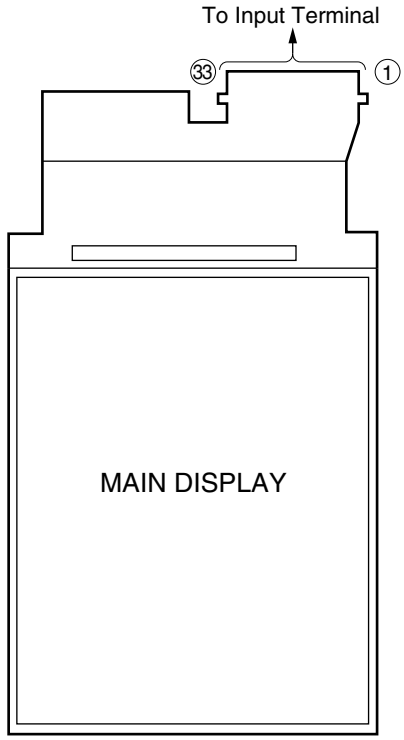
Pin No.	Terminal name	Input/Output	Description of terminal
1	CE1	Input	Chip enable1
2	VDD	Input	Power supply
3	CE2	Input	Chip enable2
4	VOUT2	Output	VCC for VRF
5	GND	–	Earth
6	VOUT1	Output	VCC for VTCXO



[2] Function table of Display

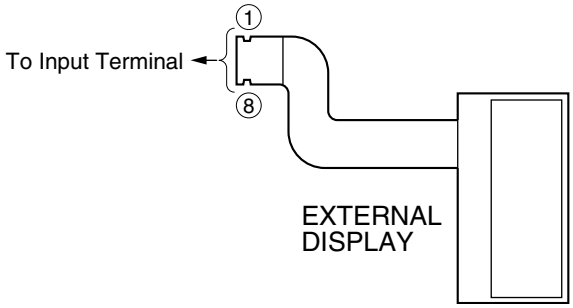
LCD100 RLCUBA019AFPZ: MAIN DISPLAY

Pin No.	Terminal name	Input/Output	Description of terminal
1	GND4	–	Earth
2	B0	Input	Data: Blue, LSB
3	B1	Input	Data: Blue, second bit
4	B2	Input	Data: Blue, third bit
5	B3	Input	Data: Blue, fourth bit
6	B4	Input	Data: Blue, fifth bit
7	B5	Input	Data: Blue, MSB
8	G0	Input	Data: Green, LSB
9	G1	Input	Data: Green, second bit
10	G2	Input	Data: Green, third bit
11	G3	Input	Data: Green, fourth bit
12	G4	Input	Data: Green, fifth bit
13	G5	Input	Data: Green, MSB
14	R0	Input	Data: Red, LSB
15	R1	Input	Data: Red, second bit
16	R2	Input	Data: Red, third bit
17	R3	Input	Data: Red, fourth bit
18	R4	Input	Data: Red, fifth bit
19	R5	Input	Data: Red, MSB
20	GND3	–	Earth
21	DCLK	Input	Dotclock
22	HSYNC	Input	HSYNC
23	VSYNC	Input	VSYNC
24	GND2	–	Earth
25	SO	Output	Output serial
26	SI	Input	Input serial
27	SCLK	Input	Serial clock
28	LCDCS	Input	Serial chip select
29	VDDIO	–	Power supply for logic
30	VDC2	–	Power supply for drive
31	VDC1	–	Power supply for drive
32	RESET	Input	Display reset
33	GND1	–	Earth



LCD101 RLCUBA020AFPZ: EXTERNAL DISPLAY

Pin No.	Terminal name	Input/Output	Description of terminal
1	SDIN	Input	Serial data input
2	SCLK	Input	Serial clock input
3	DC_B	Input	Data/command select input: Select "L" for commands, and "H" to write data
4	SCEB	Input	Chip enable: Select "H" to initialise command register
5	RESET_B	Input	Reset input: Select "L" to initialise this product
6	VDD	–	MPU power supply terminal can also be used for VDD
7	VLCD	–	Power supply for liquid crystal drive circuit
8	VSS	–	0V terminal to be connected to system earth



SHARP PARTS GUIDE

No. SX429TQG250/B

DIGITAL MOBILE PHONE

MODEL GX25

CONTENTS

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.

SHARP CORPORATION

CONFIDENTIAL

	NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
	[1] INTEGRATED CIRCUITS					
	iC102	VHiQ5RW45BF-1L	AD			4.5V Regulator,Q5RW45BF
⚠	iC103	--------	-			This Parts is Supplied with Cabinet Parts 104
	iC104	--------	-			This Parts is Supplied with Cabinet Parts 104
	iC105	VHiTC7SZ08F-1L	AC			And Gate,TC7SZ08F
⚠	iC106	--------	-			This Parts is Supplied with Cabinet Parts 104
	iC107	VHiX61CN27N-1L	AD			Voltage Detector,X61CN27N
	iC108	VHi1323B30G-1R	AD			Regulator,1323B30G
	iC109	VHiTC7SZ32F-1L	AC			Logic,TC7SZ32F
	iC111	VHiBH30MA3W-1R	AE			Regulator,BH30MA3W
	iC114	VHiTC75S58A-1L	AE			Comparator,TC75S58A
	iC115	VHiEW6671F+-1R	AD			Hall,EW6671F
	iC402	VHiBC313143-1L	AX			Bluetooth Module,BC313143
	iC403	VHiR118030B-1L	AD			Regulator,R118030B
	iC501	VHiTK11132C-1R	AD			Regulator,TK11132C
	iC503	VHiTK73840G-1L	AF			Regulator,TK73840G
	iC504	VHiUSBUF2WE-1L	AF			EMI Filter,USBUF2WE
	iC507	VHi74VHC1GT-1L	AC			Logic,74VHC1GT
	iC601	VHiXC621918-1L	AD			Regulator,XC621918
	iC602	VHiTK11128C-1R	AD			Regulator,TK11128C
	iC603	RH-iXA020AFPZL	AR			Camera I/F Conversion LSI,LR38876
⚠	iC604	VHiYMU762C+-1L	AX			Sound,YMU762C
	iC605	VHiSC606AiT-1L	AL			Power,SC606AIT
	iC703	VHiR11618FB-1L	AD			Regulator,R11618FB
	iC704	--------	-			This Parts is Supplied with Cabinet Parts 104
⚠	iC801	VHi15515502-1L	AU			RF,15515502
⚠	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
	Q106	VSEC4301C++-1L	AB			FET,EC4301 C
	Q107	VSEC4401C++-1L	AB			FET,EC4401 C
	Q501	VSDC114YETG-1L	AB			Digital,NPN,DC114 YETG
	Q502	VSEC4401C++-1L	AB			FET,EC4401 C
	Q503	VSDC114YETG-1L	AB			Digital,NPN,DC114 YETG
	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
	Q751	VSEC4401C++-1L	AB			FET,EC4401 C
	[3] DIODES					
	D101	VHDRB52030T-1L	AB			Silicon,RB52030T
	D102	VHDRB160M30-1L	AC			Silicon,RB160M30
	D105	VHDRB52130T-1L	AB			Silicon,RB52130T
	D502	VHD1SS388F+-1L	AB			Silicon,1SS388F
	D503	VHDRB160M30-1L	AC			Silicon,RB160M30
	D505	VHDRB52130T-1L	AB			Silicon,RB52130T
	D631	VHD1SS388F+-1L	AB			Silicon,1SS388F
	D708	VHDMA2SD31+-1L	AB			Silicon,MA2SD31
	D771	VHD1SS388F+-1L	AB			Silicon,1SS388F
	LED551	VHPPY1103CF-1L	AB			LED,Yellow green,PY1103CF
	LED552	VHPPY1103CF-1L	AB			LED,Yellow green,PY1103CF
	LED553	VHPPY1103CF-1L	AB			LED,Yellow green,PY1103CF
	LED554	VHPPY1103CF-1L	AB			LED,Yellow green,PY1103CF
	LED555	VHPYPY1105C-1L	AC			LED,Yellow green,YPY1105C
	LED556	VHPYPY1105C-1L	AC			LED,Yellow green,YPY1105C
	LED559	VHPPY1103CF-1L	AB			LED,Yellow green,PY1103CF
	LED560	VHPPY1103CF-1L	AB			LED,Yellow green,PY1103CF
	LED561	VHPPY1103CF-1L	AB			LED,Yellow green,PY1103CF
	LED562	VHPPY1103CF-1L	AB			LED,Yellow green,PY1103CF
	LED701	VHPEW008BB5-1L	AG			LED,White,EW008BB5
	LED702	VHPEW008BB5-1L	AG			LED,White,EW008BB5
	LED703	VHPEW008BB5-1L	AG			LED,White,EW008BB5
	LED704	VHPNSCB215T-1L	AE			LED,Blue,NSCB215T
	LED751	VHPEW1102AT-1L	AK			LED,White,EW1102AT
	UN101	VHP2W0110VY-1R	AH			Infrared Port (2W0110VY)
	ZD101	VHERSB6R8S+-1L	AC			Zener,6.8V,RSB6.8S
	ZD102	VHERSB6R8S+-1L	AC			Zener,6.8V,RSB6.8S
	ZD703	VHERSB6R8S+-1L	AC			Zener,6.8V,RSB6.8S
	ZD704	VHERSB6R8S+-1L	AC			Zener,6.8V,RSB6.8S

