

Service Manual

Telephone Equipment

Model No. **KX-TG3661JXM**

KX-TG3662JXM

KX-TG3668JXM

KX-TG3669JXM

KX-TGA365JXM

Caller ID Compatible



KX-TGA365JXM
(Cordless Handset)



KX-TG3661JXM
(Base Unit)

2.4 GHz Digital Cordless Phone

M: Metallic Gray Version
(for Middle East)



(Charger Unit)

Configuration for each model

Model No	Base Unit	Handset	Charger Unit
KX-TG3661	1(TG3661)	1(TGA365)	1
KX-TG3662	1(TG3661)	2(TGA365)	2
KX-TG3668	1(TG3668)	1(TGA365)	1
KX-TG3669	1(TG3668)	2(TGA365)	2

* KX-TGA365 is an optional accessory, which contains a handset and a charger.

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 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.

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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

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

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

Note:

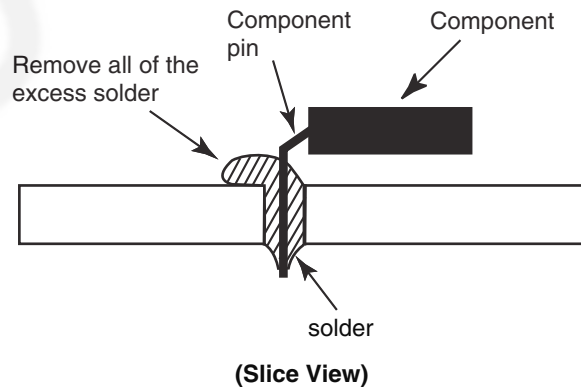
In the information below, Pb, the symbol for lead in the periodic table of elements, will refer to standard solder or solder that contains lead.

We will use PbF 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

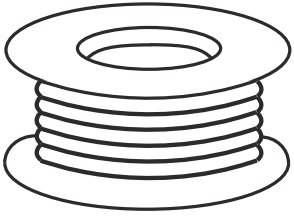
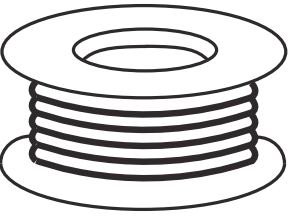
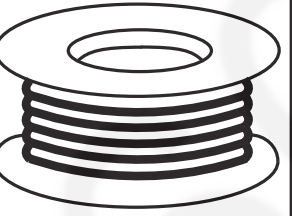
- PbF solder has a melting point that is 50°F ~ 70° F (30°C ~ 40°C) higher than Pb solder. Please use a soldering iron with temperature control and adjust it to 700°F ± 20° F (370°C ± 10°C).
- Exercise care while using higher temperature soldering irons.:
Do not heat the PCB for too long time in order 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).
- If you must use Pb solder on a PCB manufactured using PbF solder, remove as much of the original PbF solder as possible and be sure that any remaining is melted prior to applying the Pb solder.
- 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).



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

	Base Unit	Cordless Handset	Charger
Power Source	AC Adaptor (KX-TG3661/3662: PQLV219BXY, 100-240 V AC, KX-TG3668/3669: PQLV219EW, 220-240 V AC, 50/60 Hz)	Rechargeable AAA(R03) Ni-MH battery (2 x 1.2V, 700mAh)	AC Adaptor (KX-TG3661/3662: PQLV219BXY, 100-240 V AC, KX-TG3668/3669: PQLV219EW, 220-240 V AC, 50/60 Hz)
Receiving/Transmitting Frequency	91 channels within 2.40 GHz-2.48 GHz	91 channels within 2.40 GHz-2.48 GHz	_____
Receiving Method	Super Heterodyne	Super Heterodyne	_____
Oscillation Method	PLL synthesizer	PLL synthesizer	_____
Detecting Method	Quadrature Discriminator	Quadrature Discriminator	_____
Tolerance of OSC Frequency	10.368 MHz $\pm$ 41 Hz ($\pm$ 4 ppm)	10.368 MHz $\pm$ 41 Hz ($\pm$ 4 ppm)	_____
Modulation Method	Frequency Shift Keying	Frequency Shift Keying	_____
Spread spectrum Method	Frequency Hopping Spread spectrum	Frequency Hopping Spread spectrum	_____
Security Codes	_____	1,000,000	_____
Ringer Equivalence No. (REN)	1	_____	_____
Dialing Mode	Tone (DTMF)/Pulse	Tone (DTMF)/Pulse	_____
Redial	Up to 24 digits	Up to 24 digits	_____
Speed Dialer	Up to 24 digits	Up to 24 digits (Phone book)	_____
RF Transmission Power	25 mW (max.)	25 mW (max.)	_____
Power Consumption	Standby: Approx. 1.0 W, Maximum: Approx. 2.5 W	150 hours at Standby, 5 hours at Talk	Standby: Approx. 0.2 W, Maximum: Approx. 2.5 W
Operating Conditions	0°C - 40°C, 20 % - 80 % relative air humidity (dry)	0°C - 40°C, 20 % - 80 % relative air humidity (dry)	0°C - 40°C, 20 % - 80 % relative air humidity (dry)
Dimensions (H x W x D)	Approx. 68 mm x 214 mm x 175 mm	Approx. 155 mm x 48 mm x 32 mm	Approx. 53 mm x 81 mm x 91 mm
Mass (Weight)	Approx. 450 g	Approx. 130 g	Approx. 60 g

Note:

- Design and specifications are subject to change without notice.

4 Technical Descriptions

4.1. FHSS Description

4.1.1. Frequency

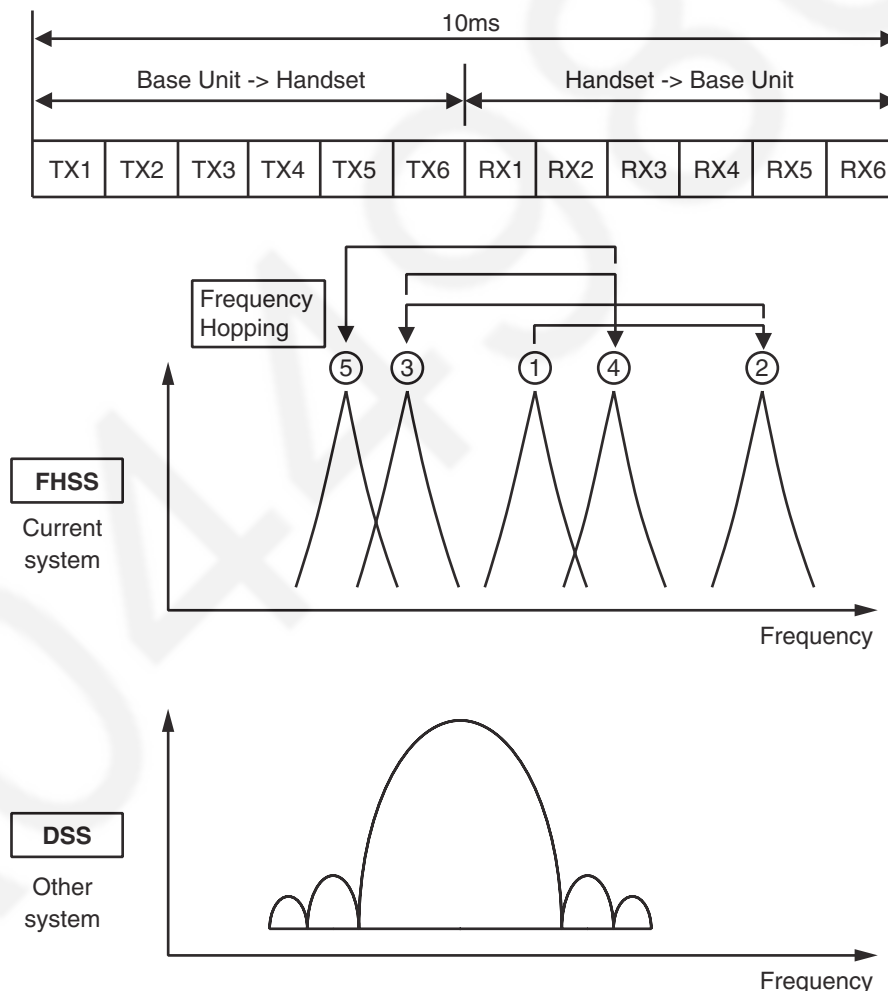
The frequency range of 2.40 GHz - 2.48 GHz is used. Transmitting and receiving channel between Base Unit and Cordless Handset is same frequency. Refer to **Frequency Table** (P.49).

4.1.2. FHSS (Frequency Hopping Spread Spectrum)

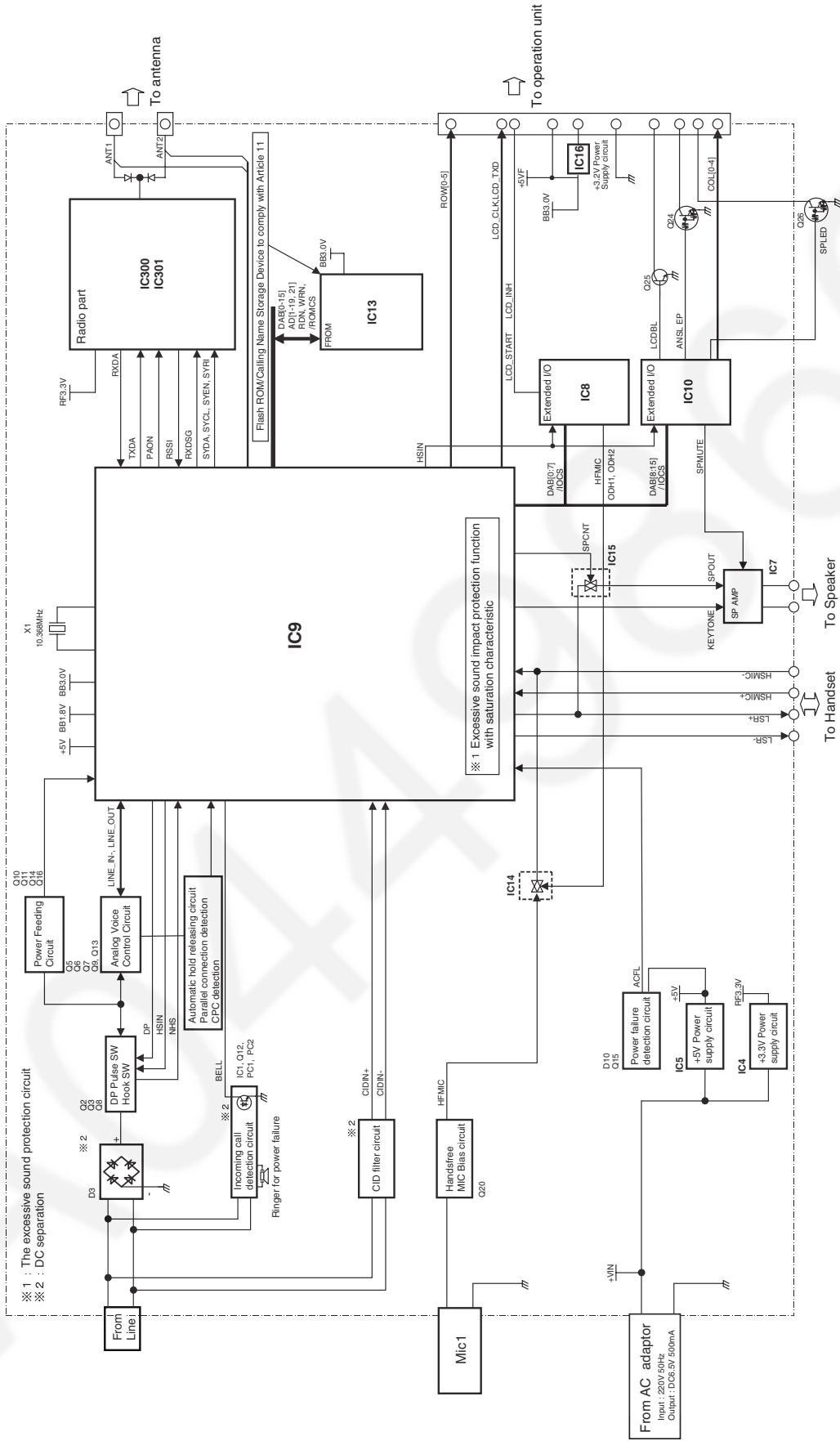
This telephone is using an IC chip which has similar specification to WDCT (World Digital Cordless Telephone) and is the telephone system that can use multiple portable unit simultaneously. The explanation of this system is mentioned below. This system uses a Time Division Multiple Access/Time Division Duplex (**TDMA/TDD**) scheme:

transmitting and receiving frequencies of the Base Unit and Cordless Handset are shared in the same frequency. The construction of RX/TX frequency data is shown below. It consists of 6 slots from the Base Unit to the Cordless Handset, and 6 slots from the Handset to the Base Unit, total 12 slots in 10ms. By this slot system, simultaneous air link and communication between 6 Cordless Handset and the Base Unit can be realized. One communication between Cordless Handset and the Base Unit is done by one slot from the Base Unit to Cordless Handset, and another slot from Cordless Handset to the Base Unit.

DSS makes spectrum spread by multiplying carrier signal by PN code. The purpose to make spectrum spread is to reduce power density per time and per band. On the other hand, **FHSS** makes spectrum spread by changing channel every 10ms according to Hopping table. Also the purpose to make spectrum spread is to reduce power density per time and per band.

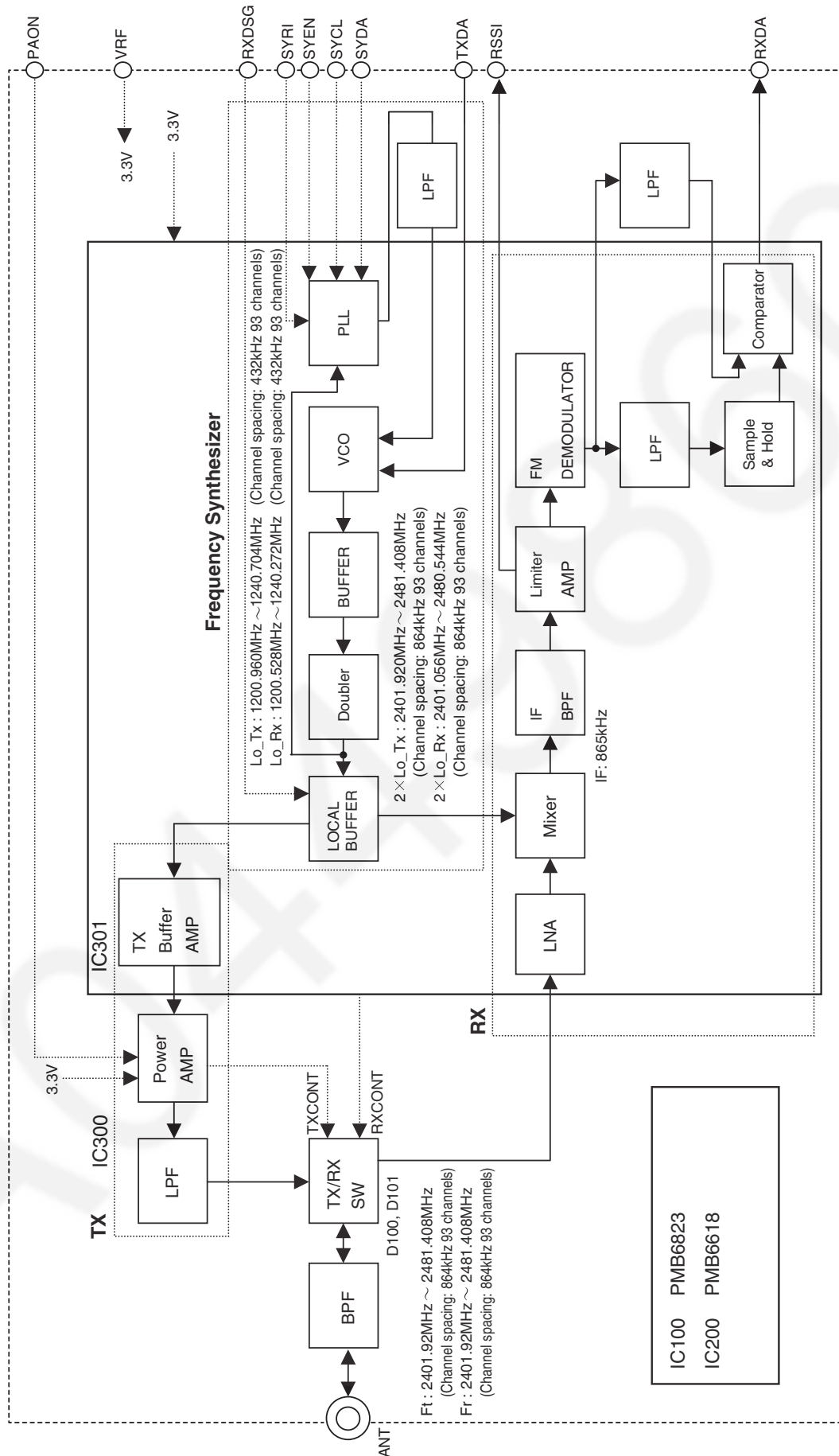


4.2. Block Diagram (Base Unit_Main)



TG3661/3662/3668/3669 BLOCK DIAGRAM (Base Unit_Main)

4.3. Block Diagram (Base Unit_RF Part)



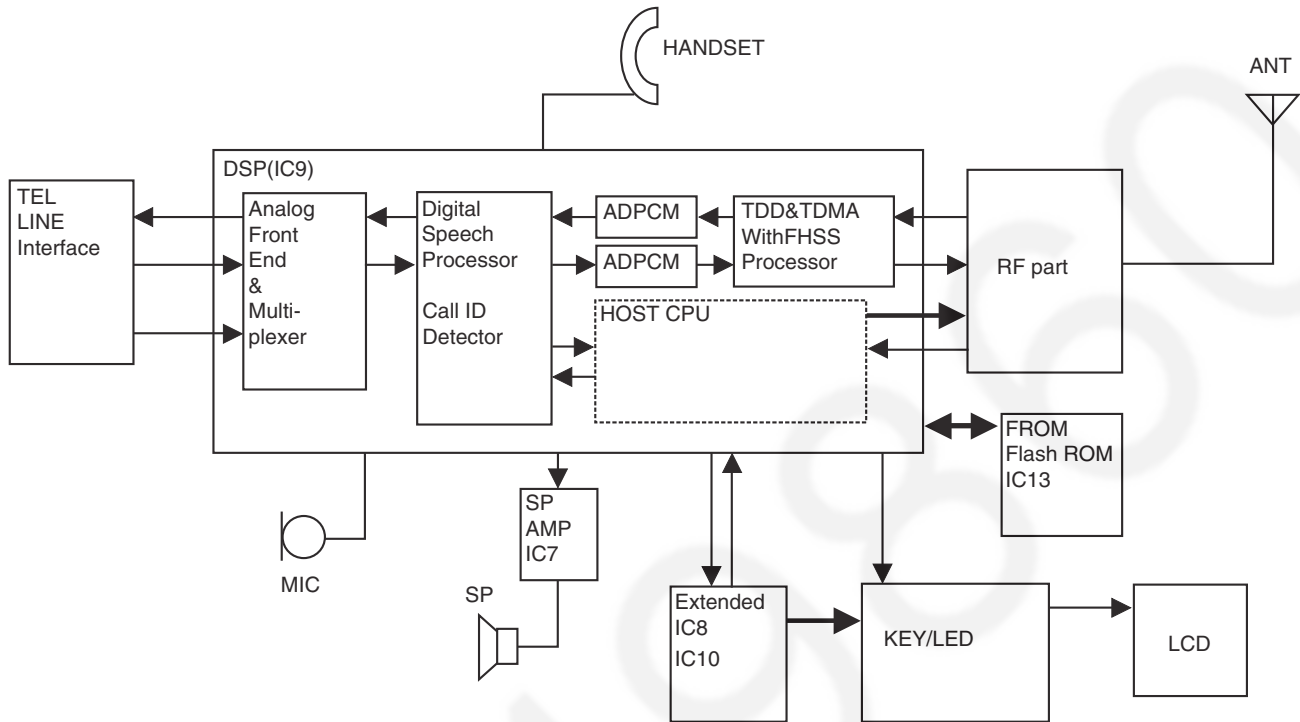
TG3661/3662/3668/3669 BLOCK DIAGRAM (Base Unit_RF Part)

4.4. Circuit Operation (Base Unit_Main)

General Description:

DSP, from Flash ROM IC13 is a digital speech/signal processing system that implements all the functions of speech compression and memory management required in a digital telephone.

The DSP system is fully controlled by a host processor DSP. The host processor provides activation and control of all that functions as follows.



4.4.1. DSP (Digital Speech/Signal Processing: IC9)

DTMF Detection/Generator

The DTMF detection is implemented by the DSP system in software. The DTMF detection is performed during Record, Play back, and Line Monitoring modes of operation.

When the DTMF data from the Handset is received, the DTMF signal is output.

Caller ID demodulation

The DSP implements monitor and demodulate the FSK signals that provide CID information from the Central Office.

Analog Switching

The voice signal from telephone line is transmitted to the speaker or the voice signal from speakerphone microphone is transmitted to the Telephone line, etc. They are determined by the signal path route operation of voice signal.

Block Interface Circuit

RF part, LED, Key scan, Telephone line.

4.4.2. FROM: IC13

Following information data is stored.

Settings

ex: ID code, Flash Time, Tone/Pulse

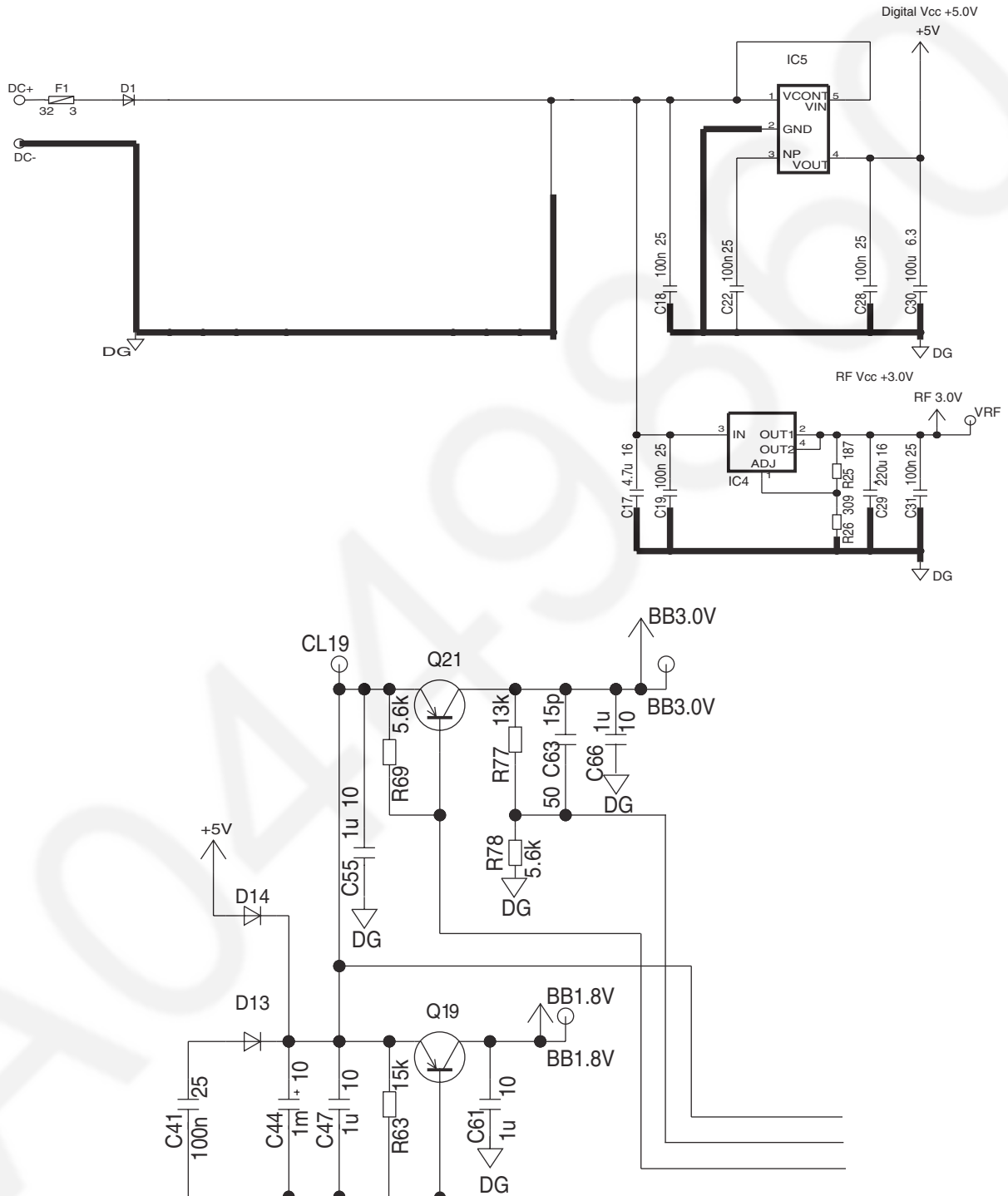
4.4.3. Power Supply Circuit

Function:

The power supply voltage from AC adaptor is converted to the desired voltage of each block.

Circuit Operation:

- IC5 +5.0V Regulator
- IC4 +3.3V Regulator
- Q21 +3.0V IC9 I/O Voltage
- Q19 +1.8V IC9 Internal Voltage



The voltage of +5V regulated in IC5 is controlled by IC9 to be made into IC9's I/O voltage of BB3.0V at Q21 and IC9's internal power supply of BB1.8V at Q19.

4.4.4. Reset Circuit

Function:

This circuit is used to initialize the microcomputer when it incorporates an AC adaptor.

Circuit Operation:

The system is reset when IC9's BBIC internal voltage of BB1.8V goes down below 1.65V.

