ORDER NO. KM40606107CE

Service Manual

Telephone Equipment

KX-TG7100HGS
KX-TG7102HGS
KX-TGA711FXS

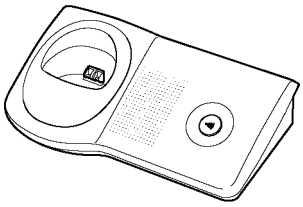
Digital Cordless Phone

Silver Version
(for Hungary)

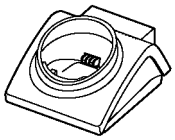
Caller ID and SMS Compatible

SMS

KX-TGA711FXS
(HANDSET)



KX-TG7100HGS
(BASE UNIT)



(CHARGER UNIT)

Configuration for each model

Model No	Base Unit	Handset	Charger Unit
KX-TG7100	1 (TG7100)	1 (TGA711)	
KX-TG7102	1 (TG7100)	2 (TGA711)	1

Panasonic

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

IMPORTANT SAFETY NOTICE

There are special components used in this equipment which are important for safety. These parts are marked by ⚠ in the Schematic Diagrams, Circuit Board Diagrams, Exploded Views and Replacement Parts List. It is essential that these cirtical parts should be replaced with manufactuer's specified parts to prevent shock, fire or other hazards. Do not modify the original design without permission of manufacturer.

IMPORTANT INFORMATION ABOUT LEAD FREE, (PbF), SOLDERING

If lead free solder was used in the manufacture of this product the printed circuit boards will be marked PbF. Standard leaded, (Pb), solder can be used as usual on boards without the PbF mark.
When this mark does appear, please read and follow the special instructions described in this manual on the use of PbF and how it might be permissible to use Pb solder during service and repair work.

- When you note the serial number, write down all 11 digits. The serial number may be found on the bottom of the unit.
- The illustrations in this Service Manual may vary sllightly from the actual product.

Note for TABLE OF CONTENTS:
Because TABLE OF CONTENTS 5, 6 and 7 are the extracts from the operating instructions of this model, it is subject to change without notice. You can download and refer to the original operating instructions on TSN Server for further information.

TABLE OF CONTENTS

1 Safety Precaution

1.1. For Service Technicians

ICs and LSIs are vulnerable to static electricity.

When repairing, the following precautions will help prevent recurring malfunctions.

1. Cover the plastic parts boxes with aluminum foil and ground them.
2. Ground the soldering irons.
3. Use a conductive mat on the worktable.
4. Do not touch IC or LSI pins with bare fingers.

2 Warning

2.1. Battery Caution

1. Danger of explosion if battery is incorrectly replaced.
2. Replace only with the same or equivalent type recommended by the manufacturer.
3. Dispose of used batteries according to the manufacture's Instructions.

2.2. About Lead Free Solder (Pbf: Pb free)

Note:

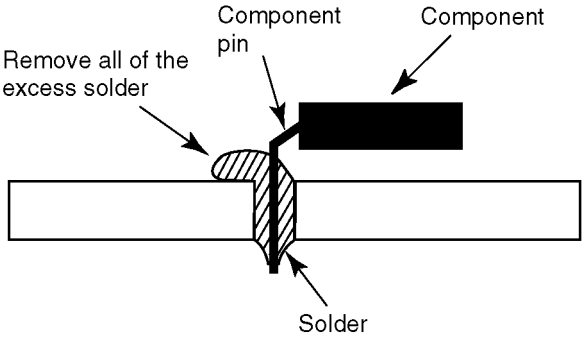
In the information below, Pb, the symbol for lead in the periodic table of elements, will refer to standard solder or solder that contains lead.

We will use PbF solder when discussing the lead free solder used in our manufacturing process which is made from Tin (Sn), Silver (Ag), and Copper (Cu).

This model, and others like it, manufactured using lead free solder will have PbF stamped on the PCB. For service and repair work we suggest using the same type of solder.

Caution

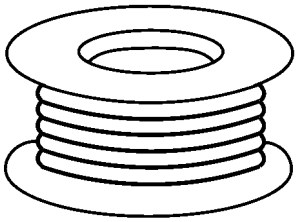
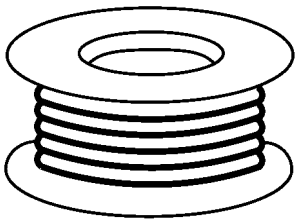
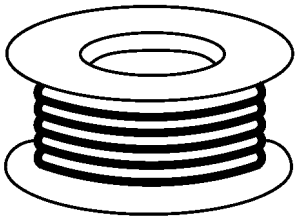
- PbF solder has a melting point that is 50 °F ~ 70 °F (30 °C ~ 40 °C) higher than Pb solder. Please use a soldering iron with temperature control and adjust it to 700 °F ± 20 °F (370 °C ± 10 °C).
- Exercise care while using higher temperature soldering irons.:
  Do not heat the PCB for too long time in order to prevent solder splash or damage to the PCB.
- PbF solder will tend to splash if it is heated much higher than its melting point, approximately 1100 °F (600 °C).
- When applying PbF solder to double layered boards, please check the component side for excess which may flow onto the opposite side (See the figure below).



(Slice View)

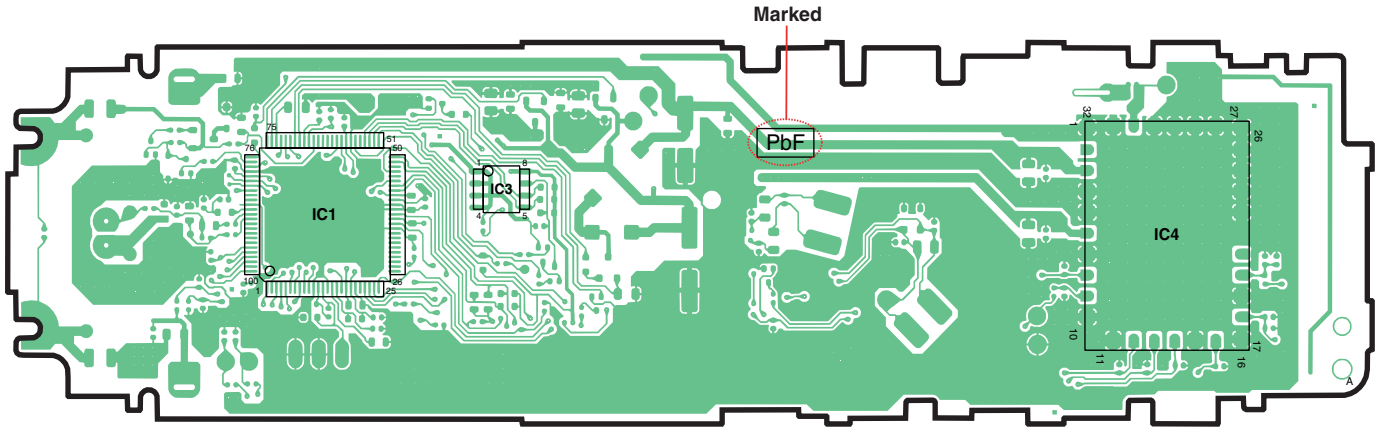
2.2.1. Suggested PbF Solder

There are several types of PbF solder available commercially. While this product is manufactured using Tin, Silver, and Copper (Sn+Ag+Cu), you can also use Tin and Copper (Sn+Cu) or Tin, Zinc, and Bismuth (Sn+Zn+Bi). Please check the manufacturer's specific instructions for the melting points of their products and any precautions for using their product with other materials.
The following lead free (PbF) solder wire sizes are recommended for service of this product: 0.3 mm, 0.6 mm and 1.0 mm.

0.3 mm X 100 g	0.6 mm X 100 g	1.0 mm X 100 g
		

2.2.2. How to Recognize that Pb Free Solder is Used

(Example: Handset P.C.B.)



(Component View)

Note:

The location of the "PbF" mark is subject to change without notice.

3 Specifications

■ **Standard:**
DECT (Digital Enhanced Cordless Telecommunications),
GAP (Generic Access Profile)

■ **Number of channels:**
120 Duplex Channels

■ **Frequency range:**
1.88 GHz to 1.9 GHz

■ **Duplex procedure:**
TDMA (Time Division Multiple Access)

■ **Channel spacing:**
1,728 kHz

■ **Bit rate:**
1,152 kbit/s

■ **Modulation:**
GFSK (Gaussian Frequency Shift Keying)

■ **RF transmission power:**
Approx. 250 mW

■ **Voice coding:**
ADPCM 32 kbit/s

■ **Power source (AC Adaptor):**
220–240 V, 50 Hz
Base unit: PQLV207CEZ
Charger: PQLV209CEZ

■ **Power consumption**
Base unit:
Standby: Approx. 1.9 W
Maximum: Approx. 6.8 W
Charger:
Standby: Approx. 1.5 W
Maximum: Approx. 3 W

■ **Operating conditions:**
5 °C–40 °C, 20 %–80 % relative air humidity (dry)

■ **Dimensions:**
Base unit: Approx. 60mm x 173mm x 105mm
Handset: Approx. 155mm x 48mm x 34mm
Charger: Approx. 61mm x 87mm x 95mm

■ **Mass (weight):**
Base unit: Approx. 220 g
Handset: Approx. 140 g
Charger: Approx. 90 g

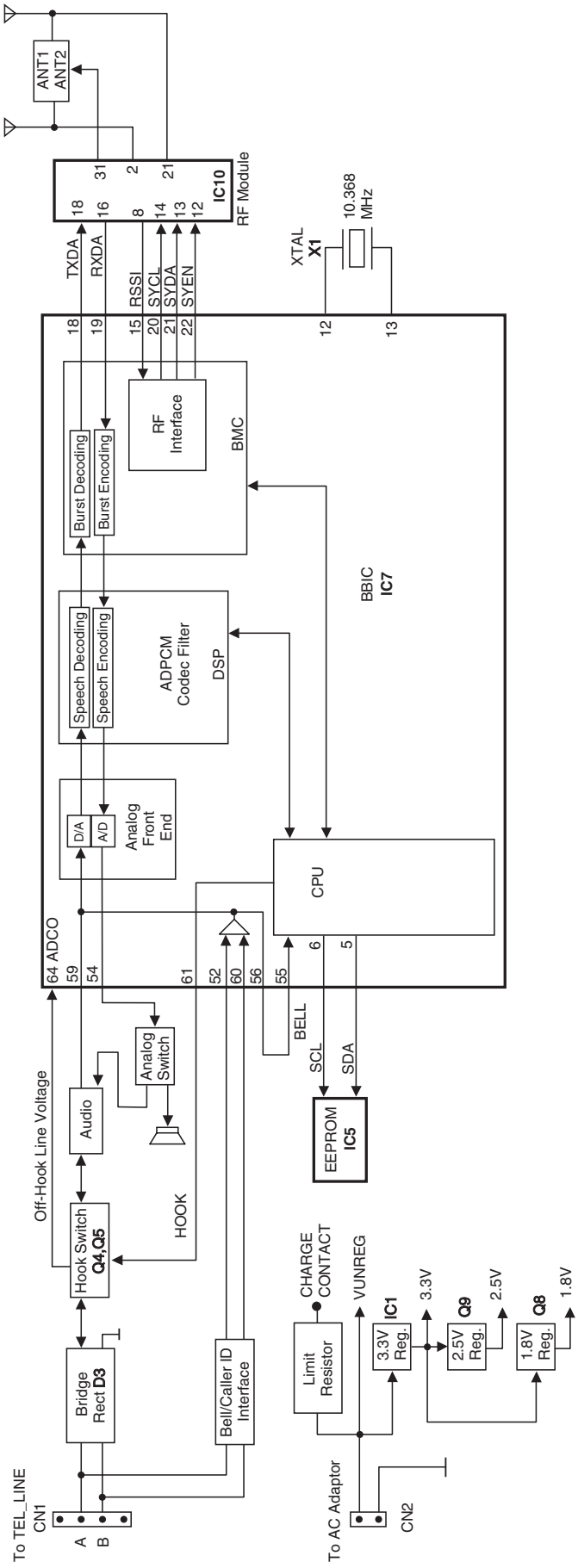
Note:
- Specifications are subject to change.

Connections:
- The unit will not work during a power failure. We recommend you connect a standard telephone on the same line for power protection.

Note for Service:
- Operation range: Up to 300 m outdoors, Up to 50 m indoors
- Analog telephone connection: Telephone Line

4 Technical Descriptions

4.1. Block Diagram (Base Unit)



4.2. Circuit Operation (Base Unit)

4.2.1. Outline

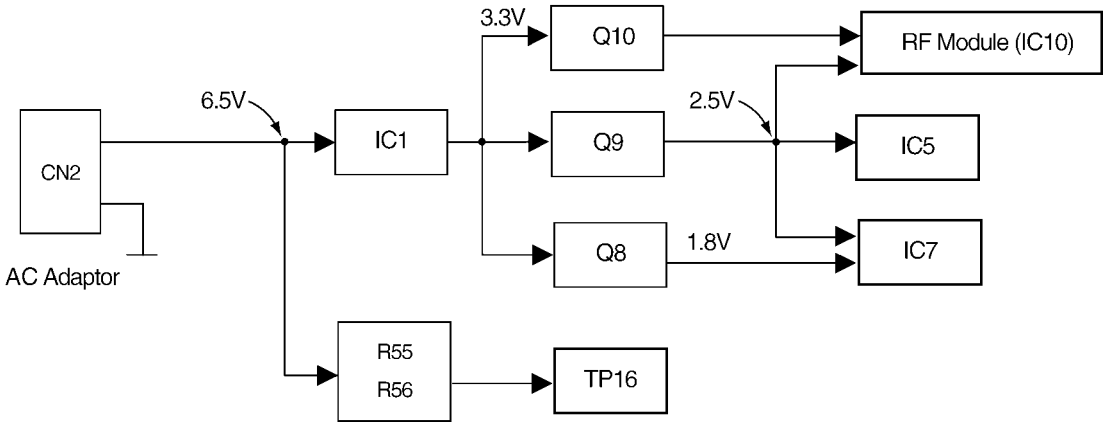
Base Unit consists of the following ICs as shown in **Block Diagram (Base Unit)** (P.7).

- DECT BBIC (**B**ase **B**and IC): IC7
  - Handling all the audio, signal and data processing needed in a DECT base unit
  - Controlling the DECT specific physical layer and radio section (**B**urst **M**odule **C**ontroller section)
  - ADPCM code filter for speech encoding and speech decoding (DSP section)
  - Echo-cancellation and Echo-suppression (DSP section)
  - Any tones (tone, sidetone, ringing tone, etc.) generation (DSP section)
  - DTMF receiver (DSP section)
  - Clock Generation for RF Module
  - ADC, DAC, timer, and power control circuitry
  - All interfaces (ex: RF module, EEPROM, LED, Analog Front End, etc.)
- RF Module: IC10
  - PLL Oscillator
  - Detector
  - Compress/Expander
  - First Mixer
  - Amplifier for transmission and reception
- EEPROM: IC5
  - Temporary operating parameters (for RF, etc.)
- Additionally,
  - Power Supply Circuit (+3.3 V, +2.5 V, +1.8 V output)
  - Crystal Circuit (10.368 MHz)
  - Charge Circuit
  - Telephone Line Interface Circuit

4.2.2. Power Supply Circuit

The power is supplied to the DECT BBIC, RF Module, EEPROM and Charge Contact from AC Adaptor (+6.5 V) as shown in Fig.101. The power supply is as follows;

- DECT BBIC (IC7):
  CN2 (+6.5 V) → IC1 → Q9 → IC7
  CN2 (+6.5 V) → IC1 → Q8 → IC7
- RF Module (IC10):
  CN2 (+6.5 V) → IC1 → Q9 → IC10 (PLL)
  CN2 (+6.5 V) → IC1 → Q10 → IC10 (Power AMP)
- EEPROM (IC5):
  CN2 (+6.5 V) → IC1 → Q9 → IC5
- Charge Contact (TP16):
  CN2 (+6.5 V) → R55, R56 → TP16



<Fig.101>

4.2.3. Telephone Line Interface

<Function>

- Bell signal detection
- Clip signal detection
- ON/OFF hook circuit

Bell & Clip (: Calling Line Identification Presentation: Caller ID) signal detection:

In the standby mode, Q3 is open to cut the DC loop current and decrease the ring load.

When ring voltage appears at the L1T (A) and L1R (B) leads (when the telephone rings), the AC ring voltage is transferred as follows;

- A → C4 → R6 → R33 → IC7 Pin 60 (CID INp)
- B → C3 → R4 → R35 → IC7 Pin 52 (CID INn)

ON/OFF hook circuit:

In the standby mode, Q3 is open, and connected as to cut the DC loop current and to cut the voice signal. The unit is consequently in an **on-hook condition**.

When IC7 detects a ring signal or press the TALK Key onto the handset, Q4 turns on and then Q3 turns on, thus providing an **off-hook condition** (DC current flows through the circuit) and the following signal flow makes the loop current.

- A → D3 → Q3 → Q5 → R21 → R22 → D3 → B [**OFF HOOK**]

4.2.4. Transmitter/Receiver

• Audio Circuits and DTMF tone signal circuits.

Base Unit and Handset mainly consist of RF Module and DECT BBIC.

Base Unit and Handset transmit/receive voice signal and data signal through the antenna on carrier frequency.

Signal Path:

*Refer to **Signal Route** (P.13).

4.2.4.1. Transmitter Block

The voice signal input from the TEL LINE interface goes to RF Module (IC10) through DECT BBIC (IC7) as shown in **Block Diagram (Base Unit)** (P.7)

The voice signal passes through the analog part of IC7 where it is amplified and converted to a digital audio stream signal. The burst switch controller processes this stream performing encryption and scrambling, adding the various other fields to produce the GAP (**G**eneric **A**ccess **P**rofile) standard DECT frame, assigning to a time slot and channel etc.

In IC10, the carrier frequency is changing, and frequency modulated RF signal is generated and amplified, and radiated from antenna. Handset detects the voice signal or data signal in the circuit same as the following explanation of Receiver Block.

4.2.4.2. Receiver Block

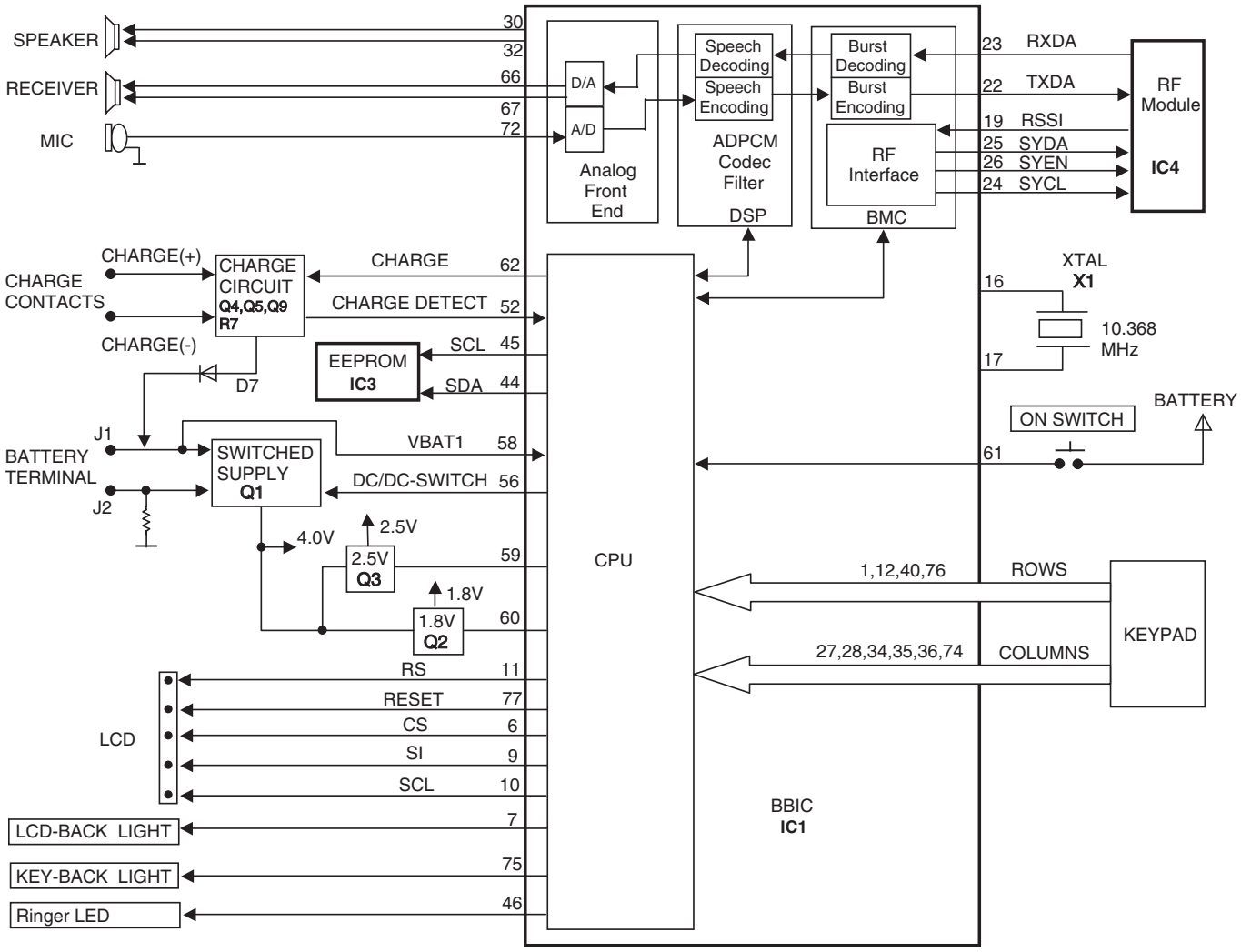
The signal of 1900 MHz band (1881.792 MHz ~ 1897.344 MHz) which is input from antenna is input to IC10 as shown in **Block Diagram (Base Unit)** (P.7).

In IC10, the signal of 1900 MHz band is downconverted to 864 kHz signal and demodulated, and goes to IC7 as GAP (**G**eneric **A**ccess **P**rofile) standard DECT frames. It passes through the decoding section burst switch controller where it separates out the frame information and performs de-encryption and de-scrambling as required. It then goes to the DSP section where it is turned back into analog audio. This is amplified by the analog front end, and goes to the TEL LINE Interface.

4.2.5. Pulse Dialling

During pulse dialing the hookswitch (Q3,Q4) is used to generate the pulses using the HOOK control signal, which is set high during pulses. To force the line impedance low during the “pause” intervals between dial pulses, the PULSE_DIAL signal turns on Q2

4.3. Block Diagram (Handset)



KX-TGA711 BLOCK DIAGRAM (HANDSET)

4.4. Circuit Operation (Handset)

4.4.1. Outline

Handset consists of the following ICs as shown in **Block Diagram (Handset)** (P.11).

- DECT BBIC (**B**ase **B**and IC): IC1
  - All data signals (forming/analyzing ACK or CMD signal)
  - All interfaces (ex: Key, Detector Circuit, Charge, DC/DC Converter, EEPROM, LCD)
- RF Module: IC4
  - PLL Oscillator
  - Detector
  - Compress/Expander
  - Amplifier for transmission and reception
- EEPROM: IC3
  - Temporary operating parameters (for RF, etc.)

4.4.2. Power Supply Circuit/Reset Circuit

Circuit Operation:

When power on the Handset, the voltage is as follows;

BATTERY(2.2 V ~ 2.6 V: J1) → F1, L1, D1 → Q2 (1.8 V), Q3 (2.5 V), Q1 (3.3 V)

The Reset signal generates IC1 (66 pin) and 1.8 V.

4.4.3. Charge Circuit

Circuit Operation:

When charging the handset on the Base Unit, the charge current is as follows;

DC+(6.5 V) → R55, R56 → CHARGE+(Base) → CHARGE+(Handset) → L4 → Q4 → D7→ F1 → BATTERY+... Battery...

BATTERY- → R45 → GND → L5 → CHARGE-(Handset)→ CHARGE-(Base) → GND → DC-(GND)

In this way, the BBIC on Handset detects the fact that the battery is charged.

The charge current is controlled by switching Q5 of Handset.

Refer to Fig.101 in **Power Supply Circuit** (P.9).

4.4.4. Battery Low/Power Down Detector

Circuit Operation:

"Battery Low" and "Power Down" are detected by BBIC which check the voltage from battery.

The detected voltage is as follows;

- Battery Low

Battery voltage: V (Batt) ≦ 2.25 V ± 50 mV

The BBIC detects this level and "▭" starts flashing.

- Power Down

Battery voltage: V (Batt) ≦ 2.0 V ± 50 mV

The BBIC detects this level and power down.

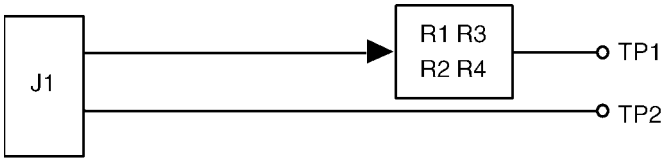
4.4.5. Speakerphone

The hands-free loudspeaker at SP+ and SP- is used to generate the ring alarm.

4.5. Circuit Operation (Charger Unit)

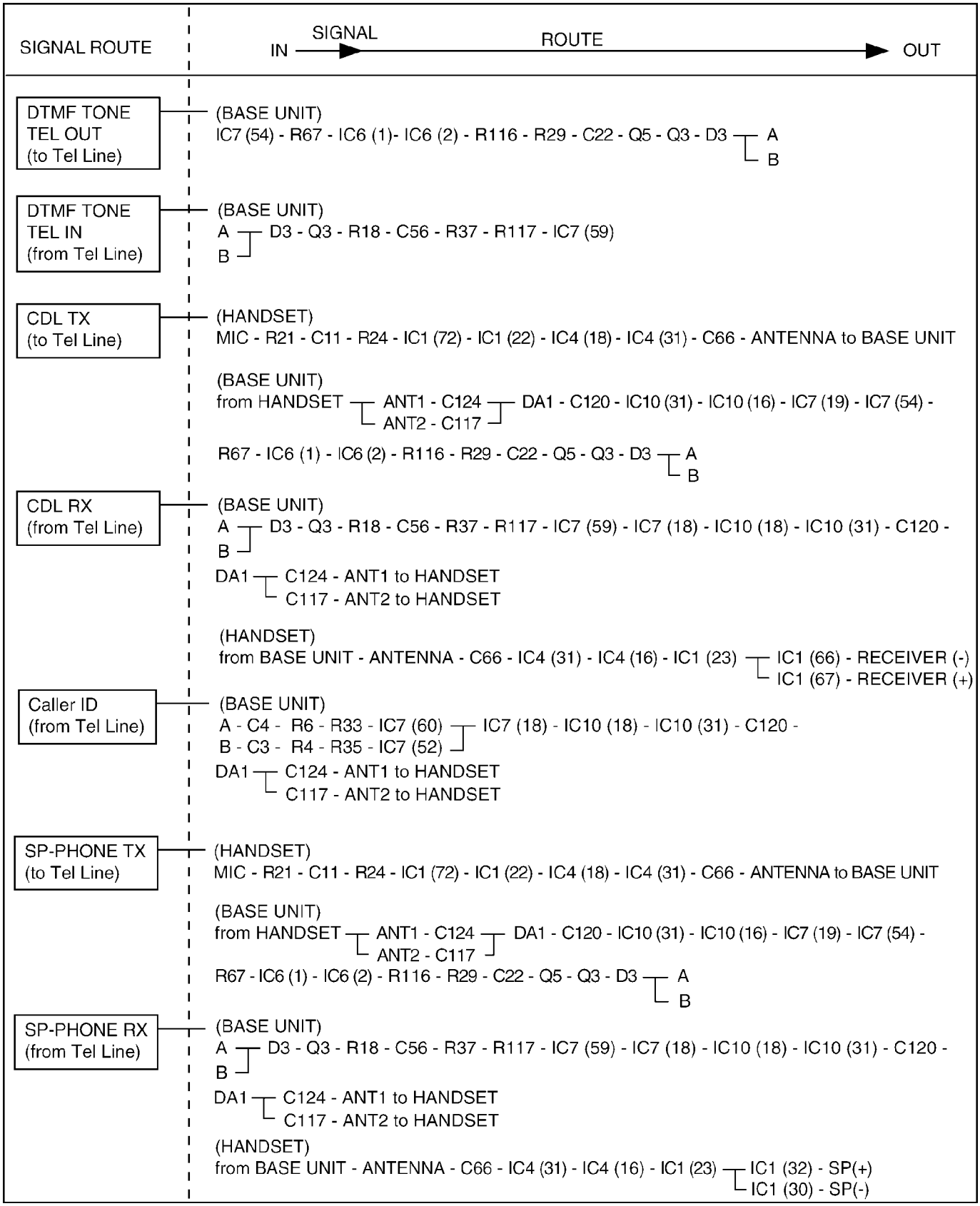
4.5.1. Power Supply Circuit

The power supply is as shown.