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
[4] FILTERS					
FL101	RFiLNA004AFZZN	AC			Noise Filter
FL102	RFiLNA004AFZZN	AC			Noise Filter
FL103	RFiLNA004AFZZN	AC			Noise Filter
FL104	RFiLNA004AFZZN	AC			Noise Filter
FL105	RFiLNA004AFZZN	AC			Noise Filter
FL401	RFiLRA017AFPZR	AE			Filter,Bluetooth
FL701	RFiLNA004AFZZN	AC			Noise Filter
⚠ FL803	RFiLRA006AFZZL	AF			RF Switch
FL823	RFiLN0020AFZZN	AB			Ferrite Beads
FL902	RFiLRA015AFPZL	AG			SAW Filter
FL903	RFiLRA014AFPZL	AF			SAW Filter
FL905	RFiLR0256AFZZL	AE			ESD Device
[5] COILS					
L101	RCiLZ1088YCZZ-	AC			Ferrite Beads
L102	RCiLZ1088YCZZ-	AC			Ferrite Beads
L103	VPBFMS33JR65MT	AB			33 nH
L104	VPBFMS33JR65MT	AB			33 nH
L107	RCiLZ1088YCZZ-	AC			Ferrite Beads
L108	RCiLZ1088YCZZ-	AC			Ferrite Beads
L113	RCiLZ1088YCZZ-	AC			Ferrite Beads
L124	RCiLZ1088YCZZ-	AC			Ferrite Beads
L403	VPBZNS22J0000-	AA			22 nH
L635	VPBFMS33JR65MT	AB			33 nH
L636	VPBFMS33JR65MT	AB			33 nH
L714	RBLN-0240TAZZY	AB			Ferrite Beads
L715	RBLN-0240TAZZY	AB			Ferrite Beads
L746	RCiLZA008AFZZN	AB			Ferrite Beads
L749	RCiLZ0387AFZZN	AB			Ferrite Beads
L801	RCiLZ1103YCZZ-	AB			Ferrite Beads
L802	RCiLZA005AFZZN	AB			Ferrite Beads
L821	VPCAMT22S0000-	AC			2.2 nH
L822	VPCAMT22S0000-	AC			2.2 nH
L830	VPCAMT27S0000-	AC			2.7 nH
L883	VPCAMS10J0000-	AA			10 nH
L884	VPCAMS12J0000-	AK			12 nH
L891	VPCAMT68J0000-	AA			6.8 nH
L892	VPCAMT68J0000-	AA			6.8 nH
L1871	VPCAMT68J0000-	AA			6.8 nH
L1872	VPCAMT33S0000-	AA			3.3 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	RTCOXA005AFPZL	AP			VCTCXO,26 MHz
X101	RCRSC0065AFZZL	AF			Crystal,32 kHz
[8] THERMISTOR					
TH101	RH-HXA001AFZZN	AF			Thermistor,10 kohm
[9] ARRAY PARTS					
FL219	RFiLN0024AFZZR	AF			Array,EMI Filter
FL220	RFiLN0024AFZZR	AF			Array,EMI Filter
FL221	RFiLN0024AFZZR	AF			Array,EMI Filter
FL222	RFiLN0024AFZZR	AF			Array,EMI Filter
FL223	RFiLN0024AFZZR	AF			Array,EMI Filter
L733	RCiLZ0389AFZZN	AC			Array,Ferrite Beads
L734	RCiLZ0389AFZZN	AC			Array,Ferrite Beads
L735	RCiLZ0389AFZZN	AC			Array,Ferrite Beads
L736	RCiLZ0389AFZZN	AC			Array,Ferrite Beads
R273	RMPTR4470ACZZN	AB			Array,47 ohms
R274	RMPTR4470ACZZN	AB			Array,47 ohms
R275	RMPTR4470ACZZN	AB			Array,47 ohms
R276	RMPTR4470ACZZN	AB			Array,47 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
R615	RMPTR4470ACZZN	AB			Array,47 ohms
R616	RMPTR4470ACZZN	AB			Array,47 ohms
R617	RMPTR4470ACZZN	AB			Array,47 ohms

