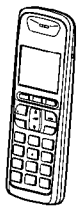
ORDER NO. KM40901800CE
F13

Service Manual

Telephone Equipment

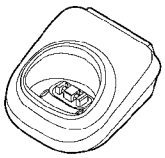
Caller ID Compatible

DECT 6.0



KX-TGA106M
(Cordless Handset)

KX-TG1061M
(Base Unit)



(Charger Unit)

Configuration for each model

Model No	Base Unit	Handset	Charger Unit	Expandable
KX-TG1061	1 (TG1061)	1 (TGA106)	1	Up to 6
KX-TG1062	1 (TG1061)	2 (TGA106)	2	Up to 6
KX-TGA106*		1 (TGA106)	1	

* KX-TGA106 is also an optional accessory, which contains a handset and a charger.

Model No. KX-TG1061M
KX-TG1062M
KX-TGA106M

Expandable Digital Corded/Cordless Answering System

M: Metallic Grey Version
(for U.S.A.)

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 critical parts should be replaced with manufacturer'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 slightly from the actual product.

Note for TABLE OF CONTENTS:
Because sections 5, 6 and 7 of this manual are the extracts from the operating instructions for this model, they are 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 Precautions

1.1. For Service Technicians

- **Repair service shall be provided in accordance with repair technology information such as service manual so as to prevent fires, injury or electric shock, which can be caused by improper repair work**.
  1. When repair services are provided, neither the products nor their parts or members shall be remodeled.
  2. If a lead wire assembly is supplied as a repair part, the lead wire assembly shall be replaced.
  3. FASTON terminals shall be plugged straight in and unplugged straight out.

- **ICs and LSIs are vulnerable to static electricity.**
  When repairing, the following precautions will help prevent recurring malfunctions.
  1. Cover plastic parts boxes with aluminum foil.
  2. Ground the soldering irons.
  3. Use a conductive mat on worktable.
  4. Do not grasp IC or LSI pins with bare fingers.

2 Warning

2.1. Battery Caution

Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.

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

Note:

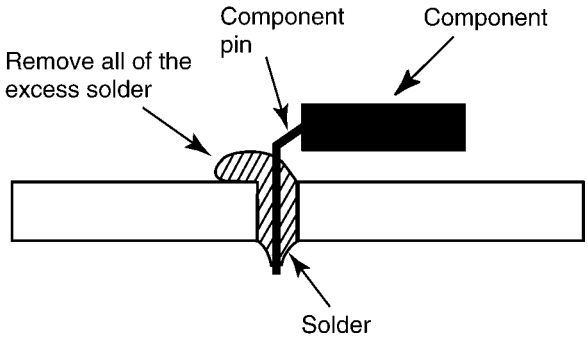
In the information below, Pb, the symbol for lead in the periodic table of elements, will refer to standard solder or solder that contains lead.

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).

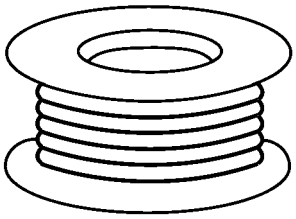
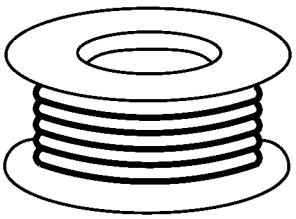
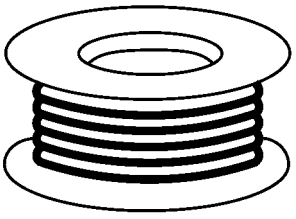


(Slice View)

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
		

2.3. Discarding of P. C. Board

When discarding P. C. Board, delete all personal information such as telephone directory and caller list or scrap P. C. Board.

3 Specifications

■ **Standard:**
DECT 6.0 (Digital Enhanced Cordless Telecommunications 6.0)

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

■ **Frequency range:**
1.92 GHz to 1.93 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:**
115 mW (max.)

■ **Voice coding:**
ADPCM 32 kbit/s

	Base Unit	Cordless Handset	Charger
Power source	AC Adaptor (PQLV219Z, 120 V AC, 60 Hz)	Rechargeable Ni-MH battery AAA (R03) size (1.2 V 550 mAh)	AC Adaptor (PQLV219Z, 120 V AC, 60 Hz)
Receiving Method	Super Heterodyne	Super Heterodyne	—
Oscillation Method	PLL synthesizer	PLL synthesizer	—
Detecting Method	Quadrature Discriminator	Quadrature Discriminator	—
Modulation Method	Frequency Modulation	Frequency Modulation	—
ID Code	40 bit	40 bit	—
Ringer Equivalence No. (REN)	0.1B	—	—
Dialing Mode	Tone (DTMF)/Pulse	Tone (DTMF)/Pulse	—
Redial	Up to 48 digits	Up to 48 digits	—
Speed Dialer	Up to 24 digits (Phonebook)	Up to 24 digits (Phonebook)	—
Power Consumption	Standby: Approx. 1.3 W Maximum: Approx. 2.0 W	11 days at Standby, 5 hours at Talk	—
Operating Conditions	0 °C - 40 °C (32 °F – 104 °F) 20 % – 80 % relative air humidity (dry)	0 °C - 40 °C (32 °F – 104 °F) 20 % – 80 % relative air humidity (dry)	Standby: Approx. 0.1 W, Maximum: Approx. 3.3 W 0 °C - 40 °C (32 °F – 104 °F) 20 % – 80 % relative air humidity (dry)
Dimensions (H x W x D)	Approx. 68mm × 214 mm × 175 mm	Approx. 158 mm × 48 mm × 30 mm	Approx. 52 mm × 75 mm × 88 mm
Mass (Weight)	Approx. 450 g	Approx. 130 g	Approx. 60 g

Note:
- Design and specifications are subject to change without notice.

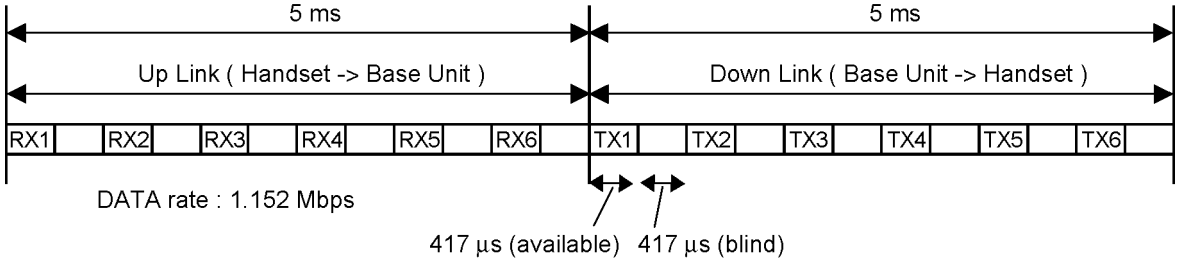
Note for service:
- Operation range: Up to 300 m outdoors, Up to 50 m indoors, depending on the condition.
- Optional headset: KX-TCA60, KX-TCA86, KX-TCA92, KX-TCA93, KX-TCA94

4 Technical Descriptions

4.1. US-DECT Description

The frequency range of 1.92 GHz-1.93 GHz is used. Transmitting and receiving carrier between base unit and handset is same frequency. Refer to **Frequency Table (MHz)** (P.75).

4.1.1. TDD Frame Format

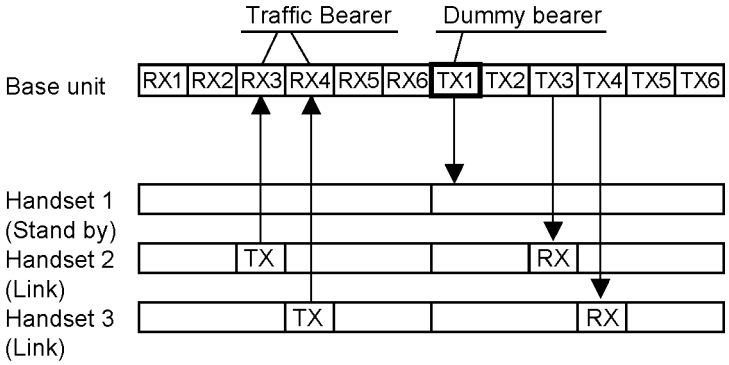


4.1.2. TDMA system

This system is the cycles of 10 ms, and has 6 duplex paths, but maximum duplex communication path is 5 because of dummy bearer use.

In 1 slot 417 µs, the 10 ms of voice data is transmitted.

• **2 - Handsets Link**



Traffic Bearer

A link is established between base unit and handset.

The state where duplex communication is performed.

Handset doesn't make up duplex in no free RF channels because of interference. (*1)

Dummy Bearer

Base unit sends Dummy-data to the all stand-by state handsets.

Handsets receive that data for synchronization and monitoring request from the base unit.

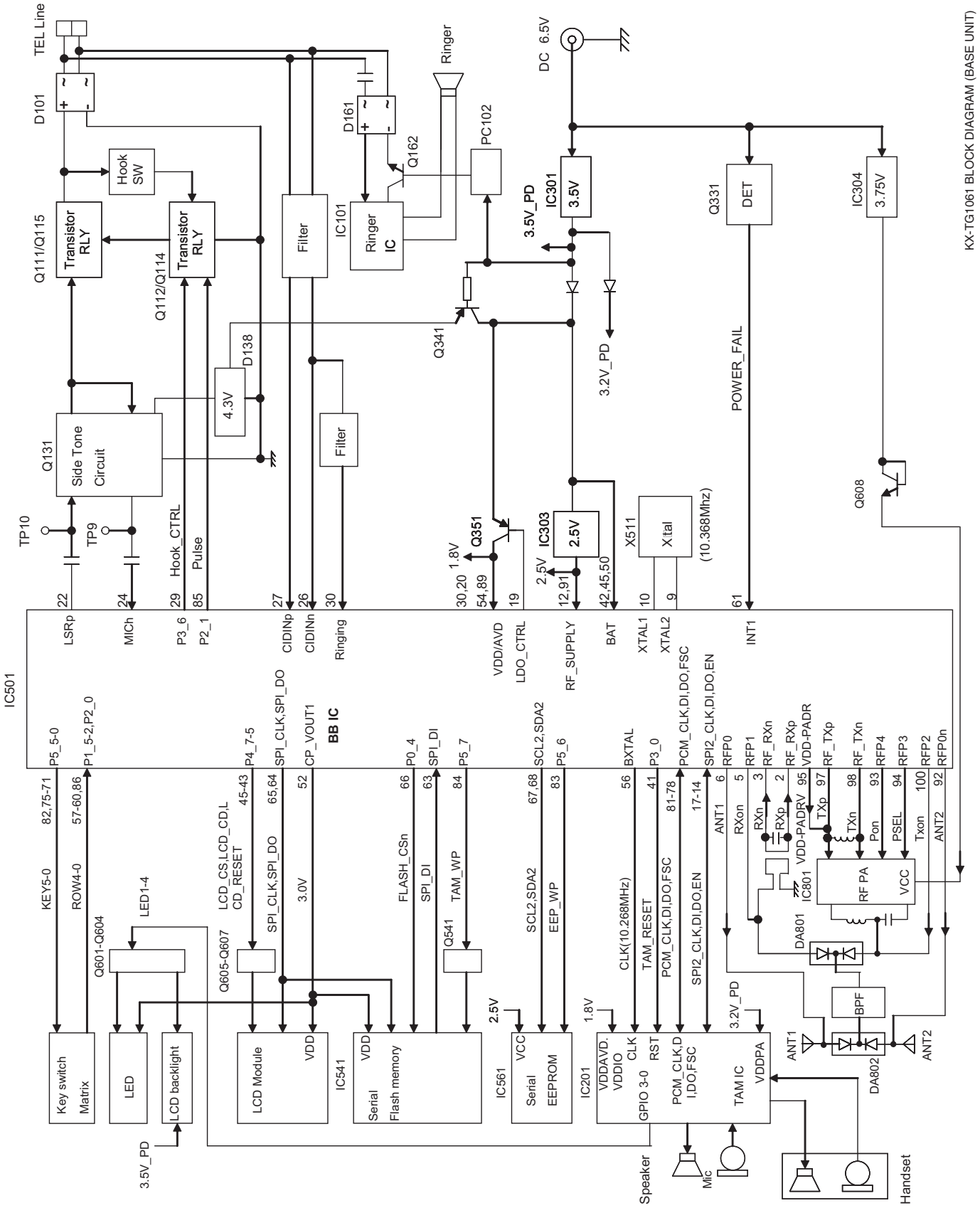
Base unit doesn't send Dummy bearer in no free RF channels because of interference. (*1)

Note:

(*1) It is a feature under FCC 15 regulation and for interference avoidance.

In the case of checking RF parts, it is better in least interference condition.

4.2. Block Diagram (Base Unit)



4.3. Circuit Operation (Base Unit)

4.3.1. Outline

Base unit consists of the following ICs as shown in **Block Diagram (Base Unit)** (P.8).

- DECT BBIC (**B**ase **B**and IC): IC501
  - Handling all the audio, signal and data processing needed in a US DECT base unit
  - Controlling the US 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 Tranceiver (LNA Mixer IF Filter, Modulator/Demodulator, PLL, Vco)
- EEPROM: IC561
  - Temporary operating parameters (for RF, etc.)
- FLASH MEMORY: IC541
  - Voice Prompt (TAM) D/L Area
  - ICM/OGM/MEMO Recording Area
- TAM Companion: IC201
  - Voice data compression and decompression
  - Speaker Amp
- Additionally,
  - Power Supply Circuit (+4.0 V, +3.3 V, +2.5 V, +1.8 V output)
  - Crystal Circuit (10.368 MHz)
  - Telephone Line Interface Circuit

4.3.2. Power Supply Circuit

The power is supplied to the BBIC,TAM Companion,Power AMP,LCD module,EEPROM,Flash Memory,LED,LCD backlight from AC Adaptor(+6.5V) as shown in Fig 1.

When power line failure, the power is supplied to BBIC,TAM companion,EEPROM from telephone line instead of AC Adaptor through D138 and Q341.

• BBIC (IC501)

AC adaptor → F301 → D301→ IC301 → D311 → Q351 → IC501 (VDD 1.8V)
(When power fail) → IC501 (BAT 3.2V)
Telephone line → line interface → D138 → Q341 → IC303 → IC501 (RF_SUPPLY)

• TAM Companion (IC201)

AC adaptor → F301 → D301 → D311
(When power fail) → Q351 → IC201 (VDD 1.8V)
Telephone line → line interface → D138 → Q341

AC adaptor → F301 → D301→ IC301 → D353 → IC201 (VDDPA 3.2V)

• RF Power AMP (IC801)

AC adaptor → F301 → D301→ IC304 → Q608 → IC801 (VCC)

• EEPROM (IC561)

AC adaptor → F301 → D301→ IC301 → D311
(When power fail) → IC303 → IC561 (VCC 2.5V)
Telephone line → line interface → D138 → Q341

• Flash memory (IC541)

AC adaptor → F301 → D301→ IC301 → D311 → IC501 (BAT:CP_VOUT1) → IC541 (VDD 3.0V)

• LCD module

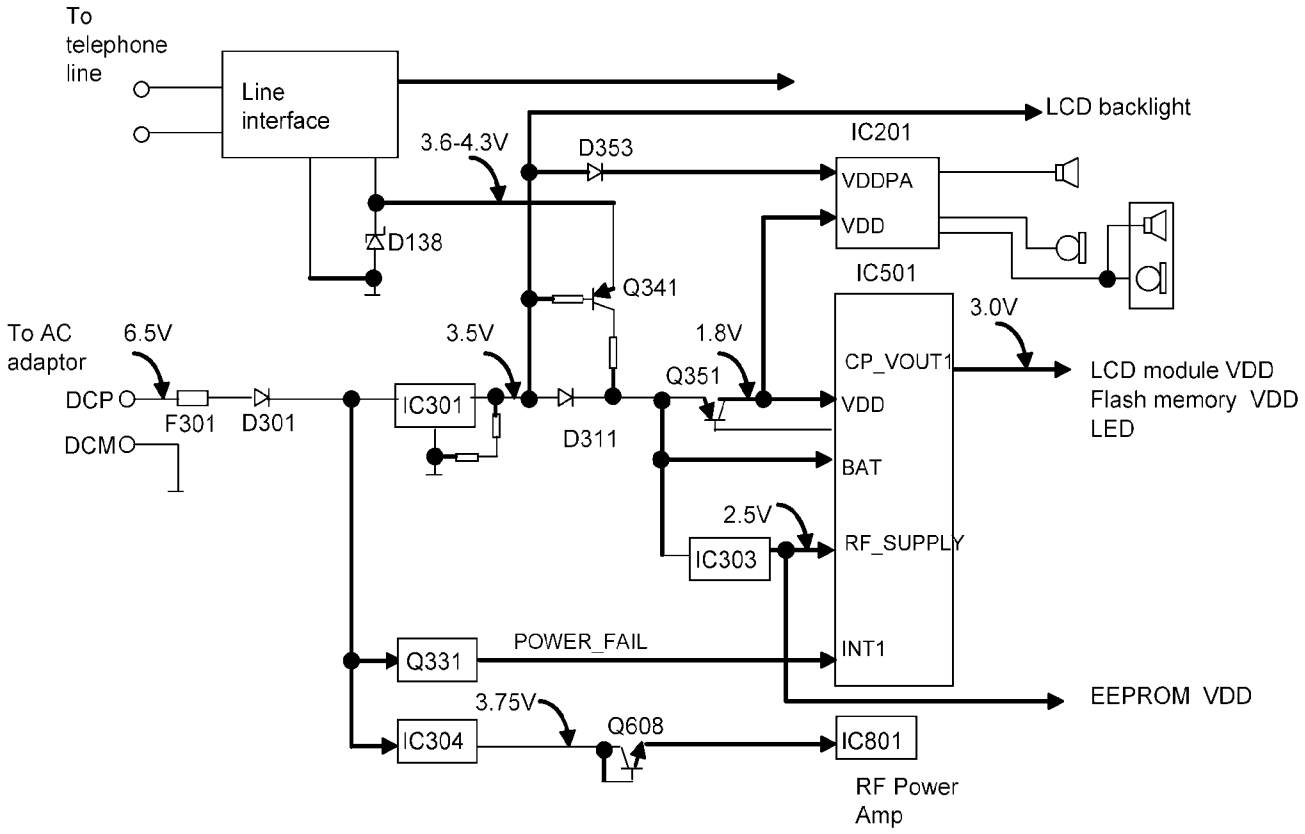
AC adaptor → F301 → D301→ IC301 → D311 → IC501 (BAT:CP_VOUT1) → CN1 → LCD module (VDD 3.0V)

• LED

AC adaptor → F301 → D301→ IC301 → D311 → IC501 (BAT:CP_VOUT1) → CN1 → LED (3.0V)

• LCD backlight

AC adaptor → F301 → D301 → IC301→ CN2 → LCD backlight (3.5V)



<Fig.1>

4.3.3. Telephone Line Interface

Function

- Bell signal detection
- CLIP signal detection
- ON/OFF hook and pulse dial circuit

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

In standby mode,Q111/Q115 is open to cut the DC Loop current and decrease the ring load.
When ringing voltage appears at the TIP and RING, AC ring voltages transferred as followings;

CLIP signal detection

TIP → C181 → R182 → R185 → IC501(26)(BBIC-CIDINn)
RING → C191 → R192 → R195 → IC501(27)(BBIC-CIDINp)

Bell signal detection

TIP → C181 → R182 → C184 → R186 → C187 → IC501(30)(BBIC-RINGING)
When power line failure (Because this case is no power to IC501)
TIP → C164 → D161(2) → D161(1) → IC101(1:5) → R167 → RINGERP
RING ← D161(3) ← D161(4) ← Q162(c:e) ← IC101(2:8) ← RINGERM

ON/OFF hook circuit

ON hook:

Q111/Q115 is open to cut the DC loop current and voice signal, caused by the following control:
Hook switch (between hook2-4 and hook2-6) is opened and IC501(29)(Hook CTRL) is Low, (and Q114 is open), then Q112 is OFF,so Q111/115 is OPEN

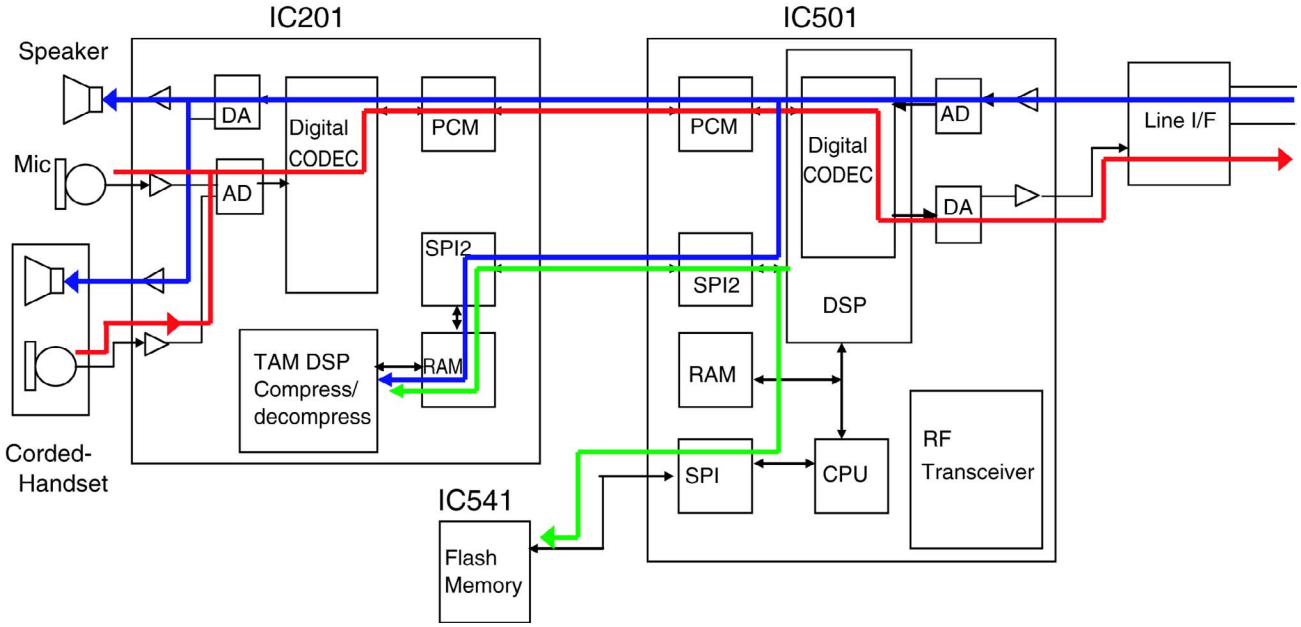
OFF hook:

Q111/Q115 is ON to make the DC loop current and be possible to transfer voice signal, caused by the following control:
Hook switch (between hook2-4 and hook2-6) make and IC501(29)(Hook CTRL) is High. (and Q114 is open), then Q112 is ON.

4.3.4. Audio signal Flow (Out line)

The audio signal from Mic (for SP-phone and Corded Handset) is converted from Analog to digital in TAM companion IC(IC201), then is transfered to BBIC(IC501) through PCM interface.
In BBIC(IC501), these data is converted to Analog, then send out tel line through tel line interface.
On the other hand, the audio signal from tel line is converted from Analog to digital in BBIC(IC501), then is transfered to TAM companion IC(IC201) through PCM interface.
In TAM companion IC(IC201) ,these data is converted to Analog, then sound out from speaker.

On the recorded and replay TAM data, as following.
On recording sound, the audio signal from the tel line is converted to digital data in BBIC, then is transfered to TAM companion IC through SPI2 interface and compressed. This compressed data re-transfer to BBIC, then BBIC transfer these data to Flash-memory(IC541) through SPI interface. On replaying the recorded TAM data, the compressed data in Flash-memory is transferd to BBIC through SPI interface. Then BBIC transfer these data to TAM companion IC through SPI2 interface to decompress these data.TAM companion IC send back the decompress data to BBIC. BBIC transfer them to TAM companion IC through PCM interface, finally these data is coverted to Analog signal, then sound out Speaker.
Refer to the fig.2.

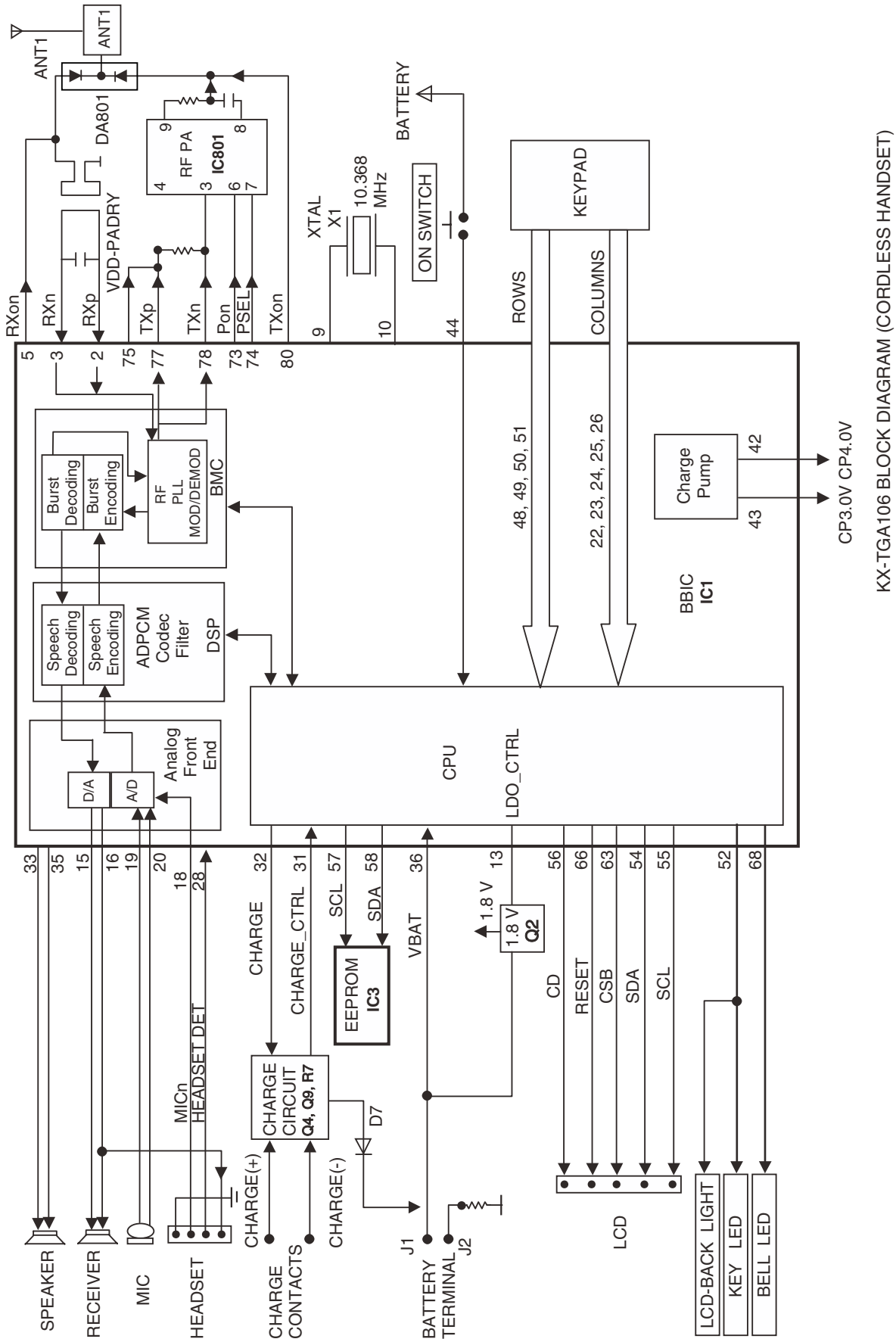


<Fig.2>

4.3.5. RF cuircuit

BBIC(IC501) inclueds the RF transceiver circuit. (LNA,Mixer, IF filter, modulator/Demodulator,PLL, VCO etc).
This RF transceiver is interfaced with Power-AMP(IC801) and Antenna circuit.

4.4. Block Diagram (Cordless Handset)



4.5. Circuit Operation (Cordless Handset)

4.5.1. Outline

Cordless Handset consists of the following ICs as shown in **Block Diagram (Cordless Handset)** (P.13).

- 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 Power Amp.)
  - PLL Oscillator
  - Detector
  - Compress/Expander
  - Reception
- RF Power Amp: IC801
  - Amplifier for transmission
- EEPROM: IC3
  - Temporary operating parameters (for RF, etc.)

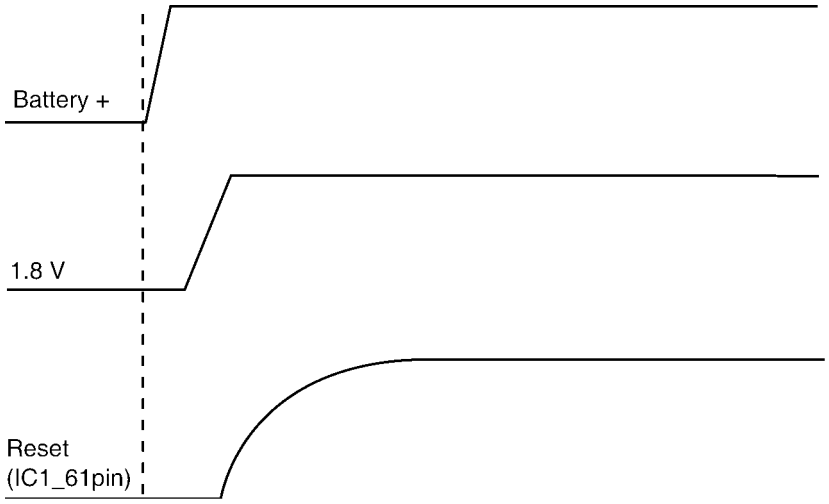
4.5.2. Power Supply Circuit/Reset Circuit

Circuit Operation:

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

BATTERY(2.2 V ~ 2.6 V: BATT+) → F1 → Q2 (1.8 V), IC1-43pin (2.5V)

The Reset signal generates IC1 (61 pin) and 1.8 V.



4.5.3. Charge Circuit

Circuit Operation:

When charging the Cordless Handset on the Charger Unit, the charge current is as follows;

DC+(6.5 V) → F1 → D1 → R1 → CHARGE+(Charger) → CHARGE+(Cordless Handset) → L4 → Q4 → D7→ F1 → BATTERY+... Battery...

BATTERY- → L8 → R45 → GND → L5 → CHARGE-(Cordless Handset)→ CHARGE-(Charger) → GND → DC-(GND)

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

The charge current is controlled by switching Q9 of Cordless Handset.

4.5.4. 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.

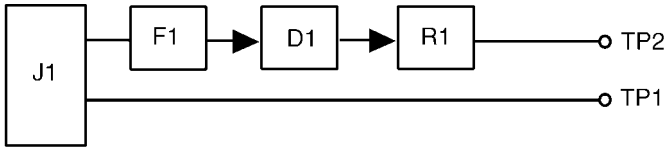
4.5.5. Speakerphone

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

4.6. Circuit Operation (Charger Unit)

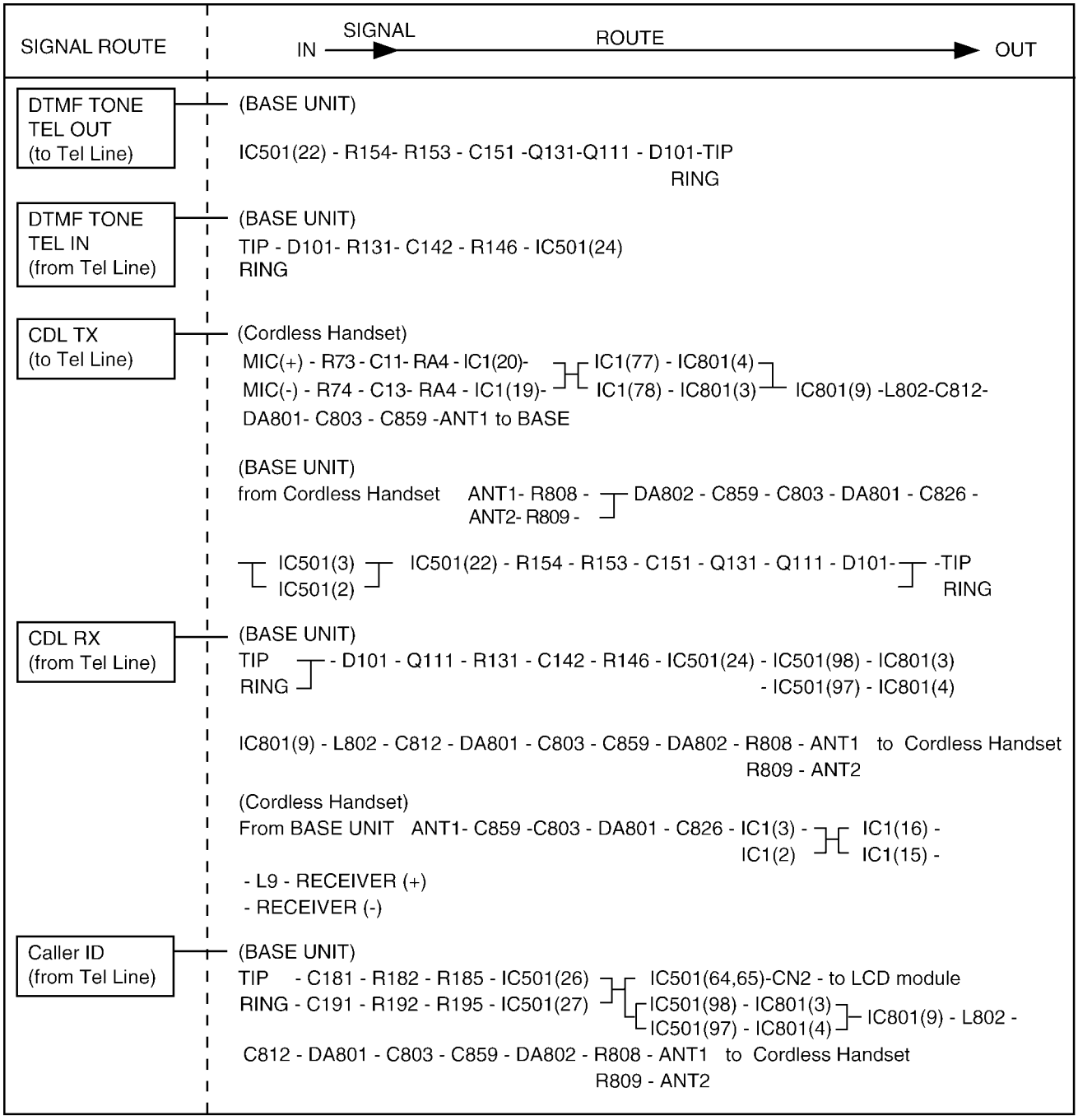
4.6.1. Power Supply Circuit

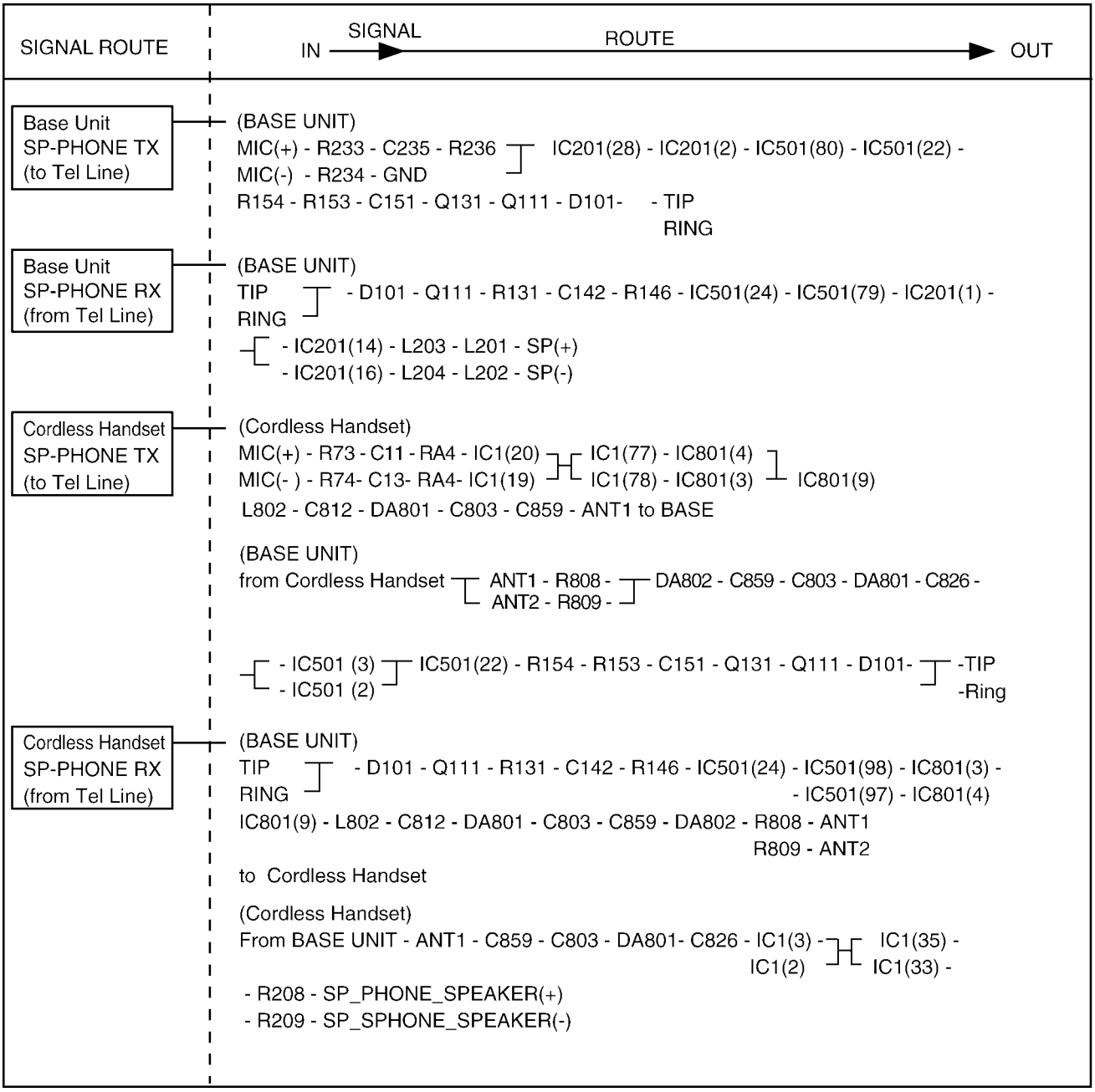
The power supply is as shown.