AC Adaptor

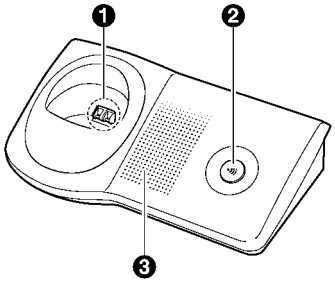
4.6. Signal Route



5 Location of Controls and Components

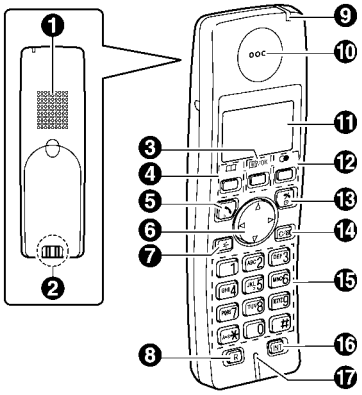
5.1. Controls

5.1.1. Base Unit



❶ Charge contact
❷ 【•))】(Page)
❸ Ringer

5.1.2. Handset



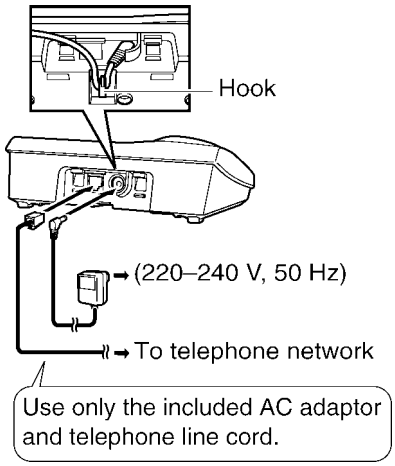
❶ Speaker
❷ Charge contact
❸ 【☰/OK】(Menu/OK)
❹ 【📖】(Phonebook)
❺ 【↘】(Talk)
❻ Navigator key (【▲】/【▼】/【►】/【◄】)
❼ 【🔊】(Speakerphone)
❽ 【R】(Recall)
❾ Charge indicator/Ringer indicator/Message indicator
❿ Receiver
⓫ Display
⓬ 【↻】(Redial/Pause)
⓭ 【⏻】(Off/Power)
⓮ 【C/⊠】(Clear/Mute)
⓯ Dial keypad
⓰ 【INT】(Intercom)
⓱ Microphone

6 Installation Instructions

6.1. Connections

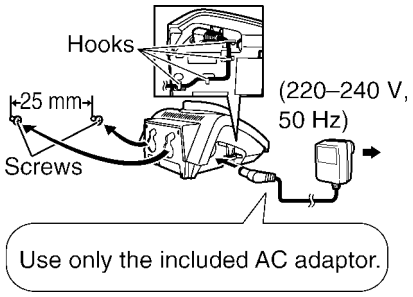
Base Unit

When connecting the AC adaptor to the base unit, a short beep will be heard. If it is not heard, check the connections.



Charger

Connect the AC adaptor to the charger and route the cable as shown. The charger can be mounted on the wall, if required.



Note:

- Never install telephone wiring during a lightning storm.
- The AC adaptor must remain connected at all times. (It is normal for the adaptor to feel warm during use.)
- The AC adaptor should be connected to a vertically oriented or floor-mounted AC outlet. Do not connect the AC adaptor to a ceiling-mounted AC outlet, as the weight of the adaptor may cause it to become disconnected.

Location

- For maximum distance and noise-free operation, place your base unit:
  - away from electrical appliances such as TVs, radios, personal computers or other phones.
  - in a convenient, high and central location.

6.2. Battery

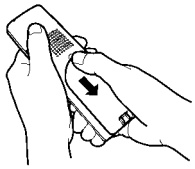
6.2.1. Battery Installation/Replacement

Important:

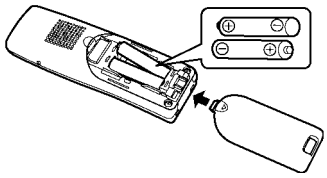
- Use only the included rechargeable batteries HHR-55AAAB or HHR-4EPT.
- When replacing batteries, we recommend using the Panasonic rechargeable batteries P03P.

1 Press the notch on the handset cover firmly and slide it in the direction of the arrow.

- When replacing batteries, remove the old batteries positive (⊕) terminal first.



2 Insert the batteries negative (⊖) terminal first. Close the handset cover.



Notice:

When inserting the batteries:

- Wipe the battery ends (⊕, ⊖) with a dry cloth.
- Install the batteries without touching the battery ends (⊕, ⊖) or the unit contacts.

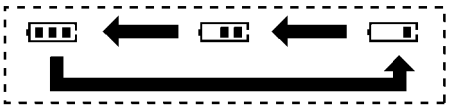
I fully charged the batteries, but the operating time seems to be short:

- Wipe the battery ends (⊕, ⊖) and the unit contacts with a dry cloth.

6.2.2. Battery Charge

Place the handset on the base unit or charger for about 7 hours before initial use.

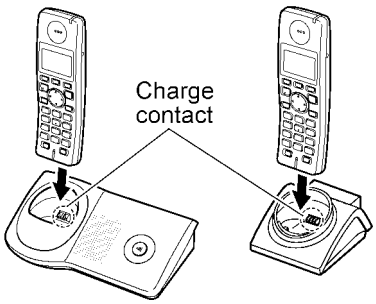
When charging, the battery icon is shown as follows.



When the batteries are fully charged, remains on the display.

- The charge indicator lights up when the handset is placed on the base unit or charger.

Base unit **Charger**



Note:

- It is normal for the handset to feel warm during charging.
- If you want to use the unit immediately, charge the batteries for at least 15 minutes.
- Clean the charge contacts of the handset, base unit, and charger with a soft, dry cloth, otherwise the batteries may not charge properly. Clean if the unit is exposed to grease, dust or high humidity.

6.2.3. Battery Strength

Battery icon	Battery strength
	High
	Medium
	Low When flashing: Needs to be charged.

6.2.4. Panasonic Ni-MH Battery Performance (included batteries)

Operation	Operating time
In continuous use	17 hours max.
In continuous standby mode	180 hours max.

Note:

- It is normal for batteries not to reach full capacity at the initial charge. Maximum battery performance is reached after a few complete cycles of charge/discharge (use).
- Actual battery performance depends on a combination of how often the handset is in use and how often it is not in use (standby).
- Battery operating time may be shortened over time depending on usage conditions and ambient temperature.
- Even after the handset is fully charged, the handset can be left on the base unit or charger without any ill effect on the batteries.
- The battery strength may not be displayed correctly after you replace the batteries. In this case, place the handset on the base unit or charger and charge for at least 7 hours.

7 Operation Instructions

7.1. Base Unit Settings

- Use the handset to customise the base unit.
- When customising the base unit, the current item or setting is indicated by ▶.

To customise the base unit:

1 【☰/OK】
2 Press 【▲】 or 【▼】 to select "**Base Unit Setup**". → 【►】
3 Press 【▲】 or 【▼】 to select the desired item in the base unit settings menu. → 【►】
4 Press 【▲】 or 【▼】 to select the desired item in the sub-menu. → 【►】
5 Press 【▲】 or 【▼】 to select the desired setting then press 【►】 or follow the instruction in the "Feature" column of the chart.
   - To exit the operation, press 【⏻】.

Base unit settings menu	Sub-menu	Feature (default setting)	Remarks (selectable options)
Ringer Volume	—	Base unit ringer volume *(Medium)*	Off/Low/Midium/High*4
Call Options	**Dial Mode**	("**Tone**")	Tone/Pulse
	Recall/Flash	Change the recall time ("**100 msec.**"). *1	80/90/100/110/160/200/250/300/400/600/700/900 msec
	Call Restrict	—	Off/On (Up to 6 Numbers)
Other Options	**Base Unit PIN**	Change base unit PIN ("**0000**").*2 – Enter the current 4-digit base unit PIN.*3 → Enter the new 4-digit base unit PIN. → 【☰/OK】	"0000" - "9999" (4 digits)
	Repeater Mode	("**Off**")	On/Off

*1 Change the recall time, if necessary, depending on the requirements of your service provider/telephone company or PBX.
*2 If you forget your PIN, see **For Service Hint** (P.19).
*3 If you change the PIN, please make note of your new PIN. The unit will not reveal the PIN to you.
*4 The items are not shown on the display.

7.1.1. SMS Settings

SMS settings	Remarks (selectable options)
SMS on/off (default: "**Off**")	On/Off
Message Centre 1	—
Message Centre 2	—
PBX line access number (default: "**Off**")	Off/On (1 number only)

7.2. Handset Settings

- When customising the handset, the current item or setting is indicated by ▶.

To customise the handset:

1 【▤/OK】

2 Press 【▲】 or 【▼】 to select "**Handset Setup**". → 【►】

3 Press 【▲】 or 【▼】 to select the desired item in the handset settings menu. → 【►】

4 Press 【▲】 or 【▼】 to select the desired item in the sub-menu. → 【►】

5 Press 【▲】 or 【▼】 to select the desired setting then press 【►】 or follow the instruction in the "Feature" column of the chart.
- To exit the operation, press 【↩⏻】.

Handset settings menu	Sub-menu	Feature (default setting)	Remarks (selectable options)
Time Settings	**Set Date & Time**	Date and time	–
	Alarm	Set the alarm	Off/Once/Daily
Ringer Setup	**Ringer Volume**	Handset ringer volume *(Maximum)*[*1]	Off/Volume 1 to 6[*7]
	Ext. Ringtone *(External ringtone)*	Ringtones for outside calls ("**Ringtone 1**")[*2]	15 (5 tone + 10 melody)
	Int. Ringtone *(Intercom ringtone)*	Ringtones for intercom calls ("**Ringtone 3**")[*3]	15 (5 tone + 10 melody)
Display Setup	**Standby Display**	Standby mode display ("**Off**")[*4]	Off/Handset Number
	Select Language	Display language ("**Magyar**")	16 languages selectable
	Contrast	Display contrast *(Level 3)*	Contrast 1 to 6[*7]
Registration	**Register H.set** *(Register handset)*	See "**Registering a Handset to the Base Unit**"	–
Other Options	**New Msg. Alert** *(New message alert)*	New message alert ("**Off**")[*5]	On/Off
	Keytones	Keytones on/off ("**On**")	On/Off
	Auto Talk	Auto talk on/off ("**Off**")[*6]	On/Off

*1 When the ringer is turned off, the handset will ring:
- at the minimum level for alarm
- at the minimum level for intercom calls
- at the maximum level for paging

*2 If you select one of the melody ringtones, the ringtone will continue to sound for several seconds if the caller hangs up before you answer. You may hear a dial tone or no one on the line when you answer a call.
The preset melodies in this product are used with permission of © 2004 M-ZoNE Co., Ltd.

*3 The preset melodies in this product are used with permission of © 2004 M-ZoNE Co., Ltd.

*4 If "**Off**" is selected, only current date and time are displayed.
If "**Handset Number**" is selected and the current handset number is 2, "**[2]**" is displayed.

*5 This feature alerts you when new messages have been received or recorded:
- SMS

The message indicator on the handset flashes until you have read all new messages. While message alert is on, battery operating time is shortened.

*6 Auto talk feature allows you to answer calls simply by lifting the handset off the base unit or charger. You do not need to press 【📞】.

*7 The items are not shown on the display.

Cross Reference:
Registering a Handset to the Base Unit (P.18)

7.3. Registering a Handset to the Base Unit

The included handset and base unit are preregistered. If for some reason the handset is not registered to the base unit (for example, Y flashes even when the handset is near the base unit), register the handset manually.

To register an additional handset to the base unit (easy registration)

After purchasing an additional handset, register it to the base unit. Ensure that the additional handset is switched on. If it is not on, press and hold 【Y⏻】 for few seconds to turn the handset on.

1 Lift the additional handset and press 【Y⏻】 to put the handset in standby mode.
2 Press and hold 【•))】 on the base unit for about 3 seconds, until the registration tone sounds.
3 Place the additional handset on the base unit. The registration tone continues to sound. With the handset still on the base unit, wait until a confirmation tone sounds and Y stops flashing.

Note:

- If an error tone sounds, or if Y is still flashing, register the handset manually (manual registration).
- If all registered handsets start ringing in step 2, press 【•))】 to stop. Start again from step 1.
- Charge the batteries of your additional handset for about 7 hours before initial use.
- This registration method cannot be used for handsets that have already been registered to the base unit. Register the handset manually (manual registration).

To register a handset to the base unit (manual registration)

You can register a handset to the base unit manually using the following method.

1 【☰/OK】 → "**Handset Setup**" → 【►】
2 "**Registration**" → 【►】
3 "**Register H.set**" → 【►】
4 Press and hold 【•))】 on the base unit for about 3 seconds, until the registration tone sounds.
   - If all registered handsets start ringing, press 【•))】 to stop, then repeat this step.
   - After pressing 【•))】, the rest of this procedure must be completed within 1 minute.
5 Wait until "**Enter Base PIN**" is displayed, then enter the base unit PIN (default: "**0000**"), then press 【☰/OK】.
   - If you forget your PIN, see **For Service Hint**.
   - When the handset has been registered successfully, Y will stop flashing. If keytones are turned on, a confirmation tone will be heard.

Cross Reference:
For Service Hint (P.19)

7.3.1. Cancelling a Handset

A maximum of 6 handsets can be registered to the base unit. A handset can cancel its own registration (or the registration of another handset) that is stored in the base unit. This will allow the base unit to "forget" the handset.

1 【☰/OK】 → "Base Unit Setup" → 【►】
2 Enter "335".
3 "Cancel Handset" → 【►】
   - The numbers of all handsets registered to the base unit are displayed.
4 Select the handset(s) you want to cancel, by pressing the desired handset number. → 【☰/OK】
   - The selected handset number(s) will flash.
   - To cancel a selected handset number, press the number again. The number will stop flashing.
5 "Yes" → 【►】 → 【Y⏻】

7.4. For Service Hint

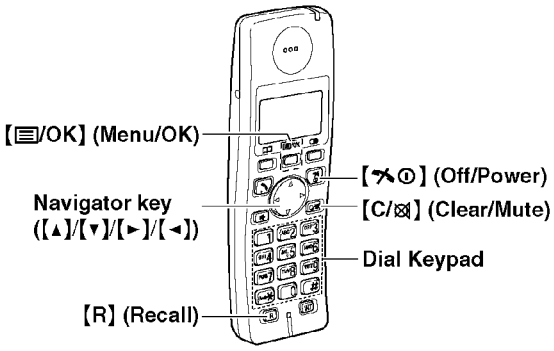
Items	Contents
Battery	You could use other rechargeable batteries sold in a market, but the unit is not guaranteed to work properly.
PIN Code	● If you forget the PIN, change the PIN using the following method. **1** **[≡/OK]** **2** Press **[▲]** or **[▼]** to select "`Base Unit Setup`". → **[►]** **3** "`Other Options`" → **[►]** **4** "`Base Unit PIN`" → **[►]** **5** Press **[✳][7][0][0][0]**. **6** Enter the new 4-digit base unit PIN. → **[►]** → **[⏻]**

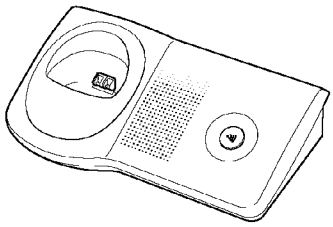
8 Service Mode

8.1. Engineering Mode

8.1.1. Base Unit

Important:
Make sure the address on LCD is correct when entering new data. Otherwise, you may ruin the unit.



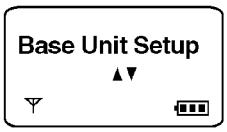


H/S key operation **H/S LCD**

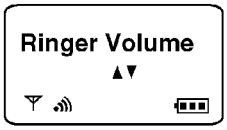
1). Register a Handset to a Base Unit. (*1)

2). Press 【▤/OK】.

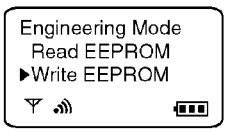
3). Select "Base Unit Setup" using 【▲】or【▼】 then press 【▤/OK】 or 【►】.



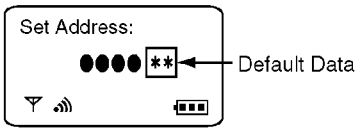
4). Enter "7", "2", "6", "2", "7", "6", "6", "4".
Note: 7262 7664 = PANA SONI
(see letters printed on dial keys)



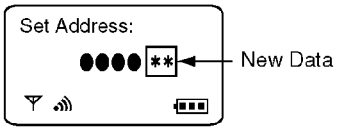
5). Select "Write EEPROM" using 【▲】or【▼】 then press 【▤/OK】 or 【►】.



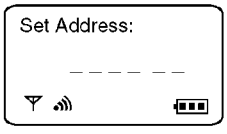
6). Enter "●", "●", "●", "●" (Address). (*2)



7). Enter "＊", "＊" (New Data). (*2)



8). Press 【▤/OK】, a long confirmation beep will be heard.



9). Press 【⏻】(off) to return to standby mode.
After that, turn the base unit power off and then power on.

Frequently Used Items (Base Unit)

ex.)

Items (*3)	**Address**	**Default Data**	**New Data**		**Remarks**
C-ID (FSK) sensitivity	04 6F	00	01 (6dB up)	02 (12dB up)	When hex changes from “00” to “01” or “02”, gain increases by 6dB or 12dB.
C-ID (DTMF) sensitivity	04 7D	50	60 (6dB up)	70 (12dB up)	When hex changes from “50” to “60” or “70”, gain increases by 6dB or 12dB.
SMS (FSK) receiving sensitivity	04 6F	00	01 (6dB up)	02 (12dB up)	When hex changes from “00” to “01” or “02”, gain increases by 6dB or 12dB.
SMS (FSK) sending level	04 89/04 88	12/28	19/20 (6dB up)	32/40 (12dB up)	When hex changes from “00 0B” to “00 16” or “00 2C”, gain increases by 6dB or 12dB.
Frequency	00 01	75	-	-	Use these items in a **READ-ONLY** mode to confirm the contents. Careless rewriting may cause serious damage to the computer system.
ID	00 10~00 14	Given value	-	-	
Bell length	01 F6	32 (5sec) (*4)	1E (3sec)	14 (2sec)	This is time until bell stops ringing. (Unit: 100ms)
PULSE Dial speed (10PPS -> 20PPS)	03 5C	21 (33msec) (*4)	14 (20msec)	-	This is pulse make time. (Unit:1ms)
	03 5D	43 (67msec) (*4)	1E (30msec)	-	This is pulse break time. (Unit:1ms)
	01 E4	47 (710msec) (*4)	2C (440msec)	-	This is inter-digit time in pulse mode. (Unit:10ms)

Note:

(*1) Refer to **Registering a Handset to the Base Unit** (P.18)

(*2) When you enter the address or New Data, please refer to the table below.

Desired Number (hex)	**Input Keys**	**Desired Number (hex)**	**Input Keys**
0	0	A	[R] + 0
1	1	B	[R] + 1
.	.	C	[R] + 2
.	.	D	[R] + 3
.	.	E	[R] + 4
9	9	F	[R] + 5

(*3)

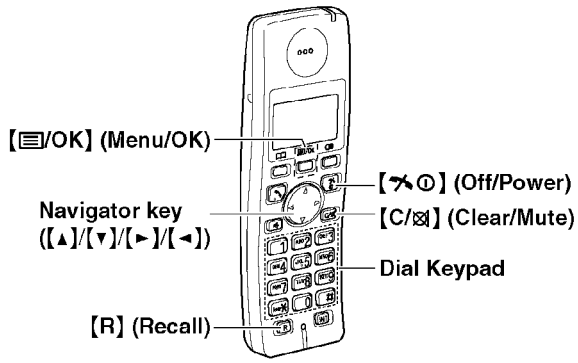
Items	**Description**
C-ID (FSK) sensitivity	FSKGain_shiftgain
C-ID (DTMF) sensitivity	Foutgains:HPFilter Foutgains
SMS (FSK) receiving sensitivity	FSKGain_shiftgain
SMS (FSK) sending level	wFskAttn:Signal Output Attenuation (DSP parameter)
Frequency	Setting value of FREQ_TRIM_REG
ID	ID
Bell length	Time until it stops bell.
PULSE Dial speed (10PPS -> 20PPS)	Pulse MakeTime and BreakTime. bMakeTime:Pulse MakeTime Unit: 1ms bBreakTime:Pulse Break Time Unit: 1ms
	Inter-digit time in Pulse mode. Unit:10ms

(*4)

Bell length	32(hex) = 50(dec) → 50 × 100msec = 5000msec (5sec)
PULSE Dial speed (10PPS -> 20PPS)	21(hex) = 33(dec) → 33 × 1msec = 33msec
	43(hex) = 67(dec) → 67 × 1msec = 67msec
	47(hex) = 71(dec) → 71 × 10msec = 710msec

8.1.2. Handset

Important:
Make sure the address on LCD is correct when entering new data. Otherwise, you may ruin the unit.



H/S key operation	H/S LCD
1). Press 【▤/OK】.	Caller List ▲▼
2). Select "Handset Setup" using 【▲】or【▼】 then press 【▤/OK】or 【►】.	Handset Setup ▲▼
3). Enter "7", "2", "6", "2", "7", "6", "6", "4". **Note:** 7262 7664 = PANA SONI (see letters printed on dial keys)	Time Settings ▲▼
4). Select "Write EEPROM" using 【▲】or【▼】 then press 【▤/OK】or 【►】.	Engineering Mode Read EEPROM ▶Write EEPROM
5). Enter "●", "●", "●", "●" (Address). (*1)	Set Address: ●●●● ** ← Default Data
6). Enter "＊", "＊" (New Data). (*1)	Set Address: ●●●● ** ← New Data
7). Press 【▤/OK】, a long confirmation beep will be heard.	Set Address: _ _ _ _ _ _

8). Press 【⏻】(off) to return to standby mode.
After that, remove and reinsert the batteries.
Press the Power button for about 1 second if the power is not turned on.

Frequently Used Items (Handset)

ex.)

Items (*2)	Address	Default Data	New Data	Possible Adjusted Value MAX (hex)	Possible Adjusted Value MIN (hex)	Remarks
Sending level	00 06	Adjusted value	Given value	6F	00	(*3)
Receiving level	00 07	Adjusted value	Given value	00	3F	(*4)
Battery Low	00 04	25	-	-	-	(*5)
Frequency	00 01	75	-	-	-	
ID	00 10~00 14	Given value	-	-	-	

Note:

(*1) When you enter the address or New Data, please refer to the table below.

Desired Number (hex)	Input Keys	Desired Number (hex)	Input Keys
0	0	A	[R] + 0
1	1	B	[R] + 1
.	.	C	[R] + 2
.	.	D	[R] + 3
.	.	E	[R] + 4
9	9	F	[R] + 5

(*2)

Items	Description
Sending level	Analog Front End MIC Setting for Handset Mode
Receiving level	Analog Front End LSR Setting for Handset Mode
Battery Low	ADC value for battery low detection
Frequency	Setting value of FREQ_TRIM_REG
ID	International Portable Part Equipment Identities

(*3) When adding “01” (hex) to default value, sending level increases by 0.25 dB.

ex.)

Item	Default Data	New Data	
	3A	3E	36
Sending level	-8.5 dBm	-7.5 dBm	-9.5 dBm

(*4) When reducing “01” (hex) from default value, receiving level increases by 0.25 dB.

ex.)

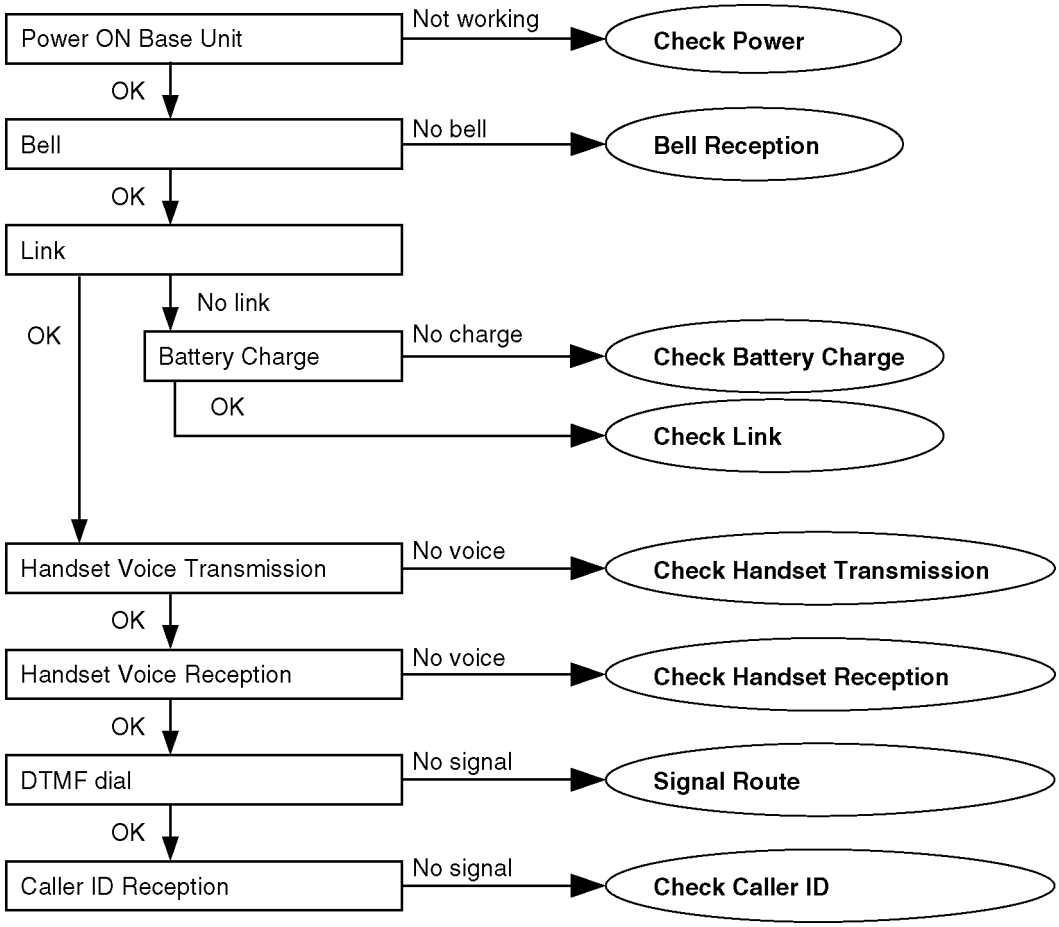
Item	Default Data	New Data	
	14	18	10
Receiving level	-21 dBm	-22 dBm	-20 dBm

(*5) Use these items in a READ-ONLY mode to confirm the contents. Careless rewriting may cause serious damage to the handset.

9 Troubleshooting Guide

9.1. Troubleshooting Flowchart

Flow Chart



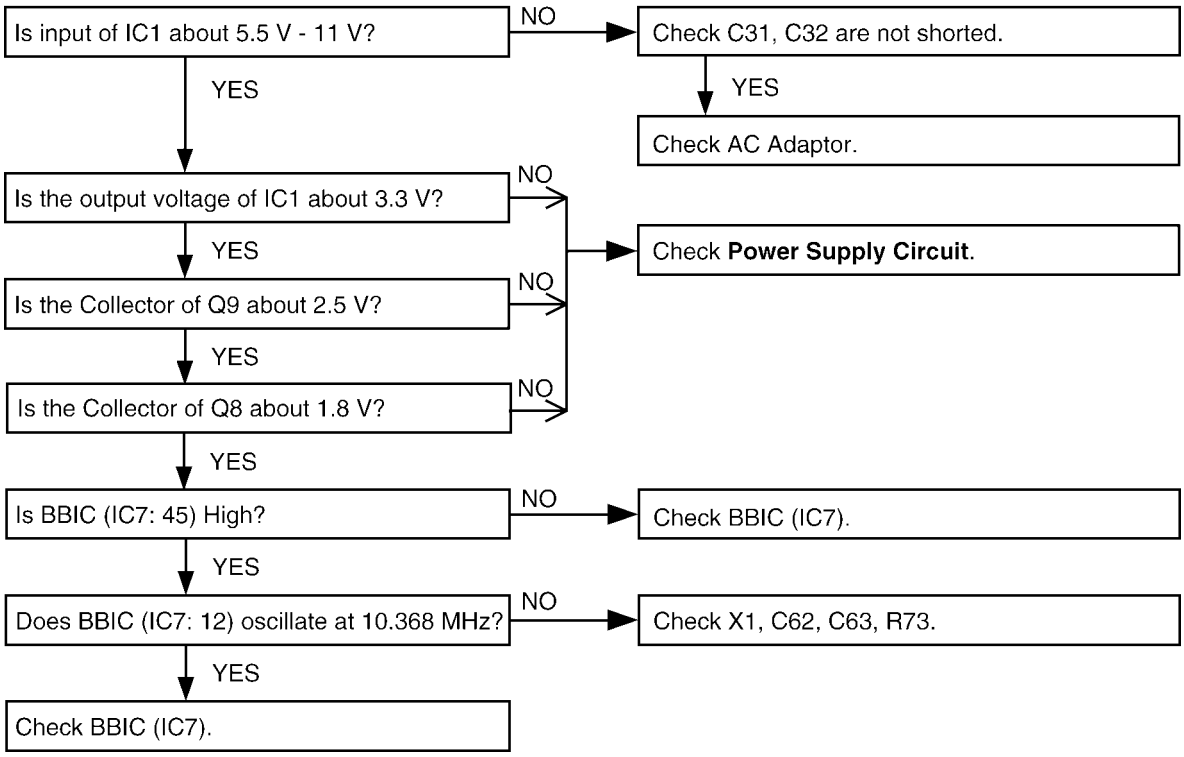
Cross Reference:

Check Power (P.25)
Bell Reception (P.31)
Check Battery Charge (P.26)
Check Link (P.27)
Check Handset Transmission (P.30)
Check Handset Reception (P.30)
Signal Route (P.13)
Check Caller ID (P.30)

9.1.1. Check Power

9.1.1.1. Base Unit

Is the AC Adaptor inserted into AC outlet? (*1)



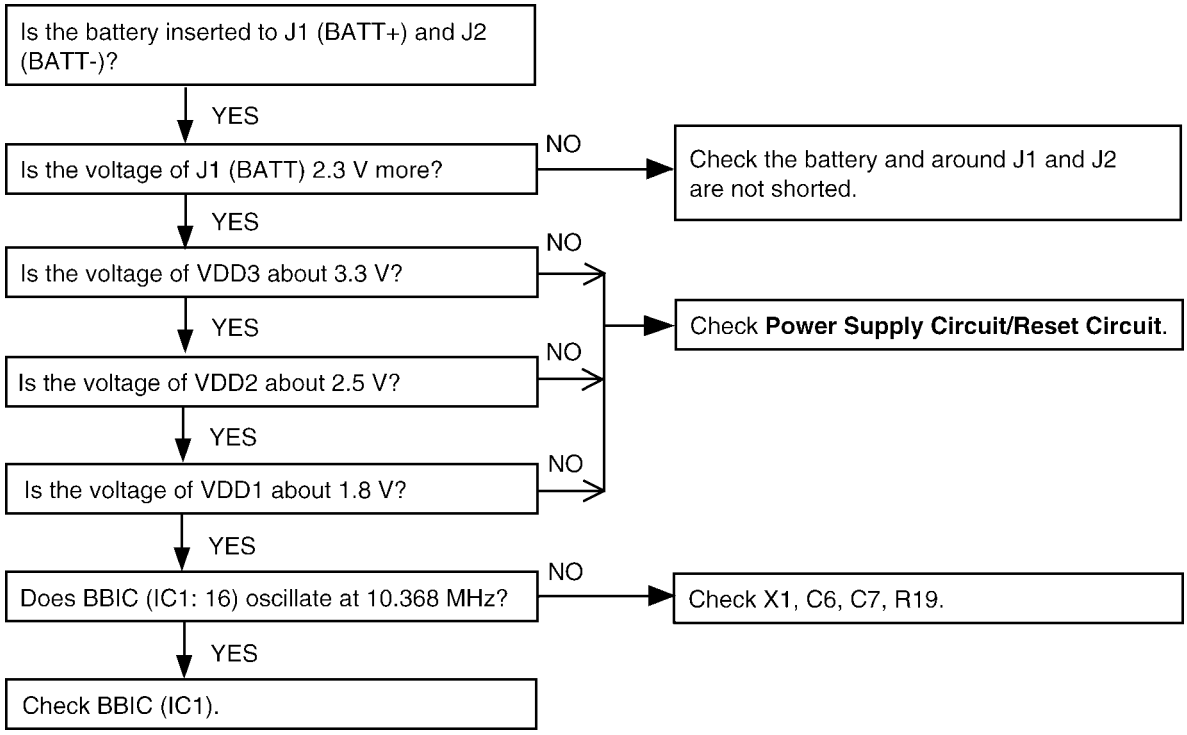
Cross Reference:

Power Supply Circuit (P.9)

Note:

(*1) Refer to **Specifications** (P.6) for part number and supply voltage of AC Adaptor.