4.4.5. Telephone Line Interface

Telephone Line Interface Circuit:

Function

- Bell signal detection
- Clip signal detection
- ON/OFF hook circuit
- Pulse dial circuit
- Side tone circuit

Ring signal detection:

In the standby mode, Q3 is open to cut the DC loop current and decrease the ring load. When ring voltage appears at the Tel_T and Tel_R leads (When the telephone rings), the AC ring voltage is transferred as follows:

Tel_T → LF1 → IC1 Pin 1

Tel_R → LF1 → C9 → R5, R6, R7 → IC1 Pin 8

Ring signal from T-R is input to Ringer IC1 and output from pin 5 of IC1. Then it is detected through the following route.

IC1 5pin → R13 → PC1 → IC9 Pin 63 (BELL)

Clip (:Calling Line Identification presentation: Caller ID) signal detection:

The Clip signal voltage is transferred as follows;

Tel_T → C20 → R20 → C137 → IC9 Pin 107 (CIDin+)

Tel_R → C21 → R23 → C138 → IC9 Pin 112 (CIDin-)

ON/OFF HOOK Circuit:

Q2 is turned ON when IC9 detects the Ring signal, the handset of base unit is off-hook or the TALK key of the handset is pressed. This causes Q3 to be turned ON and the line will be closed. (The Line Loop state).

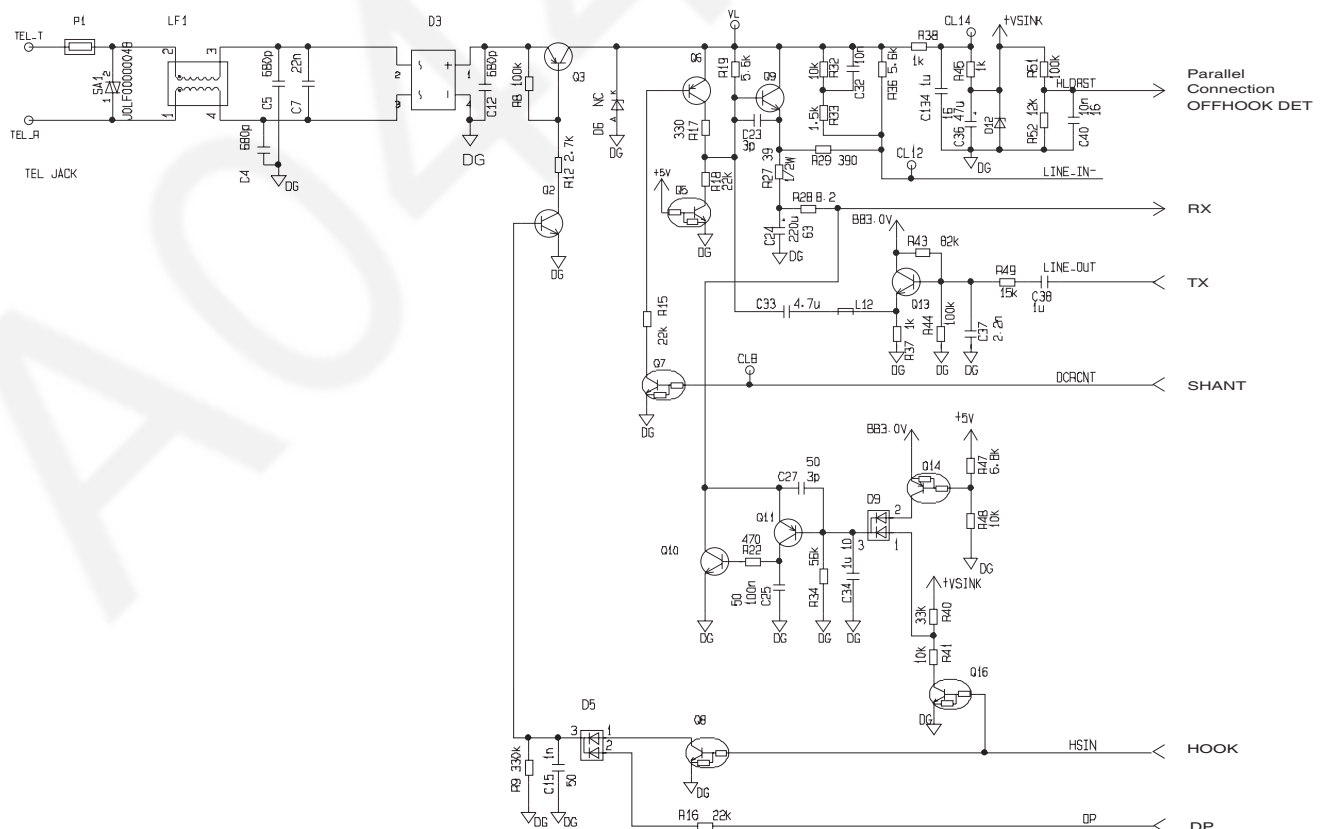
Tel_T → LF1 → D3 → Q3 → Q9 → R27 → R28 → Q10 → D3 → LF1 → Tel_R [OFF HOOK]

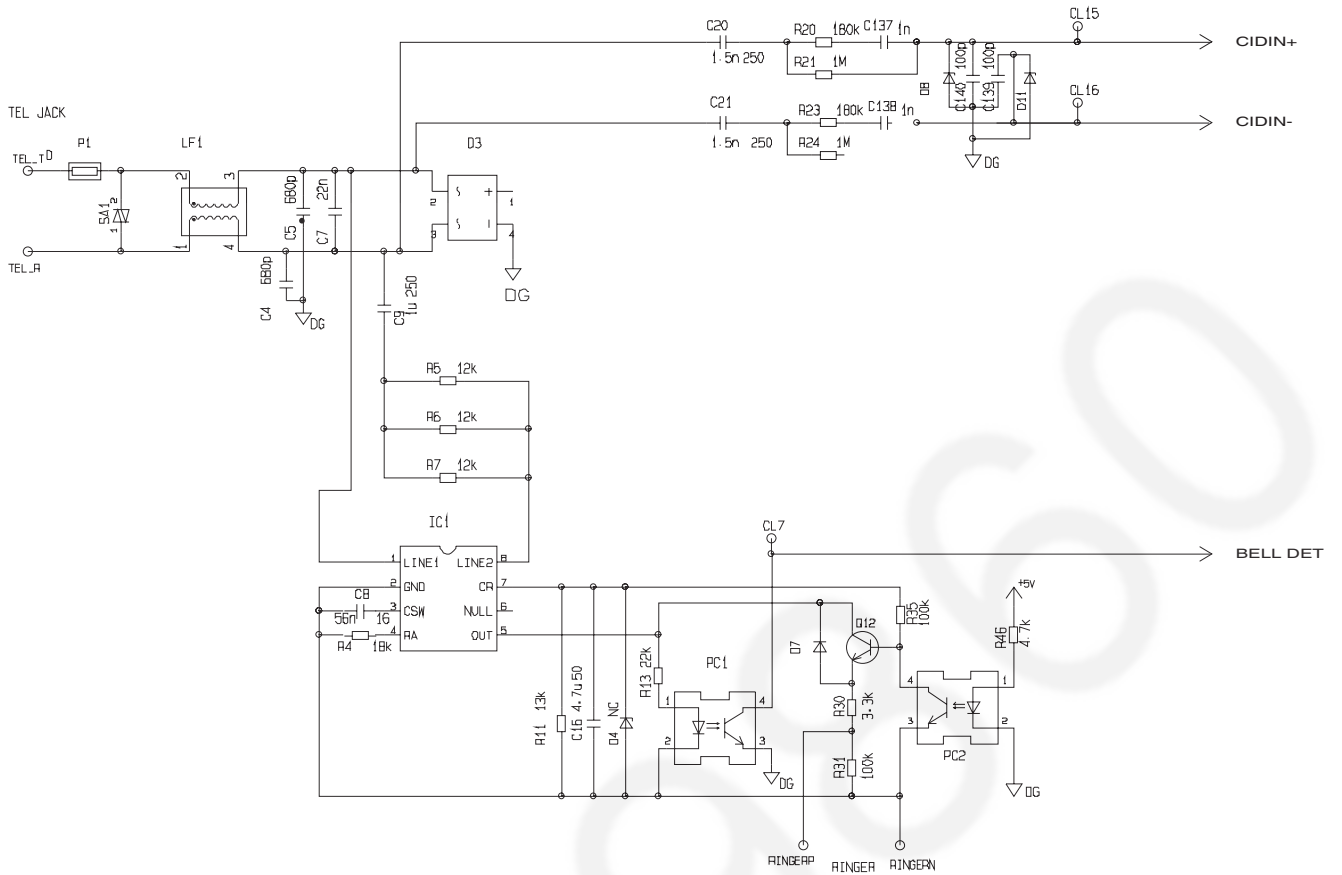
Pulse Dial Circuit:

Pin 94 of DSP IC9 (HOOK/DP) turns Q2 ON/OFF to make the pulse dialing.

Side Tone Circuit:

Basically this circuit prevents the TX signal from feeding back to RX signal. As for this unit, TX signal feed back from Q9 is canceled by the canceller circuit of DSP (IC9).



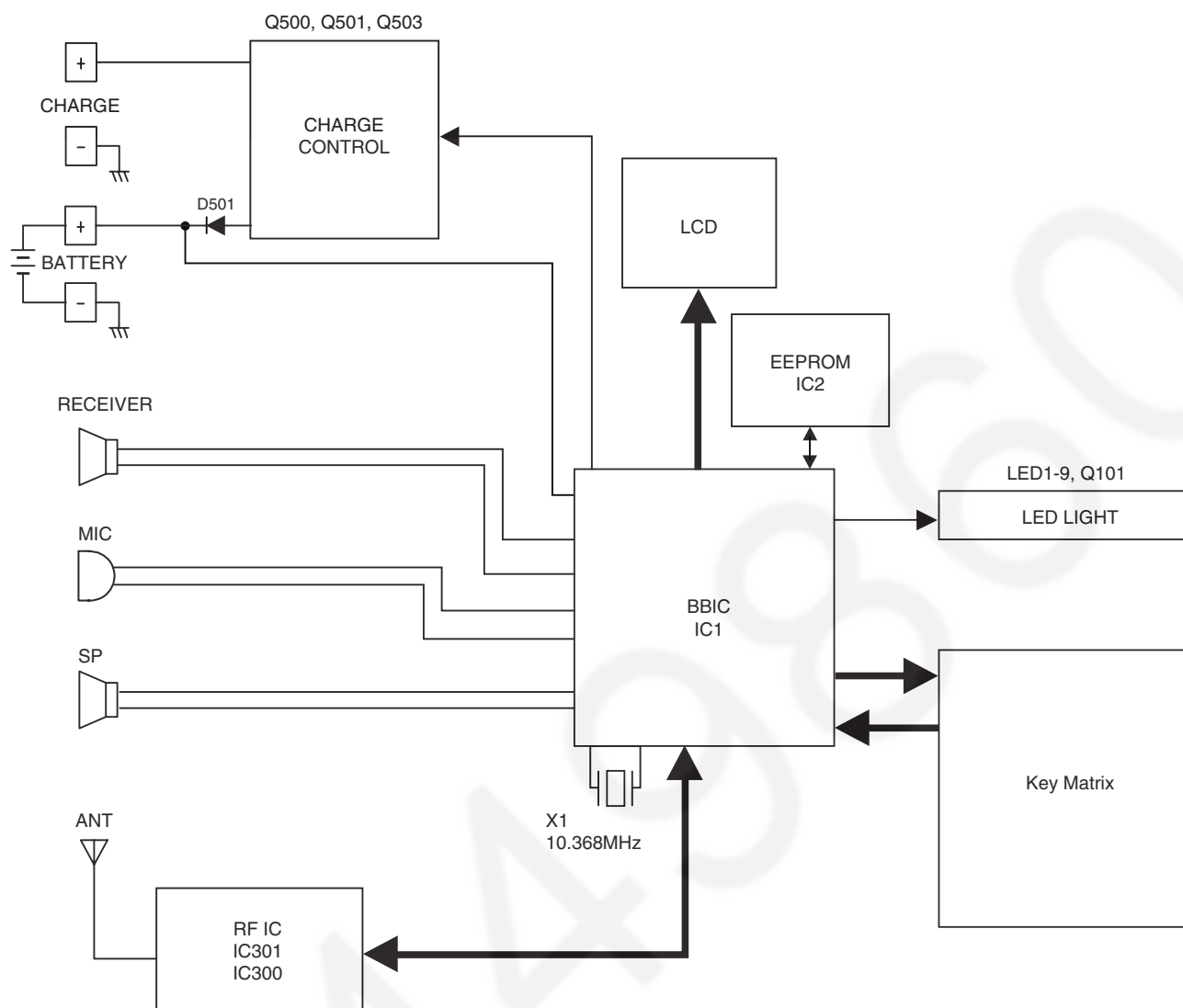


4.4.6. Transmitter/Receiver

Base unit and handset mainly consist of RF Module and BBIC.

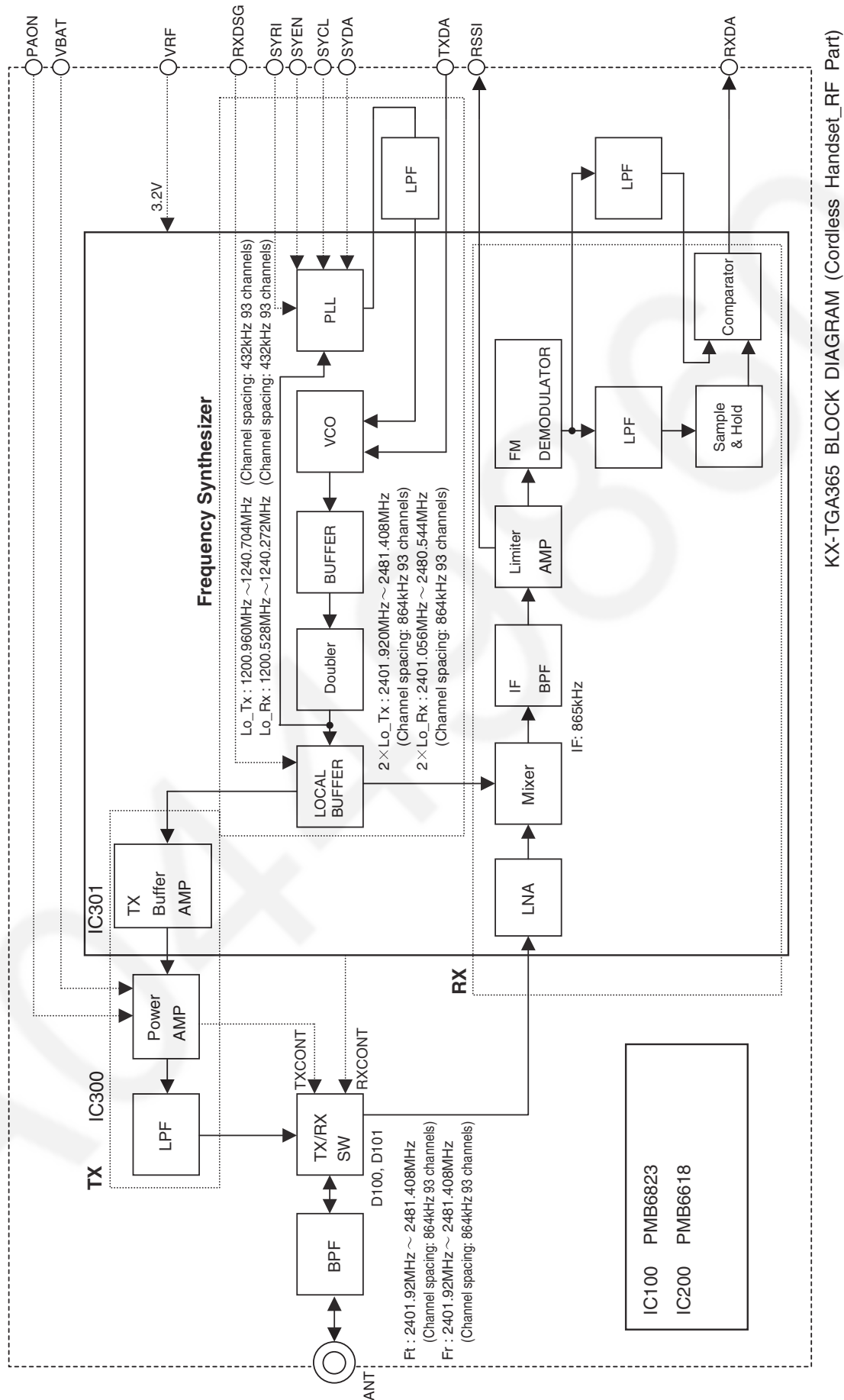
Base unit and handset transmit/receive voice signal and data signal through the antenna on carrier frequency.

4.5. Block Diagram (Cordless Handset)



KX-TGA365 BLOCK DIAGRAM (Cordless Handset)

4.6. Block Diagram (Cordless Handset_RF Part)



KX-TGA365 BLOCK DIAGRAM (Cordless Handset_RF Part)

4.7. Circuit Operation (Cordless Handset)

4.7.1. Outline

Cordless Handset consists of the following ICs as shown in **Block Diagram (Cordless Handset)** (P.14).

- BBIC (Base Band IC): IC1
 - FHSS
 - All interfaces (ex: Key, Detector Circuit, Charge, DC/DC Converter, EEPROM, LCD)
- RF IC
 - Transceiver IC including LNA, PLL, demodulator, logic IC301
 - PA (TX power amplifier) IC300
- EEPROM: IC2
 - Temporary operating parameters (for RF, etc.)

4.7.2. Power Supply Circuit

Circuit Operation:

When power on the Cordless Handset, the voltage is as follows;
 BATTERY(2.2 V ~ 2.6 V) → L101, D100 → Q302 (1.8 V) → Q303 (2.5 V).
 The Reset signal generates IC1 (53 pin) and 1.8 V.

4.7.3. Charge Circuit

Circuit Operation:

When charging the cordless Handset on the charger, the charge current is as follows;
 AC Adaptor: DC+(6.5V) → CHARGE+ (charger) → CHARGE+ (cordless Handset) → Q503 → D501 → Vbat (+) → BATTERY--
 - Vbat (-) → R500 → GND → CHARGE- (Cordless Handset) → CHARGE- (charger) → GND → DC- (GND)
 In this way, the BBIC on Handset detects the fact that the battery is charged.
 The charge current is controlled by switching Q500 of Handset.

4.7.4. Battery Low/Power Down Detector

Circuit Operation:

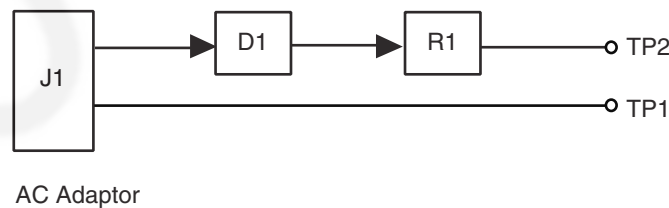
"Battery Low" and "Power Down" are detected by BBIC which check the voltage from battery.
 The detected voltage is as follows;

- Battery Low
 Battery voltage: $V(\text{Batt}) < 2.3\text{V} \pm 50\text{mV}$
 The BBIC detects this level and "  " starts flashing.
- Power Down
 Battery voltage: $V(\text{Batt}) < 2.1\text{V} \pm 50\text{mV}$
 The BBIC detects this level and power down.

4.8. Circuit Operation (Charger Unit)

4.8.1. Power Supply Circuit

The power supply is as shown.



4.9. Signal Route

Each signal route is as follows.

SIGNAL ROUTE	IN	->	ROUTE	->	OUT
HANDSET TX (Base Unit)	HANDSET MIC -> HSMICN/HSMICP -> L8/L9 -> C141/C142 -> R137/R138 -> -> IC9(118/114 -> 100) ->(LINE OUT) -> C38 -> R49 ->Q13 ->C33-> -> Q9 -> Q3 -> D3 -> LF1 -> TEL JACK				
HANDSET RX (Base Unit)	TEL JACK-> LF1 -> D3 -> Q3 -> (LINE IN) -> C53 -> R76 -> -> L3 -> IC9(102 ->110/111) -> (LSR+/-) -> R56/R55 -> L11/L10 -> HSRCPV/HSRCVN ->HANDSET RECEIVER				
SP-Phone TX (Base Unit)	MIC -> MICP/MICN -> C43 -> R60 -> Q20 -> IC14 (1->2) -> C70 -> R82 -> -> IC9 (114 -> 100) -> (LINE OUT) -> C38 -> R49 -> Q13 -> C33 -> Q9 -> -> Q3 -> D3 -> LF1 -> TEL JACK				
SP-Phone RX (Base Unit)	TEL JACK -> LF1 -> D3 -> Q3 -> (LINE IN-) -> C53 -> R76 -> L3 -> -> IC9 (102 ->110) -> (LSR+) -> IC15 (2->1) -> (SPOUT) -> C51 -> R68 -> R79/IC7 (4->5/8) -> SPP/SPN ->SPEAKER				
OGM RECORDING (Base Unit with CL- HS)	CL- HS MIC -> R408/R409 -> C405/C407 -> R401/R400 -> IC1(72/68) -> -> <CL- HS_RF_TX_ROUTE > <CL- HS_RF_TX_ROUTE > --->ANT. -> <BASE UNIT_RF_TX_ROUTE > -> IC9 (26/42) -> IC13(FLASH_ROM)				
OGM SEND TO TEL LINE (Base Unit)	IC13(FLASH_ROM)-> IC9 (100) -> (LINE OUT) -> C38 -> R49 -> Q13 -> C33 -> -> Q9 -> Q3 -> D3 -> LF1 -> TEL JACK				
ICM RECORDING (Base Unit)	TEL JACK ->LF1 -> D3 -> Q3 -> (LINE IN-) -> C53 -> R76 -> L3 -> IC9 (102) -> IC13 (FLASH_ROM)				
ICM PLAY TO SPEAKER (Base Unit)	IC13(F-ROm) -> IC9 (110) -> (LSR+) -> IC15 (2->1) -> (SPOUT) -> C51 -> R68 -> R79/IC7(4->5/8) -> SPP/SPN -> SPEAKER				
DTMF DETECTION (TAM REMOTE)	TEL JACK -> LF1 -> D3 -> Q3 -> (LINE IN-) -> C53 -> R76 -> L3 -> -> IC9 (102->DTMF-Det)				
CL- HS TX and SP-Phone TX (Base Unit with CL- HS)	CL- HS MIC -> R408/R409 -> C405/C407 -> R401/R400 -> IC1(72/68) -> -> <CL- HS_RF_TX_ROUTE > -> ANT ---> --->ANT. -> <BASE UNIT_RF_TX_ROUTE >-> IC9 (100) -> (LINE OUT) -> C38 -> -> R49 -> Q13 -> C33 -> Q9 -> Q3 -> D3 -> LF1 -> TEL JACK				
CL- HS RX (Base Unit with CL- HS)	TEL JACK -> LF1 -> D3 -> Q3 -> (LINE IN-) -> C53 -> R76 -> L3 -> IC9 (102) -> -> <BASE UNIT RF_RX_ROUTE > -> ANT ---> --->ANT-> <CL- HS_RF_RX_ROUTE > -> IC1(67/66) -> L401/L400 -> -> R413/R412 -> RECEIVER				
CL- HS SP-Phone RX (Base Unit with CL-HS)	TEL JACK -> LF1 -> D3 -> Q3 -> (LINE IN-) -> C53 -> R76 -> L3 -> IC9 (102) -> -> <BASE UNIT RF_RX_ROUTE > -> ANT ---> --->ANT -> <CL- HS_RF_RX_ROUTE > -> IC1(32/30) -> R450/R451 -> -> L450/L451 -> SPEAKER				

Note:

: inside of CL- HS

CL- HS: Cordless handset

Each signal route is as follows.

SIGNAL ROUTE	IN	ROUTE	OUT
INTERCOM HANDSET to CL- HS	HANDSET MIC -> HSMicN/HSMicP -> L8/L9 -> C141/C142 -> R137/R138 -> IC9 (118/114) -> <BASE UNIT RF_RX_ROUTE> -> ANT --->		---> ANT-> <CL- HS_RF_RX_ROUTE> -> IC1(67/66) -> L401/L400 -> R413/R412 ->RECEIVER
INTERCOM CL- HS to HANDSET	CL- HS MIC -> R408/R409 -> C405/C407 -> R401/R400 -> IC1(72/68) -> <CL-HS_RF_TX_ROUTE> -> ANT --->		--->ANT. -> <BASE UNIT_RF_TX_ROUTE> -> IC9 (110/111) -> (LSR+/-) -> R56/R55 -> L11/L10 -> HSRCVP/HSRCVN -> HANDSET RECEIVER
HOLD MELODY TO TEL LINE	IC9 (ToneGen3 -> 100) -> (LINE OUT) -> C38 -> R49 -> Q13 -> C33 -> Q9 -> Q3 -> D3 -> LF1 -> TEL JACK		
DTMF SIGNAL TO TEL LINE	IC9 (ToneGen1_DTMF -> 100) -> (LINE OUT) -> C38 -> R49 ->Q13 -> C33 -> Q9 -> Q3 -> D3 -> LF1 -> TEL JACK		
DIAL PULSE MAKE TO TEL LINE	IC9 (94: L/H) -> (DP) -> R16 -> D5 -> Q2 -> R12 -> Q3/R8 -> D3 -> LF1 -> TEL JACK		
RING SIGNAL DETECTION	TEL JACK ->LF1 -> IC1 (1/8 -> 5/2) -> R13 ->PC1 (1/2 -> 4/3) -> CL7 (BELL) -> R99/R103-> IC9 (63: Ring-Det-I/O)		
CALLER ID DETECTION	TEL JACK -> LF1 -> C20/C21 -> R20/R23 -> C137/C138 -> (CIDIN+/CIDIN-) -> R135/R136 -> IC9 (107/112 -> 113: CIDOUT) -> C82 -> R86 -> IC9 (101 -> FSK-Det/Tone-Det)		

Note:

: inside of CL- HS

CL- HS: Cordless handset

5 Location of Controls and Components

Refer to the Operating Instructions.

Note:

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

6 Installation Instructions

Refer to the Operating Instructions.

Note:

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

7 Operating Instructions

Refer to the Operating Instructions.

Note:

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

8 Test Mode

8.1. Test Mode Function (Base unit)

Refer to the following procedures for the Test Mode operation of the Base Unit.