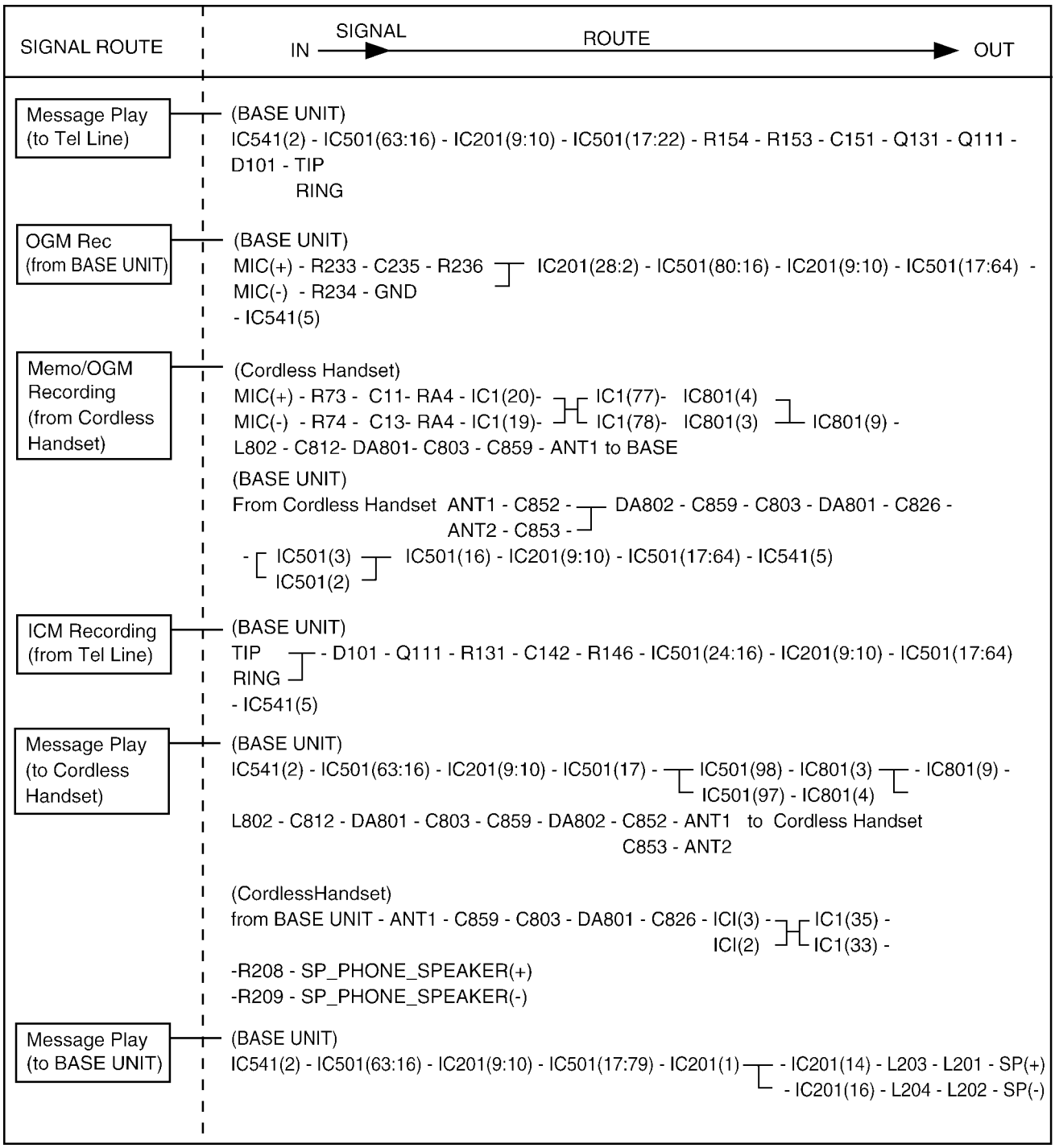


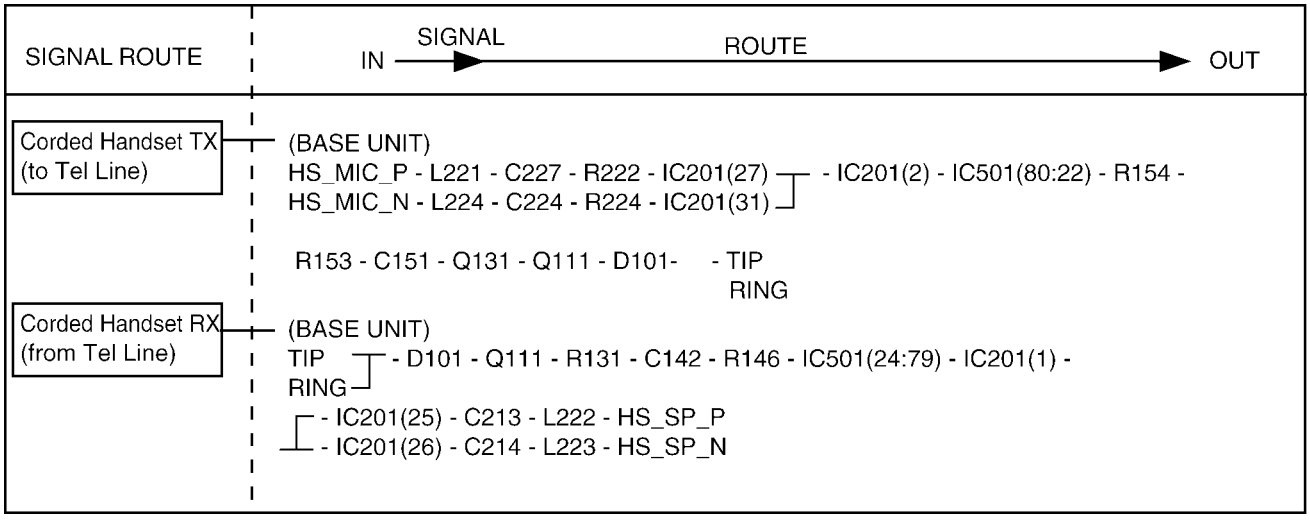
AC Adaptor

4.7. Signal Route




SIGNAL ROUTE
SIGNAL
IN
ROUTE
OUT
Base Unit
SP-PHONE TX
(to Tel Line)
(BASE UNIT)
MIC(+) - R233 - C235 - R236
MIC(-) - R234 - GND
IC201(28) - IC201(2) - IC501(80) - IC501(22) -
R154 - R153 - C151 - Q131 - Q111 - D101- - TIP
RING
Base Unit
SP-PHONE RX
(from Tel Line)
(BASE UNIT)
TIP
RING
- D101 - Q111 - R131 - C142 - R146 - IC501(24) - IC501(79) - IC201(1) -
- IC201(14) - L203 - L201 - SP(+)
- IC201(16) - L204 - L202 - SP(-)
Cordless Handset
SP-PHONE TX
(to Tel Line)
(Cordless Handset)
MIC(+) - R73 - C11 - RA4 - IC1(20)
MIC(-) - R74- C13- RA4- IC1(19)
IC1(77) - IC801(4)
IC1(78) - IC801(3)
IC801(9)
L802 - C812 - DA801 - C803 - C859 - ANT1 to BASE
(BASE UNIT)
from Cordless Handset
ANT1 - R808 -
ANT2 - R809 -
DA802 - C859 - C803 - DA801 - C826 -
- IC501 (3)
- IC501 (2)
IC501(22) - R154 - R153 - C151 - Q131 - Q111 - D101-
-TIP
-Ring
Cordless Handset
SP-PHONE RX
(from Tel Line)
(BASE UNIT)
TIP
RING
- D101 - Q111 - R131 - C142 - R146 - IC501(24) - IC501(98) - IC801(3) -
- IC501(97) - IC801(4)
IC801(9) - L802 - C812 - DA801 - C803 - C859 - DA802 - R808 - ANT1
R809 - ANT2
to Cordless Handset
(Cordless Handset)
From BASE UNIT - ANT1 - C859 - C803 - DA801- C826 - IC1(3) -
IC1(2)
IC1(35) -
IC1(33) -
- R208 - SP_PHONE_SPEAKER(+)
- R209 - SP_SPHONE_SPEAKER(-)

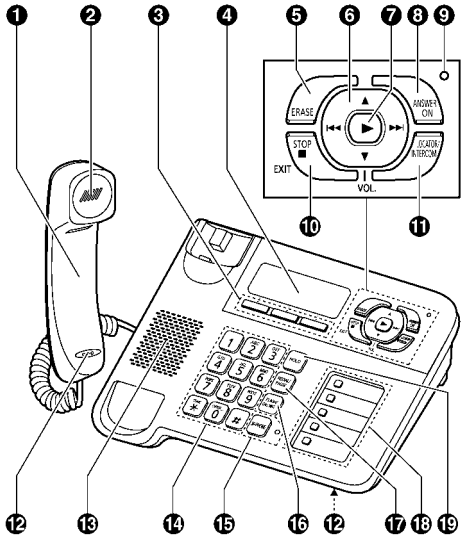

SIGNAL ROUTE
IN
SIGNAL
ROUTE
OUT
Message Play (to Tel Line)
(BASE UNIT)
IC541(2) - IC501(63:16) - IC201(9:10) - IC501(17:22) - R154 - R153 - C151 - Q131 - Q111 - D101 - TIP
RING
OGM Rec (from BASE UNIT)
(BASE UNIT)
MIC(+) - R233 - C235 - R236
MIC(-) - R234 - GND
IC201(28:2) - IC501(80:16) - IC201(9:10) - IC501(17:64) - IC541(5)
Memo/OGM Recording (from Cordless Handset)
(Cordless Handset)
MIC(+) - R73 - C11- RA4 - IC1(20)-
MIC(-) - R74 - C13- RA4 - IC1(19)-
IC1(77)- IC801(4)
IC1(78)- IC801(3)
IC801(9) - L802 - C812- DA801- C803 - C859 - ANT1 to BASE
(BASE UNIT)
From Cordless Handset ANT1 - C852 -
ANT2 - C853 -
DA802 - C859 - C803 - DA801 - C826 -
IC501(3)
IC501(2)
IC501(16) - IC201(9:10) - IC501(17:64) - IC541(5)
ICM Recording (from Tel Line)
(BASE UNIT)
TIP
RING
- D101 - Q111 - R131 - C142 - R146 - IC501(24:16) - IC201(9:10) - IC501(17:64) - IC541(5)
Message Play (to Cordless Handset)
(BASE UNIT)
IC541(2) - IC501(63:16) - IC201(9:10) - IC501(17) -
IC501(98) - IC801(3)
IC501(97) - IC801(4)
- IC801(9) - L802 - C812 - DA801 - C803 - C859 - DA802 - C852 - ANT1 to Cordless Handset
C853 - ANT2
(CordlessHandset)
from BASE UNIT - ANT1 - C859 - C803 - DA801 - C826 - ICI(3) -
ICI(2)
IC1(35) -
IC1(33) -
-R208 - SP_PHONE_SPEAKER(+)
-R209 - SP_PHONE_SPEAKER(-)
Message Play (to BASE UNIT)
(BASE UNIT)
IC541(2) - IC501(63:16) - IC201(9:10) - IC501(17:79) - IC201(1) -
- IC201(14) - L203 - L201 - SP(+)
- IC201(16) - L204 - L202 - SP(-)


SIGNAL ROUTE
IN
SIGNAL
ROUTE
OUT
Corded Handset TX (to Tel Line)
(BASE UNIT)
HS_MIC_P - L221 - C227 - R222 - IC201(27) -
HS_MIC_N - L224 - C224 - R224 - IC201(31) -
- IC201(2) - IC501(80:22) - R154 - R153 - C151 - Q131 - Q111 - D101-
- TIP
RING
Corded Handset RX (from Tel Line)
(BASE UNIT)
TIP
RING
- D101 - Q111 - R131 - C142 - R146 - IC501(24:79) - IC201(1) -
- IC201(25) - C213 - L222 - HS_SP_P
- IC201(26) - C214 - L223 - HS_SP_N

5 Location of Controls and Components

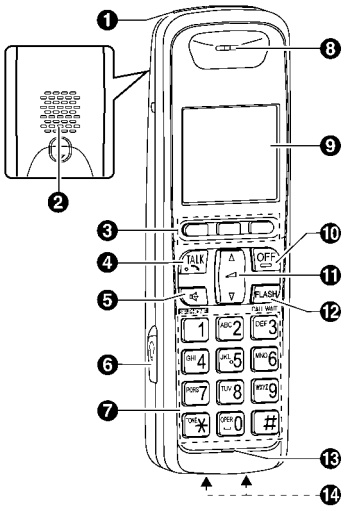
5.1. Controls

5.1.1. Base Unit



❶ Corded handset
❷ Receiver
❸ Soft keys
❹ Display
❺ [ERASE]
❻ Navigator key ([▲]/[▼])
VOL.: Volume ([▲]/[▼])
Repeat/Skip ([⏮]/[⏭])
❼ [►] (Play)
Message indicator
❽ [ANSWER ON]
❾ ANSWER ON indicator
❿ [■] (STOP) (EXIT)
⓫ [LOCATOR] [INTERCOM]
⓬ Microphone
⓭ Speaker
⓮ Dial keypad ([✳]: TONE)
⓯ [SP-PHONE] (Speakerphone)
SP-PHONE indicator
⓰ [FLASH] [CALL WAIT]
⓱ [REDIAL] [PAUSE]
⓲ Speed dial buttons
⓳ [HOLD]

5.1.2. Cordless Handset



❶ Charge indicator
Ringer indicator
Message indicator
❷ Speaker
❸ Soft keys
❹ [📞] (TALK)
❺ [🔊] (SP-PHONE: Speakerphone)
❻ Headset jack
❼ Dial keypad ([✳]: TONE)
❽ Receiver
❾ Display
❿ [OFF]
⓫ Navigator key ([▲]/[▼])
🔈: Volume ([▲]/[▼])
⓬ [FLASH] [CALL WAIT]
⓭ Microphone
⓮ Charge contacts

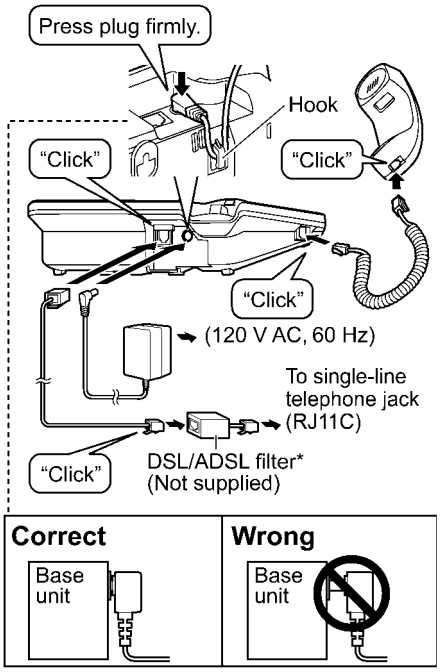
6 Installation Instructions

6.1. Setting up

6.1.1. Connections

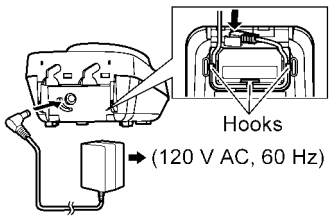
- Use only the supplied Panasonic AC adaptor PQLV219Z.

■ **Base unit**



*For DSL/ADSL service users

■ **Charger**



Note:

- 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 ceilingmounted AC outlet, as the weight of the adaptor may cause it to become disconnected.

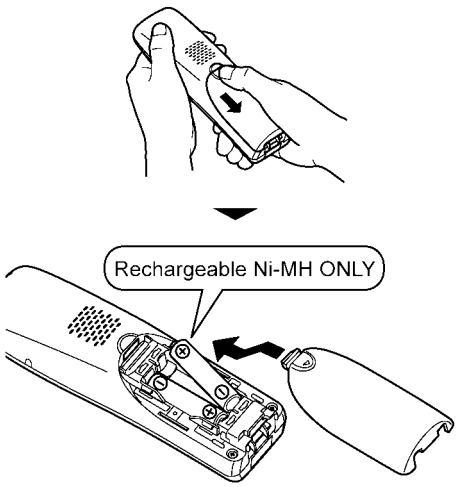
During a power failure

The base unit will work as a standard telephone using power from the telephone line, so you can make and answer outside calls with the corded handset. However, this operation may not work properly depending on area or telephone line's condition. The base unit speakerphone and the cordless handset will not function during a power failure.

6.2. Battery

6.2.1. Battery Installation

- USE ONLY Ni-MH batteries AAA (R03) size.
- Do NOT use Alkaline/Manganese/Ni-Cd batteries.
- Confirm correct polarities (⊕, ⊖).



Note:

- Use the supplied rechargeable batteries. For replacement, we recommend using the Panasonic rechargeable batteries HHR-4DPA.
- Wipe the battery ends (⊕, ⊖) with a dry cloth.
- Avoid touching the battery ends (⊕, ⊖) or the unit contacts.

Important:

- If the handset does not automatically turn on after installing/replacing batteries, place the handset on the charger.

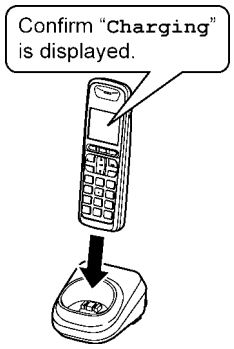
Attention:

A nickel metal hydride battery that is recyclable powers the product you have purchased.
Please call 1-800-8-BATTERY (1-800-822-8837) for information on how to recycle this battery.

6.2.2. Battery Charge

Charge for about 7 hours.

- When the batteries are fully charged, the charge indicator goes off.



Note:

- It is normal for the handset to feel warm during charging.
- Clean the charge contacts of the handset and charger with a soft and dry cloth.
- Clean if the unit is exposed to grease, dust, or high humidity.

6.2.3. Battery Level

Icon	Battery level
	High
	Medium
	Low
	Needs charging.
	Empty

Note:

- The batteries need to be charged if the cordless handset beeps while you are engaged in a call or operating the answering system remotely.

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

Operation	Operating time
In continuous use	12 hours max.
Not in use (standby)	6 days max.

Note:

- Actual battery performance depends on a combination of how often the handset is in use and how often it is not in use (standby).
- Even after the handset is fully charged, the handset can be left on the charger without any ill effect on the batteries.
- The battery level may not be displayed correctly after you replace the batteries. In this case, place the handset on the charger and let it charge for at least 7 hours.

7 Operating Instructions

7.1. Programmable settings

You can customize the unit by programming the following features.
To access the features, there are 2 methods:
- scrolling through the display menus.
- using the direct commands.
  • Direct command is the main method used in this service manual.

7.1.1. Programming by scrolling through the display menus

Base unit / Cordless handset

1 **[MENU]**
2 Press **[▼]** or **[▲]** to select the desired main menu. → **[SELECT]**
3 Press **[▼]** or **[▲]** to select the desired item in sub-menu 1. → **[SELECT]**
   ● In some cases, you may need to select from sub-menu 2. → **[SELECT]**
4 Press **[▼]** or **[▲]** to select the desired setting. → **[SAVE]**
   ● This step may vary depending on the feature being programmed.
   ● To exit the operation, press **[■]** (EXIT) on the base unit or **[OFF]** on the handset.

Base unit

Main menu	Sub-menu 1	Sub-menu 2
Caller list	–	–
Set answering	Screen call	–
Initial setting	Ringer setting	Ringer volume
		Ringer tone
		Silent mode – On / Off – Start / End
	Call block*1	–
	LCD contrast	–
	Caller ID edit	–
	Display language	–
Customer support	–	–

*1 If you program these settings using the base unit, you do not need to program the same item using a handset.

Cordless Handset

Main menu	Sub-menu 1	Sub-menu 2
Caller list	–	–
Answering device	Play new msg.	–
	Play all msg.	–
	Erase all msg.*1	–
	Greeting	Record greeting*1
		Check greeting
		Pre-recorded*1
	Settings	Ring count*1
		Recording time*1
		Remote code*1
		Screen call
	Answer on*1	–
	Answer off*1	–
Intercom	–	–
Initial setting	Ringer setting	Ringer volume
		Ringer tone
		Silent mode – On / Off – Start / End
	Set date / time	Date and time*1
		Alarm
		Time adjust*1
	Call block*1	–
	Message alert	–
	LCD contrast	–
	Key tone	–
	Auto talk	–
	Set tel line	Set dial mode*1
		Set flash time*1
		Set line mode*1
		VM tone detect*1
		Caller ID edit
	Registration	Register handset
		Deregistration
	Change language	Display
		Voice prompt*1
Customer support	–	–

*1 If you program these settings using one of the handsets, you do not need to program the same item using another unit.

7.1.2. Programming using the Direct Commands

1 【MENU】 → 【⌗】

2 Enter the desired feature code.

3 【▼】/【▲】: Select the desired setting. → 【SAVE】

- This step may vary depending on the feature being programmed.
- To exit the operation, press 【■】(EXIT) on the base unit or 【OFF】 on the cordless handset.

Note:

- The operating unit column shows the unit(s) that can be used to program the item.
  : Only the base unit can program the item.
  : Only the cordless handset can program the item.
  / : Both the base unit and cordless handset can program the item.
- In the following table, < > indicates the default settings.

Operating unit	Feature	Feature code	Setting	System setting*1
	Alarm	【7】【2】【0】	<Off> Once Daily	–
	Answer off	【3】【2】【8】	–	●
	Answer on	【3】【2】【7】	–	●
	Auto talk*2	【2】【0】【0】	On <Off>	–
/	Block w/o num. (Block calls without phone number)	【2】【4】【0】	On <Off>	●
/	Call block	【2】【1】【7】	–	●
/	Caller ID edit (Caller ID number auto edit)	【2】【1】【4】	<On> Off	–
/	Caller list	【2】【1】【3】	–	–
	Check greeting	【3】【0】【3】	–	–
/	Customer support*3	【6】【8】【0】	–	–
	Date and time	【1】【0】【1】	–	●
	Deregistration	【1】【3】【1】	–	–
	Display language	【1】【1】【0】	<English> Español	–
	Display (Change language)			
	Erase all msg. (msg.: messages)	【3】【2】【5】	–	●
	Intercom	【2】【7】【4】	–	–
	Key tone*4	【1】【6】【5】	<On> Off	–
/	LCD contrast (Display contrast)	【1】【4】【5】	Level 1–6 <3>	–

Operating unit	Feature	Feature code	Setting	System setting*1
🔧	Message alert	[3][4][0]	On <Off>	–
🔧	Play all msg. (msg.: messages)	[3][2][4]	–	–
🔧	Play new msg. (msg.: messages)	[3][2][3]	–	–
🔧	Pre-recorded (Reset to pre-recorded greeting)	[3][0][4]	–	●
🔧	Record greeting	[3][0][2]	–	●
🔧	Recording time	[3][0][5]	1min <3min> Greeting only	●
🔧	Register handset	[1][3][0]	–	–
🔧	Remote code	[3][0][6]	<111>	●
🔧	Ring count	[2][1][1]	Toll saver 2–7 rings <4>	●
🏠/🔧	Ringer tone*5, *6	[1][6][1]	**Base unit:** Tone <1>–6 **Handset**[*7]**:** Tone <1>–5 Melody 1–10	–
🏠/🔧	Ringer volume*8	[1][6][0]	**Base unit:** Level 1–<3>, Off **Handset:** Level 1–<6>, Off	–
🏠/🔧	Screen call	[3][1][0]	<On> Off	–
🔧	Set dial mode	[1][2][0]	<Tone> Pulse	●
🔧	Set flash time*9	[1][2][1]	80ms 90ms 100ms 110ms 160ms 200ms 250ms 300ms 400ms 600ms <700ms> 900ms	●
🔧	Set line mode*10	[1][2][2]	A <B>	●
🏠/🔧	Silent mode (On/Off)	[2][3][8]	On <Off>	–
🏠/🔧	Silent mode (Start/End)	[2][3][7]	<11:00 PM/06:00 AM>	–
🔧	Time adjust*11 (Caller ID subscribers only)	[2][2][6]	<Caller ID auto> Manual	●
🔧	VM tone detect (VM: Voice mail)	[3][3][2]	<On> Off	●
🔧	Voice prompt (Change language)	[1][1][2]	<English> Español	●

*1 If "System setting" column is checked, you do not need to program the same item using another unit.
*2 If you subscribe to a Caller ID service and want to view the caller's information after lifting up the handset to answer a call, turn off this feature.
*3 The base unit and cordless handset can display the Internet address where you can download the operating instructions or get further information for this product, using your computer.
*4 Turn this feature off if you prefer not to hear key tones while you are dialing or pressing any keys, including confirmation tones and error tones.
*5 If you subscribe to a distinctive ring service (such as IDENTA-RING), select a tone (base unit: tone 1 to 6/cordless handset: tone 1 to 5). If you select a melody, you cannot distinguish lines by their ringers.
*6 If you select one of the melody ringer tones, the ringer tone continues to play for several seconds even if the caller has already hung up. You may either hear a dial tone or no one on the line when you answer the call.
*7 The preset tones and melodies in this product are used with permission of © 2007 Copyrights Vision Inc.
*8 When the ringer volume is turned off, 🔕 is displayed and the base unit and/or cordless handset do not ring for outside calls.
However even when the ringer volume is set to off:
– the base unit rings at the low level for intercom calls.
– the cordless handset rings at the lowest level for alarm and intercom calls, and rings at the highest level for paging.
*9 The flash time depends on your telephone exchange or host PBX. Contact your PBX supplier if necessary. The setting should stay at "700ms" unless pressing **【FLASH】** fails to pick up the waiting call.
*10Generally, the line mode setting should not be adjusted. If "New Voice Mail" is not displayed, even when the message indication service is available, you need to change the line mode to "A".
*11This feature allows the unit to automatically adjust the date and time setting when caller information is received. To use this feature, set the date and time first.

7.1.3. Answering System Settings

Setting (default setting)	Remarks (Selectable options)
Answering system on/off (Answer On)	Answer On/Answer Off
Remote access code (111)	000~999
Number of rings (4 Rings)	Toll saver/2 to 7 Rings
Caller's recording time (3 Minutes)	1 Minute/3 Minutes/Greeting only
Call screening (On)	On/Off

7.2. Registering a Cordless Handset to a Base Unit

The supplied cordless handset and base unit are pre-registered. If for some reason the cordless handset is not registered to the base unit, re-register the cordless handset.

1 **Cordless Handset:**
[MENU] → [#][1][3][0]

2 **Base unit:**
Press and hold **[LOCATOR]** for 5 seconds until the registration tone sounds.
- If all registered cordless handsets start ringing, press the same button to stop. Then repeat from step1.
- The next step must be completed within 90 seconds.

3 **Cordless Handset:**
Press **[OK]**, then wait until a long beep sounds.

Note:
- When you purchase an additional cordless handset, refer to the additional cordless handset's installation manual for registration.

7.2.1. Deregistering a Cordless Handset

A cordless handset can cancel its own registration (or the registration of another cordless handset) that is stored in the base unit.

This allows the cordless handset to end its wireless connection with the system.

Cordless Handset

1 **[MENU] → [#][1][3][1]**
2 **[3][3][5] → [OK]**
3 Select the cordless handset you want to cancel by pressing the desired cordless handset(s) number.
- The selected cordless handset number(s) flashes.
- To cancel a selected cordless handset number, press the number again. The number will stop flashing.

4 **[OK] → [▼]/[▲]: "Yes" → [SELECT]**
- When you cancel a different cordless handset than the one you are now using, press **[OFF]** to exit.

7.3. Copying Phonebook Entries

You can copy phonebook entries from the base unit to a cordless handset , and vice versa.

Important:
- Groups (including their names and ringer tones) are not copied.
- You cannot make phonebook copy between cordless handsets directly.
  However it is possible by first copying a cordless handset's phonebook entries to the base unit, then copying the base unit's phonebook entries to another cordless handset.

7.3.1. Copying All Entries

Base unit

1 **[📖] → [MENU]**
2 **[▼]/[▲]: "Copy all" → [SELECT]**
3 Enter the handset number to copy to.
- When all entries have been copied, "Completed" is displayed.

4 **[■]** (EXIT)

Cordless handset

1 **[📖] → [MENU]**
2 **[▼]/[▲]: "Copy all to base" → [SELECT]**
- When all entries have been copied, "Completed" is displayed.

3 **[OFF]**

7.4. Dialing Mode

If you cannot make calls, change this setting according to your telephone line service.
The default setting is "Tone".
"Tone": For tone dial service.
"Pulse": For rotary/pulse dial service.

Cordless handset

1 [MENU] → [#][1][2][0]
2 [▼]/[▲]: Select the desired setting.
3 [SAVE] → [OFF]

7.5. Error Messages

If the unit detects a problem, one of the following messages is shown on the display.

Display message	Cause/solution
Busy	• The called unit is in use. • Other units are in use and the system is busy. Try again later. • The cordless handset you are using is too far from the base unit. Move closer and try again. • The cordless handset's registration may have been canceled. Re-register the cordless handset.
Check tel line	• The supplied telephone line cord has not been connected yet or not connected properly. Check the connections.
Error!!	• Recording was too short. Try again.
Failed	• Phonebook copy failed. Confirm the other unit (the receiver) is in standby mode and try again.
Incomplete	• Phonebook copy is incomplete. The receiver's phonebook memory is full. Erase the unnecessary phonebook entries from the other unit (the receiver) and try again.
Memory full	• The phonebook memory is full. Erase unnecessary entries. • Message memory is full. Erase unnecessary messages.
Messages full	• Message memory is full. Erase unnecessary messages.
No link. Reconnect base AC adaptor.	• The cordless handset has lost communication with the base unit. Move closer to the base unit and try again. • Unplug the base unit's AC adaptor to reset the unit. Reconnect the adaptor and try again. • The cordless handset's registration may have been canceled. Re-register the cordless handset.
Requires subscription to Caller ID.	• You must subscribe to a Caller ID service. Once you receive caller information after subscribing to a Caller ID service, this message will not be displayed.
Use rechargeable battery.	• A wrong type of battery such as Alkaline or Manganese was inserted. Use only the rechargeable Ni-MH batteries.

7.6. Troubleshooting

If you still have difficulties after following the instructions in this section, disconnect the base unit's AC adaptor, then reconnect the base unit's AC adaptor. Remove the batteries from the cordless handset, and then insert the batteries into the cordless handset again.

General use

Problem	Cause/solution
The unit does not work.	• Make sure the batteries are installed correctly. • Fully charge the batteries. • Check the connections. • Unplug the base unit's AC adaptor to reset the unit. Reconnect the adaptor and try again. • The cordless handset has not been registered to the base unit. Register the cordless handset.
I cannot hear a dial tone.	• The base unit's AC adaptor or telephone line cord is not connected. Check the connections. • If you are using a splitter to connect the unit, remove the splitter and connect the unit to the wall jack directly. If the unit operates properly, check the splitter. • Disconnect the base unit from the telephone line and connect the line to a known working telephone. If the working telephone operates properly, contact our service personnel to have the unit repaired. If the working telephone does not operate properly, contact your service provider/telephone company.
The indicator on the cordless handset flashes slowly.	• New messages have been recorded. Listen to the new messages. • New voice mail messages have been recorded. Listen to the new voice mail messages.

Programmable settings

Problem	Cause/solution
The display is in a language I cannot read.	• Change the display language.
While programming, the unit starts to ring.	• A call is being received. Answer the call and start again after hanging up.
I cannot register a cordless handset to a base unit.	• The maximum number of cordless handsets (6) is already registered to the base unit. Cancel unused cordless handset registrations from the base unit. • Place the cordless handset and the base unit away from other electrical appliances.

Battery recharge

Problem	Cause/solution
The handset beeps and/or 🔋 flashes.	• Battery charge is low. Fully charge the batteries.
I fully charged the batteries, but 🔋 still flashes or 🪫 is displayed.	• Clean the charge contacts and charge again. • It is time to replace the batteries.
I fully charged the batteries, but the operating time seems to be shorter.	• Clean the battery ends (⊕, ⊖) and the charge contacts with a dry cloth and charge again.

Making/answering calls, intercom

Problem	Cause/solution
Y is flashing.	• The cordless handset is too far from the base unit. Move closer. • The base unit's AC adaptor is not properly connected. Reconnect AC adaptor to the base unit. • You are using the base unit or cordless handset in an area with high electrical interference. Re-position the base unit and use the cordless handset away from sources of interference. • The cordless handset is not registered to the base unit. Register it.
Noise is heard, sound cuts in and out.	• You are using the base unit or cordless handset in an area with high electrical interference. Re-position the base unit and use the handset away from sources of interference. • Move closer to the base unit. • If you use a DSL/ADSL service, we recommend connecting a DSL/ADSL filter between the base unit and the telephone line jack. Contact your DSL/ADSL provider for details.
The base unit and/or cordless handset does not ring.	• The ringer volume is turned off. Adjust the ringer volume. • Silent mode is turned on. Turn it off.
I cannot make a call.	• The dialing mode may be set incorrectly. Change the setting. • The cordless handset is too far from the base unit. Move closer and try again.
I cannot make long distance calls.	• Make sure that you have long distance service.

Caller ID

Problem	Cause/solution
Caller information is not displayed.	• You must subscribe to Caller ID service. Contact your service provider/telephone company for details. • If your unit is connected to any additional telephone equipment such as a Caller ID box or cordless telephone line jack, plug the unit directly into the wall jack. • If you use a DSL/ADSL service, we recommend connecting a DSL/ADSL filter between the base unit and the telephone line jack. Contact your DSL/ADSL provider for details. • The name display service may not be available in some areas. Contact your service provider/telephone company for details. • Other telephone equipment may be interfering with this unit. Disconnect the other equipment and try again.

Problem	Cause/solution
Caller information is displayed late.	• Depending on your service provider/telephone company, the unit may display the caller's information at the 2nd ring or later. • Move closer to the base unit.
The caller list/incoming phone numbers are not edited automatically.	• The Caller ID number auto edit feature is turned off. Turn it on and try again. • You need to call back the edited number to activate Caller ID number auto edit.
I cannot dial the phone number edited in the caller list.	• The phone number you dialed might have been edited incorrectly (for example, the long distance "1" or the area code is missing). Edit the phone number with another pattern.
Time on the unit has shifted.	• Incorrect time information from incoming Caller ID changes the time. Set the time adjustment to **"Manual"** (off).
The 2nd caller's information is not displayed during an outside call.	• In order to use Caller ID, call waiting, or Call Waiting Caller ID (CWID), you must first contact your service provider/telephone company and subscribe to the desired service. After subscribing, you may need to contact your service provider/telephone company again to activate this specific service, even if you already subscribed to both Caller ID and Call Waiting with Caller ID services (CWID).

Answering system

Problem	Cause/solution
The unit does not record new messages.	• The answering system is turned off. Turn it on. • The message memory is full. Erase unnecessary messages. • The recording time is set to **"Greeting only"**. Change the setting. • If you subscribe to a voice mail service, messages are recorded by your service provider/telephone company, not your telephone. Change the unit's number of rings setting or contact your service provider/telephone company
I cannot operate the answering system.	• Someone is using the unit. Wait for the other user to finish. • A caller is leaving a message. Wait for the caller to finish. • The cordless handset is too far from the base unit. Move closer.
I cannot operate the answering system remotely.	• You are entering the wrong remote access code. If you forgot the remote access code, enter the remote access code setting to check your current code. • Press each key firmly. • The answering system is turned off. Turn it on. • You are using a rotary/pulse telephone. Try again using a touch-tone phone.
While recording a greeting message or listening to messages, the unit rings and the operation stops.	• A call is being received. Answer the call and try again later.

Liquid damage

Problem	Cause/solution
Liquid or other form of moisture has entered the base unit/handset.	• Disconnect the AC adaptor and telephone line cord from the base unit. Remove the batteries from the cordless handset and leave to dry for at least 3 days. After the base unit/handset are completely dry, reconnect the AC adaptor and telephone line cord. Insert the batteries and charge fully before use.

Caution:

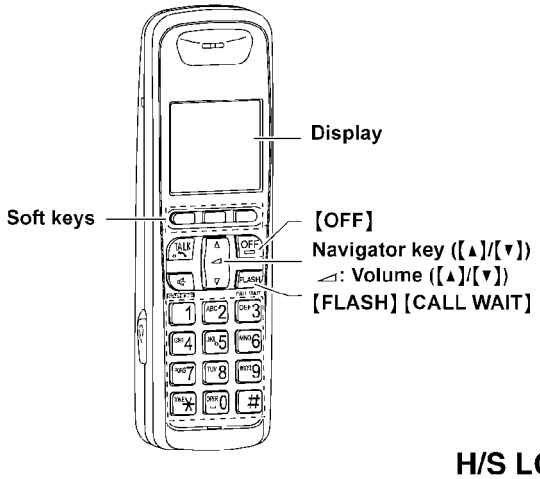
• To avoid permanent damage, do not use a microwave oven to speed up the drying process.

8 Service Mode

8.1. Engineering Mode

8.1.1. Base Unit

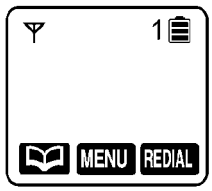
Important:
Make sure the address on LCD is correct when entering new data. Otherwise, you may ruin the unit.



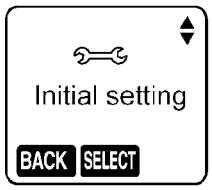
H/S key operation

H/S LCD

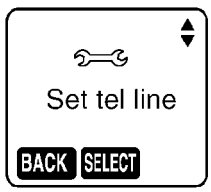
1). Press " MENU " (middle soft key).



2). Select "Initial setting" by Navigator key then press " SELECT "(middle soft key).

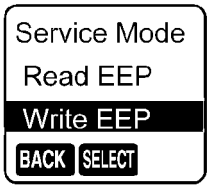


3). Select "Set tel line" by Navigator key then press " SELECT "(middle soft key).



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

5). Select "Write EEP" by Navigator key.



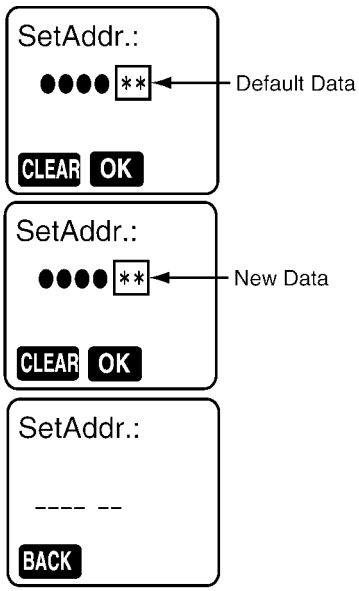
6). Select " SELECT "(middle soft key).

7). Enter "●", "●", "●", "●" (Address). (*1)

8). Enter "∗", "∗" (New Data). (*1)

9). Press " OK " (middle soft key).
A long confirmation beep will be heard.

10). 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.)

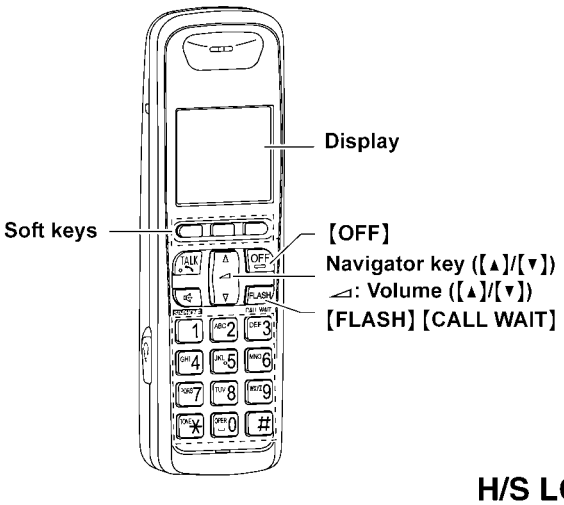
Items	Address(*1)	Default Data	New Data		Remarks
Frequency	00 01~00 02	50 03	-	-	Use these items in a **READ-ONLY** mode to confirm the contents. Careless rewriting may cause serious damage to the system.
ID	00 10~00 14	Given value	-	-	

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	[FLASH] + 0
1	1	B	[FLASH] + 1
.	.	C	[FLASH] + 2
.	.	D	[FLASH] + 3
.	.	E	[FLASH] + 4
9	9	F	[FLASH] + 5

8.1.2. Cordless Handset

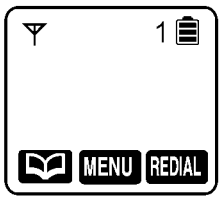
Important:
Make sure the address on LCD is correct when entering new data. Otherwise, you may ruin the unit.



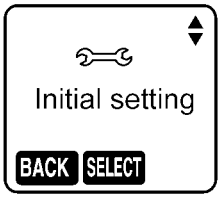
H/S key operation

H/S LCD

1). Press " MENU " (middle soft key).

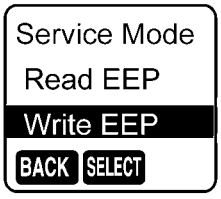


2). Select "Initial setting" by Navigator key then press " SELECT "(middle soft key).



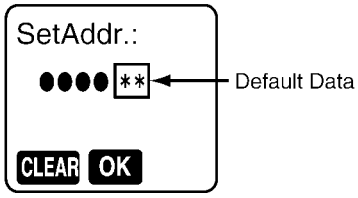
2). Enter "7", "2", "6", "2", "7", "6", "6", "4".
Note: 7262 7664 = PANA SONI
(see letters printed on dial keys)

3). Select "Write EEP" by Navigator key.

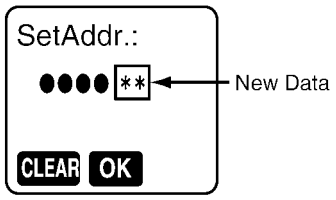


4). Select " SELECT "(middle soft key).

5). Enter "●", "●", "●", "●" (Address). (*1)



6). Enter "＊", "＊" (New Data). (*1)



7). Press " OK " (middle soft key).
A long confirmation beep will be heard.

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 (Cordless Handset)

ex.)

Items	Address	Default Data	New Data	Possible Adjusted Value MAX (hex)	Possible Adjusted Value MIN (hex)	Remarks
Battery Low	00 04	70	-	-	-	(*2)
Frequency	00 01~00 02	70 02	-	-	-	
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	[FLASH] + 0
1	1	B	[FLASH] + 1
.	.	C	[FLASH] + 2
.	.	D	[FLASH] + 3
.	.	E	[FLASH] + 4
9	9	F	[FLASH] + 5

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

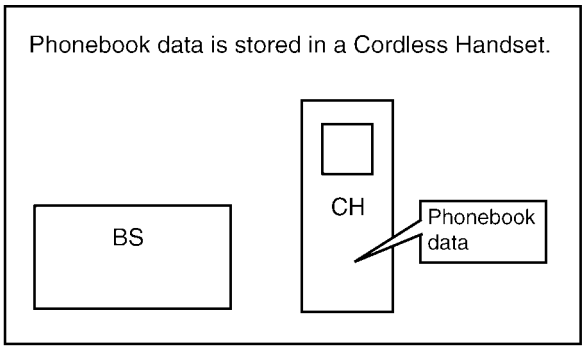
8.2. Copying Phonebook Items when Repairing

You can copy the base unit (Maximum number of contacts is 100.) phonebook to another (compatible Panasonic) cordless handset. This will help to save the original phonebook data which the customer has registered.

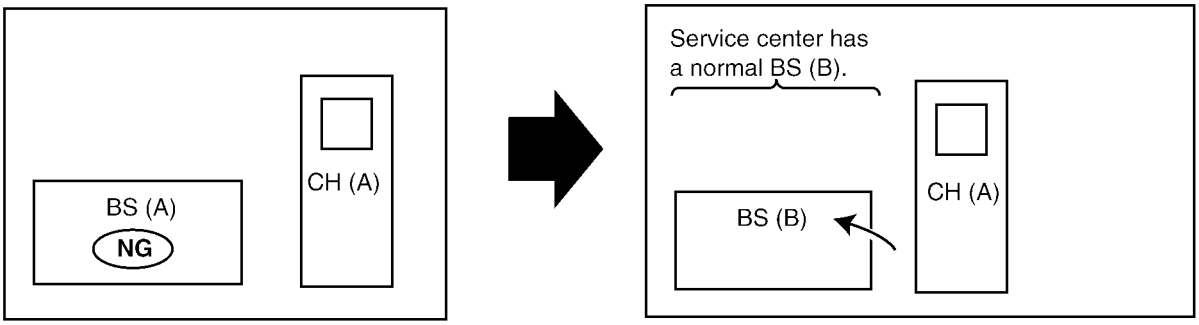
* You cannot copy the base unit phonebook to another base unit.

Available models: KX-TG1061/KX-TG1062

Refer to the following procedures.

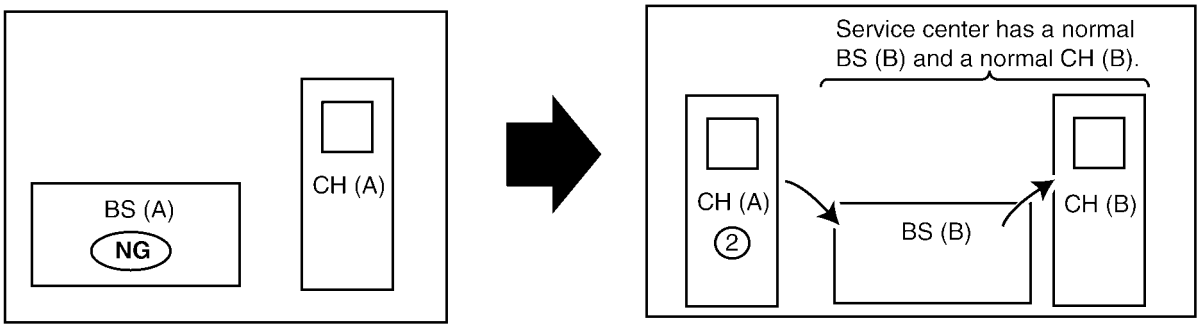


Case 1: A base unit has a defect.
(Replacing a base unit PCB etc...)