9.1.1.2. Handset

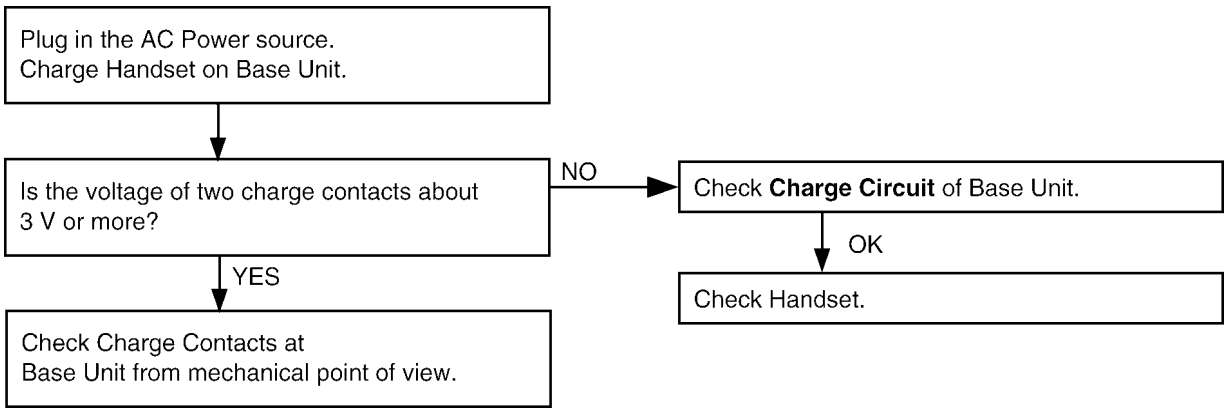


Cross Reference:

Power Supply Circuit/Reset Circuit (P.12)

9.1.2. Check Battery Charge

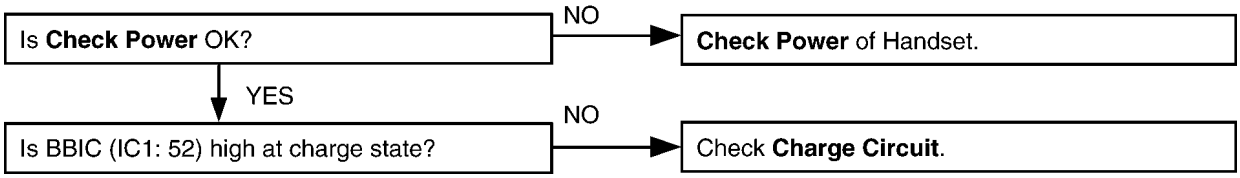
9.1.2.1. Base Unit



Cross Reference:

Charge Circuit (P.12)

9.1.2.2. Handset

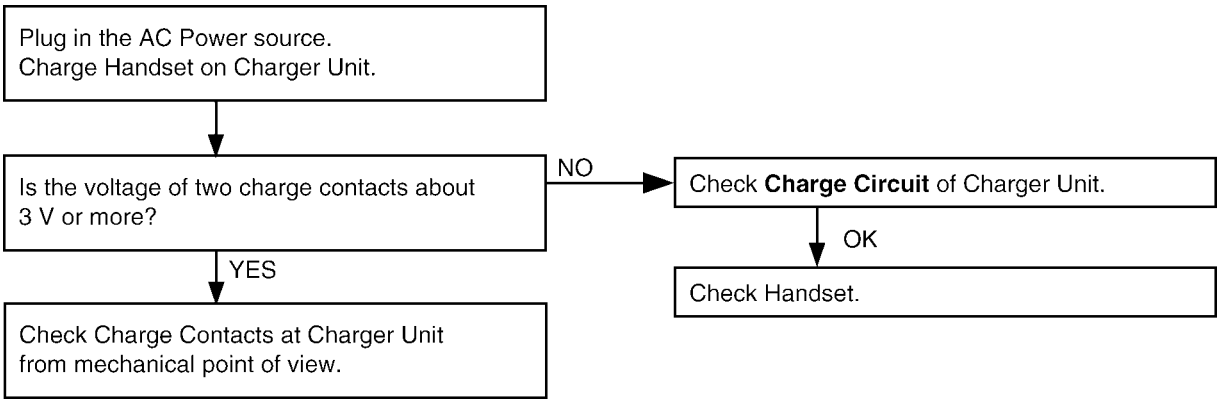


Cross Reference:

Check Power (P.25)

Charge Circuit (P.12)

9.1.2.3. Charger Unit

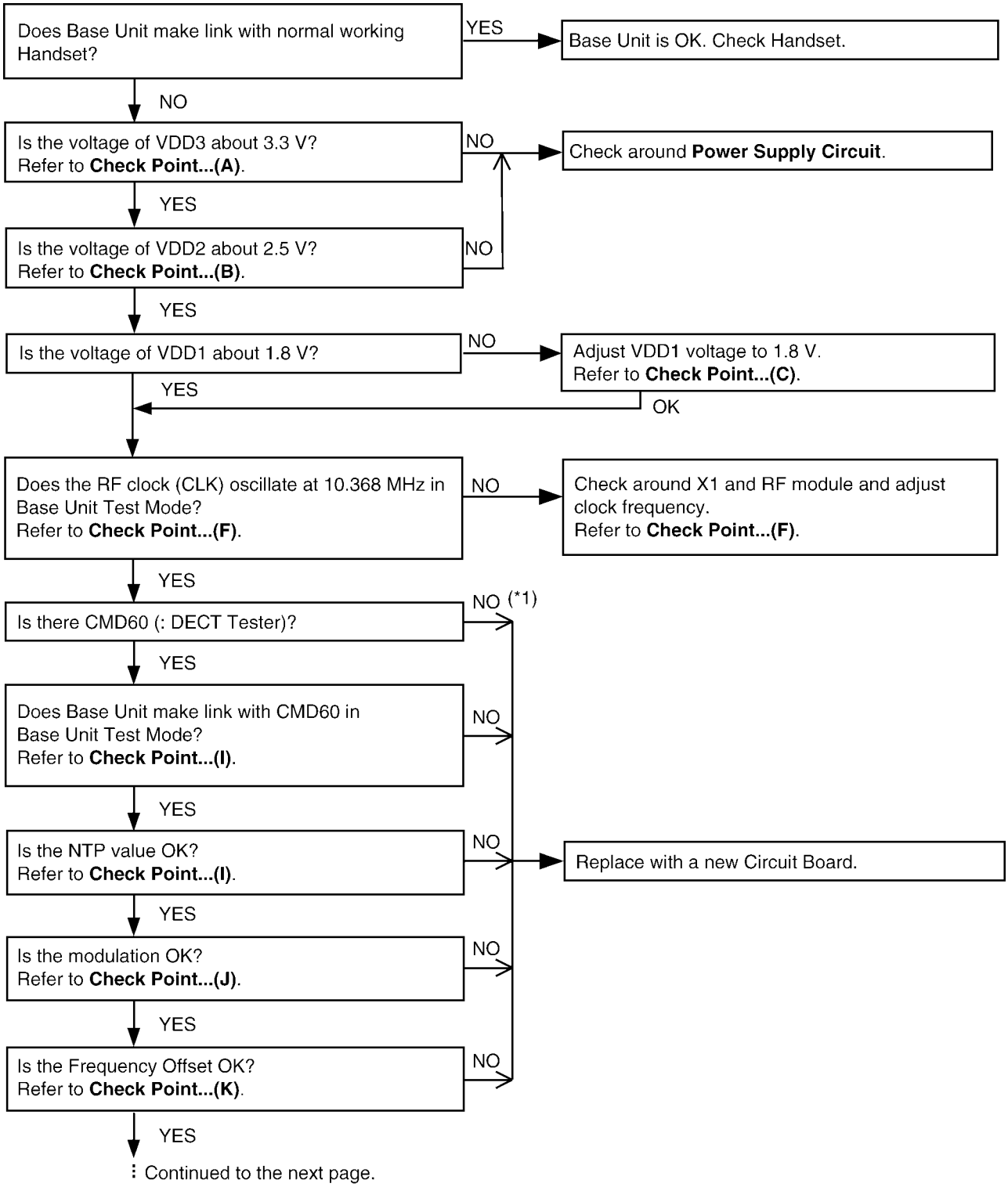


Cross Reference:

Charge Circuit (P.12)

9.1.3. Check Link

9.1.3.1. Base Unit



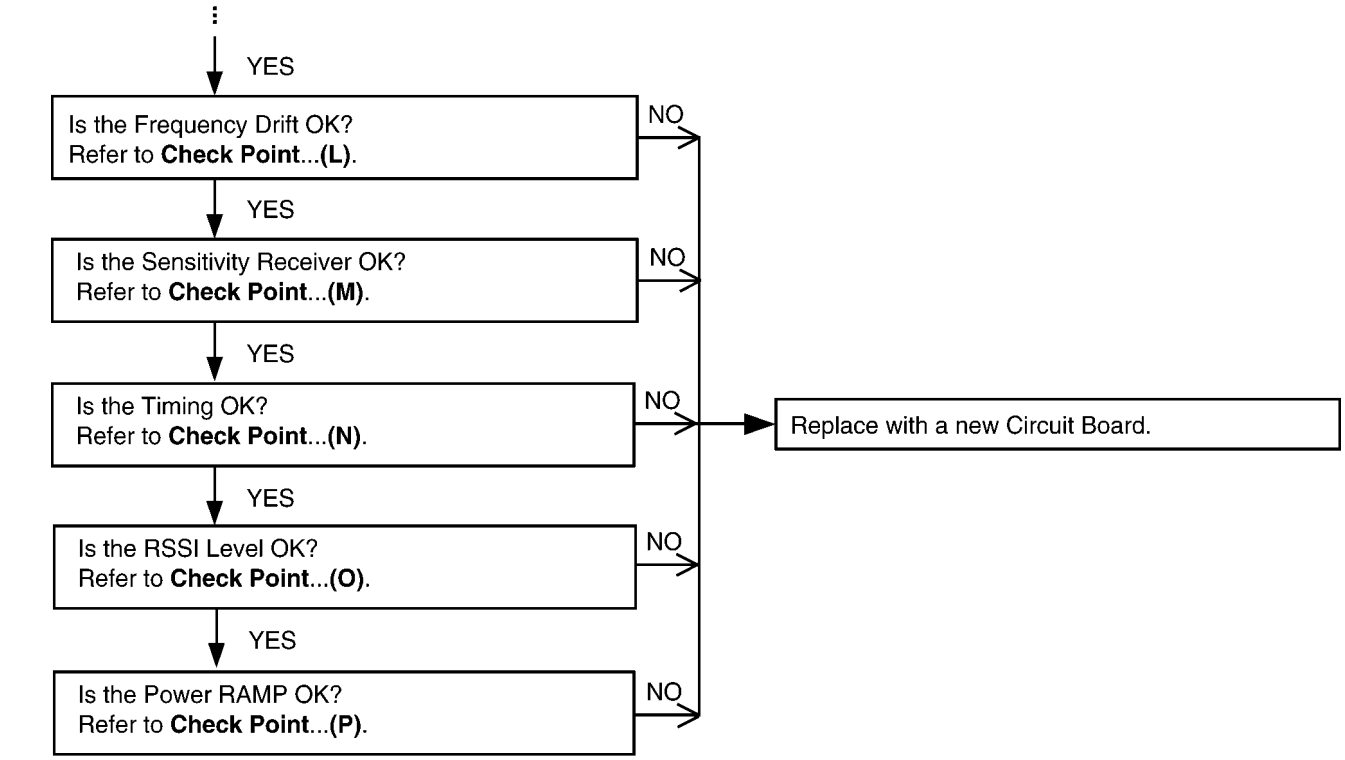
Note:

(*1) Refer to **Troubleshooting by Symptom (Base Unit and Charger Unit)** (P.32)

Cross Reference:

Check Point (Base Unit) (P.32)

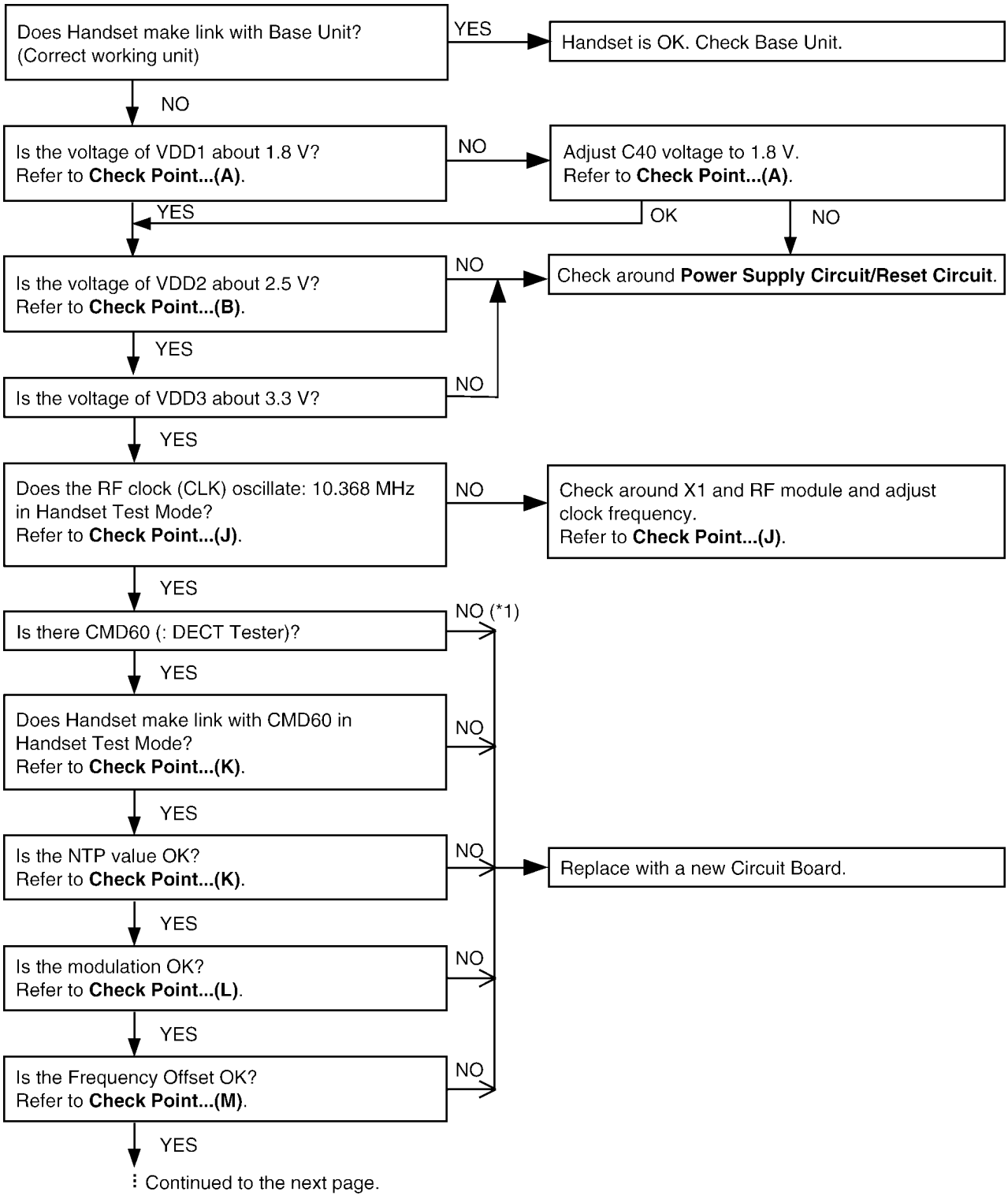
Power Supply Circuit (P.9)



Cross Reference:

Check Point (Base Unit) (P.32)

9.1.3.2. Handset



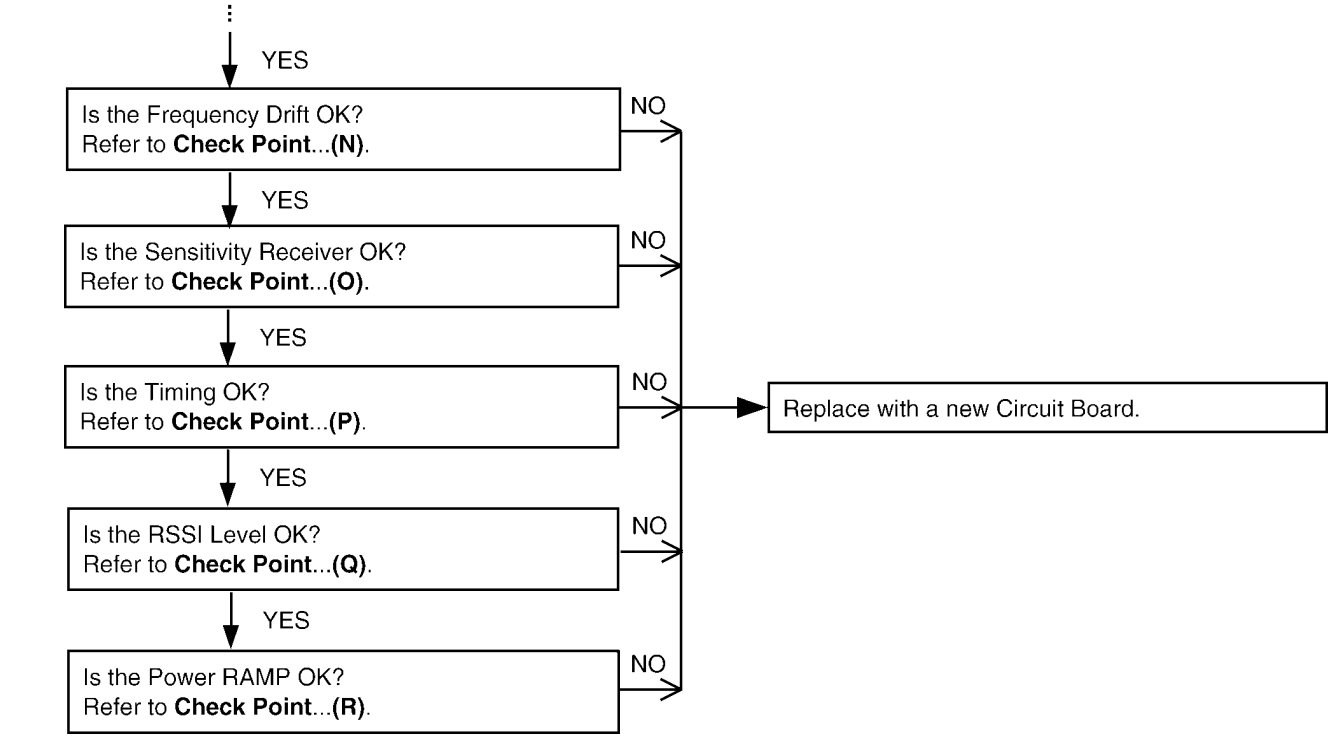
Note:

(*1) Refer to **Troubleshooting by Symptom (Handset)** (P.36)

Cross Reference:

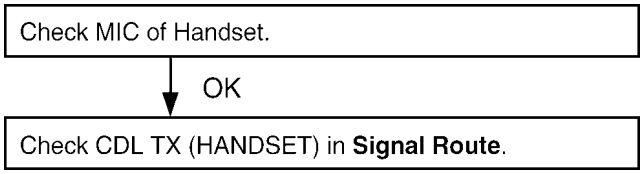
Check Point (Handset) (P.36)

Power Supply Circuit/Reset Circuit (P.12)



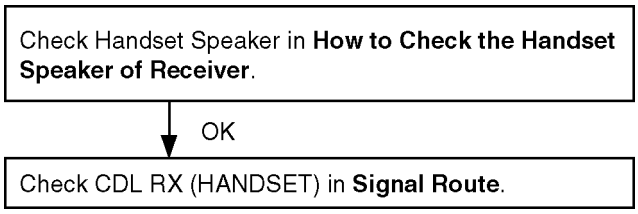
Cross Reference:
Check Point (Handset) (P.36)

9.1.4. Check Handset Transmission



Cross Reference:
Signal Route (P.13)

9.1.5. Check Handset Reception



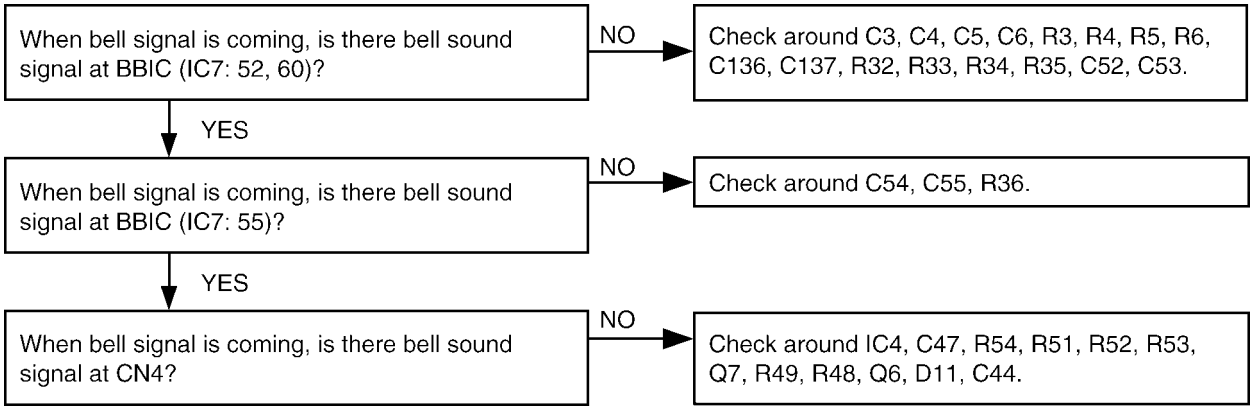
Cross Reference:
How to Check the Handset Speaker of Receiver (P.54).
Signal Route (P.13)

9.1.6. Check Caller ID

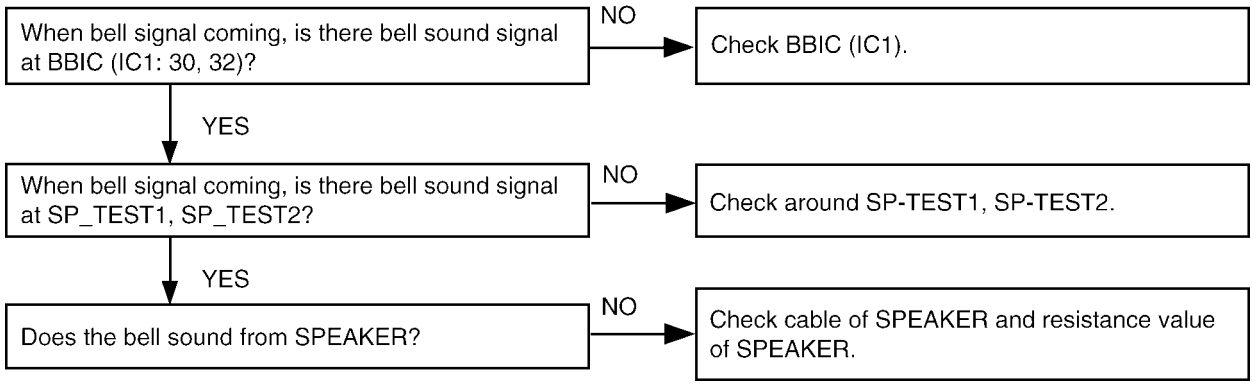
Cross Reference:
Signal Route (P.13)

9.1.7. Bell Reception

9.1.7.1. Base Unit



9.1.7.2. Handset



Cross Reference:

Telephone Line Interface (P.9)

Check Link (P.27)

How to Check the Handset Speaker of Receiver (P.54)

9.2. Troubleshooting by Symptom (Base Unit and Charger Unit)

If your unit has below symptoms, follow the instructions in remedy column. Remedies depend on whether you have DECT tester (*1) or not.

Symptom	Remedy (*2)	
	You don't have DECT Tester.	You have DECT Tester. (Model Number : CMD60)
You cannot dial.	Check item (**A**)-(**H**).	Check item (**A**)-(**H**), (**I**)-(**P**).
You cannot hear the caller's voice.	Check item (**A**)-(**F**).	Check item (**A**)-(**F**), (**I**)-(**P**), (**Q**).
You cannot use handset a little away from base unit even if the handset is within range of the base unit.	-	Check item (**I**)-(**P**).
The acoustic transmit level is high or low.	Check item (**Q**).	Check item (**Q**).
The acoustic reception level is high or low.	Check item (**Q**).	Check item (**Q**).
Base unit and handset do not link each other.	Check item (**A**)-(**H**).	Check item (**A**)-(**P**).
The unit cannot charge.	Check item (**R**).	Check item (**R**).

Note:

(*1) A general repair is possible even if you don't have the DECT tester because it is for confirming the levels, such as Acoustic level in detail.

(*2) Refer to **Check Point (Base Unit)** (P.32)

9.2.1. Check Point (Base Unit)

Please follow the items below when BBIC or EEPROM is replaced.

Note:

After the measuring, suck up the solder of TP.

*: **PC Setting** (P.45) is required beforehand.

The connections of simulator equipments are as shown in **Adjustment Standard (Base Unit)** (P.47).