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NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
[10] CAPACITORS					
C101	VCCCCZ1EH470JT	AB			47 pF (CH),25V
C103	VCCCCZ1EH470JT	AB			47 pF (CH),25V
C105	VCKYCZ1AB104KT	AA			0.1 μ F,10V
C106	VCCCCZ1EH470JT	AB			47 pF (CH),25V
C107	RC-KZ1315AFZZN	AC			10 μ F,6.3V
C108	RC-KZ1315AFZZN	AC			10 μ F,6.3V
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	RC-KZ1308AFZZT	AD			4.7 μ F,6.3V
C123A	VCKYCZ1AB104KT	AA			0.1 μ F,10V
C124	VCKYCZ0JB105KT	AB			1 μ F,6.3V
C125	VCKYCZ1AB104KT	AA			0.1 μ F,10V
C126	VCCCCZ1EH470JT	AB			47 pF (CH),25V
C127	VCKYCZ1AB104KT	AA			0.1 μ F,10V
C129	VCKYCZ1AB104KT	AA			0.1 μ F,10V
C131	VCCCCZ1EH470JT	AB			47 pF (CH),25V
C132	VCKYCZ0JB105KT	AB			1 μ F,6.3V
C133	VCCCCZ1EH470JT	AB			47 pF (CH),25V
C134	VCCCCZ1EH470JT	AB			47 pF (CH),25V
C135	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	VCCCCZ1EH470JT	AB			47 pF (CH),25V
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	VCCCCZ1EH470JT	AB			47 pF (CH),25V
C148	VCKYCZ1AB104KT	AA			0.1 μ F,10V
C149	VCCCCZ1EH470JT	AB			47 pF (CH),25V
C150	VCKYCZ0JB105KT	AB			1 μ F,6.3V
C151	VCKYCZ1EB102KT	AB			0.001 μ F,25V
C153	VCCCCZ1EH470JT	AB			47 pF (CH),25V
C155	VCKYCZ0JB105KT	AB			1 μ F,6.3V
C156	VCKYCY0JB225KT	AC			2.2 μ F,6.3V
C158	VCKYCY0JB225KT	AC			2.2 μ F,6.3V
C159	VCKYCZ0JB105KT	AB			1 μ F,6.3V
C160	VCKYCZ0JB105KT	AB			1 μ F,6.3V
C161	VCKYCZ0JB105KT	AB			1 μ F,6.3V
C162	VCKYCY1AB474KT	AC			0.47 μ F,10V
C163	VCCCCZ1EH470JT	AB			47 pF (CH),25V
C164	VCKYCZ0JB105KT	AB			1 μ F,6.3V
C165	VCKYCZ1AB104KT	AA			0.1 μ F,10V
C166	VCKYCZ0JB105KT	AB			1 μ F,6.3V
C170	VCKYCZ1AB104KT	AA			0.1 μ F,10V
C173	VCKYCZ1EB102KT	AB			0.001 μ F,25V
C176	VCCCCZ1EH2R0CT	AB			2 pF (CH),25V
C177	VCKYCZ1AB104KT	AA			0.1 μ F,10V
C178	VCKYCZ1AB104KT	AA			0.1 μ F,10V
C179	VCKYCZ1CB103KT	AB			0.01 μ F,16V
C180	VCCCCZ1EH470JT	AB			47 pF (CH),25V
C181	VCKYCZ1AB104KT	AA			0.1 μ F,10V
C182	VCKYCZ1AB104KT	AA			0.1 μ F,10V
C183	VCKYCZ1AB104KT	AA			0.1 μ F,10V
C184	VCKYCZ1AB104KT	AA			0.1 μ F,10V
C186	VCKYCZ1CB103KT	AB			0.01 μ F,16V
C187	VCKYCZ1AB104KT	AA			0.1 μ F,10V
C188	VCKYCZ1AB104KT	AA			0.1 μ F,10V
C191	VCKYCZ1AB104KT	AA			0.1 μ F,10V
C192	VCCCCZ1HH100DT	AA			10 pF (CH),50V
C195	VCKYCZ1CB103KT	AB			0.01 μ F,16V
C196	RC-KZ1308AFZZT	AD			4.7 μ F,6.3V
C197	RC-KZ1308AFZZT	AD			4.7 μ F,6.3V
C198	VCKYCZ1AB104KT	AA			0.1 μ F,10V
C199	VCKYCZ1AB104KT	AA			0.1 μ F,10V
C200	VCCCCZ1EH470JT	AB			47 pF (CH),25V
C203	VCKYCZ0JB105KT	AB			1 μ F,6.3V
C207	VCKYCZ1AB104KT	AA			0.1 μ F,10V
C213	VCKYCZ0JB105KT	AB			1 μ F,6.3V
C214	VCKYCZ0JB105KT	AB			1 μ F,6.3V
C219	VCKYCZ1AB104KT	AA			0.1 μ F,10V
C220	VCKYCZ1AB104KT	AA			0.1 μ F,10V
C231	VCKYCZ1AB104KT	AA			0.1 μ F,10V
C232	VCKYCZ1AB104KT	AA			0.1 μ F,10V
C233	VCKYCZ0JB105KT	AB			1 μ F,6.3V
C401	VCKYCZ0JB105KT	AB			1 μ F,6.3V
C402	VCKYCZ0JB105KT	AB			1 μ F,6.3V