- 1 Disconnect the AC Adaptor cord.
- 2 While pressing [1] [3] [MUTE] simultaneously, connect the AC Adaptor.
- 3 [00] is displayed on the LCD when becoming a static test mode. The figure blinks.
- 4 When the examination is ended, [MUTE] KEY is pressed.
- 5 When the test mode is ended, disconnect the AC Adaptor cord.

Item	Key operation	Remarks
KEY TEST	05	[SP-PHONE] LED lights when all KEY except [MUTE] key are pressed. When [MUTE] key is pressed at the last, 4 beeps are heard and KEY TEST is finished.
Fixed Message replay	07	An English fixed message is reproduced at once.
DTMF (#) Send	09	DTMF (#) is sent to the line.
Dial Pulse (0)	87	Dial Pulse (0) is sent to the line.
DTMF (0) Send	89	DTMF (0) is sent to the line.
LED TEST	94	Each time you press the [STOP] key, [SP-PHONE] LED and LCD backlight turns on sequentially.
LCD TEST	95	[STOP] key is pressed then Test pattern 1 is displayed on the LCD. Whenever [STOP] key is pressed, four patterns are repeated.

8.2. Test Mode Function (Cordless Handset)

Refer to the following procedures for the Test Mode operation of the Cordless Handset.

To enter Test Mode, Press [↶] [✖][7] [#] keys simultaneously while in stand by mode, then "TEST MODE" is displayed.

Item	Key operation	Remarks
LCD/LED TEST	[0] [1] [#]	The display pattern of the LCD changes if centre of soft keys is pressed. Press [✖] then LCD/LED TEST is finished.
KEY TEST	[0] [2] [#]	All keys are pressed and when [✖] key is pressed OK is displayed in the end.
Display Software version	[0] [3] [#]	A soft version and the Sum value of the cordless handset are displayed. VER>JB**** SUM>****
Refer to registered information.	[0] [7] [#]	Press Navigator key down then following information is displayed. PSID, CSID, Baseset code and PS-No.
LCD Contrast adjustment	[1] [2] [#]	Press Navigator key down or up then LCD contrast can be adjusted. Press centre of soft keys then new data is set.
Test mode end (To the usually state.)	[0] [0] [#]	TESTMODE is finished, and it returns to the ordinary mode.

9 Service Mode

9.1. Service Mode Function (for Base Unit with Cordless Handset)

The service mode of KX-TG366x is operated by the Cordless Handset which has been linked the Base Unit.

To enter Service Mode:

1. Press [].
2. Press [#].
3. Enter "9" "0" "0" "0" "x", then "SERVICE MODE" is displayed
4. Press the desired feature code (shown below).

Item	Key operation	Remarks
Software version	# 551 or [▽] [△]	ROM=KXTG70 ver***
CNTTONE DET=	# 580 or [▽] [△]	Continuous sound detection function (ON/OFF)
Remote turn	# 602 or [▽] [△]	Remote turn=10
DTMF det=	# 757 or [▽] [△]	DTMF detection integration time (Default: 50 ms)
BELL DET TIME=	# 769 or [▽] [△]	RINGER detection integration time (Default: 600 ms)
TAD MONITOR=	# 782 or [▽] [△]	Monitor setting when absence responding (Default: ON)
Slot diversity	# 842 or [▽] [△]	Slot diversity function (Default: TX=on,RX=on)
Pause 035*100	# 501 or [▽] [△]	Pause time setting (Default: 3.5 s=3500 ms)
Redial all erase	# 506 or [▽] [△]	The data of the redial memory is cleared.
VOX DETECT=	# 510 or [▽] [△]	VOX detection time (Default: 6s)
VOX SNS=	# 511 or [▽] [△]	VOX detection sensitivity setting: HIGH/LOW (Default: HIGH)
VOX =	# 513 or [▽] [△]	VOX detection function: ON/OFF (Default: ON)
System setup	# 540 or [▽] [△]	When [F1] is pressed, it becomes an initialization menu.
KEYTONE SET=	# 992 or [▽] [△]	KEY operation sound setting of base unit: ON/OFF (Default: ON)
AUTO DSCNCT=	# 732 or [▽] [△]	Automatic line opens control setting (over parallel connected telephone): ON/OFF (Default: OFF)
LINE MODE=	# 713 or [▽] [△]	Line AGC control function: ON/OFF (Default: ON)
CPC MODE=	# 731 or [▽] [△]	Disconnect line pulse detect function: ON/OFF (Default: OFF)

9.1.1. How to Clear User Setting

Units are reset to the Factory setting by this operation

(Erase recorded Voice messages, stored Phone numbers, Caller list and etc.).

Note:

- This operation should not be performed for a usual repair.
- Use the Cordless Handset which has been linked with the Base Unit for the factory setting of Base Unit.

1. Press [] [#] [9] [0] [0] [0] [x], and it goes to the service mode.

"SERVICE MODE" is displayed on the LCD.

2. Press "#540" (system setup), then press [] key.
3. Select [x] key in the menu of "All Initialize", and it becomes "Base Initialize".

For initializing Base Unit and Cordless Handset

4. When select [x] key in the menu of "Base Initialize", then Base Unit and Cordless Handset are initialized.
After "complete" is shown on the display, press the [F1] key and it reactivates.

For initializing Cordless Handset

4. When select [#] key in the menu of "HS Initialize", then Cordless Handset is initialized.
After "complete" is shown on the display, press the [F1] key and it reactivates.
5. Delete All data of the Phonebook.

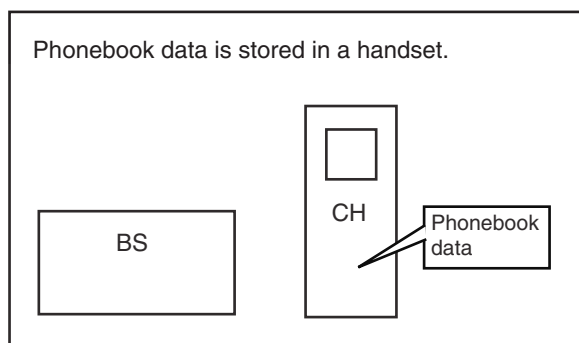
[] → [] [1] [4] [4]

[] → [*]

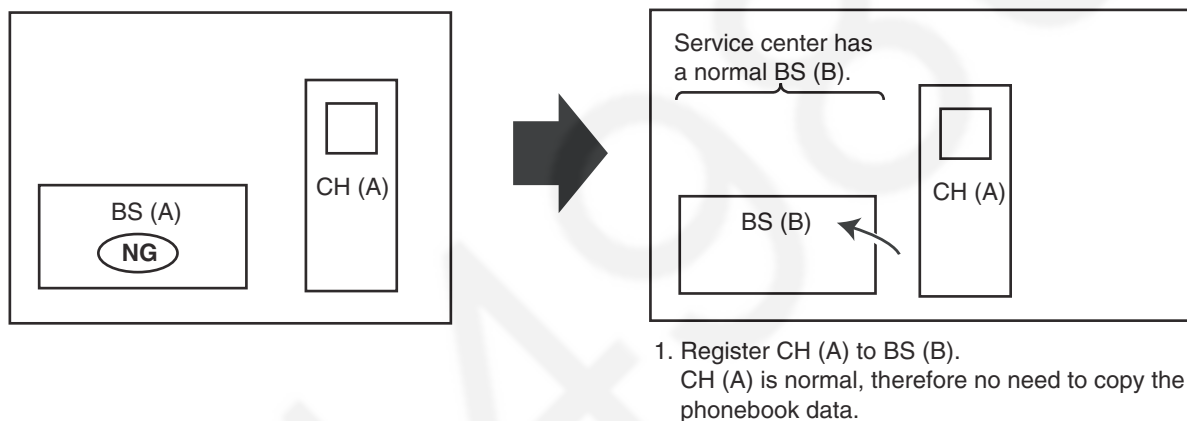
For detailed procedure, see Programming using the direct commands in the Operating Instructions feature code #144.

9.2. Copying Phonebook Items when Repairing

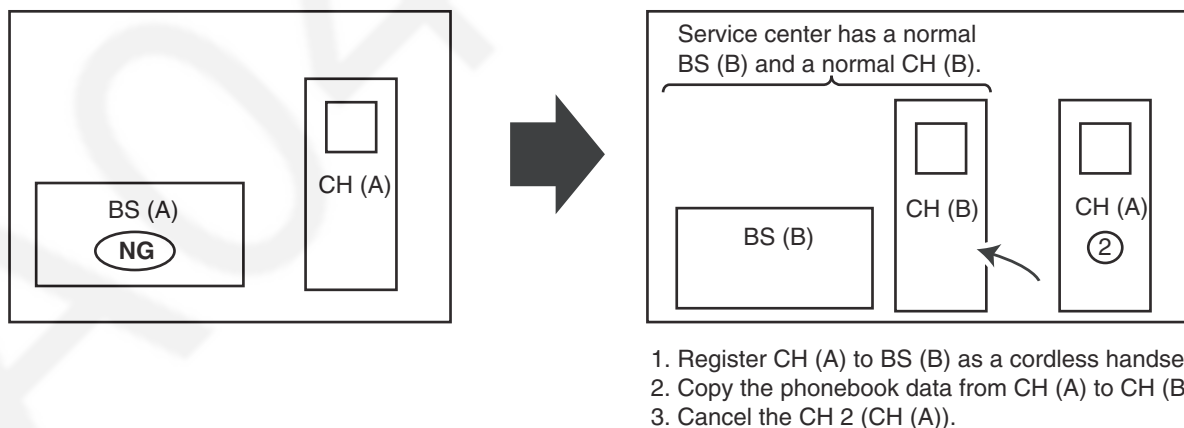
You can copy the cordless handset phonebook to another (compatible Panasonic) cordless handset. This will help to save the original phonebook data which the customer has registered. Refer to the following procedures.



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



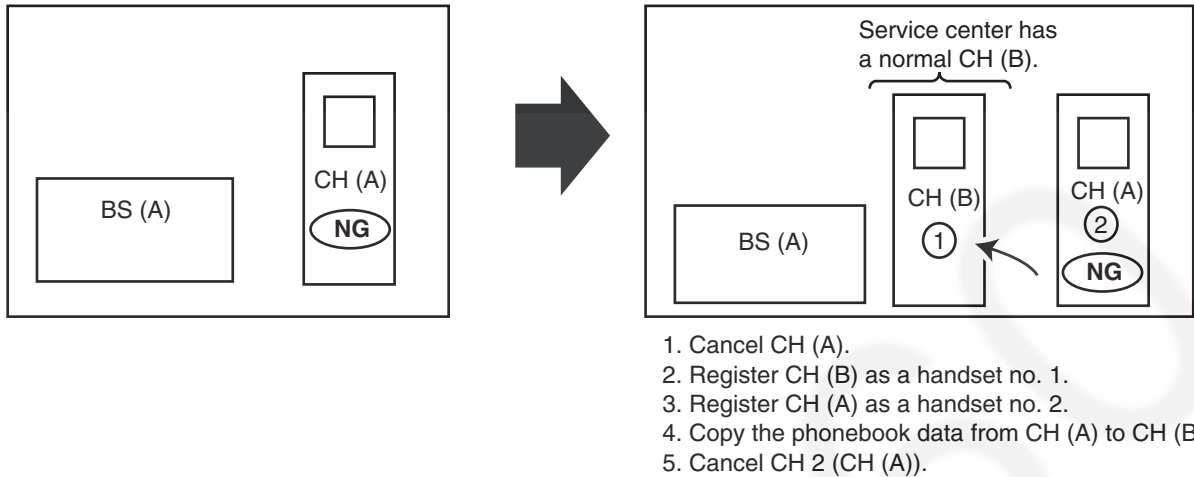
Case 2: A base unit has a defect.
(Replacing both a base unit and a cordless handset)



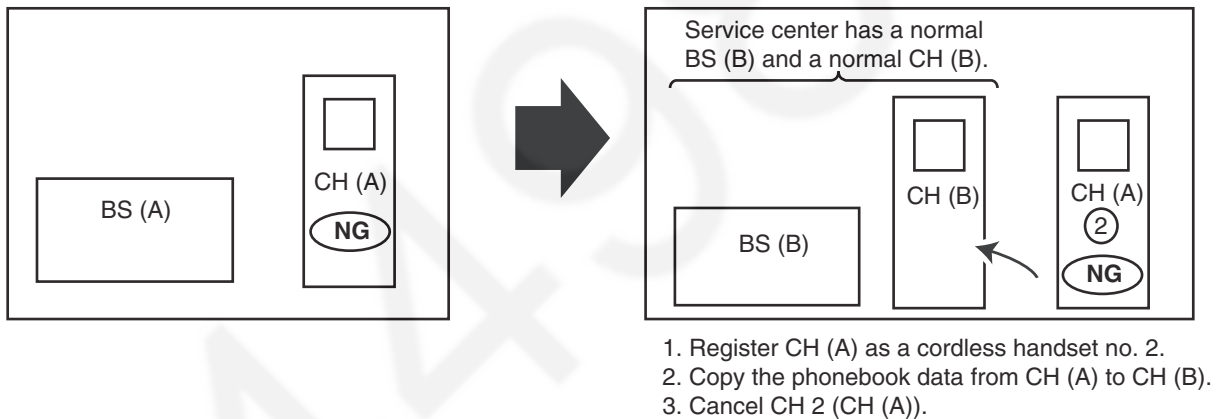
Note:

- BS=Base Unit, CH=Cordless Handset
- If the max number of handsets are already registered to the base unit, a new cordless handset cannot be registered.
- To register the handset, refer to **Registering a Cordless Handset to a Base unit** (P.31)
- To cancel the handset, refer to **Deregistering a Cordless Handset** (P.31)

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



Case 4: A cordless handset has a defect.
(Radio transmission is functioning.)

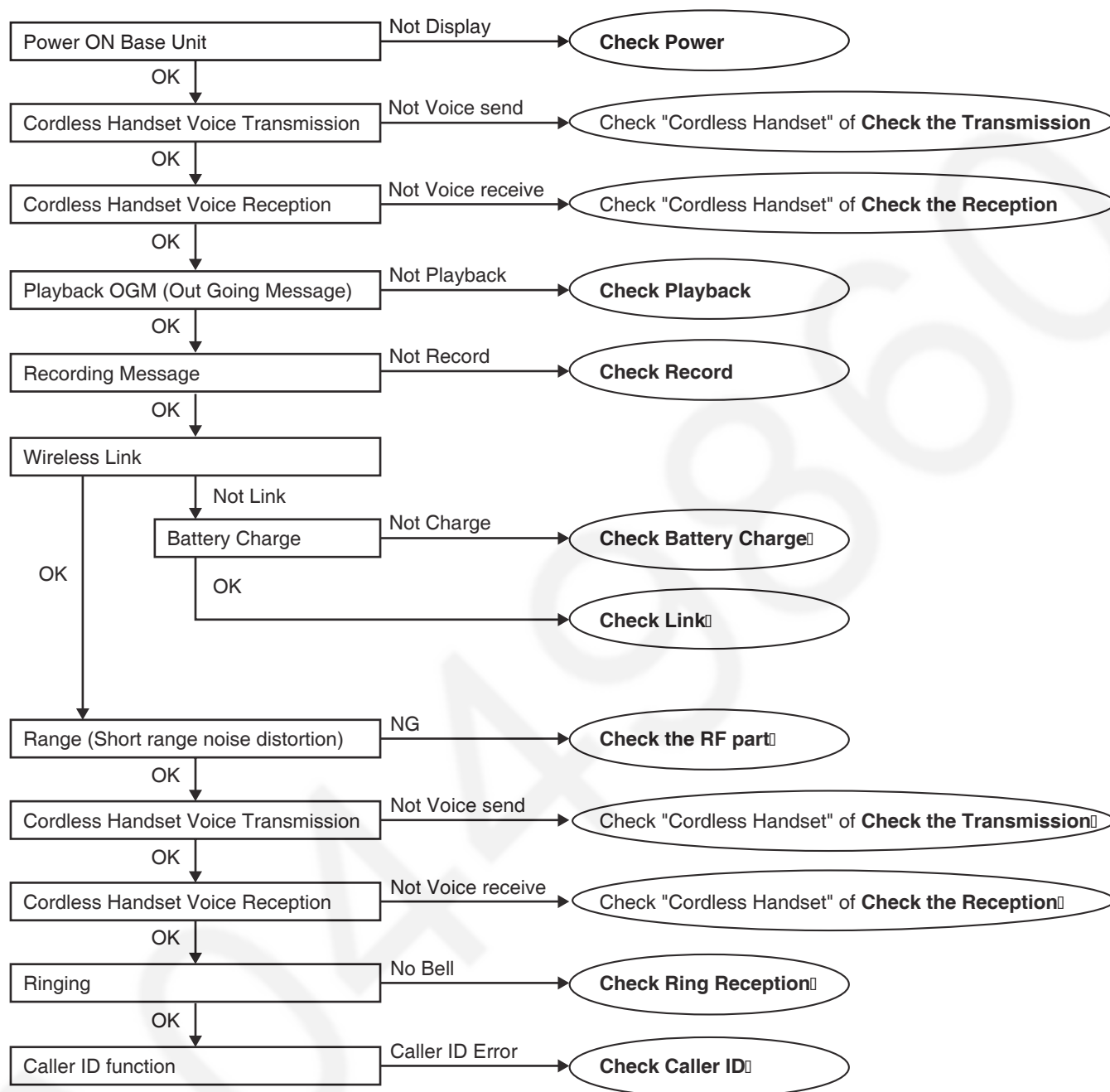


Note:

- BS=Base Unit, CH=Cordless Handset
- If the max number of handsets are already registered to the base unit, a new cordless handset cannot be registered.
- To register the handset, refer to **Registering a Cordless Handset to a Base unit** (P.31)
- To cancel the handset, refer to **Deregistering a Cordless Handset** (P.31)

10 Troubleshooting Guide

10.1. Troubleshooting Flow Chart



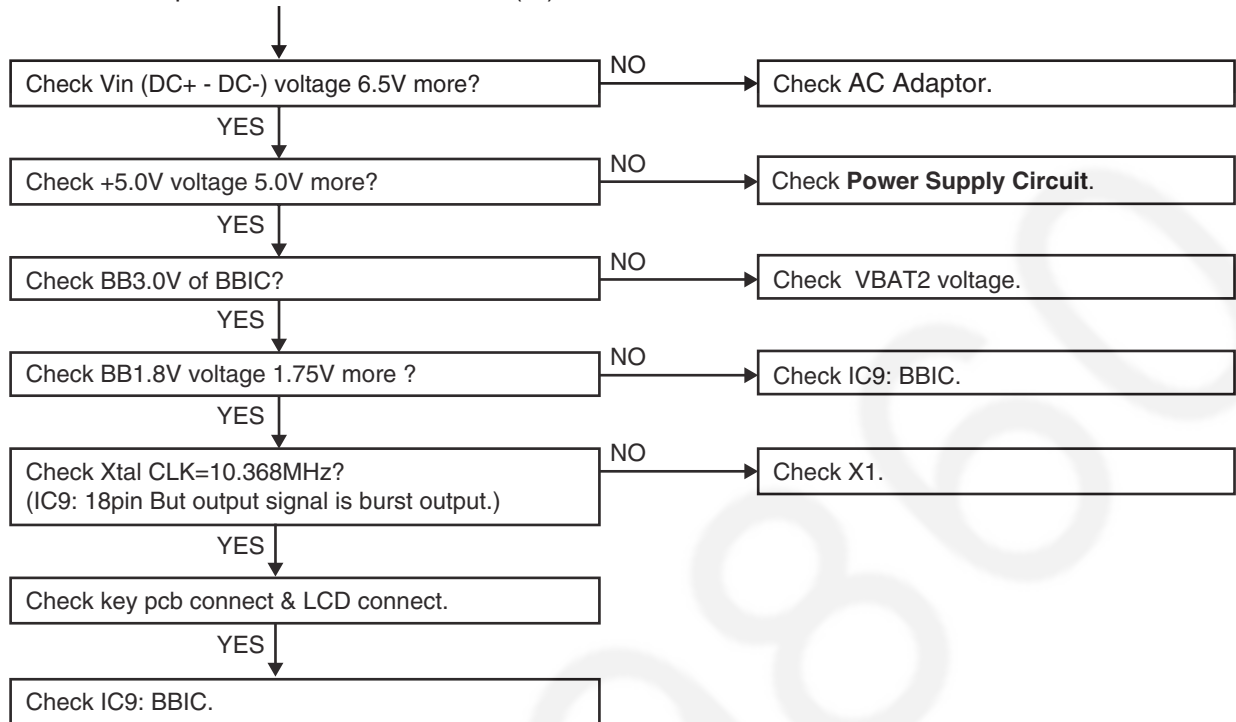
Cross Reference:

- Check Power** (P.25)
- Check the Transmission** (P.26)
- Check the Reception** (P.26)
- Check Playback** (P.27)
- Check Record** (P.28)
- Check Battery Charge** (P.29)
- Check Link** (P.30)
- Check the RF part** (P.31)
- Check Ring Reception** (P.32)
- Check Caller ID** (P.32)

10.1.1. Check Power

BASE UNIT

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



Cross Reference:

Power Supply Circuit (P.11)

Note:

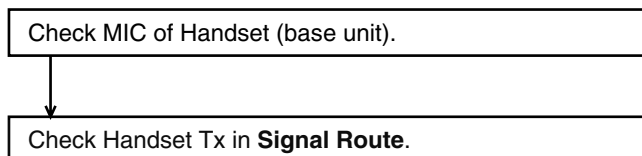
(*1) Refer to **Specifications** (P.6) for part number and supply voltage of AC adaptor.

Flash Memory is IC13.

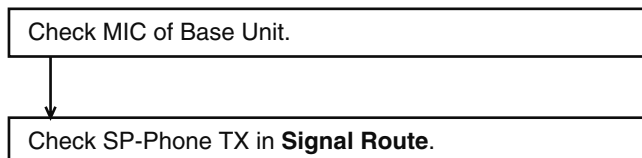
DSP is IC9.

10.1.2. Check the Transmission

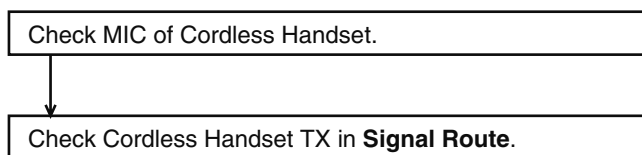
Handset (base unit)



Base Unit (SP-Phone)



Cordless Handset



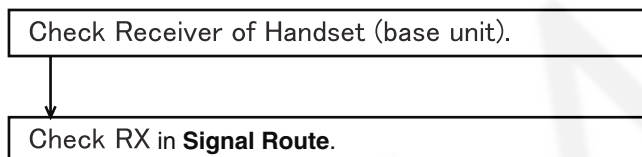
Cross Reference:

Telephone Line Interface (P.12)

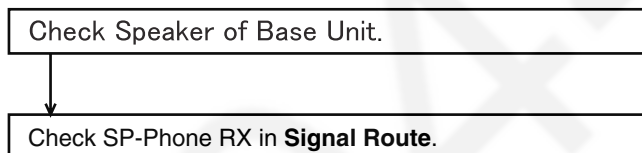
Signal Route (P.17)

10.1.3. Check the Reception

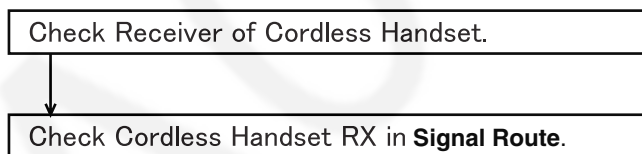
Handset (base unit)



Base Unit (SP-Phone)



Cordless Handset



Cross Reference:

Telephone Line Interface (P.12)

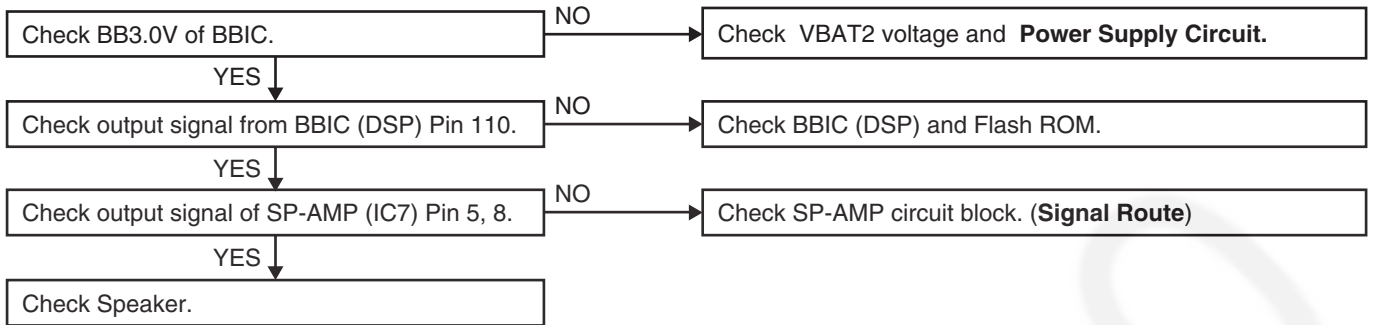
Signal Route (P.17)

Note:

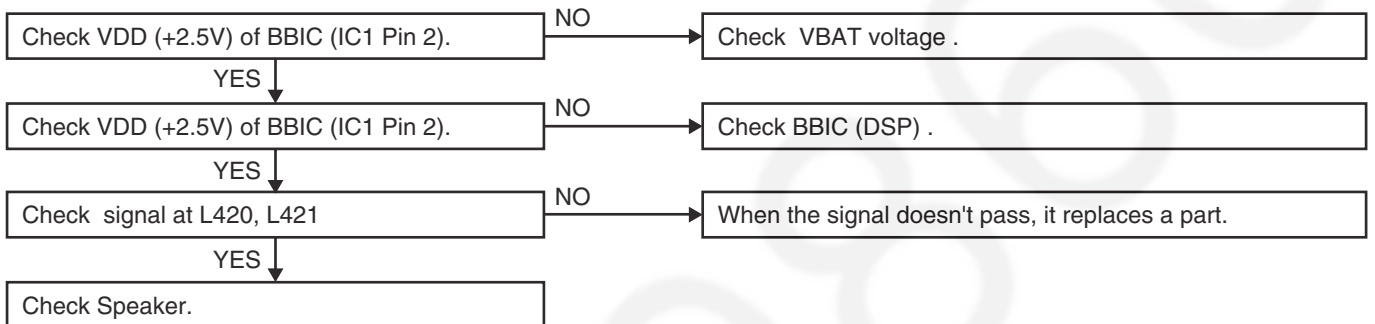
When checking the RF part, Refer to **Check the RF part** (P.31).