	Items	Check Point	Procedure	Check or Replace Parts
(**A**)	3.3 V Supply Confirmation	VDD3	1. Confirm that the voltage between test point VDD3 and GND is 3.3 V ± 0.2 V.	IC1, C31, C32, R38, R39, C36, C37
(**B**)	2.5 V Supply Confirmation	VDD2	1. Confirm that the voltage between test point VDD2 and GND is 2.5 V ± 0.2 V.	Q9, C70, C71
(**C**)*	1.8 V Supply Confirmation	VDD1	1. Confirm that the voltage between test point VDD1 and GND is 1.8 V ± 0.1 V.	Q8, R72, D12, C68
(**D**)*	BBIC Confirmation	-	1. BBIC Confirmation (Execute the command "getchk"). 2. Confirm the returned checksum value. Connection of checksum value and program number is shown below. ex.) checksum value: 6F50 / program number: D661ZB	IC7, R37, C62, C63, X1, C72, R75~R81, R62, R63
(**E**)*	EEPROM Confirmation	-	1. EEP-ROM Confirmation (Execute the command "ChkTG8100XXrevYY.bat"). XX: country code YY: revision number 2. Confirm the returned checksum value. 3. The checksum is displayed in the last output line. **Note:** "XX", "YY", and "checksum" vary depending on the country version. You can find them in the batch file, PQZZ- mentioned in **JIG and PC** (P.45).	IC5, C51, R62, R63, Q14, C50, R57~R61
(**F**)*	BBIC Clock Adjustment	CLK	1. Input Command "rdeeprom 00 01 01", then you can confirm the current value. 2. Adjust the frequency of CLK executing the command "setfreq xx (where xx is the value)" so that the reading of the frequency counter is 10.368000 MHz ± 10 Hz.	IC10, C111, C112, X1, R73, C62, C63

	Items	Check Point	Procedure	Check or Replace Parts
(**G**)*	Hookswitch Check with DC Characteristics	-	1. Connect CN1 (Telephone Socket) to Tel-simulator which is connected with 600 Ω. 2. Set line voltage to 48 V and line current to 40mA at off-hook condition of normal telephone. 3. Execute the command “hookoff” 4. Confirm that the line current is 40 mA ± 5 mA. 5. Execute the command “hookon”. 6. Confirm that the line current is less than + 0.8 mA.	L1, L2, Q3, R14, R15, Q4, R16, R17, IC7, D3
(**H**)*	DTMF Generator Check	-	1. Connect CN1 (Telephone Socket) to DTMF tester. (Road=600 Ω) 2. Link Handset and push dial key. 3. Confirm DTMF character. 4. Confirm that the high Group is -5.0 dBm ~ -9.0 dBm. 5. Confirm that the low Group is -8.0 dBm ~ -12.0 dBm.	IC7, R67, IC6, R116, C141, R29, C22, C23, R18~R24, C14~C17, Q5, D4
(**I**)*	Transmitted Power Confirmation	-	Remove the Antenna before starting step from 1 to 7. 1. Configure the DECT tester (CMD60) as follows; <Setting> • Short A_1 and GND. • Test mode: FP • Traffic Carrier: 5 • Traffic Slot: 4 • Mode: Loopback • PMID: 00000 • RF LEVEL = -70dBm. 2. Execute the command “testmode”. 3. Execute the command “sendchar dmv 2 2”. 4. Check that “Signalling Status” has been set to “Locked”, then press “ACCEPT RFPI”. 5. Initiate connection from Dect tester (“set up connect”) 6. Execute the command “ANT1”. 7. Confirm that the NTP value at ANT is 20 dBm ~ 25 dBm.	IC7, IC10, L7, L3, L4, L6, C117, C118, C119, C120, C124, C125, R106, R109, DA1, C102, R102, R103, Q10, C110, C112, R111, C126, C127, R112
(**J**)	Modulation Check and Adjustment	-	Follow steps 1 to 6 of **(I)**. 7.Confirm that the B-Field Modulation is -350 ~ -400/+320 ~ +370 kHz/div using data type Fig31. 8.Adjust the B-Field Modulation if required. (Execute the command “readmod” and “wrtmod xx”, where xx is the value.)	IC7, IC10, L7, L3, L4, L6, C117, C118, C119, C120, C124, C125, R106, R109, DA1, C102, R102, R103, Q10, C110, C112, R111, C126, C127, R112
(**K**)	Frequency Offset Check	-	Follow steps 1 to 6 of **(I)**. 7.Confirm that the frequency offset is < ± 45 kHz.	IC7, IC10, L7, L3, L4, L6, C117, C118, C119, C120, C124, C125, R106, R109, DA1, C102, R102, R103, Q10, C110, C112, R111, C126, C127, R112
(**L**)	Frequency Dirft Confirmation	-	Follow steps 1 to 6 of **(I)**. 7.Confirm that the frequency drift is < ± 30 kHz/ms.	IC7, IC10, L7, L3, L4, L6, C117, C118, C119, C120, C124, C125, R106, R109, DA1, C102, R102, R103, Q10, C110, C112, R111, C126, C127, R112

	Items	Check Point	Procedure	Check or Replace Parts
(**M**)	Sensitivity Receiver Confirmation	-	Follow steps 1 to 6 of **(I)**. 7.Set DECT tester power to -90 dBm. 8.Confirm that the BER is < 1000 ppm.	IC7, IC10, L7, L3, L4, L6, C117, C118, C119, C120, C124, C125, R106, R109, DA1, C102, R102, R103, Q10, C110, C112, R111, C126, C127, R112
(**N**)	Timing Confirmation	-	Follow steps 1 to 6 of **(I)**. 7.Confirm that the Timing accuracy is < ± 2.0 ppm.	IC7, IC10, L7, L3, L4, L6, C117, C118, C119, C120, C124, C125, R106, R109, DA1, C102, R102, R103, Q10, C110, C112, R111, C126, C127, R112
(**O**)*	RSSI Level Confirmation	-	Follow steps 1 to 6 of **(I)**. 7.Execute the command “readrssi”. 8. Confirm that the returned value is 22 ± A (hex).	IC7, IC10, L7, L3, L4, L6, C117, C118, C119, C120, C124, C125, R106, R109, DA1, C102, R102, R103, Q10, C110, C112, R111, C126, C127, R112
(**P**)	Power RAMP Confirmation	-	Follow steps 1 to 6 of **(I)**. 7.Confirm that Power RAMP is matching.	IC7, IC10, L7, L3, L4, L6, C117, C118, C119, C120, C124, C125, R106, R109, DA1, C102, R102, R103, Q10, C110, C112, R111, C126, C127, R112
(**Q**)*	Audio Check	-	1. Link with Handset. 2. Input -45dBm/1kHz to MIC of Handset. Measure the Level at Line I/F and distortion level. 3. Confirm that the level is -8.5 dBm ± 2 dBm and that the distortion level is < 5% at TEL Line (600 Ω Load). 4. Input -20 dBm/1 kHz to Line I/F. Measure the level at Receiver of Handset and distortion level (*Receive volume set to second position from minimum). 5. Confirm that the level is -21.0 dBm ± 2 dBm and that the distortion level is < 5% at Receiver (Volume Middle, 150 Ω Load).	IC7, CN1, SA1, L1, L2, D3, Q3, Q4, R14, R15, R16, R17
(**R**)	Charging Check	-	1. Connect Charge Contact 12 Ω/2 W resistor between charge+ and charge-. 2. Measure and confirm voltage across the resistor is 3.10 V ± 0.2 V.	R55, R56, C48, C49

9.2.2. Check Point (Charger Unit)

	Items	Check Point	Procedure	Check or Replace Parts
(**A**)	Charging Check	-	1. Connect Charge Contact 12 Ω/2 W resistor between charge+ and charge-. 2. Measure and confirm voltage across the resistor is 3.3 V ± 0.2 V.	R2, R1 R3, R4

Note:

After the measuring, suck up the solder of TP.

The connection of adjustment equipment is as shown in **Adjustment Standard (Charger Unit)** (P.48).

9.3. Troubleshooting by Symptom (Handset)

If your unit has below symptoms, follow the instructions in remedy column. Remedies depend on whether you have DECT tester (*1) or not.

Symptom	Remedy (*2)	
	You don't have DECT Tester.	You have DECT Tester. (Model Number : CMD60)
Battery strength is not indicated correctly by Battery icon.	Check item (**A**)-(**D**), (**G**)-(**H**).	Check item (**A**)-(**D**), (**H**)-(**I**).
You cannot hear the caller's voice.	Check item (**A**)-(**D**), (**J**).	Check item (**A**)-(**D**), (**J**)-(**M**), (**N**), (**P**).
You cannot use handset a little away from base unit even if the handset is within range of the base unit.	-	Check item (**K**), (**O**).
Does not link between base unit and handset.	Check item (**A**)-(**D**), (**J**).	Check item (**A**)-(**D**), (**J**)-(**Q**).
The Audio level is high or low.	Check item (**S**).	Check item (**S**).
The SP-Phone level is high or low.	Check item (**T**).	Check item (**T**).

Note:

(*1) A general repair is possible even if you don't have the DECT tester because it is for confirming the levels, such as Acoustic level in detail.

(*2) Refer to **Check Point (Handset)** (P.36)

9.3.1. Check Point (Handset)

Please follow the items below when BBIC or EEPROM is replaced.

Note:

After the measuring, suck up the solder of TP.

*: **PC Setting** (P.49) is required beforehand.

The connections of adjustment equipments are as shown in **Adjustment Standard (Handset)** (P.51).

	Items	Check Point	Procedure	Check or Replace Parts
(**A**)*	1.8 V Supply Adjustment	VDD1	1. Confirm that the voltage between test point VDD1 and GND is 1.8 V ± 0.02 V. 2. Execute the command "bandgap", then check the current value. 3. Adjust the 1.8V voltage of VDD1 executing command "bandgap XX"(XX is the value).	IC1, Q2, C10
(**B**)	DC/DC Supply Confirmation	VDD3	1. Confirm that the voltage between test point VDD3 and GND is 3.3 V ± 0.3 V (Backlight is ON).	IC1, F1, C1, C2, C3, R1, Q1, D1, L1
(**C**)	2.5 V Supply Confirmation	VDD2	1. Confirm that the voltage between test point VDD2 and GND is 2.5 V ± 0.1 V.	IC1, Q3, C5
(**D**)*	BBIC Confirmation	-	1. BBIC Confirmation (Execute the command "getchk"). 2. Confirm the returned checksum value. Connection of checksum value and program number is shown below. ex.) checksum value: FA5D / program number: D862FN	IC1, X1, C6, C7, R19
(**E**)*	EEP-ROM Confirmation	-	1. EEP-ROM Confirmation (Execute the command "ChkTGA711XXrevYY"). XX: country code YY: revision number 2. Confirm the returned checksum value. **Note:** "XX", "YY", and "checksum" vary depending on the country version. You can find them in the batch file, PQZZ- mentioned in **JIG and PC** (P.45).	IC1, IC3, R40, R41, R42, Q10, Q11, R43, R44, C37
(**F**)	Charge Control Check & Charge Current Monitor Check	-	1. Apply 3.5 V between J3(+) and J4(-) with DC power supply and set current limit to 250 mA. 2. Confirm that the current limit LED of DC power supply is ON/OFF. 3. Decrease current limit of DC power supply to 100mA. 4. Confirm that the current limit LED of DC power supply is stable. (Current limiter is ON.) (If charge control cannot be confirmed by this procedure, please use battery to handset power supply and try again.)	IC1, Q4, Q5, Q9, D6, D7, D8, L4, L5, R5, R6, R7, R8, F1

	Items	Check Point	Procedure	Check or Replace Parts
(**G**)*	Charge Detection (OFF) Check	-	1. Stop supplying 3.5 V to J3 CHARGE(+) and J4 CHARGE(-). 2. Execute the command “Backloff” then “charge”. 3. Confirm that the returned value is 00 (hex).	IC1, Q4, Q5, Q9, D6, D7, D8, L4, L5, R5, R6, R7, R8, F1
(**H**)*	Battery Monitor Check	-	1. Apply 2.25 V between BATT and GND. 2. Execute the command “readbatt”. It assumes that the return value is XX. a) 1E ≦ XX ≦ 2C: No need to adjust b) XX: 18 ~ 1D: Need to adjust XX: 2D ~ 32: Need to adjust Write AD value of 2.25V to EEPROM. ex) read data: XX = 1D, write data: YY = 1D read data: XX = 2D, write data: YY = 2D EEPROM = 0004(Low Voltage) write “YY” Execute the command “wreeprom 00 04 01 YY”. EEPROM = 0005(No Voltage) write “YY - 1D” Execute the command “wreeprom 00 05 01 ZZ”. EEPROM = 000A(Low Voltage BL) write “YY - 16” Execute the command “wreeprom 00 0A 01 WW”. **Note:** ZZ = YY - 1D, WW = YY - 16 No Voltage writing data limit is ‘00’. c) XX: 00 ~ 17: Reject XX: 33 ~ FF: Reject	IC1, F1, C1 C3, R12
(**I**)	Battery Low Confirmation	-	1. Apply 2.40 V between BATTERY(+) and BATTERY(-). 2. Confirm that there is no flashing of Battery Icon. 3. Apply 2.25 V ± 0.08 V between BATTERY(+) and BATTERY(-). 4. Confirm that there is flashing of Battery Icon.	IC1, F1, C1 C3, R12
(**J**)*	BBIC Clock Adjustment	CLK	1. Apply 2.6 V between BATTERY(+) and BATTERY(-) with DC power. 2. Execute the command “conttx”. 3. Input Command “rdeeprom 00 01 01”, then you can confirm the current value. 4. Adjust the frequency of CLK executing the command “setfreq xx (where xx is the value)” so that the reading of the frequency counter is 10.368000 MHz ± 10 Hz. Note: CLK is displayed only for a few seconds when executing the command “conttx” after battery is inserted.	IC1, X1, C6, C7, R19, IC4, C57
(**K**)*	Transmitted Power Confirmation	-	Remove the Antenna before starting step from 1 to 4. 1. Configure the DECT tester (CMD60) as follows; <Setting> • Test mode: PP • RFPI: 0102030405 • Traffic Carrier: 5 • Traffic Slot: 4 • Mode: Loopback • RF LEVEL = -70 dBm 2. Execute the command “regcmd60 01 02 03 04 05". 3. Initiate connection from DECT tester. 4. Confirm that the NTP value at A201 is 19 dBm ~ 25 dBm.	IC1, IC4, C66, C58, C57, C50, C52, C53, R52, C60, C61
(**L**)*	Modulation Check and Adjustment	-	Follow steps 1 to 3 of **(K)**. 4.Confirm that the B-Field Modulation is -350 ~ -400/+320 ~ +370 kHz/div using data type Fig 31. 5.Adjust the B-Field Modulation if required. (Execute the command “Readmod” and “wrtmod xx”, where xx is the value.)	IC1, IC4, C66, C58, C57, C50, C52, C53, R52, C60, C61
(**M**)	Frequency Offset Confirmation	-	Follow steps 1 to 3 of **(K)**. 4.Confirm that the frequency Offset is < ± 45 kHz.	IC1, IC4, C66, C58, C57, C50, C52, C53, R52, C60, C61
(**N**)	Frequency Drift Confirmation	-	Follow steps 1 to 3 of **(K)**. 4.Confirm that the frequency Drift is < ± 30 kHz/ms.	IC1, IC4, C66, C58, C57, C50, C52, C53, R52, C60, C61

	Items	Check Point	Procedure	Check or Replace Parts
(**O**)	Sensitivity Receiver Confirmation	-	Follow steps 1 to 3 of **(K)**. 4.Set DECT tester power to -88 dBm. 5.Confirm that the BER is < 1000 ppm.	IC1, IC4, C66, C58, C57, C50, C52, C53, R52, C60, C61
(**P**)	Timing Confirmation	-	Follow steps 1 to 3 of **(K)**. 4.Confirm that the Timing accuracy is < ± 2.0 ppm.	IC1, IC4, C66, C58, C57, C50, C52, C53, R52, C60, C61
(**Q**)*	RSSI Level Confirmation	-	Follow steps 1 to 3 of **(K)**. 4.Set DECT tester power to -81 dBm. 5.Execute the command “readrssi“. 6.Confirm that the returned value is 1C ± 8 (hex). 7.Set DECT tester power to -63 dBm. 8.Execute the command “readrssi“. 9.Confirm that the returned value is 25 ± 8 (hex).	IC1, IC4, C66, C58, C57, C50, C52, C53, R52, C60, C61
(**R**)	Power RAMP Confirmation	-	Follow steps 1 to 3 of **(K)**. 4.Confirm that Power RAMP is matching.	IC1, IC4, C66, C58, C57, C50, C52, C53, R52, C60, C61
(**S**)	Audio Check and Confirmation	-	1. Link to BASE which is connected to Line Simulator. 2. Set line voltage to 48 V and line current to 40 mA. 3. Input -45 dBm/1 KHz to MIC and measure Line output level. 4. Confirm that the level is -8.5 dBm ± 2 dBm and that the distortion level is < 5 % at TEL Line (600 Ω Load). 5. Input -20dBm/1KHz to Line I/F and measure Receiving level at REV1 and REV2. 6. Confirm that the level is -21.0 dBm ± 2 dBm and that the distortion level is < 5 % at Receiver. (vol = 2)	IC1, R21, R22, R23, R24, R25, C11, D4, D5, C12, C73, C74, C75, C95, C96
(**T**)	SP phone Audio Check and Confirmation	-	1. Link to Base which is connected to Line Simulator. 2. Set line voltage to 48 V and line current to 40 mA. 3. Set the handset off-hook using SP-Phone key. 4. Input -25 dBm/1KHz to Line I/F and measure Receiving level at SP_TEST1 and SP_TEST2. 5. Confirm that the level is -14 dBm ± 2 dBm and that the distortion level is < 5 %. (vol = 3)	IC1, R21, R22, R23, R24, R25, C11, C39, C12, C73, C74, C75, C95, C96

9.3.2. Troubleshooting for Speakerphone

When the customer’s telephone line corresponds to the following conditions, and the transmission signal of SP-Phone is interrupted, performing the next set up to a cordless handset will improve it to some extent.

Conditions

1. When customer’s line has less line loss.
   ex.) The customer is using optical fiber, ISDN terminal adaptor, or PBX.
   In this case, receiving signal is strong and it may affect transmission signal.
2. When the other party is talking from noisy place.
   ex.) The other party is using cellular phone. The background noise is very loud.
   In this case, the noise from the other party (i.e. surrounding noise) may affect transmission signal.

Setting Method

• Change the address of EEPROM (0144) from 00 to 01.

9.4. How to Replace the Flat Package IC

Even if you do not have the special tools (for example, a spot heater) to remove the Flat IC, with some solder (large amount), a soldering iron and a cutter knife, you can easily remove the ICs that have more than 100 pins.

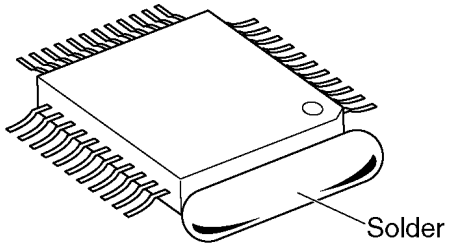
9.4.1. Preparation

- PbF (: Pb free) Solder
- Soldering Iron
  Tip Temperature of 700 °F ± 20 °F (370 °C ± 10 °C)
  Note: We recommend a 30 to 40 Watt soldering iron. An expert may be able to use a 60 to 80 Watt iron where someone with less experience could overheat and damage the PCB foil.
- Flux
  Recommended Flux: Specific Gravity → 0.82.
  Type → RMA (lower residue, non-cleaning type)

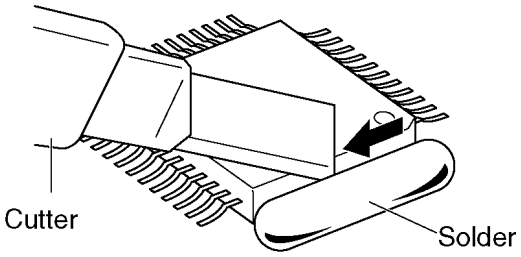
Note: See **About Lead Free Solder (Pbf: Pb free)** (P.4)

9.4.2. How to Remove the IC

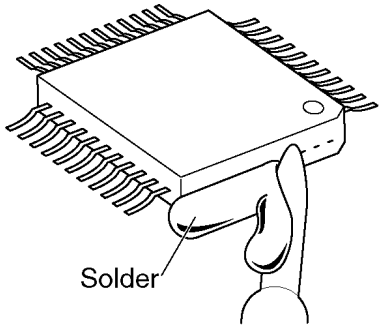
1. Put plenty of solder on the IC pins so that the pins can be completely covered.
   Note:
   If the IC pins are not soldered enough, you may give pressure to the P.C. board when cutting the pins with a cutter.



2. Make a few cuts into the joint (between the IC and its pins) first and then cut off the pins thoroughly.



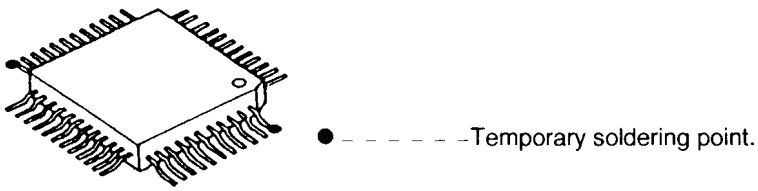
3. While the solder melts, remove it together with the IC pins.



When you attach a new IC to the board, remove all solder left on the board with some tools like a soldering wire. If some solder is left at the joint on the board, the new IC will not be attached properly.

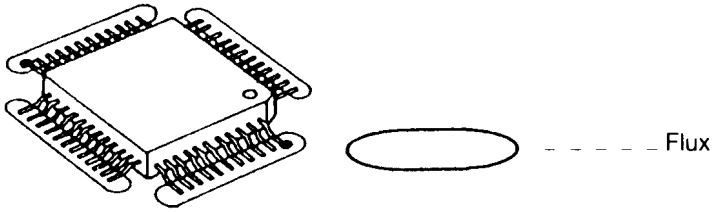
9.4.3. How to Install the IC

1. Temporarily fix the FLAT PACKAGE IC, soldering the two marked pins.

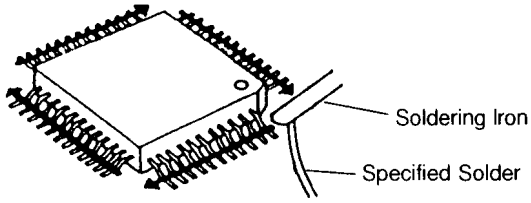


*Check the accuracy of the IC setting with the corresponding soldering foil.

2. Apply flux to all pins of the FLAT PACKAGE IC.

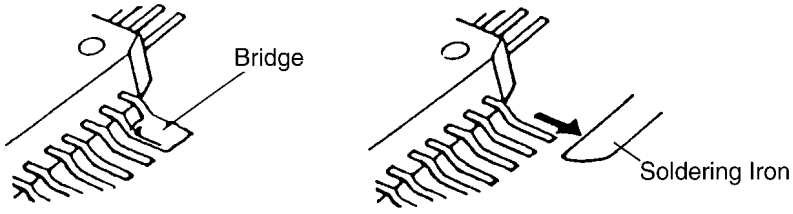


3. Solder the pins, sliding the soldering iron in the direction of the arrow.



9.4.4. How to Remove a Solder Bridge

1. Lightly resolder the bridged portion.
2. Remove the remaining solder along the pins using a soldering iron as shown in the figure below.

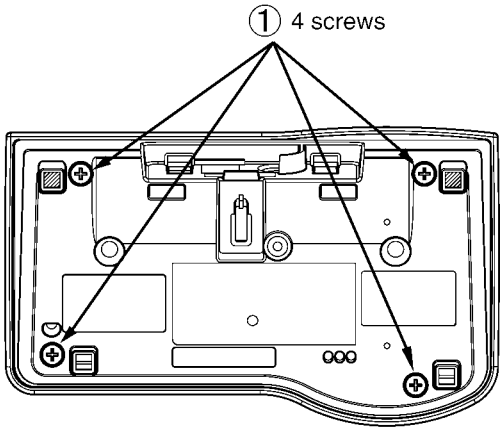


10 Disassembly and Assembly Instructions

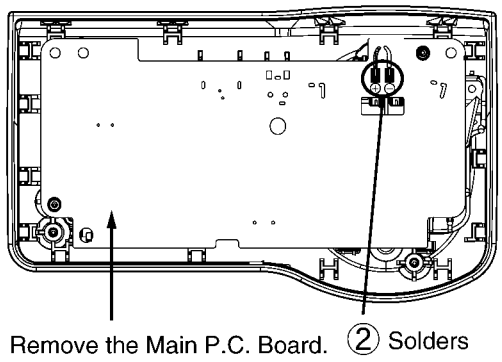
10.1. Disassembly Instructions

10.1.1. Base Unit

① **Remove the 4 screws to remove the Cabinet Cover.**

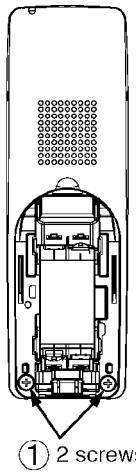


② **Remove the Solders to remove the Main P.C. Board.**

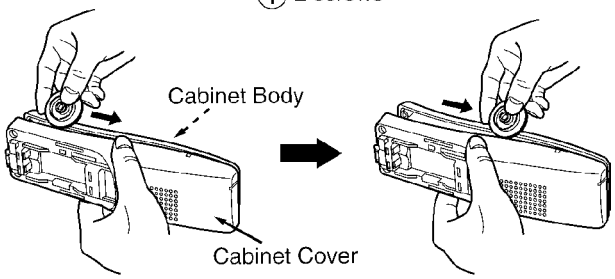


10.1.2. Handset

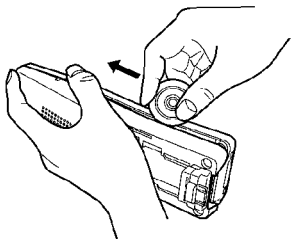
① **Remove the 2 screws.**



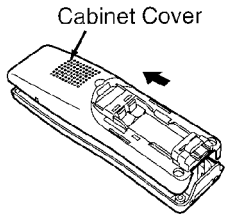
② **Insert a JIG (PQDJ10006Y) between the Cabinet Body and the Cabinet Cover, then pull it along the gap to open the Cabinet.**



③ **Likewise, open the other side of the Cabinet.**



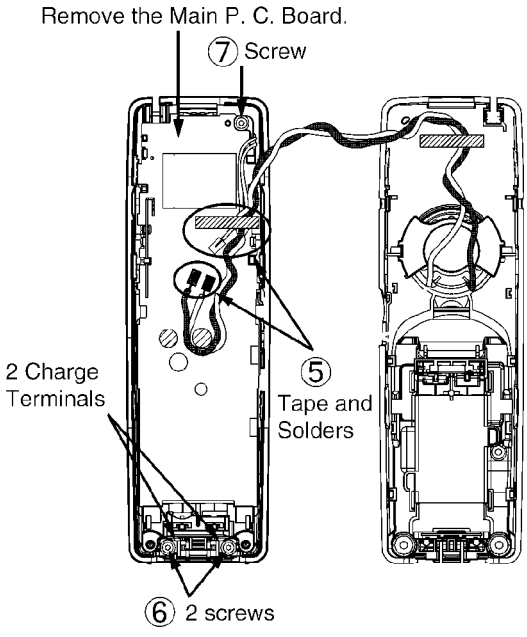
④ **Remove the Cabinet Cover by pushing it upward.**



⑤ **Remove the Tape and the Solders.**

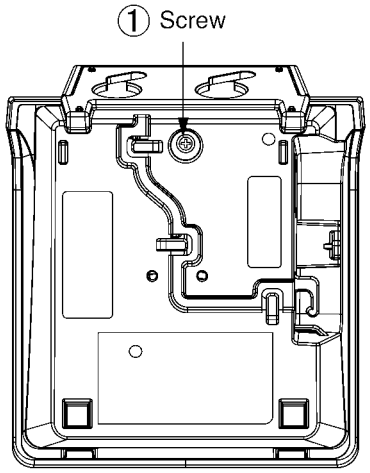
⑥ **Remove the 2 screws to remove the 2 Charge Terminals.**

⑦ **Remove the screw to remove the Main P. C. Board.**

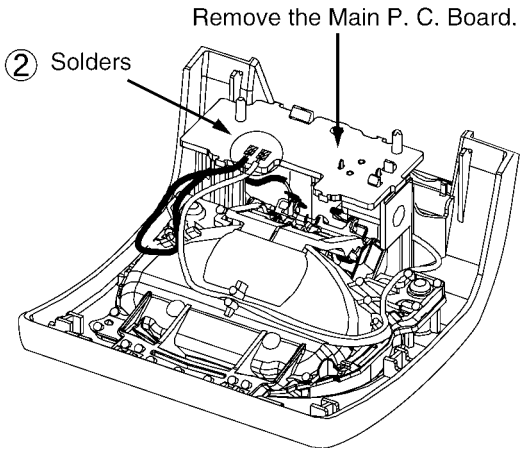


10.1.3. Charger Unit

① **Remove the screw to remove the Cabinet Cover.**

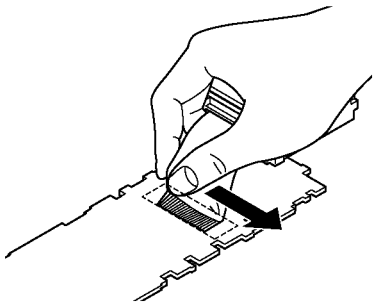


② **Remove the Solders to remove the Main P. C. Board.**



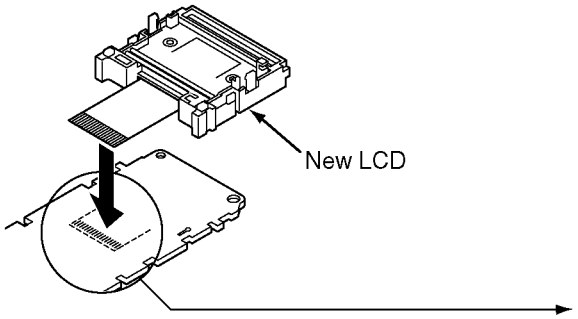
10.2. How to Replace the Handset LCD

①

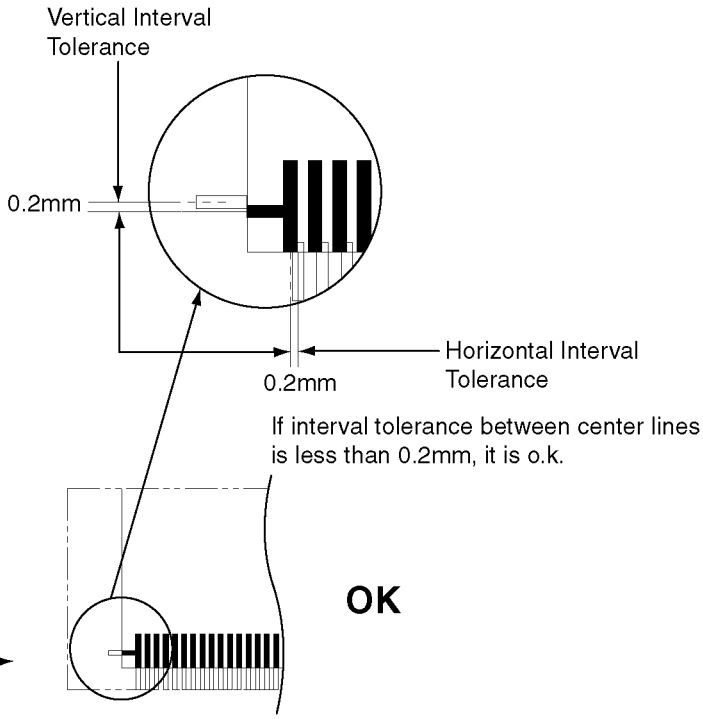


Peel off the FFC (Flexible Flat Cable) from the LCD, in the direction of the arrow.
Take care to ensure that the foil on the P.C. board is not damaged.

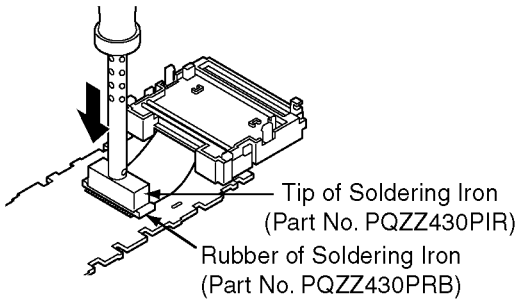
②



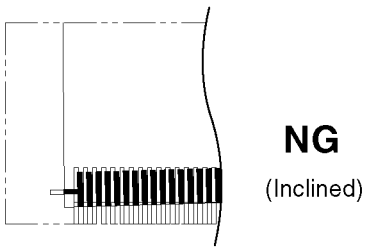
Fit the heatseal of a new LCD.

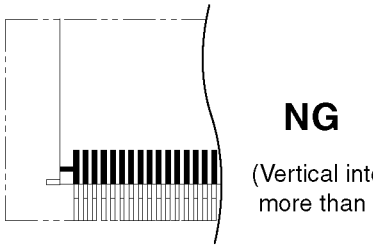


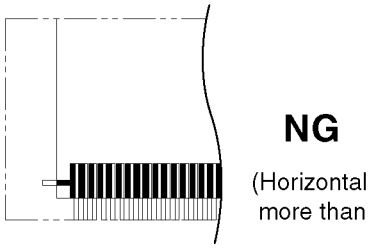
③



Heatweld with the tip of the soldering Iron about 5 to 8 seconds
(in case of 60W soldering iron).