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
[10] CAPACITORS					
C409	VCKYCZ1CB103KT	AB			0.01 μ F,16V
C410	VCKYCZ1CB103KT	AB			0.01 μ F,16V
C411	VCKYCY1AB225KT	AB			2.2 μ F,10V
C413	VCCCCZ1EH2R0CT	AB			2 pF (CH),25V
C414	VCKYCZ1CB103KT	AB			0.01 μ F,16V
C416	VCKYCZ1CB103KT	AB			0.01 μ F,16V
C417	VCCCCZ1EH2R0CT	AB			2 pF (CH),25V
C418	RC-CZ0065CFZZN	AB			1.6 pF,16V
C501	VCKYCZ1AB104KT	AA			0.1 μ F,10V
C504	VCKYCZ1EB102KT	AB			0.001 μ F,25V
C505	RC-KZ1321AFZZN	AD			22 μ F,6.3V
C507	VCKYCZ0JB105KT	AB			1 μ F,6.3V
C510	VCKYCZ0JB105KT	AB			1 μ F,6.3V
C511	VCKYCZ1CB103KT	AB			0.01 μ F,16V
C512	VCKYCZ1CB103KT	AB			0.01 μ F,16V
C513	VCKYCY1AB105KT	AB			1 μ F,10V
C521	VCKYCY1EB105KT	AB			1 μ F,25V
C601	VCKYCZ0JB105KT	AB			1 μ F,6.3V
C602	VCKYCZ1AB104KT	AA			0.1 μ F,10V
C604	VCKYCZ1CB103KT	AB			0.01 μ F,16V
C605	VCKYCY1AB105KT	AB			1 μ F,10V
C606	VCKYCZ0JB105KT	AB			1 μ F,6.3V
C607	VCKYCZ1AB473KT	AB			0.047 μ F,10V
C608	VCKYCZ0JB105KT	AB			1 μ F,6.3V
C609	VCKYCZ1AB104KT	AA			0.1 μ F,10V
C610	VCKYCZ1AB104KT	AA			0.1 μ F,10V
C611	VCCCCZ1EH470JT	AB			47 pF (CH),25V
C613	VCKYCZ1AB104KT	AA			0.1 μ F,10V
C614	VCKYCZ0JB105KT	AB			1 μ F,6.3V
C615	VCKYCZ1AB104KT	AA			0.1 μ F,10V
C619	VCKYCZ1AB104KT	AA			0.1 μ F,10V
C620	VCKYCZ1AB473KT	AB			0.047 μ F,10V
C621	VCCCCZ1EH221JT	AA			220 pF (CH),25V
C622	VCKYCZ1AB473KT	AB			0.047 μ F,10V
C623	VCKYCZ1AB104KT	AA			0.1 μ F,10V
C624	VCKYCZ1EB102KT	AB			0.001 μ F,25V
C625	RC-KZ1308AFZZT	AD			4.7 μ F,6.3V
C626	VCKYCZ1AB104KT	AA			0.1 μ F,10V
C627	VCCCCZ1EH470JT	AB			47 pF (CH),25V
C628	VCCCCZ1EH470JT	AB			47 pF (CH),25V
C629	VCKYCZ1EB103KT	AA			0.01 μ F,25V
C630	VCKYCZ1EB103KT	AA			0.01 μ F,25V
C632	VCCCCZ1EH470JT	AB			47 pF (CH),25V
C633	VCKYCZ0JB105KT	AB			1 μ F,6.3V
C635	VCKYCZ0JB105KT	AB			1 μ F,6.3V
C636	VCKYCZ0JB105KT	AB			1 μ F,6.3V
C637	VCKYCZ0JB105KT	AB			1 μ F,6.3V
C638	VCCCCZ1EH470JT	AB			47 pF (CH),25V
C639	VCCCCZ1EH470JT	AB			47 pF (CH),25V
C640	VCCCCZ1EH470JT	AB			47 pF (CH),25V
C642	VCKYCZ1AB104KT	AA			0.1 μ F,10V
C711	VCCCCZ1EH470JT	AB			47 pF (CH),25V
C712	VCCCCZ1EH470JT	AB			47 pF (CH),25V
C717	VCCCCZ1HH100DT	AA			10 pF (CH),50V
C720	VCCCCZ1HH100DT	AA			10 pF (CH),50V
C727	VCKYCZ1AB104KT	AA			0.1 μ F,10V
C728	VCKYCZ0JB105KT	AB			1 μ F,6.3V
C729	VCKYCY0JB105KT	AC			1 μ F,6.3V
C730	VCKYCZ1AB104KT	AA			0.1 μ F,10V
C732	VCKYCZ1AB104KT	AA			0.1 μ F,10V
C734	VCKYCZ1AB104KT	AA			0.1 μ F,10V
C736	VCKYCZ1CB103KT	AB			0.01 μ F,16V
C737	VCKYCZ1AB104KT	AA			0.1 μ F,10V
C739	VCKYCZ1AB104KT	AA			0.1 μ F,10V
C766	VCKYCZ1CB103KT	AB			0.01 μ F,16V
C771	VCKYCZ1AB104KT	AA			0.1 μ F,10V
C772	VCKYCY1AB104KT	AC			0.1 μ F,10V
C787	VCCCCZ1EH101JT	AB			100 pF (CH),25V
C801	VCKYCZ0JB105KT	AB			1 μ F,6.3V
C802	VCKYCY0JB225KT	AC			2.2 μ F,6.3V
C803	VCKYCZ1CB103KT	AB			0.01 μ F,16V
C806	VCKYCY0JB225KT	AC			2.2 μ F,6.3V
C807	VCKYCZ1CB103KT	AB			0.01 μ F,16V
C810	VCKYCZ0JB105KT	AB			1 μ F,6.3V
C811	VCCCCZ1EH220JT	AA			22 pF (CH),25V
C812	VCCCCZ1EH220JT	AA			22 pF (CH),25V
C830	VCKYCZ0JB105KT	AB			1 μ F,6.3V
C831	RC-KZ3009AFZZN	AA			0.0022 μ F,50V
C831A	VCCCCZ1EH5R0CT	AA			5 pF (CH),25V
C832	VCCCCZ1EH271JT	AA			270 pF (CH),25V
C833	VCCCCZ1EH101JT	AB			100 pF (CH),25V
C835	VCKYCZ1AB104KT	AA			0.1 μ F,10V
C836	VCCCCZ1EH101JT	AB			100 pF (CH),25V
C837	VCKYCZ1AB104KT	AA			0.1 μ F,10V
C840	VCKYCZ1EB331KT	AA			330 pF,25V

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NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
[10] CAPACITORS					
C841	RC-KZ3010AFZZN	AB			0.0033 μ F,50V
C842	VCKYCZ1AB104KT	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	VCKYCZ1AB104KT	AA			0.1 μ F,10V
C850	RC-CZ3001AFZZN	AB			0.015 μ F,50V
C851	VCKYCZ1EB182KT	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-SZ3004AFPZL	AE			47 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	VCKYCZ1EB102KT	AB			0.001 μ F,25V
C881	VCCCCZ1EH470JT	AB			47 pF (CH),25V
C885	RC-CZ0057CFZZN	AB			0.7 pF,16V
C892	VCCCCZ1EH1R0CT	AA			1 pF (CH),25V
C1820	VCKYCZ1EB102KT	AB			0.001 μ F,25V
C1822	VCKYCZ1CB103KT	AB			0.01 μ F,16V
C1823	VCCCCZ1EH101JT	AB			100 pF (CH),25V
C1824	VCKYCZ1EB102KT	AB			0.001 μ F,25V
C1862	VCKYCZ1EB102KT	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	VCCCCZ1EH2R0CT	AB			2 pF (CH),25V
C1876	VCCCCZ1EH2R0CT	AB			2 pF (CH),25V
C1877	VCCCCZ1EH2R0CT	AB			2 pF (CH),25V
C1878	VCCCCZ1EH1R0CT	AA			1 pF (CH),25V
[11] RESISTORS					
R101	VRS-CZ1JB474JT	AB			470 kohms,1/16W
R102	VRS-CZ1JB471JT	AA			470 ohms,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
R110	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R112	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
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-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R127	VRS-CZ1JB470JT	AA			47 ohms,1/16W
R128	VRS-CZ1JB913JT	AA			91 kohms,1/16W
R130	VRS-CZ1JB332DT	AA			3.3 kohms,1/16W
R131	VRS-CZ1JB331JT	AB			330 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
R154	VRS-CZ1JB474JT	AB			470 kohms,1/16W
R156	VRS-CZ1JB474JT	AB			470 kohms,1/16W
R160	VRS-CZ1JB474JT	AB			470 kohms,1/16W
R161	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
R170	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R171	VRS-CZ1JB471JT	AA			470 ohms,1/16W
R172	VRS-CZ1JB471JT	AA			470 ohms,1/16W
R173	VRS-CZ1JB471JT	AA			470 ohms,1/16W
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
R179	VRS-CZ1JB820JT	AA			82 ohms,1/16W
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