10.1.4. Check Playback

Base Unit



Cordless Handset



Cross Reference:

Power Supply Circuit (P.11)

Signal Route (P.17)

Note:

Flash-ROM is IC13.

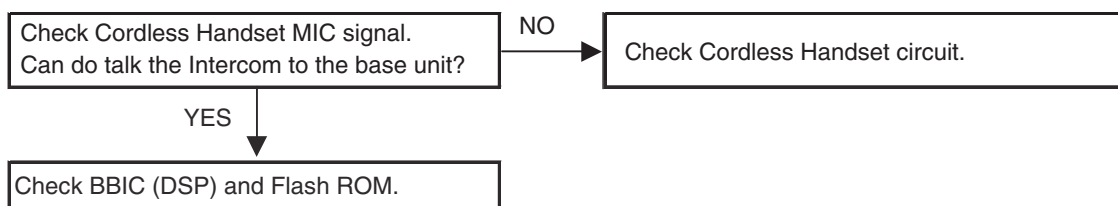
BBIC(DSP) is IC9.

SP-AMP is IC7.

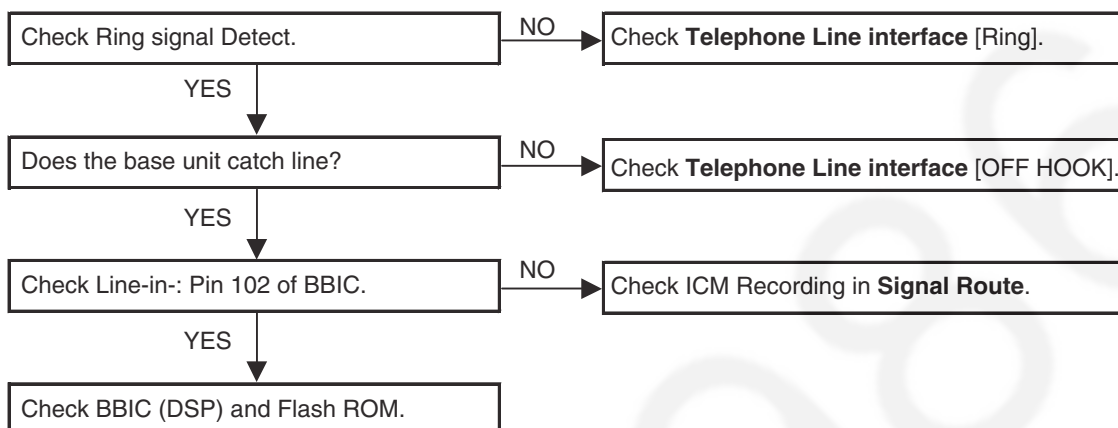
10.1.5. Check Record

Cordless Handset and Base Unit

a) Not record Greeting Message.



b) Not record Incoming Message.



c) How to change the Vox detect time.

(The shipment default is set to 6s.)

1. Press [F1] [#] [9] [0] [0] [0] [*] key then it goes to "SERVICE MODE".
2. Press [#] [5] [1] [0].
"VOX DETECT=06s"
3. Increase a set value within the range from 6 to 12s by inputting ten key.
4. Set to a new value by pressing [F1] key.

Cross Reference:

Telephone Line Interface (P.12)

Signal Route (P.17)

Note:

Flash Memory is IC13.

DSP is IC9.

10.1.6. Check Battery Charge

Charger

Plug in the AC power source. (*1)



Is the voltage between CHG+ and CHG- around 6.5V more?

NO

Check DC IN voltage is 6.5V more ?

YES



Check around of D1, R1, F1 and contact lead.

Cordless Handset

The Cordless Handset is set in the charger.



Display on LCD "Charging" or "Full Charged"

NO

Check the contact of CHARGER. Is contact with the charger OK?

YES



Check the contact between the Battery and Cordless Handset.



Is the voltage at [Vbat(+)] - [Vbat(-)] 2.7V when the Cordless Handset is charged on the Charger.?

YES



Check Battery.

Cross Reference:

Telephone Line Interface (P.12)

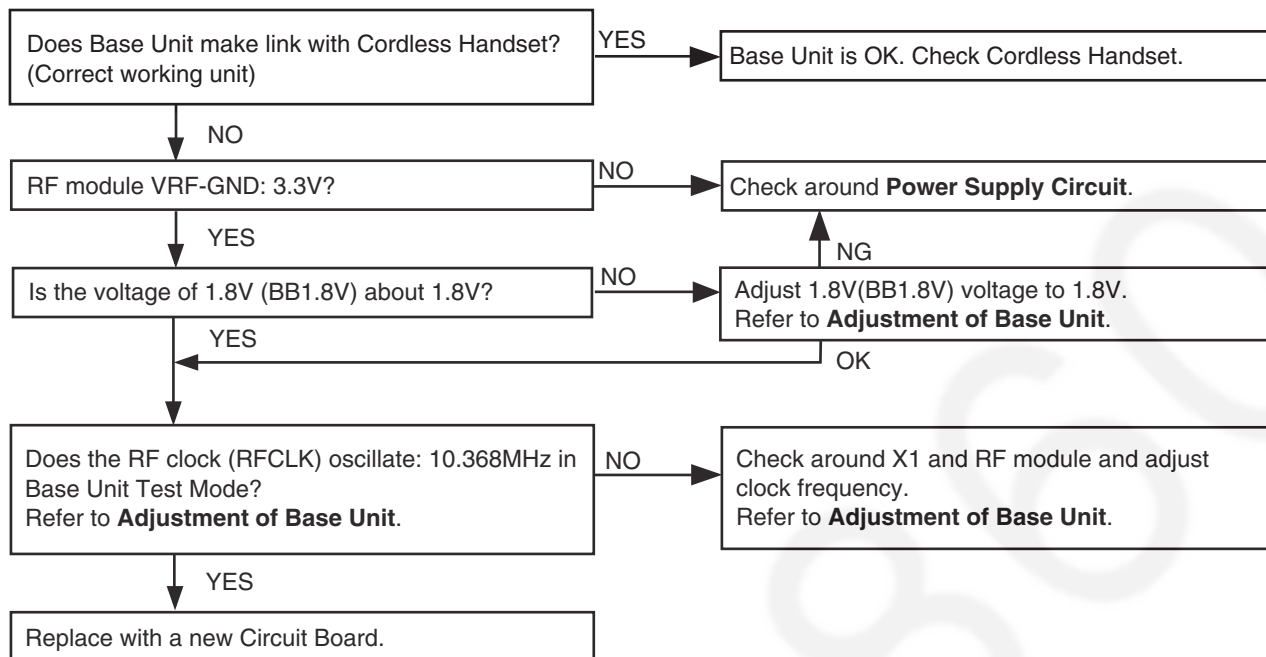
Signal Route (P.17)

Note:

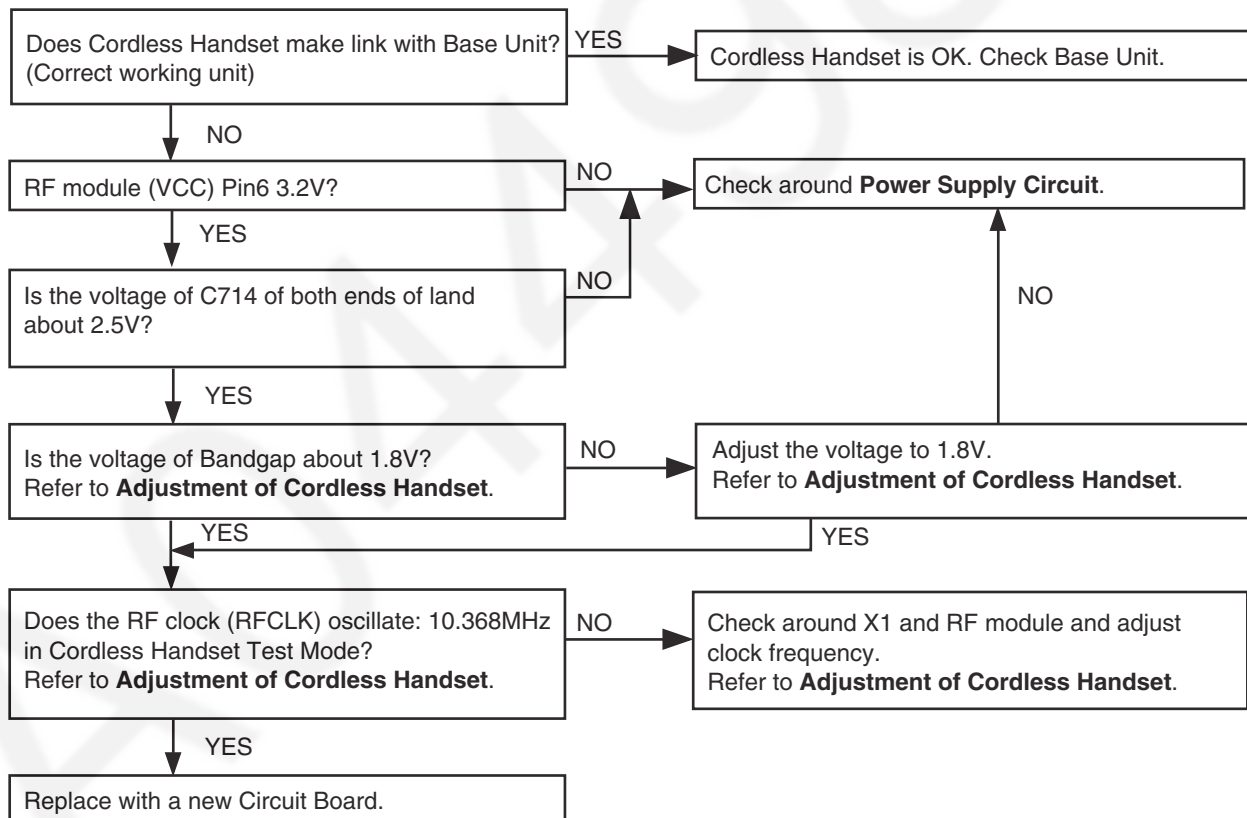
(*1) Refer to **Specifications** (P.6) for part number and supply voltage of AC adaptor.

10.1.7. Check Link

Base Unit



Cordless Handset



Cross Reference:

Power Supply Circuit (P.11) for Base Unit

Power Supply Circuit (P.16) for Cordless Handset

Adjustment of Base Unit (P.41)

Adjustment of Cordless Handset (P.46)

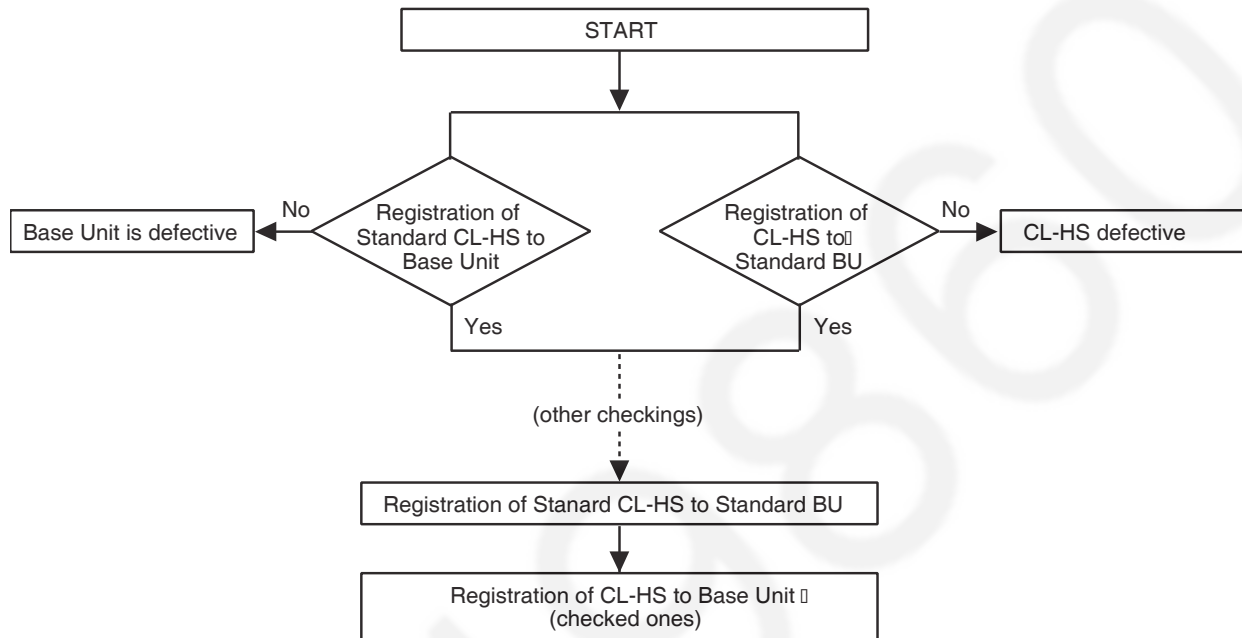
10.1.8. Check the RF part

10.1.8.1. Finding out the Defective part

1. Prepare "Standard BU (*2)" and "Standard CL-HS (*1)"
 2. a. Re-registered standard CL-HS (Normal mode) to the BU (to be checked).
 - b. Re-registered CL-HS (to be checked) to standard BU (Normal mode).
- If this operation fails in some ways, the CL-HS is defective.

After All the Checkings or Repairing

1. Re-register the checked CL-HS to the checked BU, and Standard CL-HS to Standard BU.



Note:

- (*1) CL-HS: Cordless Handset
(*2) BU: Base Unit

10.1.8.1.1. Registering a Cordless Handset to a Base unit

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

1 Base unit:

Press and hold **[LOCATOR]** for about 5 seconds until flashes.

- If the registered handset starts ringing, press the same button to stop. Then repeat this step.
- The next step must be completed within 3 minutes.

2 Handset:

→ **[*][1][2][3]** → **OK**

3 Press **[2]** to select "Register HS".

- A long beep sounds from the handset.
- disappears from the base unit.

10.1.8.1.2. Deregistering a Cordless Handset

A handset can cancel its own registration that is stored in the base unit. This allows the handset to end its wireless connection with the system.

Important:

- If you do not use the handset after canceling registration, remove the batteries.
- If you cancel the handset registration of the extension number 1, the date and time are not backed up during a power failure.

1 → **[*][1][2][3]** → **OK**

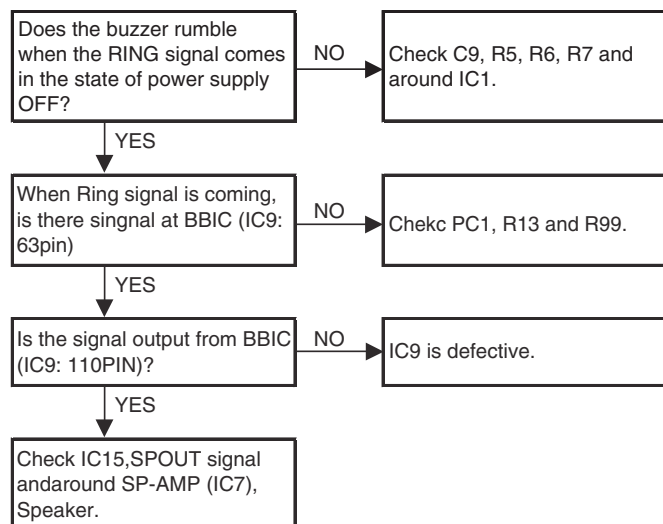
2 Press **[1]** to select "Cancel HS".

3 Select the handset you want to cancel by pressing the desired handset number.

4 Remove the batteries from the deregistered handset.

10.1.9. Check Ring Reception

Base Unit

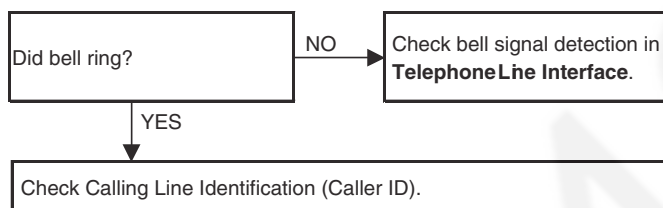


Cross Reference:

Telephone Line Interface (P.12).

10.1.10. Check Caller ID

Base Unit



Cross Reference:

Telephone Line Interface (P.12).

Note:

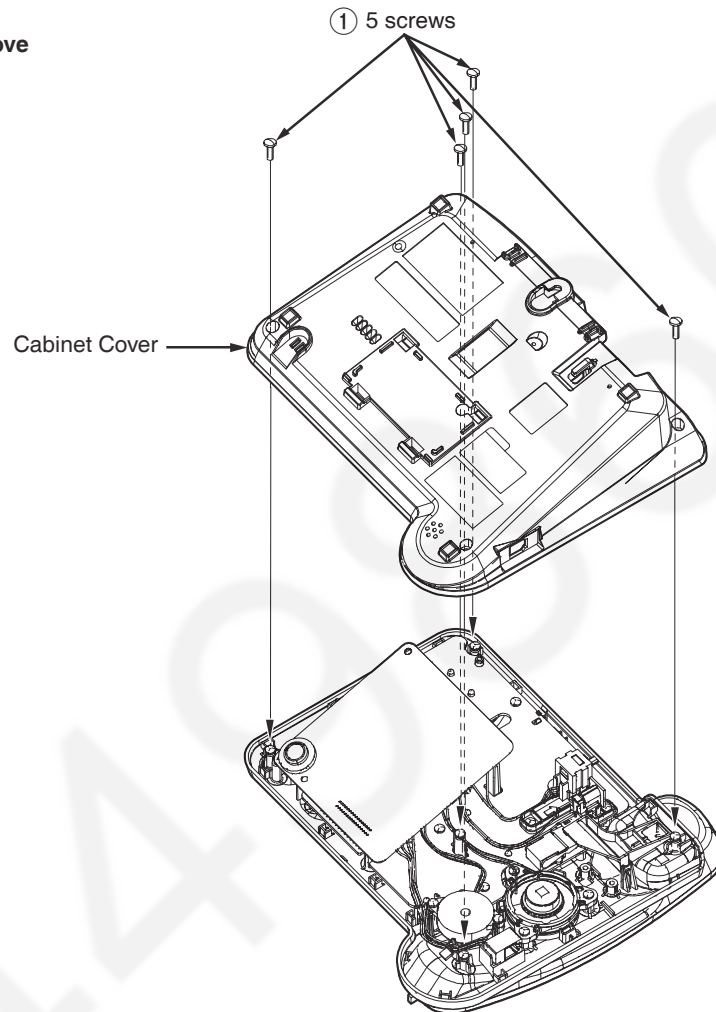
- Make sure the format of the Caller ID Service of the Telephone company that the customer subscribes to.
- It is recommended to confirm that the customer is really a subscriber of the service.

11 Disassembly and Assembly Instructions

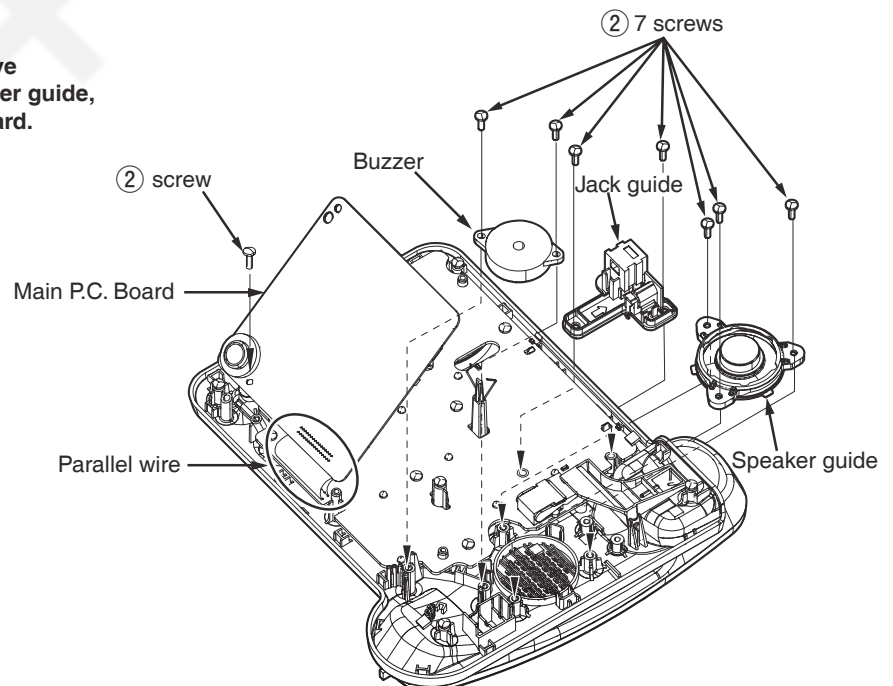
11.1. Disassembly Instructions

11.1.1. Base Unit

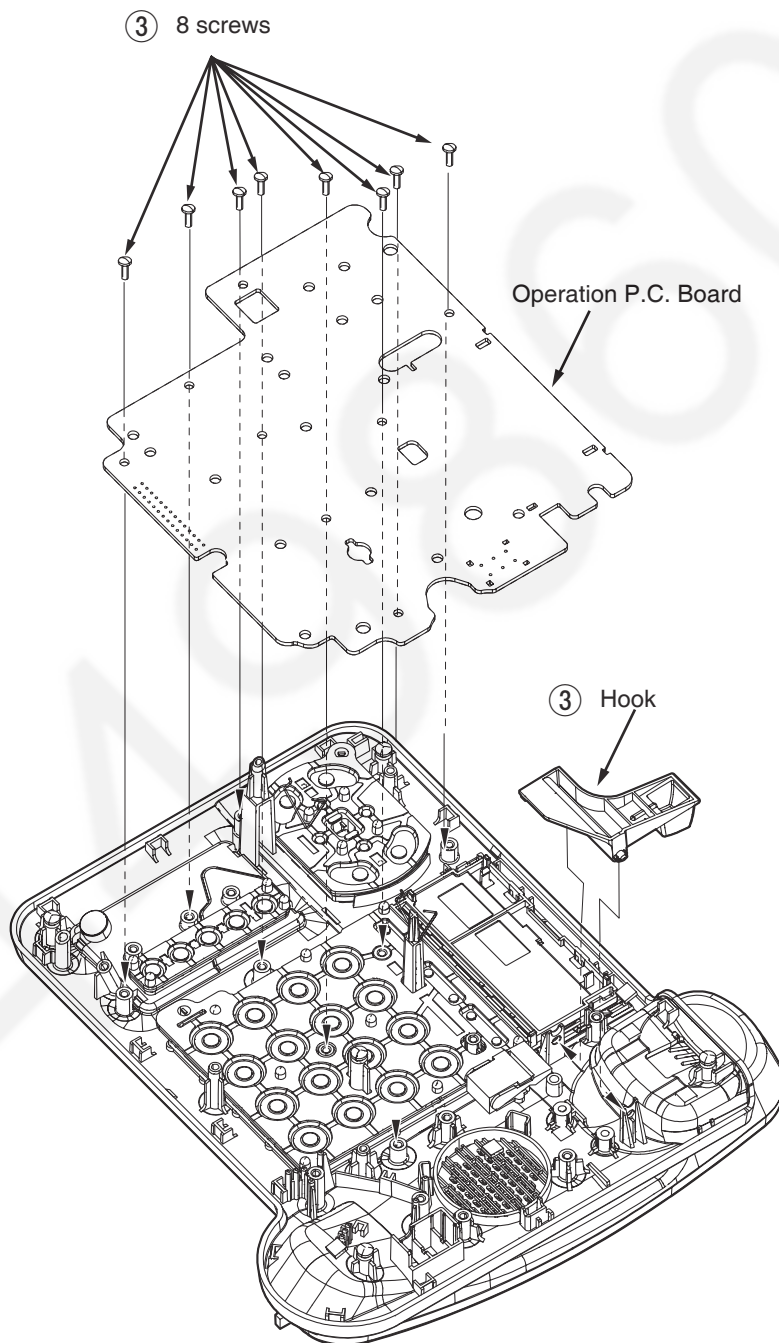
- ① Remove the 5 screws to remove the cabinet cover.



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

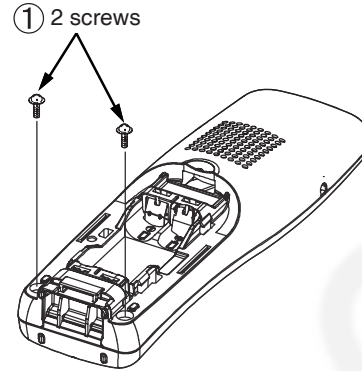


- ③ Unhook the hook and remove the 8 screws to remove the operational P.C. board.

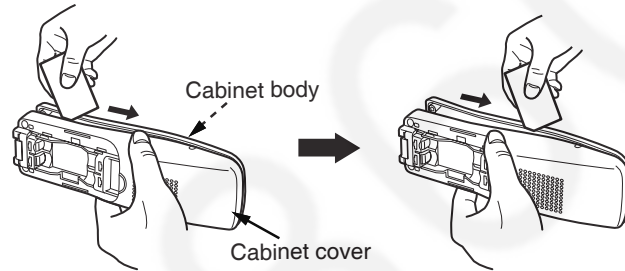


11.1.2. Cordless Handset

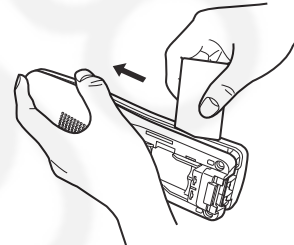
- ① Remove the 2 screws.



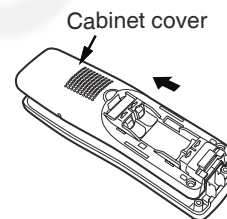
- ② Insert a plastic card. (Ex. Used SIM card etc.) between the cabinet body and the cabinet cover, then pull it along the gap to open the cabinet.