11 Measurements and Adjustments

11.1. The Setting Method of JIG (Base Unit)

11.1.1. Preparation

11.1.1.1. Equipment Required

- DECT tester: Rohde & Schwarz, CMD 60 is recommended.
- Frequency counter: It must be precise enough to measure intervals of 1 Hz (precision; ±4 ppm). Hewlett Packard, 53131A is recommended.
- Digital multi-meter (DMM): It must be able to measure voltage and current.
- Oscilloscope

11.1.1.2. JIG and PC

- Serial JIG
  JIG Cable: PQZZ1CD300E*
- PC which runs in DOS mode
- **Batch file CD-ROM** for setting: PQZZTG7100HG

Note:

*: If you have the JIG Cable for TCD500 series (PQZZ1CD505E), change the following values of resistance. Then you can use it as a JIG Cable for both TCD300 and TCD500 series. (It is an upper compatible JIG Cable.)

Resistor	Old value (kΩ)	New value (kΩ)
R2	22	3.3
R3	22	3.3
R4	22	4.7
R7	4.7	10

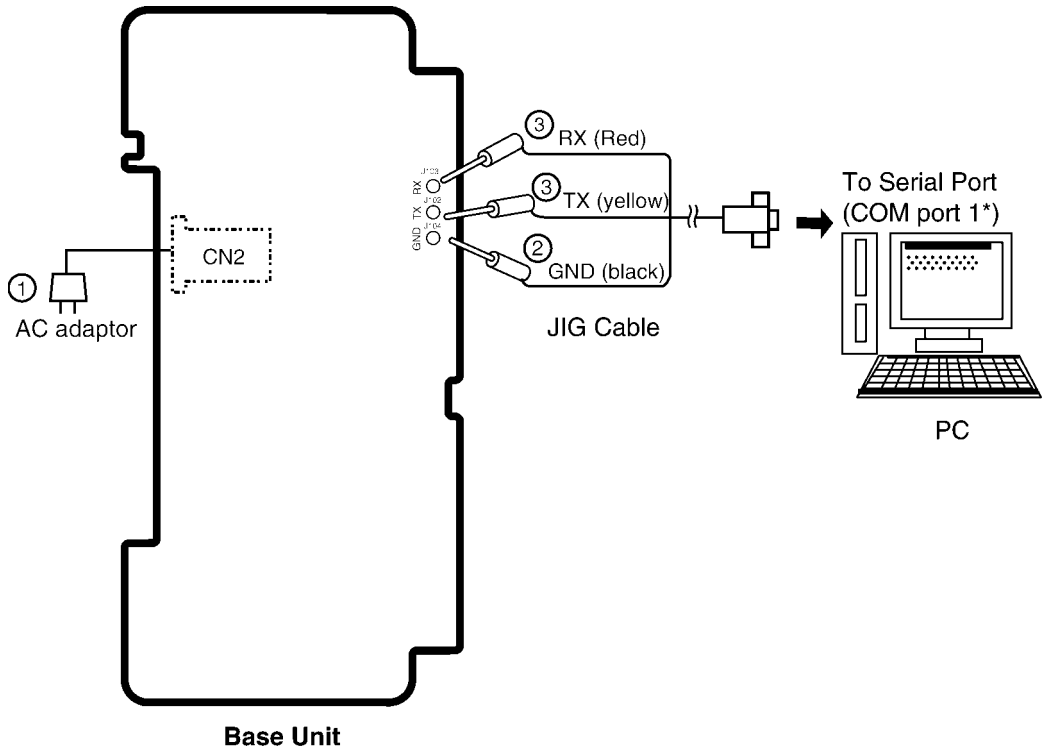
11.1.2. PC Setting

11.1.2.1. Connections

①Connect the AC adaptor to CN2 (base unit).

②Connect the JIG Cable GND (black).

③Connect the JIG Cable RX (red) and TX (yellow).



Note:

*: COM port names may vary depending on what your PC calls it.

11.1.2.2. Batch file Settings

1. Insert the Batch file CD-ROM into CD-ROM drive and copy PQZZTG**** folder to your PC (example: D drive).

2. Open an MS-DOS mode window.

<Example for Windows>

On your computer, click **[Start]**, select **Programs** (**All Programs** for Windows XP/Windows Server 2003), then click
MS-DOS Prompt. (for Windows 95/Windows 98)
Or
Accessories-MS-DOS Prompt. (for Windows Me)
Or
Command Prompt. (for Windows NT 4.0)
Or
Accessories-Command Prompt.
(for Windows 2000/Windows XP/Windows Server 2003)

3. At the DOS prompt, type "**D:**" (for example) to select the drive, then press the **Enter** key.

4. Type "**CD ¥PQZZTG****"**, then press the **Enter** key.

5. Type "**SET_COM=X**", then press the **Enter** key
(**X**: COM port number used for the serial connection on your PC).

6. Type "**READID**", then press the **Enter** key.
- If any error messages appear, change the port number or check the cable connection.
- If any value appear, go to next step.

7. Type "**DOSKEY**", then press the **Enter** key.

<Example: correct setting>

```
C: ¥Documents and Settings>D:
D: ¥>CD ¥PQZZTG****
D: ¥PQZZTG**** >SET_COM=X
D: ¥PQZZTG****>READID
00 52 4F A8 A8
D: ¥PQZZTG****>DOSKEY
D: ¥PQZZTG****>
```

<Example: incorrect setting>

```
C: ¥Documents and Settings>D:
D: ¥>CD ¥PQZZTG****
D: ¥PQZZTG**** >SET_COM=X
D: ¥PQZZTG****>READID
  CreateFile error
ERROR 10: Can't open serial port
D: ¥PQZZTG ****>
```

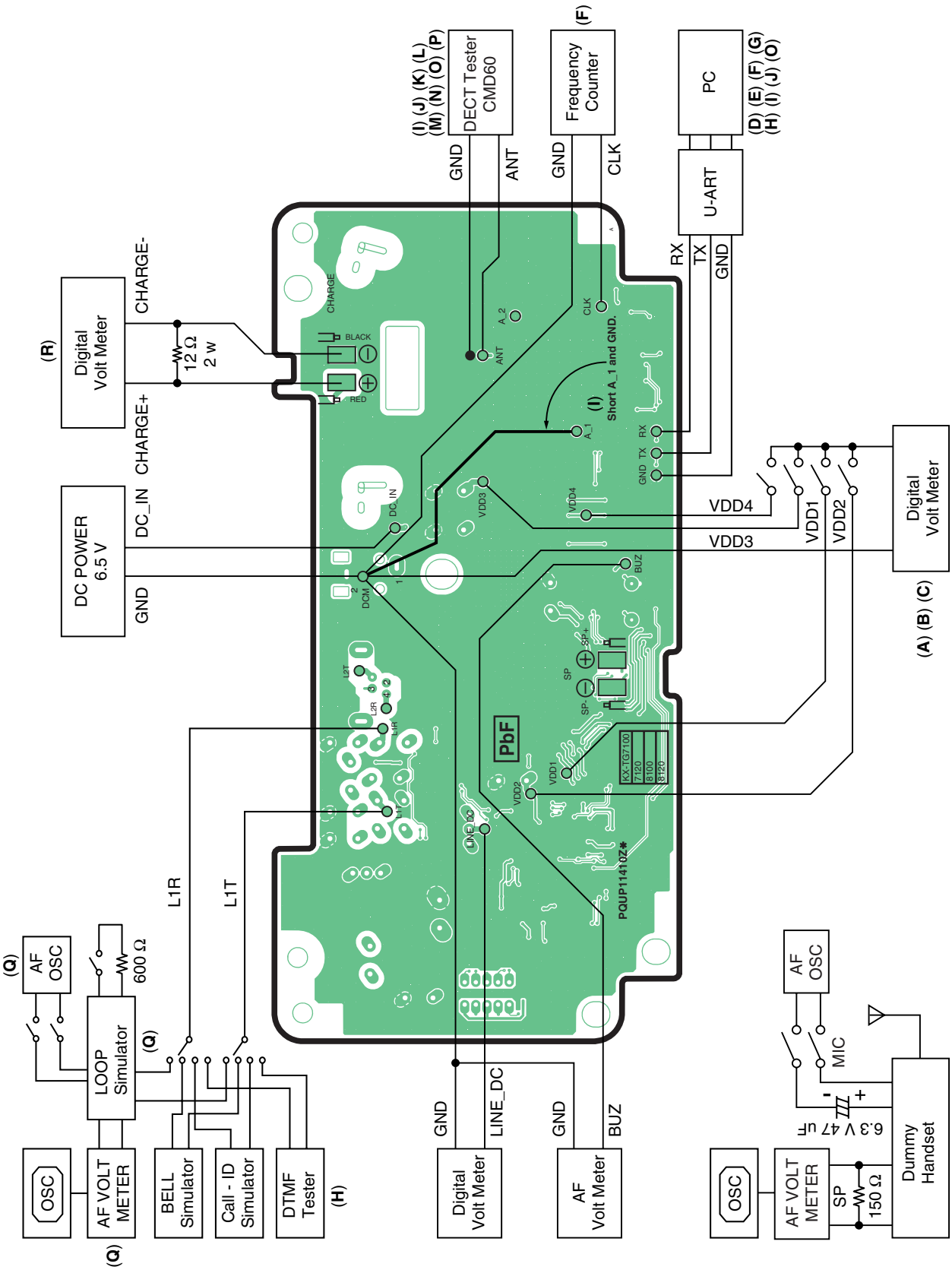
Note:
- "*****" varies depending on the country.
- See the table below for frequently used commands.

Command name	Function	Example
rdeeprom	Read the data of EEPROM	Type "rdeeprom 00 00 FF", and the data from address "00 00" to "FF" is read out.
readid	Read ID (RFPI)	Type "readid", and the registered ID is read out.
writeid	Write ID (RFPI)	Type "writeid 00 18 E0 0E 98", and the ID "0018 E0 0E 98" is written.
setfreq	Adjust Frequency of RFIC	Type "setfreq nn".
hookoff	Off-hook mode on Base	Type "hookoff".
hookon	On-hook mode on Base	Type "hookon".
getchk	Read checksum	Type "getchk".
wreeprom	Write the data of EEPROM	Type "wreeprom 01 23 45". "01 23" is address and "45" is data to be written.

11.2. Adjustment Standard (Base Unit)

When connecting the simulator equipments for checking, please refer to below.

11.2.1. Flow Solder Side View



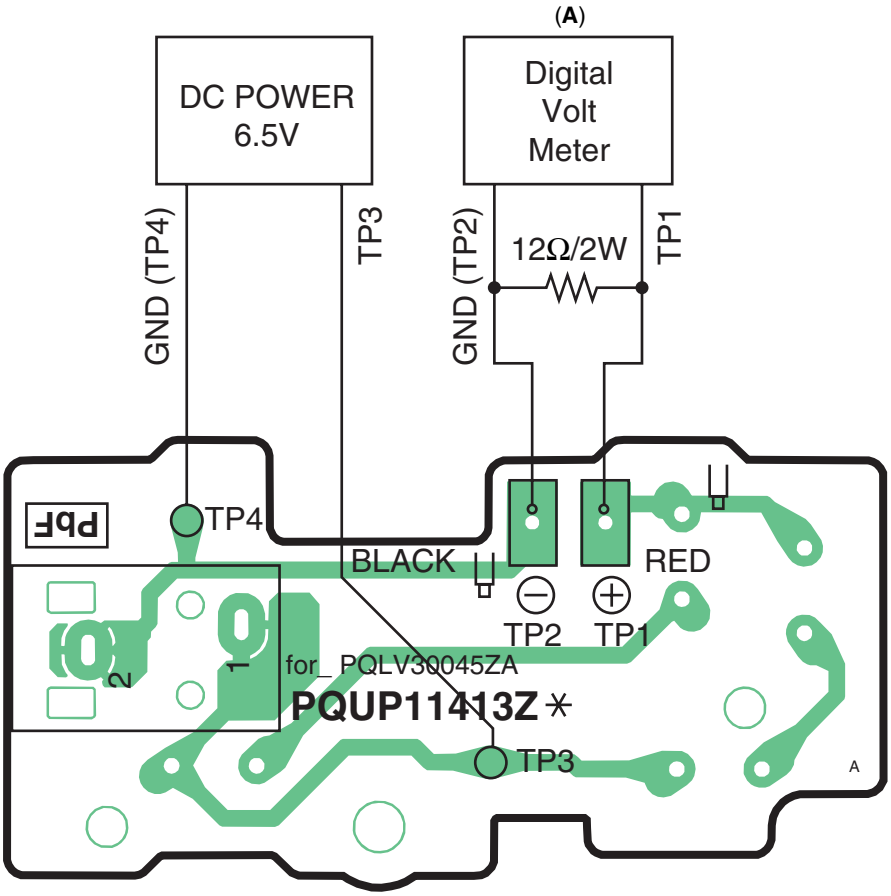
Note:

(**A**) - (**R**) is referred to **Check Point (Base Unit)** (P.32)

11.3. Adjustment Standard (Charger Unit)

When connecting the simulator equipments for checking, please refer to below.

11.3.1. Flow Solder Side View



Note:

(**A**) is referred to **Check Point (Charger Unit)** (P.35)

11.4. The Setting Method of JIG (Handset)

11.4.1. Preparation

11.4.1.1. Equipment Required

- DECT tester: Rohde & Schwarz, CMD 60 is recommended.
- Frequency counter: It must be precise enough to measure intervals of 1 Hz (precision; ±4 ppm). Hewlett Packard, 53131A is recommended.
- DC power: It must be able to output at least 1 A current under 2.4 V for Handset.
- Digital multi-meter (DMM): It must be able to measure voltage and current.
- Oscilloscope

11.4.1.2. JIG and PC

- Serial JIG
  JIG Cable: PQZZ1CD300E*
- PC which runs in DOS mode.
- **Batch file CD-ROM** for setting: PQZZTG7100HG

Note:

*: If you have the JIG Cable for TCD500 series (PQZZ1CD505E), change the following values of resistance. Then you can use it as a JIG Cable for both TCD300 and TCD500 series. (It is an upper compatible JIG Cable.)

Resistor	Old value (kΩ)	New value (kΩ)
R2	22	3.3
R3	22	3.3
R4	22	4.7
R7	4.7	10

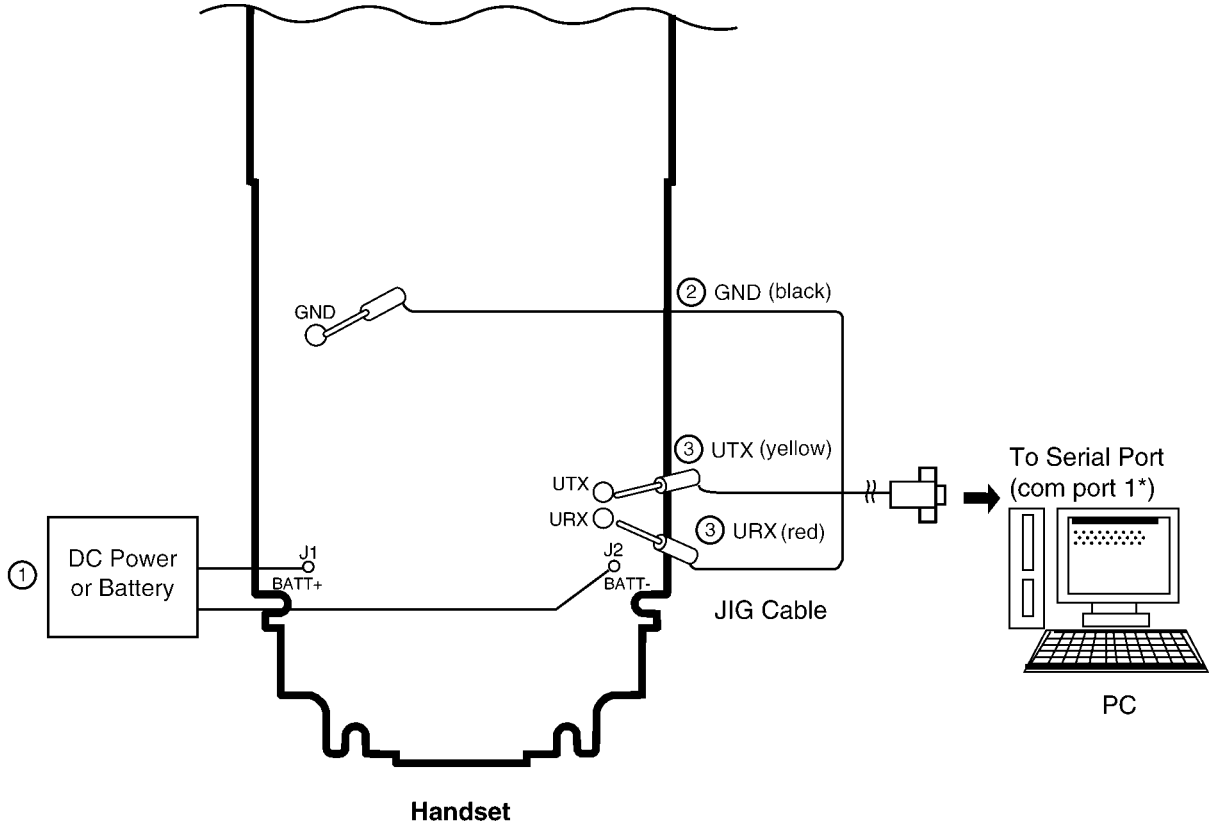
11.4.2. PC Setting

11.4.2.1. Connections

①Connect the DC Power or Battery to J1 and J2 (Handset).

②Connect the JIG cable GND (black).

③Connect the JIG cable UTX (yellow) and URX (red).



Note:

*: Com port names may vary depending on what your PC calls it.

11.4.2.2. Batch file Settings

1. Insert the Batch file CD-ROM into CD-ROM drive and copy PQZZTG**** folder to your PC (example: D drive).

2. Open an MS-DOS mode window.

<Example for Windows>

On your computer, click **[Start]**, select **Programs** (**All Programs** for Windows XP/Windows Server 2003), then click
MS-DOS Prompt. (for Windows 95/Windows 98)
Or
Accessories-MS-DOS Prompt. (for Windows Me)
Or
Command Prompt. (for Windows NT 4.0)
Or
Accessories-Command Prompt.
(for Windows 2000/Windows XP/Windows Server 2003)

3. At the DOS prompt, type "**D:**" (for example) to select the drive, then press the **Enter** key.

4. Type "**CD ¥PQZZTG****"**, then press the **Enter** key.

5. Type "**SET_COM=X**", then press the **Enter** key
(**X**: COM port number used for the serial connection on your PC).

6. Type "**READID**", then press the **Enter** key.
- If any error messages appear, change the port number or check the cable connection.
- If any value appear, go to next step.

7. Type "**DOSKEY**", then press the **Enter** key.

<Example: correct setting>

```
C: ¥Documents and Settings>D:
D: ¥>CD ¥PQZZTG****
D: ¥PQZZTG**** >SET_COM=X
D: ¥PQZZTG****>READID
00 52 4F A8 A8
D: ¥PQZZTG****>DOSKEY
D: ¥PQZZTG****>
```

<Example: incorrect setting>

```
C: ¥Documents and Settings>D:
D: ¥>CD ¥PQZZTG****
D: ¥PQZZTG**** >SET_COM=X
D: ¥PQZZTG****>READID
  CreateFile error
ERROR 10: Can't open serial port
D: ¥PQZZTG ****>
```

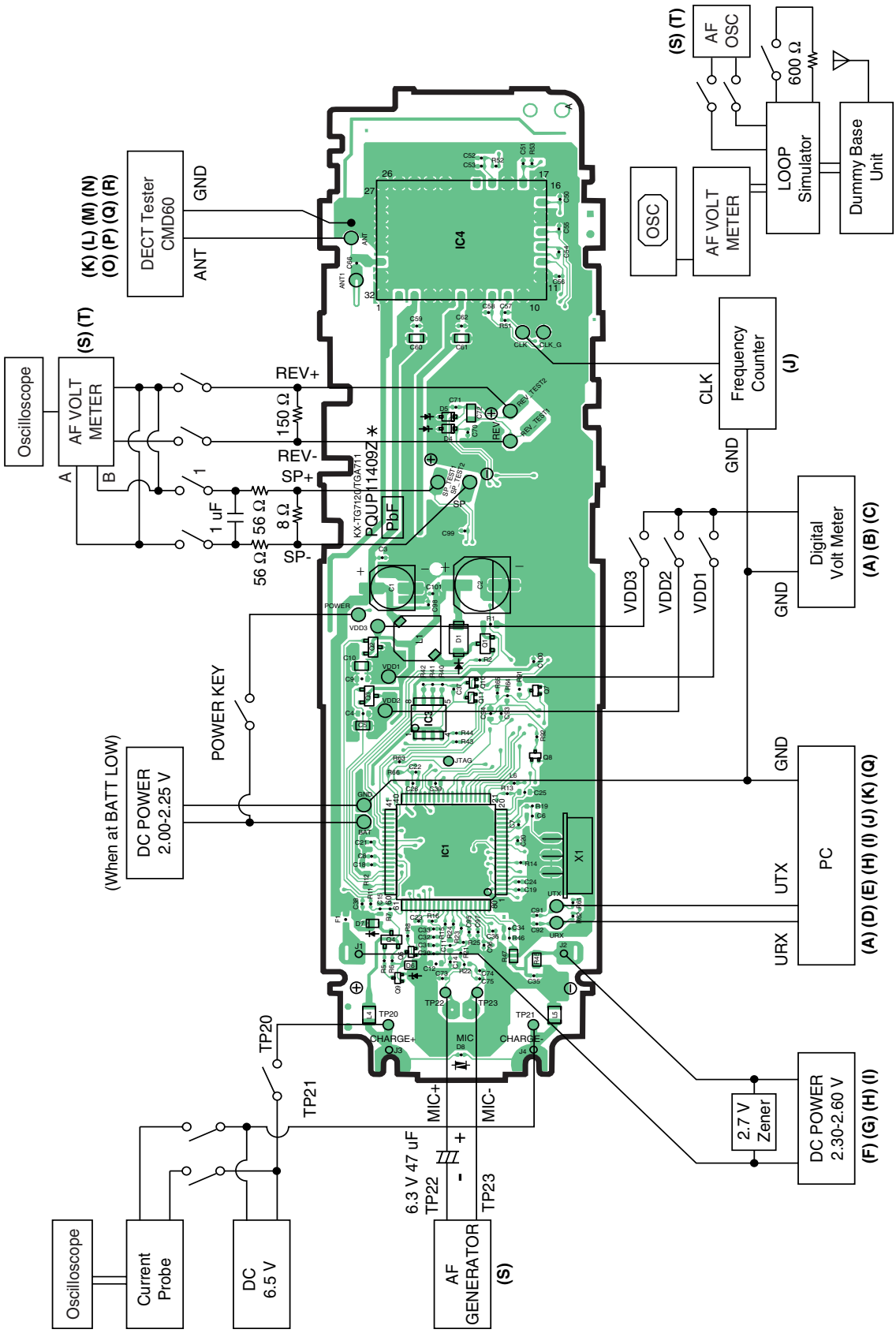
Note:
- "*****" varies depending on the country.
- See the table below for frequently used commands.

Command name	Function	Example
rdeeprom	Read the data of EEPROM	Type "rdeeprom 00 00 FF", and the data from address "00 00" to "FF" is read out.
readid	Read ID (RFPI)	Type "readid", and the registered ID is read out.
writeid	Write ID (RFPI)	Type "writeid 00 18 E0 0E 98", and the ID "0018 E0 0E 98" is written.
setfreq	Adjust Frequency of RFIC	Type "setfreq nn".
getchk	Read checksum	Type "getchk".
wreeprom	Write the data of EEPROM	Type "wreeprom 01 23 45". "01 23" is address and "45" is data to be written.

11.5. Adjustment Standard (Handset)

When connecting the simulator equipments for checking, please refer to below.

11.5.1. Component View



Note:

(**A**) - (**T**) is referred to **Check Point (Handset)** (P.36)

11.6. Things to Do after Replacing IC

Cautions:

Some of the content on this page may not apply to models from some countries.

11.6.1. Base Unit

Before making the following adjustment, ensure you have carried out **PC Setting** (P.45) in **The Setting Method of JIG (Base Unit)**.

IC		Necessary Adjustment
BBIC (IC7)	Programs for Voice processing, interface for RF and EEPROM	1. Default batch file: Execute the command “default.bat”. 2. Country version batch file: Execute the command “TG8100XXrevYY.bat”. (*1) 3. Clock adjustment: Refer to Check Point (F). (*2)
EEPROM (IC5)	Adjustment parameter data (country version batch file, default batch file, etc.)	1. Change the address “0000” of EEPROM to “AA”. 2. Default batch file: Execute the command “default.bat”. 3. Country version batch file: Execute the command “TG8100XXrevYY.bat”. (*1) 4. Clock adjustment: Refer to Check Point (F). (*2)

Note:

(*1) XX: country code, YY: revision number

“XX” and “YY” vary depending on the country version. You can find them in the batch file, PQZZ- mentioned in **JIG and PC** (P.45).

(*2) Refer to **Check Point (Base Unit)** (P.32)

11.6.2. Handset

Before making the following adjustment, ensure you have carried out **Batch file Settings** (P.46) in **The Setting Method of JIG (Handset)**.

IC		Necessary Adjustment
BBIC (IC1)	Programs for Voice processing, interface for RF and EEPROM	1. Default batch file: Execute the command “default.bat”. 2. Default batch file (remaining): Execute the command “TGA711DEFrevYY.bat”.(*3) 3. Country version batch file: Execute the command “TGA711XXrevYY”. (*3) 4. Clock adjustment: Refer to Check Point (J). (*4) 5. 1.8 V setting and battery low detection: Refer to Check Point (A), (H) and (I). (*4)
EEPROM (IC3)	Adjustment parameter data (country version batch file, default batch file, etc.)	1. Change the address “0015” of EEPROM to “00”. 2. Default batch file: Execute the command “default.bat”. 3. Default batch file (remaining): Execute the command “TGA711DEFrevYY.bat”.(*3) 4. Country version batch file: Execute the command “TGA711XXrevYY”. (*3) 5. Clock adjustment: Refer to Check Point (J). (*4) 6. 1.8 V setting and battery low detection: Refer to Check Point (A), (H) and (I). (*4)

Note:

(*3) XX: country code, YY: revision number

“XX” and “YY” vary depending on the country version. You can find them in the batch file, PQZZ- mentioned in **JIG and PC** (P.45).

(*4) Refer to **Check Point (Handset)** (P.36)

11.7. RF Specification

11.7.1. Base Unit

Item	Value	Refer to -. *
TX Power	20 dBm ~ 25 dBm	**Check Point (Base Unit) (I)**
Modulation	-350 ~ -400/+320 ~ +370 kHz/div	**Check Point (Base Unit) (J)**
Frequency Offset	-45 kHz ~ +45 kHz	**Check Point (Base Unit) (K)**
Frequency Drift	< ± 30 kHz / ms	**Check Point (Base Unit) (L)**
RX Sensitivity	< 1000 ppm	**Check Point (Base Unit) (M)**
Timing Accuracy	< ± 2.0 ppm	**Check Point (Base Unit) (N)**
RSSI Level	22 hex ± A hex	**Check Point (Base Unit) (O)**
Power RAMP	Power RAMP is matching	**Check Point (Base Unit) (P)**

*: Refer to **Check Point (Base Unit)** (P.32)

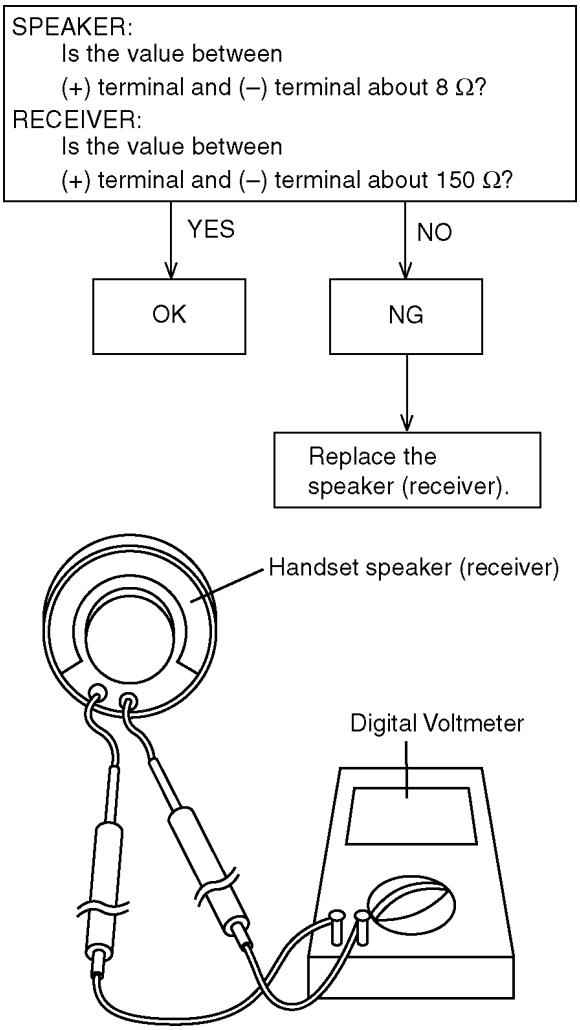
11.7.2. Handset

Item	Value	Refer to -. **
TX Power	19 dBm ~ 25 dBm	**Check Point (Handset) (K)**
Modulation	-350 ~ -400/+320 ~ +370 kHz/div	**Check Point (Handset) (L)**
Frequency Offset	-45 kHz ~ +45 kHz	**Check Point (Handset) (M)**
Frequency Drift	< ± 30 kHz / ms	**Check Point (Handset) (N)**
RX Sensitivity	< 1000 ppm	**Check Point (Handset) (O)**
Timing Accuracy	< ± 2.0 ppm	**Check Point (Handset) (P)**
RSSI Level	1C hex ± 8 hex (at -81dBm) 25 hex ± 8 hex (at -63dBm)	**Check Point (Handset) (Q)**
Power RAMP	Power RAMP is matching	**Check Point (Handset) (R)**

: Refer to **Check Point (Handset) (P.36)

11.8. How to Check the Handset Speaker of Receiver

1. Prepare the digital voltmeter, and set the selector knob to ohm meter.
2. Put the probes at the speaker terminals as shown below.