1. Register CH (A) to BS (B).
   CH (A) is normal, therefore no need to copy the phonebook data.

Case 2: A base unit has a defect.
(Replacing both a base unit and a Cordless Handset)

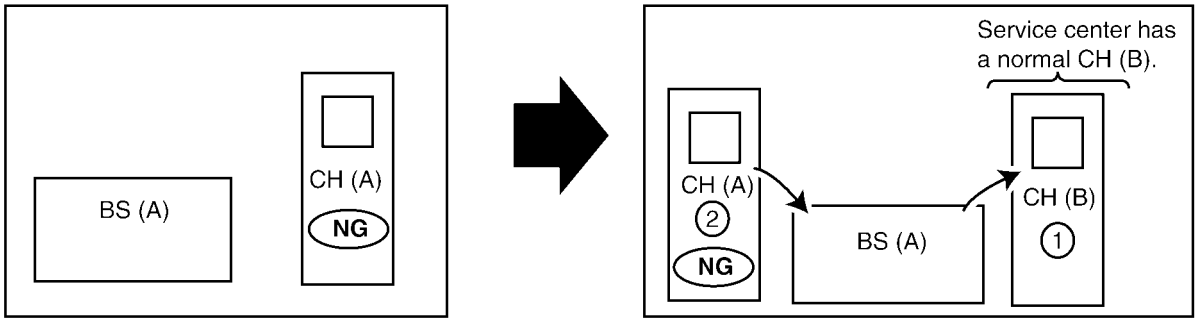


1. Register CH (A) to BS (B) as a handset no. 2.
2. Copy the phonebook data from CH (A) to BS (B) then copy the phonebook data from BS (B) to CH (B).
3. Cancel the CH 2 (CH (A)).

Note:

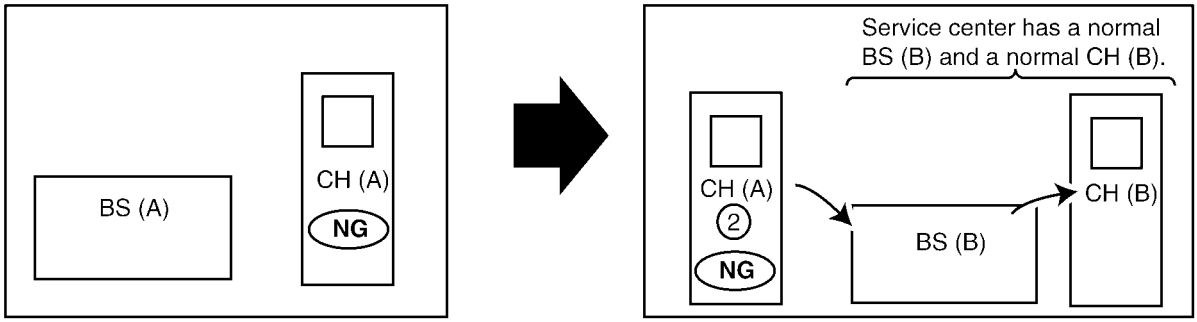
- BS=Base Unit , CH=Cordless Handset
- If the max number of Cordless Handsets are already registered to the base unit, a new Cordless Handsets cannot be registered.
- To register the Cordless Handsets, refer to **Registering a Cordless Handset to a Base Unit** (P.27)
- To cancel the Cordless Handsets, refer to **Deregistering a Cordless Handset** (P.27)
- To copy the Cordless Handsets phonebook, refer to **Copying Phonebook Entries** (P.27)

Case 3: A Cordless Handset has a defect.
(Radio transmission is functioning.)



1. Cancel CH (A).
2. Register CH (B) as a Cordless Handset no. 1.
3. Register CH (A) as a Cordless Handset no. 2.
4. Copy the phonebook data from CH (A) to BS (A)
   then copy the phonebook data from BS (A) to CH (B).
5. Cancel CH 2 (CH (A)).

Case 4: A Cordless Handset has a defect.
(Radio transmission is functioning.)



1. Register CH (A) as a Cordless Handset no. 2.
2. Copy the phonebook data from CH (A) to BS (B)
   then copy the phonebook data from BS (B) to CH (B).
3. Cancel CH 2 (CH (A)).

Note:

- BS=Base Unit , CH=Cordless Handset
- If the max number of Cordless Handsets are already registered to the base unit, a new Cordless Handsets cannot be registered.
- To register the Cordless Handsets, refer to **Registering a Cordless Handset to a Base Unit** (P.27)
- To cancel the Cordless Handsets, refer to **Deregistering a Cordless Handset** (P.27)
- To copy the Cordless Handsets phonebook, refer to **Copying Phonebook Entries** (P.27)

8.3. How to Clear User Setting

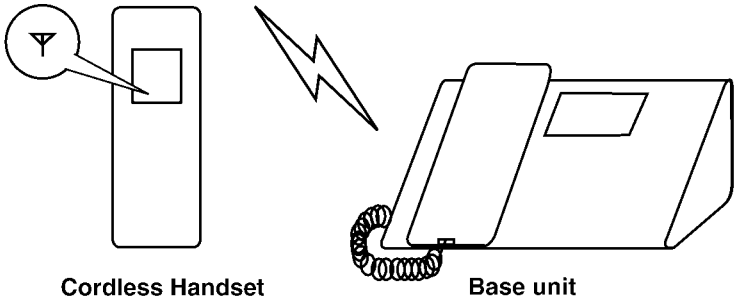
Units are reset to the Factory settings by this operation (Erase recorded voice messages, stored Phone numbers, Caller list and etc.)

Note:

- Some menus are not reset. Refer to **Operating Instructions** (P.22).
- The reset menus differ depending on the following operations.
- **This operation should not be performed for a usual repair.**

8.3.1. Resetting both base unit and Cordless Handset

Both the base unit and the registered cordless handset which you did the following steps ① to ④ are reset. Other registered cordless handset will not be reset.



Cordless Handset **Base unit**

① Connect the AC adaptor to the base unit and install the charged batteries into the cordless handset.

② Confirm the cordless handset is registered to the base unit (lights).
If the cordless handset is not registered to the base unit (is flashing), register it. (*1)

③ Lift the cordless handset and press 【**OFF**】 to put the cordless handset in standby mode.

④ Press 1, 5, 9 and * key of the cordless handset simultaneously until a confirmation tone is heard.

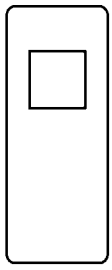
⑤ Disconnect the AC adaptor, then remove the battery.

Note:

(*1) Refer to **Registering a Cordless Handset to a Base Unit** (P.27).

8.3.2. Resetting only Cordless Handset

The only Cordless Handset is reset by doing the following steps ① to ④.



Cordless Handset

① Install the charged batteries into the cordless handset.

② Lift the cordless handset and press 【**OFF**】 to put the cordless handset in standby mode.

③ Press 3, 5, 7 and # key of the cordless handset simultaneously until a confirmation tone is heard. (*2)

④ Remove the battery.

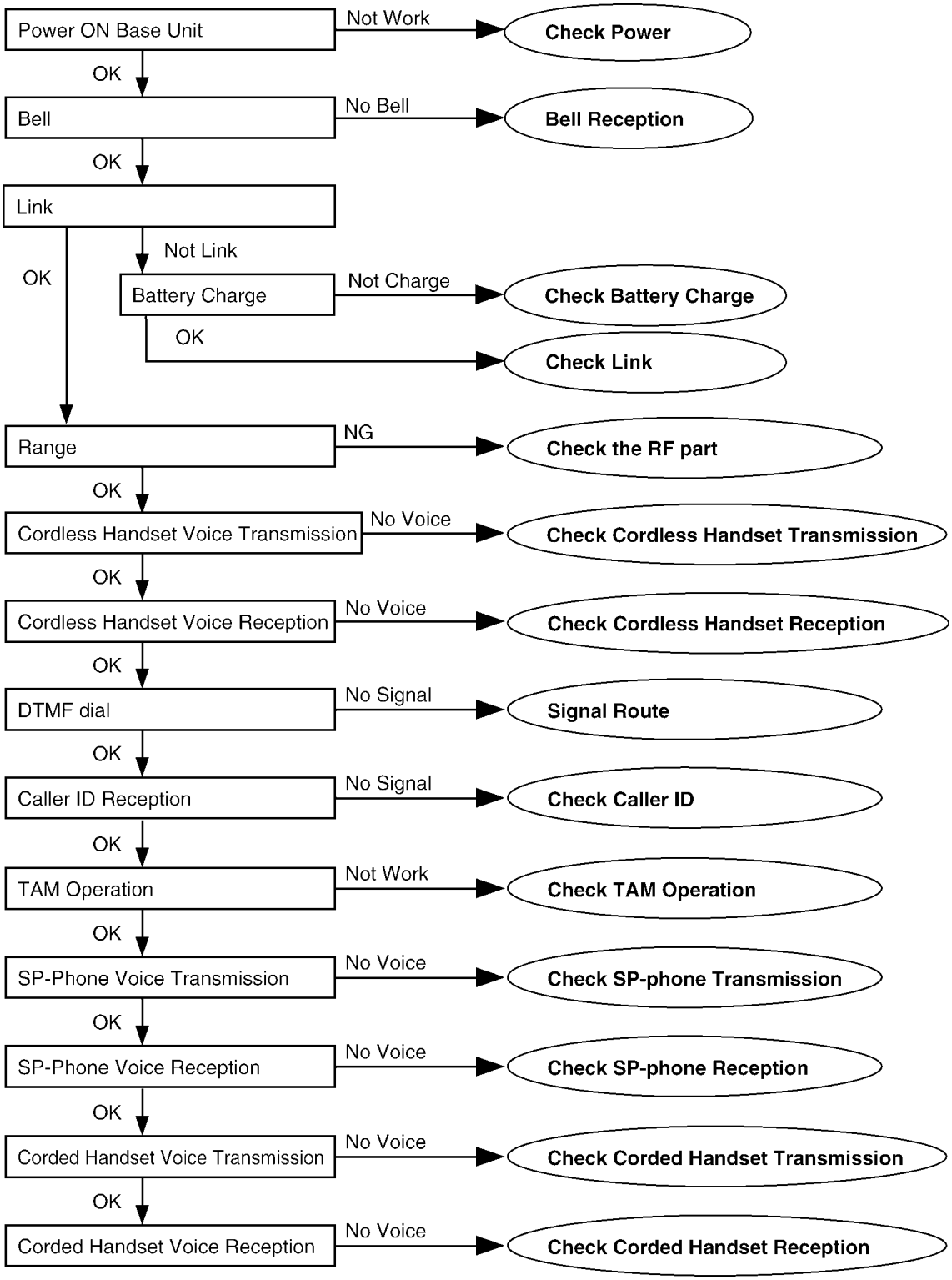
Note: (*2)

- The cordless handset registration to the base unit is cancelled.
- If the cordless handset needs to be registered to the base unit, refer to **Registering a Cordless Handset to a Base Unit** (P.27).
- If users do not bring the base unit with them, the registration procedure has to be done by users themselves.

9 Troubleshooting Guide

9.1. Troubleshooting Flowchart

Flow Chart



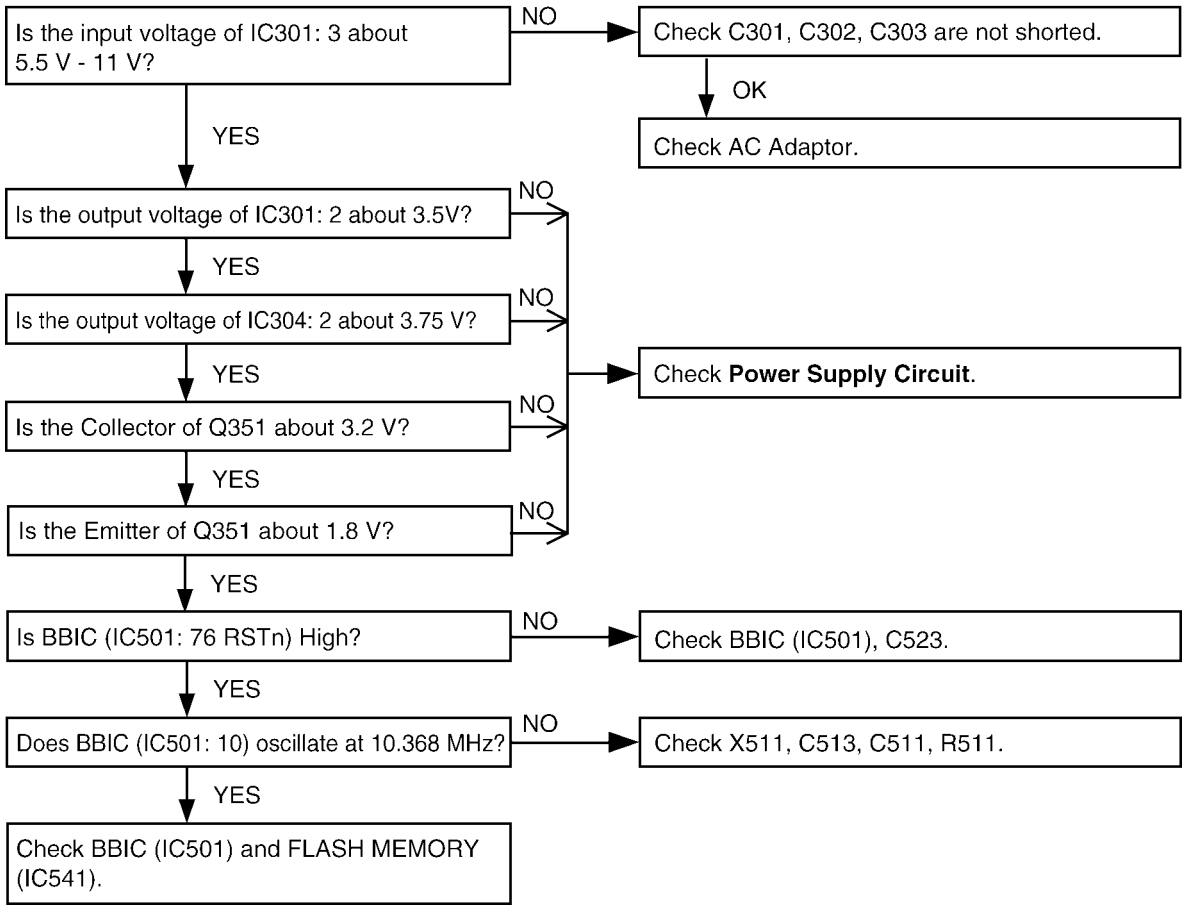
Cross Reference:

Check Power (P.40)
Bell Reception (P.49)
Check Battery Charge (P.41)
Check Link (P.42)
Check the RF part (P.46)
Check Cordless Handset Transmission (P.48)
Check Cordless Handset Reception (P.48)
Signal Route (P.16)
Check Caller ID (P.48)
Check TAM Operation (P.50)
Check SP-phone Transmission (P.50)
Check SP-phone Reception (P.50)

9.1.1. Check Power

9.1.1.1. Base Unit

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



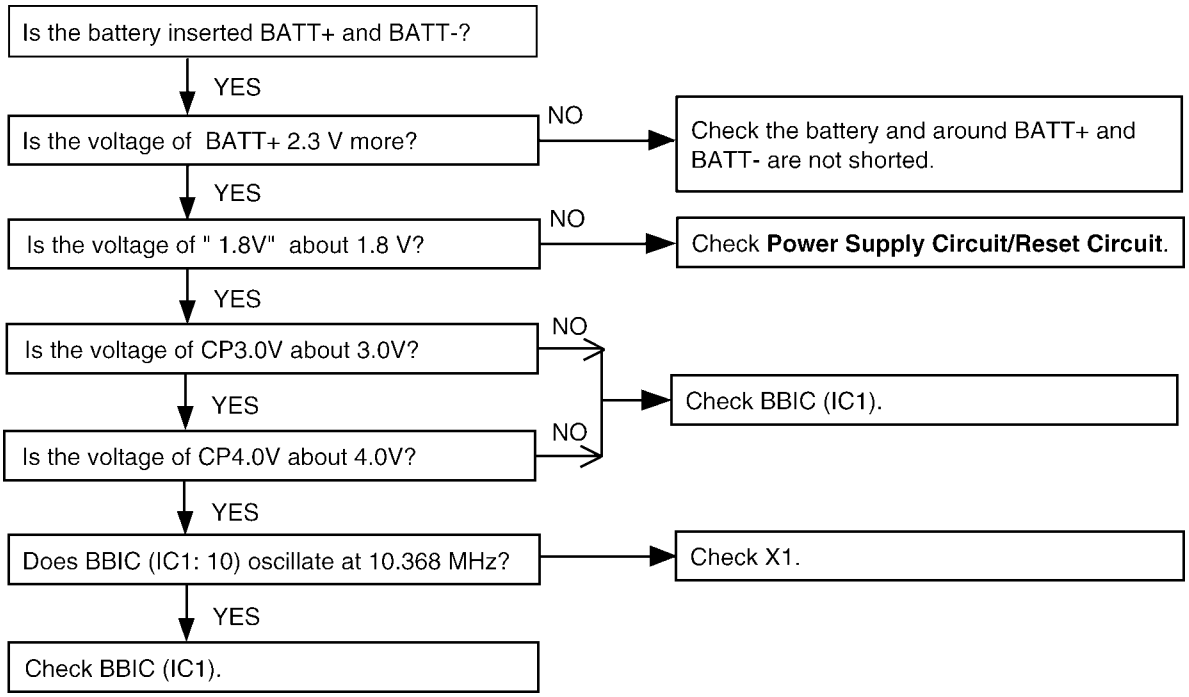
Cross Reference:

Power Supply Circuit (P.10)

Note:

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

9.1.1.2. Cordless Handset

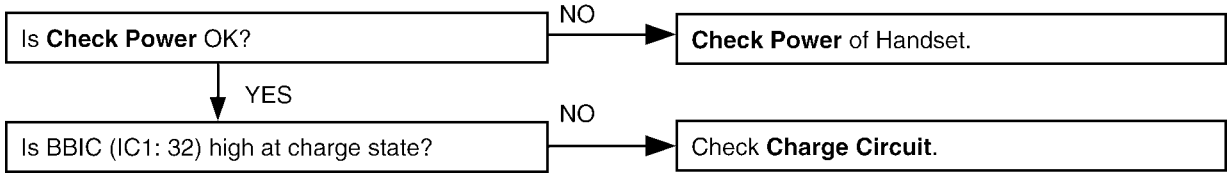


Cross Reference:

Power Supply Circuit/Reset Circuit (P.14)

9.1.2. Check Battery Charge

9.1.2.1. Cordless Handset

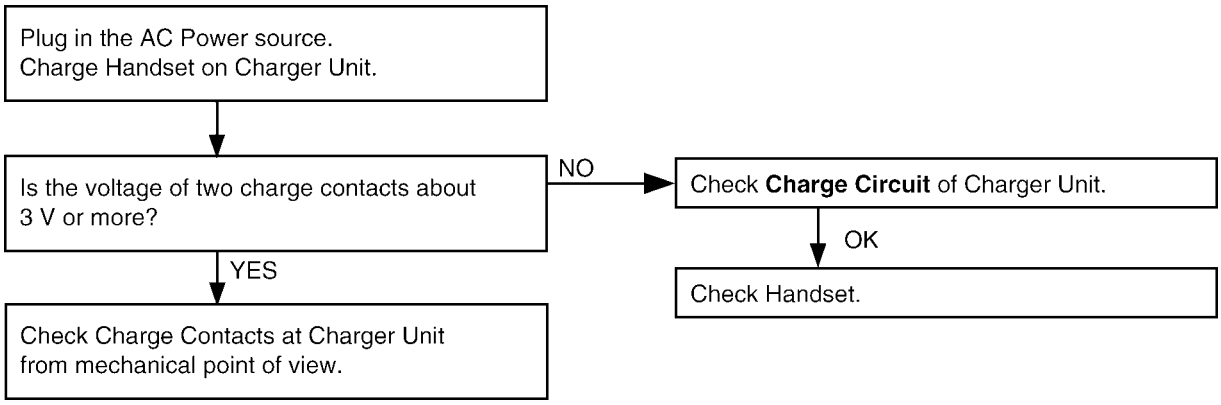


Cross Reference:

Check Power (P.40)

Charge Circuit (P.14)

9.1.2.2. Charger Unit

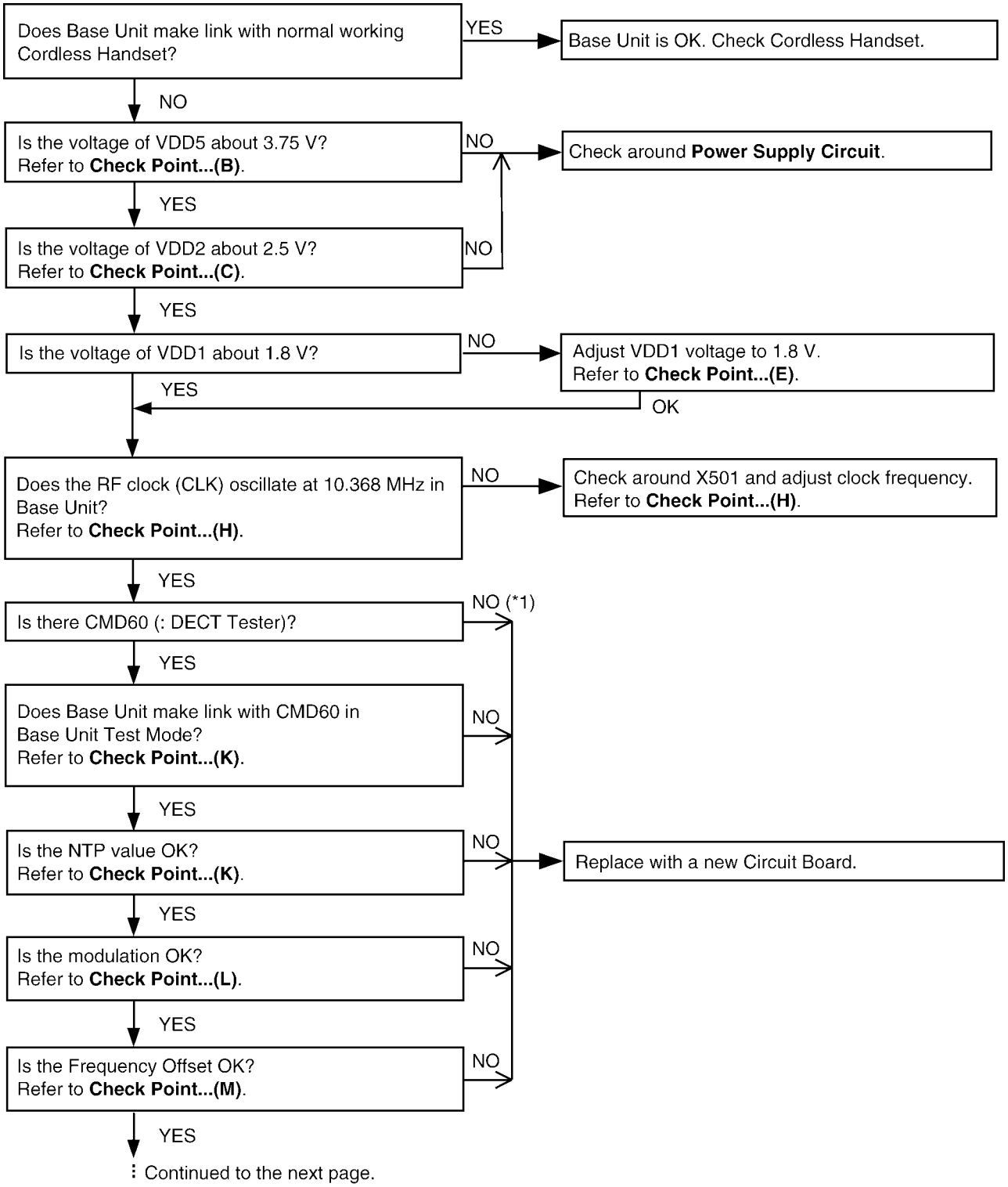


Cross Reference:

Charge Circuit (P.14)

9.1.3. Check Link

9.1.3.1. Base Unit



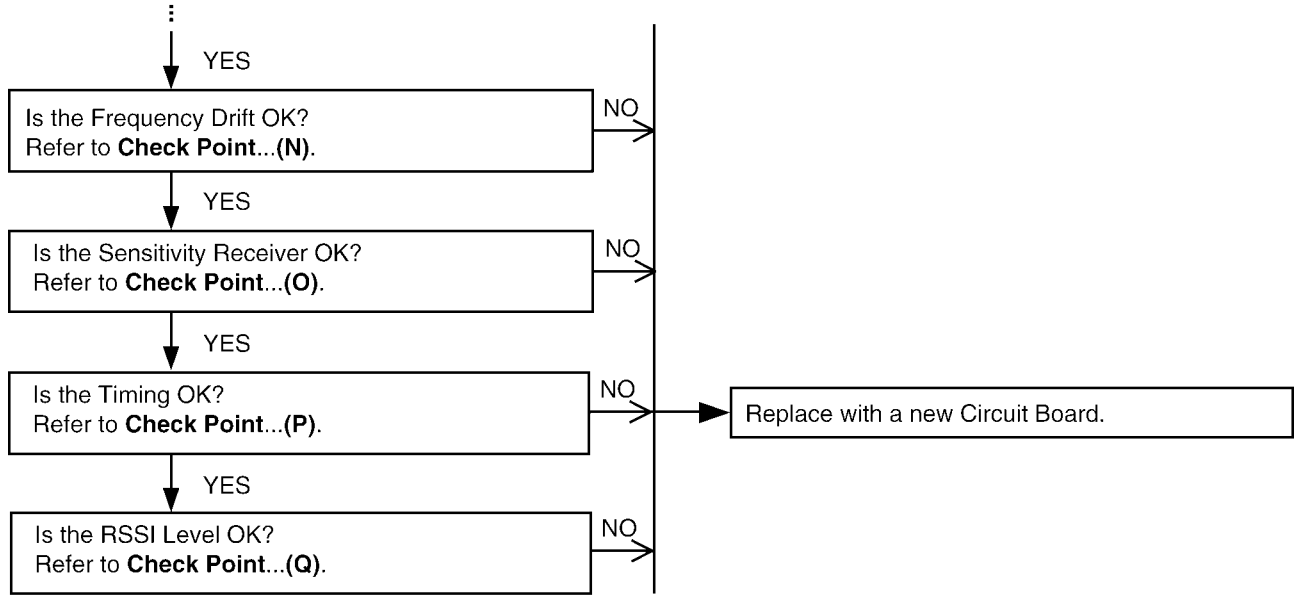
Cross Reference:

Power Supply Circuit (P.10)

Check Point (Base Unit) (P.51)

Note:

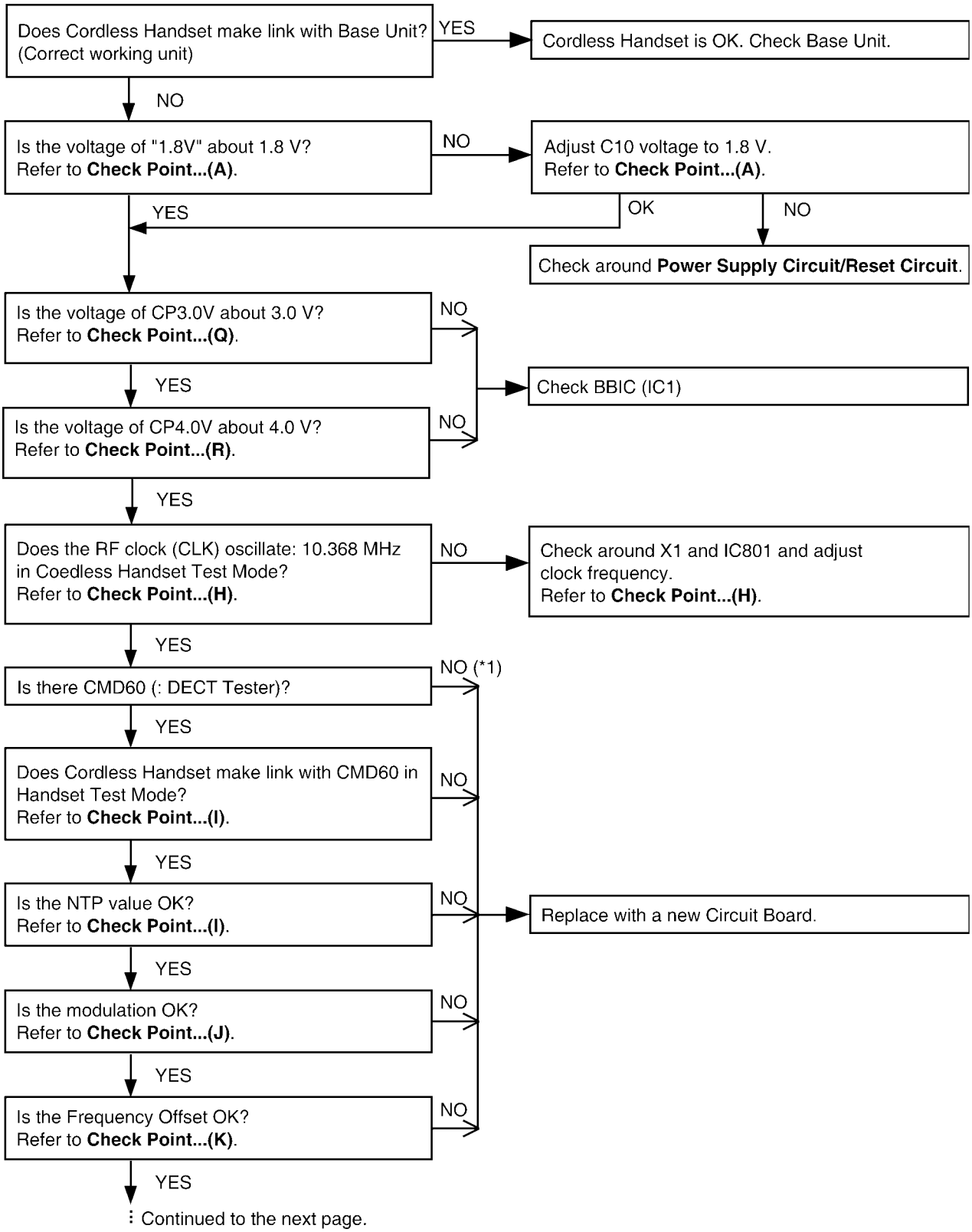
(*1) Refer to **Troubleshooting by Symptom (Base Unit and Charger Unit)** (P.51).



Cross Reference:

Check Point (Base Unit) (P.51)

9.1.3.2. Cordless Handset



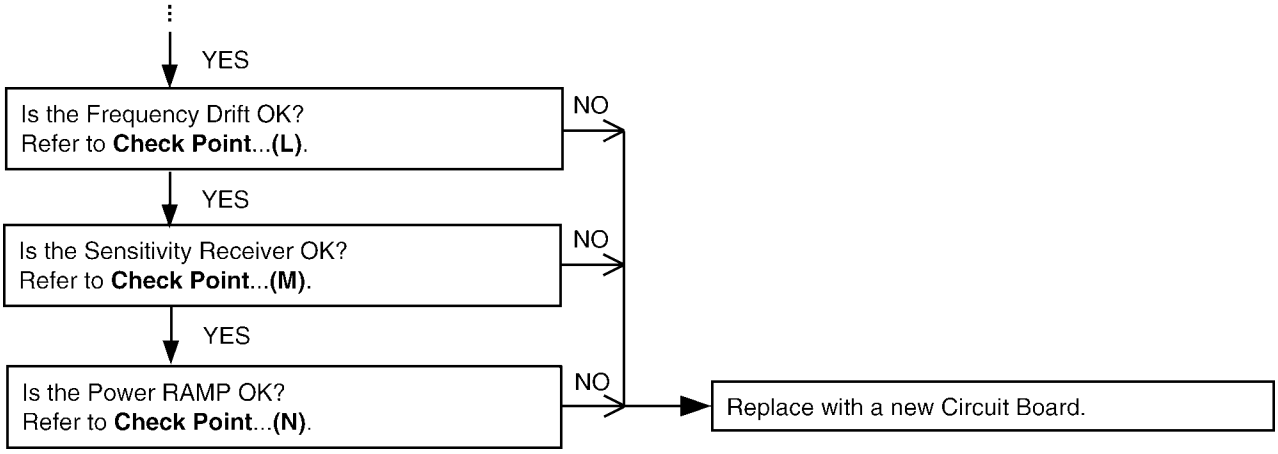
Cross Reference:

Power Supply Circuit/Reset Circuit (P.14)

Check Point (Cordless Handset) (P.55)

Note:

(*1) Refer to **Troubleshooting by Symptom (Cordless Handset)** (P.55).



Cross Reference:

Check Point (Cordless Handset) (P.55)

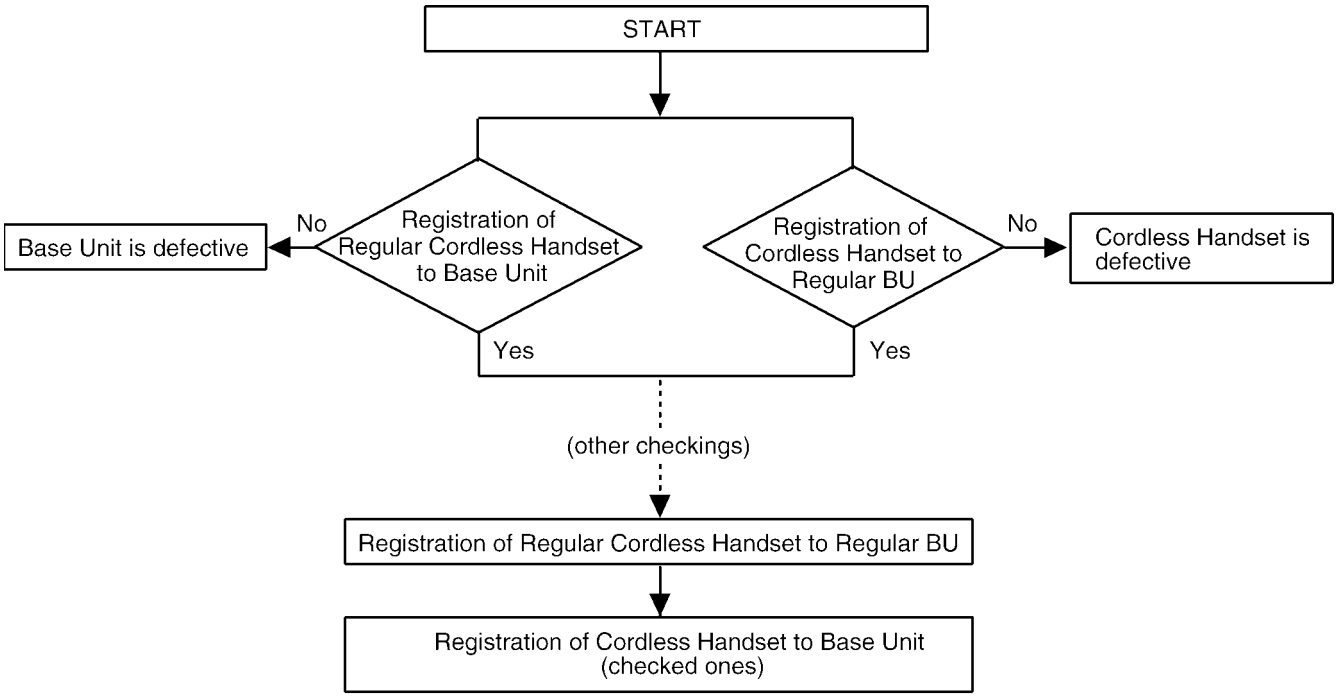
9.1.4. Check the RF part

9.1.4.1. Finding out the Defective part

1. Prepare Regular CH (Cordless Handset) and Regular BU (Base unit).
2. a. Re-register regular CH (Normal mode) to Base Unit (to be checked).
   If this operation fails in some ways, the Base Unit is defective.
   b. Re-register Cordless Handset (to be checked) to regular BU (Normal mode).
   If this operation fails in some ways, the Cordless Handset is defective.

After All the Checkings or Repairing

1. Re-register the checked Cordless Handset to the checked Base Unit, and Regular CH to Regular BU.

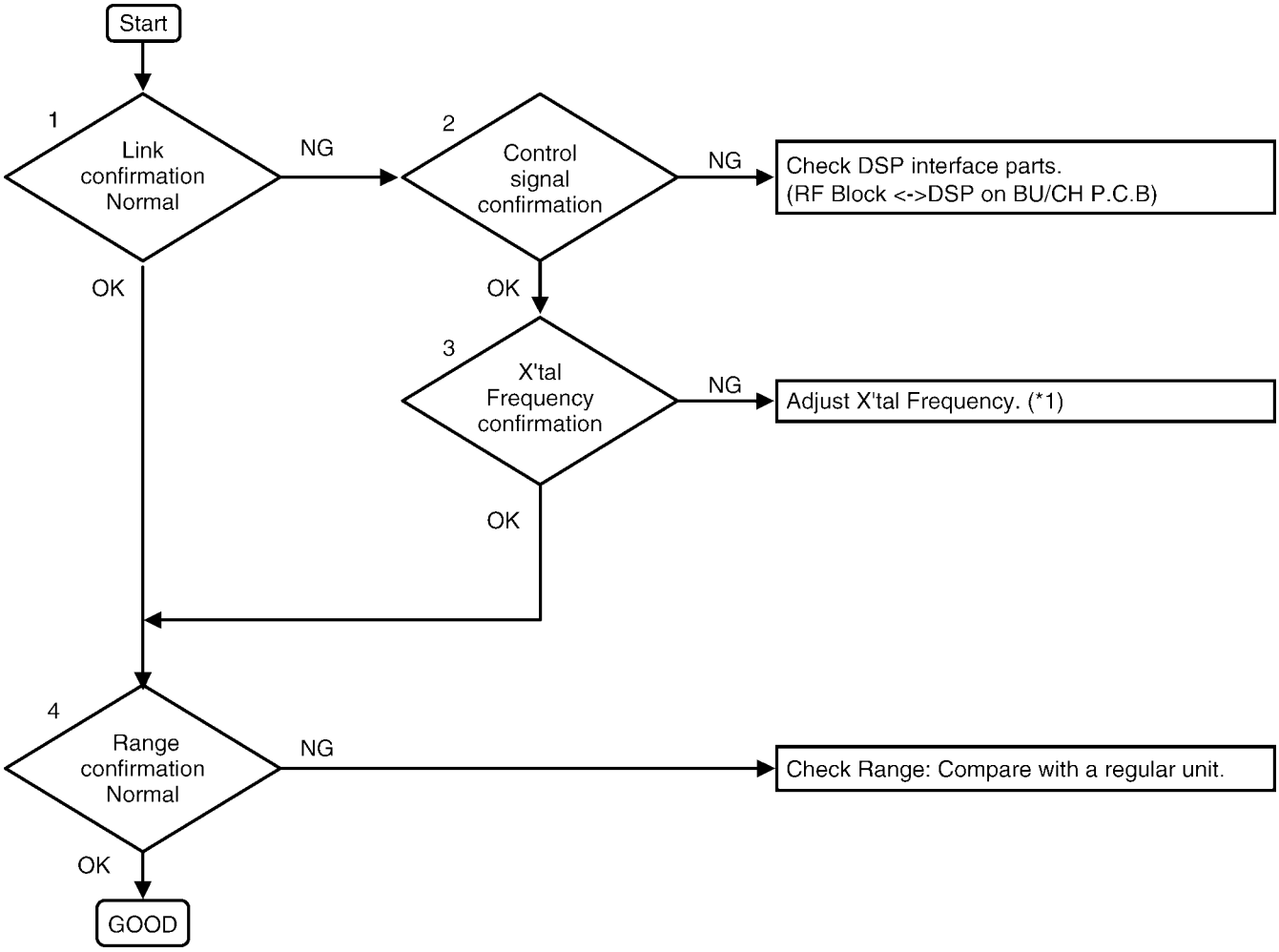


Note:

If you need to register a Cordless Handset, refer to **Registering a Cordless Handset to a Base Unit** (P.27)50

9.1.4.2. RF Check Flowchart

Each item (1 ~ 4) of RF Check Flowchart corresponds to **Check Table for RF part** (P.48).
Please refer to the each item.



Note:

(*1) Base unit - refer to **(H)** of **Check Point (Base Unit)** (P.51)

(*2) Cordless Handset - refer to **(J)** of **Check Point (Cordless Handset)** (P.55)

9.1.4.3. Check Table for RF part

No.	Item	BU (Base Unit) Check	CH (Cordless Handset) Check
1	Link Confirmation Normal	1. Register Regular CH to BU (to be checked). (*1) 2. Press [Talk] key of the Regular HS to establish link.	1. Register CH (to be checked) to Regular BU. (*1) 2. Press [Talk] key of the CH to establish link.
2	Control signal confirmation	1. Check BBIC interface.	1. Check BBIC interface.
3	X'tal Frequency confirmation	1. Check X'tal Frequency. (*2) (10.368 MHz ± 100 Hz)	1. Check X'tal Frequency. (*3) (10.368 MHz ±100 Hz)
4	Range Confirmation Normal	1. Register Regular CH to BU (to be checked). (*1) 2. Press [Talk] key of the Regular CH to establish link. 3. Compare the range of the BU (being checked) with that of the Regular BU.	1. Register CH (to be checked) to Regular BU. (*1) 2. Press [Talk] key of the CH to establish link. 3. Compare the range of the CH (being checked) with that of the Regular CH.

Note:

(*1) Refer to **Registering a Cordless Handset to a Base Unit** (P.27)

(*2) Refer to **Adjustment Standard (Base Unit)** (P.67)

(*3) Refer to **Adjustment Standard (Cordless Handset)** (P.71)

9.1.5. Check Cordless Handset Transmission

Check MIC of Cordless Handset.

↓ OK

Check CDL TX (Cordless Handset) in **Signal Route**.

Cross Reference:

Signal Route (P.16)

9.1.6. Check Cordless Handset Reception

Check Cordless Handset Speaker in **How to Check the Portable Speaker or Receiver**.