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
[11] RESISTORS					
R184	VRS-CZ1JB474JT	AB			470 kohms,1/16W
R185	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R188	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R189	VRS-CZ1JB474JT	AB			470 kohms,1/16W
R192	VRS-CZ1JB474JT	AB			470 kohms,1/16W
R194	VRS-CZ1JB474JT	AB			470 kohms,1/16W
R197	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R199	VRS-CZ1JB474JT	AB			470 kohms,1/16W
R203	VRS-CZ1JB752JT	AA			7.5 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-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R218	VRS-CZ1JB474JT	AB			470 kohms,1/16W
R224	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R225	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R226	VRS-CZ1JB103DT	AB			10 kohm,1/16W
R227	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R228	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R229	VRS-CZ1JB103DT	AB			10 kohm,1/16W
R231	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R233	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R234	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R235	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
R401	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R406	VRS-CZ1JB474JT	AB			470 kohms,1/16W
R411	VRS-CZ1JB2R2JT	AA			2.2 ohms,1/16W
R412	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-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R513	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
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
R528	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R529	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
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
R543	VRS-CZ1JB471JT	AA			470 ohms,1/16W
R544	VRS-CZ1JB471JT	AA			470 ohms,1/16W
R545	VRS-CZ1JB471JT	AA			470 ohms,1/16W
R551	VRS-CZ1JB821JT	AA			820 ohms,1/16W
R552	VRS-CZ1JB821JT	AA			820 ohms,1/16W
R553	VRS-CZ1JB821JT	AA			820 ohms,1/16W
R554	VRS-CZ1JB821JT	AA			820 ohms,1/16W
R555	VRS-CZ1JB821JT	AA			820 ohms,1/16W
R556	VRS-CZ1JB821JT	AA			820 ohms,1/16W
R559	VRS-CZ1JB821JT	AA			820 ohms,1/16W
R561	VRS-CZ1JB821JT	AA			820 ohms,1/16W
R562	VRS-CZ1JB821JT	AA			820 ohms,1/16W
R564	VRS-CZ1JB103JT	AA			10 kohm,1/16W
R565	VRS-CZ1JB821JT	AA			820 ohms,1/16W
R601	VRS-CZ1JB474JT	AB			470 kohms,1/16W
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
R608	VRS-CZ1JB222JT	AB			2.2 kohms,1/16W
R614	VRS-CZ1JB474JT	AB			470 kohms,1/16W
R618	VRS-CZ1JB121JT	AB			120 ohms,1/16W
R620	VRS-CZ1JB273JT	AA			27 kohms,1/16W
R621	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R622	VRS-CZ1JB183JT	AB			18 kohms,1/16W
R623	VRS-CZ1JB683JT	AA			68 kohms,1/16W
R624	VRS-CY1JB000JT	AA			0 ohm,Jumper,0.8x1.55mm,Green
R625	VRS-CY1JB000JT	AA			0 ohm,Jumper,0.8x1.55mm,Green
R626	VRS-CY1JB000JT	AA			0 ohm,Jumper,0.8x1.55mm,Green

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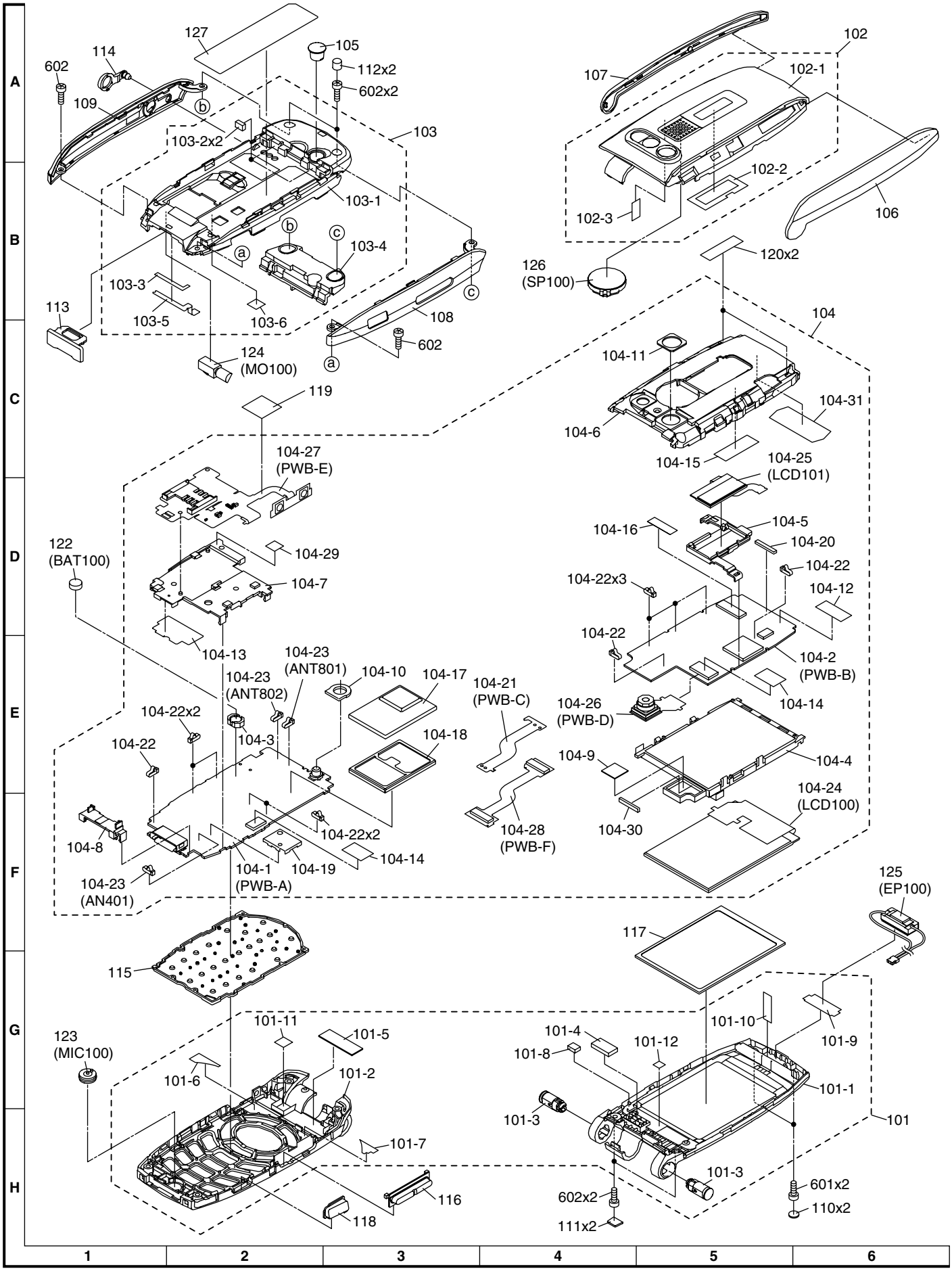
NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
[11] RESISTORS					
R628	VRS-CZ1JB332JT	AA			3.3 kohms,1/16W
R629	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R630	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R633	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R637	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R638	VRS-CZ1JB474JT	AB			470 kohms,1/16W
R639	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R640	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R641	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R704	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R705	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R710	VRS-CZ1JB104JT	AA			100 kohm,1/16W
R711	VRS-CZ1JB221JT	AA			220 ohms,1/16W
R713	VRS-CZ1JB1R0JT	AA			1 ohm,1/16W
R713A	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R714	VRS-CZ1JB474JT	AB			470 kohms,1/16W
R716	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R717	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R719	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R720	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R727	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R728	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R732	VRS-CZ1JB474JT	AB			470 kohms,1/16W
R747	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R748	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R763	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R771	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R773	VRS-CZ1JB474JT	AB			470 kohms,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
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
R832	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
R1873	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R1874	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R2002	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
R2015	VRS-CZ1JB000JT	AB			0 ohm,Jumper,0.5x1.0mm
[12] OTHER CIRCUITRY PARTS					
AN401	QTANZA005AFZZL	AC			Contact,Spring B
ANT801	QTANZA005AFZZL	AC			Contact,Spring B
ANT802	QTANZA005AFZZL	AC			Contact,Spring B
BAT100	RDNTLA002AFPZ	AF			Battery,Back-up
CN101	QCNCMA010AF60N	AK			Plug,60Pin
CN103	QCNCWA037AF10R	AF			Socket,10Pin
CN401	QCNCW947FAFZZL	AF			Terminal,Bluetooth Aerial
CN501	QCNTAA018AFPZN	AG			Contact,Battery
CN502	QSOCNA002AFPZL	AM			Connector,External
CN701	QCNCMA010AF60N	AK			Plug,60Pin
CN702	QCNCMA045AF02R	AD			Plug,2Pin
CN704	QCNCWUF33AFZZL	AK			Socket,33Pin
CN771	QCNCWA022AF08R	AF			Socket,8Pin
CNS702	--------	-			Connector,2Pin (Supplies at Ref No.EP100)
EP100	RPHODA008AFPZ	AM			Earpiece
FS501	QFS-L252EAFNZN	AC			Fuse,2.5A
FS601	QFS-L631EAFNZN	AC			Fuse,0.63A
J801	QCNCW927AAFZZR	AG			RF Connector
JK101	QJAKM0223AFZZL	AE			Connector,Handsfree
LCD100	RLCUBA019AFPZ	BP			Main Display
LCD101	RLCUBA020AFPZ	AW			External Display
MiC100	RMiCCA010AFZZ	AK			Microphone
MO100	RMOTVA001AFPZ	AM			Vibrator
SO601	QCNCWTi25AFZZL	AH			Socket,25Pin
SP100	RSP-ZA012AFPZ	AL			Speaker