11.9. Frequency Table (MHz)

	BASE UNIT		HANDSET	
Channel No	**Transmit Frequency**	Receive Frequency	**Transmit Frequency**	**Receive Frequency**
1	1897.344	1897.344	1897.344	1897.344
2	1895.616	1895.616	1895.616	1895.616
3	1893.888	1893.888	1893.888	1893.888
4	1892.160	1892.160	1892.160	1892.160
5	1890.432	1890.432	1890.432	1890.432
6	1888.704	1888.704	1888.704	1888.704
7	1886.976	1886.976	1886.976	1886.976
8	1885.248	1885.248	1885.248	1885.248
9	1883.520	1883.520	1883.520	1883.520
10	**1881.792**	**1881.792**	**1881.792**	**1881.792**

Note:

Channel No. 10: In the Test Mode on Base Unit and Handset.

12 Schematic Diagram

12.1. For Schematic Diagram

12.1.1. Base Unit (Schematic Diagram (Base Unit))

Notes:

1. DC voltage measurements are taken with voltmeter from the negative voltage line.

> Important Safety Notice:
> Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only the manufacturer's specified parts.

2. The schematic diagram may be modified at any time with the development of new technology.

12.1.2. Handset (Schematic Diagram (Handset))

Notes:

1. DC voltage measurements are taken with an oscilloscope or a tester with a ground.
2. The schematic diagram may be modified at any time with the development of new technology.

12.1.3. Charger Unit (Schematic Diagram (Charger Unit))

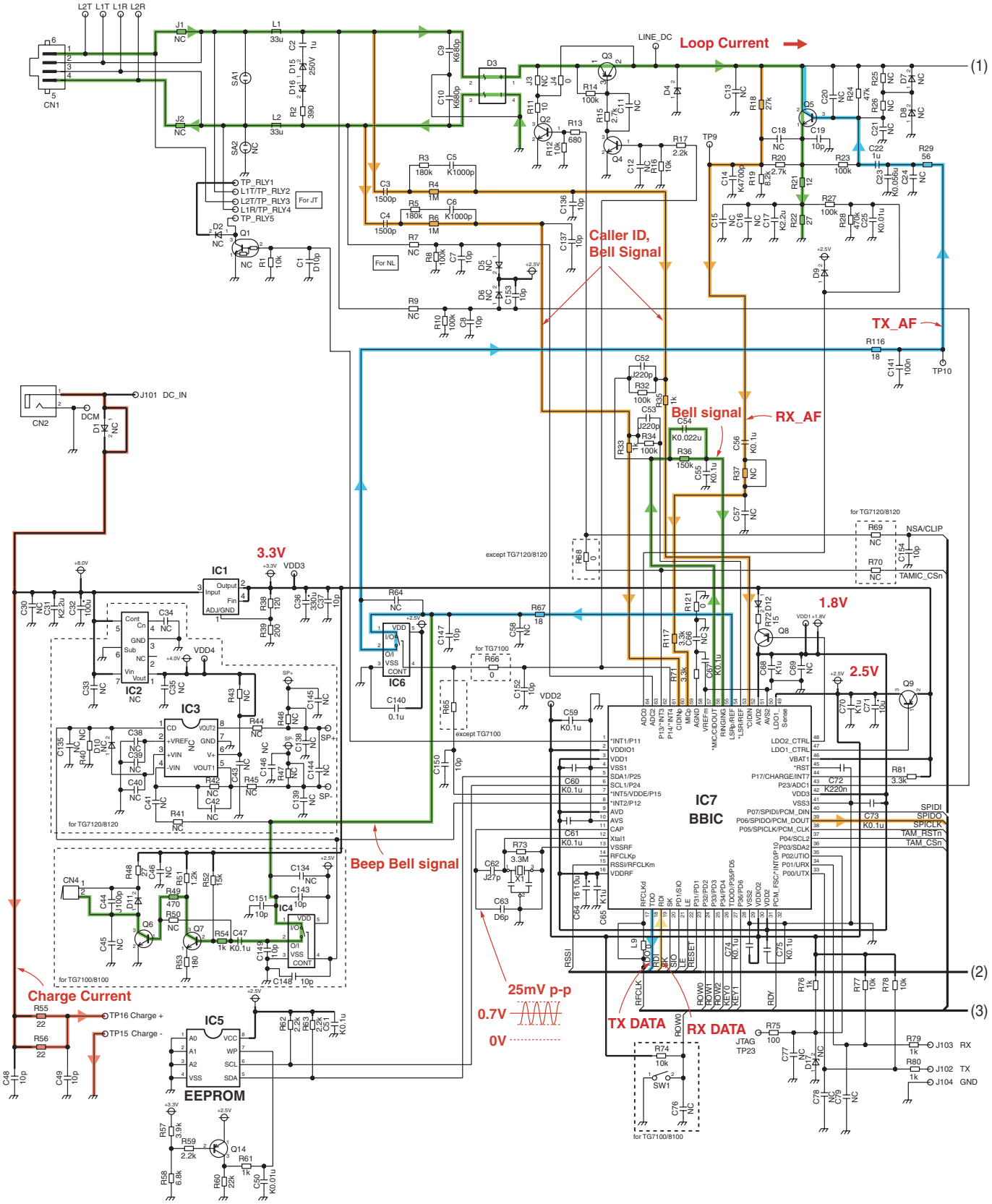
Notes:

1. DC voltage measurements are taken with voltmeter from the negative voltage line.

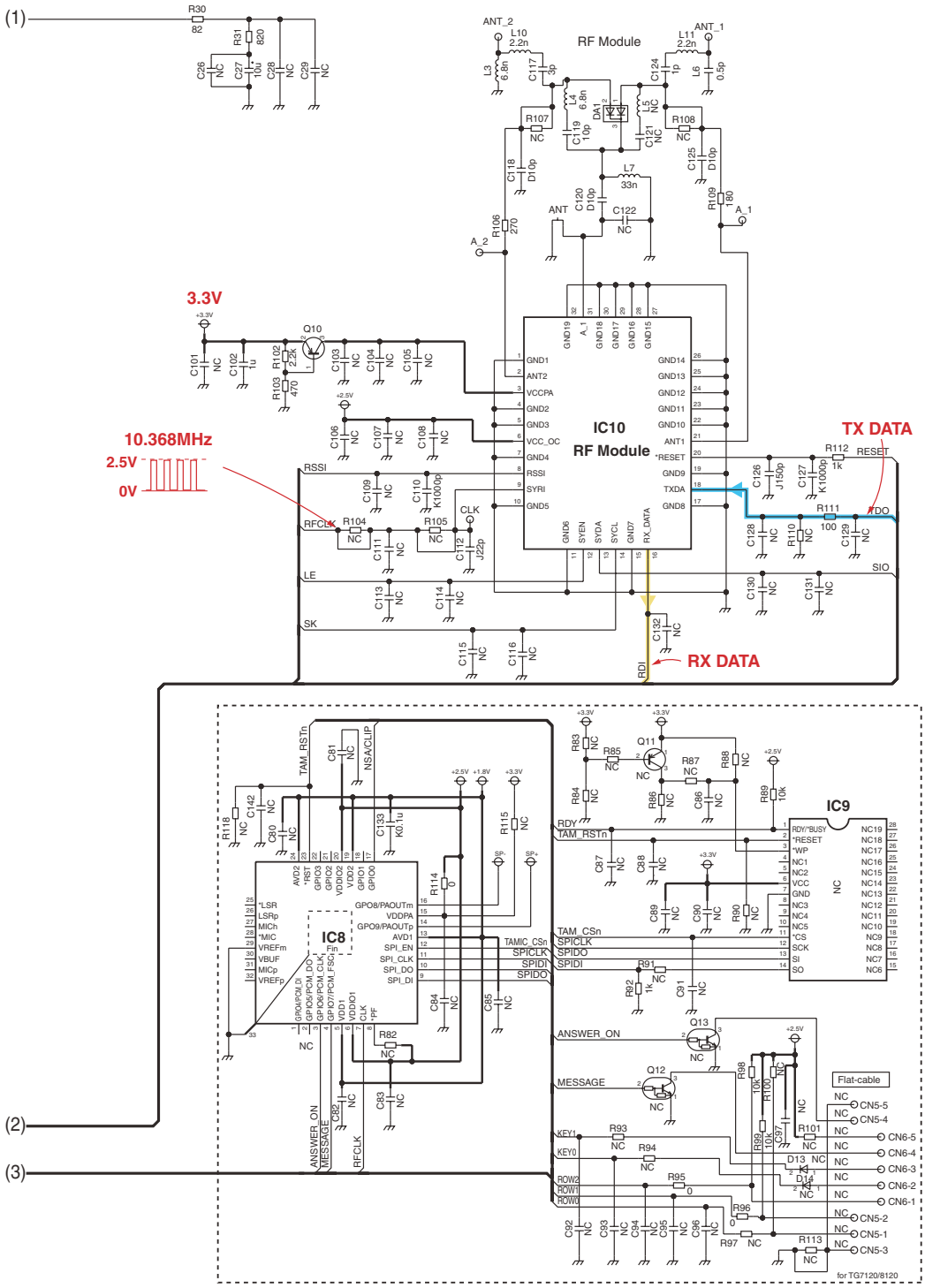
> Important Safety Notice:
> Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only the manufacturer's specified parts.

2. The schematic diagram may be modified at any time with the development of new technology.

12.2. Schematic Diagram (Base Unit)



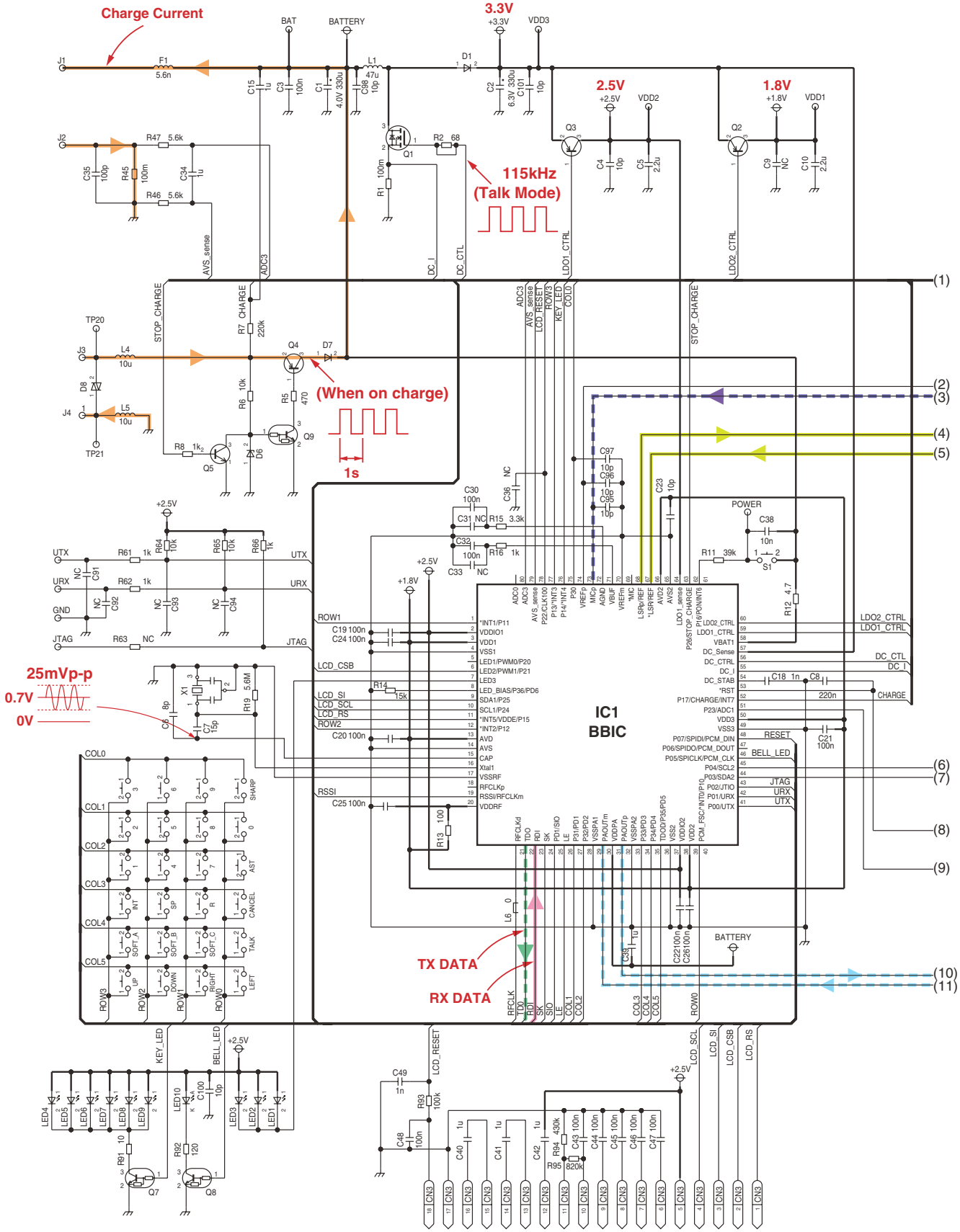
NC: No Components



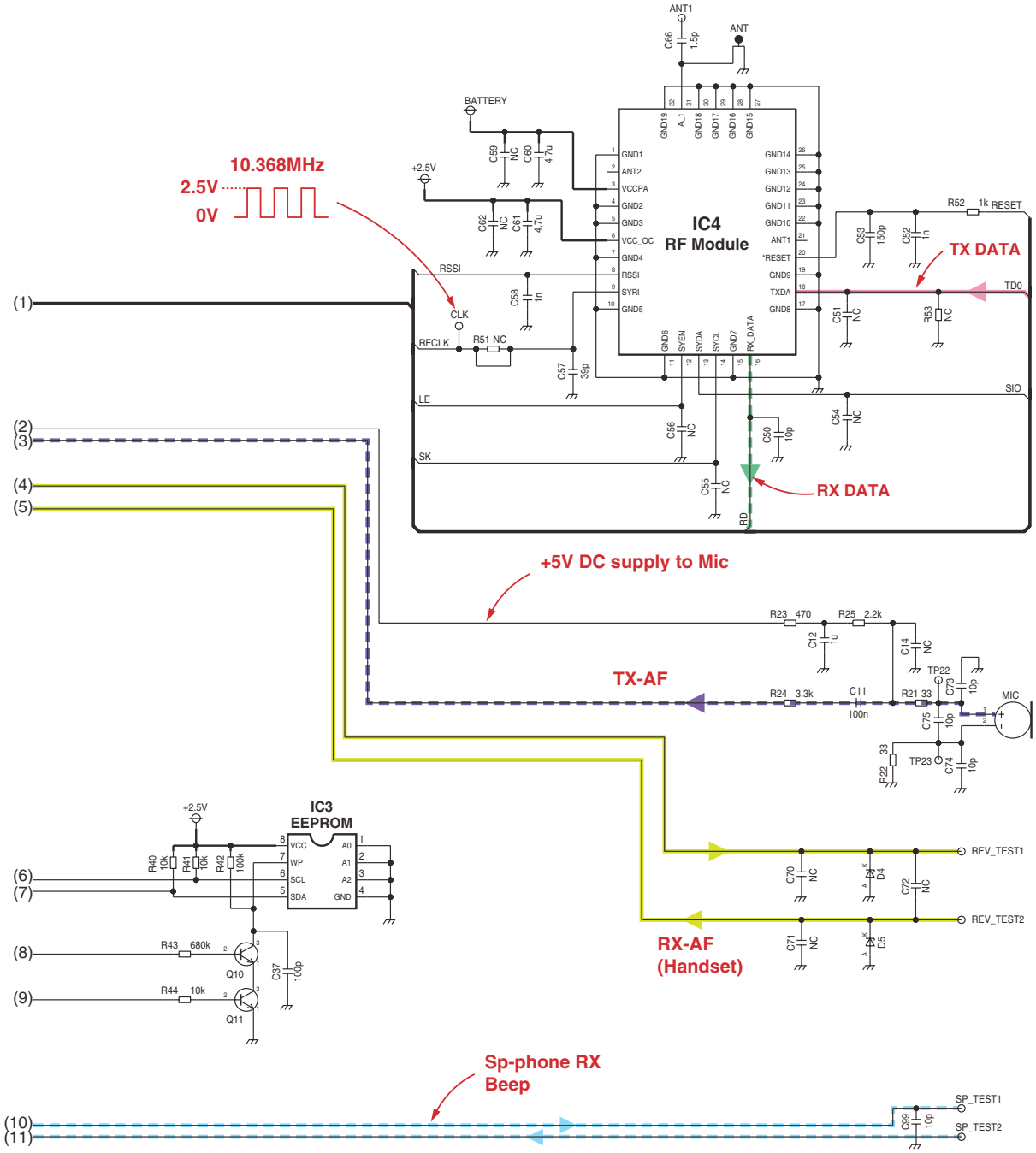
NC: No Components

KX-TG7100/7102HG SCHEMATIC DIAGRAM (Base Unit)

12.3. Schematic Diagram (Handset)



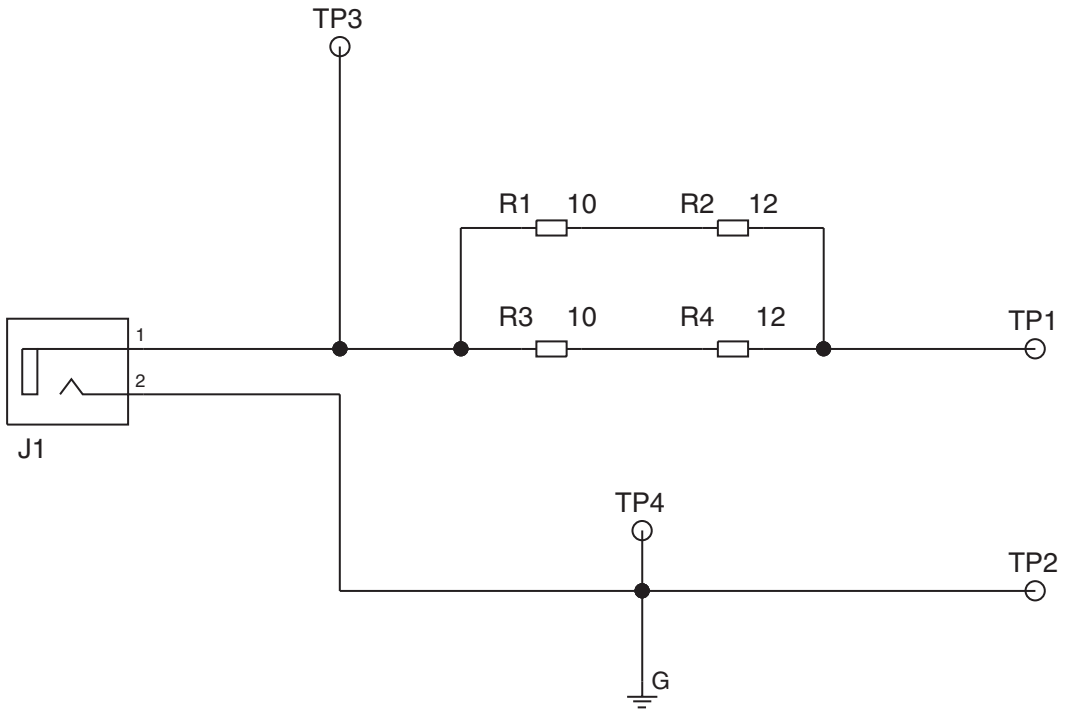
NC: No Components



NC: No Components

KX-TGA711 SCHEMATIC DIAGRAM (Handset)

12.4. Schematic Diagram (Charger Unit)



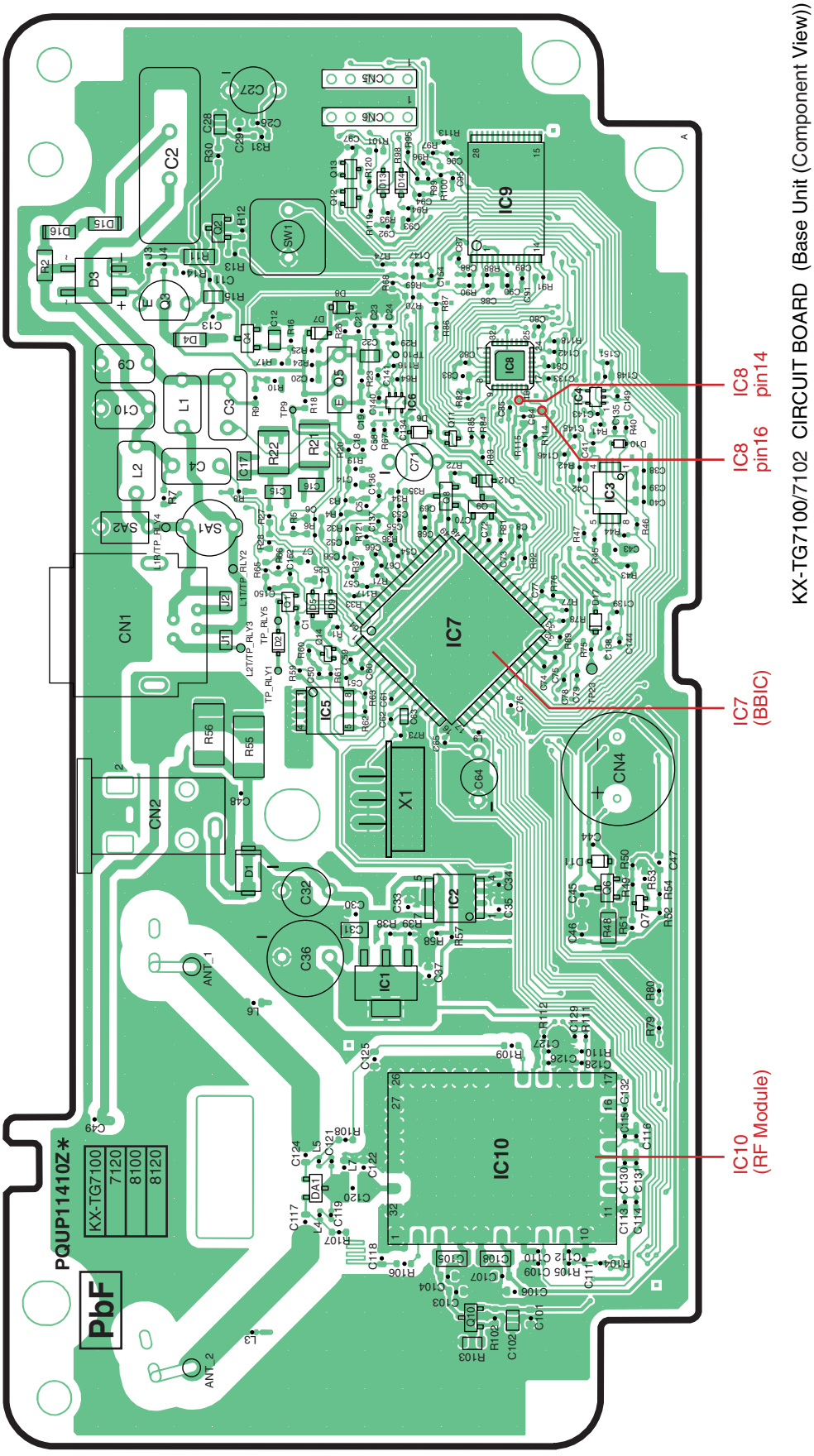
NC: No Components

SCHEMATIC DIAGRAM (Charger Unit)

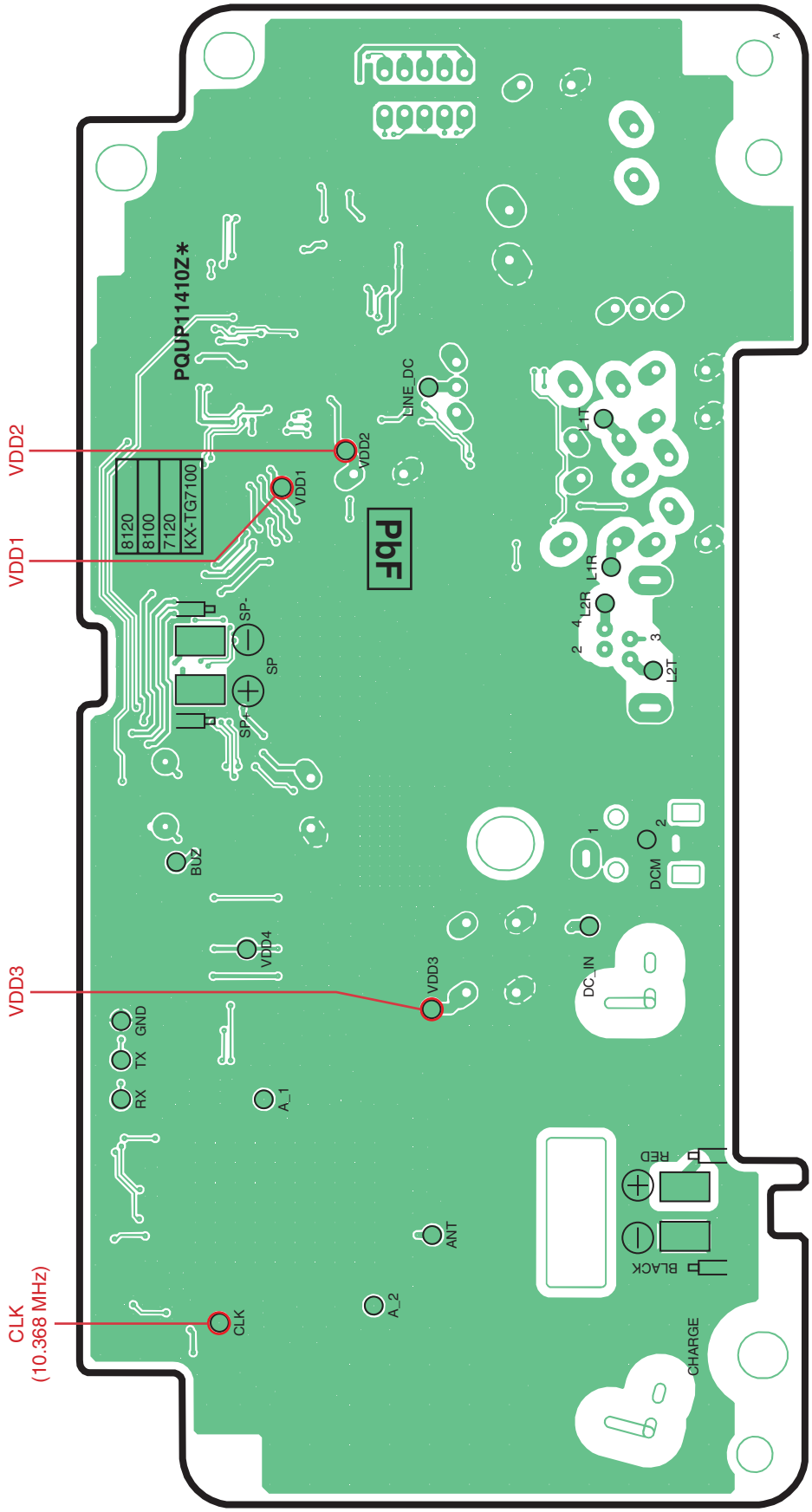
13 Printed Circuit Board

13.1. Circuit Board (Base Unit)

13.1.1. Component View



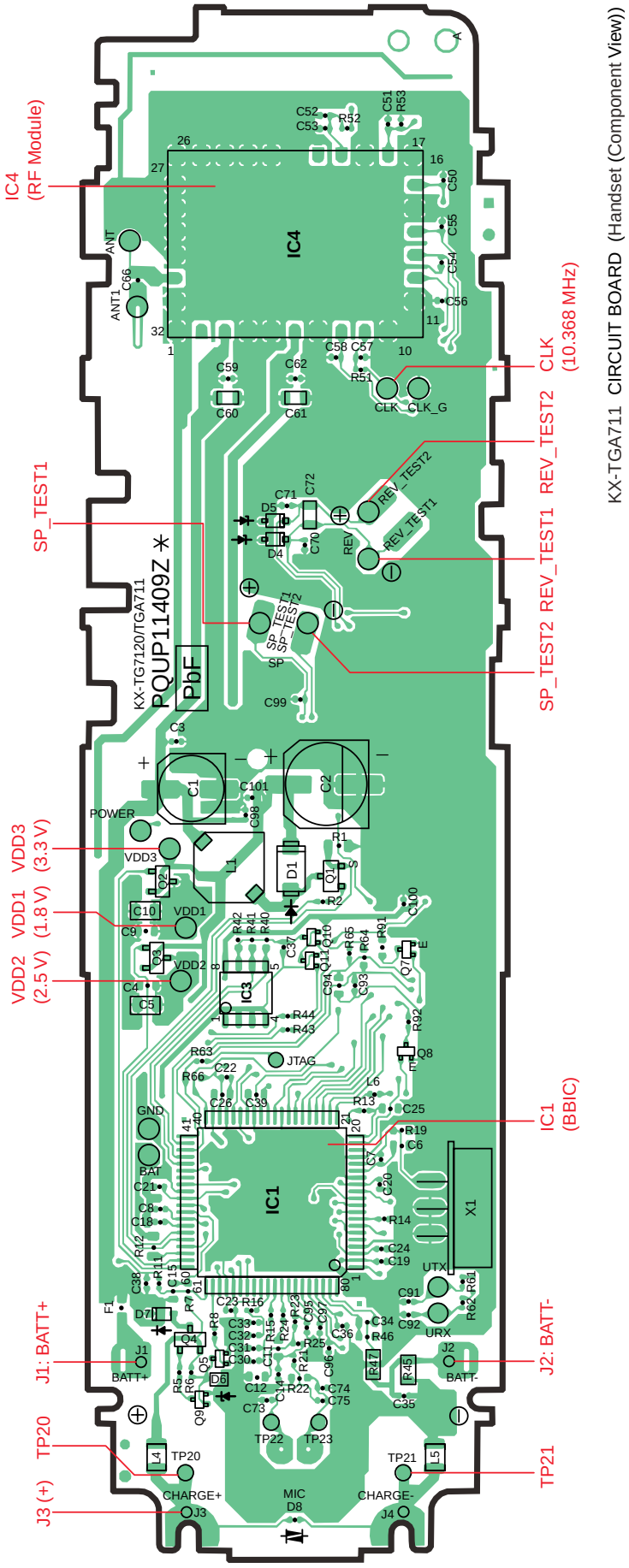
13.1.2. Flow Solder Side View



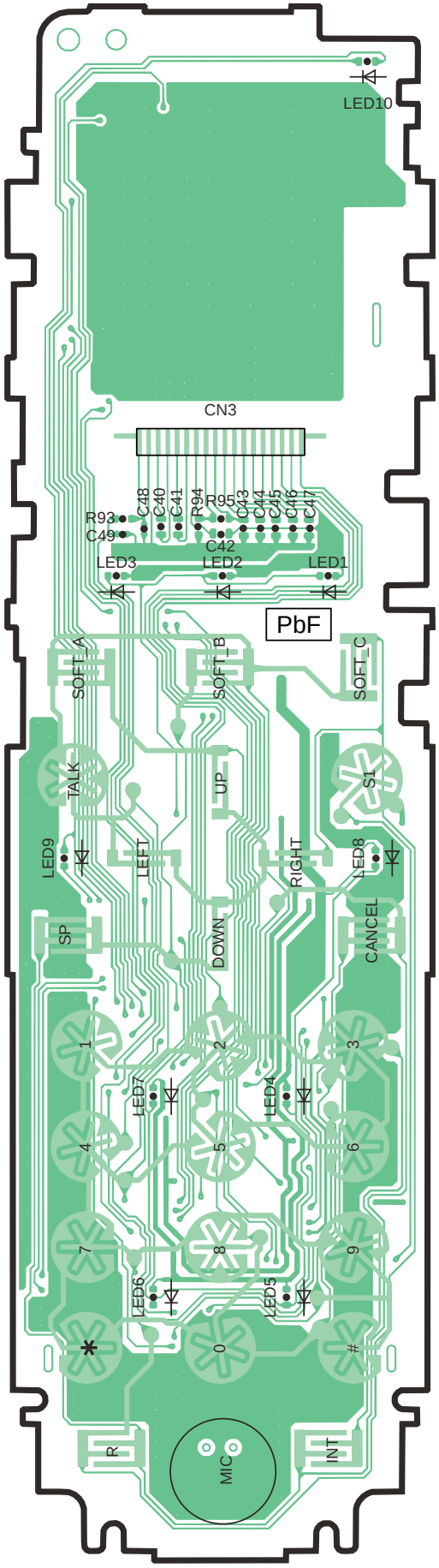
KX-TG7100/7102 CIRCUIT BOARD (Base Unit (Flow Solder Side View))