↓ OK

Check CDL RX (Cordless Handset) in **Signal Route**.

Cross Reference:

How to Check the Cordless Handset Speaker or Receiver (P.75).

Signal Route (P.16)

9.1.7. Check Caller ID

Check Caller ID in **Signal Route**.

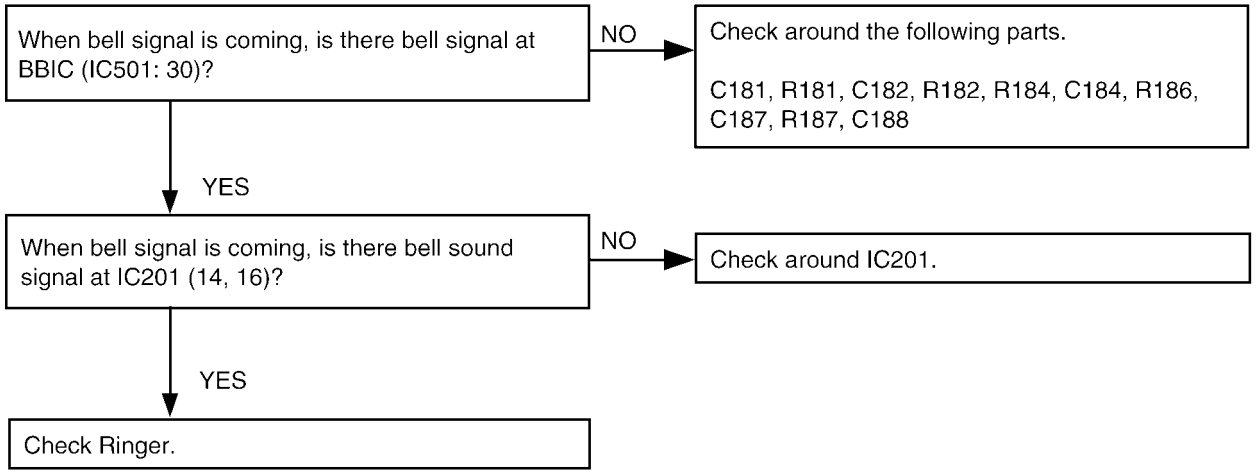
Cross Reference:

Signal Route (P.16)

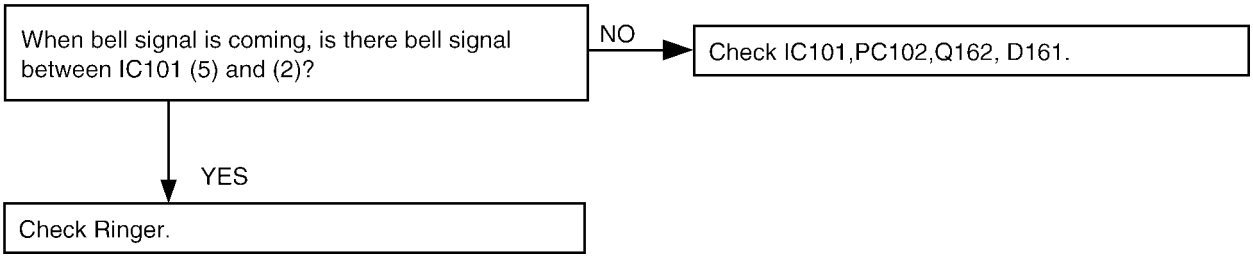
9.1.8. Bell Reception

9.1.8.1. Base Unit

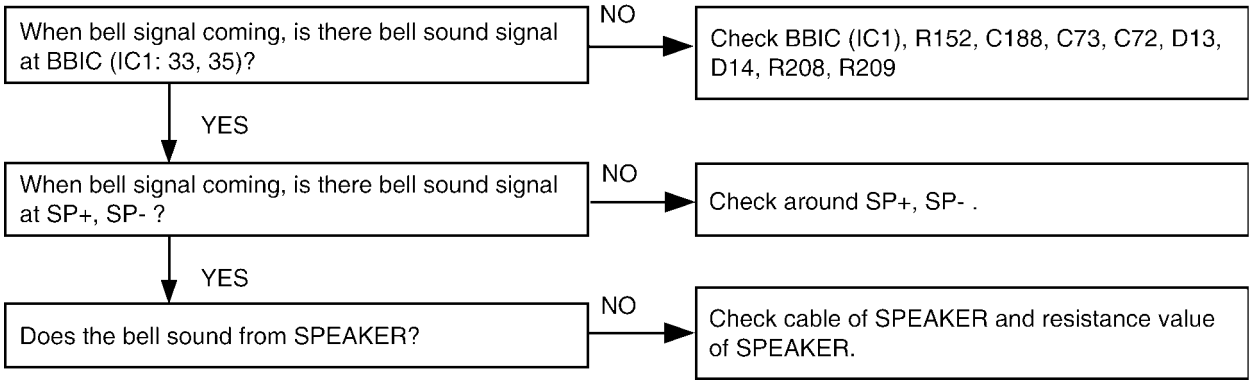
(A) When Power is normal:



(B) When Power fails:



9.1.8.2. Cordless Handset



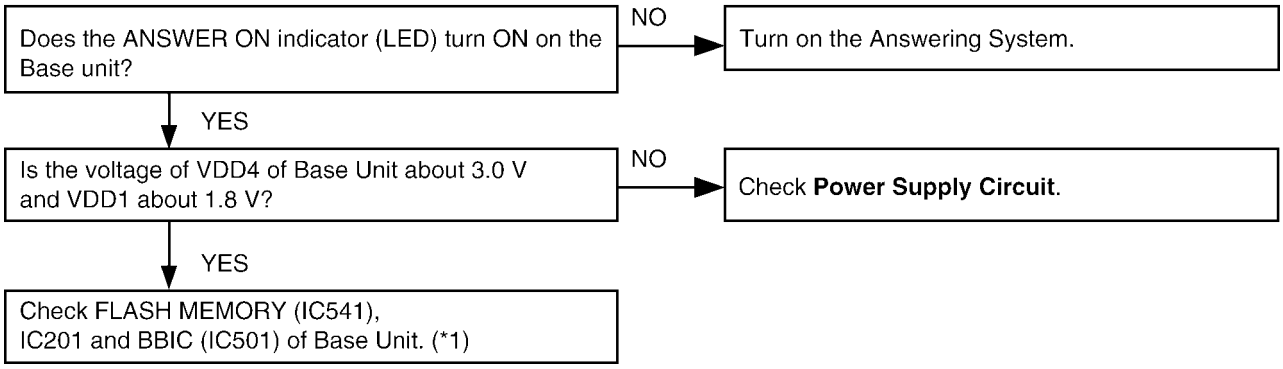
Cross Reference:

Telephone Line Interface (P.11)

Check Link (P.42)

How to Check the Cordless Handset Speaker or Receiver (P.75)

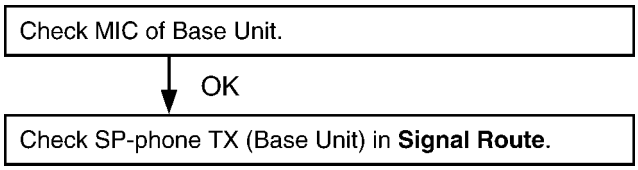
9.1.9. Check TAM Operation



Cross Reference:
Power Supply Circuit (P.10)

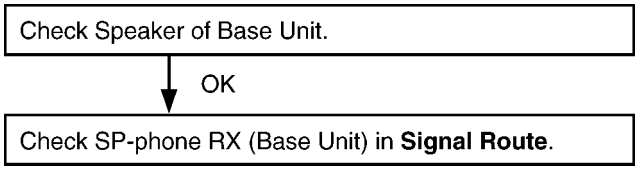
Note:
(*1) When replacing FLASH MEMORY (IC541), TAM data needs to be written to it. Refer to **Base Unit** (P.72) of **Things to Do after Replacing IC**.

9.1.10. Check SP-phone Transmission



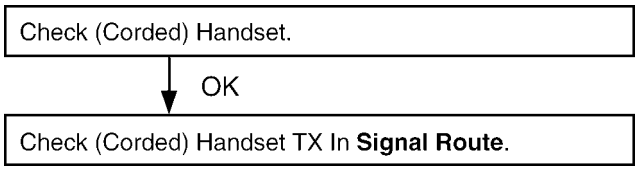
Cross Reference:
Signal Route (P.16)

9.1.11. Check SP-phone Reception



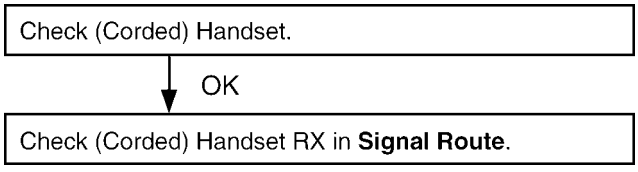
Cross Reference:
Signal Route (P.16)

9.1.12. Check Corded Handset Transmission



Cross Reference:
Signal Route (P.16)

9.1.13. Check Corded Handset Reception



Cross Reference:
Signal Route (P.16)

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 wether 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**)-(**J**).	Check item (**A**)-(**J**).
You cannot hear the caller's voice.	Check item (**A**)-(**J**), (**R**).	Check item (**A**)-(**J**), (**R**).
You cannot use cordless handset a little away from base unit even if the cordless handset is within range of the base unit.	-	Check item (**K**)-(**Q**).
The acoustic transmit level is high or low.	Check item (**R**).	Check item (**R**).
The acoustic reception level is high or low.	Check item (**R**).	Check item (**R**).
Base unit and cordless handset do not link each other.	Check item (**A**)-(**H**).	Check item (**A**)-(**H**), (**K**)-(**Q**).
TAM function does not work.	Check item (**S**).	Check item (**S**).
The unit cannot charge.	Check item Charger (**A**).	Check item Charger (**A**).

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.51)

9.2.1. Check Point (Base Unit)

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

Note:

After the measuring, suck up the solder of TP.

*: **How to install Batch file into P.C.** (P.66) is required beforehand.

The connections of simulator equipments are as shown in **Adjustment Standard (Base Unit)** (P.67).

	Items	Check Point	Procedure	Check or Replace Parts
(**A**)	3.5 V Supply Confirmation	VDD3	1. Confirm that the voltage between test point VDD3 and GND is 3.5 V ± 0.2 V.	IC301,R311, R312,C311, D301,F301
(**B**)	3.75 V Supply Confirmation	VDD5	1. Confirm that the voltage between test point VDD5 and GND is 3.75 V ± 0.2 V.	IC304,R384, R385,C385, D301,F301
(**C**)	2.5 V Supply Confirmation	VDD2	1. Confirm that the voltage between test point VDD2 and GND is 2.5 V ± 0.2 V.	D311,IC303
(**D**)	3.0 V Supply Confirmation	VDD4	1. Confirm that the voltage between test point VDD4 and GND is 3 V ± 0.2 V.	C504,R387, IC501
(**E**)	1.8 V Supply Confirmation	VDD1	1. Confirm that the voltage between test point VDD1 and GND is 1.8 V ± 0.1 V.	Q351,IC501
(**F**)*	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: 4F7F / program number: JDJ1AA	IC501
(**G**)*	EEPROM Confirmation	-	1. EEPROM Confirmation (Execute the command "sendchar EPV"). 2. Confirm the returned value. (Value for reference is written at"EEPROM C/SUM" in Software_Version_Table.xls) **Note:** "checksum" vary depending on the country version. You can find them in the batch file, PNZZ- mentioned in **The Setting Method of JIG (Base Unit)** (P.65).	IC561
(**H**)*	BBIC Clock Adjustment	CLK GND_C	1. Check X'tal Frequency. (10.368 MHz ± 100 Hz). Input Command "sendchar sfr", then you can confirm the current value. 2. If the frequency is not 10.368 MHz ± 100 Hz, Adjust the frequency of CLK executing the command "sendchar sfr XX YY (where XX YY is the value)" so that the reading of the frequency counter is 10.368000 MHz ± 20 Hz.	IC501,X511

	Items	Check Point	Procedure	Check or Replace Parts
(**I**)*	Hookswitch Check with DC Characteristics	-	1. Connect TIP/RING (Telephone Socket) to Tel-simulator which is connected with 600 Ω. 2. Set line voltage to 48 V and line current to 40 mA 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.	P101,D101, Q111,Q112, R110,R111, R112,R123, R115,R117, R118,D117
(**J**)	DTMF Generator Check	-	1. Connect TIP/RING (Telephone Socket) to DTMF tester. (Road=600 Ω) 2. Link cordless handset and push dial key. 3. Confirm DTMF character. 4. Confirm that the high Group is -6 dBm ± 2 dBm. 5. Confirm that the low Group is -8 dBm ± 2 dBm.	IC501,R154, R153,C151, Q131
(**K**)*	Transmitted Power Confirmation	ANT2	Remove the Antenna before starting step from 1 to 7. 1. Configure the DECT tester (CMD60) as follows; <Setting> • Test mode: FP • Traffic Carrier: 2 • Traffic Slot: 4 • Mode: Loopback • PMID: 00000 • RF LEVEL = -70 dBm. 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 “ANT2”. 7. Confirm that the NTP value at ANT is 16.5 dBm ~ 20.5 dBm.	DA802,C859, C803,DA801, C812,L802, IC801,IC501
(**L**)*	Modulation Check	ANT2	Follow steps 1 to 6 of **(K)**. 7.Confirm that the B-Field Modulation is -430 ~ -350/+350 ~ +430 kHz/div using data type Fig31.	DA802,C859, C803,DA801, C812,L802, IC801,IC501
(**M**)*	Frequency Offset Check	ANT2	Follow steps 1 to 6 of **(K)**. 7.Confirm that the frequency offset is < ± 10 kHz.	DA802,C859, C803,DA801, C812,L802, IC801,IC501
(**N**)*	Frequency Dirft Confirmation	ANT2	Follow steps 1 to 6 of **(K)**. 7.Confirm that the frequency drift is < ± 20 kHz/ms.	C803,DA801, C812,L802, IC801,IC501
(**O**)*	Sensitivity Receiver Confirmation	ANT2	Follow steps 1 to 6 of **(K)**. 7.Set DECT tester power to -88 dBm. 8.Confirm that the BER is < 1000 ppm.	DA802,C859, C803,DA801, C826,R807, C822,IC501
(**P**)*	Timing Confirmation	ANT2	(Through Cordless handset) Follow steps 1 to 6 of **(K)**. 7.Confirm that the Timing accuracy is < ± 2.0 ppm.	DA802,C859, C803,DA801, C812,L802, IC801,IC501
(**Q**)*	RSSI Level Confirmation	ANT2	Follow steps 1 to 6 of **(K)**. 7.Execute the command “readrssi”. 8. Confirm that the returned value is 22 ± A (hex).	DA802,C859, C803,DA801, C826,R807, C822,IC501

	Items	Check Point	Procedure	Check or Replace Parts
(**R**)	Audio Check	-	(Through Cordless handset) 1. Link with cordless handset. 2. Input -45 dBm/1kHz to MIC of cordless handset. Measure the Level at Line I/F and distortion level. 3. Confirm that the level is -15.5 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 cordless handset and distortion level (*Set Receive volume to second position from minimum). 5. Confirm that the level is -16.5 dBm ± 2 dBm and that the distortion level is < 5 % at Receiver (150 Ω Load).	P101,D101, Q111,Q112, R110,R112, R123,R115, R117,R118, D117Q131, C151,R153, R154,C152, C154,C155, R131,C142, R146,IC501
		-	(Through SP-PHONE) 1. Press Answer key ON. 2. Input -45dBm/1KHz to the terminal for SP_Phone MIC on the Base unit. 3. Measure and check the level at line I/F is -7dBm ± 2dBm and that the distortion level is < 5% at TEL Line (600 Ω). 4. Input -20dBm/1Khz to Line I/F. 5. Measure and check the level at the terminal for SP_Phone receiver of the Base unit is -15dBm ± 2dBm and that distortion level is <5% (Set Receivr volume set to 5th position from minimum, On the measurement connection.) Refer to **Adjustment Standard (Base Unit)** (P.67).	In addition to (through Cordless handset) IC201,L203, L204,L201, L201,SP, Mic,R233, R234,C232-234 D235,R232, C235,R236
		-	(Through Corded-Handset) 1. Set the Hook Switch to OFF-HOOK. 2. Input -45dBm/1KHz to the terminal for Corded-handset MIC on the Base unit. 3. Measure and check the level at line I/F is -21dBm ± 2dBm and that the distortion level is < 5% at TEL Line(600Ω) 4. Input -20dBm/1Khz to Line I/F. 5. Measure and check the level at terminal for Corded-Handset receiver on Base unit is -22dBm ± 2dBm and that distortion level is <5% (Set Receiver volume to second position from minimum, and load is 150Ω instead of Receiver.) Refer to **Adjustment Standard (Base Unit)** (P.67).	In addition to (through cordless handset) IC201,L221-L224 R213,R214 C213,C214 C224,C227 R222,R224 Corded-handset
(**S**)*	TAM Operation Confirmation	-	1. TAM Confirmation (Execute the command “sendchar_VPI”) 2. Confirm the returned Value (Value is “DB07AA 01”).	IC201,IC541 Q541

9.2.2. Check Point (Charger Unit)

	Items	Check Point	Procedure	Check or Replace Parts
(**A**)	Charging Check	-	1. Connect Charge Contact 10 Ω/2 W resistor between charge+ and charge-. 2. Measure and confirm voltage across the resistor is 3.1 V ± 0.3 V.	R1, D1, F1

Note:

After the measuring, suck up the solder of TP.

The connection of adjustment equipment is as shown in **Adjustment Standard (Charger Unit)** (P.68).

9.3. Troubleshooting by Symptom (Cordless 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**).
You cannot use cordless handset a little away from base unit even if the cordless handset is within range of the base unit.	-	Check item (**K**), (**O**).
Does not link between base unit and cordless handset.	Check item (**A**)-(**D**), (**J**).	Check item (**A**)-(**D**), (**J**)-(**O**).
The Audio level is high or low.	Check item (**Q**).	Check item (**Q**).
The SP-Phone level is high or low.	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 (Cordless Handset)** (P.55)

9.3.1. Check Point (Cordless Handset)

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

Note:

After the measuring, suck up the solder of TP.

*: **How to install Batch file into P.C.** (P.70) is required beforehand.

The connections of adjustment equipments are as shown in **Adjustment Standard (Cordless Handset)** (P.71).

	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 "VDD", then check the current value. 3. Adjust the 1.8V voltage of VDD1 executing command "VDD XX"(XX is the value).	IC1, Q2, C48, D1, C1, C44, R12, R45, C40, C45, F1
(**B**)*	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: 895A; program number: JDJ2AA	IC1, X1, RA61, R64, R66
(**C**)*	EEP-ROM Confirmation	-	1. EEPROM Confirmation (Execute the command "sendchar EPV"). 2. Confirm the returned value. (Value for reference is written at "EEPROM C/SUM" in Software_Version_Table.xls) **Note:** "checksum" vary depending on the country version. You can find them in the batch file, PNZZ- mentioned in **The Setting Method of JIG (Cordless Handset)** (P.69).	IC1, IC3, R40~R42, C172
(D)	Charge Control Check & Charge Current Monitor Check	-	1. Apply 3.5 V between CHG(+) and CHG(-) with DC power supply and set current limit to 250 mA. Confirm the indication of "charging" on LCD. 2. Confirm that the current limit LED of DC power supply is ON/OFF. Confirm it after waiting over 1 minute at least. 3. Decrease current limit of DC power supply to 100 mA. 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 Q9, D7, R6, R7, F1, C1, R2, R30, R31, R8, R45
(**E**)*	Charge Detection (OFF) Check	-	1. Stop supplying 3.5 V to CHG (+) and CHG (-). 2. Confirm the indication of "charging" has been cleared.	IC1, Q4 Q9, D7, R6, R7, F1, C1, R2, R30, R31, R8, R45

	Items	Check Point	Procedure	Check or Replace Parts
(**F**)*	Battery Monitor Check	-	1. Apply 2.25 V between BATT+ and BATT-. 2. Execute the command sendchar PAD sendchar LED 0 sendchar CRX 0 1 sendchar AD1 It assumes that the return value is XX. a) 6c ≤ XX ≤ 71: No need to adjust b) XX: 6A ~ 6B: Need to adjust XX: 72 ~ 74: Need to adjust Write AD value of 2.25 V to EEPROM. ex) read data: XX = 6A, write data: YY = 6A read data: XX = 73, write data: YY = 73 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 - C No Voltage writing data limit is ‘00’. c) XX: 00 ~ 69: Reject XX: 75 ~ FF: Reject	IC1, F1, C1, R12, R45
(**G**)	Battery Low Confirmation	-	1. Apply 2.40 V between BATT+ and BATT-. 2. Confirm that there is no flashing of Battery Icon. 3. Apply 2.25 V ± 0.08 V between BATT+ and BATT-. 4. Confirm that there is flashing of Battery Icon.	IC1, F1, C1, R12, R45
(**H**)*	BBIC Clock Adjustment	CLK	1. Apply 2.6 V between BATT+ and BATT- with DC power. 2. Input Command “sendchar sfr”, then you can confirm the current value. 3. Check X’tal Frequency. (10.368 MHz ± 100 Hz). 4. If the frequency is not 10.368 MHz ± 100 Hz, adjust the frequency of CLK executing the command “sendchar sfr xx xx (where xx is the value)” so that the reading of the frequency counter is 10.368000 MHz ± 20 Hz. Note: Clear the registered information for Base Unit before measurement, because the Frequency will not possibly get stable due to the registered information. Pressing the button of “3” “7” “9” “#” clears the registration. Register to it on Base Unit after measurement.	IC1, X1, C47
(**I**)*	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 • PACKET: PP32Z 2. Execute the command “sendchar TST 01 02 03 04 05". 3. Initiate connection from DECT tester. 4. Confirm that the NTP value at ANT is 19 dBm ~ 25 dBm.	IC1, C802~C806, C808~C814, C819~C820, C822, C825~C827, C834, C859~C864, L801~L804, DA801, R801~R808
(**J**)*	Modulation Check and Adjustment	-	Follow steps 1 to 3 of **(K)**. 4.Confirm that the B-Field Modulation is -370±30/ +370±30 kHz/div & Modulated width ≧ 690 kHz using data type Fig 31.	IC1, C802~C806, C808~C814, C819~C820, C822, C825~C827, C834, C859~C864, L801~L804, DA801, R801~R808

	Items	Check Point	Procedure	Check or Replace Parts
(**K**)*	Frequency Offset Confirmation	-	Follow steps 1 to 3 of **(I)**. 4.Confirm that the frequency Offset is < ± 50 kHz.	IC1, C802~C806, C808~C814, C819~C820, C822, C825~C827, C834, C859~C864, L801~L804, DA801, R801~R808
(**L**)*	Frequency Drift Confirmation	-	Follow steps 1 to 3 of **(I)**. 4.Confirm that the frequency Drift is < ± 35 kHz/ms.	IC1, C802~C806, C808~C814, C819~C820, C822, C825~C827, C834, C859~C864, L801~L804, DA801, R801~R808
(**M**)*	Sensitivity Receiver Confirmation	-	Follow steps 1 to 3 of **(I)**. 4.Set DECT tester power to -88 dBm. 5.Confirm that the BER is < 1000 ppm.	IC1, C802~C806, C808~C814, C819~C820, C822, C825~C827, C834, C859~C864, L801~L804, DA801, R801~R808
(**N**)*	Power RAMP Confirmation	-	Follow steps 1 to 3 of **(I)**. 4.Confirm that Power RAMP is matching.	IC1, C802~C806, C808~C814, C819~C820, C822, C825~C827, C834, C859~C864, L801~L804, DA801, R801~R808
(**O**)	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/1KHz to MIC and measure Line output level. 4. Confirm that the level is -8 dBm ± 2 dBm and that the distortion level is < 5% at TEL Line (600 Ω Load). 5. Input -20 dBm/1KHz to Line I/F and measure Receiving level at REV+ and REV-. 6. Confirm that the level is -22 dBm ± 2 dBm and that the distortion level is < 5% at Receiver. (vol = 2)	IC1, C12, D19, D20, C96, C97, R215, R27, RA4, C11, C13, R28, D3, D4, MIC, L9, RA2, R73, R74
(**P**)	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+ and SP-. 5. Confirm that the level is -15 dBm ± 2 dBm and that the distortion level is < 5%. (vol = 3)	IC1, C12, C73, D13, D14, R152, R73, R74, RA2, MIC, C11, C13, RA4, R27, R28, R208, R209, C96, C97, R215, C72
(**Q**)	Charge Pump 3.0V Supply Confirmation	CP3.0V	1. Confirm that the voltage between testpoint CP3.0V and GND is 3.0V -0.1/+0.3V.	C52, C53, C49
(**R**)	Charge Pump 4.0V Supply Confirmation	CP4.0V	1. Confirm that the voltage between testpoint CP4.0V and GND is 4.0V I0.2V.	C50, C51

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

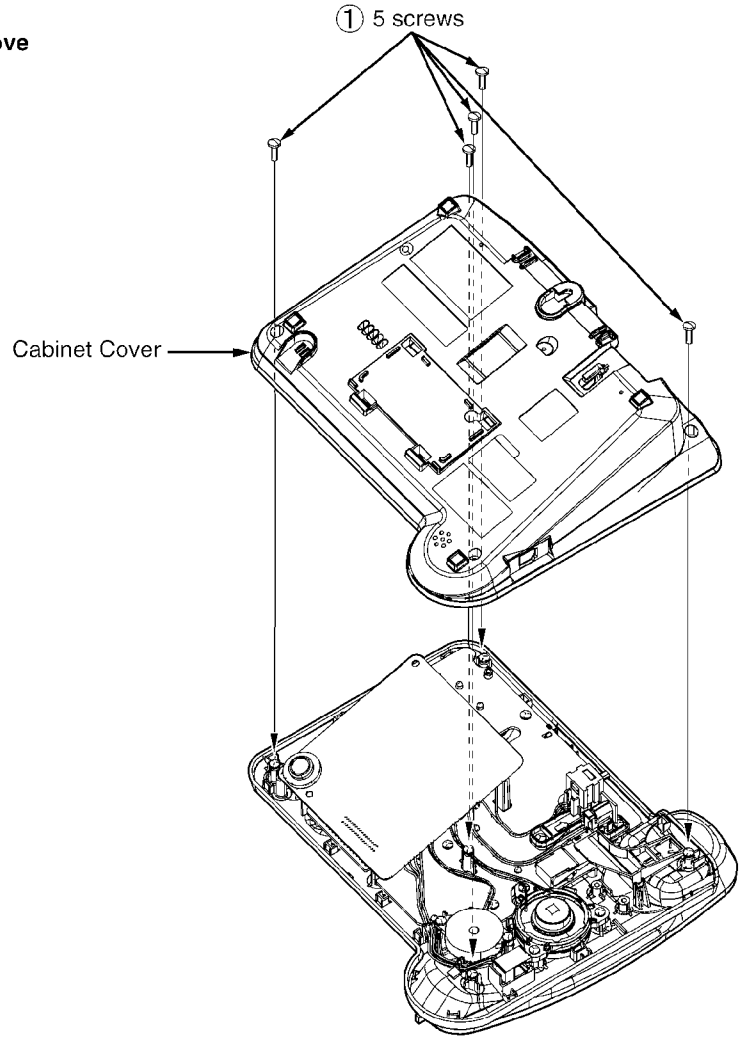
- Change the cordless handset address of EEPROM (0129) from 00 to 01 by **Engineering Mode**.

10 Disassembly and Assembly Instructions

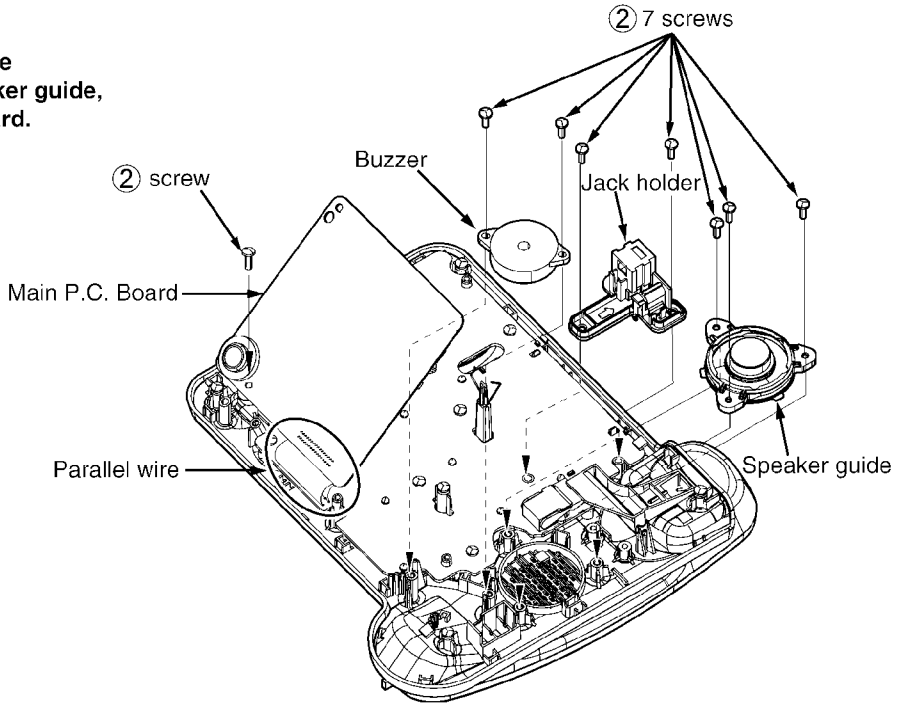
10.1. Disassembly Instructions

10.1.1. Base Unit

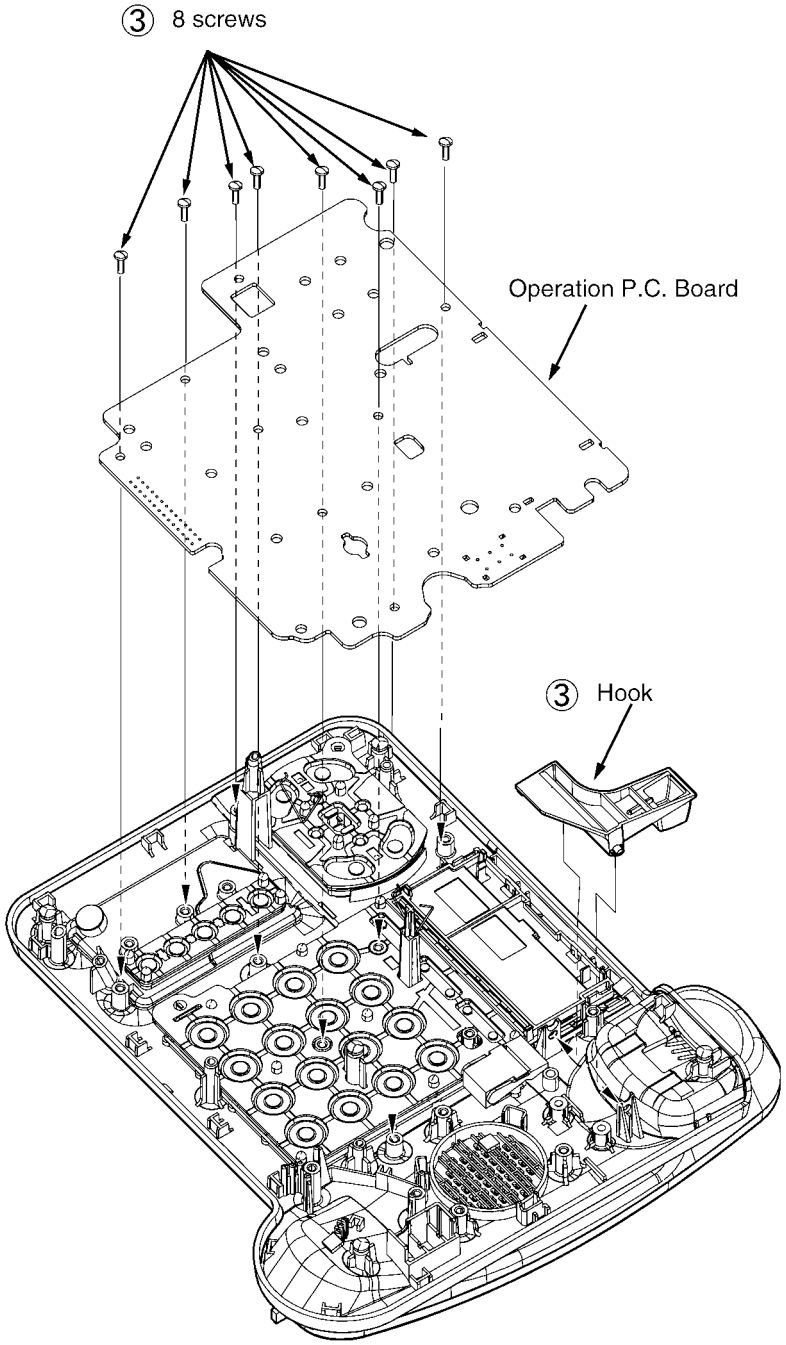
① **Remove the 5 screws to remove the cabinet cover.**



② **Remove the 8 screws to remove Buzzer, Jack holder, and Speaker guide, then unhook the main P.C. Board.**

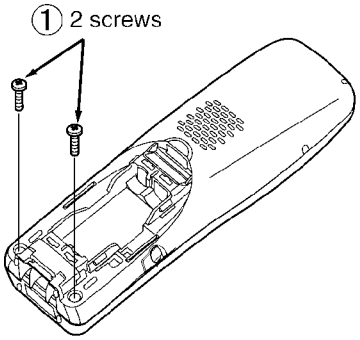


③ **Unhook the hook and remove the 8 screws to remove the operational P.C. board.**

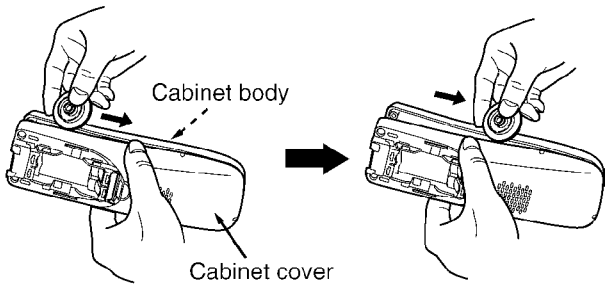


10.1.2. Cordless Handset

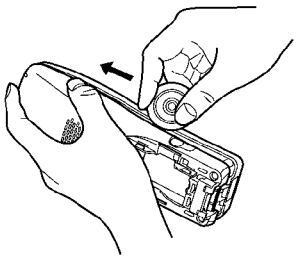
① **Remove the 2 screws.**



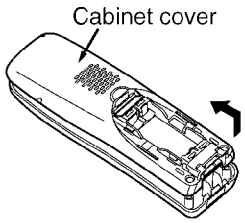
② **Insert a JIG (PQDJ10006Y) between the cabinet body and the cabinet cover, then pull it along the gap to open the cabinet.**



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



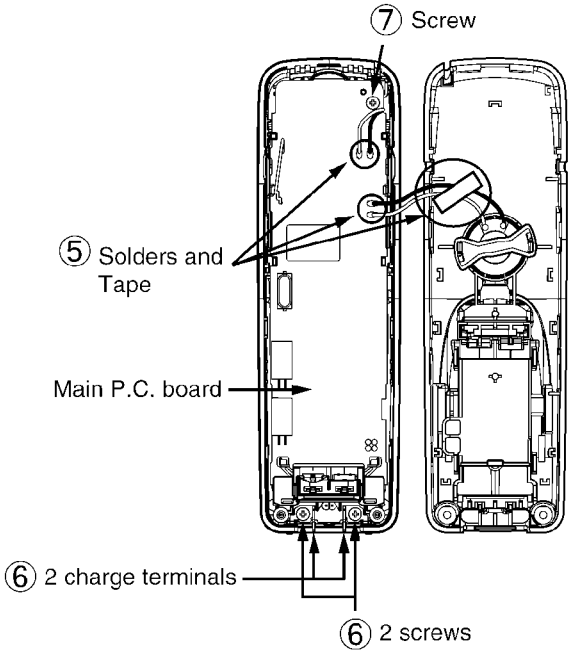
④ **Remove the cabinet cover by pushing it upward.**



⑤ **Remove the solders and tape.**

⑥ **Remove the 2 screws to remove the 2 charge terminals.**

⑦ **Remove the screw to remove the main P. C. board.**

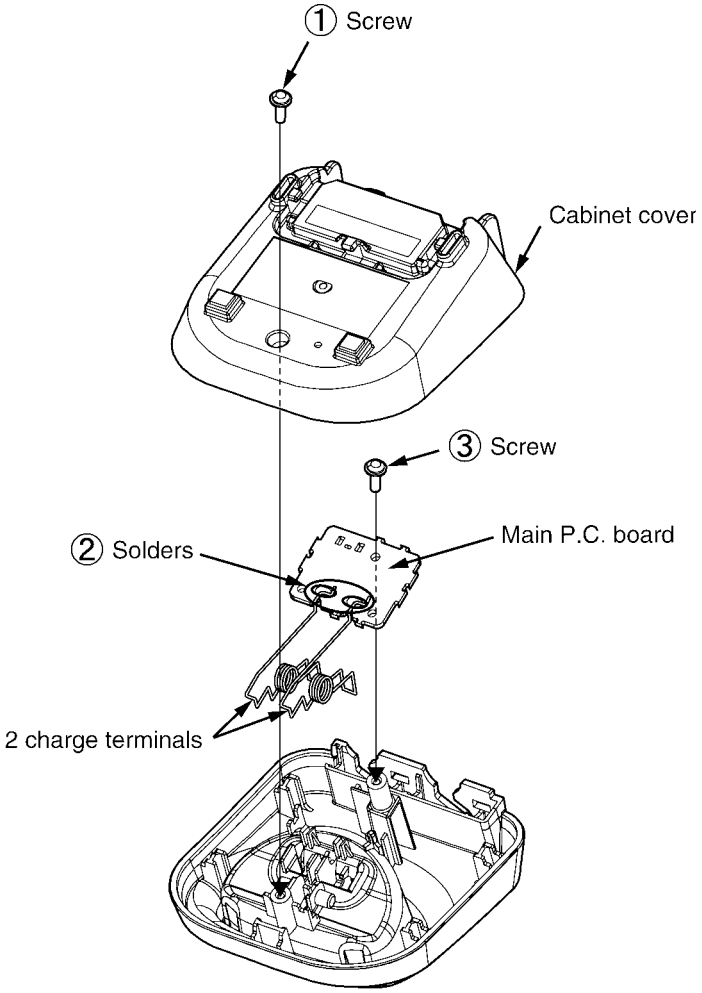


10.1.3. Charger Unit

① **Remove the screw to remove the cabinet cover.**

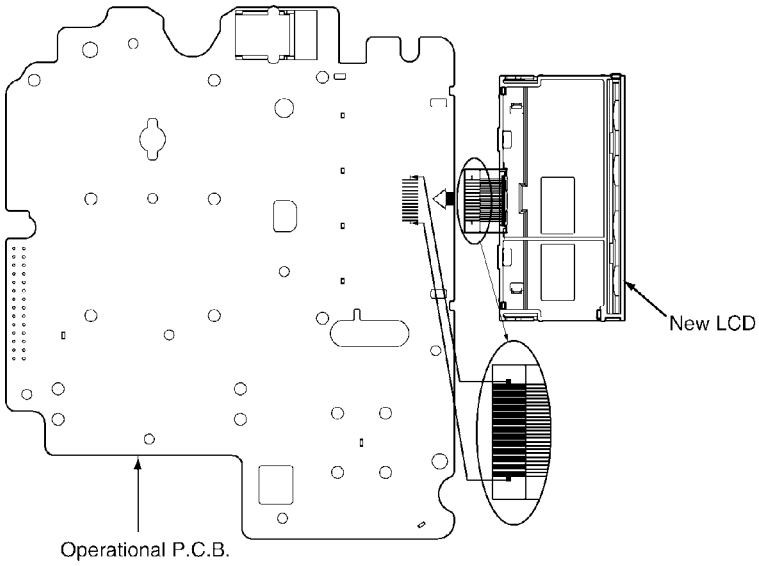
② **Remove the solders to remove the 2 charge terminals.**

③ **Remove the screw to remove the main P.C. board.**

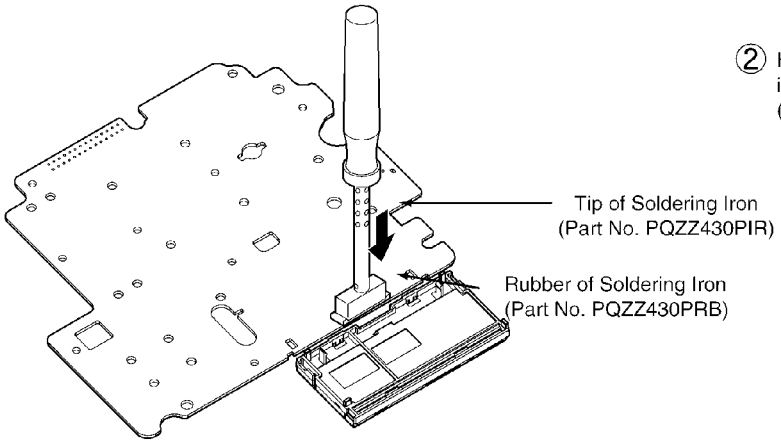


10.2. Assembly Instructions

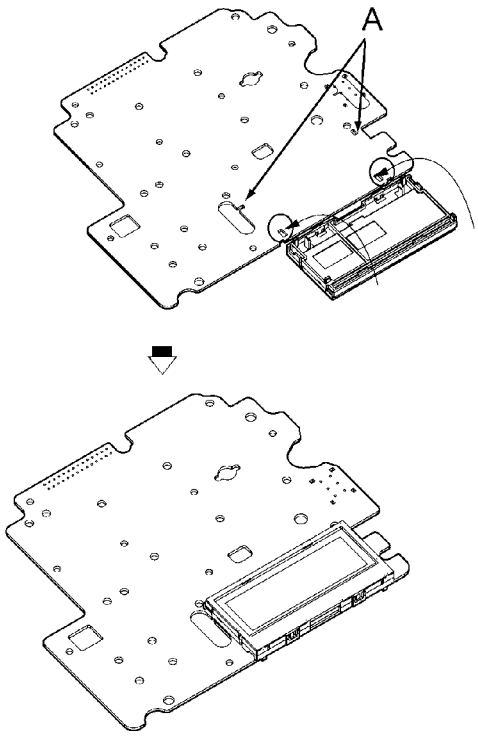
10.2.1. How to Replace the Base unit LCD



① Fit the heatseal of a new LCD.