[13] CABINET PARTS



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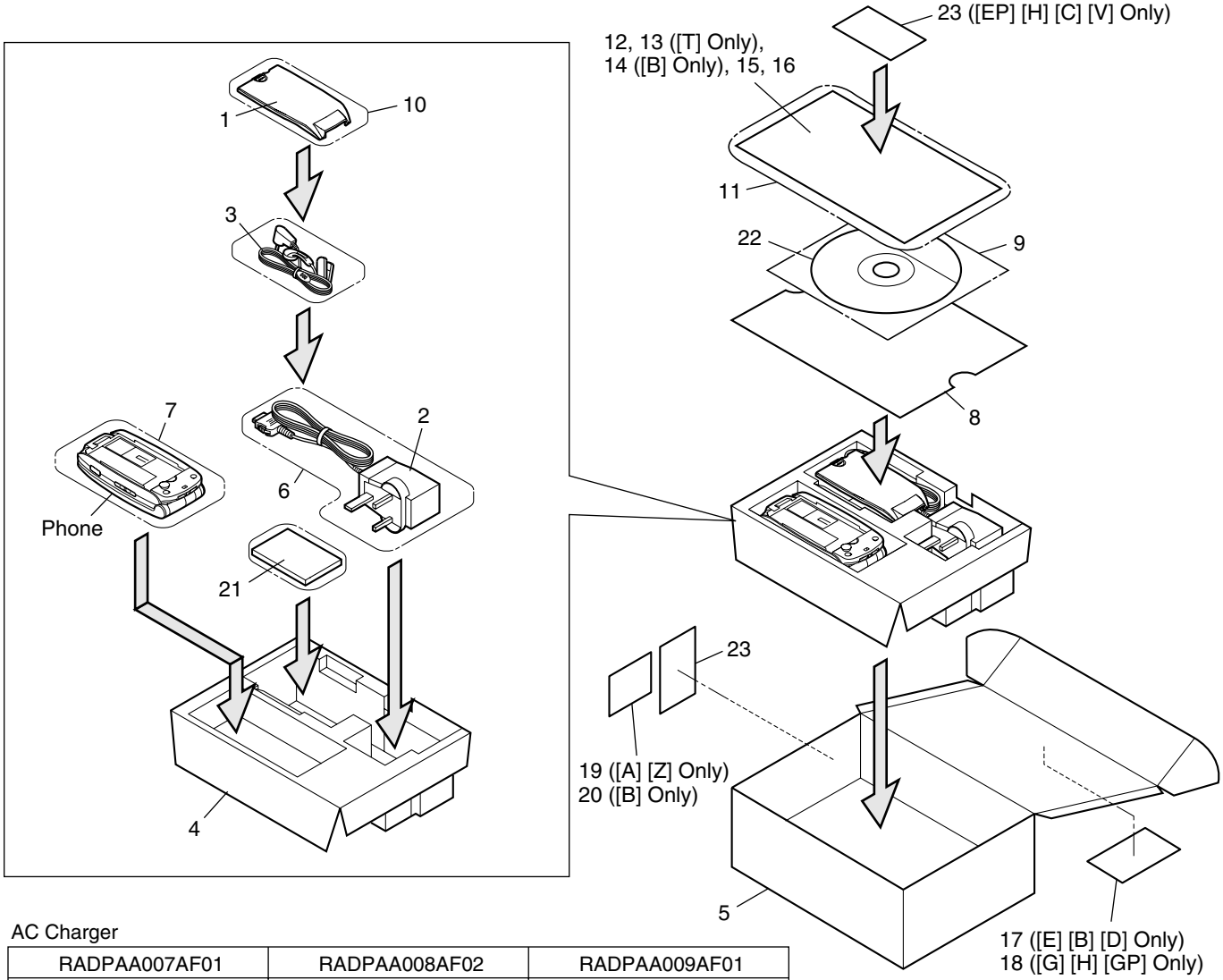
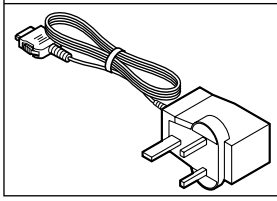
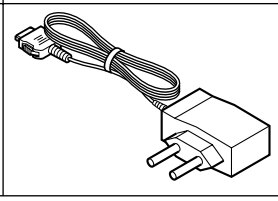
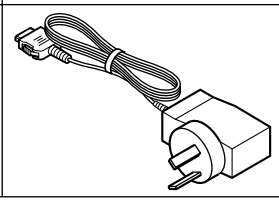
NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
[13] CABINET PARTS					
101	DCABAW182AFSH	BB			Front Cabinet Assembly [C]
101	DCABAW182AFS1	BB			Front Cabinet Assembly (Except for [C])
101- 1	--------	-			Front Cabinet (Display) (Not Replacement Item)
101- 2	GCABCA055AFSA	AR			Front Cabinet (Key)
101- 3	MHNG-0210AFSB	AG			Hinge
101- 4	PCUSSA167AFZZ	AA			Cushion,Connector (Relay FPC)
101- 5	PCUSSA168AFZZ	AB			Cushion,BB
101- 6	PCUSSA206AFZZ	AC			Cushion A,Insulator
101- 7	PCUSSA207AFZZ	AC			Cushion B,Insulator
101- 8	PMAGZ0072AFZZ	AD			Magnet
101- 9	PSHEZA274AFZZ	AC			Leak Mesh
101-10	PSHEZA347AFZZ	AB			Sheet,Earpiece
101-11	TLABZ2595AFZZ	AA			Sensor,Moisture (Large)
101-12	TLABZ2783AFZZ	AA			Sensor,Moisture (Small)
102	DCABBW182AFSH	AY			Back Cabinet (Display) Assembly [C]
102	DCABBW182AFS1	AY			Back Cabinet (Display) Assembly (Except for [C])
102- 1	--------	-			Back Cabinet (Display) (Not Replacement Item)
102- 2	PCUSSA162AFZZ	AC			Cushion,External Display
102- 3	PSHEZA342AFZZ	AB			Sheet,Speaker
103	DCABDW182AFS1	AZ			Back Cabinet (Key) Assembly
103- 1	--------	-			Back Cabinet (Key) (Not Replacement Item)
103- 2	PCUSSA022AFZZ	AA			Cushion,Battery
103- 3	PSHEZA302AFZZ	AC			Tape,Bluetooth Aerial
⚠ 103- 4	QANTWA006AFZZ	AM			Built-in Aerial
103- 5	QANTWA007AFZZ	AD			Bluetooth Aerial
103- 6	TLABZ2595AFZZ	AA			Sensor,Moisture (Large)
104	DKENDW182AFSA	CN			Board Unit [W]
104	DKENDW182AFSB	CN			Board Unit [B]
104	DKENDW182AFSC	CN			Board Unit [Z]
104	DKENDW182AFSD	CN			Board Unit [D]
104	DKENDW182AFSE	CN			Board Unit [Q]
104	DKENDW182AFSF	CN			Board Unit [L]
104	DKENDW182AFSG	CN			Board Unit [GP]
104	DKENDW182AFSH	CN			Board Unit [C]
104	DKENDW182AFSL	CN			Board Unit [V]
104	DKENDW182AFS1	CN			Board Unit [E]
104	DKENDW182AFS2	CN			Board Unit [G]
104	DKENDW182AFS3	CN			Board Unit [A]
104	DKENDW182AFS4	CN			Board Unit [EP]