13.2. Circuit Board (Handset)

13.2.1. Component View



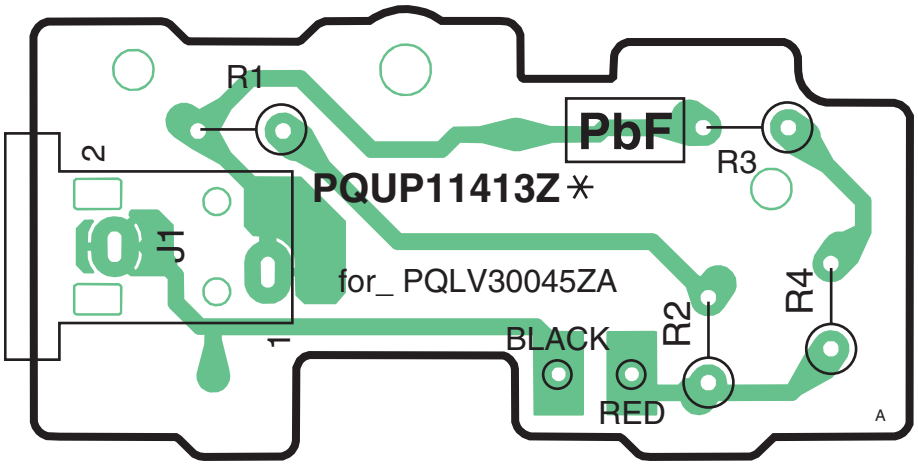
13.2.2. Flow Solder Side View



KX-TGA711 CIRCUIT BOARD (Handset (Flow Solder Side View))

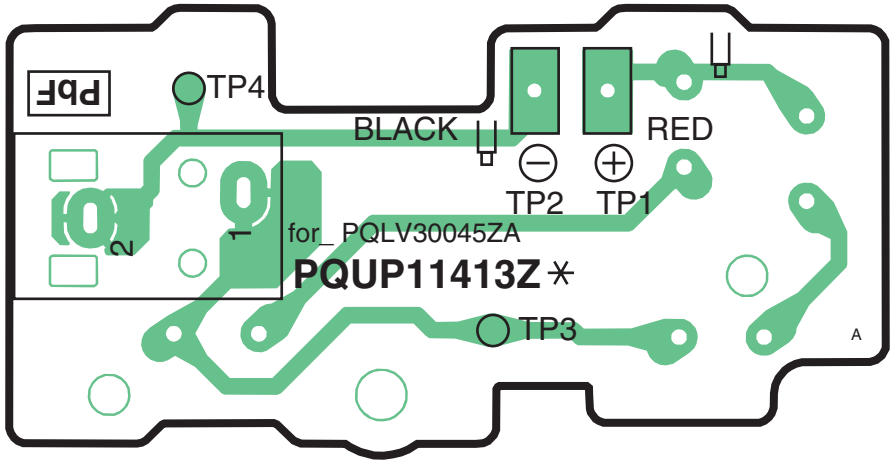
13.3. Circuit Board (Charger Unit)

13.3.1. Component View



CIRCUIT BOARD (Charger Unit (Component View))

13.3.2. Flow Solder Side View



CIRCUIT BOARD (Charger Unit (Flow Solder Side View))

14 Appendix Information of Schematic Diagram

14.1. CPU Data (Base Unit)

14.1.1. IC7 (BBIC)

Pin No.	Description	I/O	Connection	at Normal mode	at Reset mode
1	INT1n / P1[1]	D,O	RLY	O	I-PU
2	VDDIO	-	-	-	-
3	VDD3	-	-	-	-
4	VSS4	-	-	-	-
5	SDA1/P2[5]	D,I/O	SDA	I/O	I
6	SCL1/P2[4]	D,O	SCL	O	I
7	INT5n/VDDE/P1[5]	D,O	P1[5]	O-L	I-PU
8	INT2n/P1[2]	D,O	P1[2]	O-H	I-PU
9	AVD	-	-	-	-
10	AVS	-	-	-	-
11	CAP	A,I	CAP	I	I
12	Xtal1	A,I	Xtall	I	-
13	VSSRF	-	-	-	-
14	RFCLKp	A,O	NC	O	Hi-Z
15	RSSI / RFCLKm	A,I	RSSI	I	Hi-Z
16	VDDRF	-	-	-	-
17	RFCLKd	D,O	RFCLKd	O	O-L
18	TDO	A,O	TDO	O	-
19	RDI	D,I	RDI	I	I
20	SK	D,I/O	SK	-	O-L
21	PD1 / SIO	D,I/O	SIO	-	I-PD
22	LE	D,I/O	LE	O	O-H
23	P3[1] / PD1	D,I/O	P3[1]	O	I-PD
24	P3[2] / PD2	D,I	P3[2]	I	I-PD
25	P3[3] / PD3	D,O	P3[3]	O	I-PD
26	P3[4] / PD4	D,O	P3[4]	O	I-PD
27	TDOD/ P3[5] / PD5	D,O	P3[5]	O	I-PD
28	P3[6]/PD6	D,O	P3[6]	O	I-PD
29	VSS	-	-	-	-
30	VDDIO	-	-	-	-
31	VDD	-	-	-	-
32	PCM_FSC / INT0n/P1[0]	D,I/O	INT0n	O	I-PU
33	P0[0] / UTX	D,I/O	UTX	O	I-PU
34	P0[1] / URX	D,I/O	URX	O	I-PU
35	P0[2] / JTIO	D,I/O	JTIO	O	I-PU
36	P0[3] / SDA2	D,I/O	P0[3]	O	I-PU
37	P0[4] / SCL2	D,O	P0[4]	O	I-PU
38	P0[5] / SPICLK/PCM_CL	D,I/O	SPICLK	O	I-PU
39	P0[6] / SPIDO/PCM_DOL	D,I/O	SPIDO	O	I-PU
40	P0[7] / SPIDI/PCM_DIN	D,I/O	SPIDI	O	I-PU
41	VSS	-	-	-	-
42	VDD	-	-	-	-
43	P2[3] / ADC1	I	ADC1	I	I
44	P1[7] / CHARGE / INT7	I	CHARGE	I	I-PD
45	RSTn	I	RSTn	I	I-PU
46	VBAT1	A,I	VBAT1	I	I
47	LDO1_CTRL	D,O	LDO1_CTRL	O	O-H
48	LDO2_CTRL	D,O	LDO2_CTRL	O	O-H
49	LDO1_Sense	D,I	LDO1_Sense	I	O-L
50	AVS2	-	-	-	-
51	AVD2	-	-	-	-
52	CIDINn	A,I	CIDINn	I	I
53	LSRn / REF	A,O	REF	O	O
54	LSRp / REF	A,O	LSRp	O	O
55	RINGING	A,I	RINGING	I	I
56	MICn/CIDOUT	A,I	CIDOUT	O	O
57	VREFm	-	-	-	-
58	AGND	A,O	AGND	O	O
59	MICp	A,I	MICp	I	I

Pin No.	Description	I/O	Connection	at Normal mode	at Reset mode
60	CIDINp	A,I	CIDINp	I	I
61	P1[4] / INT4n	D,O	P1[4]	O	I
62	PULSE_CTRL	D,O	Q2_ON	-	Q2_OFF
63	ADC2	A,I	ADC2	I	I
64	ADC0	A,I	ADC0	I	I

14.2. CPU Data (Handset)

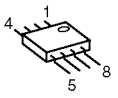
14.2.1. IC1 (BBIC)

Pin No	Description	I/O	Connection	at Normal	at Reset mode
1	INT1n/P1[1]	D,I	ROW1	I	I-PU
2	VDDIO	S	VDDIO	S	-
3	VDD	S	VDD	S	-
4	VSS	S	VSS	S	-
5	LED1/PWM0/P2[0]	D,O	NC	O	I-PU
6	LED2/PWM1/P2[1]	D,O	LCD_CSB	O	I-PU
7	LED3	A,I	LCD_BACKLIGHT	I	I
8	LED_BIAS/P3[6]/PD6	A,O	LED_BIAS	O	I-PD
9	SDA1/P2[5]	D,IO	LCD_SI	O	I
10	SCL1/P2[4]	D,O	LCD_SCL	O	I
11	INT5n/VDDE/P1[5]	D,O	LCD_RS	O	O-H
12	INT2n/P1[2]	A,I	ROW2	I	I-PU
13	AVD	S	AVD	S	-
14	AVS	S	AVS	S	-
15	CAP	A,I	CAP	I	I
16	Xtal1	A,I	Xtal1	I	I
17	VSSRF	S	VSSRF	S	-
18	RFCLKp	A,O	NC	O	O-HiZ
19	RSSI/RFCLKm	I	RSSI	I	O-HiZ
20	VDDRF	S	VDDRF	S	-
21	RFCLKd	D,O	RFCLK	O	O-H
22	TDO	A,O	TDO	O	O
23	RDI	D,I	RDI	I	I
24	SK	D,IO	SK	O	O-L
25	SIO	D,IO	SIO	I	I-PD
26	LE	D,IO	LE	I	O-H
27	P3[1]/PD1	D,IO	COL1	I/O	I-PD
28	P3[2]/PD2	D,IO	COL2	I/O	I-PD
29	VSSPA	S	VSSPA	S	-
30	PAOUTp	A,O	PAOUTp	O	I-PD
31	VDDPA	S	VDDPA	S	-
32	PAOUTp	A,O	PAOUTp	O	I-PD
33	VSSPA	S	VSSPA	S	-
34	P3[3]/PD3	D,IO	COL3	I/O	I-PD
35	P3[4]/PD4	D,IO	COL4	I/O	I-PD
36	TDOD/P3[5]/PD5	D,IO	COL5	I/O	I-PD
37	VSS	S	VSS	S	-
38	VDDIO	S	VDDIO	S	-
39	VDD	S	VDD	S	Å|
40	PCM_FSC/INT0n/P1[0]	D,IO	ROW0	I	I-PU
41	P0[0]/UTX	D,O	UTX	O	I-PU
42	P0[1]/URX	D,I	URX	I	I-PU
43	P0[2]/JTIO	D,IO	JTAG	I/O	I-PU
44	P0[3]/SDA2	D,IO	EEP_SDA	I/O	I-PU
45	P0[4]SCL2	D,IO	EEP_SCL	O	I-PU
46	P0[5]/SPICLK/PCM_CLK	D,O	RINGER_LED	O	I-PU
47	P0[6]/SPIDO/PCM_DOUT	D,O	NC	O	I-PU
48	P0[7]/SPIDI/PCM_DIN	D,O	RESET	O	I-PU
49	VSS	S	VSS	S	-
50	VDD	S	VDD	S	-
51	P2[3]/ADC1	D,O	EEP_WP	O	I
52	P1[7]/CHARGE/INT7	D,I	CHARGE	I	I-PD
53	RSTn	A,IO	RSTn	O	I-PU
54	DC_stab	A,O	DC_stab	O	O
55	DC_I	A,I	DC_I	I	I
56	DC_CTRL	D,O	DC_CTRL	O	I-PU
57	DC_Sence	A,I	DC_Sence	I	I
58	VBAT1	A,I	VBAT1	I	I
59	LDO1_CTRL	A,I	LDO1_CTRL	I	I
60	LDO2_CTRL	A,I	LDO2_CTRL	I	I
61	P1[6]/PON/INT6	D,I	POWER_KEY	I	I-PD
62	P2[6]/stop_charge	A,O	stop_charge	O	O-L

Pin No	Description	I/O	Connection	at Normal	at Reset mode
63	LDO1_Sence	A,I	LDO1_Sence	I	I
64	AVS2	S	AVS2	S	-
65	AVD2	S	AVD2	S	-
66	LSRn/REF	A,O	LSRn	O	O
67	LSRp/REF	A,O	LSRp	O	O
68	MICn	A,I	NC	I	I
69	VREFm	S	VREFm	S	-
70	VBUF	A,O	VBUF	O	O
71	AGND	S	AGND	S	-
72	MICp	A,I	MICp	I	I
73	VREFp	A,O	VREFp	O	O
74	P3[0]	D,O	COL0	I/O	I-PD
75	P1[4]/INT4n	D,O	KEY_LED	O	I
76	P1[3]/INT3n	D,I	ROW3	I	I
77	P2[2]/CLK100	D,O	LCD_RESET	O	I-PD
78	AVS_Sence	A,I	AVS_Sence	I	I
79	ADC3	A,I	ADC3	I	I
80	ADC0	A,I	NC	I	I

14.3. Terminal Guide of the ICs, Transistors and Diodes

14.3.1. Base Unit



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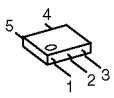

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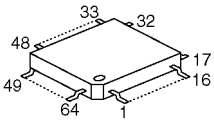

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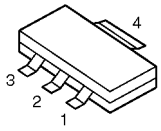

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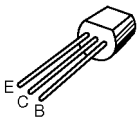

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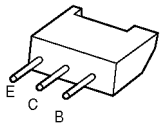
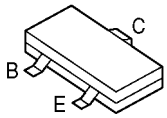


2SD1994A



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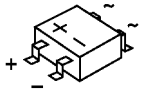
B1ADCF000040, B1ABGE000006
B1ABCF000103, B1ABCE000009



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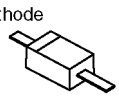

MA112
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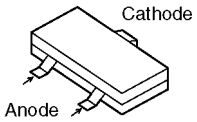
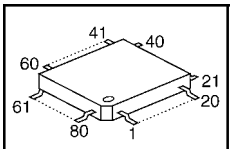
1SS355
MA111
PQVDRLZ3R9A



B0DDCM000001

14.3.2. Handset



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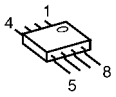

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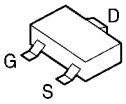

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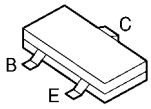

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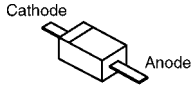

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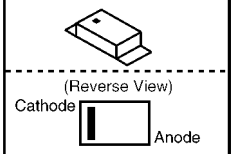

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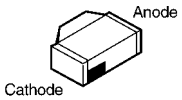
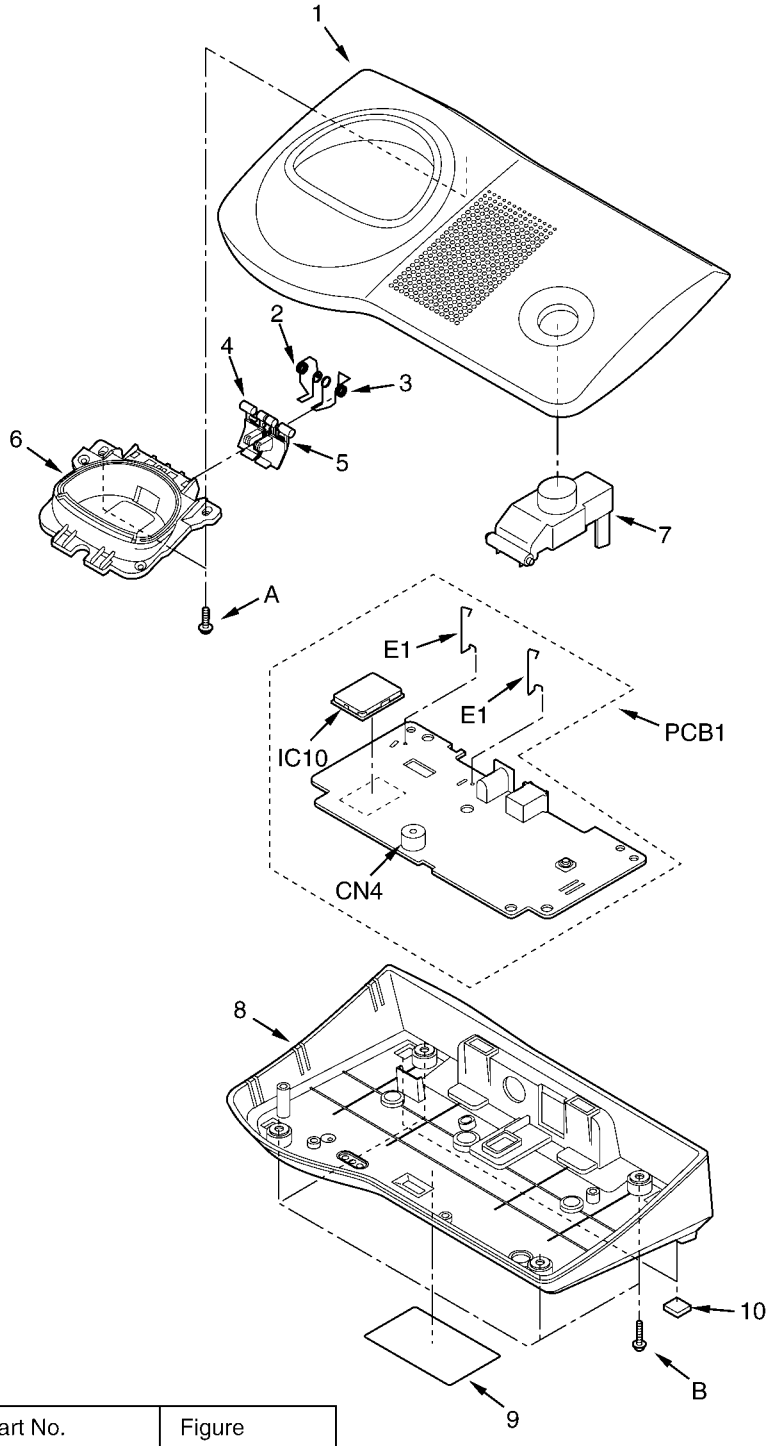


B3ACB0000134

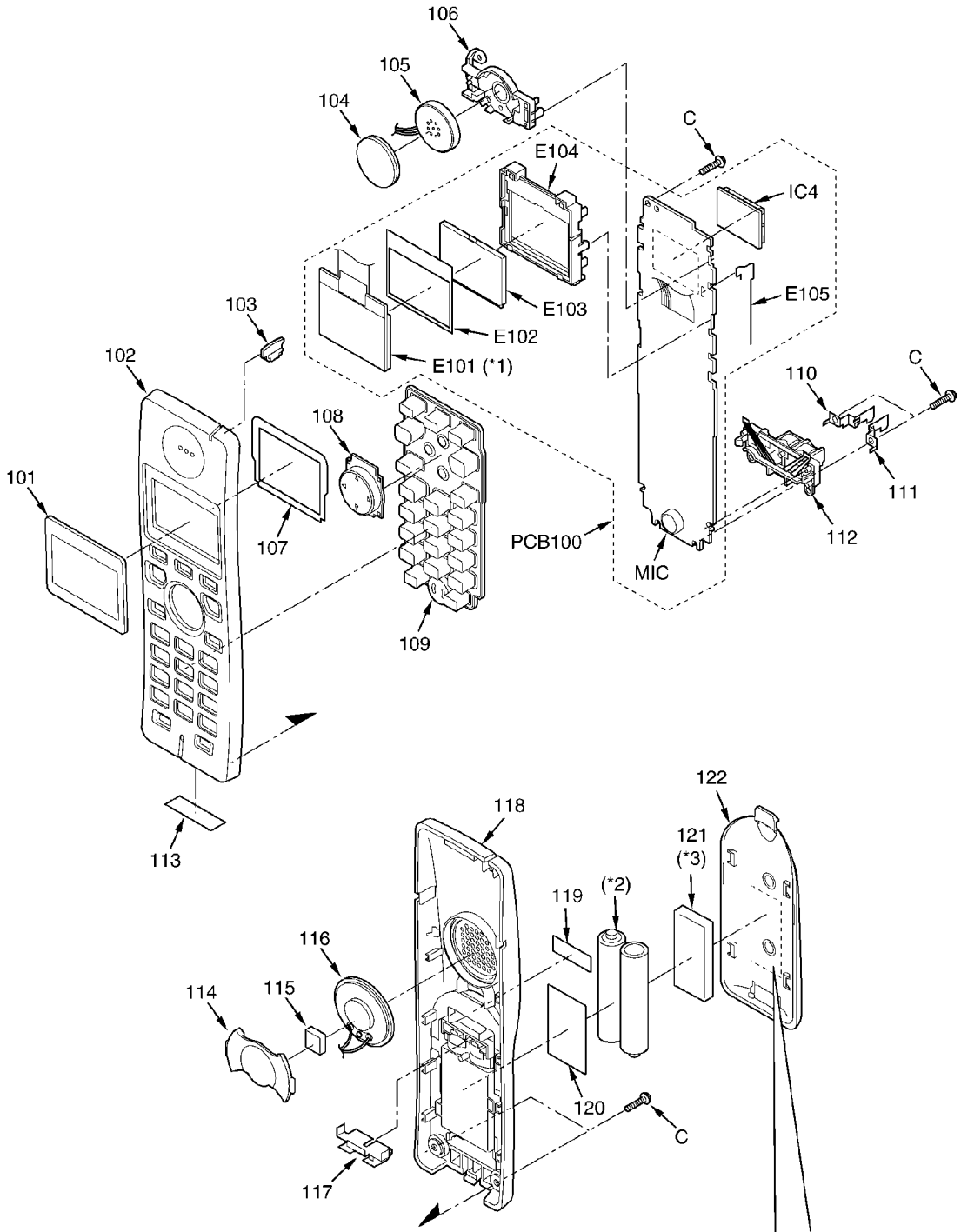
15 Exploded View and Replacement Parts List

15.1. Cabinet and Electrical Parts (Base Unit)

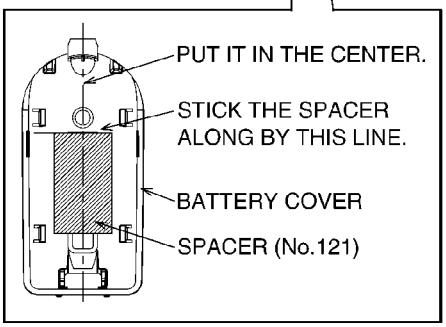


Ref.No.	Part No.	Figure
A	XTW26+T8PFJ	ϕ2.6 × 8mm
B	XTW26+T14PFJ	ϕ2.6 × 14mm

15.2. Cabinet and Electrical Parts (Handset)



Ref.No.	Part No.	Figure
C	XTW2+R10PFJ	ϕ2 × 10mm



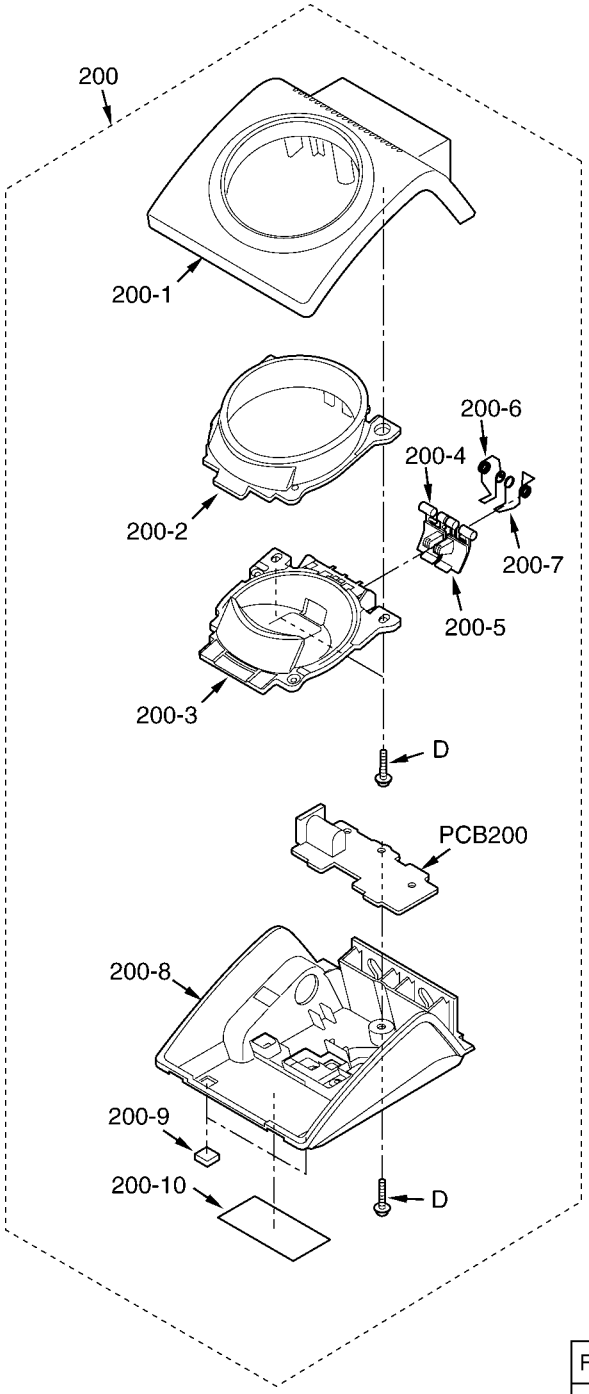
Note:

(*1) This cable is fixed by welding. Refer to **How to Replace the Handset LCD** (P.44).

(*2) The rechargeable Ni-MH battery P03P (HHR-4EPT, Capacity: up to750 mAh) is available through sales route of Panasonic.

(*3) Attach the spacer (No. 121) to the exact location described above.