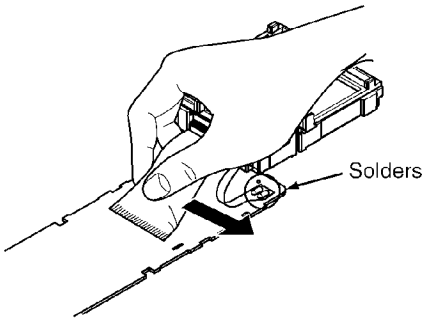
② Heatweld with the tip of the soldering iron about 5 to 8 seconds (in case of 60W soldering iron).



③ Attach the hooks to A.

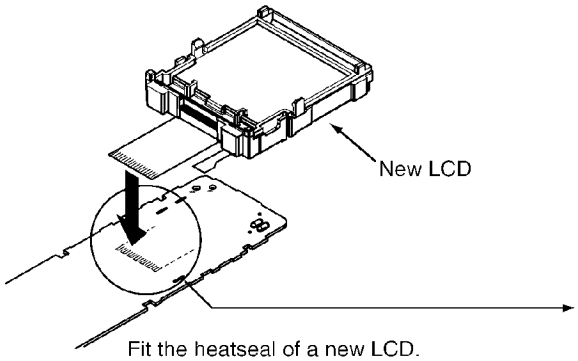
10.2.2. How to Replace the Cordless Handset LCD

①



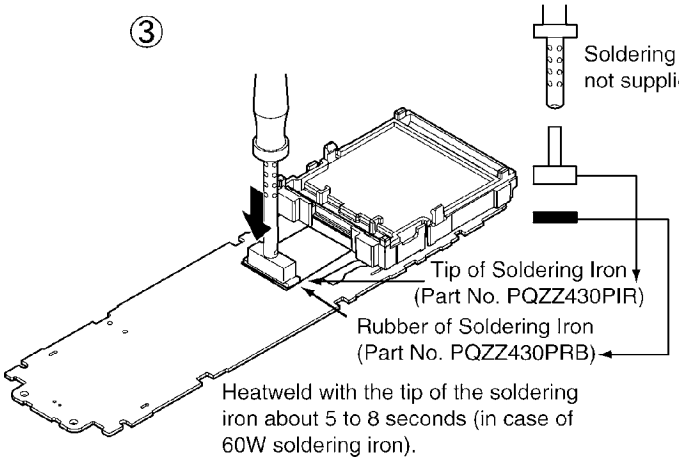
Remove the solders of the FPC (Flexible Printed Circuit), then peel off the FFC (Flexible Flat Cable) from the P.C. board, in the direction of the arrow. Take care to ensure that the foil on the P.C. board is not damaged.

②

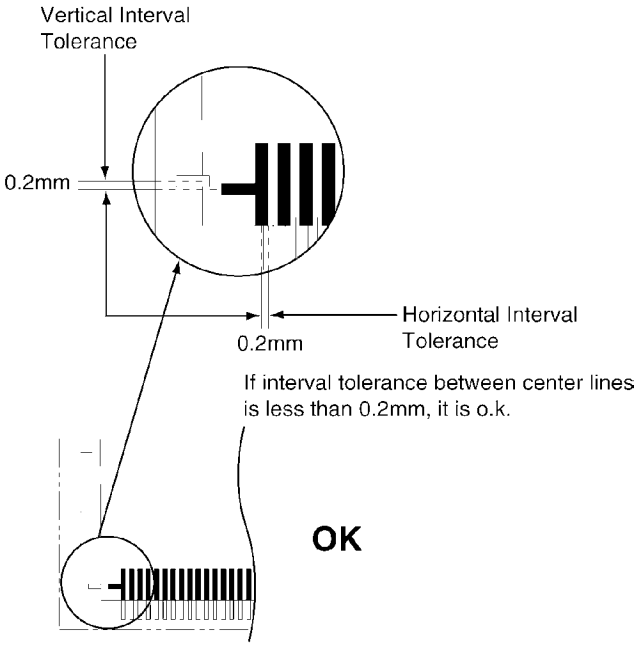


Fit the heatseal of a new LCD.

③

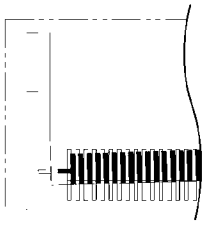


Heatweld with the tip of the soldering iron about 5 to 8 seconds (in case of 60W soldering iron).



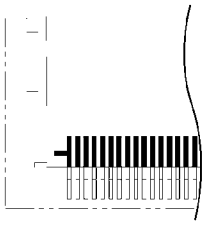
If interval tolerance between center lines is less than 0.2mm, it is o.k.

OK



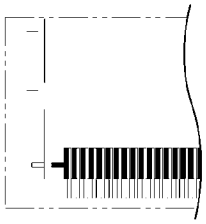
NG

(Inclined)



NG

(Vertical interval tolerance is more than 0.2mm.)



NG

(Horizontal interval tolerance is more than 0.2mm.)

11 Measurements and Adjustments

This chapter explains the measuring equipment, the JIG connection, and the PC setting method necessary for the measurement in **Troubleshooting Guide** (P.39)

11.1. Equipment Required

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

  This equipment may be useful in order to precisely adjust like a mass production.

11.2. The Setting Method of JIG (Base Unit)

This section explains the PC setting to use command required in **Check Point (Base Unit)**(P.51).

<Preparation>

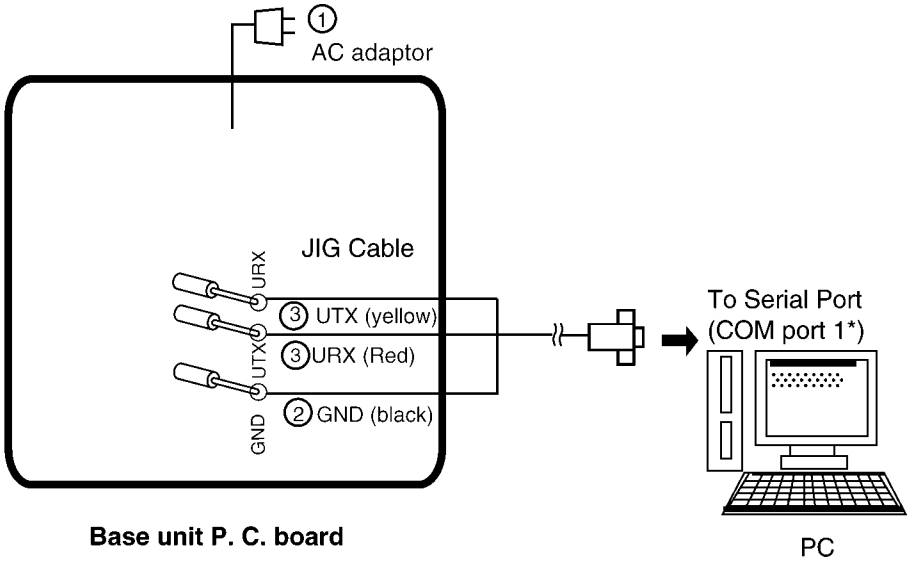
- Serial JIG cable: PQZZ1CD300E
- PC which runs in DOS mode
- **Batch file CD-ROM** for setting: PNZZTG1061M

11.2.1. Connections

① Connect the AC adaptor to DC-JACK (base unit).

② Connect the JIG Cable GND (black) to GND.

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



Base unit P. C. board

Note:

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

11.2.2. How to install Batch file into P.C.

1. Insert the Batch file CD-ROM into CD-ROM drive and copy PNZZTG**** 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 \PNZZTG****"**, 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: >

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

<Example: error happens>

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

Note:
- "*****" varies depending on the country or models.

11.2.3. Commands

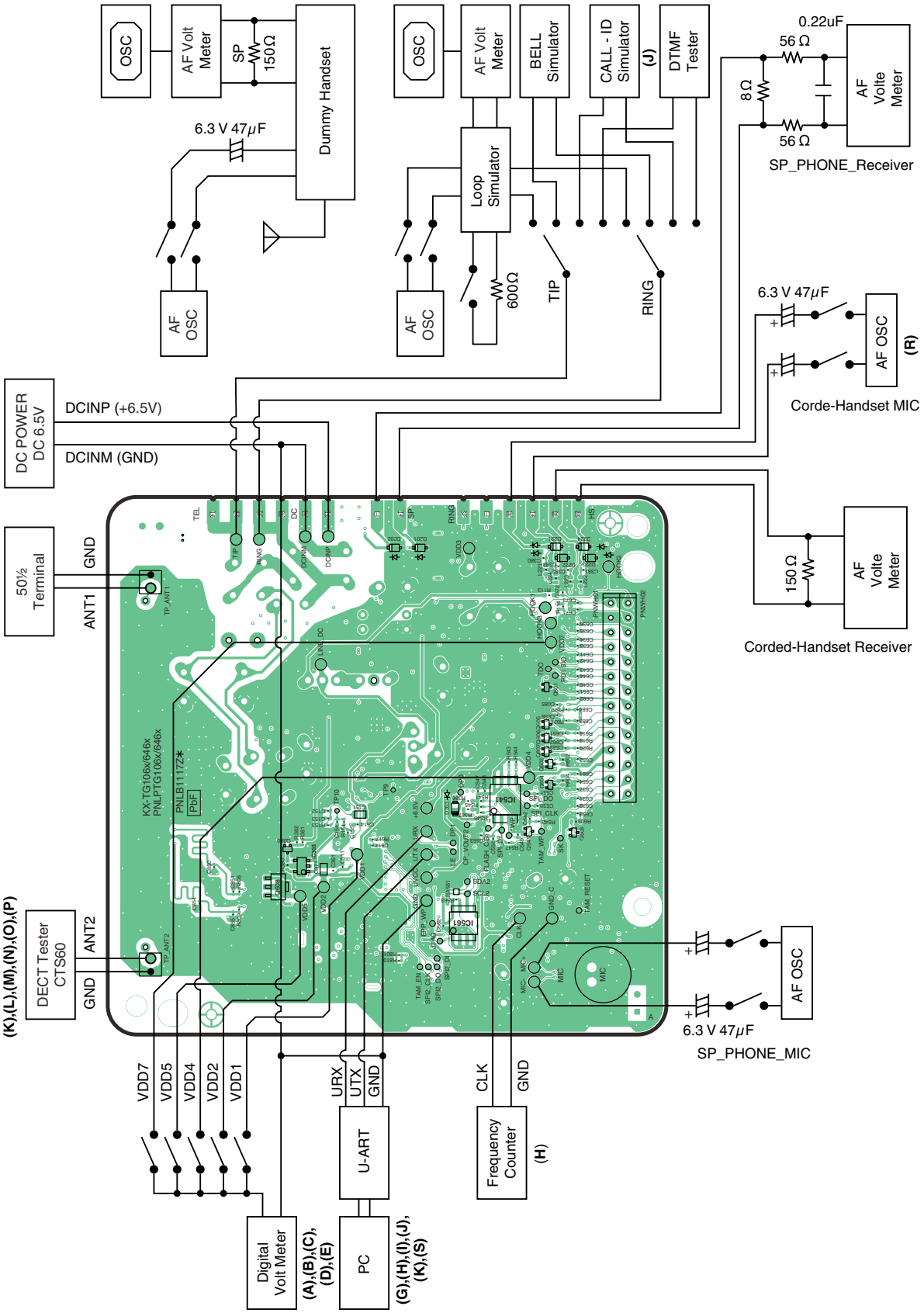
See the table below for frequently used commands.

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.
bursttx	Burst TX mode	Type "bursttx"
textrx	Test RX mode	Type "testrx"
tph	High TX mode	Type "tph"
tpl	Low TX mode	Type "tpl"

11.3. Adjustment Standard (Base Unit)

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

11.3.1. Bottom View



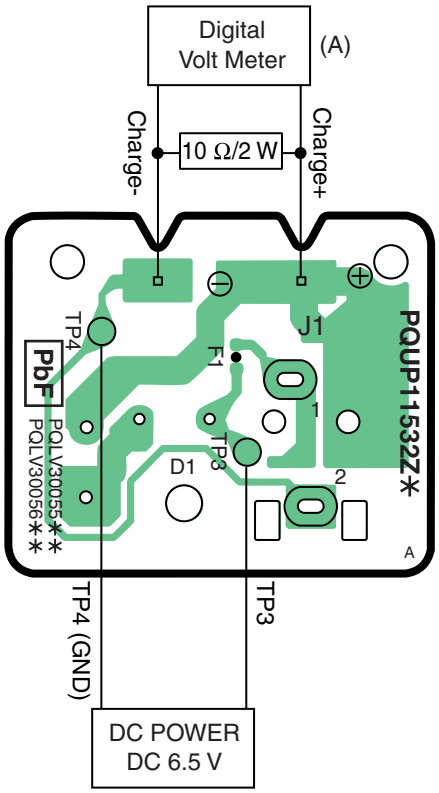
Note:

(**A**) - (**S**) is referred to **Check Point (Base Unit)** (P.51)

11.4. Adjustment Standard (Charger Unit)

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

11.4.1. Bottom View



Note:

(**A**) is referred to **Check Point (Charger Unit)** (P.54)

11.5. The Setting Method of JIG (Cordless Handset)

This section explains the PC setting to use command required in **Check Point (Cordless Handset)(**P.55).

<Preparation>

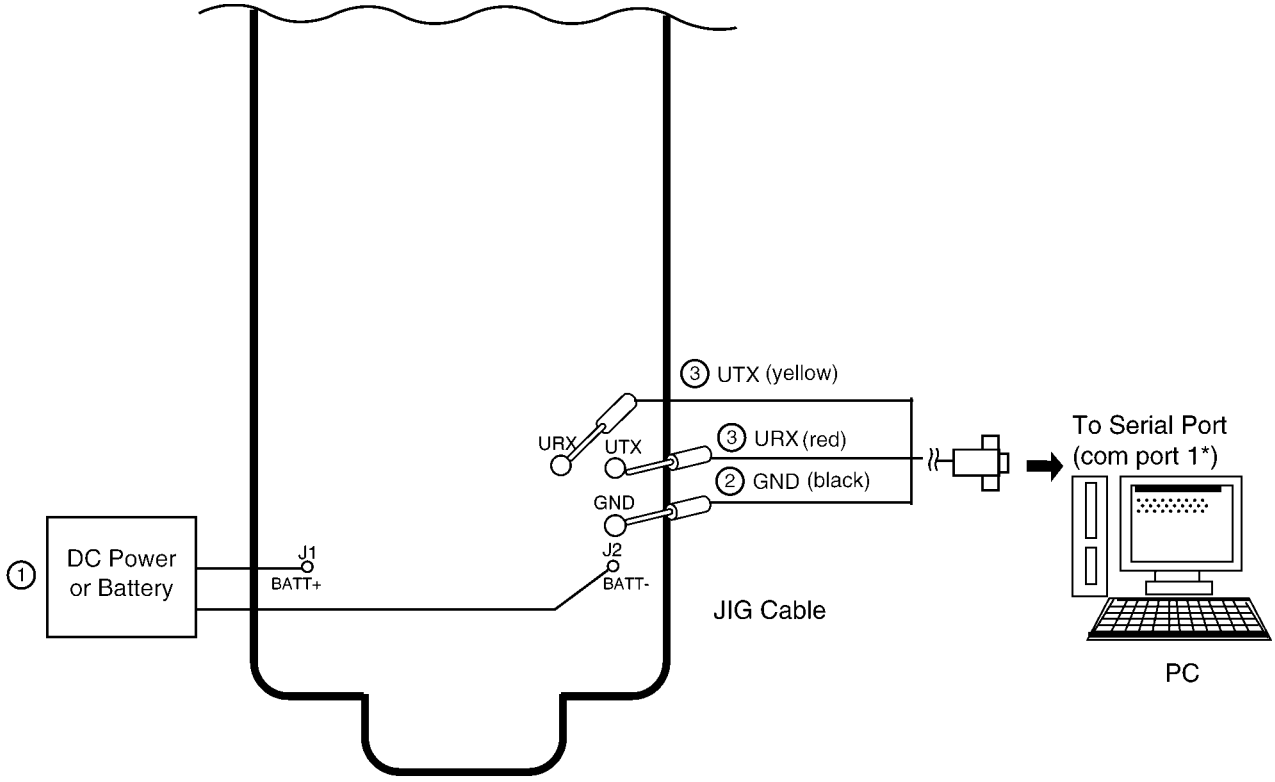
- Serial JIG cable: PQZZ1CD300E
- PC which runs in DOS mode
- **Batch file CD-ROM** for setting: PNZZTG1061M

11.5.1. Connections

①Connect the DC Power or Battery to BATT+ and BATT-.

②Connect the JIG cable GND (black) to GND.

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



Cordless Handset P. C. board

Note:

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

11.5.2. How to install Batch file into P.C.

1. Insert the Batch file CD-ROM into CD-ROM drive and copy PNZZTG***** 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 \PNZZTG*****"**, then press the **Enter** key.

<Example:>

```
C: \Documents and Settings>D:
D: \>CD \PNZZTG*****
D: \PNZZTG***** >SET RTX_COM=X
D: \PNZZTG*****>READID
00 52 4F A8 A8
D: \PNZZTG*****>DOSKEY
D: \PNZZTG*****>
```

5. Type "**SET RTX_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: error happens>

```
C: \Documents and Settings>D:
D: \>CD \PNZZTG*****
D: \PNZZTG***** >SET RTX_COM=X
D: \PNZZTG*****>READID
   CreateFile error
ERROR 10: Can't open serial port
D: \PNZZTG*****>
```

Note:
- "*****" varies depending on the country or models.

11.5.3. Commands

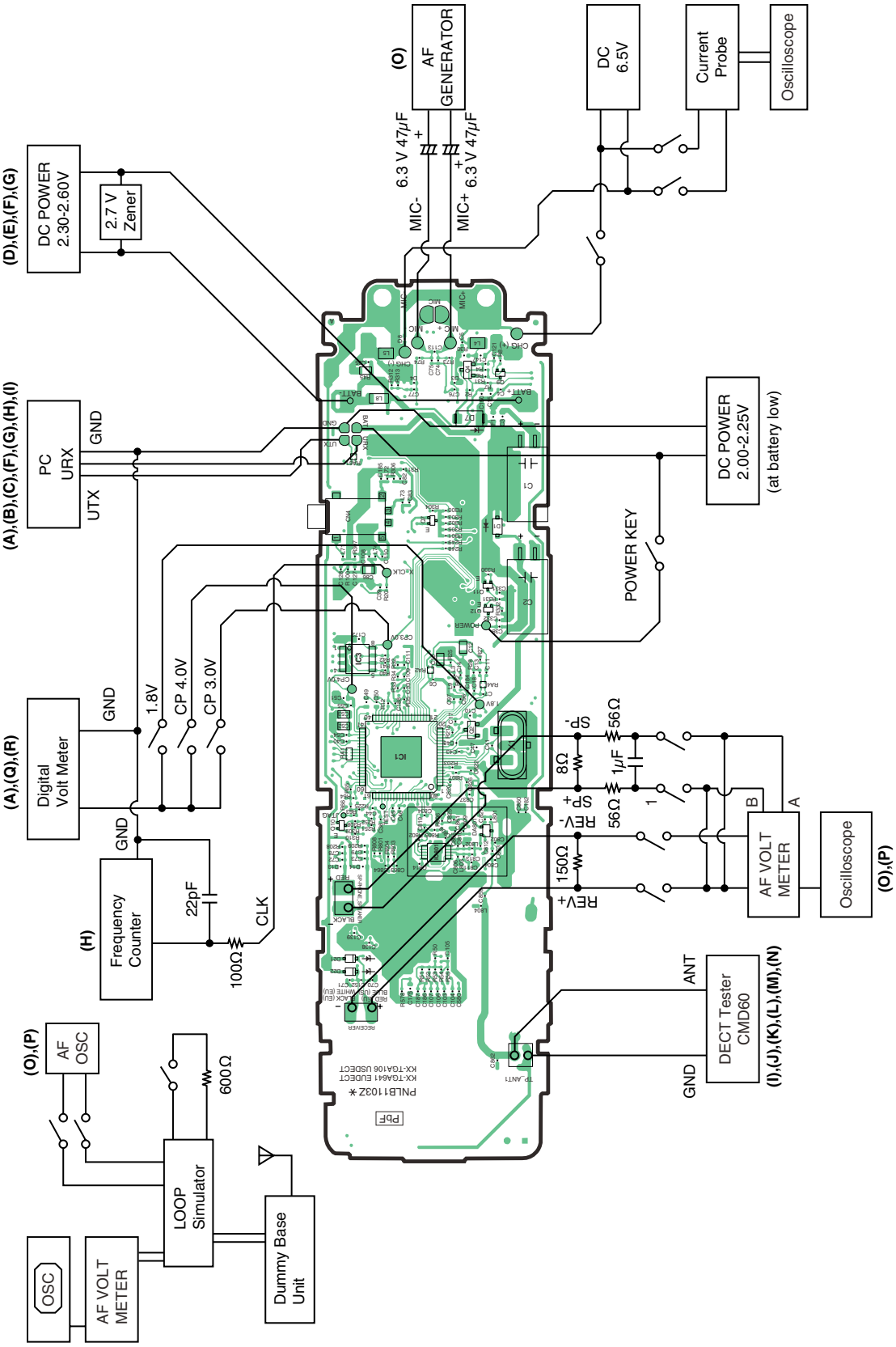
See the table below for frequently used commands.

Command name	Function	Example
rdeeprom	Read the data of FLASH	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 FLASH	Type "wreeprom 01 23 45". "01 23" is address and "45" is data to be written.
bursttx	Burst TX mode	Type "bursttx"
textrx	Test RX mode	Type "testrx"
tph	High TX mode	Type "tph"
tpl	Low TX mode	Type "tpl"

11.6. Adjustment Standard (Cordless Handset)

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

11.6.1. Component View



Note:

(**A**) - (**R**) is referred to **Check Point (Cordless Handset)** (P.55)

11.7. Things to Do after Replacing IC or X'tal

If repairing or replacing BBIC (FLASH type), EEPROM and X'tal, it is necessary to download the required data such as Programming data or adjustment data, etc in memory.
The set doesn't operate if it is not executed.

11.7.1. How to download the data

11.7.1.1. Base Unit

First, operate the PC setting according to **The Setting Method of JIG (Base Unit)(**P.65).
Then download the appropriate data according to the following procedures.

Items		How to download/Required adjustment
BBIC (IC501)	Programming data is stored in memory.	1) Make sure to connect the JIG cable, then disconnect the DC Power in order to download the data. 2) Execute the command “flw480 *********.hex”. 3) Connect the DC Power. 4) Press the PC Enter key once. 5) After a few minutes, “Successful upgrade” is displayed on the PC indicating downloading has finished. 6) Detach the JIG cable, then disconnect the DC Power. 7) Connect the DC Power. 8) Connect the JIG cable again, and execute the command “getchk”, then confirm the checksum value is correct. • If the downloading fails, start again from step 1). 9) Default batch file: Execute the command “default.bat”. 10) Country version batch file: Execute the command “TG1061XXrevYY.bat”. (*1) 11) Clock adjustment: Refer to Check Point (H). (*2)
EEPROM (IC561)	Adjusted parameter data is stored in memory. (country version batch file, default batch file, etc.)	1) Change the address “0000” of EEPROM to “55” to download the data. 2) Default batch file: Execute the command “default.bat”. 3) Country version batch file: Execute the command “TG1061XXrevYY.bat”. (*1) 4) Clock adjustment: Refer to Check Point (H). (*2)
FLASH (IC541)	Voice prompt data is stored in memory. (vary depending on country version)	1) Wait more than 15 seconds after connecting the JIG Cable 2) Execute the command "VPDL2009 -57600 ZZ.bin"(*1). 3) Wait until “VP file trasnsfer complete” is displayed on the P.C. (writing time: aprox. About 1 min) 4) Detach the JIG cable to disconnect DC Power. Then reconnect the DC Power and confirm whether the download is successfully completed.
X'tal (X511)	System clock	Clock adjustment data is in EEPROM, adjust the data again after replacing it. 1) Refer to Check Point (H). (*2)

Note:

(*1) Refer to **Check Point (Base Unit)** (P.51)

(*2) XX: country code YY: revision number, ZZ: voice prompt

“XX”, “YY” and “ZZ” vary depending on the country version. You can find them in the batch file, PNZZ- mentioned in **The Setting Method of JIG (Base Unit)** (P.65).

11.7.1.2. Cordless Handset

First, operate the PC setting according to **The Setting Method of JIG (Cordless Handset)(**P.69).
Then download the appropriate data according to the following procedures.

Items		How to download/Required adjustment
BBIC (FLASH type) (IC1)	Programming data is stored in memory.	1) Make sure to connect the JIG cable, then disconnect the DC Power in order to download the data. 2) Execute the command “flw480 *********.hex”. 3) Connect the DC Power. 4) Press and hold the cordless handset OFF key. 5) While holding down cordless handset OFF key, press the PC Enter key once. 6) After a few minutes, “Successful upgrade” is displayed on the PC indicating downloading has finished. 7) Detach the JIG cable, then press cordless handset OFF key to turn it on. 8) Connect the JIG cable again, and execute the command "getchk”, then confirm the checksum value is correct. • If the downloading fails, start again from step 1). 10) Default batch file: Execute the command “default.bat”. 11) Country version batch file: Execute the command “TGA106XXrevYY.bat”. (*3). 12) Clock adjustment: Refer to Check Point (J). (*4). 13) 1.8 V setting and battery low detection: Refer to Check Point (A), (H) and (I). (*4).
EEPROM (IC3)	Adjusted parameter data is stored in memory. (country version batch file, default batch file, etc.)	1) Change the address “0015” of EEPROM to “55”. 2) Default batch file: Execute the command “default.bat”. 3) Default batch file (remaining); Execute the command “TGA106 DEFrevYY.bat”. (*3) 4) Country version batch file: Execute the command “TGA106XXrevYY”. (*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)
X'tal (X1)	System clock	Clock adjustment data is in EEPROM, adjust the data again after replacing it. 1) Refer to Check Point (J). (*4)

Note:

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

“XX” and “YY” varies depending on the country version. You can find them in the batch file, PNZZ- mentioned in **The Setting Method of JIG (Cordless Handset)** (P.69).

(*4) Refer to **Check Point (Cordless Handset)** (P.55)

11.8. RF Specification

11.8.1. Base Unit

Item	Value	Refer to -. *
TX Power	16.5 dBm ~ 20.5 dBm	**Check Point (Base Unit) (J)**
Modulation	-390±40/+390±40 kHz/div & Modulated width ≧ 720 kHz	**Check Point (Base Unit) (K)**
Frequency Offset	-10 kHz ~ +10 kHz	**Check Point (Base Unit) (L)**
Frequency Drift	< ± 20 kHz / ms	**Check Point (Base Unit) (M)**
RX Sensitivity	< 1000 ppm	**Check Point (Base Unit) (N)**
Timing Accuracy	< ± 2.0ppm	**Check Point (Base Unit) (O)**

*: Refer to **Check Point (Base Unit)** (P.51)

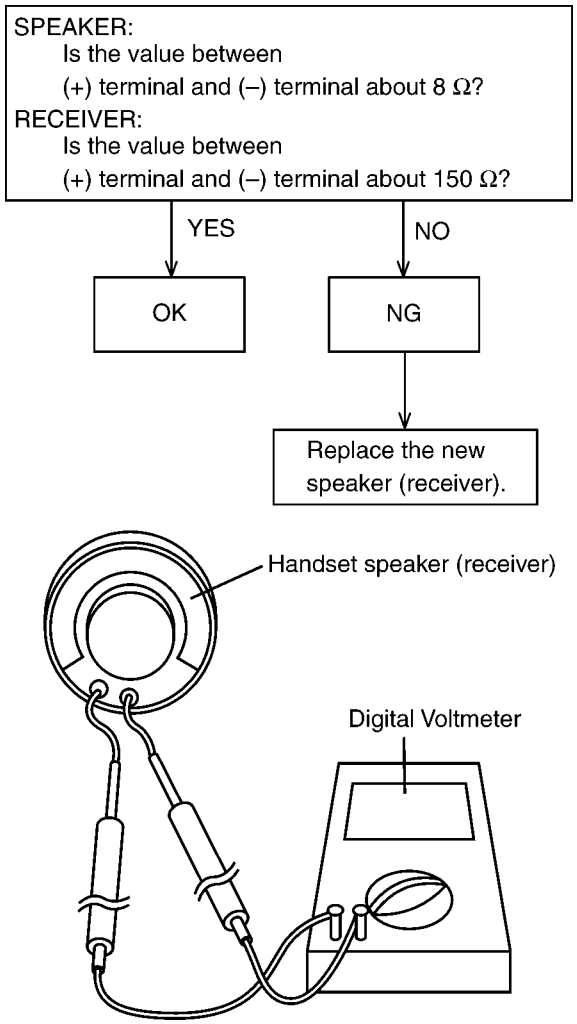
11.8.2. Cordless Handset

Item	Value	Refer to -. **
TX Power	19 dBm ~ 25 dBm	**Check Point (Cordless Handset) (I)**
Modulation	-370±30/+370±30 kHz/div & Modulated width ≧ 690 kHz	**Check Point (Cordless Handset) (J)**
Frequency Offset	-50 kHz ~ +50 kHz	**Check Point (Cordless Handset) (K)**
Frequency Drift	< ± 35 kHz / ms	**Check Point (Cordless Handset) (L)**
RX Sensitivity	< 1000 ppm	**Check Point (Cordless Handset) (M)**
Power RAMP	Power RAMP is matching	**Check Point (Cordless Handset) (N)**

: Refer to **Check Point (Cordless Handset) (P.55)

11.9. How to Check the Cordless Handset Speaker or 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.



11.10. Frequency Table (MHz)

	Ch. (hex)	TX/RX Frequency (MHz)
Channel 0	00	1928.448
Channel 1	01	1926.720
Channel 2	02	1924.992
Channel 3	03	1923.264
Channel 4	04	1921.536

12 Miscellaneous

12.1. CPU Data (Base Unit)

12.1.1. IC501 (BBIC)

Pin No.	Description	I/O	Connection	at Normal mode	at Reset mode
1	VSS_LNA1	-	GND	-	-
2	RF_RXp	A.I	RF_RXp	A.I	A.I
3	RF_RXn	A.I	RF_RXn	A.I	A.I
4	VSS_LNA2	-	GND	-	-
5	RFP1	D.O	RXON	H/L	Hi-Z
6	RFP0	D.O	ANT1	H/L	Hi-Z
7	REF_RES	A.O	REF_RES	A.O	A.O
8	AVS_XTAL	-	GND	-	-
9	XTAL2	A.I	XTAL2	A.I	A.I
10	XTAL1	A.I	XTAL1	A.I	A.I
11	AVD_XTAL	-	AVD_XTAL	-	-
12	RF_SUPPLY1	-	RF_SUPPLY1	-	-
13	VDD1	-	VDD1	-	-
14	SPI2_EN/P4_0	D.O	TAM_EN	H/L	H
15	SPI2_CLK/P4_1	D.O	SPI2_CLK	H/L	H
16	SPI2_DO/P4_2	D.O	SPI2_DO	H/L	H
17	SPI2_DI/P4_3	D.I	SPI2_DI	H/L	H
18	P4_4	D.O	KEY6	L	H
19	LDO_CTRL	A.O	LDO_CTRL	A.O	O-1
20	AVD	-	AVD	-	-
21	LSRn	A.O	LSRn	A.O	A.O
22	LSRp	A.O	LSRp	A.O	A.O
23	VREFm	-	GND	-	-
24	MICh	A.I	MICh	A.I	A.I
25	CIDOUT/MICn	A.O	CIDOUT	A.O	A.I
26	CIDINn/MICp	A.I	CIDINn	A.I	A.I
27	CIDINp/VREFp	A.I	CIDINp	A.I	A.I
28	RINGp/P3_7	D.O	PulseMute (NC)	L	L
29	RINGn/P3_6	D.O	HOOK	L	L
30	RINGOUT/RINGING/ P3_5	A.I	RINGING	A.I	A.I
31	PARADET/P3_4	A.I	PARADET	A.I	A.I
32	ADC0/P3_3	A.I	GND	A.I	A.I
33	ADC1/INT0/P1_0	A.I	ADC1	A.I	I-PU
34	NTC/ADC2	-	GND	-	A.I
35	SOCp	-	GND	-	A.I
36	SOCn	-	GND	-	A.I
37	CHARGE_CTRL	A.O	N.C.	A.O	O-0
38	P1_7/CHARGE	A.I	CHARGE	A.I	I-PD
39	DP1/PAOUTp/P3_1	D.O	DP1(N.C.)	D.O	O-0
40	VDDPA	-	Vdd	-	-
41	DP0/PAOUTn/P3_0	D.O	TAM_Reset	H	L
42	VBAT1	-	VBAT1	-	-
43	P4_5	D.O	LCD_CD	L	H
44	P4_6	D.O	LCD_Reset	L	H
45	P4_7	D.O	LCD_CS	L	H
46	VBAT2	-	VBAT2	-	-
47	CP_C1x	A.I/O	N.C.	A.I/O	A.I
48	CP_C2x	A.I/O	CP_C2x	A.I/O	A.I
49	CP_C1y	A.I/O	N.C.	A.I/O	A.I
50	VBAT3	-	VBAT3	-	-
51	CP_C2y	A.I/O	CP_C2y	A.I/O	A.I
52	CP_VOUT1/LED1	A.O	CP_VOUT1	A.O	A.I
53	CP_VOUT2/LED2	A.O	CP_VOUT2	A.O	A.I
54	PON/P1_6	D.I	HOOK_DET	H	H
55	VDD2	-	+1.8V	-	-
56	P2_7/BXTAL	D.O	CLK	H/L	H
57	P1_5/INT5/RDI/ VDDE	D.I	ROW0	H	H
58	P1_4/INT4/TDOD	D.I	ROW1	H	H

Pin No.	Description	I/O	Connection	at Normal mode	at Reset mode
59	P1_3/INT3/SIO	D.I	ROW2	H	L
60	P1_2/INT2/SK	D.I	ROW3	H	H
61	P1_1/INT1/LE	D.I	Power_Fail	L	L
62	P2_6/WTF_IN	D.O	LineSeisure (NC)	L	H
63	P0_7/SPI_DI	D.I	SPI_DI	H	H
64	P0_6/SPI_DO	D.O	SPI_DO	H	H
65	P0_5/SPI_CLK	D.O	SPI_CLK	H	H
66	P0_4/SPI_EN	D.O	FLASH_CSn	H	H
67	P0_3/SCL2	D.O	SCL2	H	H
68	P0_2/SDA2	D.I/O	SDA2	H	H
69	P0_1/URX/PWM0	D.I	URX	H	H
70	P0_0/UTX	D.O	UTX	H	H
71	P5_0	D.O	KEY0	L	H
72	P5_1	D.O	KEY1	L	H
73	P5_2	D.O	KEY2	L	H
74	P5_3	D.O	KEY3	L	H
75	P5_4	D.O	KEY4	L	H
76	RSTn	A.O	RSTn	H	L
77	JTAG	D.I/O	JTAG	H	H
78	P2_5/PCM_FSC/SF	D.O	PCM_FSC	H/L	H
79	P2_4/SCL1/ PCM_DO/DP3	D.O	PCM_DO	H/L	H
80	P2_3/SDA1/PCM_DI/ DP2	D.I	PCM_DI	H/L	H
81	P2_2/PCM_CLK/ CLK100	D.I/O	PCM_CLK	H/L	H
82	P5_5	D.O	KEY5	L	H
83	P5_6	D.O	EEP_WP	L	H
84	P5_7	D.O	TAM_WP	H	H
85	P2_1/ECZ2/PWM1/ LED4	D.O	Pulse	H	L
86	P2_0/ECZ1/PWM0/ LED3	D.I	ROW4	H	H
87	NC	-	NC	-	-
88	VSS	-	GND	-	-
89	VDD3	-	+1.8V	-	-
90	LDORF_CTRL	A.I	NC	A.I	A.I
91	RF_SUPPLY2	-	RF_SUPPLY2	-	-
92	RFP0n	D.O	ANT2	H/L	Hi-Z
93	RFP4	D.O	PON	H/L	Hi-Z
94	RFP3	D.O	PSEL	L	Hi-Z
95	VDD_PADR	A.O	VDD_PADRV	A.O	A.O
96	VSS_PADR1	-	GND	-	-
97	RF_TXn	A.O	TXp	A.O	A.O
98	RF_TXp	A.O	TXn	A.O	A.O
99	VSS_PADR2	-	GND	-	-
100	RFP2	D.O	TXON	H/L	Hi-Z
101	GND	-	GND	-	-

12.2. CPU Data (Cordless Handset)

12.2.1. IC1 (BBIC)

Pin No.	Description	I/O	Connection	at Normal mode	at Reset mode
1	VSS_LNA1	-	GND	-	-
2	RF_RXp	A.I	RF_RXp	A.I	A.I
3	RF_RXn	A.I	RF_RXn	A.I	A.I
4	VSS_LNA2	-	GND	-	-
5	RFP1	D.O	RXON	H/L	Hi-Z
6	RFP0	D.O	ANT1	H/L	Hi-Z
7	REF_RES	A.O	REF_RES	A.O	A.O
8	AVS_XTAL	-	GND	-	-
9	XTAL2	A.I	XTAL2	A.I	A.I
10	XTAL1	A.I	XTAL1	A.I	A.I
11	AVD_XTAL	-	AVD_XTAL	-	-
12	RF_SUPPLY1	-	RF_SUPPLY1	-	-
13	LDO_CTRL	A.O	LDO_CTRL	A.O	O-1
14	AVD	-	+1.8V	-	-
15	LSRn	A.O	LSRn	A.O	A.O
16	LSRp	A.O	LSRp	A.O	A.O
17	VREFm	-	GND	-	-
18	MICh	A.I	MICn	A.I	A.I
19	CIDOUT/MICn	A.I	MICn	A.I	A.I
20	CIDINn/MICp	A.I	MICp	A.I	A.I
21	CIDINp/VREFp	A.O	VREFp	A.O	A.I
22	RINGp/P3_7	D.O	COL4	H/L	O-L
23	RINGn/P3_6	D.O	COL3	H/L	O-L
24	RINGOUT/RINGING/P3_5	D.O	COL2	H/L	O-L
25	PARADET/P3_4	D.O	COL1	H/L	O-L
26	ADC0/P3_3	D.O	COL0	H/L	O-L
27	ADC1/INT0/P1_0	D.O	NC	L	O-L
28	NTC/ADC2	A.I	HEADSET_DET	I_0	A.I
29	SOCp	A.I	SOCp	A.I	A.I
30	SOCn	A.I	SOCn	A.I	A.I
31	CHARGE_CTRL	A.O	CHARGE_CTRL	A.O	O-0
32	P1_7/CHARGE	A.I	CHARGE	A.I	I-PD
33	PAOUTp/P3_1	A.O	PAOUTp	A.O	O-0
34	VDDPA	-	VDDPA	-	-
35	PAOUTn/P3_0	A.O	PAOUTn	A.O	O-0
36	VBAT1	-	VBAT1	-	-
37	CP_C1x	A.I/O	CP_C1x	A.I/O	A.I
38	CP_C2x	A.I/O	CP_C2x	A.I/O	A.I
39	CP_C1y	A.I/O	CP_C1y	A.I/O	A.I
40	VBAT2	-	VBAT2	-	-
41	CP_C2y	A.I/O	CP_C2y	A.I/O	A.I
42	CP_VOUT1/LED1	A.O	CP_VOUT1	A.O	A.I
43	CP_VOUT2/LED2	A.O	CP_VOUT2	A.O	A.I
44	PON/P1_6	A.I	PON	A.I	I-PD
45	VDD1	-	+1.8V	-	-
46	P2_7/BXTAL	D.O	BXTAL	H/L	O-L
47	P1_5/INT5/RDI/VDDE	D.O	N.C.	L	O-L
48	P1_4/INT4/TDOD	D.I	ROW0	H/L	I-PV
49	P1_3/INT3/SIO	D.I	ROW3	H/L	I-PV
50	P1_2/INT2/SK	D.I	ROW2	H/L	I-PV
51	P1_1/INT1/LE	D.I	ROW1	H/L	I-PV
52	P2_6/WTF_IN	D.O	KEY_LED	H/L	O-H
53	P0_7/SPI_DI	D.O	EEPROM_WP	H/L	O-H
54	P0_6/SPI_DO	D.O	LCD_SDA	H/L	O-L
55	P0_5/SPI_CLK	D.O	LCD_SCL	H/L	O-L
56	P0_4/SPI_EN	D.O	LCD_CD	H/L	O-L
57	P0_3/SCL2	D.O	SCL	H/L	O-L
58	P0_2/SDA2	D.I/O	SDA	H/L	O-L
59	P0_1/URX	D.I	URX	H/L	I-PV
60	P0_0/UTX	D.O	UTX	H/L	O-L
61	RSTn	D.O	RSTn	H/L	H
62	JTAG	D.I/O	JTAG	H/L	O-L

Pin No.	Description	I/O	Connection	at Normal mode	at Reset mode
63	P2_5/PCM_FSC/SF	D.O	LCD_CSB	H/L	O-H
64	P2_4/SCL1/PCM_DO/DP3	D.O	N.C.	L	L-O
65	P2_3/SDA1/PCM_DI/DP2	D.O	N.C.	L	L-O
66	P2_2/PCM_CLK/CLK100	D.O	LCD_RESET	H/L	L-O
67	P2_1/ECZ2/PWM1/LED4	D.O	N.C.	L	L-O
68	P2_0/ECZ1/PWM0/LED3	D.O	BELL_LED_A	A.I	A.I
69	VDD2	-	+1.8V	-	-
70	LDORF_CTRL	A.I	N.C.	A.I	A.I
71	RF_SUPPLY2	-	RF_SUPPLY2	-	-
72	RF0n	D.O	ANT2	H/L	Hi-Z
73	RFP4	D.O	PON	H/L	Hi-Z
74	RFP3	D.O	PSEL	H/L	Hi-Z
75	VDD_PADR	A.O	VDD_PADRV	A.O	A.O
76	VSS_PADR1	-	GND	-	-
77	RF_TXp	A.O	TXp	A.O	A.O
78	RF_TXn	A.O	TXn	A.O	A.O
79	VSS_PADR2	-	GND	-	-
80	RFP2	D.O	TXON	H/L	Hi-Z
81	GND	-	GND	-	-

12.3. 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.