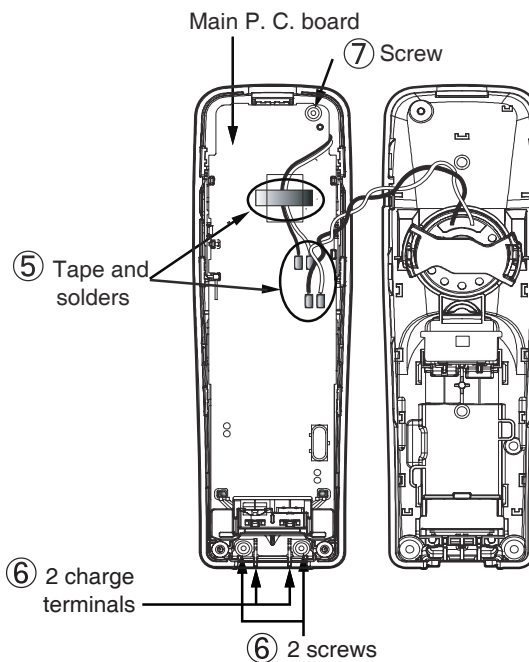
- ③ Likewise, open the other side of the cabinet.



- ④ Remove the cabinet cover by pushing it upward.



- ⑤ Remove the tape and solders.

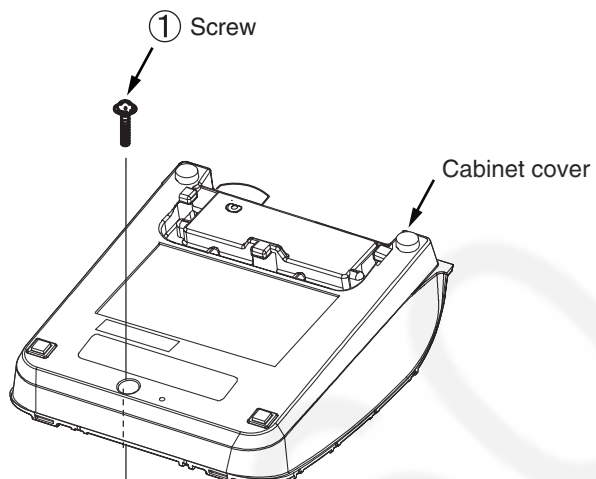


- ⑥ Remove the 2 screws to remove the 2 charge terminals.

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

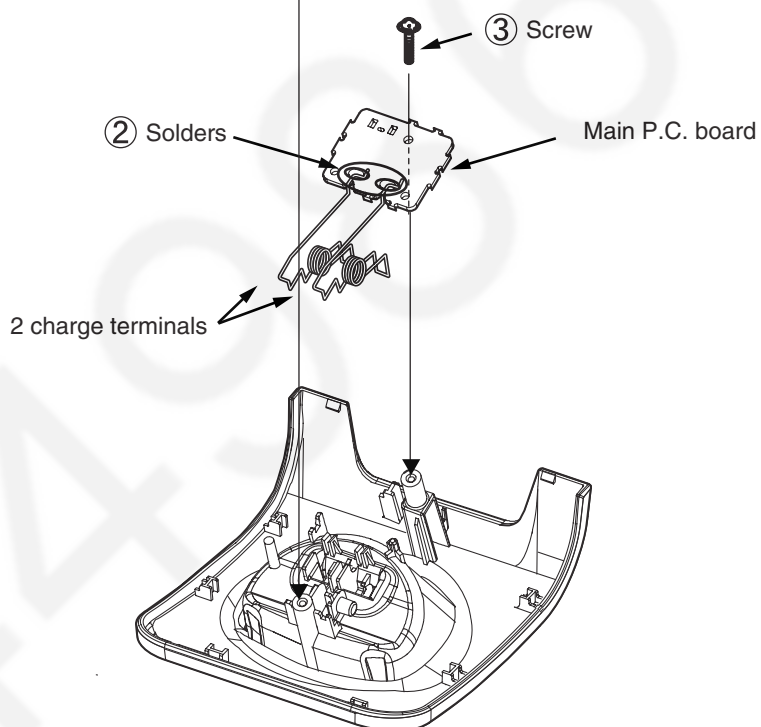
11.1.3. Charger Unit

- ① Remove the screw to remove the cabinet cover.



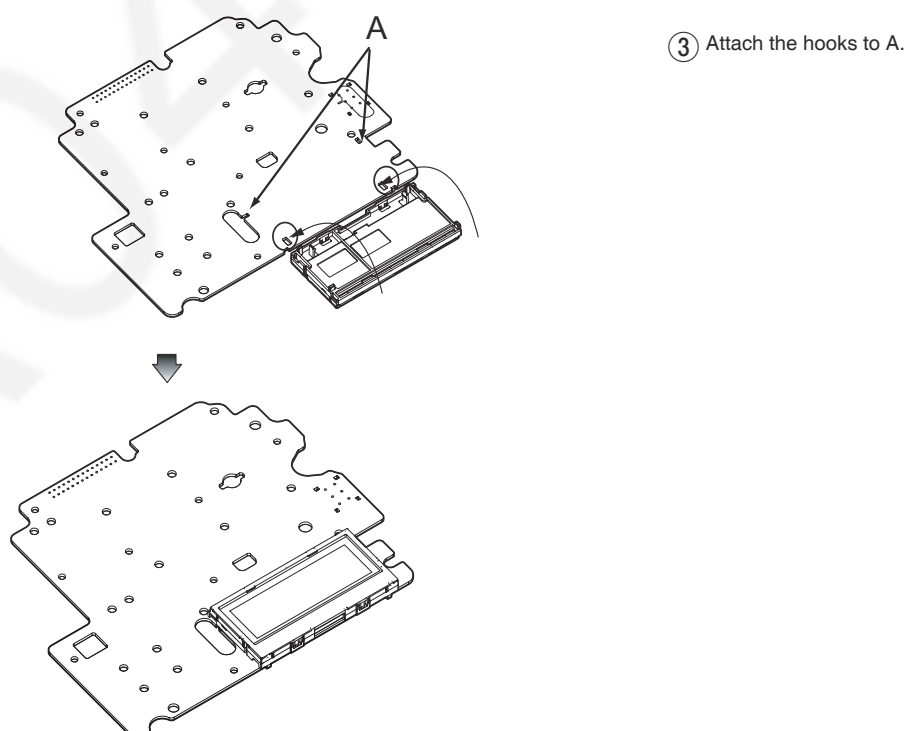
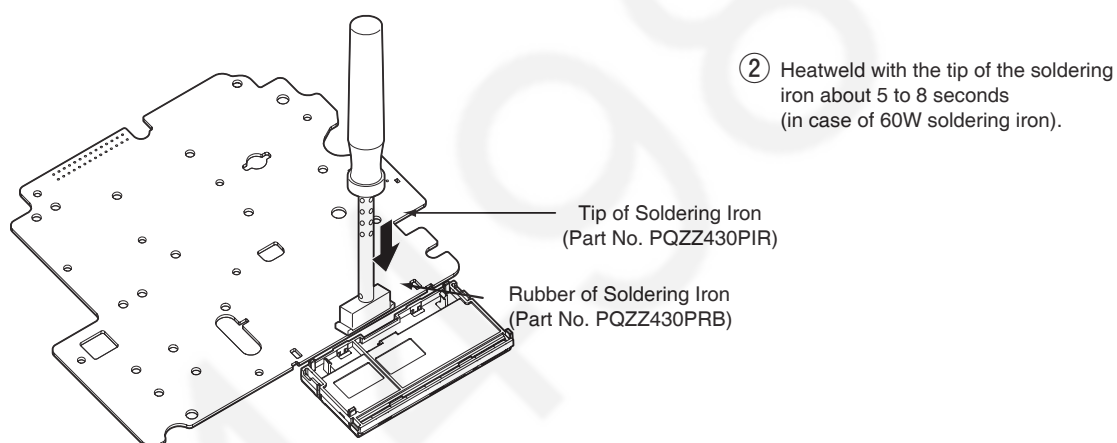
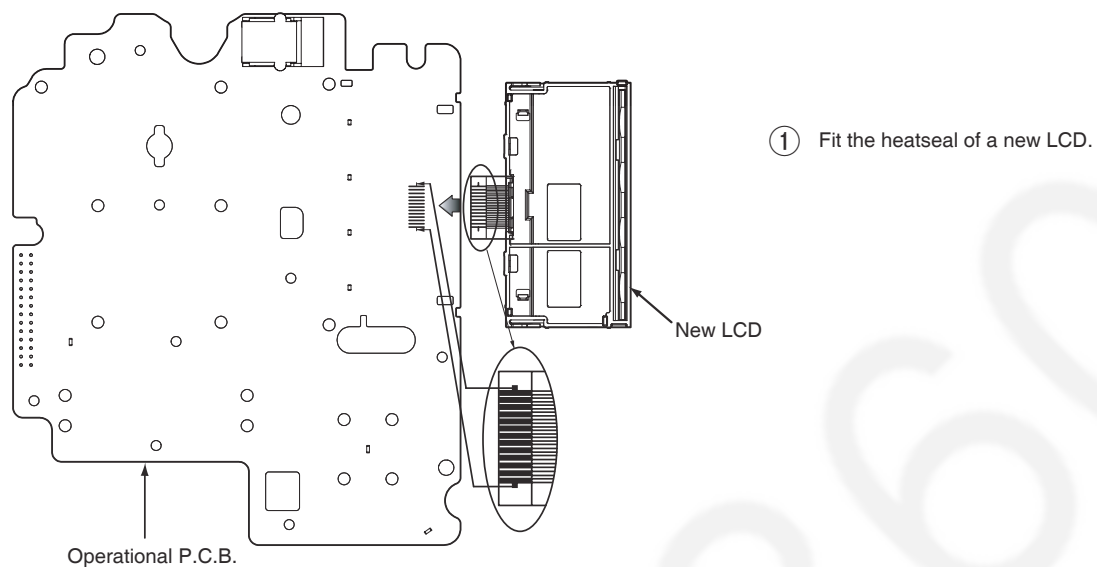
- ② Remove the solders to remove the 2 charge terminals.

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



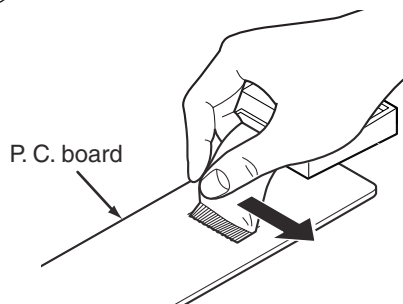
11.2. Assembly Instructions

11.2.1. How to Replace the Base unit LCD



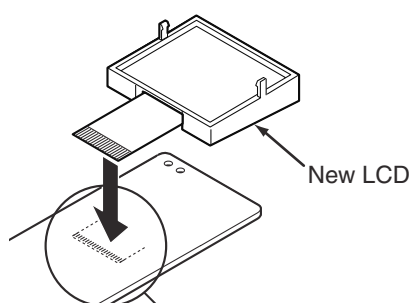
11.2.2. How to Replace the Cordless Handset LCD

①

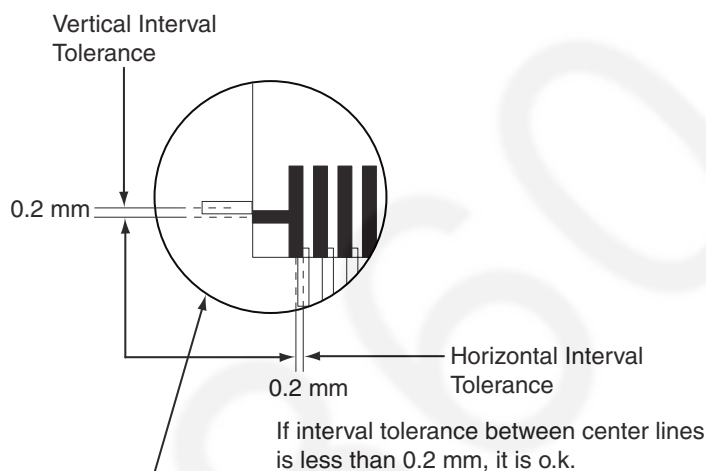


Peel off the FFC (Flexible Flat Cable) from the LCD, in the direction of the arrow. Take care to ensure that the foil on the P.C. board is not damaged.

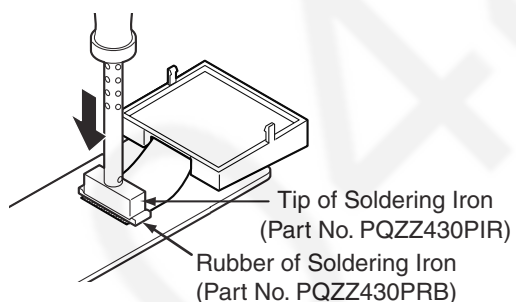
②



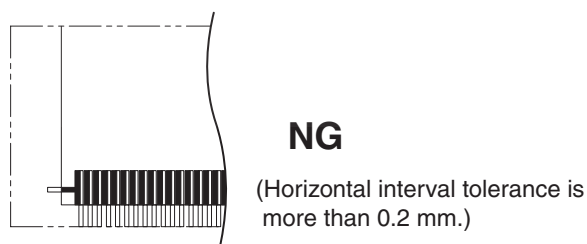
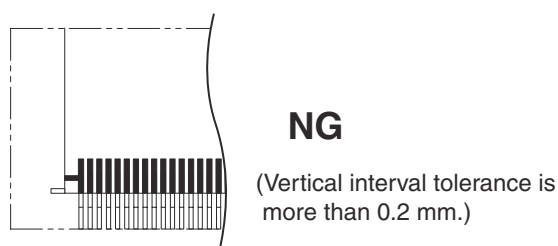
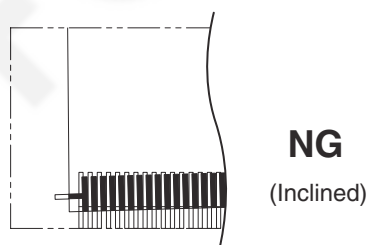
Fit the heatseal of a new LCD.



③



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



12 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.24)

12.1. 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.

12.2. The Setting Method of JIG (Base Unit)

<Preparation>

- Serial JIG cable: PQZZ1CD300E*
- PC which runs in DOS mode
- **Batch file CD-ROM** for setting: PNZZTG3661JX

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

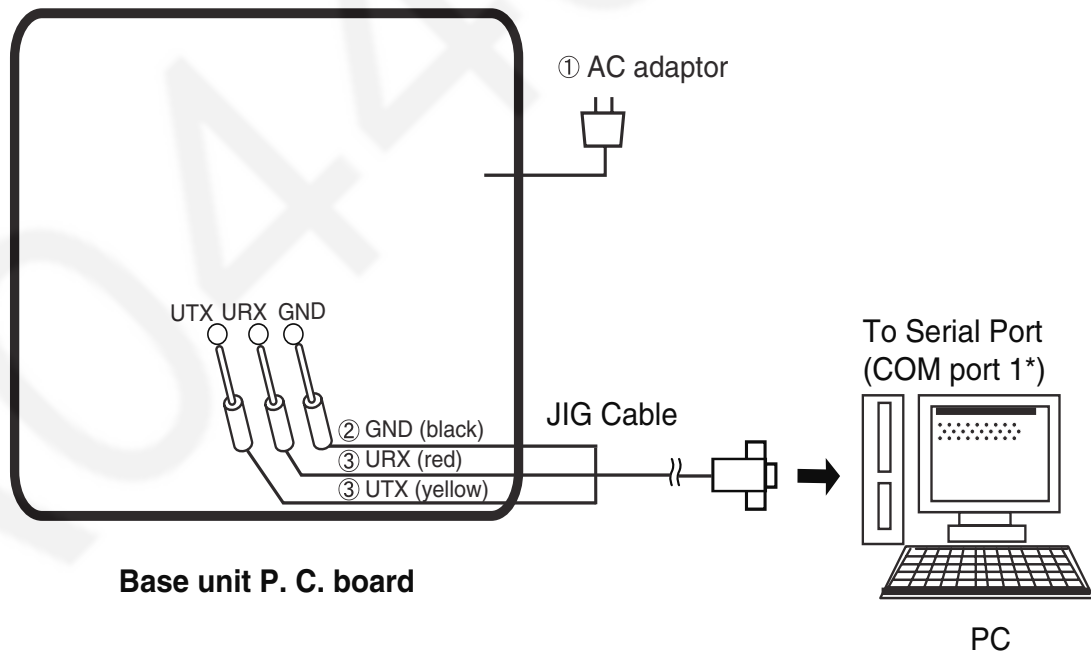
Resistor	Old value (k Ω)	New value (k Ω)
R2	22	3.3
R3	22	3.3
R4	22	4.7
R7	4.7	10

Note:

*: If you have the JIG Cable for TCD500 series

12.2.1. Connections

- ① Connect the AC adaptor to DC-JACK (base unit).
- ② Connect the JIG Cable GND (black).
- ③ Connect the JIG Cable URX (red) and UTX (yellow).



Note:

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

12.2.2. 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. Jig cable is connected with the base unit main_PCB
 (or CL HS_PCB) to be adjusted and power supply is supplied.

7. 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.

<Example: >

```
C: ¥Documents and Settings>D:
D: ¥>CD ¥PNZZTG****
D: ¥PNZZTG**** >SET_COM=1
D: ¥PNZZTG****>READID
00 52 4F A8 A8
D: ¥PNZZTG****>_
```

<Example: error hapens>

```
C: ¥Documents and Settings>D:
D: ¥>CD ¥PNZZTG****
D: ¥PNZZTG**** >SET_COM=1
D: ¥PNZZTG****>READID
CreateFile error
ERROR 10: Can't open serial port
D: ¥PNZZTG ****>_
```

Note:

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

12.2.3. Commands

See the table below for frequently used commands.

Command name	Function	Example
set_com	Set com port serial parameter of PC	Type "set_com =x" then setup to com port x.
getver	GetVer	Type "getver" then registered Rom version is read out.
readid	Read ID (RFPI)	Type "readid", then registered ID is read out.
BandGap	Read VDD Adjustment value	Type "setvdd", then registered VDD Adjustment value is read out.
BandGap nn	Set VDD Adjustment value	Type "setvdd", and the registered Bandgap voltage Adjust value.
conttx	Set to burst mode	Type "contx", then set to RF burst mode.
setfreq	Set Frequency Adjustment value	Type "setfreq", then registered Frequency Adjust value is read out."
setfreq nn	Read Frequency Adjustment value	Type "setfreq", and the registered Frequency Adjust value.

12.3. Adjustment of Base Unit

When IC9 (BBIC) or IC13 (Flash ROM) is exchanged, the Bandgap adjustment and the Frequency adjustment are necessary.
When X1 (X'tal) is exchanged, the Frequency adjustment is necessary.

Procedure:

1. Open a window of MS-DOS mode from the start-up menu.
2. Change directory to the copied folder.
Ex) If you initialize TG3661****, you change directory to “..\PNZZTG****\”
3. Type “**SET_COM 1**” from the keyboard (when COM port 1 is used for the connection).
4. Type “**readid**”. Check ID code on PC screen.
If OK (ID is displayed), go to advances to the adjustment process.
If NG (ID is not displayed), you have to stop this procedure, and check your PC environment.

BandGAP Voltage Adjustment

1. Check BandGap voltage. (BB1.8V-GND)
2. If voltage value is $1.8\text{ V} \pm 0.02\text{ V}$ then OK, go to **Frequency Adjustment** process.
If voltage value is not $1.8\text{ V} \pm 0.02\text{ V}$ then, go to step 3.
3. Type “**bandgap**”, you can check registered value of parameter.
When you want to up the voltage: “Value+1”.
When you want to down the voltage: “Value-1”.
4. Type “**bandgap nn**”, you can register a new parameter value.
5. Please operate step1 to 5 again until the voltage becomes it within the range ($1.8\text{V} \pm 0.002\text{V}$).

Example

```
D:\PNZZTG****>bandgap
08
D:\PNZZTG****>bandgap 09
OK
D:\PNZZTG****>
```

Please confirm the following item when the adjustment does not go well.

Symptom	item
Can not Adjust Bandgap Voltage	Please check Power Supply Circuit .

When it does not improve even if the above-mentioned is confirmed, IC9 might be defective.
Please check soldering.

Frequency Adjustment

1. Type “contx” then set to RF burst mode. (Respons “OK”)
2. Check Frequency. (RF-CLK-GND)
3. If Frequency value is 10.368000 MHz $\pm 41\text{ Hz}$ then OK, finished Adjustment process
- Please turn off the power of PCB board.
If Frequency value is not 10.368000 MHz $\pm 41\text{ Hz}$ then, go to step 4.
4. Type “**setfreq**”, you can check registered value of parameter.
When you want to up the frequency: “Value -1”.
When you want to down the frequency: “Value +1”.
5. Type “**setfreq nn**”, you can register a new parameter value.
6. Please operate step 4 to 6 again until the Frequency becomes it within the range ($10.368\text{MHz} \pm 5\text{Hz}$).

Example

```
D:\PNZZTG****>contx
OK
D:\PNZZTG****>setfreq
66
D:\PNZZTG****>setfreq 65
OK
D:\PNZZTG****>
```

registered value →

Please confirm the following item when the adjustment does not go well.

Symptom	item
Can not Adjust RFCLK Frequency	Please check VDDRF (R89, C91, C92), RFCLK (R90, L4, C102)

When it does not improve even if the above-mentioned is confirmed, IC9 or IC300, IC301 (RF unit) might be defective.
Please check soldering.

Cross Reference:

Power Supply Circuit (P.11)

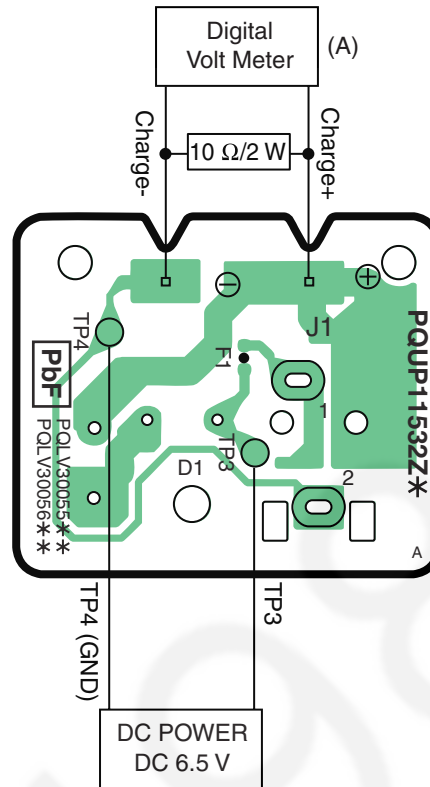
12.4.1. Bottom View



12.5. Adjustment Standard (Charger Unit)

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

12.5.1. Bottom View



12.6. The Setting Method of JIG (Cordless Handset)

<Preparation>

- Serial JIG cable: PQZZ1CD300E*
- PC which runs in DOS mode
- **Batch file CD-ROM** for setting: PNZZTG3611JX

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

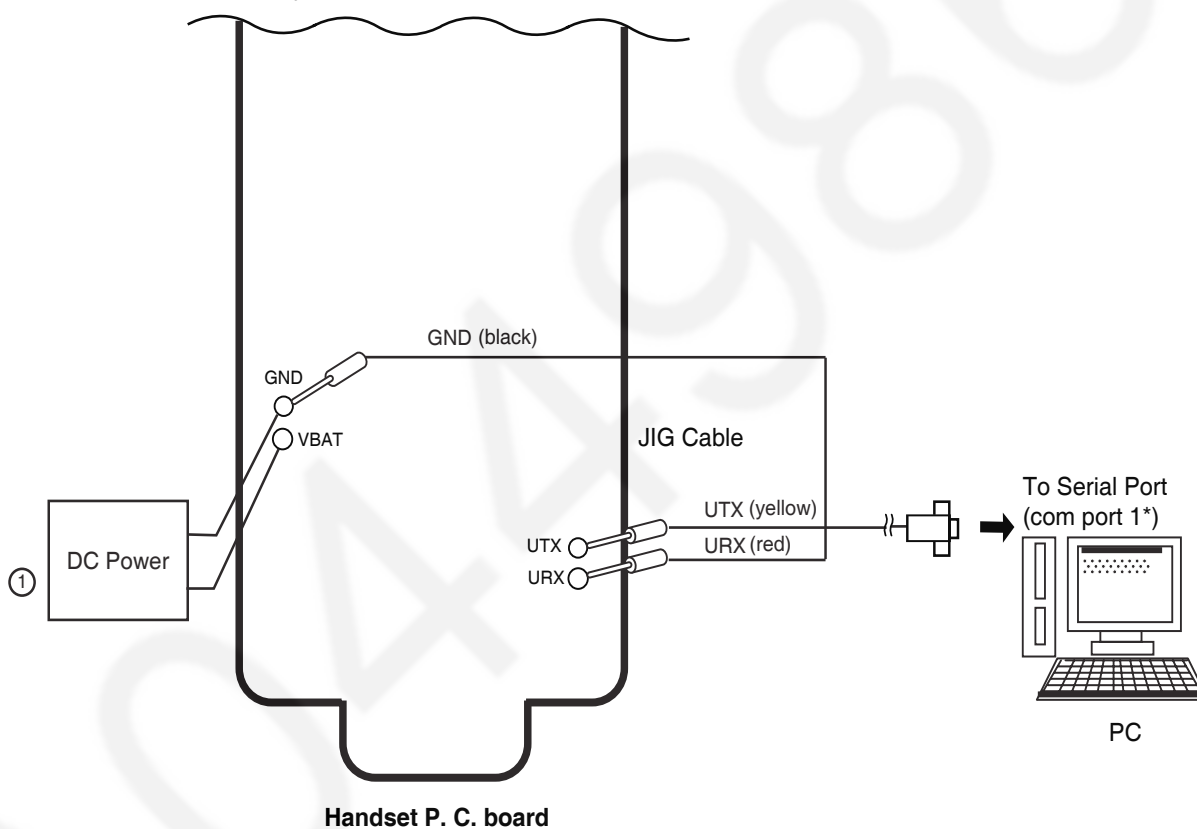
Resistor	Old value (kΩ)	New value (kΩ)
R2	22	3.3
R3	22	3.3
R4	22	4.7
R7	4.7	10

Note:

*: If you have the JIG Cable for TCD500 series

12.6.1. Connections

- ① Connect the DC Power TP(VBAT)+ and TP(GND).
- ② Connect the JIG cable GND (black).
- ③ Connect the JIG cable UTX (yellow) and URX (red).