104	DKENDW182AFS5	CN			Board Unit [R]
104	DKENDW182AFS6	CN			Board Unit [T]
104	DKENDW182AFS7	CN			Board Unit [PP]
104	DKENDW182AFS8	CN			Board Unit [S]
104	DKENDW182AFS9	CN			Board Unit [H]
⚠ 104- 1	--------	-			Main (Not Replacement Item) (PWB-A)
⚠ 104- 2	--------	-			Display (Not Replacement Item)(PWB-B)
104- 3	LHLDB1190AFZZL	AE			Holder,Back-up Battery
104- 4	LHLDZA112AF01	AQ			Main Display Holder Assembly
104- 5	LHLDZA113AF01	AK			External Display Holder Assembly
104- 6	LHLDZA114AFZZ	BM			Frame,External Display
⚠ 104- 7	LHLDZA115AFZZ	AK			Shield Case,BB
104- 8	LHLDZA116AFSA	AD			Holder,External Connector
104- 9	PCUSSA163AFZZ	AB			Cushion,Camera Unit A
104-10	PCUSSA164AFZZ	AB			Cushion,Aerial
104-11	PCUSSA165AFZZ	AB			Cushion,Camera
104-12	PCUSSA166AFZZ	AA			Cushion,Main Display FPC
104-13	PSHEZA285AFZZ	AB			Insulator,BB
104-14	PSHEZA390AFZZ	AB			Sheet,Connector
104-15	PSHEZA354AFZZ	AE			Sheet,Prevent Noise
104-16	PSHEZA359AFZZ	AB			Sheet,Connector (CN704)
⚠ 104-17	PSLDMA015AFZZ	AE			Shield Case,RF (Cover)
⚠ 104-18	PSLDMA016AFZZL	AE			Shield Case,RF (Frame)
⚠ 104-19	PSLDMA091AFPZL	AD			Shield Case
104-20	PSPAPA010AFZZ	AB			Spacer,Main Display
104-21	QPWBHA091AFPZ	AH			Earth FPC (PWB-C)
104-22	QTANZA001AFZZL	AB			Contact,Spring A
104-23	QTANZA005AFZZL	AC			Contact,Spring B (AN401,ANT801,ANT802)
104-24	RLCUBA019AFPZ	BP			Main Display (LCD100)
104-25	RLCUBA020AFPZ	AW			External Display (LCD101)
104-26	RUiTKA015AFPZ	BB			Camera Unit (PWB-D)
104-27	CUiTKA016AFPZ	AU			SIM FPC (PWB-E)
104-28	CUiTKA017AFPZ	AY			Relay FPC (PWB-F)
104-29	TLABZ2595AFZZ	AA			Sensor,Moisture (Large)
104-30	PCUSSA228AFZZ	AB			Cushion,Camera Unit B
104-31	PSHEZA377AFZZ	AC			Sheet,Insulator
105	GCOVA2546AFSC	AB			Cap,Aerial
106	GCOVAA118AFSA	AL			Cover A,Side
107	GCOVAA119AFSA	AL			Cover B,Side
108	GCOVAA120AFSA	AL			Cover C,Side
109	GCOVAA121AFSA	AL			Cover D,Side
110	GCOVAA124AFSA	AC			Screw Cover,Display (Circle)
111	GCOVAA125AFSA	AC			Screw Cover,Display (Square)
112	GCOVDA008AFSA	AB			Screw Cover,Key
113	GCOVHA032AFSA	AD			Cover,External Connector