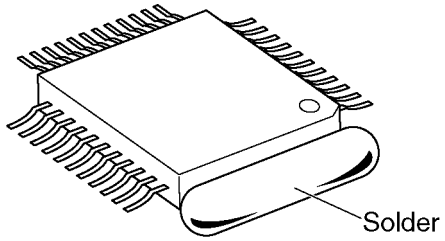
12.3.1. Preparation

- 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)

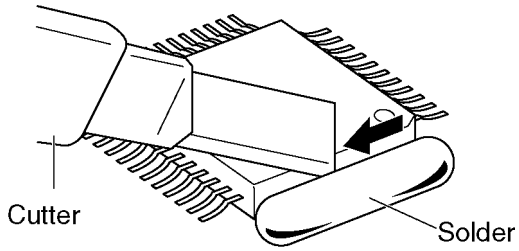
Note: See **About Lead Free Solder (Pbf: Pb free)** (P.4).

12.3.2. How to Remove the IC

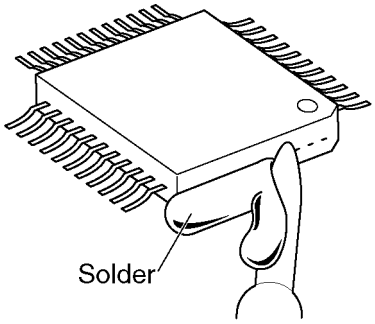
1. Put plenty of solder on the IC pins so that the pins can be completely covered.
   Note:
   If the IC pins are not soldered enough, you may give pressure to the P.C. board when cutting the pins with a cutter.



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



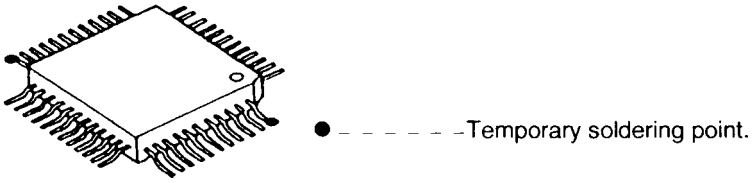
3. While the solder melts, remove it together with the IC pins.



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.

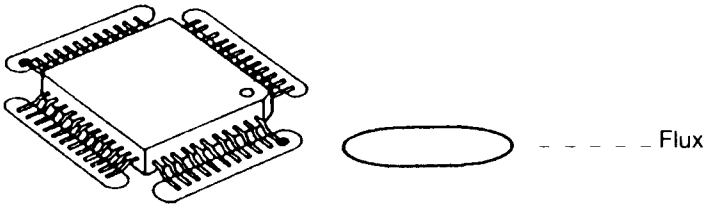
12.3.3. How to Install the IC

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

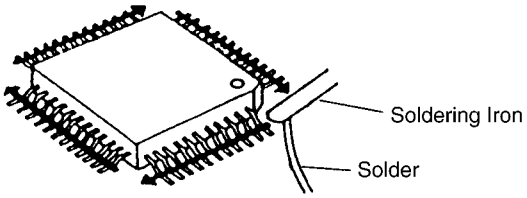


*Check the accuracy of the IC setting with the corresponding soldering foil.

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

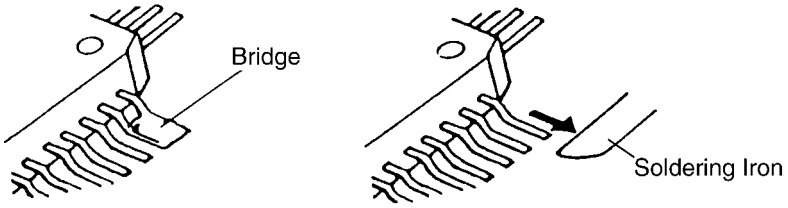


3. Solder the pins, sliding the soldering iron in the direction of the arrow.



12.3.4. 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.



12.4. How to Replace the LLP (Leadless Leadframe Package) IC

12.4.1. 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.
- Hot Air Desoldering Tool
  Temperature: 608°F ± 68°F (320°C ± 20°C)

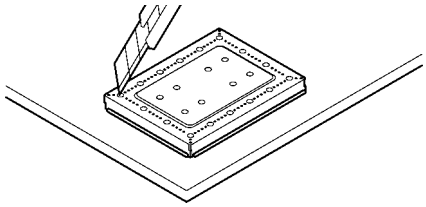
12.4.2. Caution

- To replace the IC efficiently, choose the right sized nozzle of the hot air desoldering tool that matches the IC package.
- Be careful about the temperature of the hot air desoldering tool not to damage the PCB and/or IC.

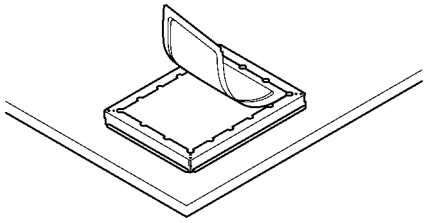
12.4.3. How to Remove the Shield Case

Note:
If you don't have special tools (ex. Hot air disordering tool), conduct the following operations.

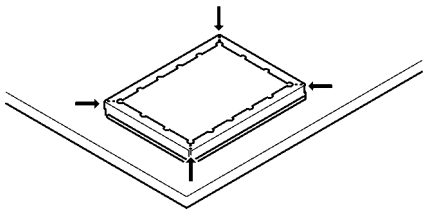
1. Cut the case along perforation.



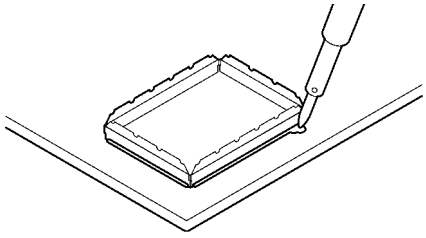
2. Remove the cut part.



3. Cut the four corners along perforation.



4. Remove the reminds by melting solder.

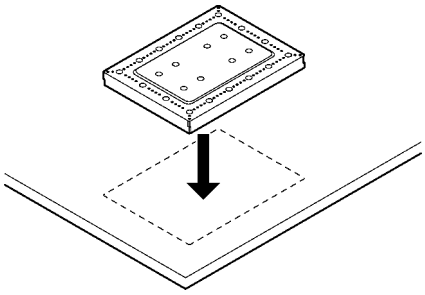


12.4.4. How to Install the Shield Case

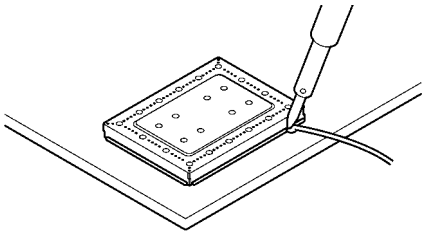
Note:

- If you don't have special tools (ex. Hot air disordering tool), conduct the following operations.
- Shield case's No. : PNMC1013Z

1. Put the shield case.



2. Solder the surroundings.



12.5. How to Replace the LLP (Leadless Leadframe Package) IC

12.5.1. Preparation

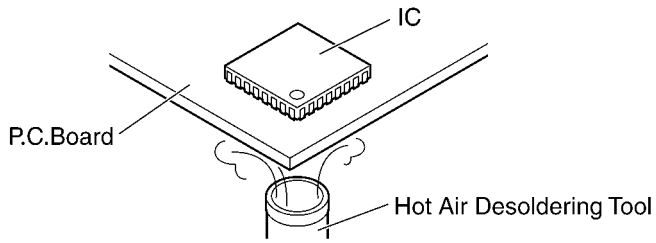
- PbF (: Pb free) Solder
- Soldering Iron
  Tip Temperature of 700 °F ± 20 °F (370 °C ± 10 °C)
  Note:
  We recommend a 30 to 40 Watt soldering iron. An expert may be able to use a 60 to 80 Watt iron where someone with less experience could overheat and damage the PCB foil.
- Hot Air Desoldering Tool
  Temperature: 608 °F ± 68 °F (320 °C ± 20 °C)

12.5.2. Caution

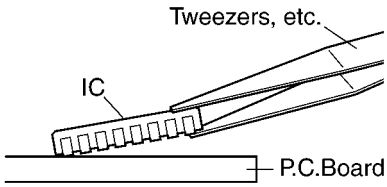
- To replace the IC efficiently, choose the right sized nozzle of the hot air desoldering tool that matches the IC package.
- Be careful about the temperature of the hot air desoldering tool not to damage the PCB and/or IC.

12.5.3. How to Remove the IC

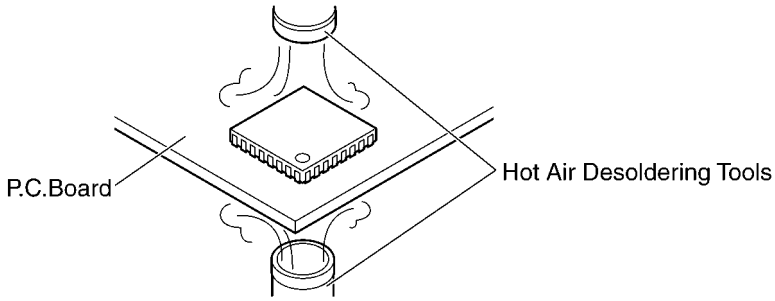
1. Heat the IC with a hot air desoldering tool through the P.C.Board.



2. Pick up the IC with tweezers, etc. when the solder is melted completely.
   Note:
   • Be careful not to touch the peripheral parts with tweezers, etc. They are unstable.



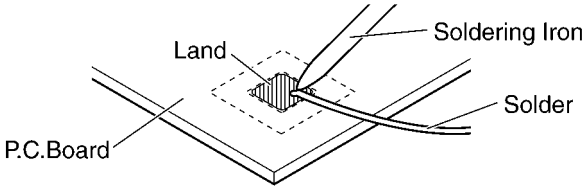
When it is hard to melt the solder completely, heat it with a hot air desoldering tool through the IC besides through the P.C.Board.



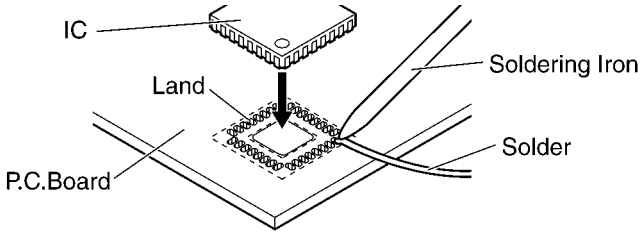
3. After removing the IC, clean the P.C.Board of residual solder.

12.5.4. How to Install the IC

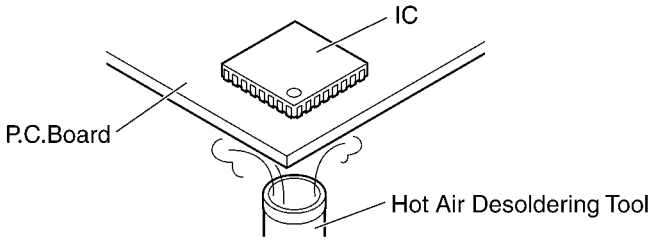
1. Place the solder a little on the land where the radiation GND pad on IC bottom is to be attached.



2. Place the solder a little on the land where IC pins are to be attached, then place the IC.
   Note:
   • When placing the IC, the positioning should be done very carefully.



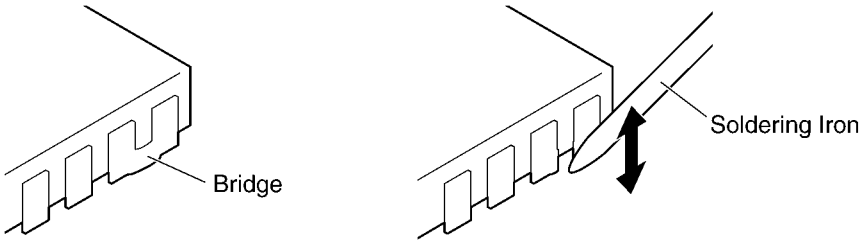
3. Heat the IC with a hot air desoldering tool through the P.C.Board until the solder on IC bottom is melted.
   Note:
   • Be sure to place it precisely, controlling the air volume of the hot air desoldering tool.



4. After soldering, confirm there are no short and open circuits with visual inspection.

12.5.5. How to Remove a Solder Bridge

When a Solder Bridge is found after soldering the bottom of the IC, remove it with a soldering iron.



12.6. Terminal Guide of the ICs, Transistors and Diodes

12.6.1. Base Unit

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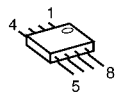
<td> 

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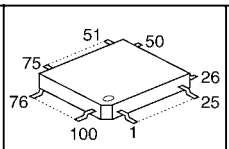
<td> 

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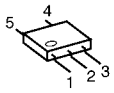
<td> 

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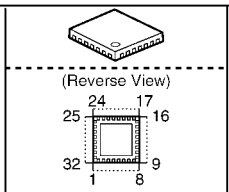
<td> 

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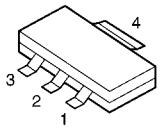
<td> 

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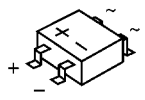
<td> 

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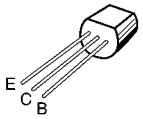
<td> 

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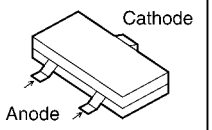
<td> 

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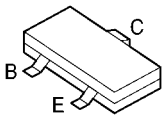
<td colspan="2"> 

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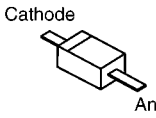
<td colspan="2"> 

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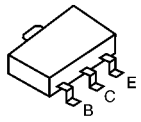
<td> 

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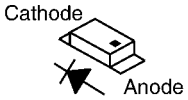
<td> 

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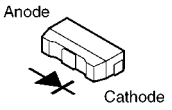
<td> 

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12.6.2. Cordless Handset

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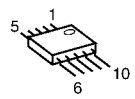
<td> 

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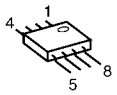
<td> 

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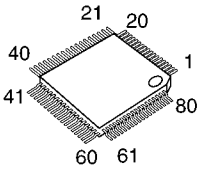
<td> 

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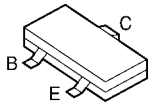
<td> 

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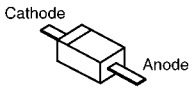
<td> 

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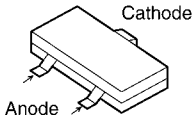
<td> 

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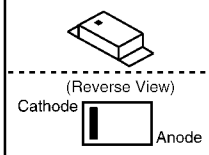
<td> 

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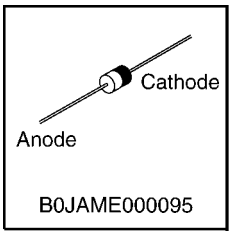
12.6.3. Charger



B0JAME000095

13 Schematic Diagram

13.1. For Schematic Diagram

13.1.1. Base Unit (Schematic Diagram (Base Unit_Main))

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 diagrams may be modified at any time with the development of new technology.

13.1.2. Cordless Handset (Schematic Diagram (Cordless Handset))

Notes:

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

13.1.3. Charger Unit (Schematic Diagram (Charger Unit))

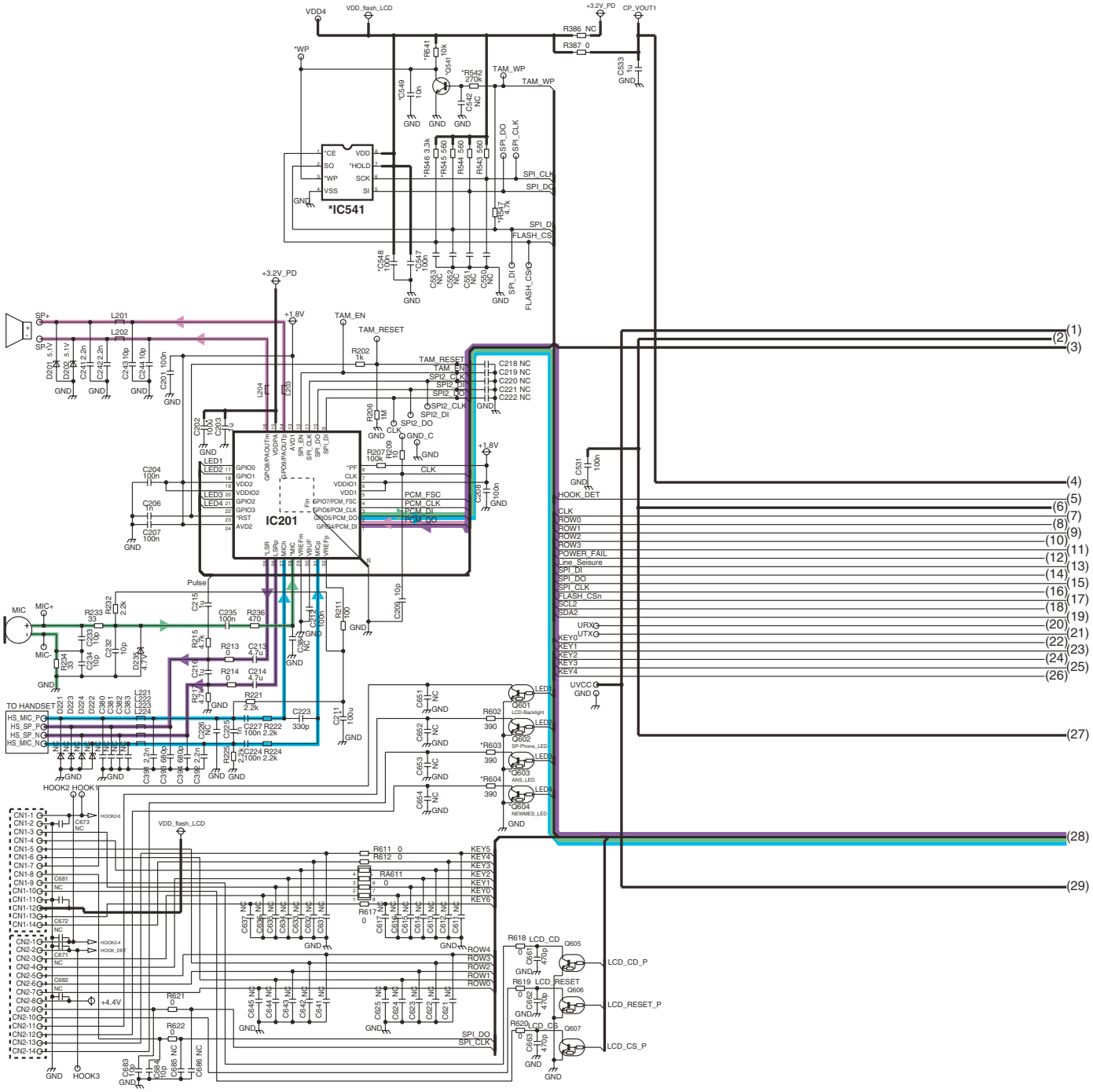
Notes:

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

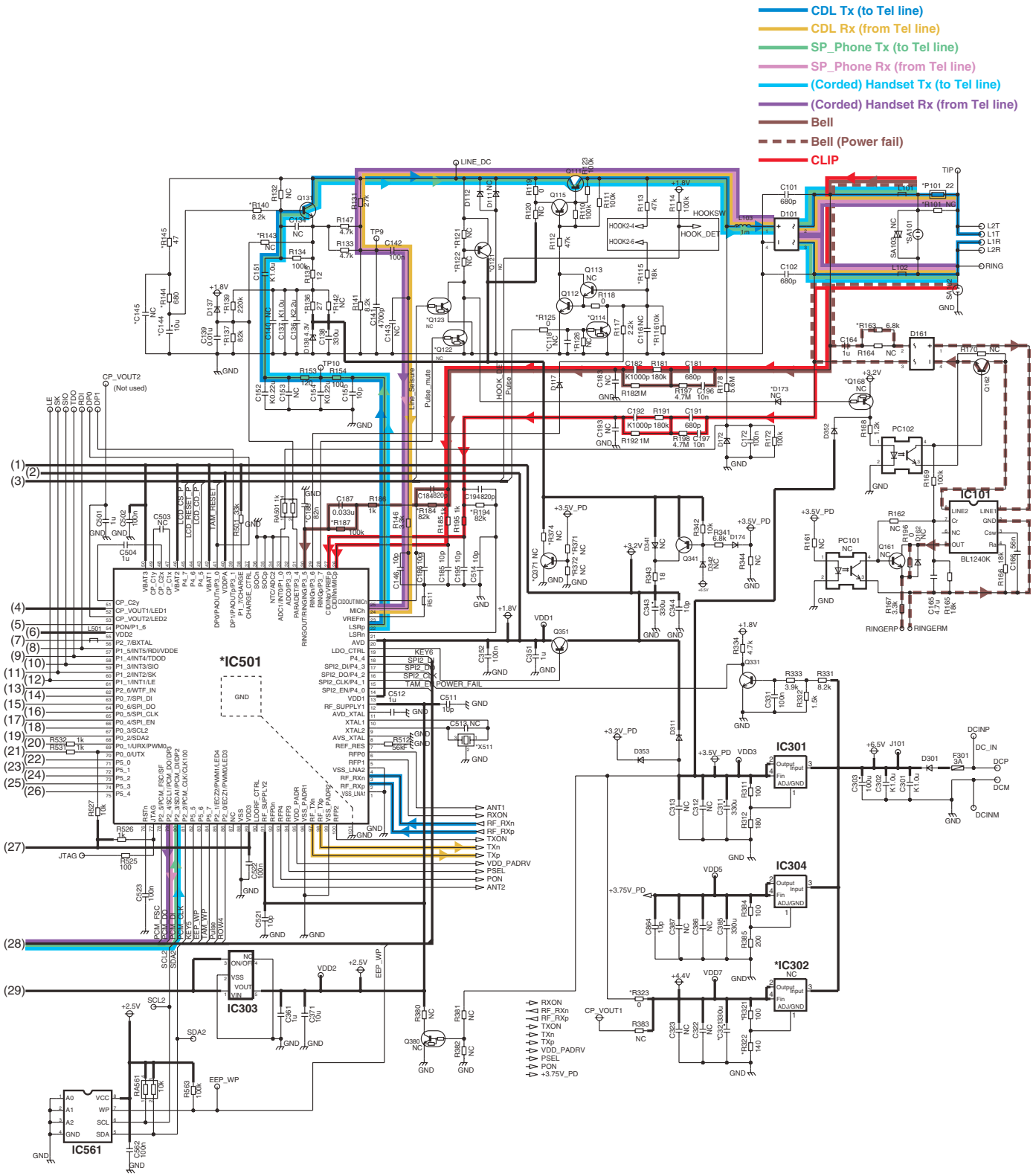
> Important Safety Notice:
> Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only the manufacturer's specified parts.

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

13.2. Schematic Diagram (Base Unit_Main)



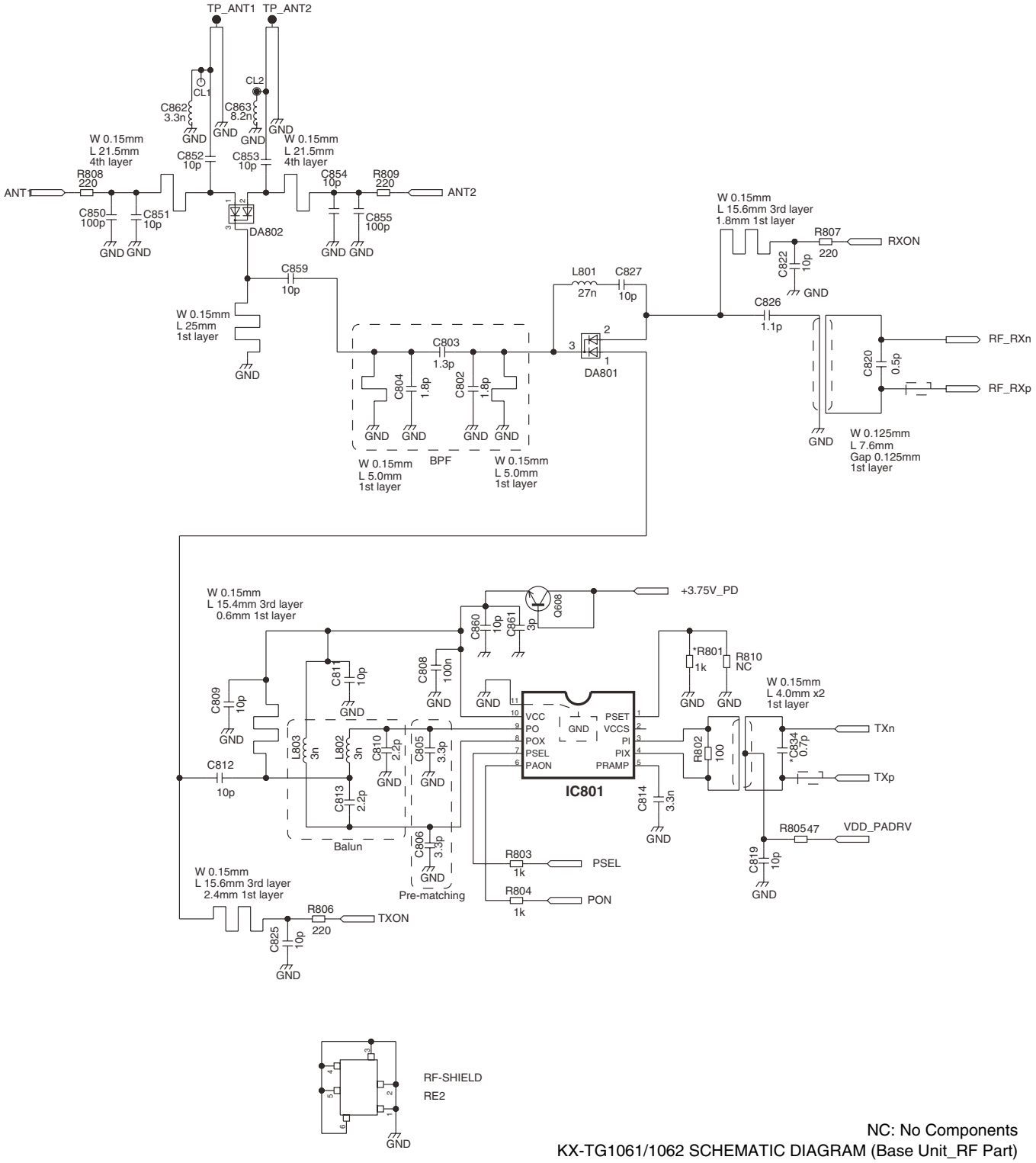
NC: No Components



NC: No Components

KX-TG1061/1062 SCHEMATIC DIAGRAM (Base Unit_Main)

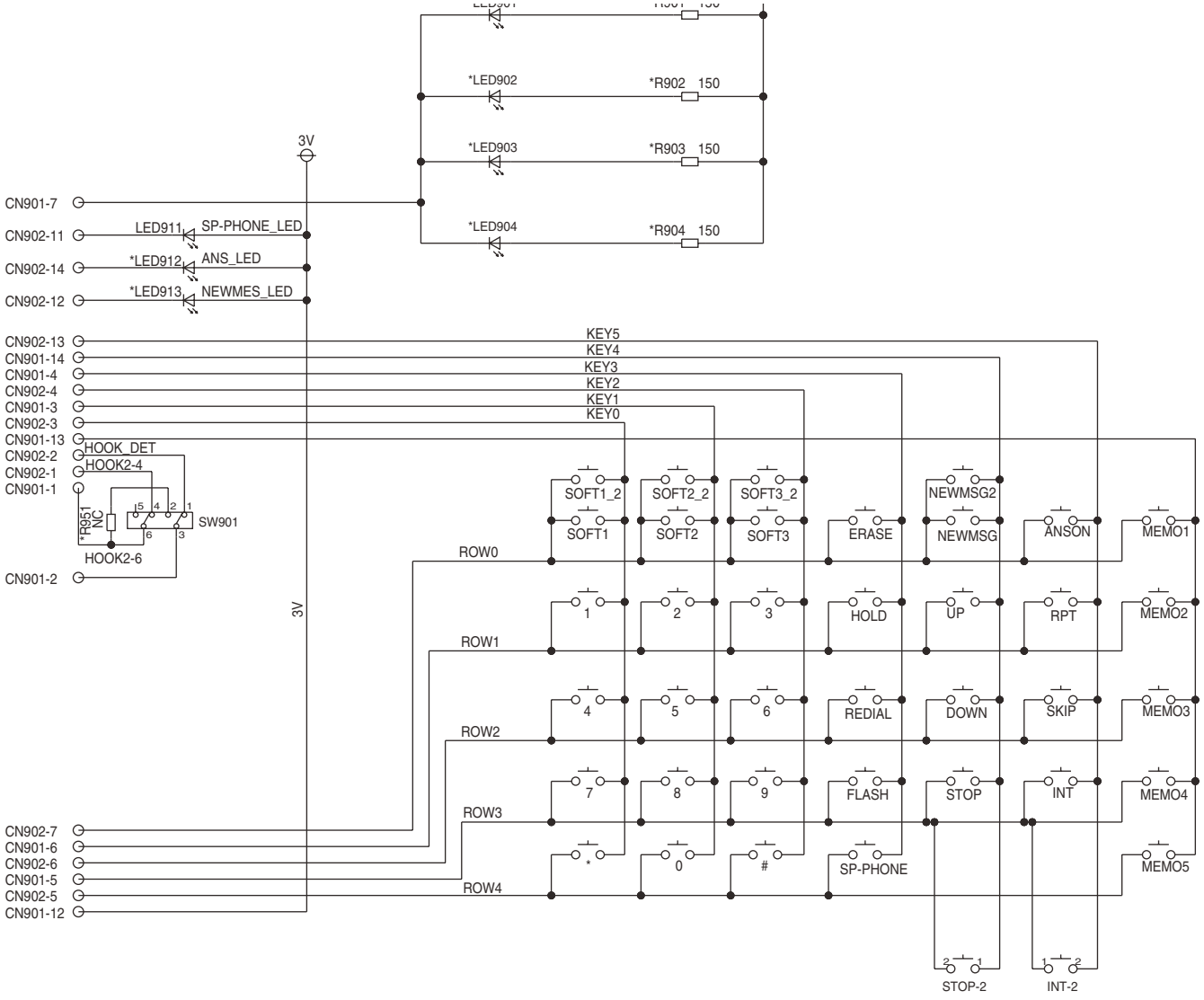
13.3. Schematic Diagram (Base Unit_RF Part)

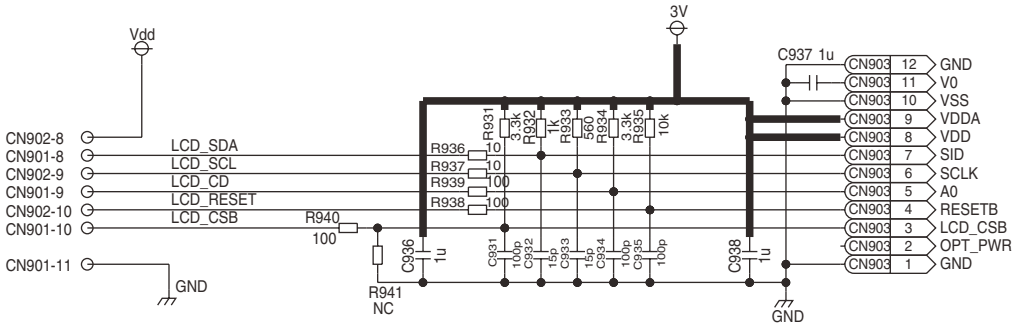


NC: No Components

KX-TG1061/1062 SCHEMATIC DIAGRAM (Base Unit_RF Part)

13.4. Schematic Diagram (Base Unit_Operation)

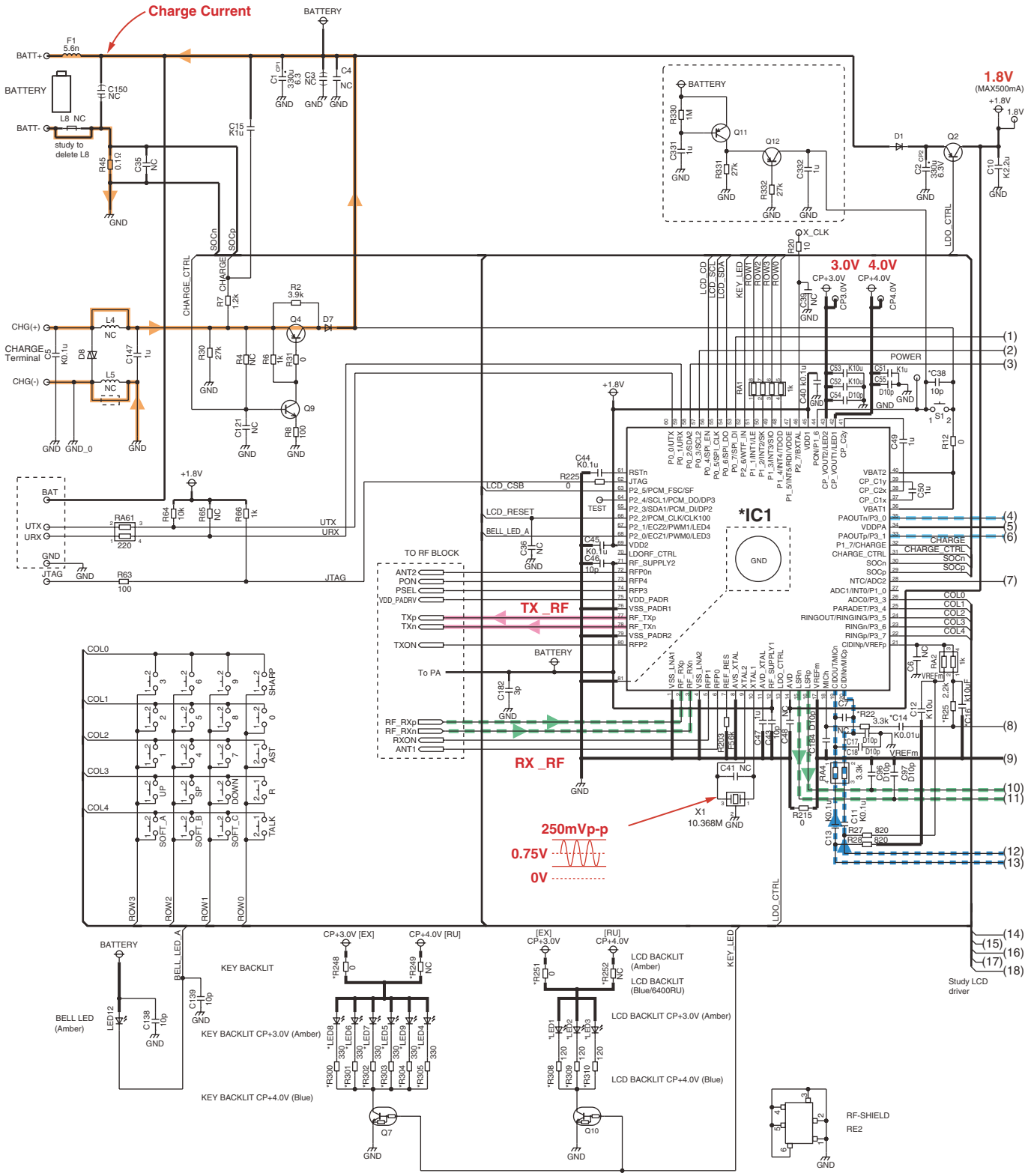




NC: No Components

KX-TG1061/1062 SCHEMATIC DIAGRAM (Base Unit_Operation)

13.5. Schematic Diagram (Cordless Handset)



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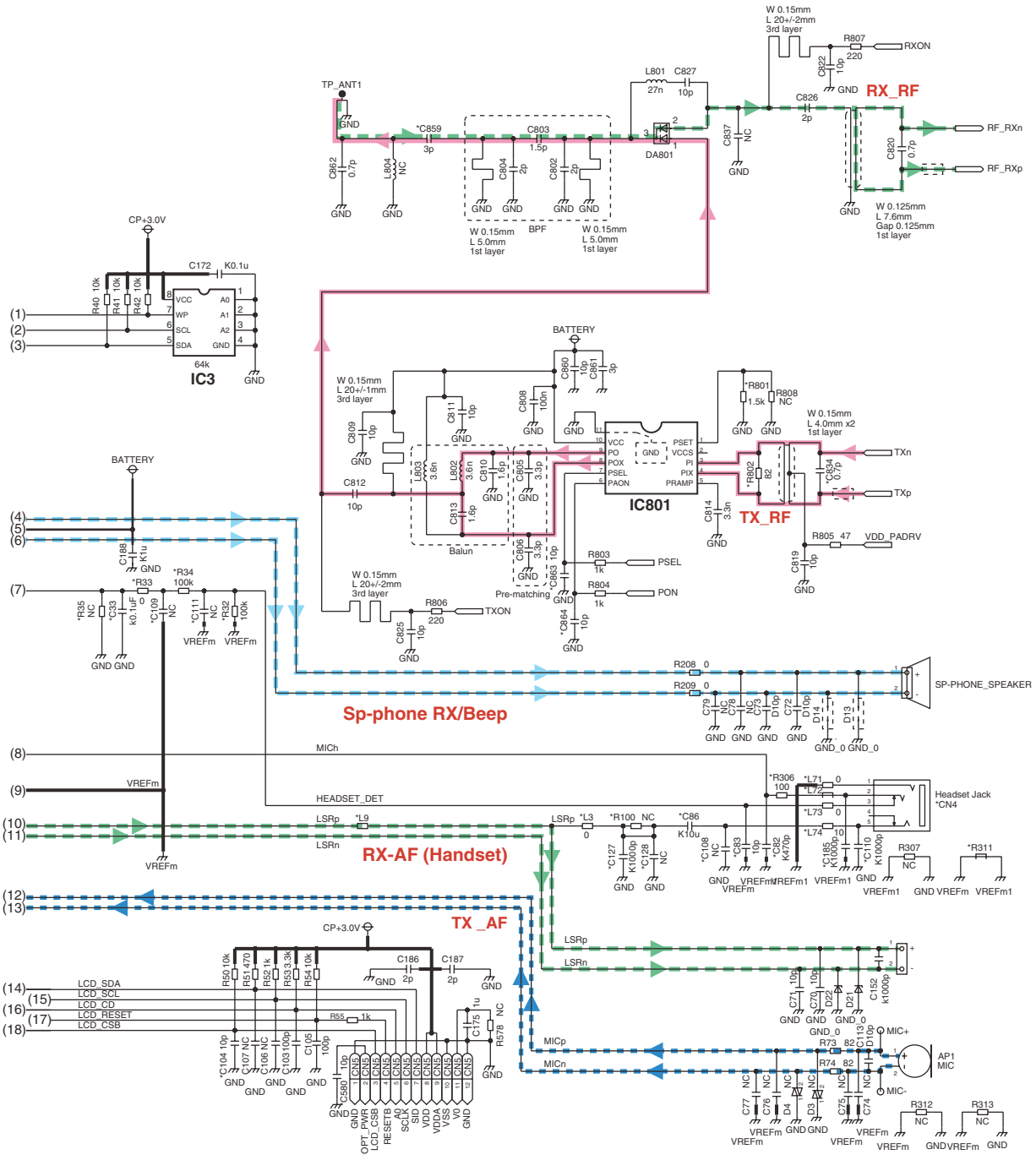
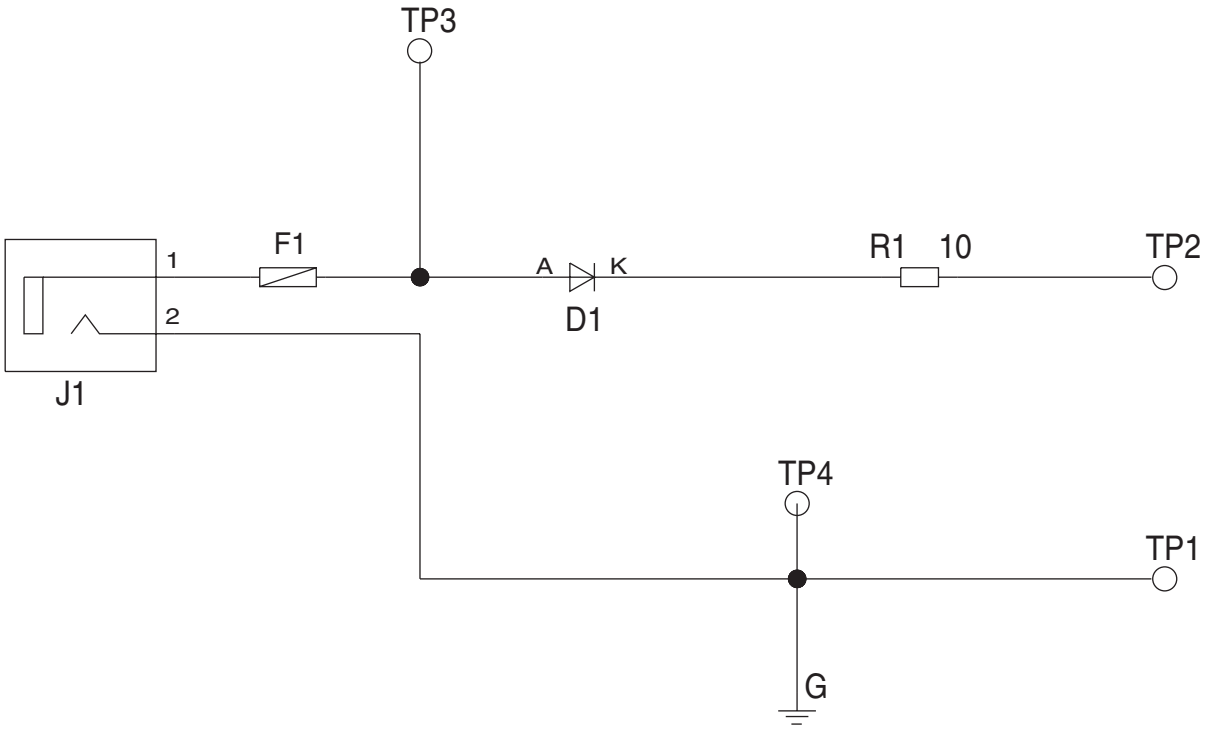