Note:

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

12.6.2. 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. Jig cable is connected with the base unit main_PCB
 (or CL HS_PCB) to be adjusted and power supply is supplied.

7. 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.

<Example: >

```
C: ¥Documents and Settings>D:
D: ¥>CD ¥PNZZTG****
D: ¥PNZZTG**** >SET_COM=1
D: ¥PNZZTG****>READID
00 52 4F A8 A8
D: ¥PNZZTG****>_
```

<Example: error happens>

```
C: ¥Documents and Settings>D:
D: ¥>CD ¥PNZZTG****
D: ¥PNZZTG**** >SET_COM=1
D: ¥PNZZTG****>READID
CreateFile error
ERROR 10: Can't open serial port
D: ¥PNZZTG ****>_
```

Note:

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

12.6.3. Commands

See the table below for frequently used commands.

Command name	Function	Example
set_com	Set com port serial parameter of PC	Type "set_com =x" then setup to com port x.
getver	GetVer	Type "getver" then registered Rom version is read out.
readid	Read ID (RFPI)	Type "readid", then registered ID is read out.
BandGap	Read VDD Adjustment value	Type "setvdd", then registered VDD Adjustment value is read out.
BandGap nn	Set VDD Adjustment value	Type "setvdd", and the registered Bandgap voltage Adjust value.
contx	Set to burst mode	Type "contx", then set to RF burst mode.
setfreq	Set Frequency Adjustment value	Type "setfreq", then registered Frequency Adjust value is read out."
setfreq nn	Read Frequency Adjustment value	Type "setfreq", and the registered Frequency Adjust value.

12.7. Adjustment of Cordless Handset

When IC1(BBIC) or IC2 (EEPROM) is exchanged, the Bandgap adjustment and the Frequency adjustment are necessary.
When X1 (X'tal) is exchanged, the Frequency adjustment is necessary.

Procedure:

1. Open a window of MS-DOS mode from the start-up menu.
2. Change directory to the copied folder.
Ex) If you initialize TG3661****, you change directory to “..\PNZZTG****\”
3. Type “**SET_COM 1**” from the keyboard (when COM port 1 is used for the connection).
4. Type “**readid**”. Check ID code on PC screen.
If OK (ID is displayed), go to advances to the adjustment process.
If NG (ID is not displayed), you have to stop this procedure, and check your PC environment.

BandGAP Voltage Adjustment

1. Check BandGap voltage. (TP: +1.8V- GND)
2. If voltage value is $1.8\text{ V} \pm 0.02\text{ V}$ then OK, go to **Frequency Adjustment** process.
If voltage value is not $1.8\text{ V} \pm 0.02\text{ V}$ then, go to step 3.
3. Type “**bandgap**”, you can check registered value of parameter.
When you want to up the voltage: “Value+1”.
When you want to down the voltage: “Value-1”.
4. Type “**bandgap nn**”, you can register a new parameter value.
5. Please operate step1 to 5 again until the voltage becomes it within the range ($1.8\text{V} \pm 0.002\text{V}$).

Please confirm the following item when the adjustment does not go well.

Symptom	item
Can not Adjust Bandgap Voltage	Please check Power Supply Circuit .

When it does not improve even if the above-mentioned is confirmed, IC1 might be defective.
Please check soldering.

Frequency Adjustment

1. Type “conttx” then set to RF burst mode. (Respons “OK”)
2. Check Frequency. (TP: RFCLK-GND)
3. If Frequency value is 10.368000 MHz $\pm 41\text{ Hz}$ then OK , finished Adjustment process
- Please turn off the power of PCB board.
If Frequency value is not 10.368000 MHz $\pm 41\text{ Hz}$ then, go to step 4.
4. Type “**setfreq**”, you can check registered value of parameter.
When you want to up the frequency: “Value -1”.
When you want to down the frequency: “Value +1”.
5. Type “**setfreq nn**”, you can register a new parameter value.
6. Please operate step 4 to 6 again until the Frequency becomes it within the range ($10.368\text{MHz} \pm 5\text{Hz}$).

Please confirm the following item when the adjustment does not go well.

Symptom	item
Can not Adjust RFCLK Frequency	Please check VDDRF (R2, C10), RFCLK (R5, L1, C708)

When it does not improve even if the above-mentioned is confirmed, IC1 or IC300, IC301 (RF unit) might be defective.
Please check soldering.

Cross Reference:

Power Supply Circuit (P.16)

Example

```
D:\PNZZTG****>bandgap
08
D:\PNZZTG****>bandgap 09
OK
D:\PNZZTG****>
```

Example

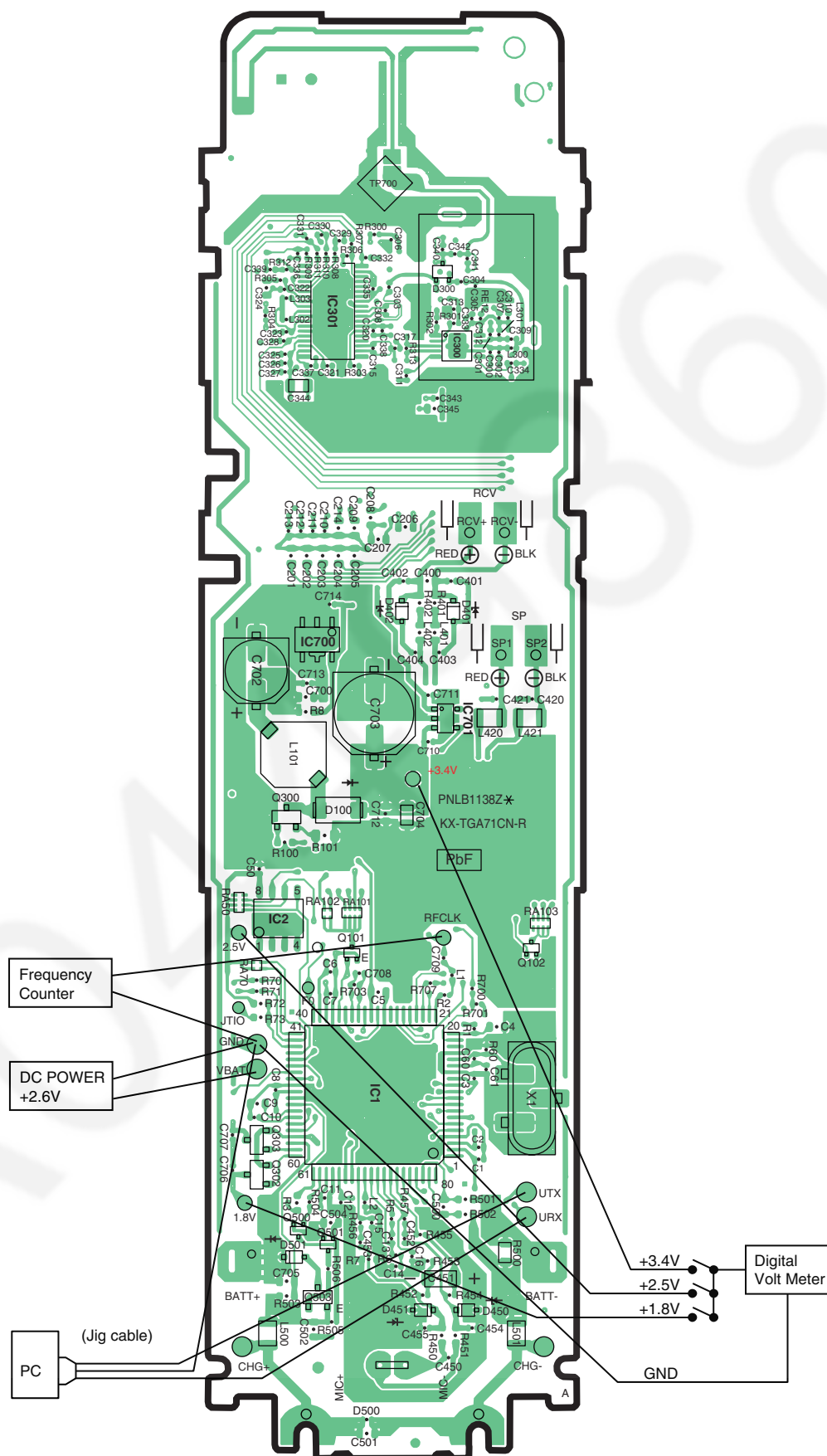
```
D:\PNZZTG****>conttx
OK
D:\PNZZTG****>setfreq
66
D:\PNZZTG****>setfreq 65
OK
D:\PNZZTG****>
```

registered value →

12.8. Cordless Handset Reference Drawing

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

12.8.1. Component View



12.9. Things to Do after Replacing IC

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.

12.9.1. How to download the data

12.9.1.1. Base Unit

First, operate the PC setting according to **The Setting Method of JIG (Base Unit)** (P.39).

Then download the appropriate data according to the following procedures.

IC		Required adjustment
BBIC (IC9)	CPU, interface for RF and FlashROM.	1) BandGAP adjustment 2) Standard frequency adjustment
Flash ROM (IC13)	Programming data is stored in memory. Adjusted parameter data is stored in memory.	1) BandGAP adjustment 2) Standard frequency adjustment
Xtal (X1)	System clock.	1) Standard frequency adjustment

Note:

Refer to **Adjustment of Base Unit** (P.41).

12.9.1.2. Cordless Handset

First, operate the PC setting according to **The Setting Method of JIG (Cordless Handset)** (P.44).

Then download the appropriate data according to the following procedures.

IC		Required adjustment
BBIC (IC1)	Programming data is stored in memory. CPU, interface for RF and FlashROM.	1) BandGAP adjustment 2) Standard frequency adjustment
EEP ROM (IC2)	Adjusted parameter data is stored in memory.	1) BandGAP adjustment 2) Standard frequency adjustment
Xtal (X1)	Source of system clock.	1) Standard frequency adjustment

Note:

Refer to **Adjustment of Cordless Handset** (P.46).

12.10. Frequency Table

Channel	Center Frequency (MHz)	RX Local Frequency (MHz)
2 (02H)	2402.784	2401.92
3 (03H)	2403.648	2402.784
4 (04H)	2404.512	2403.648
5 (05H)	2405.376	2404.512
6 (06H)	2406.24	2405.376
7 (07H)	2407.104	2406.24
8 (08H)	2407.968	2407.104
9 (09H)	2408.832	2407.968
10 (0AH)	2409.696	2408.832
11 (0BH)	2410.56	2409.696
12 (0CH)	2411.424	2410.56
13 (0DH)	2412.288	2411.424
14 (0EH)	2413.152	2412.288
15 (0FH)	2414.016	2413.152
16 (10H)	2414.88	2414.016
17 (11H)	2415.744	2414.88
18 (12H)	2416.608	2415.744
19 (13H)	2417.472	2416.608
20 (14H)	2418.336	2417.472
21 (15H)	2419.2	2418.336
22 (16H)	2420.064	2419.2
23 (17H)	2420.928	2420.064
24 (18H)	2421.792	2420.928
25 (19H)	2422.656	2421.792
26 (1AH)	2423.52	2422.656
27 (1BH)	2424.384	2423.52
28 (1CH)	2425.248	2424.384
29 (1DH)	2426.112	2425.248
30 (1EH)	2426.976	2426.112
31 (1FH)	2427.84	2426.976
32 (20H)	2428.704	2427.84
33 (21H)	2429.568	2428.704
34 (22H)	2430.432	2429.568
35 (23H)	2431.296	2430.432
36 (24H)	2432.16	2431.296
37 (25H)	2433.024	2432.16
38 (26H)	2433.888	2433.024
39 (27H)	2434.752	2433.888
40 (28H)	2435.616	2434.752
41 (29H)	2436.48	2435.616
42 (2AH)	2437.344	2436.48
43 (2BH)	2438.208	2437.344
44 (2CH)	2439.072	2438.208
45 (2DH)	2439.936	2439.072
46 (2EH)	2440.8	2439.936
47 (2FH)	2441.664	2440.8
48 (30H)	2442.528	2441.664
49 (31H)	2443.392	2442.528
50 (32H)	2444.256	2443.392
51 (33H)	2445.12	2444.256
52 (34H)	2445.984	2445.12
53 (35H)	2446.848	2445.984
54 (36H)	2447.712	2446.848
55 (37H)	2448.576	2447.712
56 (38H)	2449.44	2448.576
57 (39H)	2450.304	2449.44
58 (3AH)	2451.168	2450.304
59 (3BH)	2452.032	2451.168
60 (3CH)	2452.896	2452.032
61 (3DH)	2453.76	2452.896
62 (3EH)	2454.624	2453.76
63 (3FH)	2455.488	2454.624
64 (40H)	2456.352	2455.488
65 (41H)	2457.216	2456.352

Channel	Center Frequency (MHz)	RX Local Frequency (MHz)
66 (42H)	2458.08	2457.216
67 (43H)	2458.944	2458.08
68 (44H)	2459.808	2458.944
69 (45H)	2460.672	2459.808
70 (46H)	2461.536	2460.672
71 (47H)	2462.4	2461.536
72 (48H)	2463.264	2462.4
73 (49H)	2464.128	2463.264
74 (4AH)	2464.992	2464.128
75 (4BH)	2465.856	2464.992
76 (4CH)	2466.72	2465.856
77 (4DH)	2467.584	2466.72
78 (4EH)	2468.448	2467.584
79 (4FH)	2469.312	2468.448
80 (50H)	2470.176	2469.312
81 (51H)	2471.04	2470.176
82 (52H)	2471.904	2471.04
83 (53H)	2472.768	2471.904
84 (54H)	2473.632	2472.768
85 (55H)	2474.496	2473.632
86 (56H)	2475.36	2474.496
87 (57H)	2476.224	2475.36
88 (58H)	2477.088	2476.224
89 (59H)	2477.952	2477.088
90 (5AH)	2478.816	2477.952
91 (5BH)	2479.68	2478.816
92 (5CH)	2480.544	2479.68

13 Miscellaneous

13.1. 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.

13.1.1. 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)

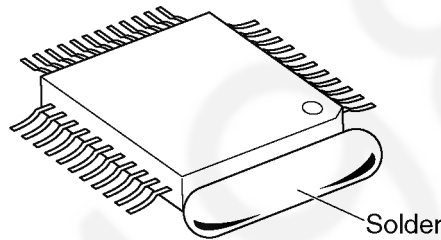
Note: See **About Lead Free Solder (Pbf: Pb free)** (P.4)

13.1.2. How to Remove the IC

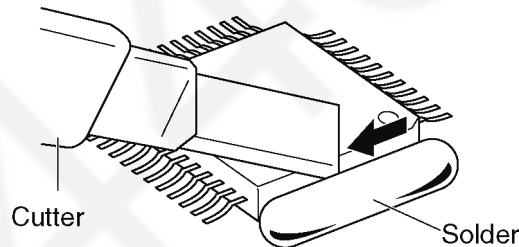
1. Put plenty of solder on the IC pins so that the pins can be completely covered.

Note:

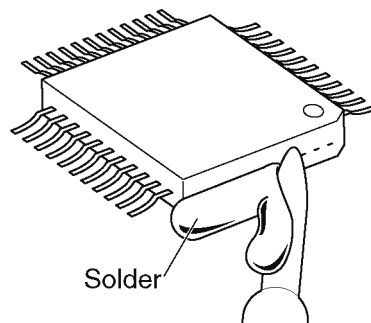
If the IC pins are not soldered enough, you may give pressure to the P.C. board when cutting the pins with a cutter.



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



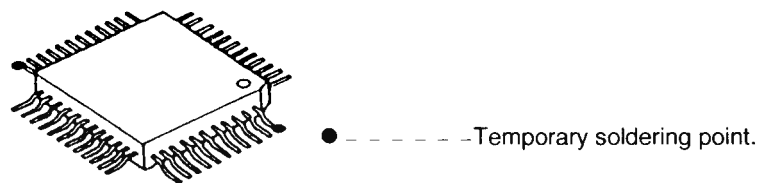
3. While the solder melts, remove it together with the IC pins.



When you attach a new IC to the board, remove all solder left on the land 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.

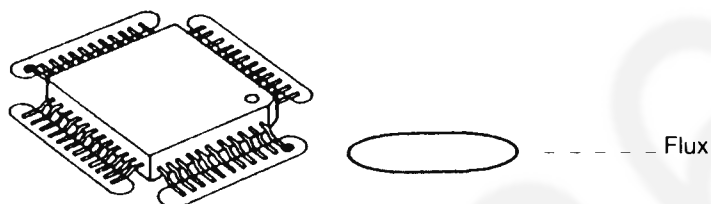
13.1.3. How to Install the IC

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

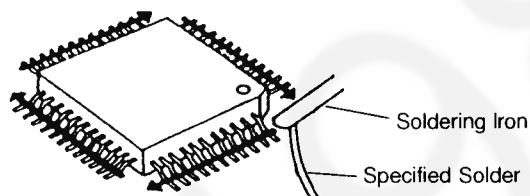


*Check the accuracy of the IC setting with the corresponding soldering foil.

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

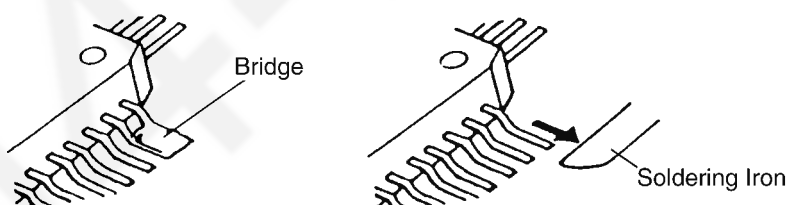


3. Solder the pins, sliding the soldering iron in the direction of the arrow.



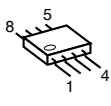
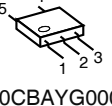
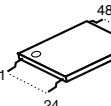
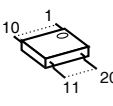
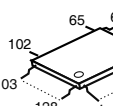
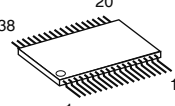
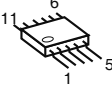
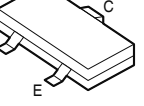
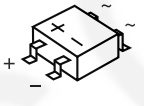
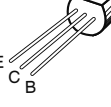
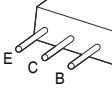
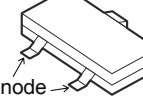
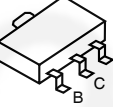
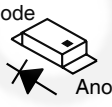
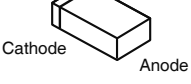
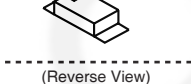
13.1.4. How to Remove a Solder Bridge

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

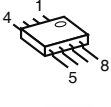
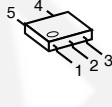
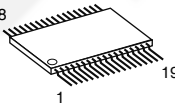
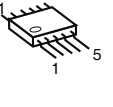
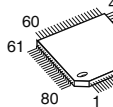
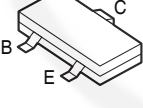
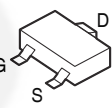
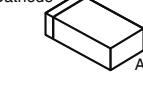
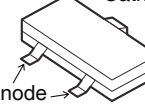
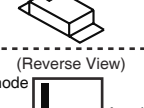


13.2. Terminal Guide of the Ics, Transistor and Diodes

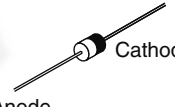
13.2.1. Base Unit

 C1BB00001024 C1CB00002903	 C0CBAYG00016 C0CBCDD00004 C0JBAS000249 C0CBCBC00205	 PNWIG3661JXH	 PSVISNLV273A	 C1CB00002704
 C1CB00001568	 C0ABAA000067	 PQVTDTC114EU, UN5213, UN5113 B1ADGE000004, 2SB0709AR		 B0EDER000009
 2SA1576R B1CCBR000001	 2SC4081R 2SD1994A	 B0DDCD000001	 B1BBAP000021	 PQVDBR1111C
 MA111, B0ECKM000008, MA8039 MA704WK, MA21D3400L, MA8033, MA142WKT, B0JCME000035, MA8075, MA8062, B0BC020A0219		 (Reverse View) Cathode Anode B3ACB0000190		

13.2.2. Cordless Handset

 PNWIGA365BXR	 C0CBCBC00205	 C1CB00001568	 C0ABAA000067	 C1CB00003421
 B1ADGE000004, B1GBCFYY0010 B1ABCF000017	 PQVTFDN335N	 B0BC3R4A00006 B0JCGD000009 B0JCME000035	 B0DDCD000001	 (Reverse View) Cathode Anode B3ACB0000133

13.2.3. Charger Unit

 B0JAME000095

14 Schematic Diagram

14.1. For Schematic Diagram

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

Notes:

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

14.1.2. 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 and circuit board may be modified at any time with the development of new technology.

14.1.3. Charger Unit (Schematic Diagram (Charger Unit))

Notes:

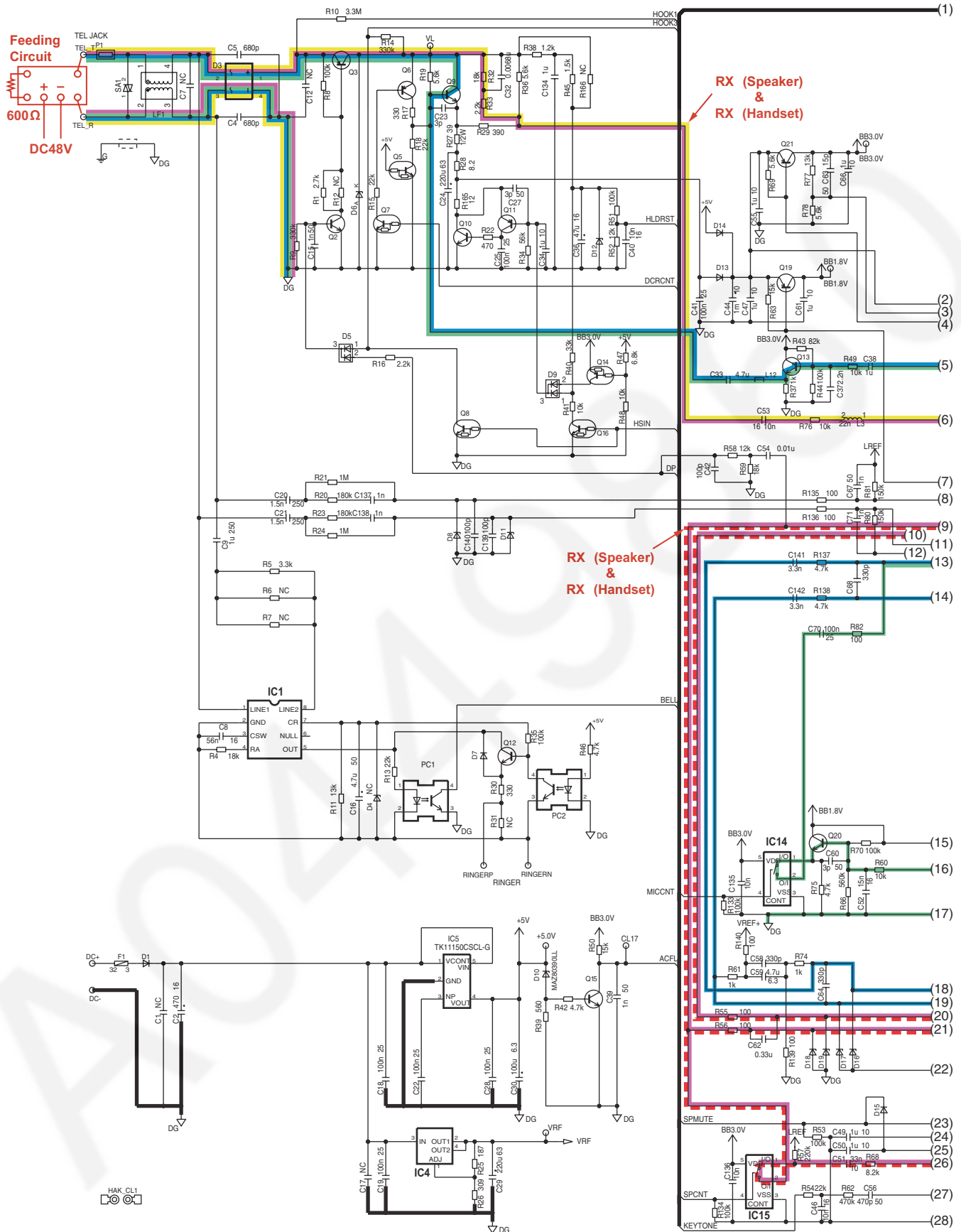
1. DC voltage measurements are taken with voltmeter from the negative voltage line.