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
[13] CABINET PARTS					
114	GCOVHA033AFSA	AD			Cover,Jack (Hands Free)
115	JKNBZA043AFSA	AT			Button,10Key
116	JKNBZA044AFSA	AG			Keys,Side-Up/Side-Down
117	PCUSSA160AFZZ	AE			Cushion,Main Display
118	PFiLWA004AFZZ	AD			Cover,Infrared Port
119	PSHEZ1813AFZZ	AB			Sheet,Side-Up/Side-Down Keys
120	PSHEZA336AFZZ	AA			Sheet,Shade
122	RDNTLA002AFPZ	AF			Battery,Back-up (BAT100)
123	RMiCCA010AFZZ	AK			Microphone (MIC100)
124	RMOTVA001AFPZ	AM			Vibrator (MO100)
125	RPHODA008AFPZ	AM			Earpiece (EP100)
126	RSP-ZA012AFPZ	AL			Speaker (SP100)
127	TSPC-A129AFZZ	DM			Label,Specifications (Except for [A,Z])
127	TSPC-A157AFZZ	DM			Label,Specifications [A,Z]
601	LX-EZ0193AFZZ	AB			Screw (M1.7x4.5mm)
602	LX-EZ0195AFZZ	AB			Screw (M1.7x5mm)

[14] ACCESSORIES/PACKING PARTS



AC Charger

RADPAA007AF01	RADPAA008AF02	RADPAA009AF01
		

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
[14] ACCESSORIES/PACKING PARTS					
1	GFTABA022AFSA	AG			Cover,Battery
⚠ 2	RADPAA007AF01	**			AC Charger [E,EP,R,L] (XN-1QC05)
⚠ 2	RADPAA008AF02	**			AC Charger [G,T,PP,S,H,W,B,D,Q,GP,C,V] (XN-1QC06)
⚠ 2	RADPAA009AF01	**			AC Charger [A,Z] (XN-1QC07)
3	RUiTZA006AFPZ	AQ			Hands Free Kit
4	SPAKAA027AFZZ	AG			Packing Add.
5	SPAKCA164AFZZ	AQ			Packing Case [E,G,A,R,T,PP,S,H,W,B,Z,D,Q,L,GP,V]
5	SPAKCA194AFZZ	AL			Packing Case [EP]
5	SPAKCA209AFZZ	AL			Packing Case [C]
6	SPAKP1252AFZZ	AC			Polyethylene Bag,AC Charger
7	SPAKPA014AFZZ	AC			Polyethylene Bag,Phone
8	SPAKXA019AFZZ	AD			Spacer
9	SSAKA0233AFZZ	AD			Polyethylene Bag,CD-ROM
10	SSAKH0329AFZZ	AA			Polyethylene Bag,Battery Cover
11	SPAKPA013AFZZ	AC			Polyethylene Bag,User Guide [C]
11	SSAKH0337AFZZ	AB			Polyethylene Bag,User Guide (Except for [C])
12	TCADHA038AFZZ	AF			Quick Start Guide [E,A,EP,R,Z,Q,L]
12	TCADHA042AFZZ	AF			Quick Start Guide [G,GP]
12	TCADHA043AFZZ	AH			Quick Start Guide [S]
12	TCADHA044AFZZ	AL			Quick Start Guide [T]

	NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
	[14] ACCESSORIES/PACKING PARTS					
	12	TCADHA045AFZZ	AL			Quick Start Guide [PP]
	12	TCADHA046AFZZ	AL			Quick Start Guide [H]
	12	TCADHA047AFZZ	AL			Quick Start Guide [B]
	12	TCADHA048AFZZ	AL			Quick Start Guide [W]
	12	TCADHA049AFZZ	AH			Quick Start Guide [D]
	13	TCADZ0263AFZZ	AC			Card,Free Service ([T] Only)
	14	TCADZA059AFZZ	AD			DOC Copy ([B] Only)
	15	TGANEA001AFZZ	AE			Guarantee [Q,L]
	15	TGANEA009AFZZ	AB			Guarantee [E,EP]
	15	TGANEA010AFZZ	AE			Guarantee [R]
	15	TGANEA011AFZZ	AE			Guarantee [A,Z]
	15	TGANiA002AFZZ	AC			Guarantee [T]
	15	TGANZA012AFZZ	AE			Guarantee [PP]
	15	TGANZA013AFZZ	AC			Guarantee [D]
	15	TGANZA014AFZZ	AD			Guarantee [W]
	15	TGANZA015AFZZ	AE			Guarantee [B]
	15	TGANZA016AFZZ	AD			Guarantee [C]
	15	TGANZA017AFZZ	AE			Guarantee [H]
	15	TGANZA018AFZZ	AE			Guarantee [S]
	16	TiNSEA034AFZZ	AG			User Guide [E,EP,R,Q,L,V]
	16	TiNSEA044AFZZ	AN			User Guide [A,Z]
	16	TiNSEA055AFZZ	AK			User Guide [C (English)]
	16	TiNSFA023AFZZ	AK			User Guide [C (French)]
	16	TiNSGA012AFZZ	AH			User Guide [G,GP]
	16	TiNSGA028AFZZ	AK			User Guide [C (German)]
	16	TiNSHA011AFZZ	AN			User Guide [H]
	16	TiNSiA010AFZZ	AN			User Guide [T]
	16	TiNSiA018AFZZ	AK			User Guide [C (Italian)]
	16	TiNSPA014AFZZ	AN			User Guide [PP]
	16	TiNSSA013AFZZ	AM			User Guide [S]
	16	TiNSWA016AFZZ	AN			User Guide [W]
	16	TiNSZA015AFZZ	AN			User Guide [B]
	16	TiNSZA017AFZZ	AM			User Guide [D]
	17	TLABZ2793AFZZ	AA			Sheet,Security ([E,B,D] Only)
	18	TLABZA044AFZZ	AC			Sheet,Transparent ([G,H,GP] Only)
	19	TLABZA053AFZZ	AB			Label,AT1C ([A,Z] Only)
	20	TLABZA072AFZZ	AB			Label,Hungary ([B] Only)
⚠	21	UBATiA014AFZZ	**			Rechargeable Li-ion Battery (XN-1BT30)
	22	UDSKAA021AF01	AK			CD-ROM
	23	--------	-			Label,Case
	[15] P.W.B. ASSEMBLY					
⚠	PWB-A	--------	-			Main (Not Replacement Item)
⚠	PWB-B	--------	-			Display (Not Replacement Item)
	PWB-C	QPWBHA091AFPZ	AH			Earth FPC
	PWB-D	RUiTKA015AFPZ	BB			Camera Unit
	PWB-E	CUiTKA016AFPZ	AU			SIM FPC
	PWB-F	CUiTKA017AFPZ	AY			Relay FPC

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SHARP

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