NC: No Components

KX-TGA106 SCHEMATIC DIAGRAM (Handset_Main)

13.6. Schematic Diagram (Charger Unit)

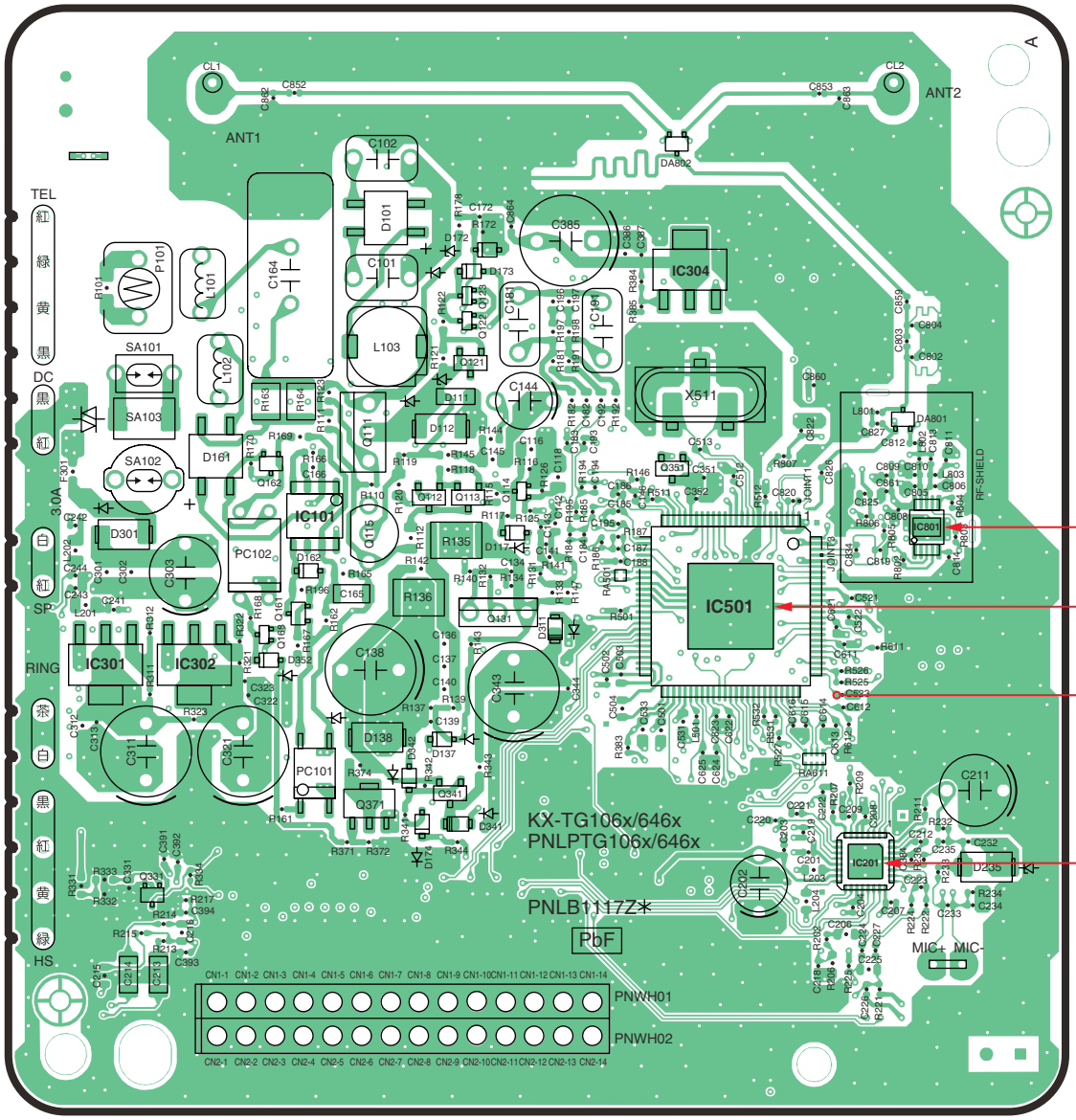


SCHEMATIC DIAGRAM (Charger Unit)

14 Printed Circuit Board

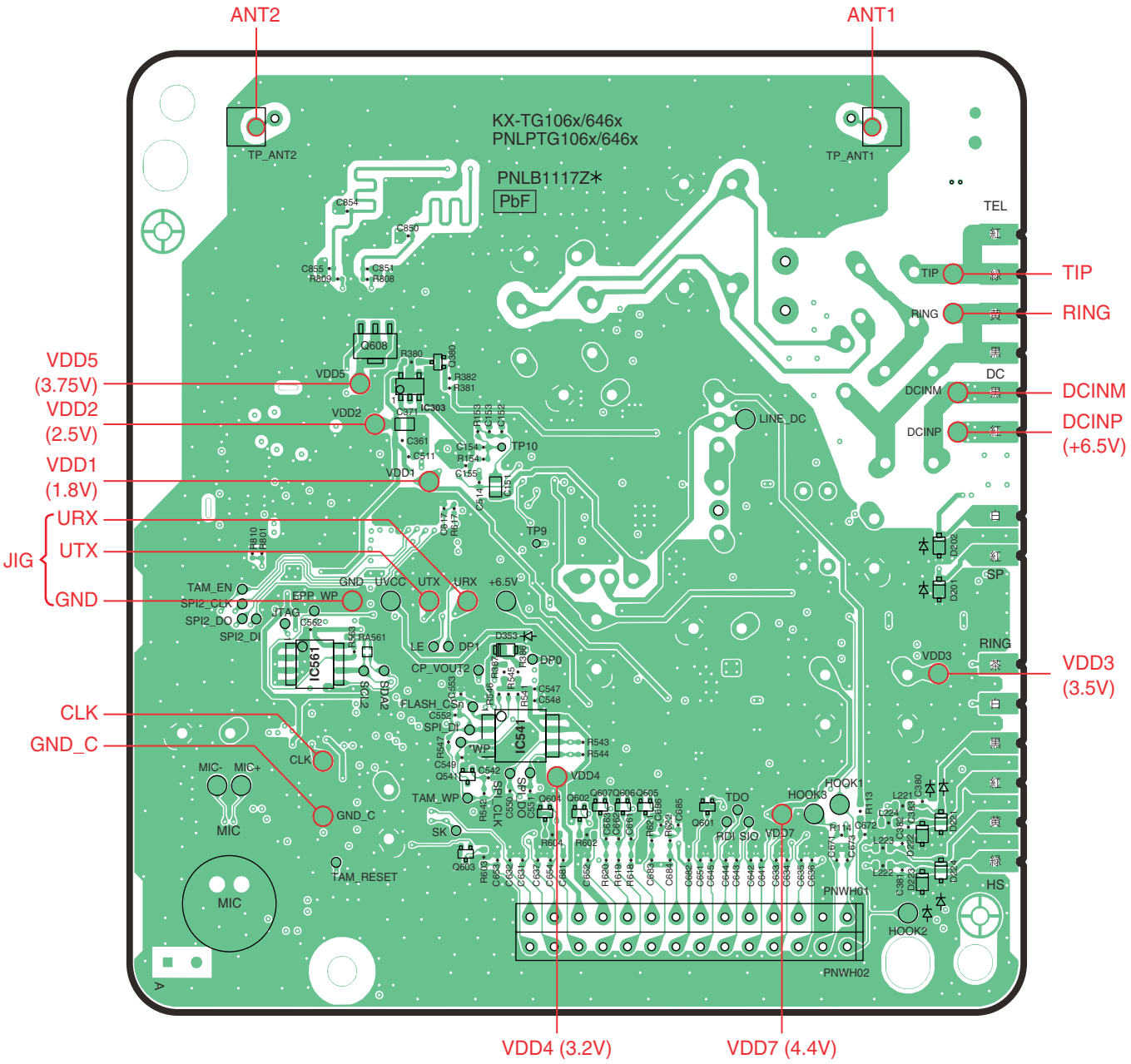
14.1. Circuit Board (Base Unit_Main)

14.1.1. Component View



KX-TG1061/1062 CIRCUIT BOARD (Base Unit_Main (Component View))

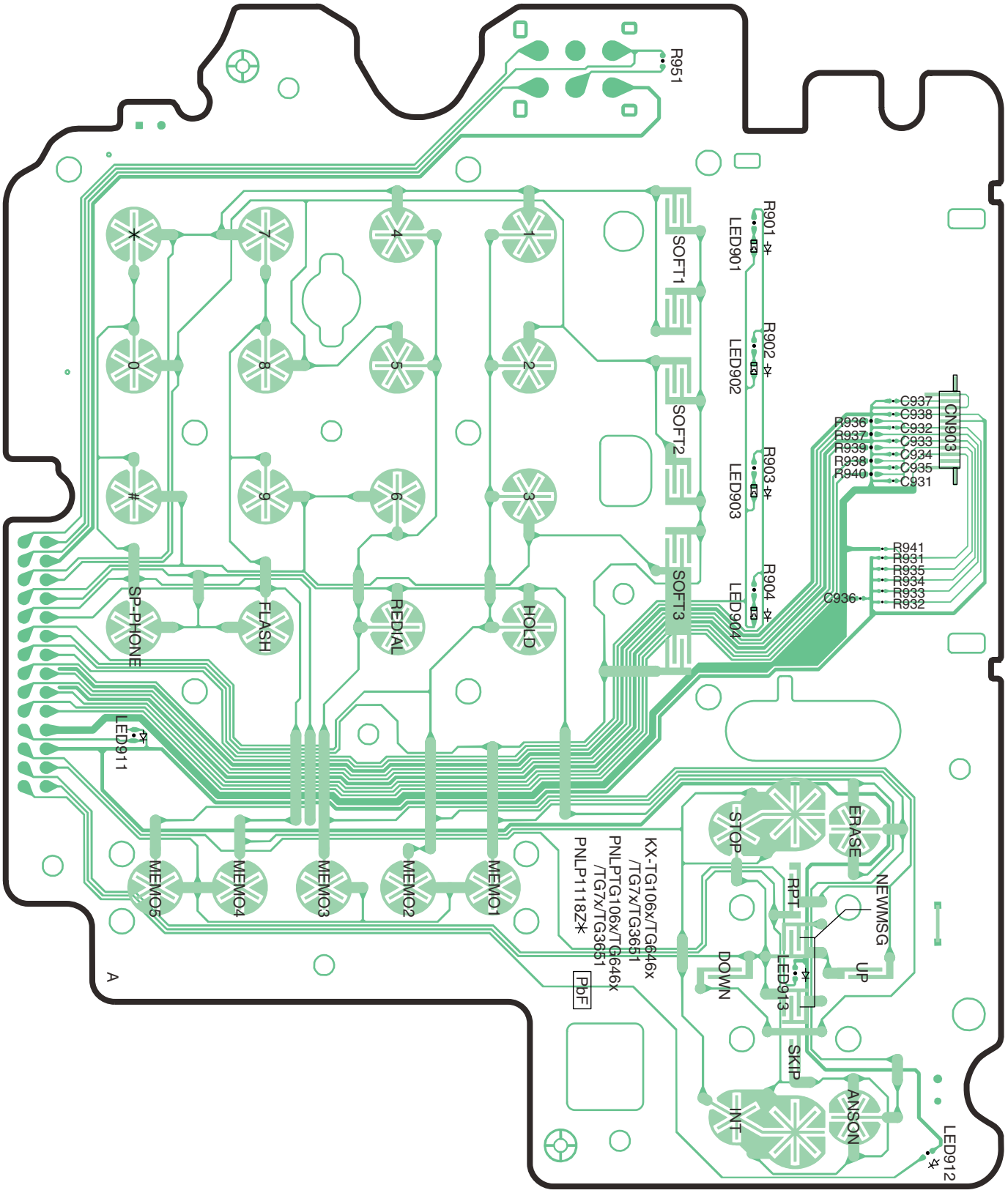
14.1.2. Bottom View



KX-TG1061/1062 CIRCUIT BOARD (Base Unit_Main (Bottom View))

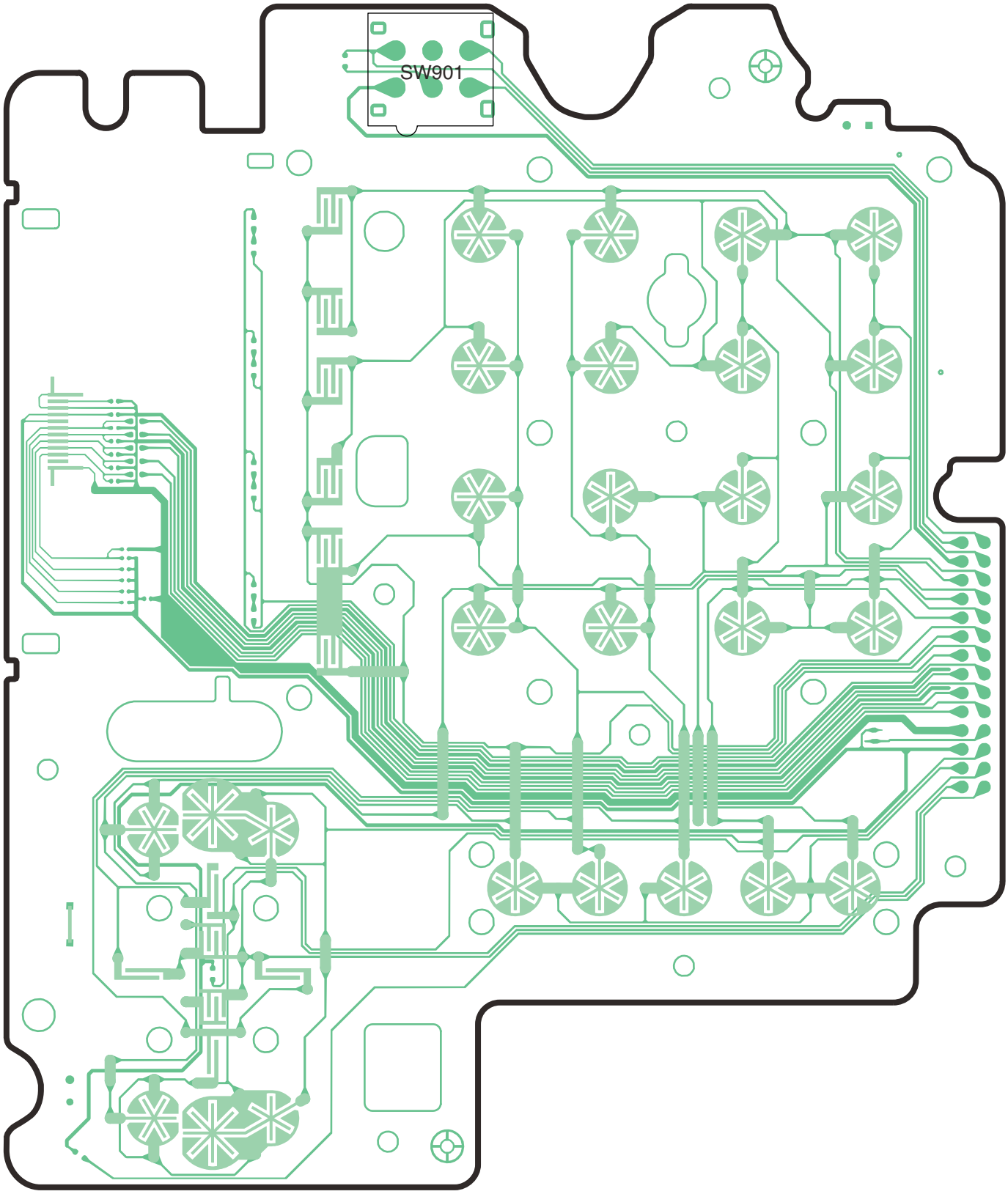
14.2. Circuit Board (Base Unit_Operation)

14.2.1. Component View



KX-TG1061/1062 CIRCUIT BOARD (Base Unit_Operation (Component View))

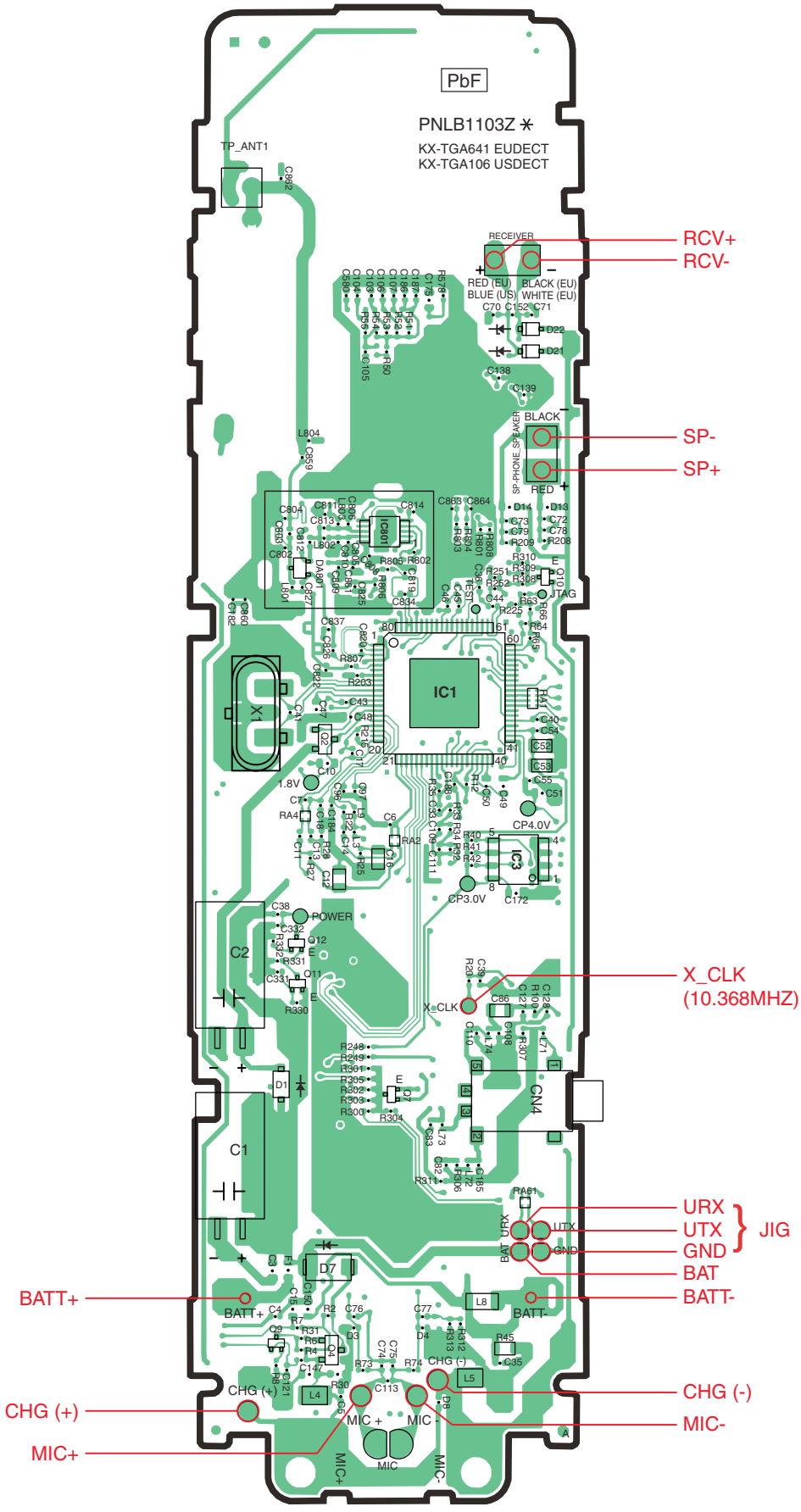
14.2.2. Bottom View



KX-TG1061/1062 CIRCUIT BOARD (Base Unit_Operation (Bottom View))

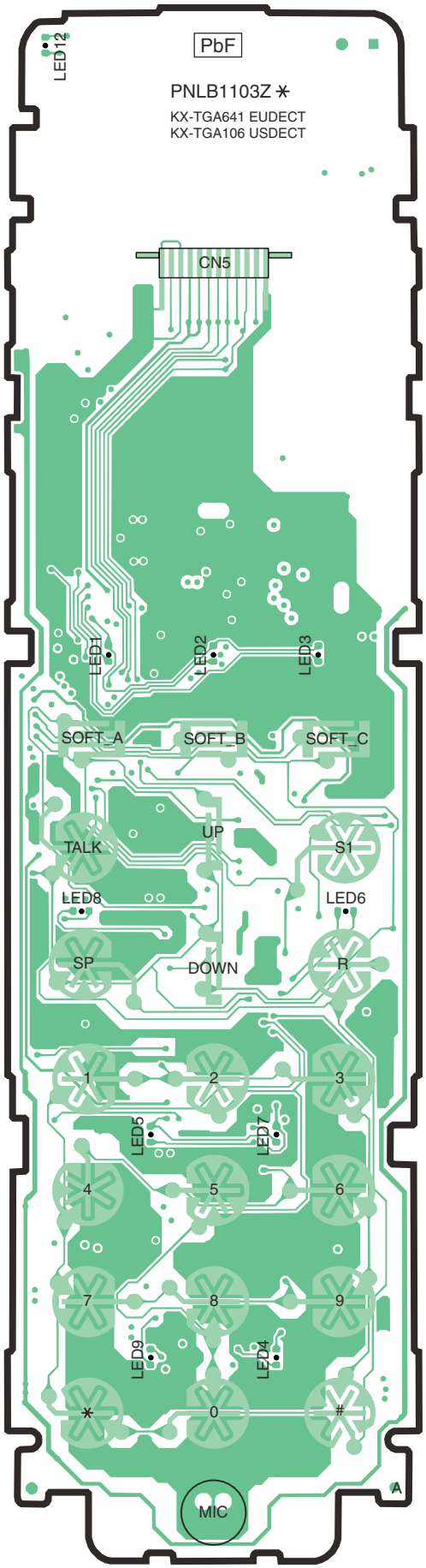
14.3. Circuit Board (Cordless Handset)

14.3.1. Component View



KX-TGA106 CIRCUIT BOARD (Handset_Main (Component View))

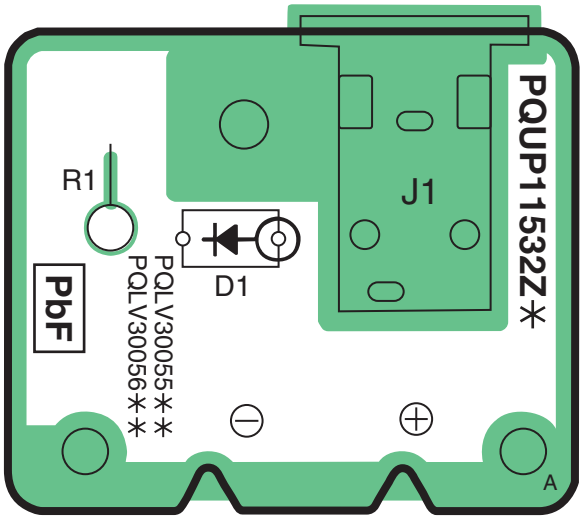
14.3.2. Bottom View



KX-TGA106 CIRCUIT BOARD (Handset_Main (Bottom View))

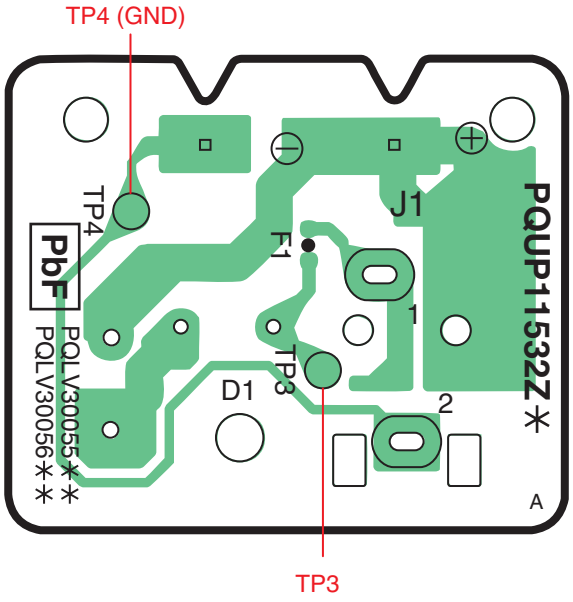
14.4. Circuit Board (Charger Unit)

14.4.1. Component View



CIRCUIT BOARD (Charger unit (Component View))

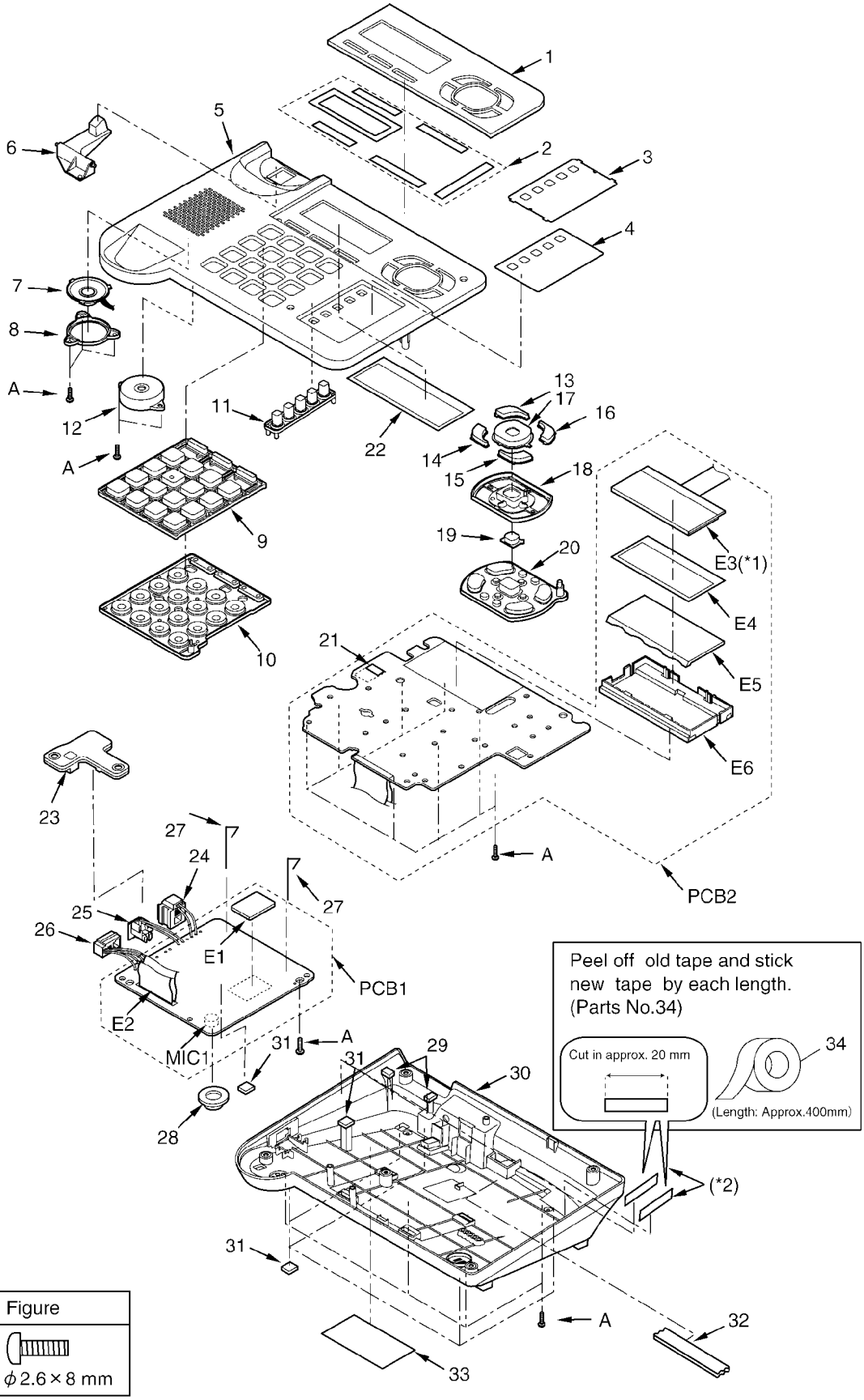
14.4.2. Bottom View



CIRCUIT BOARD (Charger unit (Bottom View))

15 Exploded View and Replacement Parts List

15.1. Cabinet and Electrical Parts (Base Unit)

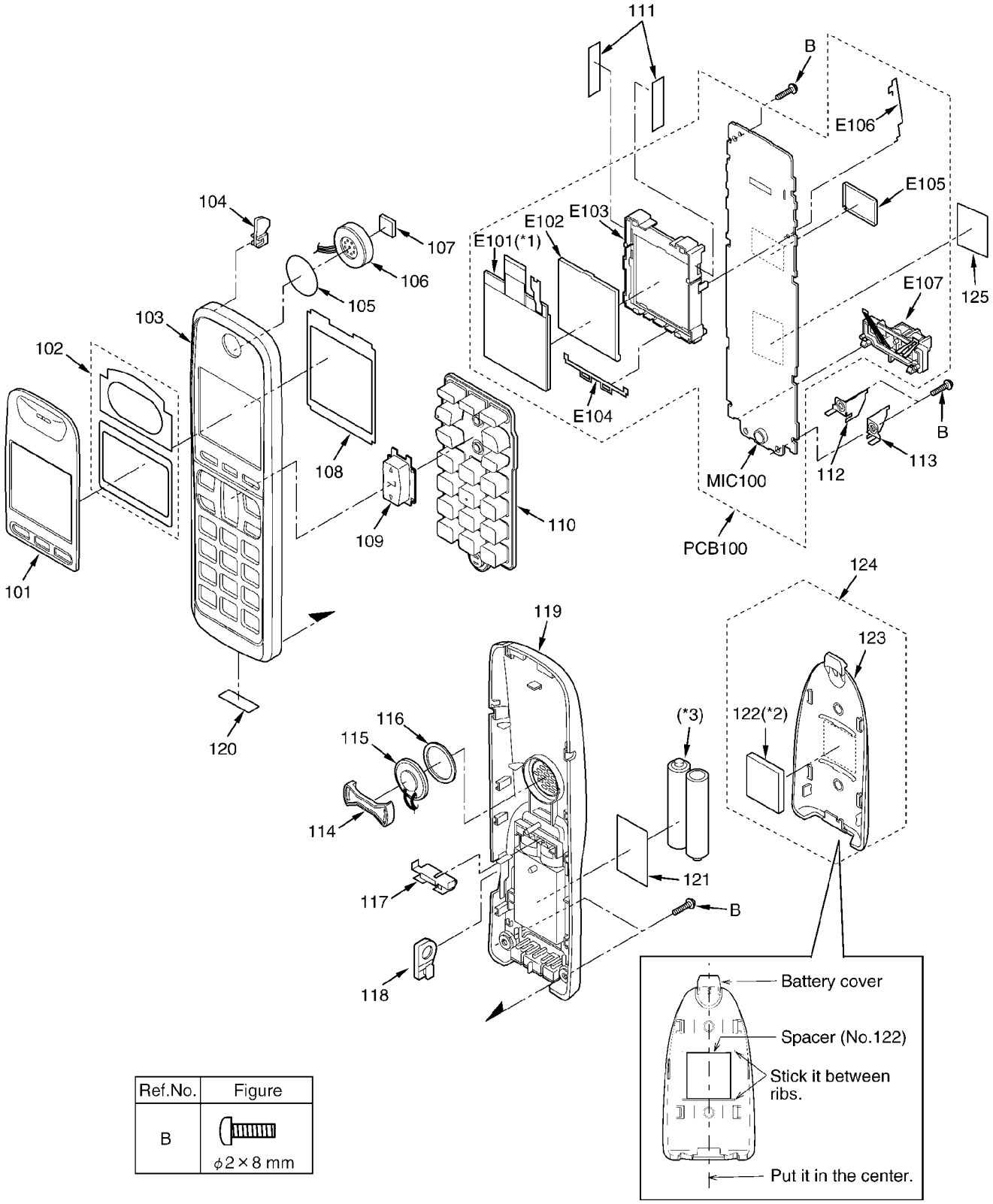


Ref.No.	Figure
A	ϕ2.6 × 8 mm

Note:

(*1) This cable is fixed by soldering. Refer to **How to Replace the Base unit LCD** (P.63).

15.2. Cabinet and Electrical Parts (Cordless Handset)



Ref.No.	Figure
B	ϕ2 × 8 mm

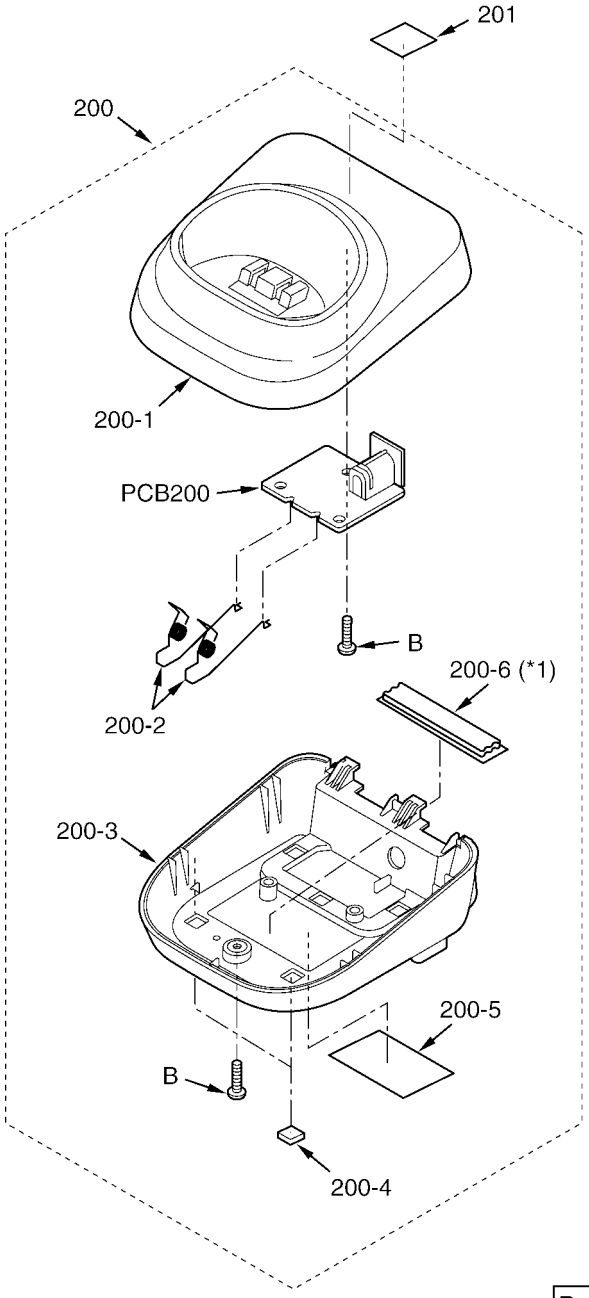
Note:

(*1) This cable is fixed by soldering. Refer to **How to Replace the Cordless Handset LCD** (P.64).

(*2) Attach the spacer (No. 122) to the exact location described above.

(*3) The rechargeable Ni-MH battery HHR-4DPA is available through sales route of Panasonic.

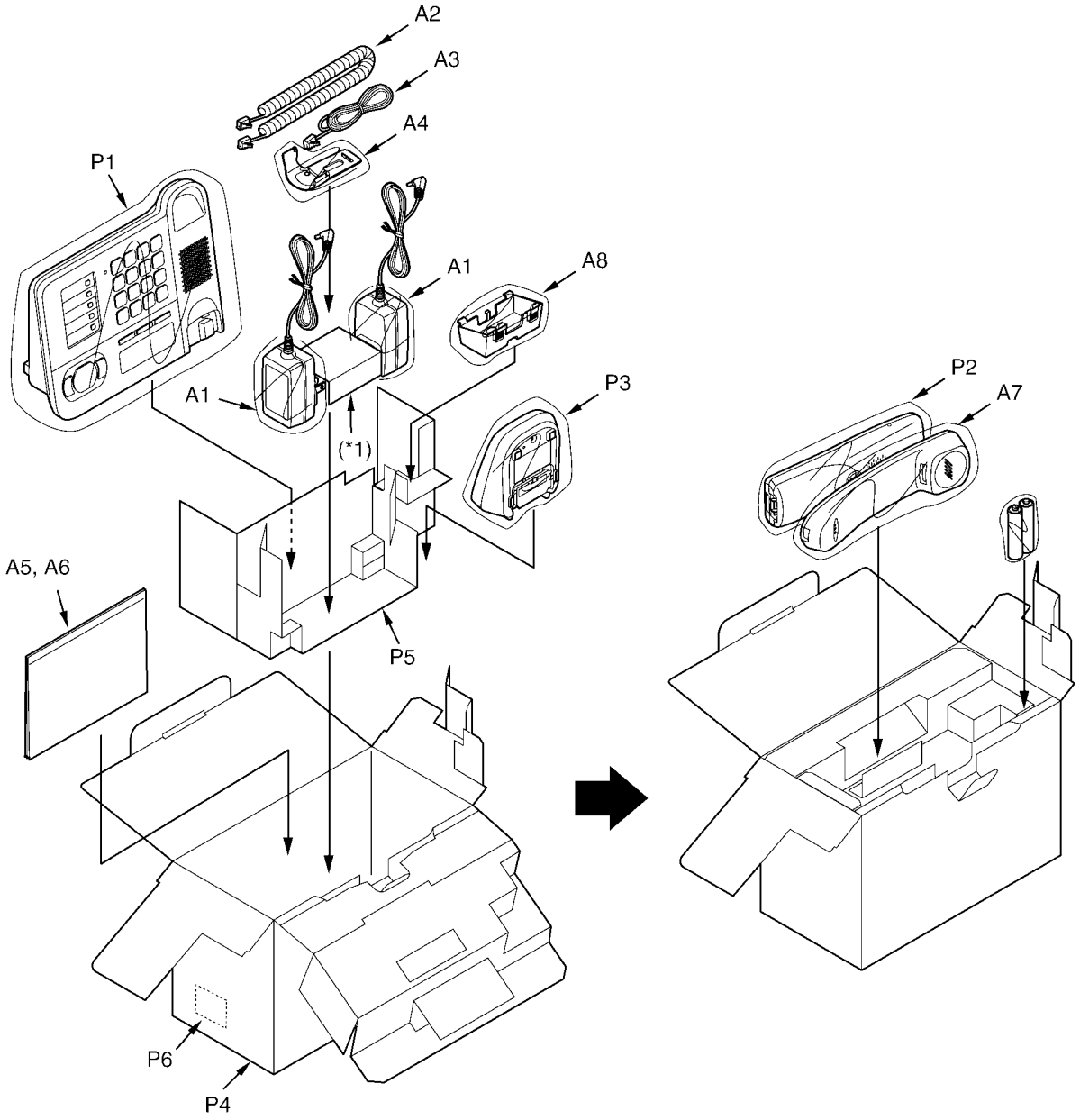
15.3. Cabinet and Electrical Parts (Charger Unit)



Ref.No.	Figure
B	 ϕ2 × 8 mm

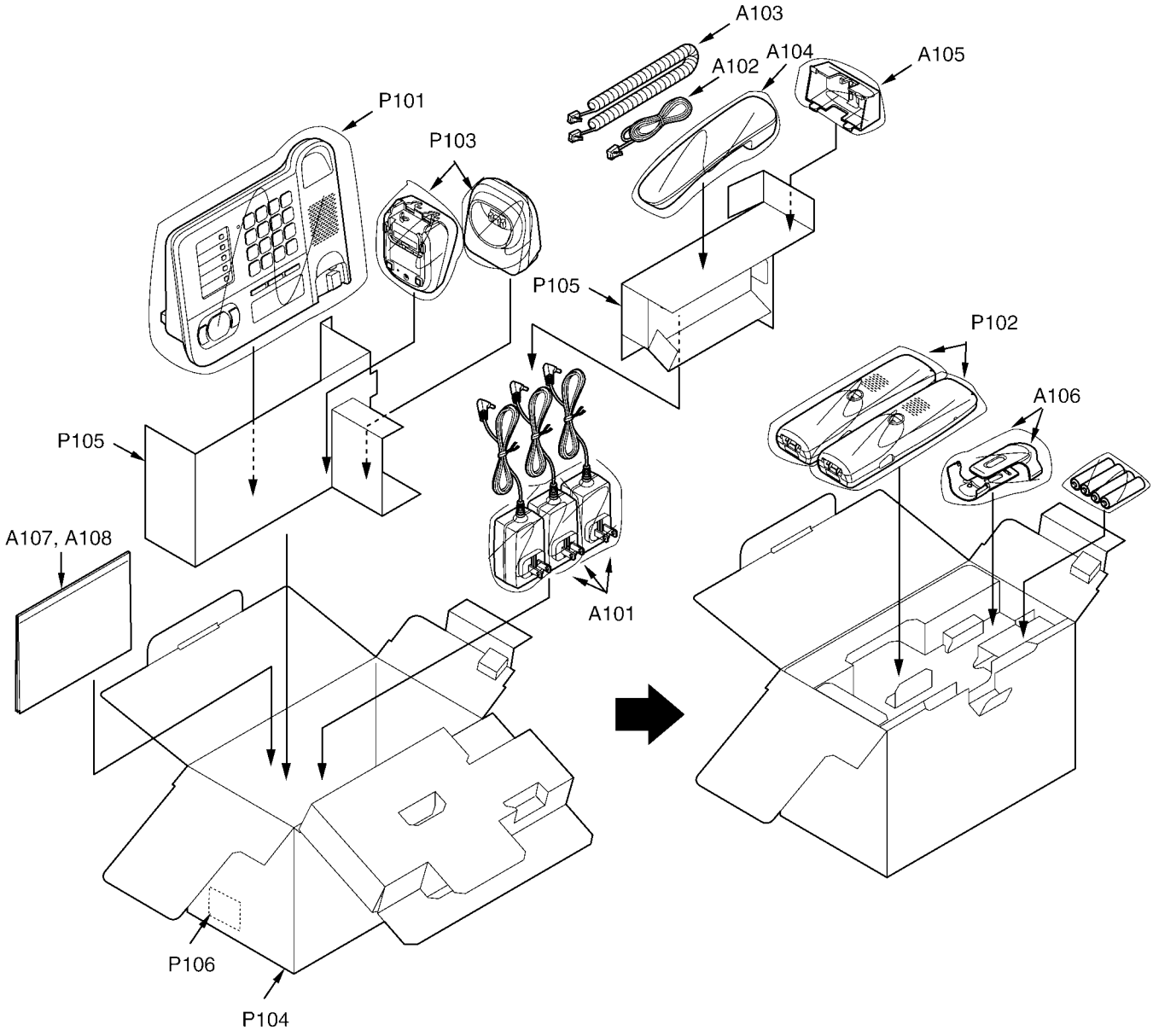
15.4. Accessories and Packing Materials

15.4.1. KX-TG1061M

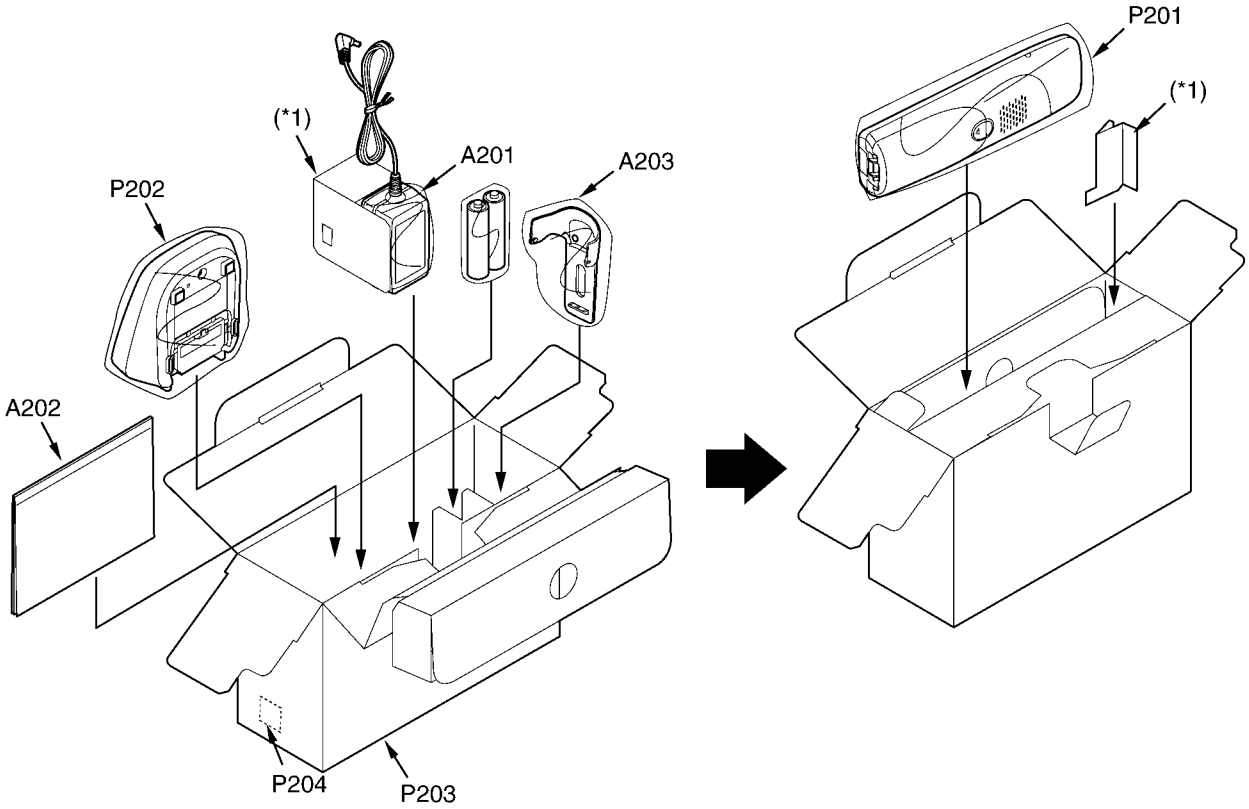


Note:
(*1) This pad is a piece of Ref No. P4 (GIFT BOX).