Important Safety Notice:

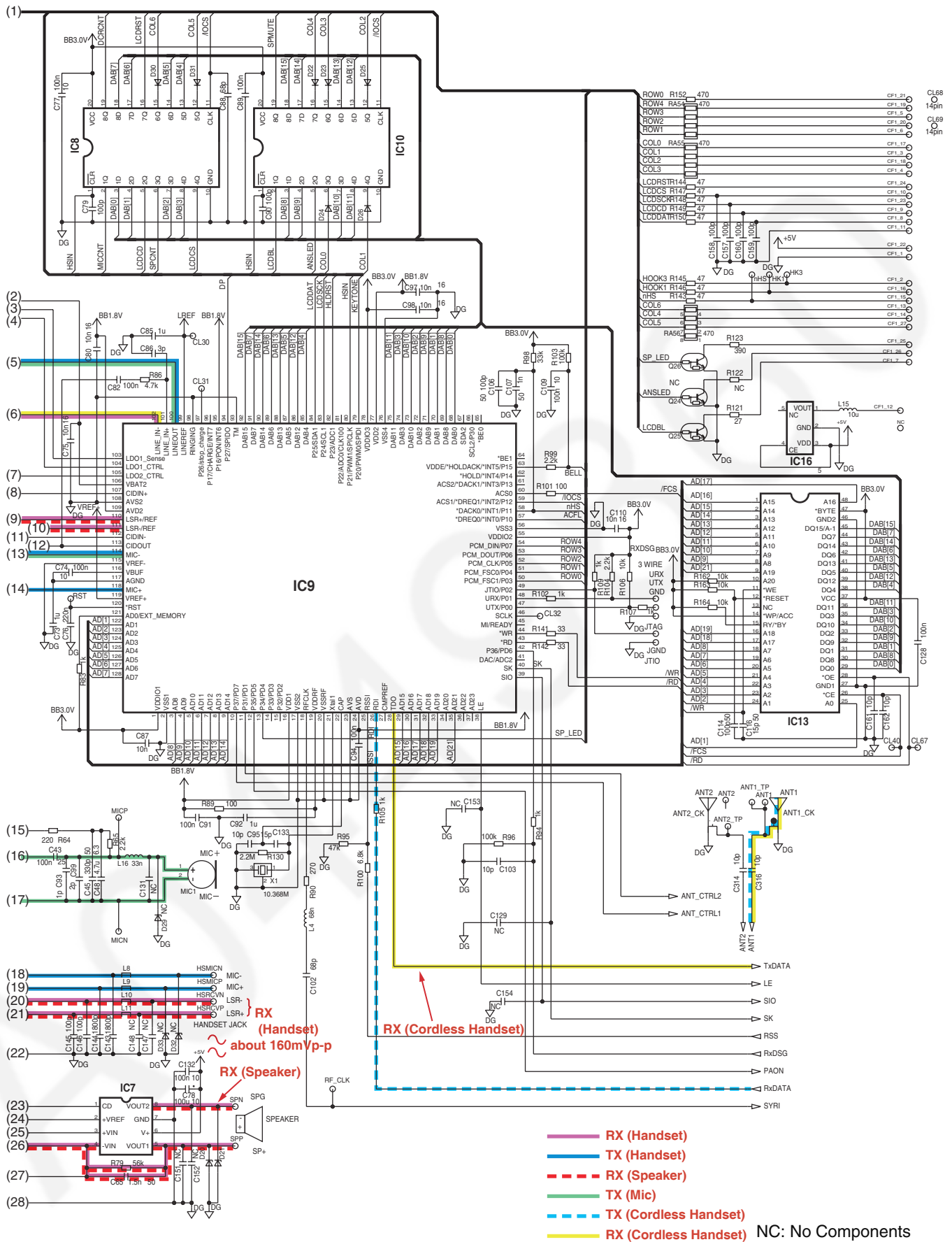
Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only the manufacture's specified parts.

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

14.2. Schematic Diagram (Base Unit_Main)

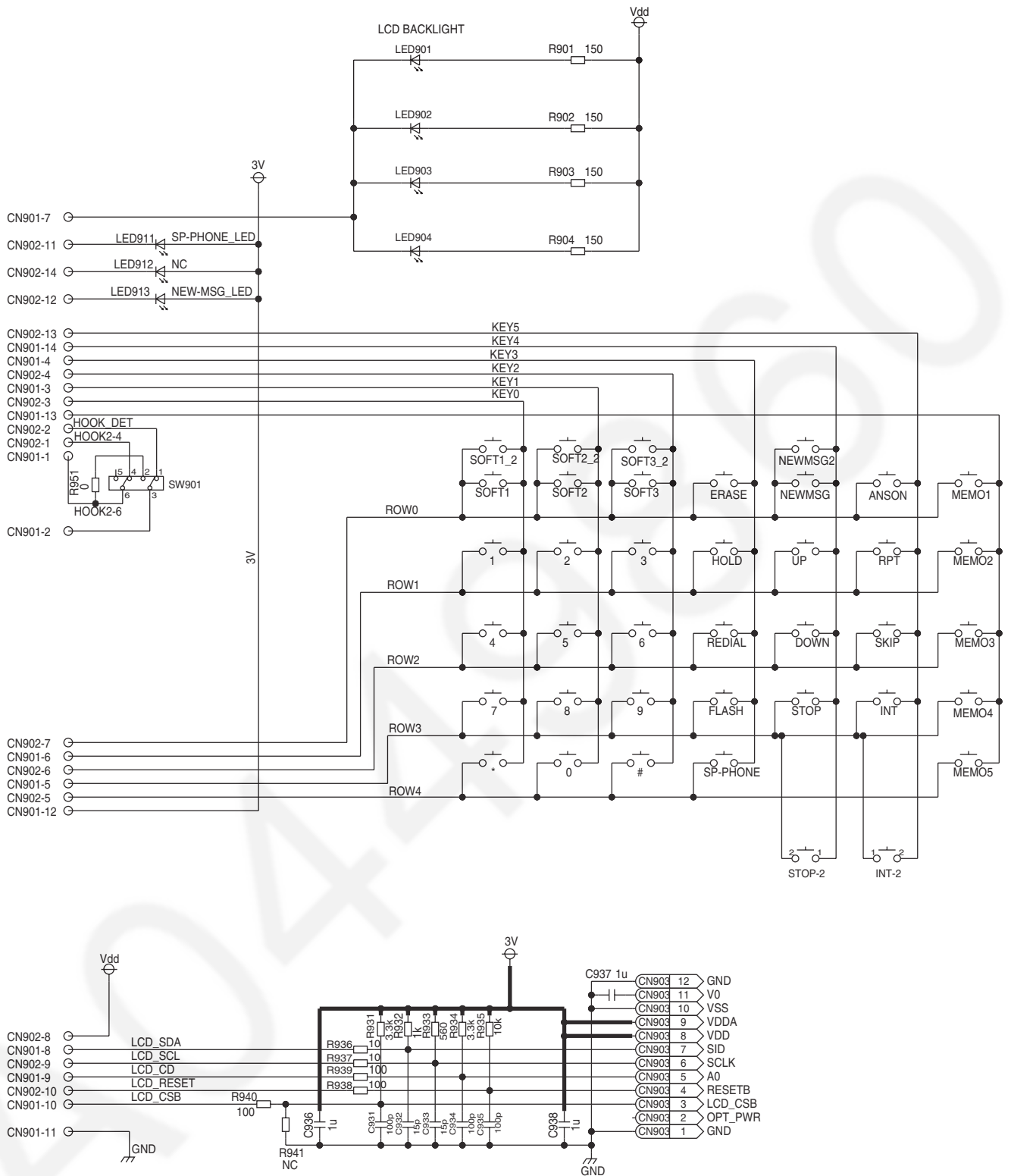


NC: No Components





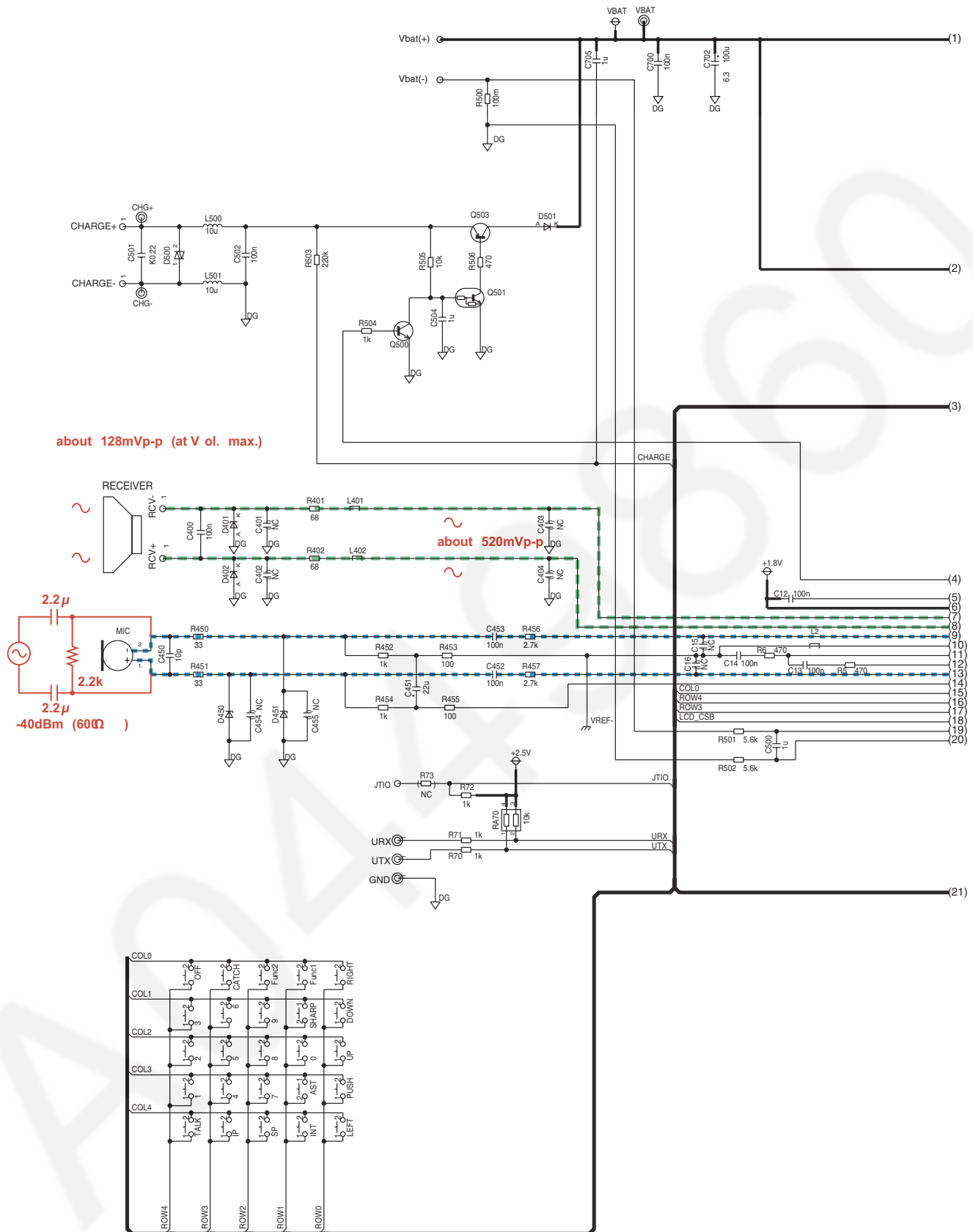
14.4. Schematic Diagram (Base Unit_Operation)

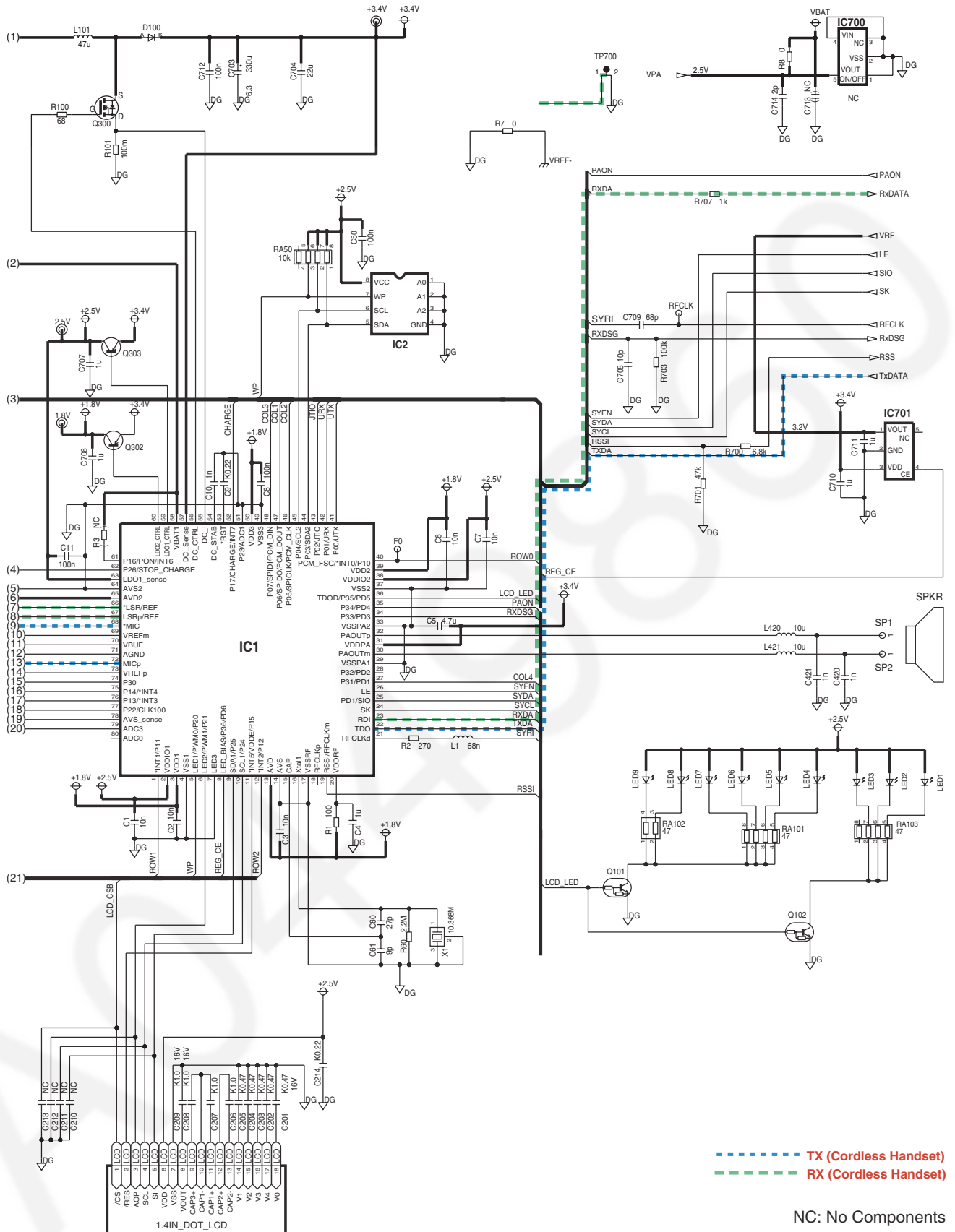


NC: No Components

KX-TG3661/3662/3668/3669 SCHEMATIC DIAGRAM (Base Unit_Operation)

14.5. Schematic Diagram (Cordless Handset)



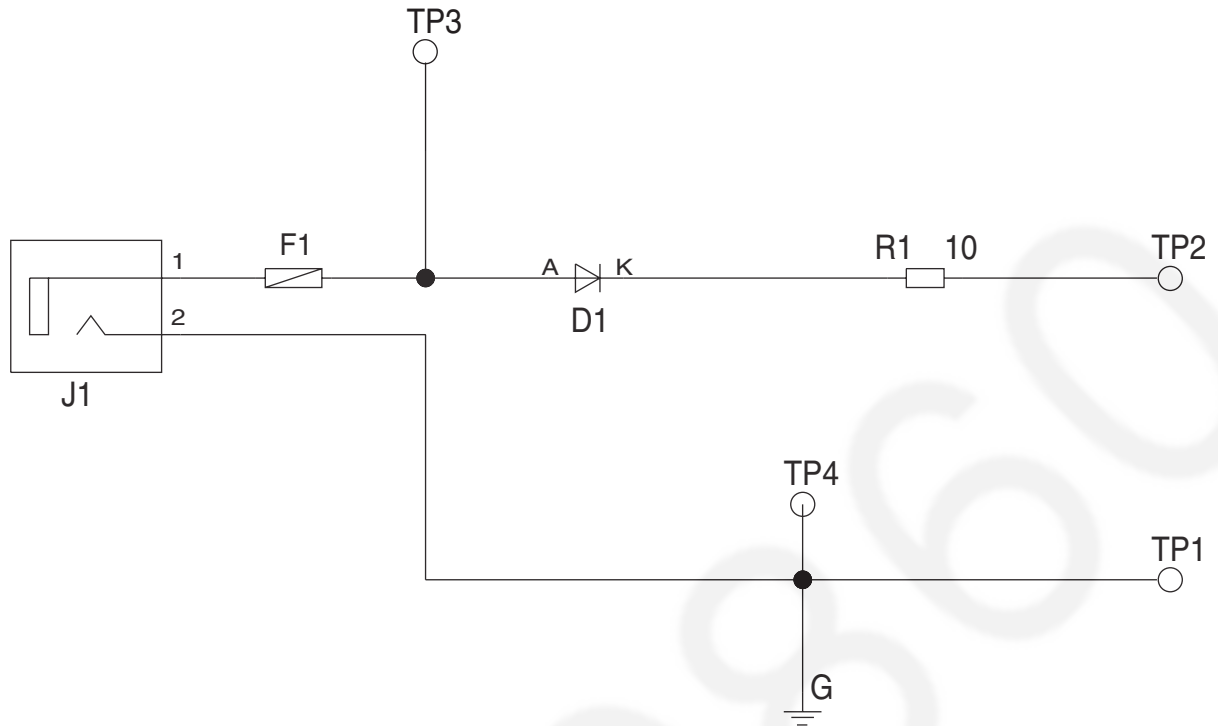


KX-TGA365 SCHEMATIC DIAGRAM (Cordless Handset_Main)



TGA365 SCHEMATIC DIAGRAM (Cordless Handset_RF Part)

14.7. Schematic Diagram (Charger Unit)



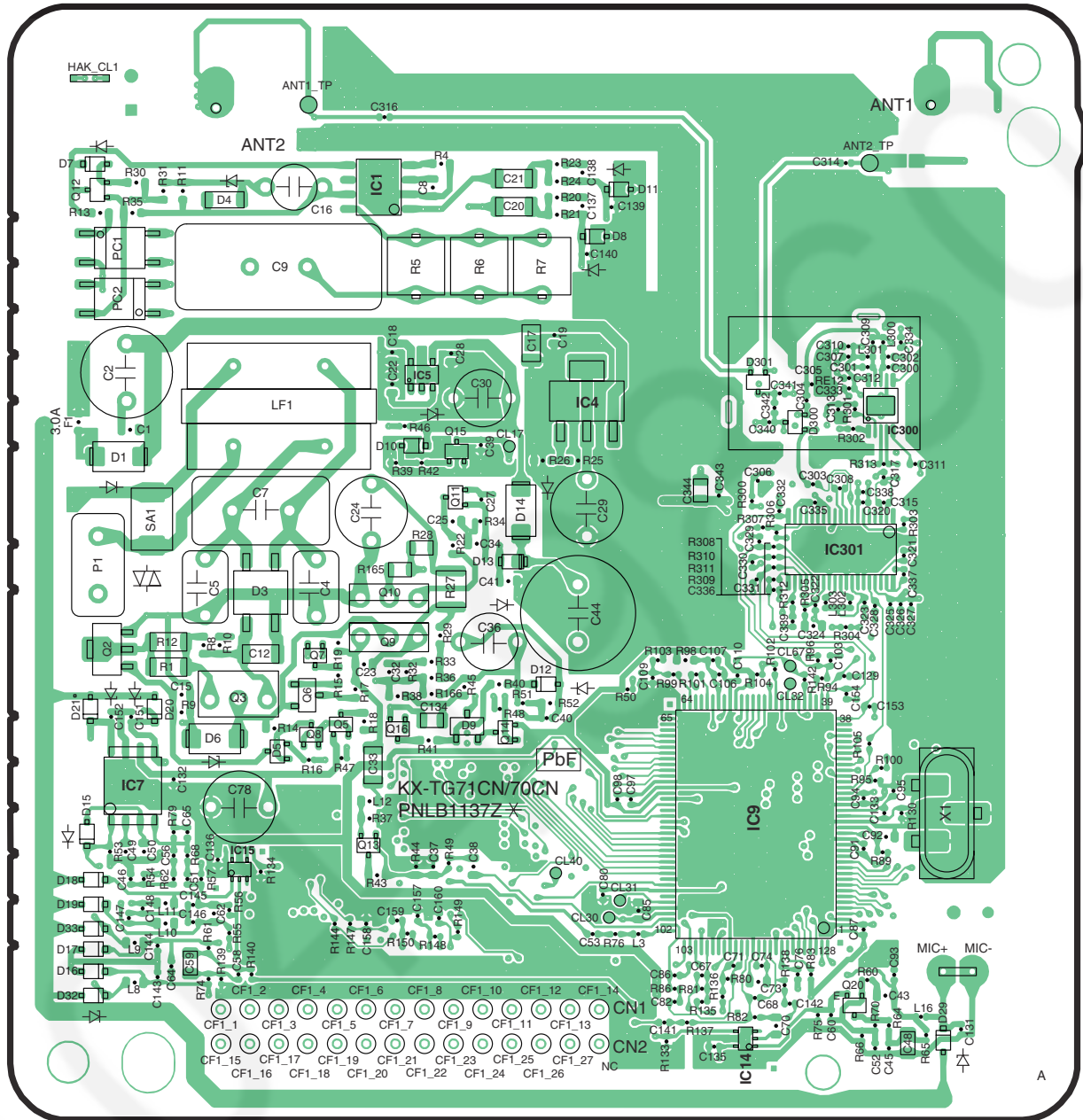
SCHEMATIC DIAGRAM (Charger Unit)

Memo

15 Printed Circuit Board

15.1. Circuit Board (Base Unit_Main)

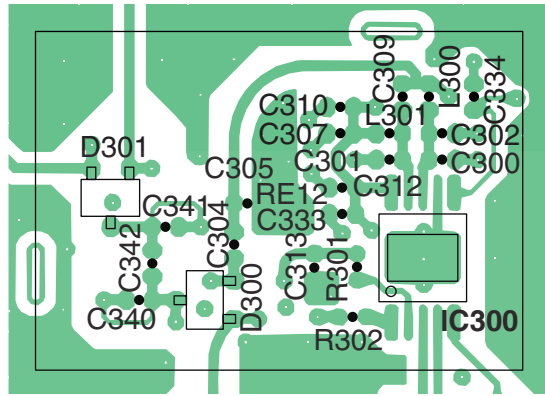
15.1.1. Component View



KX-TG3661/3662/3668/3669 CIRCUIT BOARD (Base Unit_Main (Component View))



15.2. Circuit Board (Base Unit_RF Part)

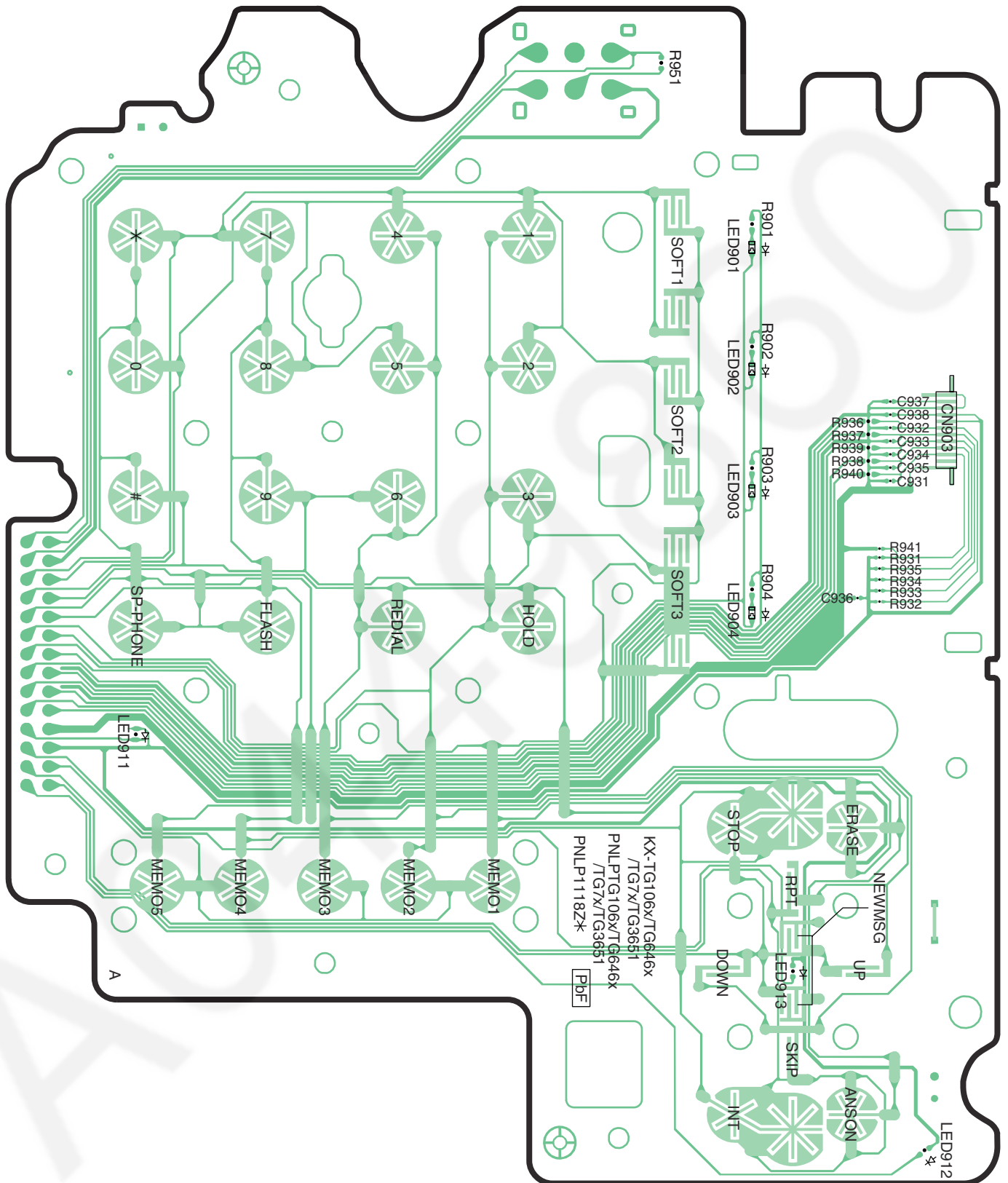


KX-TG3661/3662/3668/3669 CIRCUIT BOARD (Base Unit_RF Part)