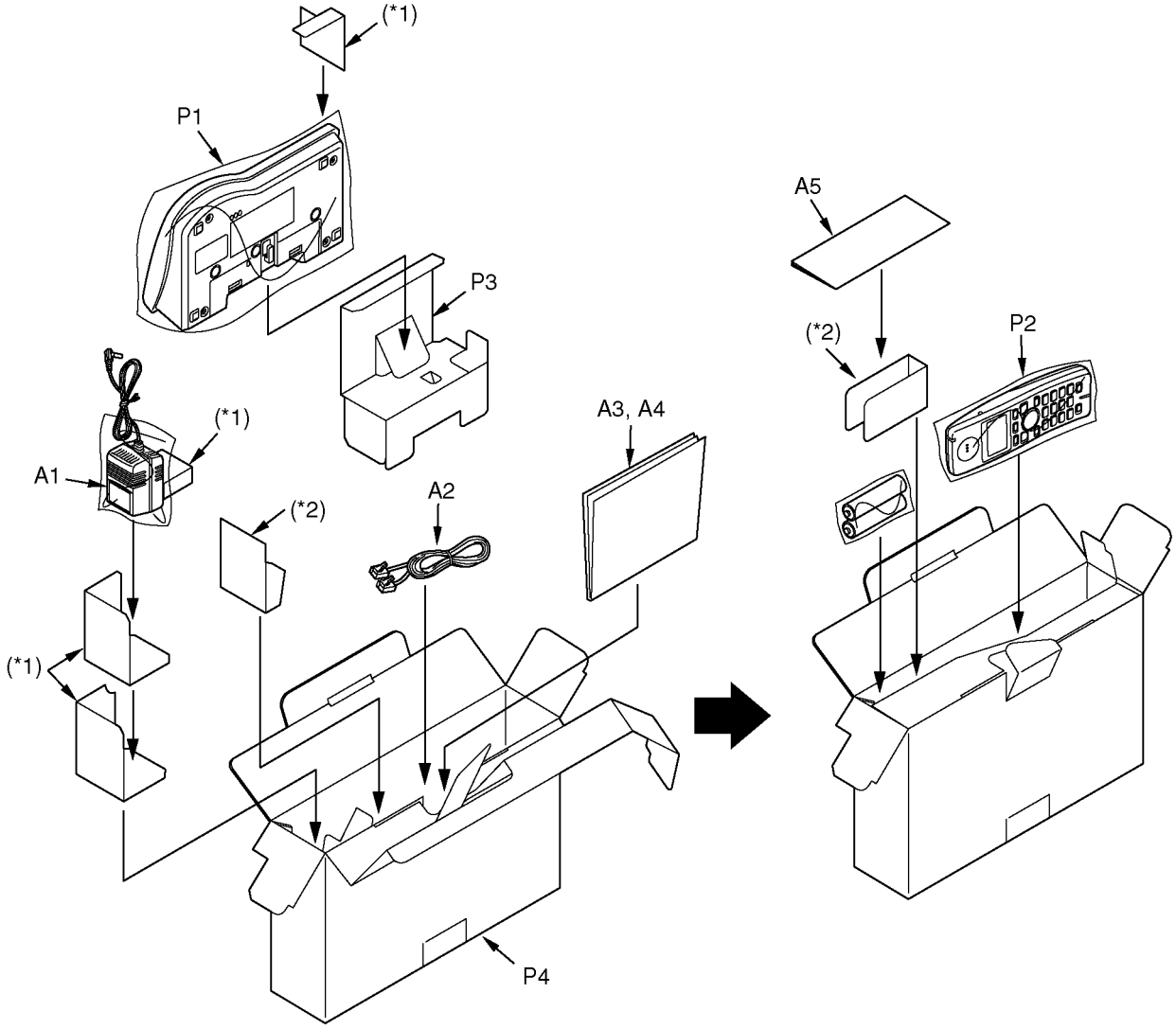
15.3. Cabinet and Electrical Parts (Charger Unit)



Ref.No.	Part No.	Figure
D	XTW26+T10PFJ	 ϕ2.6 × 10 mm

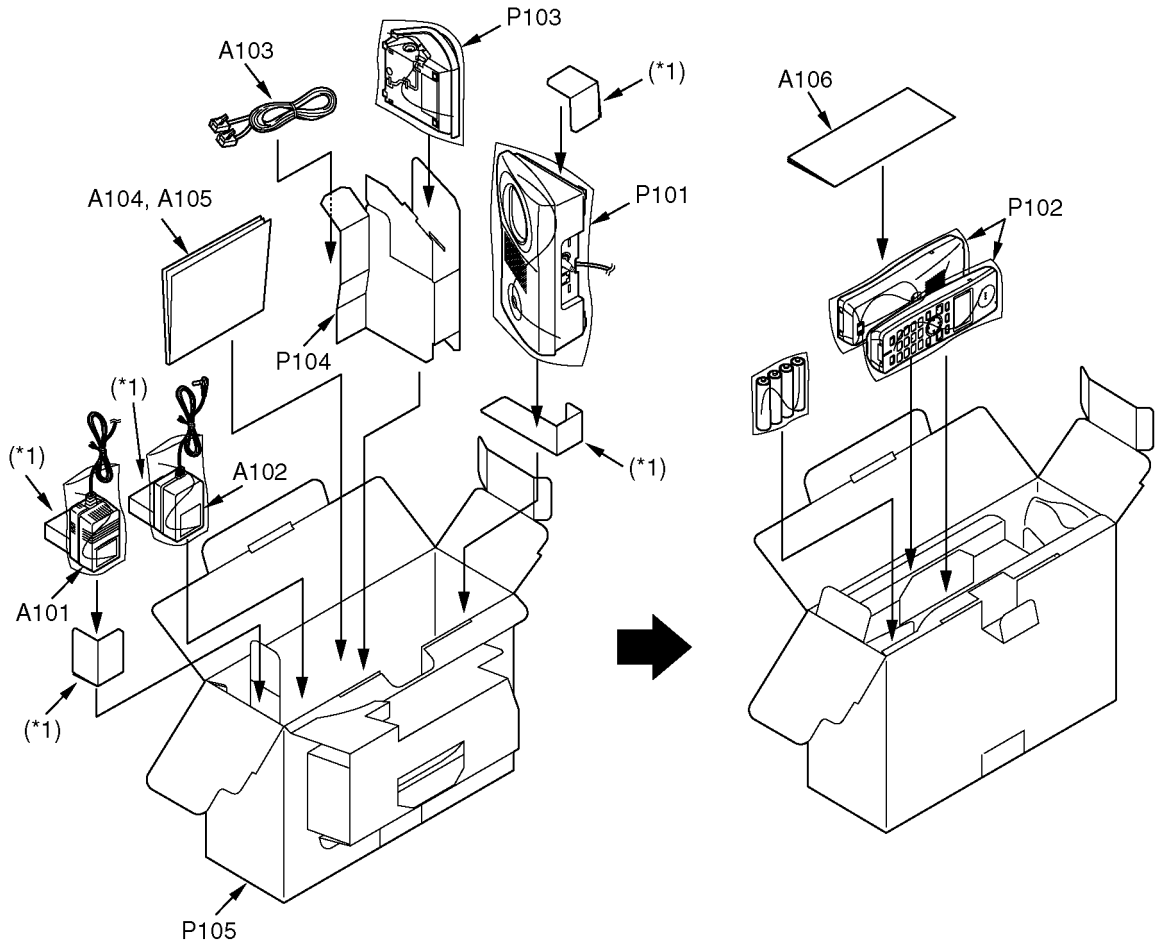
15.4. Accessories and Packing Materials

15.4.1. KX-TG7100HGS



Note:
(*1) These pads are pieces of Ref No. P3 (CUSHION).
(*2) These pads are pieces of Ref No. P4 (GIFT BOX).

15.4.2. KX-TG7102HGS



Note:
(*1) These pads are pieces of Ref No. P104 (CUSHION).

15.5. Replacement Parts List

1. RTL (Retention Time Limited)

   Note:

   The marking (RTL) indicates that the Retention Time is limited for this item.

   After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time. The retention period of availability is dependant on the type of assembly, and in accordance with the laws governing part and product retention. After the end of this period, the assembly will no longer be available.

2. Important safety notice

   Components identified by the ⚠ mark indicates special characteristics important for safety. When replacing any of these components, only use specified manufacture's parts.

3. The S mark means the part is one of some identical parts. For that reason, it may be different from the installed part.

4. ISO code (Example: ABS-94HB) of the remarks column shows quality of the material and a flame resisting grade about plastics.

5. RESISTORS & CAPACITORS

   Unless otherwise specified;

   All resistors are in ohms (Ω) K=1000Ω, M=1000kΩ

   All capacitors are in MICRO FARADS (μF)P=μμF

   *Type & Wattage of Resistor

Type

ERC:Solid ERDS:Carbon ERJ:Chip	ERX:Metal Film ERG:Metal Oxide ER0:Metal Film	PQ4R:Chip ERS:Fusible Resistor ERF:Cement Resistor

Wattage

10,16:1/8W	14,25:1/4W	12:1/2W	1:1W	2:2W	3:3W

*Type & Voltage Of Capacitor

Type

ECFD:Semi-Conductor ECQS:Styrol ECUV,PQCUV,ECUE:Chip ECQMS:Mica	ECCD,ECKD,ECBT,F1K,ECUV:Ceramic ECQE,ECQV,ECQG:Polyester ECEA,ECST,EEE:Electlytic ECQP:Polypropylene

Voltage

ECQ Type	ECQG ECQV Type	ECSZ Type	Others	
1H:50V 2A:100V 2E:250V 2H:500V	05:50V 1:100V 2:200V	0F:3.15V 1A:10V 1V:35V 0J:6.3V	0J :6.3V 1A :10V 1C :16V 1E,25:25V	1V :35V 50,1H:50V 1J :16V 2A :100V

15.5.1. Base Unit

15.5.1.1. Cabinet and Electrical Parts

Ref. No.	Part No.	Part Name & Description	Remarks
1	PQKM10719Z1	CABINET BODY	PS-HB
2	PQJT10241Y	CHARGE TERMINAL (L)	
3	PQJT10242Y	CHARGE TERMINAL (R)	
4	PQKE10454Z1	HOLDER, CHARGE TERMINAL (L)	POM-HB
5	PQKE10455Z1	HOLDER, CHARGE TERMINAL (R)	POM-HB
6	PQKE10452Z1	CASE, CHARGE TERMINAL	PS-HB
7	PQBC10468Z1	BUTTON, LOCATOR	ABS-HB
8	PQKF10708Z1	CABINET COVER	PS-HB
9	PQGT18889Z	NAME PLATE	
10	PQHA10023Z	RUBBER PARTS, FOOT CUSHION	

15.5.1.2. Main P.C.Board Parts

Note:

(*1) When replacing IC5 and IC7, data needs to be written to them with PQZZTG7100HG. Refer to **Base Unit** (P.52) of **Things to Do after Replacing IC**.

Ref. No.	Part No.	Part Name & Description	Remarks
PCB1	PQWPG7100HGH	MAIN P.C.BOARD ASS'Y (RTL)	
		(ICs)	
IC1	C0CBAYF00015	IC	
IC4	C0JBAS000249	IC	
IC5	PQWICD300EHR	IC (EEPROM) (*1)	
IC6	C0JBAS000249	IC	
IC7	C1CB00002047	IC (BBIC) (*1)	
		(TRANSISTORS)	
Q2	B1ABCE000009	TRANSISTOR(SI)	
Q3	B1ACGP000007	TRANSISTOR(SI)	
Q4	PQVTBF822T7	TRANSISTOR(SI)	
Q5	2SD1994A	TRANSISTOR(SI)	
Q6	B1ABGE000006	TRANSISTOR(SI)	
Q7	B1ABCF000103	TRANSISTOR(SI)	
Q8	B1ADGE000004	TRANSISTOR(SI)	
Q9	B1ADGE000004	TRANSISTOR(SI)	
Q10	B1ADGE000004	TRANSISTOR(SI)	
Q14	B1ADCF000040	TRANSISTOR(SI)	
		(DIODES)	
D3	B0EDER000009	DIODE(SI)	
D4	PQVDRLZ20A	DIODE(SI)	S
D9	1SS355	DIODE(SI)	S
D11	MA111	DIODE(SI)	S
D12	MA112	DIODE(SI)	S
D15	PQVDRLZ3R9A	DIODE(SI)	S
D16	PQVDRLZ3R9A	DIODE(SI)	S
DA1	B0DDCM000001	DIODE(SI)	
		(COILS)	
L1	PQLQXF330K	COIL	S
L2	PQLQXF330K	COIL	S
L3	MQLRF6N8JFB	COIL	
L4	MQLRF6N8JFB	COIL	
L7	PQLQR2M33NKT	COIL	S
L10	ELJRF2N2ZFB	COIL	S
L11	ELJRF2N2ZFB	COIL	S
		(JACKS)	
CN1	K2LB102B0053	JACK, MODULAR	
CN2	K2ECYB000001	JACK, DC	
		(RESISTORS)	
R1	ERJ2GEJ103	10K	
R2	ERJ8GEYJ391	390	
R3	ERJ3GEYJ184	180K	
R4	ERJ3GEYJ105	1M	
R5	ERJ3GEYJ184	180K	
R6	ERJ3GEYJ105	1M	
R8	ERJ3GEYJ104	100K	
R10	ERJ3GEYJ104	100K	
R11	PQ4R18XJ100	10	S
R12	ERJ3GEYJ103	10K	
R13	ERJ3GEYJ681	680	
R14	ERJ3GEYJ104	100K	
R15	PQ4R10XJ272	2.7K	S
R16	ERJ3GEYJ103	10K	
R17	ERJ3GEYJ222	2.2K	
R18	ERJ3GEYJ273	27K	
R19	ERJ3GEYJ822	8.2K	
R20	ERJ3GEYJ272	2.7K	
R21	ERJ12YJ120	12	
R22	ERJ12YJ270	27	
R23	ERJ3GEYJ104	100K	
R24	ERJ3GEYJ473	47K	
R27	ERJ3GEYJ104	100K	
R28	ERJ3GEYJ474	470K	
R29	ERJ2GEJ560X	56	
R30	ERJ3GEYJ820	82	

Ref. No.	Part No.	Part Name & Description	Remarks
R31	ERJ3GEYJ821	820	
R32	ERJ3GEYJ104	100K	
R33	ERJ2GEJ102	1K	
R34	ERJ3GEYJ104	100K	
R35	ERJ3GEYJ102	1K	
R36	ERJ2GEJ154	150K	
R38	ERJ2RKF1200	120	
R39	ERJ2RKF2000	200	
R48	ERJ8GEYJ270	27	
R49	ERJ2GEJ471	470	
R51	ERJ3GEYJ122	1.2K	
R52	ERJ2GEJ153	15K	
R53	ERJ3GEYJ181	180	
R54	ERJ2GEJ102	1K	
R55	ERJ1WYJ220	22	
R56	ERJ1WYJ220	22	
R57	ERJ2GEJ392	3.9K	
R58	ERJ2GEJ682	6.8K	
R59	ERJ3GEYJ222	2.2K	
R60	ERJ2GEJ223	22K	
R61	ERJ2GEJ102	1K	
R62	ERJ2GEJ222	2.2K	
R63	ERJ2GEJ222	2.2K	
R65	ERJ3GEY0R00	0	
R67	ERJ2GEJ180	18	
R68	ERJ3GEY0R00	0	
R71	ERJ2GEJ332	3.3K	
R72	ERJ2GEJ150	15	
R73	ERJ2GEJ335	3.3M	
R74	ERJ2GEJ103	10K	
R75	ERJ2GEJ101	100	
R76	ERJ2GEJ102	1K	
R77	ERJ2GEJ103	10K	
R78	ERJ2GEJ103	10K	
R79	ERJ2GEJ102	1K	
R80	ERJ2GEJ102	1K	
R81	ERJ2GEJ332	3.3K	
R89	ERJ2GEJ103	10K	
R92	ERJ2GEJ102	1K	
R95	ERJ2GE0R00	0	
R98	ERJ2GEJ103	10K	
R102	ERJ3GEYJ222	2.2K	
R103	PQ4R10XJ471	470	S
R106	ERJ3GEYJ271	270	
R109	ERJ3GEYJ181	180	
R111	ERJ2GEJ101	100	
R112	ERJ2GEJ102	1K	
R114	ERJ2GE0R00	0	
R116	ERJ2GEJ180	18	
R117	ERJ2GEJ332	3.3K	
R121	ERJ3GEY0R00	0	
J4	ERJ3GEY0R00	0	
L9	ERJ2GE0R00	0	
		(CAPACITORS)	
C1	ECUE1H100DCQ	10P	S
C2	F0C2E105A146	1	S
C3	F1B2H152A048	0.0015	
C4	F1B2H152A048	0.0015	
C5	ECUV1H102KBV	0.001	
C6	ECUV1H102KBV	0.001	
C7	ECUV1H100DCV	10P	
C8	ECUV1H100DCV	10P	
C9	ECKD2H681KB	680P	S
C10	ECKD2H681KB	680P	S
C14	ECUV1H472KBV	0.0047	
C17	PQCUV1A225KB	2.2	
C19	ECUV1H100DCV	10P	
C22	PQCUV1A105KB	1	
C23	ECUV1C563KBV	0.056	
C25	ECUV1H103KBV	0.01	
C27	ECEA1HKA100	10	
C31	PQCUV1A225KB	2.2	
C32	ECA1CM101	100P	
C36	ECEA0JSJ331	330	S
C37	ECUV1H100DCV	10P	
C44	ECUE1H101JCQ	100P	S
C47	ECUV1C104KBV	0.1	
C48	ECUV1H100DCV	10P	
C49	ECUV1H100DCV	10P	
C50	ECJ0EB1C103K	0.01	
C51	F1G1A1040003	0.1	
C52	ECUV1H221JCV	220P	
C53	ECUV1H221JCV	220P	
C54	ECUE1C223KBQ	0.022	S
C55	F1G1A1040003	0.1	
C56	ECUV1C104KBV	0.1	
C59	F1G1A1040003	0.1	
C60	F1G1A1040003	0.1	
C61	F1G1A1040003	0.1	
C62	ECJ0EC1H270J	27P	
C63	ECUV1H060DCV	6P	
C64	ECEA1CKS100	10	
C65	ECJ0EB0J105K	1	
C67	F1G1A1040003	0.1	
C68	ECJ0EB0J105K	1	
C70	ECUV1A105KBV	1	
C71	ECEA1CKS100	10	
C72	F1G1A2240008	0.22	
C73	F1G1A1040003	0.1	
C74	F1G1A1040003	0.1	
C75	F1G1A1040003	0.1	
C102	PQCUV1A105KB	1	
C110	ECUE1H102KBQ	0.001	S
C112	ECJ0EC1H220J	22P	
C117	ECUV1H030CCV	3P	
C118	ECUV1H100DCV	10P	
C119	ECUE1H100DCQ	10P	S
C120	ECUV1H100DCV	10P	
C124	ECUV1H010CCV	1P	
C125	ECUV1H100DCV	10P	
C126	F1G1H151A541	150P	S
C127	ECUE1H102KBQ	0.001	S
C133	F1G1A1040003	0.1	
C136	ECUE1H100DCQ	10P	S
C137	ECUE1H100DCQ	10P	S
C140	ECJ0EB1A104K	0.1	
C141	ECJ0EB1A104K	0.1	
C143	ECUE1H100DCQ	10P	S
C147	ECUE1H100DCQ	10P	S
C148	ECUV1H100DCV	10P	
C149	ECUE1H100DCQ	10P	S
C150	ECUE1H100DCQ	10P	S
C151	ECUE1H100DCQ	10P	S
C152	ECUE1H100DCQ	10P	S
C153	ECUE1H100DCQ	10P	S
C154	ECUE1H100DCQ	10P	S
L6	ECUV1H0R5CCV	0.5P	
		(OTHERS)	
E1	PQSA10187Z	ANTENNA	
IC10	PQLP10263Z	RF UNIT	
CN4	L0DACA000024	BUZZER	
SW1	EVQQJJ05Q	SPECIAL SWITCH	
SA1	J0LF00000026	VARISTOR (SURGE ABSORBER)	
X1	H0D103500003	CRYSTAL OSCILLATOR	

15.5.2. Handset

15.5.2.1. Cabinet and Electrical Parts

Ref. No.	Part No.	Part Name & Description	Remarks
101	PQGP10302Z1	PANEL, LCD	PC-HB
102	PQKM10709Y2	CABINET BODY	ABS-HB
103	PQHR11204Z	OPTIC CONDUCTIVE PARTS, LED LENS	PS-HB
104	PQHS10467Z	COVER, SP NET	

Ref. No.	Part No.	Part Name & Description	Remarks
105	L0AD02A00028	RECEIVER	
106	PQHR11197Z	GUIDE, RECEIVER	ABS-HB
107	PQHS10722Y	SPACER, LCD CUSHION	
108	PQBC10458Y2	BUTTON, NAVIGATOR KEY	ABS-HB
109	PQSX10315Z	KEYBOARD SWITCH	
110	PQJT10240Z	CHARGE TERMINAL (R)	
111	PQJT10239Z	CHARGE TERMINAL (L)	
112	PQWE10045Y	BATTERY TERMINAL	
113	PQGT18717Z	NAME PLATE	
114	PQHR11198Z	GUIDE, SPEAKER	ABS-HB
115	PQHG10729Z	RUBBER PARTS, SPEAKER	
116	L0AD02A00026	SPEAKER	
117	PQJC10056X	BATTERY TERMINAL	
118	PQKF10713Z1	CABINET COVER	ABS-HB
119	PQQT23182Z	LABEL, ATTENTION	
120	PQHX11396Z	COVER, BATTERY COVER SHEET	
121	PQHS10561Y	SPACER, BATTERY COVER	
122	PQKK10595X3	LID, BATTERY COVER	ABS-HB

15.5.2.2. Main P.C.Board Parts

Note:

(*1) When replacing IC1 and IC3, data needs to be written to it with PQZZTG7100HG. Refer to **Handset** (P.52) of **Things to Do after Replacing IC**.

(*2) When replacing the Handset LCD, See **How to Replace the Handset LCD** (P.44).

Ref. No.	Part No.	Part Name & Description	Remarks
PCB100	PQWPG7120HGR	MAIN P.C.BOARD ASS'Y (RTL) (for KX-TG7100HGS) (for KX-TG7102HGS)	
PCB100	PQWPGA711FXR	MAIN P.C.BOARD ASS'Y (RTL) (for KX-TGA711FXS)	
		(ICs)	
IC1	C1CB00002319	IC (BBIC) (*1)	
IC3	PQWIA130EXRR	IC (EEPROM) (*1)	
		(TRANSISTORS)	
Q1	PQVTFDN335N	TRANSISTOR(SI)	S
Q2	B1ADGE000004	TRANSISTOR(SI)	
Q3	B1ADGE000004	TRANSISTOR(SI)	
Q4	B1ADGE000004	TRANSISTOR(SI)	
Q5	B1ABCF000103	TRANSISTOR(SI)	
Q7	UN9219J	TRANSISTOR(SI)	S
Q8	UN9219J	TRANSISTOR(SI)	S
Q9	UN9219J	TRANSISTOR(SI)	S
Q10	B1ABCF000103	TRANSISTOR(SI)	
Q11	B1ABCF000103	TRANSISTOR(SI)	
		(DIODES)	
D1	B0JCME000035	DIODE(SI)	
D4	MA8047	DIODE(SI)	S
D5	MA8047	DIODE(SI)	S
D6	B0BC2R1A0006	DIODE(SI)	
D7	MA2Z72000	DIODE(SI)	
LED1	B3ACB0000133	LED	
LED2	B3ACB0000133	LED	
LED3	B3ACB0000133	LED	
LED4	B3ACB0000133	LED	
LED5	B3ACB0000133	LED	
LED6	B3ACB0000133	LED	
LED7	B3ACB0000133	LED	
LED8	B3ACB0000133	LED	
LED9	B3ACB0000133	LED	
LED10	B3ACB0000134	LED	
		(COILS)	
L1	G1C470M00025	COIL	
L4	G1C100MA0072	COIL	
L5	G1C100MA0072	COIL	
F1	PQLQR2M5N6K	COIL	S
		(RESISTORS)	
R1	ERJ6RSJR10V	0.1	
R2	ERJ2GEJ680	68	
R5	ERJ2GEJ471	470	
R6	ERJ2GEJ103	10K	
R7	ERJ3GEYJ224	220K	
R8	ERJ2GEJ102	1K	
R11	ERJ2GEJ393X	39K	
R12	PQ4R10XJ4R7	4.7	S
R13	ERJ2GEJ101	100	
R14	ERJ2GEJ153	15K	
R15	ERJ2GEJ332	3.3K	
R16	ERJ2GEJ102	1K	
R19	ERJ3GEYJ565	5.6M	
R21	ERJ2GEJ330	33	
R22	ERJ3GEYJ330	33	
R23	ERJ2GEJ471	470	
R24	ERJ2GEJ332	3.3K	
R25	ERJ2GEJ222	2.2K	
R40	ERJ3GEYJ103	10K	
R41	ERJ3GEYJ103	10K	
R42	ERJ3GEYJ104	100K	
R43	ERJ2GEJ684	680K	
R44	ERJ2GEJ103	10K	
R45	ERJ6RSJR10V	0.1	
R46	ERJ3GEYJ562	5.6K	
R47	PQ4R10XJ562	5.6K	S
R52	ERJ2GEJ102	1K	
R61	ERJ2GEJ102	1K	
R62	ERJ2GEJ102	1K	
R64	ERJ3GEYJ103	10K	
R65	ERJ2GEJ103	10K	
R66	ERJ3GEYJ102	1K	
R91	ERJ3GEYJ100	10	
R92	ERJ2GEJ121	120	
R93	ERJ3GEYJ104	100K	
R94	ERJ3EKF4303	430K	
R95	ERJ3EKF8203	820K	
L6	ERJ2GE0R00	0	
		(CAPACITORS)	
C1	EEE0GA331WP	330	
C2	EEE0JA331P	330	
C3	ECJ0EB1A104K	0.1	
C4	ECUV1H100DCV	10P	
C5	PQCUV1A225KB	2.2	S
C6	ECUV1H080DCV	8P	
C7	ECJ0EC1H150J	15P	
C8	F1G1A2240008	0.22	
C10	PQCUV1A225KB	2.2	S
C11	ECUV1C104KBV	0.1	
C12	ECUV1A105KBV	1	
C15	ECUV1A105KBV	1	
C18	ECJ0EB1H102K	0.001	
C19	ECJ0EB1A104K	0.1	
C20	ECJ0EB1A104K	0.1	
C21	ECJ0EB1A104K	0.1	
C22	ECJ0EB1A104K	0.1	
C23	ECJ0EC1H100D	10P	
C24	ECJ0EB1A104K	0.1	
C25	ECUV1C104KBV	0.1	
C26	ECUV1C104KBV	0.1	
C30	ECJ0EB1A104K	0.1	
C32	ECJ0EB1A104K	0.1	
C34	ECUV1A105KBV	1	
C35	ECJ0EC1H101J	100P	
C37	ECJ0EC1H101J	100P	
C38	ECJ0EB1C103K	0.01	
C39	ECUV1A105KBV	1	
C40	ECUV1A105KBV	1	
C41	ECUV1A105KBV	1	
C42	ECUV1A105KBV	1	
C43	ECUV1C104KBV	0.1	
C44	ECUV1C104KBV	0.1	
C45	ECUV1C104KBV	0.1	
C46	ECUV1C104KBV	0.1	
C47	ECUV1C104KBV	0.1	

Ref. No.	Part No.	Part Name & Description	Remarks
C48	ECJ0EB1A104K	0.1	
C49	ECJ0EB1H102K	0.001	
C50	ECJ0EC1H100D	10P	
C52	ECJ0EB1H102K	0.001	
C53	ECJ0EC1H151J	150P	
C57	ECJ0EC1H390J	39P	
C58	ECJ0EB1H102K	0.001	
C60	F1J0J4750005	4.7	
C61	F1J0J4750005	4.7	
C66	ECJ0EC1H1R5C	1.5P	
C73	ECJ0EC1H100D	10P	
C74	ECJ0EC1H100D	10P	
C75	ECJ0EC1H100D	10P	
C95	ECJ0EC1H100D	10P	
C96	ECJ0EC1H100D	10P	
C97	ECJ0EC1H100D	10P	
C98	ECJ0EC1H100D	10P	
C99	ECJ0EC1H100D	10P	
C100	ECJ0EC1H100D	10P	
C101	ECJ0EC1H100D	10P	
		(OTHERS)	
MIC	L0CBAB000052	MICROPHONE	
E101	L5DCAYY00005	LIQUID CRYSTAL DISPLAY (*2)	
E102	PQHX11378Z	COVER, LCD COVER SHEET	
E103	PQHR11195Z	TRANSPARENT PLATE, LCD PLATE	PMMA-HB
E104	PQHR11205Z	GUIDE, LCD	ABS-HB
E105	PQSA10197Z	ANTENNA	
IC4	PQLP10263Z	RF UNIT	
D8	D4ED1270A014	VARISTOR (SURGE ABSORBER)	
X1	H0D103500005	CRYSTAL OSCILLATOR	

15.5.3. Charger Unit

15.5.3.1. Cabinet and Electrical Parts

Ref. No.	Part No.	Part Name & Description	Remarks
200	PQLV30045ZS	CHARGER UNIT	
200-1	PQKM10721Z3	CABINET BODY	PS-HB
200-2	PQGG10410Y1	GRILLE	ABS-HB
200-3	PQKE10436Y2	CASE, CHARGE TERMINAL	PS-HB
200-4	PQKE10454Z1	HOLDER, CHARGE TERMINAL (L)	POM-HB
200-5	PQKE10455Z1	HOLDER, CHARGE TERMINAL (R)	POM-HB
200-6	PQJT10241Y	CHARGE TERMINAL (L)	
200-7	PQJT10242Y	CHARGE TERMINAL (R)	
200-8	PQKF10709X1	CABINET COVER	ABS-HB
200-9	PQHA10023Z	RUBBER PARTS, FOOT CUSHION	
200-10	PQGT18544Z	NAME PLATE	

15.5.3.2. Main P.C.Board Parts

Ref. No.	Part No.	Part Name & Description	Remarks
PCB200	PQWPA810ESCH	MAIN P.C.BOARD ASS'Y (RTL)	
		(JACK)	
J1	K2ECYB000001	JACK	S
		(RESISTORS)	
R1	ERDS1VJ100	10	S
R2	ERDS1TJ120	12	S
R3	ERDS1VJ100	10	S
R4	ERDS1TJ120	12	S

15.5.4. Accessories and Packing Materials

Note:

(*1) You can download and refer to the Operating Instructions (Instruction book) on TSN Server.

15.5.4.1. KX-TG7100HGS

Ref. No.	Part No.	Part Name & Description	Remarks
A1	PQLV207CEZ	AC ADAPTOR	⚠
A2	PQJA10075Z	CORD, TELEPHONE	
A3	PQQX15460Z	INSTRUCTION BOOK (*1)	
A4	PQQW15347Z	LEAFLET, QUICK GUIDE	
A5	PQQW15437Z	LEAFLET, BATTERY	
P1	PQPP10116Z	PROTECTION COVER (for Base Unit)	
P2	PQPP10084Z	PROTECTION COVER (for Handset)	
P3	PQPD10734Z	CUSHION	
P4	PQPK15226Z	GIFT BOX	

15.5.4.2. KX-TG7102HGS

Ref. No.	Part No.	Part Name & Description	Remarks
A101	PQLV207CEZ	AC ADAPTOR (for Base Unit)	⚠
A102	PQLV209CEZ	AC ADAPTOR (for Charger Unit)	⚠
A103	PQJA10075Z	CORD, TELEPHONE	
A104	PQQX15460Z	INSTRUCTION BOOK (*1)	
A105	PQQW15347Z	LEAFLET, QUICK GUIDE	
A106	PQQW15437Z	LEAFLET, BATTERY	
P101	PQPP10116Z	PROTECTION COVER (for Base Unit)	
P102	PQPH10094Z	PROTECTION COVER (for Handset)	
P103	PQPP10086Z	PROTECTION COVER (for Charger Unit)	
P104	PQPD10753Z	CUSHION	
P105	PQPK15235Z	GIFT BOX	

15.5.5. Fixtures and Tools

Note:

(*1) See **The Setting Method of JIG (Base Unit)** (P.45), and **The Setting Method of JIG (Handset)** (P.49).

(*2) When replacing the Handset LCD, See **How to Replace the Handset LCD** (P.44).

Part No.	Part Name & Description	Remarks
PQZZ1CD300E	JIG CABLE (*1)	
PQZZTG7100HG	BATCH FILE CD-ROM (*1)	
PQZZ430PIR	TIP OF SOLDERING IRON (*2)	
PQZZ430PRB	RUBBER OF SOLDERING IRON (*2)	

G/I
KXTG7100HGS
KXTG7102HGS
KXTGA711FXS