15.4.2. KX-TG1062M



15.4.3. KX-TGA106M



Note:
(*1) These pads are pieces of Ref P.203 (GIFT BOX).

15.5. Replacement Parts List

1. RTL (Retention Time Limited)
   Note:
   The “RTL” marking indicates that its Retention Time is Limited.
   When production is discontinued, this item will continue to be available only for a specific period of time. This period of time depends on the type of item, and the local laws governing parts and product retention. At the end of this period, the item 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

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	1	PNGP1055Z1	PANEL, LCD	PMMA-HB
	2	PNYE1015Z	TAPE, DOUBLE SIDED	
	3	PNGV1007Z	TRANSPARENT PLATE , TEL CARD	PC-V2
	4	PNGD1014Z	CARD, TEL CARD	
	5	PNKM1088Z2	CABINET BODY	ABS-HB
	6	PNBH1009Z1	BUTTON, HOOK	ABS-HB
	7	L0AA04A00028	SPEAKER	
	8	PQHR11082Z	GUIDE, SPEAKER	POM-HB
	9	PNBX1053Z1	BUTTON, DIAL	ABS-HB
	10	PNJK1053Z	KEYBOARD SWITCH, DIAL	
	11	PNJK1055Z	KEYBOARD SWITCH, 5KEY	
	12	L0DDYD000010	BUZZER	
	13	PNBC1005Y1	BUTTON, ERASE	ABS-HB
	14	PNBC1006Y1	BUTTON, STOP	ABS-HB
	15	PNBC1007Y1	BUTTON, LOCATOR	ABS-HB
	16	PNBC1004Y1	BUTTON, ANSWER ON	ABS-HB
	17	PNBC1002Z2	BUTTON, NAVIGATOR KEY	ABS-HB
	18	PNHR1001Z	GUIDE, BUTTON	PS-HB
	19	PNBC1001Z2	BUTTON, MESSAGE	AS-HB
	20	PNJK1054Z	KEYBOARD SWITCH, TAM	
	21	PNHX1200Z	PLASTIC PARTS, SHEET	
	22	PNYE1014Z	SPACER, CUSHION LCD	
	23	PNHR1130Z	GUIDE, JACK	ABS-HB
	24	PQJJ1T039T	JACK, MODULAR	
	25	K2ECYZ000001	JACK, DC	
	26	PQJJ1T030S	JACK, HANDSET	
	27	PNLA1004Z	ANTENNA	
	28	PQMG10025W	RUBBER PARTS, MIC	
	29	PNHS1131Z	CUSHION, CABINET	
	30	PNKF1063Z1	CABINET COVER	PS-HB
	31	PQHA10023Z	RUBBER PARTS, FOOT CUSHION	
	32	PQXDZLDRS1	MAGNET ELECTRIC TRANSDUCER, SECURITY TAG	
	33	PNGT1937Y	NAME PLATE	
	34	ZT8156AB25A6	TAPE, ACETATE	

15.5.1.2. Main P.C.Board Parts

Note:

(*1) Whren replacing IC501, IC541, IC561 or X511, data needs to be written to them. Refer to **Base Unit** (P.72) of **Things to Do after Replacing IC or X'tal** (P.72).

(*2) When replacing IC201, refer to **How to Replace the LLP (Leadless Leadframe Package) IC** (P.84).

(*3) IC541 need software downloading. Refer to **Base Unit** (P.72) of **Things to Do after Replacing IC or X'tal.**

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	PCB1	PNWP1G1061MH	MAIN P.C.BOARD ASS'Y (RTL)	
			(ICs)	
	IC101	C1CB00002903	IC(*2)	S
	IC201	C1CB00002427	IC	
	IC301	C0CBAYG00016	IC	S
	IC303	C0CBCAC00250	IC	
	IC304	C0CBAYG00016	IC	S
	IC501	C1CB00003153	IC(BBIC)(*1)	
	IC541	C3FBLY000048	IC(FLASH)(*1)(*3)	
	IC561	PNWITG1061MH	IC(EEPROM)(*1)	
	IC801	C1CB00001842	IC	
			(TRANSISTORS)	
	Q111	B1CCBR000001	TRANSISTOR(SI)	
	Q112	PQVTBF822T7	TRANSISTOR(SI)	
	Q114	PSVTDTC144E	TRANSISTOR(SI)	S
	Q115	B1ACGP000007	TRANSISTOR(SI)	
	Q131	2SD1994A	TRANSISTOR(SI)	
	Q162	2SD1819A-TX	TRANSISTOR(SI)	S
	Q331	2SD1819A-TX	TRANSISTOR(SI)	S
	Q341	B1ADGE000004	TRANSISTOR(SI)	
	Q351	B1ADGE000004	TRANSISTOR(SI)	
	Q541	2SC6054JSL	TRANSISTOR(SI)	
	Q601	UN9219J	TRANSISTOR(SI)	S
	Q602	UN9219J	TRANSISTOR(SI)	S
	Q603	UN9219J	TRANSISTOR(SI)	S
	Q604	UN9219J	TRANSISTOR(SI)	S
	Q605	PSVTDTC144E	TRANSISTOR(SI)	S
	Q606	PSVTDTC144E	TRANSISTOR(SI)	S
	Q607	PSVTDTC144E	TRANSISTOR(SI)	S
	Q608	2SD0874AS	TRANSISTOR(SI)	

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
			(DIODES)	
	D101	B0EDER000009	DIODE(SI)	
	D301	B0JCME000035	DIODE(SI)	S
	D112	MA1Z300	DIODE(SI)	S
	D117	MA111	DIODE(SI)	S
	D137	MA111	DIODE(SI)	S
	D138	B0BC4R500012	DIODE(SI)	
	D161	B0EDER000009	DIODE(SI)	
	D172	B0BC2R1A0006	DIODE(SI)	
	D174	MA111	DIODE(SI)	S
	D201	MAZ805100L	DIODE(SI)	
	D202	MAZ805100L	DIODE(SI)	
	D235	MAZY04700L	DIODE(SI)	
	D311	MA21D3400L	DIODE(SI)	
	D352	MA111	DIODE(SI)	S
	D353	MA21D3400L	DIODE(SI)	
	DA801	B0DDCD000001	DIODE(SI)	
	DA802	B0DDCD000001	DIODE(SI)	
			(COILS)	
	L101	PQLQXF330K	COIL	S
	L102	PQLQXF330K	COIL	S
	L103	G1A102BA0002	COIL	
	L201	PQLQR1WT	COIL	S
	L202	PQLQR1WT	COIL	S
	L203	PQLQR1RS241	COIL	S
	L204	PQLQR1RS241	COIL	S
	L221	PQLQR2KA20T	COIL	S
	L222	PQLQR2KA20T	COIL	S
	L223	PQLQR2KA20T	COIL	S
	L224	PQLQR2KA20T	COIL	S
	L801	G1C27NJ00010	COIL	
	L802	G1C3N0ZA0063	COIL	
	L803	G1C3N0ZA0063	COIL	
	C862	G1C3N3Z00007	COIL	
	C863	PQLQR4C8N2J	COIL	S
			(COMPONENTS PARTS)	
	RA501	D1H410220001	RESISTOR ARRAY	
	RA561	D1H410320002	RESISTOR ARRAY	
	RA611	EXB28VR000X	RESISTOR ARRAY	
			(VARISTORS)	
	SA101	PQVDDSS301L	VARISTOR (SURGE ABSORBER)	
	SA102	J0LF00000026	VARISTOR (SURGE ABSORBER)	S
			(IC FILTERS)	
	L501	J0JCC0000275	IC FILTER	
	R511	J0JCC0000275	IC FILTER	
			(PHOTO ELECTRIC TRANS-DUCER)	
	PC102	B3PAA0000531	PHOTO ELECTRIC TRANS-DUCER	
			(RESISTORS)	
	R110	ERJ2GEJ104	100k	
	R111	ERJ3GEYJ104	100k	
	R112	PQ4R10XJ473	47k	S
	R113	ERJ3GEYJ473	47k	
	R114	ERJ2GEJ104	100k	
	R115	ERJ3GEYJ183	18k	
	R116	ERJ3GEYJ103	10k	
	R117	ERJ2GEJ222	2.2k	
	R118	ERJ3GEY0R00	0	
	R119	ERJ2GE0R00	0	
	R123	ERJ3GEYJ104	100k	
	R125	ERJ2GE0R00	0	
	R131	ERJ2GEJ273X	27k	S
	R133	ERJ3GEYJ472	4.7k	
	R134	ERJ2GEJ104	100k	
	R135	ERJ12YJ120	12	
	R136	ERJ12YJ270	27	
	R137	ERJ2GEJ823	82k	
	R139	ERJ2GEJ224	220k	
	R140	ERJ2GEJ822	8.2k	
	R141	ERJ3GEYJ822	8.2k	
	R144	ERJ3GEYJ681	680	

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	R145	ERJ3GEYJ470	47	
	R146	ERJ2GEJ332	3.3k	
	R147	ERJ3GEYJ472	4.7k	
	R153	ERJ2GEJ121	120	
	R154	ERJ2GEJ101	100	
	R163	ERJ14YJ682	6.8k	
	R165	ERJ3GEYJ183	18k	
	R166	ERJ3GEYJ183	18k	
	R167	ERJ3GEYJ332	3.3k	
	R168	ERJ2GEJ122	1.2k	
	R169	ERJ3GEYJ104	100k	
	R172	ERJ3GEYJ104	100k	
	R178	ERJ3GEYJ565	5.6M	
	R181	ERJ3GEYJ184	180k	
	R182	ERJ3GEYJ105	1M	
	R184	ERJ2GEJ823	82k	
	R185	ERJ2GEJ102	1k	
	R186	ERJ2GEJ102	1k	
	R187	ERJ2GEJ104	100k	
	R191	ERJ3GEYJ184	180k	
	R192	ERJ3GEYJ105	1M	
	R194	ERJ2GEJ823	82k	
	R195	ERJ2GEJ102	1k	
	R196	ERJ3GEY0R00	0	
	R197	ERJ3GEYJ475	4.7M	
	R198	ERJ3GEYJ475	4.7M	
	R202	ERJ2GEJ102	1k	
	R206	ERJ3GEYJ105	1M	
	R207	ERJ2GEJ104	100k	
	R209	ERJ2GEJ100	10	
	R211	ERJ2GEJ101	100	
	R213	ERJ2GE0R00	0	
	R214	ERJ2GE0R00	0	
	R215	ERJ2GEJ472X	4.7k	
	R217	ERJ2GEJ472X	4.7k	
	R221	ERJ2GEJ222	2.2k	
	R222	ERJ2GEJ222	2.2k	
	R224	ERJ2GEJ222	2.2k	
	R225	ERJ2GEJ222	2.2k	
	R232	ERJ2GEJ222	2.2k	
	R233	ERJ2GEJ330	33	
	R234	ERJ2GEJ330	33	
	R236	ERJ2GEJ471	470	
	R311	ERJ2RKF1000	100	
	R312	ERJ2RKF1800	180	
	R323	ERJ2GE0R00	0	
	R331	ERJ3GEYJ822	8.2k	
	R332	ERJ3GEYJ152	1.5k	
	R333	ERJ3GEYJ392	3.9k	
	R334	ERJ2GEJ472X	4.7k	
	R341	ERJ2GEJ682	6.8k	
	R342	ERJ2GEJ103	10k	
	R343	ERJ3GEYJ180	18	
	R384	ERJ2RKF1000	100	
	R385	ERJ2RKF2000	200	
	R387	ERJ3GEY0R00	0	
	R501	ERJ2GEJ333	33k	
	R512	D0GA563ZA006	56k	
	R525	ERJ2GEJ101	100	
	R526	ERJ2GEJ102	1k	
	R527	ERJ2GEJ103	10k	
	R531	ERJ2GEJ102	1k	
	R532	ERJ2GEJ102	1k	
	R541	ERJ2GEJ103	10k	
	R542	ERJ2GEJ274	270k	
	R543	ERJ2GEJ561	560	
	R544	ERJ2GEJ561	560	
	R545	ERJ2GEJ561	560	
	R546	ERJ2GEJ332	3.3k	
	R563	ERJ2GEJ104	100k	
	R602	ERJ3GEYJ391	390	
	R603	ERJ3GEYJ391	390	
	R604	ERJ3GEYJ391	390	

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	R611	ERJ2GE0R00	0	
	R612	ERJ2GE0R00	0	
	R617	ERJ2GE0R00	0	
	R618	ERJ2GE0R00	0	
	R619	ERJ2GE0R00	0	
	R620	ERJ2GE0R00	0	
	R621	ERJ2GE0R00	0	
	R622	ERJ2GE0R00	0	
	R801	ERJ2GEJ102	1k	
	R802	ERJ2GEJ101	100	
	R803	ERJ2GEJ102	1k	
	R804	ERJ2GEJ102	1k	
	R805	ERJ2GEJ470	47	
	R806	ERJ2GEJ221	220	
	R807	ERJ2GEJ221	220	
	R808	ERJ2GEJ221	220	
	R809	ERJ2GEJ221	220	
			(CAPACITORS)	
	C101	F1B2H681A070	680p	
	C102	F1B2H681A070	680p	
	C136	PQCUV1A225KB	2.2	
	C137	PQCUV1C105KB	1	
	C138	ECEA0JKA331	330	
	C139	ECUE1C103KBQ	0.01	
	C141	ECUE1E472KBQ	0.0047	
	C142	ECUV1H104KBV	0.1	
	C144	ECEA1HKA100	10	
	C146	ECUE1H100DCQ	10p	
	C151	PQCUV1C105KB	1	
	C152	ECJ0EB0J224K	0.22	
	C154	ECJ0EB0J224K	0.22	
	C155	ECUE1H100DCQ	10p	
	C164	F0C2E1050005	1	
	C165	F1K1H475A199	4.7	
	C166	ECUV1C563KBV	0.056	
	C172	ECUE1A104KBQ	0.1	
	C181	F1B2H681A070	680p	
	C182	ECUV1H102KBV	0.001	
	C184	ECUE1H821KBQ	820p	
	C185	ECUE1H100DCQ	10p	
	C186	ECUE1H100DCQ	10p	
	C187	ECUE1C333KBQ	0.033	
	C188	ECUE1A823KBQ	0.082	
	C191	F1B2H681A070	680p	
	C192	ECUV1H102KBV	0.001	
	C194	ECUE1H821KBQ	820p	
	C195	ECUE1H100DCQ	10p	
	C196	ECUV1C103KBV	0.01	
	C197	ECUV1C103KBV	0.01	
	C201	ECUE1A104KBQ	0.1	
	C202	ECEA0JKA101	100	
	C203	ECUE0J105KBQ	1	
	C204	ECUE1A104KBQ	0.1	
	C206	ECUV1H102KBV	0.001	
	C207	ECUE1A104KBQ	0.1	
	C208	ECUE1A104KBQ	0.1	
	C209	ECUE1H100DCQ	10p	
	C211	ECEA1CK101	100	
	C212	ECUE1A104KBQ	0.1	
	C213	F1K1C4750023	4.7	
	C214	F1K1C4750023	4.7	
	C215	ECUV1A105KBV	1	
	C216	ECUV1A105KBV	1	
	C223	ECUE1H331KBQ	330p	
	C224	ECUE1A104KBQ	0.1	
	C225	ECUV1H102KBV	0.001	
	C227	ECUE1A104KBQ	0.1	
	C232	ECUE1H100DCQ	10p	
	C233	ECUE1H100DCQ	10p	
	C234	ECUE1H100DCQ	10p	
	C235	ECUE1A104KBQ	0.1	
	C241	ECUE1H222KBQ	0.0022	
	C242	ECUE1H222KBQ	0.0022	

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	C243	ECUE1H100DCQ	10p	
	C244	ECUE1H100DCQ	10p	
	C301	PQCUV1C105KB	1	
	C302	PQCUV1C105KB	1	
	C303	ECEA1CK101	100	
	C311	ECEA0JKA331	330	
	C331	ECUV1H104KBV	0.1	
	C343	ECEA0JKA331	330	
	C344	ECUE1H100DCQ	10p	
	C351	ECUV1A105KBV	1	
	C352	ECUE1A104KBQ	0.1	
	C361	ECUV1A105KBV	1	
	C371	F1J1A106A024	10	
	C385	ECEA0JKA331	330	
	C391	ECUE1H222KBQ	0.0022	
	C392	ECUE1H222KBQ	0.0022	
	C393	ECUE1H681KBQ	680p	
	C394	ECUE1H681KBQ	680p	
	C501	ECUV1A105KBV	1	
	C502	ECUE1A104KBQ	0.1	
	C504	ECUV1A105KBV	1	
	C511	ECUE1H100DCQ	10p	
	C512	ECUE0J105KBQ	1	
	C514	ECUE1H100DCQ	10p	
	C521	ECUE1H100DCQ	10p	
	C522	ECUE1A104KBQ	0.1	
	C523	ECUE1A104KBQ	0.1	
	C531	ECUV1H104KBV	0.1	
	C533	ECUV1A105KBV	1	
	C547	ECUE1A104KBQ	0.1	
	C548	ECUE1A104KBQ	0.1	
	C549	ECUE1C103KBQ	0.01	
	C562	ECUE1A104KBQ	0.1	
	C661	F1G1H471A541	470p	
	C662	F1G1H471A541	470p	
	C663	F1G1H471A541	470p	
	C683	ECUE1H100DCQ	10p	
	C684	ECUE1H100DCQ	10p	S
	C802	F1G1H1R8A480	1.8p	
	C803	F1G1H1R3A480	1.3p	
	C804	F1G1H1R8A480	1.8p	
	C805	F1G1H3R3A480	3.3p	
	C806	F1G1H3R3A480	3.3p	
	C808	ECUE1A104KBQ	0.1	
	C809	F1G1H100A420	10p	
	C810	F1G1H2R2A480	2.2p	
	C811	F1G1H100A420	10p	
	C812	F1G1H100A420	10p	
	C813	F1G1H2R2A480	2.2p	
	C814	ECUE1H332KBQ	0.0033	S
	C819	F1G1H100A420	10p	
	C820	F1G1HR50A480	0.5p	
	C822	F1G1H100A420	10p	
	C825	F1G1H100A420	10p	
	C826	F1G1H1R1A480	1.1p	
	C827	F1G1H100A420	10p	
	C834	F1G1HR70A480	1.7p	
	C850	F1G1H101A557	100p	
	C851	F1G1H100A420	10p	
	C852	F1G1H100A420	10p	
	C853	F1G1H100A420	10p	
	C854	F1G1H100A420	10p	
	C855	F1G1H101A557	100p	
	C859	F1G1H100A420	10p	
	C860	F1G1H100A420	10p	
	C861	F1G1H3R0A480	3p	
	C864	F1G1H100A420	10p	
			(OTHERS)	
	E1	PNMC1013Z	CASE, MAGNETIC SHIELD (*3)	
	E2	PNWHL14SH04B	LEAD WIRE, PARALLEL WIRE	
	P101	PFRT002	THERMISTOR(POSISTOR)	S
	F301	K5H302Y00003	FUSE	

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	X511	H0J103500033	CRYSTALOSCILLATOR (*1)	
	MIC1	L0CBAY000016	BUILTIN-MICROPHONE	

15.5.1.3. Operational P.C.Board parts

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	PCB2	PNWP2G1061MH	OPERATIONAL P.C.BOARD ASS'Y (RTL)	
			(DIODES)	
	LED901	B3ACB0000190	DIODE(SI)	
	LED902	B3ACB0000190	DIODE(SI)	
	LED903	B3ACB0000190	DIODE(SI)	
	LED904	B3ACB0000190	DIODE(SI)	
	LED911	PQVDBR1111C	DIODE(SI)	S
	LED912	PQVDBR1111C	DIODE(SI)	S
	LED913	PQVDBR1111C	DIODE(SI)	S
			(CAPACITORS)	
	C931	ECUE1H101JCQ	100p	
	C932	ECUE1H150JCQ	15p	
	C933	ECUE1H150JCQ	15p	
	C934	ECUE1H101JCQ	100p	
	C935	ECUE1H101JCQ	100p	
	C936	ECUE0J105KBQ	1	
	C937	ECUE0J105KBQ	1	
	C938	ECUE0J105KBQ	1	
			(RESISTORS)	
	R901	ERJ3GEYJ151	150	
	R902	ERJ3GEYJ151	150	
	R903	ERJ3GEYJ151	150	
	R904	ERJ3GEYJ151	150	
	R931	ERJ2GEJ332	3.3k	
	R932	ERJ2GEJ102	1k	
	R933	ERJ2GEJ561	560	
	R934	ERJ2GEJ332	3.3k	
	R935	ERJ2GEJ103	10k	
	R936	ERJ3GEYJ100	10	
	R937	ERJ3GEYJ100	10	
	R938	ERJ3GEYJ101	100	
	R939	ERJ3GEYJ101	100	
	R940	ERJ3GEYJ101	100	
			(OTHERS)	
	E3	L5DYAYY00004	LIQUID CRYSTAL DISPLAY (*1)	
	E4	PNHX1156Z	COVER, LCD	
	E5	PNHR1129Z	TRANSPARENT PLATE, LCD PLATE	PMMA-HB
	E6	PNHR1128Z	GUIDE, LCD	ABS-HB
	SW901	K0L1LB000021	SPECIAL SWITCH	

15.5.2. Cordless Handset

15.5.2.1. Cabinet and Electrical Parts

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	101	PNGP1048Z1	PANEL, LCD	PMMA-HB
	102	PNYE1008Z	TAPE, DOUBLE SIDED	
	103	PNKM1074Z3	CABINET BODY	PS-HB
	104	PNHR1105Z	OPTIC CONDUCTIVE PARTS, LED LENS	PS-HB
	105	PNHS1072Z	SPACER, RECEIVER NET	
	106	L0AD02A00043	RECEIVER	
	107	PQHG10729Z	RUBBER PARTS, RECEIVER	
	108	PNYE1009Z	SPACER, CUSHION LCD	
	109	PNBC1265Z1	BUTTON, VOLUME KEY	ABS-HB
	110	PNJK1048Z	KEYBOARD SWITCH	
	111	PNHX1165Z	COVER, LCD SHEET	
	112	PNJT1027Z	CHARGE TERMINAL (L)	
	113	PNJT1026Z	CHARGE TERMINAL (R)	
	114	PQHR11315Z	GUIDE, SPEAKER	ABS-HB
	115	L0AA02A00095	SPEAKER	
	116	PQHS10784Y	SPACER, SPEAKER NET	
	117	PQJC10056X	BATTERY TERMINAL	
	118	PNKE1027Z1	COVER, EP CAP	
	119	PNKF1053Z1	CABINET COVER	ABS-HB
	120	PNGT1948Y	NAME PLATE	
	121	PNQT1410Z	LABEL, BATTERY	
	122	PNHS1079Z	SPACER, BATTERY	
	123	PNKK1027Z1	LID, BATTERY	ABS-HB
	124	PNYNTGA641TR	LID, BATTERY ASSY'	ABS-HB
	125	PNHX1219Z	PET SHEET	

15.5.2.2. Main P.C.Board Parts

Note:

(*1) When replacing IC1, IC3 or X1, data needs to be written to them. Refer to **Cordless Handset** (P.73) of **Things to Do after Replacing IC or X'tal** (P.72).

(*2) IC3 needs software downloading. Refer to **Cordless Handset** (P.73) of **Things to Do after Replacing IC or X'tal** (P.72).

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	PCB100	PNWPTGA106MR	MAIN P.C.BOARD ASS'Y (RTL)	
			(ICs)	
	IC1	C1CB00002906	IC (BBIC) (*1)	
	IC3	PNWITGA106MR	IC (EEPROM) (*1)	
	IC801	C1CB00001842	IC	
			(TRANSISTORS)	
	Q2	B1ADGE000004	TRANSISTOR(SI)	
	Q4	B1ADGE000004	TRANSISTOR(SI)	
	Q7	UN9219J	TRANSISTOR(SI)	S
	Q9	2SC6054JSL	TRANSISTOR(SI)	
	Q10	UN9219J	TRANSISTOR(SI)	S
	Q11	B1ADCF000161	TRANSISTOR(SI)	
	Q12	B1ADCF000161	TRANSISTOR(SI)	
			(DIODES)	
	D1	MA2YD2120L	DIODE(SI)	
	D7	B0JCME000035	DIODE(SI)	S
	D21	MA8043M	DIODE(SI)	S
	D22	MA8043M	DIODE(SI)	S
	DA801	B0DDCD000001	DIODE(SI)	
	LED1	B3ACB0000216	DIODE(SI)	
	LED12	B3ACB0000216	DIODE(SI)	
	LED2	B3ACB0000216	DIODE(SI)	
	LED3	B3ACB0000216	DIODE(SI)	
	LED4	B3ACB0000216	DIODE(SI)	
	LED5	B3ACB0000216	DIODE(SI)	
	LED6	B3ACB0000216	DIODE(SI)	
	LED7	B3ACB0000216	DIODE(SI)	
	LED8	B3ACB0000216	DIODE(SI)	
	LED9	B3ACB0000216	DIODE(SI)	
			(COILS)	
	L801	G1C27NJ00010	COIL	
	L802	G1C3N6ZA0063	COIL	
	L803	G1C3N6ZA0063	COIL	
	F1	PQLQR2M5N6K	COIL	S
			(VARISTORS)	
	D8	D4ED1270A014	VARISTOR	
	D13	D4ZZ00000024	VARISTOR	
	D14	D4ZZ00000024	VARISTOR	
			(COMPONENTS PARTS)	
	RA1	D1H810240004	RESISTOR ARRAY	S
	RA2	D1H410220001	RESISTOR ARRAY	
	RA4	D1H433220001	RESISTOR ARRAY	
	RA61	D1H422120001	RESISTOR ARRAY	
			(IC FILTERS)	
	R311	J0JCC0000286	IC FILTER	
	L72	J0JCC0000276	IC FILTER	
	L9	J0JCC0000287	IC FILTER	
			(RESISTORS)	
	R2	ERJ2GEJ392	3.9k	

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	R6	ERJ2GEJ102	1k	
	R7	ERJ2GEJ122	1.2k	
	R8	ERJ2GEJ101	100	
	R12	ERJ2GE0R00	0	
	R20	ERJ2GEJ100	10	
	R22	ERJ2GEJ332	3.3k	
	R25	ERJ2GEJ222	2.2k	
	R27	ERJ2GEJ821	820	
	R28	ERJ2GEJ821	820	
	R30	ERJ3GEYJ273	27k	
	R31	ERJ2GE0R00	0	
	R32	ERJ2GEJ104	100k	
	R33	ERJ2GE0R00	0	
	R34	ERJ2GEJ104	100k	
	R40	ERJ2GEJ103	10k	
	R41	ERJ2GEJ103	10k	
	R42	ERJ2GEJ103	10k	
	R45	ERJ6RSJR10V	0.1	
	R50	ERJ2GEJ103	10k	
	R51	ERJ2GEJ471	470	
	R52	ERJ2GEJ102	1k	
	R53	ERJ2GEJ332	3.3k	
	R54	ERJ2GEJ103	10k	
	R55	ERJ2GEJ102	1k	
	R63	ERJ2GEJ101	100	
	R64	ERJ2GEJ103	10k	
	R66	ERJ2GEJ102	1k	
	R73	ERJ2GEJ820	82	
	R74	ERJ2GEJ820	82	
	R203	D0GA563ZA006	56k	
	R208	ERJ2GE0R00	0	
	R209	ERJ2GE0R00	0	
	R215	ERJ2GE0R00	0	
	R225	ERJ2GE0R00	0	
	R248	ERJ2GE0R00	0	
	R251	ERJ2GE0R00	0	
	R300	ERJ2GEJ331	330	
	R301	ERJ2GEJ331	330	
	R302	ERJ2GEJ331	330	
	R303	ERJ2GEJ331	330	
	R304	ERJ2GEJ331	330	
	R305	ERJ2GEJ331	330	
	R306	ERJ2GEJ101	100	
	R308	ERJ2GEJ121	120	
	R309	ERJ2GEJ121	120	
	R310	ERJ2GEJ121	120	
	R330	ERJ2GEJ105X	1M	
	R331	ERJ2GEJ273X	27k	
	R332	ERJ2GEJ273X	27k	
	R801	ERJ2GEJ152	1.5k	
	R802	ERJ2GEJ820	82	
	R803	ERJ2GEJ102	1k	
	R804	ERJ2GEJ102	1k	
	R805	ERJ2GEJ470	47	
	R806	ERJ2GEJ221	220	
	R807	ERJ2GEJ221	220	
	L3	ERJ2GE0R00	0	
	L71	ERJ2GE0R00	0	
	L73	ERJ2GE0R00	0	
	L74	ERJ2GEJ100	10	
			(CAPACITORS)	
	C1	F2A0J3310067	1000p	
	C2	F2A0J3310067	1000p	
	C5	ECUE1A104KBQ	0.1	
	C10	ECUV1A225KB	2.2	
	C11	ECUE1A104KBQ	0.1	
	C12	PQCUV0J106KB	10	
	C13	ECUE1A104KBQ	0.1	
	C14	ECUE1C103KBQ	0.01	
	C15	ECUV1A105KBV	1	
	C16	PQCUV0J106KB	10	
	C17	ECUE1H100DCQ	10p	
	C18	ECUE1H100DCQ	10p	

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	C33	ECUE1A104KBQ	0.1	
	C38	ECUE1H100DCQ	10p	
	C40	ECUE1A104KBQ	0.1	
	C43	ECUE1H100DCQ	10p	
	C44	ECUE1A104KBQ	0.1	
	C45	ECUE1A104KBQ	0.1	
	C46	ECUE1H100DCQ	10p	
	C47	ECUV1A105KBV	1	
	C49	ECUV1A105KBV	1	
	C50	ECUV1A105KBV	1	
	C51	ECUV1A105KBV	1	
	C52	PQCUV0J106KB	10	
	C53	PQCUV0J106KB	10	
	C54	ECUE1H100DCQ	10p	
	C55	ECUE1H100DCQ	10p	
	C70	ECUE1H100DCQ	10p	
	C71	ECUE1H100DCQ	10p	
	C72	ECUE1H100DCQ	10p	
	C73	ECUE1H100DCQ	10p	
	C82	ECUE1H471KBQ	470p	
	C83	ECUE1H100DCQ	10p	
	C86	PQCUV0J106KB	10	
	C96	ECUE1H100DCQ	10p	
	C97	ECUE1H100DCQ	10p	
	C103	ECUE1H101JCQ	100p	
	C104	ECUE1H100DCQ	10p	
	C105	ECUE1H101JCQ	100p	
	C110	ECUE1H102KBQ	0.001	
	C113	ECUE1H100DCQ	10p	
	C127	ECUE1H102KBQ	0.001	
	C138	ECUE1H100DCQ	10p	
	C139	ECUE1H100DCQ	10p	
	C147	ECUV1C105KBV	1	
	C152	ECUE1H102KBQ	0.001	
	C172	ECUV1C104KBV	0.1	
	C175	ECUV1C105KBV	1	
	C182	F1G1H3R0A480	3p	
	C184	ECUE1H100DCQ	10p	
	C185	ECUE1H102KBQ	0.001	
	C186	F1G1H2R0A480	2p	
	C187	F1G1H2R0A480	2p	
	C188	ECUE0J105KBQ	1	
	C331	ECUE0J105KBQ	1	
	C332	ECUE0J105KBQ	1	
	C580	ECUE1H100DCQ	10p	
	C802	F1G1H2R0A480	2p	
	C803	F1G1H1R5A480	1.5p	
	C804	F1G1H2R0A480	2p	
	C805	F1G1H3R3A480	3.3p	
	C806	F1G1H3R3A480	3.3p	
	C808	ECUE1A104KBQ	0.1	
	C809	ECUE1H100DCQ	10p	
	C810	F1G1H1R6A480	1.6p	
	C811	ECUE1H100DCQ	10p	
	C812	ECUE1H100DCQ	10p	
	C813	F1G1H1R6A480	1.6p	
	C814	ECUE1H332KBQ	0.0033	
	C819	ECUE1H100DCQ	10p	
	C820	F1G1HR70A480	0.7p	
	C822	ECUE1H100DCQ	10p	
	C825	ECUE1H100DCQ	10p	
	C826	F1G1H2R0A480	2p	
	C827	ECUE1H100DCQ	10p	
	C834	F1G1HR70A480	0.7p	
	C859	F1G1H3R0A480	3p	
	C860	ECUE1H100DCQ	10p	
	C861	F1G1H3R0A480	3p	
	C862	F1G1HR70A480	0.7p	
	C863	ECUE1H100DCQ	10p	
	C864	ECUE1H100DCQ	10p	
			(OTHERS)	
	MIC100	L0CBAY000032	MICROPHONE	

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	E101	L5DYBYY00001	LIQUID CRYSTAL DISPLAY (*3)	
	E102	PNHR1114Z	TRANSPARENT PLATE, LCD PLATE	PMMA-HB
	E103	PNHR1113Z	GUIDE, LCD	ABS-HB
	E104	PNHX1136Z	COVER, LCD SHEET	
	E105	PNMC1013Z	CASE, MAGNETIC SHIELD	
	E106	PNLA1020Z	ANTENNA	
	E107	PNVE1002Z	BATTERY TERMINAL	
	CN4	K2HD103D0001	JACK	
	X1	H0J103500034	CRYSTALOSCILLATOR (*1)	

15.5.3. Charger Unit

15.5.3.1. Cabinet and Electrical Parts

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	200	PNWETG6412M	CHARGER UNIT ASS'Y (RTL) (for KX-TG1061M) (for KX-TG1062M)	
	200	PNWETGA106M	CHARGER UNIT ASS'Y (RTL) (for KX-TGA106M)	
	200-1	PNKM1077Z2	CABINET BODY	PS-HB
	200-2	PNJT1010Z	CHARGE TERMINAL	
	200-3	PNKF1012Z1	CABINET COVER	PS-HB
	200-4	PQHA10023Z	RUBBER PARTS, FOOT CUSHION	
	200-5	PNGT1855Y	NAME PLATE (for KX-TG1061M) (for KX-TG1062M)	
	200-5	PNGT2050Z	NAME PLATE (for KX-TGA106M)	
	200-6	PQXDZLDRS1	MAGNET ELECTRIC TRANSDUCER, SECURITY TAG (for KX-TGA106M)	
	201	PQQT23193Z	CHARGE LABEL	

15.5.3.2. Main P.C.Board Parts

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	PCB200	PQWPTGA721CH	MAIN P.C.BOARD ASS'Y (RTL)	
			(DIODE)	
	D1	B0JAME000095	DIODE (SI)	
			(JACK)	
	J1	K2ECYB000001	JACK	
			(RESISTOR)	
	R1	ERG2SJ100E	10	
			(FUSE)	
	F1	K5H302Y00003	FUSE	

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-TG1061M

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
⚠	A1	PQLV219Z	AC ADAPTOR	
	A2	PQJA212V	CORD, CURLCORD	
	A3	PQJA10075Z	CORD, TELEPHONE	
	A4	PNKE1029Z1	HANGER, BELT CLIP	ABS-HB
	A5	PNQX1800Y	INSTRUCTION BOOK (*1)	
	A6	PQQV10494Y	CARD, CCP	
	A7	PNLXP1006Z	HANDSET	ABS-HB
	A8	PQKL10035Z1	STAND, WALLMOUNT	ABS-HB
	P1	PNPM1009Z	PROTECTION COVER (for Base Unit)	
	P2	XZB08X25B02	PROTECTION COVER (for Handset)	
	P3	XZB13X19C03	PROTECTION COVER (for Charger Unit)	
	P4	PNPK1983Z	GIFT BOX	
	P5	PNPD1192Z	CUSHION	
	P6	PQXDDS400-8	MAGNET ELECTRIC TRANSDUCER, SECURITY TAG	

15.5.4.2. KX-TG1062M

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
⚠	A101	PQLV219Z	AC ADAPTOR	
	A102	PQJA10075Z	CORD, TELEPHONE	
	A103	PQJA212V	CORD, CURLCORD	
	A104	PNLXP1006Z	HANDSET	ABS-HB
	A105	PQKL10035Z1	STAND, WALLMOUNT	ABS-HB
	A106	PNKE1029Z1	HANGER, BELT CLIP	ABS-HB
	A107	PNQX1800Y	INSTRUCTION BOOK (*1)	
	A108	PQQV10494Y	CARD, CCP	
	P101	PNPM1009Z	PROTECTION COVER (for Base Unit)	
	P102	XZB08X25B02	PROTECTION COVER (for Handset)	
	P103	XZB13X19C03	PROTECTION COVER (for Charger Unit)	
	P104	PNPK1984Z	GIFT BOX	
	P105	PNPD1193Z	CUSHION	
	P106	PQXDDS400-8	MAGNET ELECTRIC TRANSDUCER, SECURITY TAG	

15.5.4.3. KX-TGA106M

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
⚠	A201	PQLV219Z	AC ADAPTOR	
	A202	PNQX1801Y	INSTRUCTION BOOK (*1)	
	A203	PNKE1029Z1	HANGER, BELT CLIP	ABS-HB
	P201	XZB08X25B02	PROTECTION COVER (for Handset)	
	P202	XZB13X19C03	PROTECTION COVER (for Charger Unit)	
	P203	PNPK1985Z	GIFT BOX	
	P204	PQXDDS400-8	MAGNET ELECTRIC TRANSDUCER, SECURITY TAG	

15.5.5. Screws

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	A	XTB26+8GFJ	TAPPING SCREW	
	B	XTB2+8GFJ	TAPPING SCREW	

15.5.6. Fixtures and Tools

Note:

(*1) See **Equipment Required** (P.65), and **The Setting Method of JIG (Cordless Handset)** (P.69).

(*2) When replacing the Base unit and Cordless Handset LCD, See **Assembly Instructions** (P.63) .

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
		PQZZ1CD300E	JIG CABLE (*1)	
		PNZZTG1061M	BATCH FILE CD-ROM (*1)	
		PQZZ430PIR	TIP OF SOLDERING IRON (*2)	
		PQZZ430PRB	RUBBER OF SOLDERING IRON (*2)	

Y.S/N
KXTG1061M
KXTG1062M
KXTGA106M