Memo

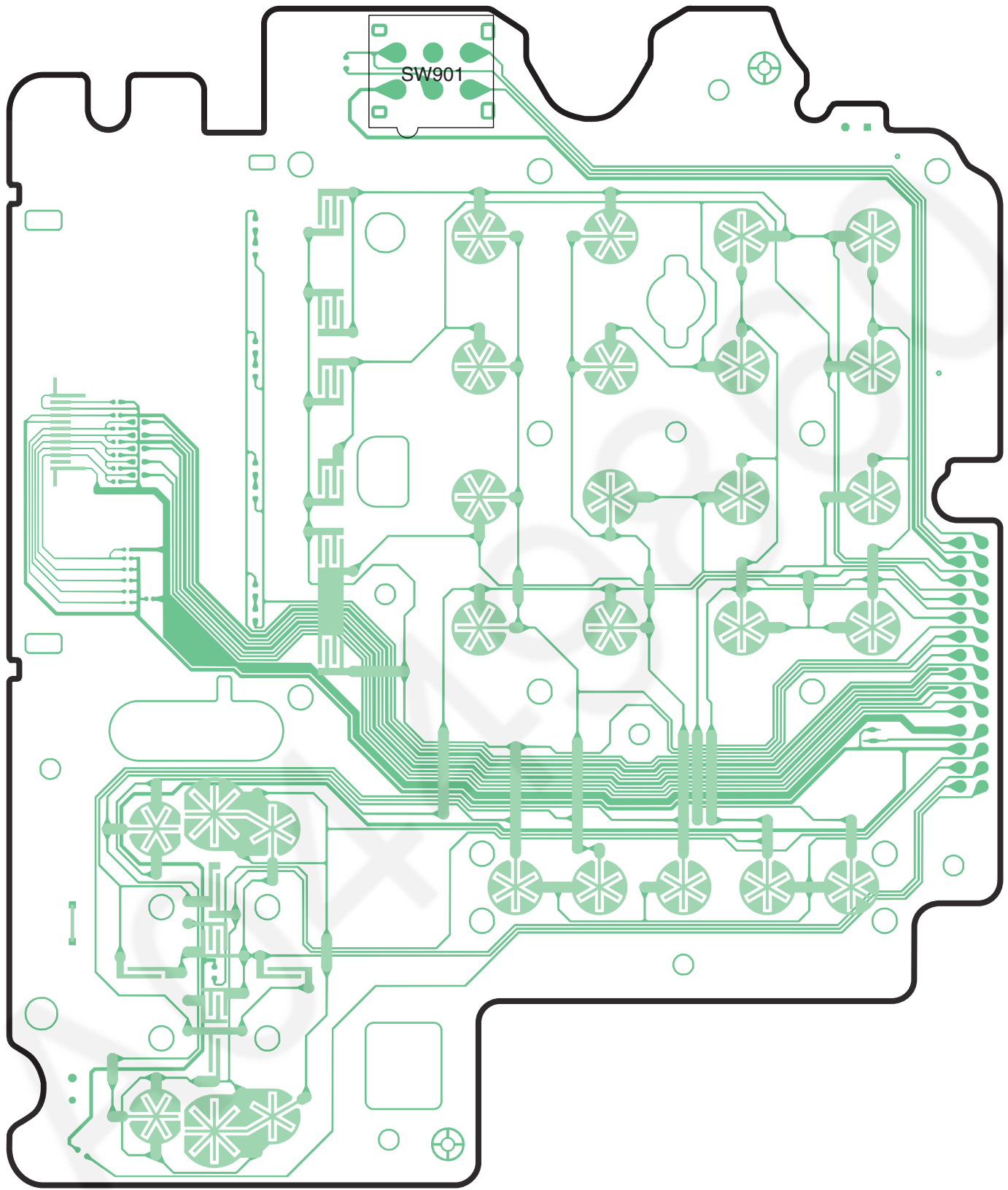
15.3. Circuit Board (Base Unit_Operation)

15.3.1. Component View



KX-TG3661/3662/3668/3669 CIRCUIT BOARD (Base Unit_Operation (Component View))

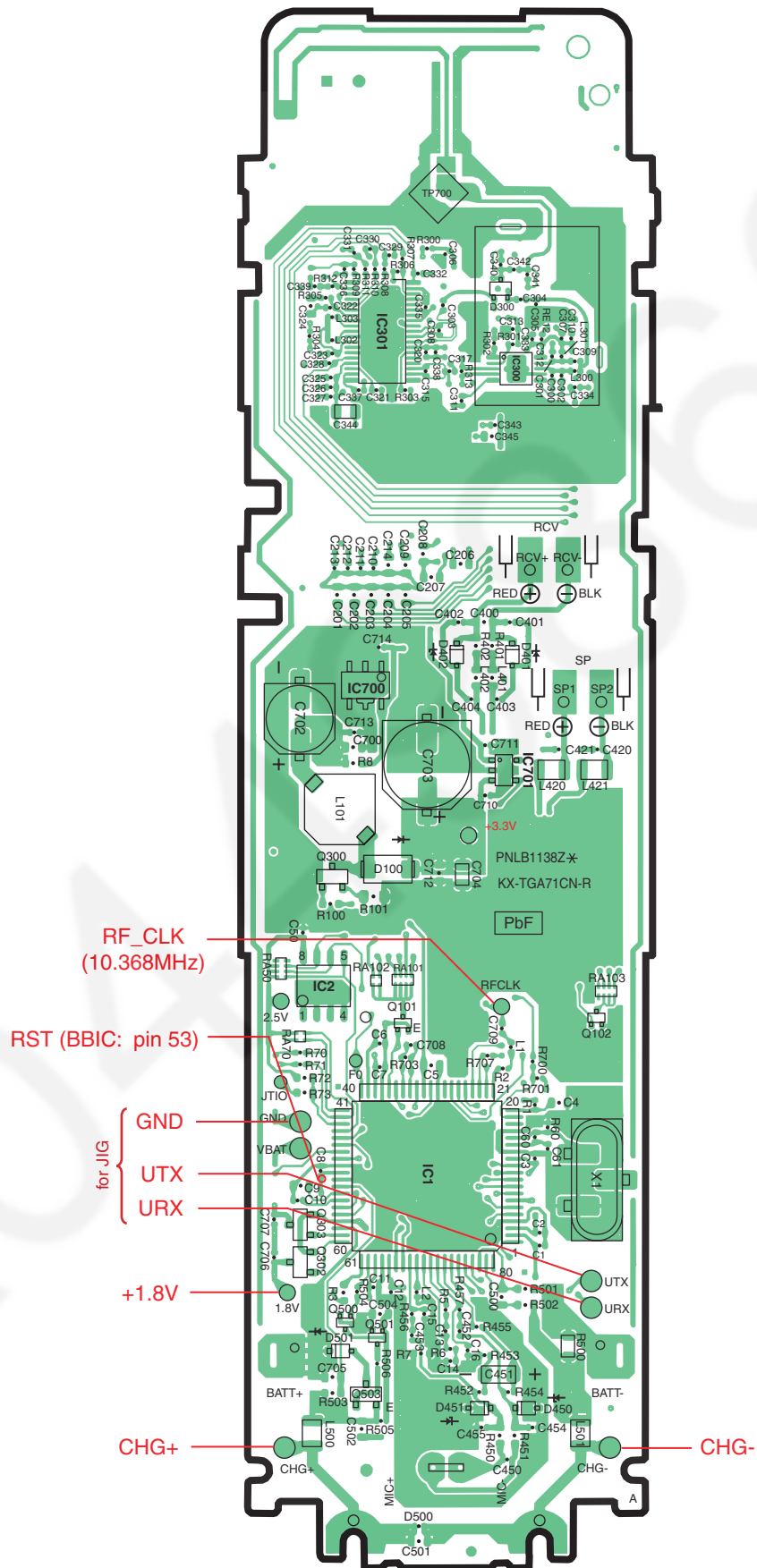
15.3.2. Bottom View



KX-TG3661/3662/3668/3669 CIRCUIT BOARD (Base Unit_Operation (Bottom View))

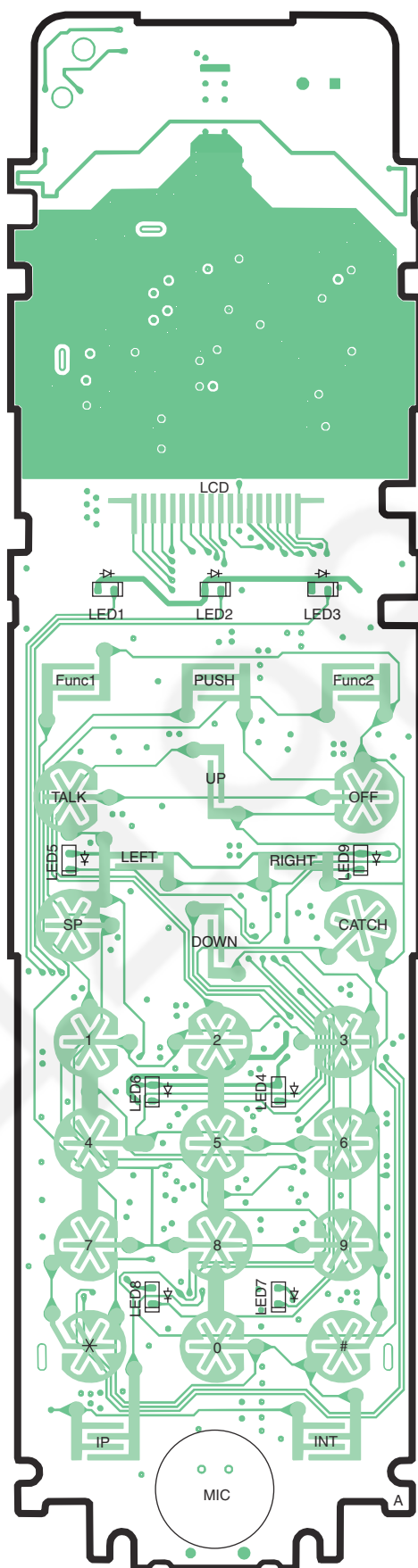
15.4. Circuit Board (Cordless Handset_Main)

15.4.1. Component View



KX-TGA365 CIRCUIT BOARD (Cordless Handset (Component View))

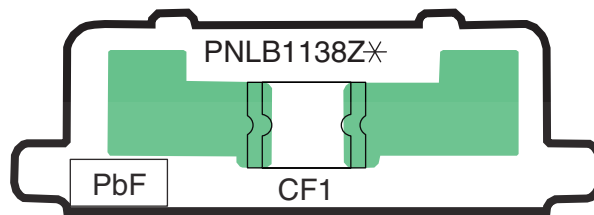
15.4.2. Bottom View



KX-TGA365 CIRCUIT BOARD (Cordless Handset (Bottom View))

15.5. Circuit Board (Cordless Handset_small P.C.B.)

15.5.1. Component View



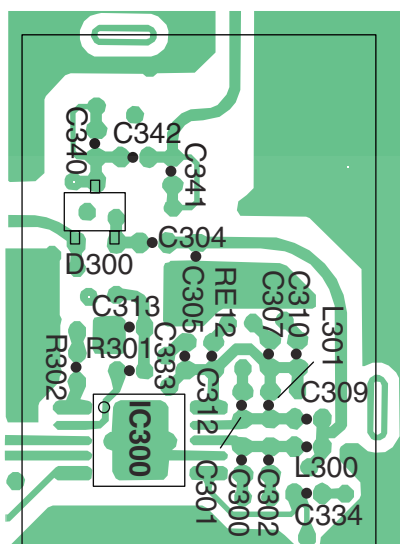
KX-TGA365 CIRCUIT BOARD (Cordless Handset_Small P.C.B (Component View))

15.5.2. Bottom View



KX-TGA365 CIRCUIT BOARD (Cordless Handset_Small P.C.B (Component View))

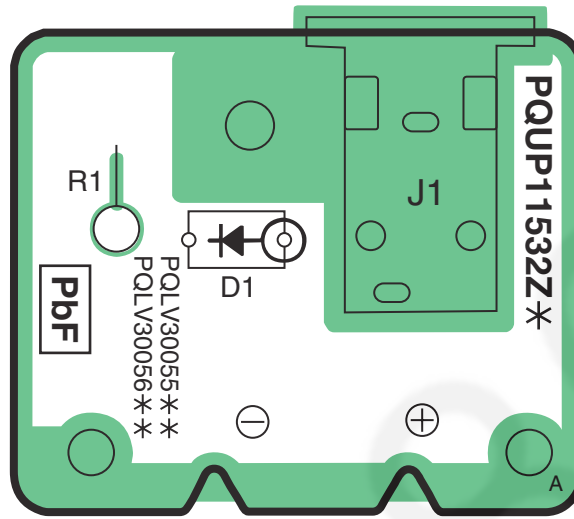
15.6. Circuit Board (Cordless handset_RF Part)



KX-TGA365 CIRCUIT BOARD (Coedless Handset_RF Part)

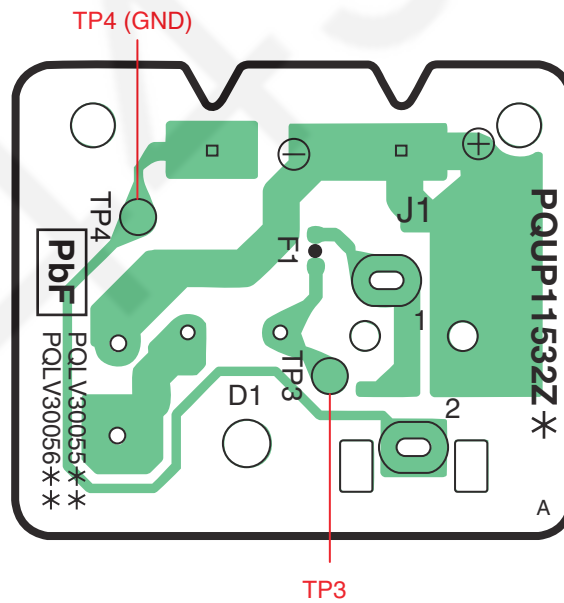
15.7. Circuit Board (Charger Unit)

15.7.1. Component View



CIRCUIT BOARD (Charger unit (Component View))

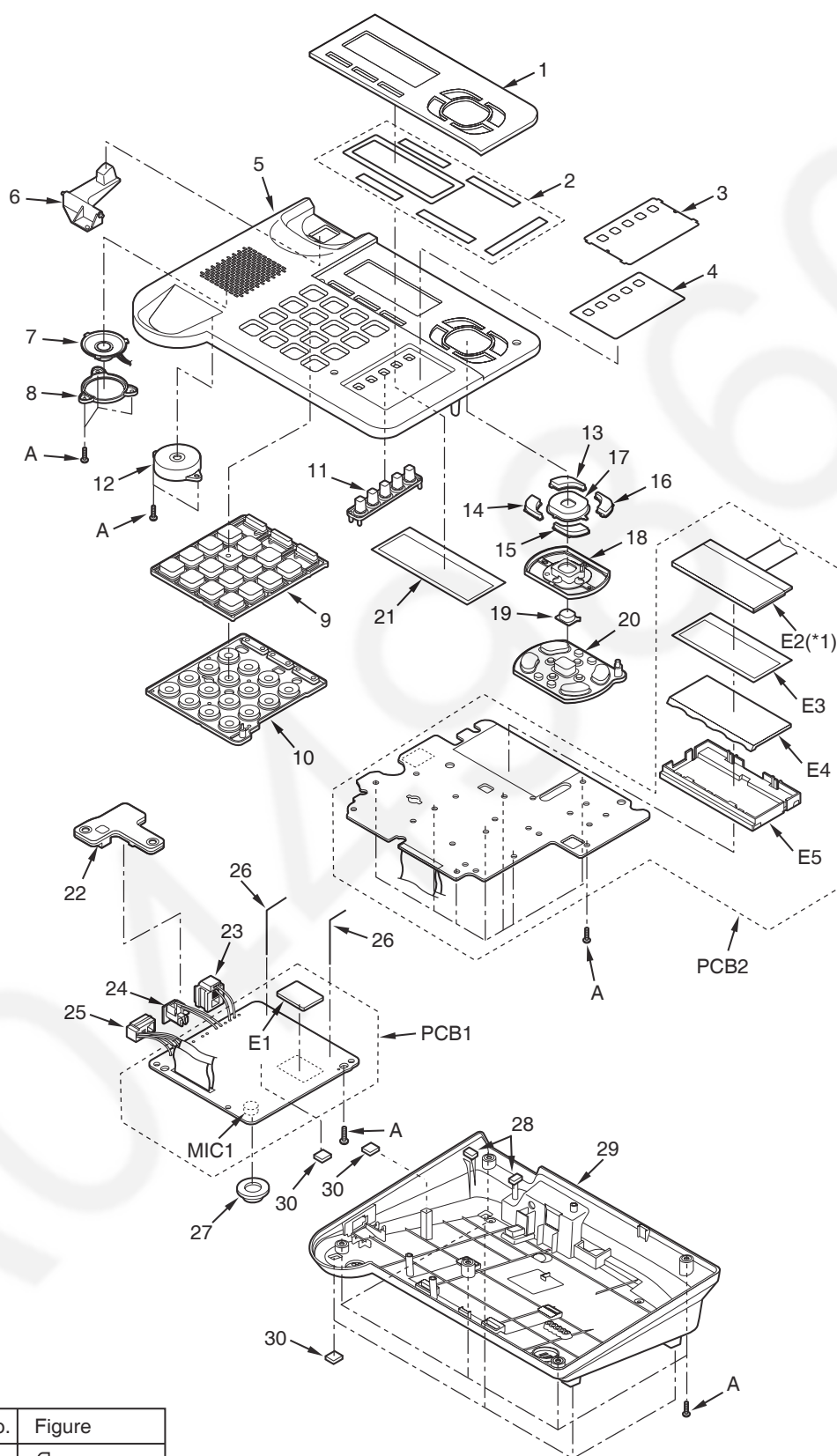
15.7.2. Bottom View



CIRCUIT BOARD (Charger unit (Bottom View))

16 Exploded View and Replacement Parts List

16.1. Cabinet and Electrical Parts (Base Unit)

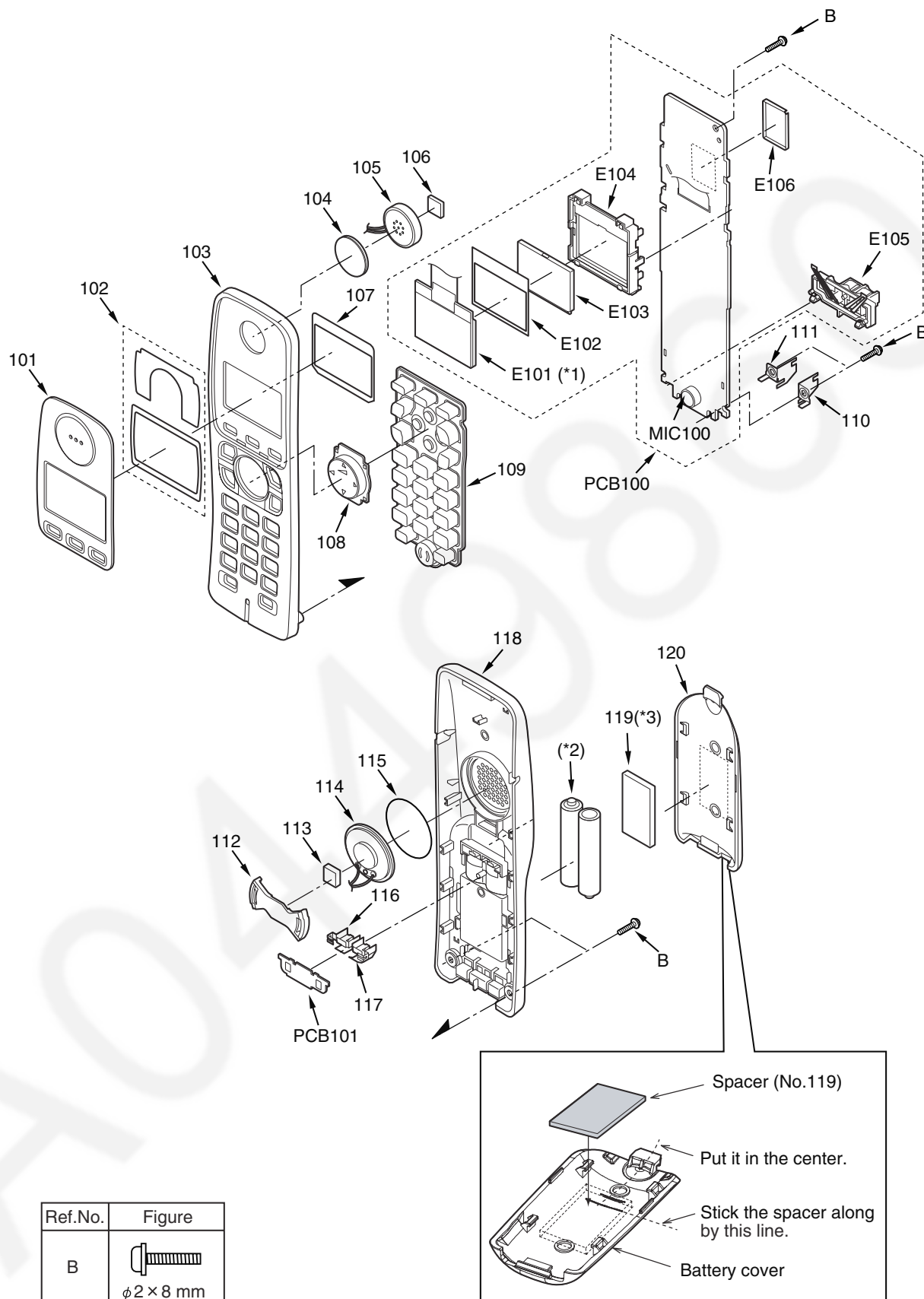


Ref.No.	Figure
A	 φ 2.6×8 mm

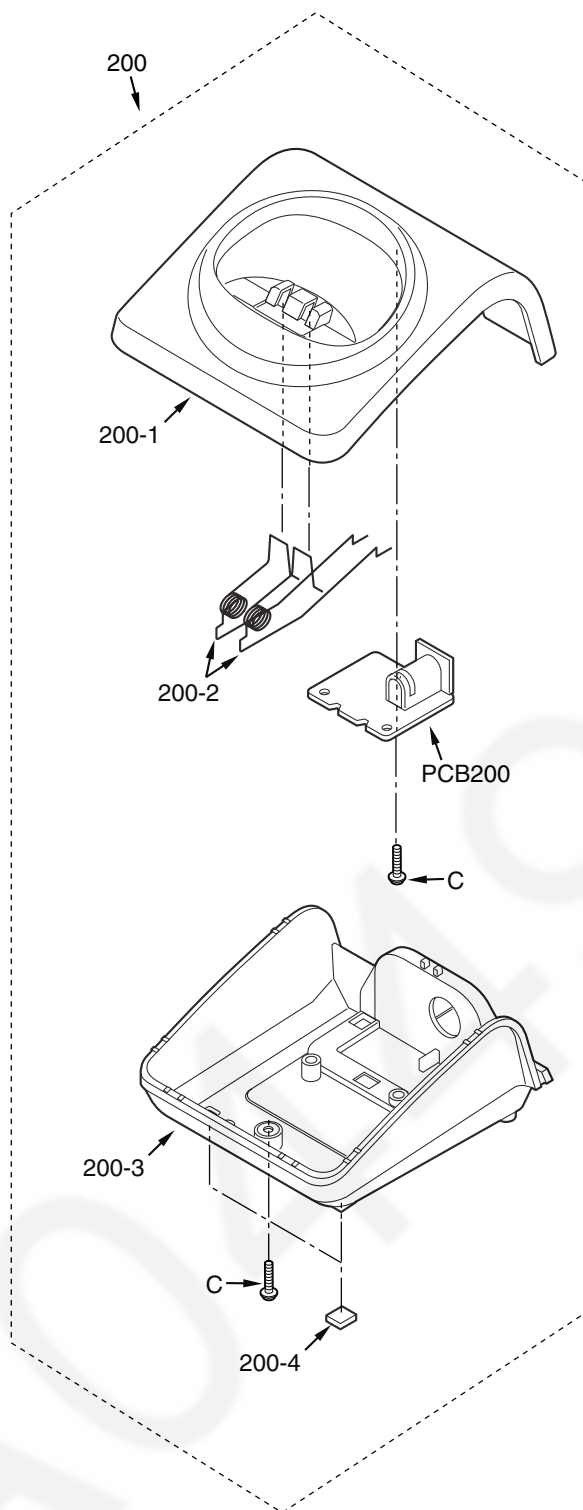
Note:

(*1) This cable is fixed by welding. Refer to **How to Replace the Base unit LCD (P.37)**

16.2. Cabinet and Electrical Parts (Cordless Handset)

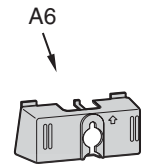
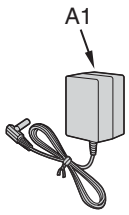


16.3. Cabinet and Electrical Parts (Charger Unit)



Ref.No.	Figure
C	 φ 2 x 10 mm

16.4. Accessories and Packing Materials



16.5. Replacement Part List

1. RTL (Retention Time Limited)

Note:

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

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 Δ 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=1000 Ω , M=1000 k Ω

All capacitors are in MICRO FARADS (μ F)p= μ F

*Type & Wattage of Resistor

Type

ERC:Solid	ERX:Metal Film	PQ4R:Chip
ERDS:Carbon	ERG:Metal Oxide	ERS:Fusible Resistor
ERJ:Chip	ER0:Metal Film	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	ECCD,ECKD,ECBT,F1K,ECUV: Ceramic
ECQS:Styroli	ECQE,ECQV,ECQG:Polyester
ECUV,PQCUV, ECUE:Chip	ECEA,ECST,EEE:Electlytic
ECQMS:Mica	ECQP:Polypropylene

Voltage

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

16.5.1. Base Unit

16.5.1.1. Cabinet and Electrical Parts

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	1	PNGP1055T5	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	PNBX1053T1	BUTTON, DIAL	ABS-HB
	10	PNJK1053Z	KEYBOARD SWITCH, DIAL	
	11	PNJK1055Z	KEYBOARD SWITCH, 5KEY	

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	12	L0DDYD000012	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	PNYE1014Z	SPACER, CUSHION LCD	
	22	PNHR1130Z	GUIDE, JACK	ABS-HB
	23	PQJJ1T039Y	JACK, MODULAR	
	24	K2ECYZ000001	JACK, DC	
	25	PQJJ1T030S	JACK, HANDSET	
	26	PNLA1021Z	ANTENNA	
	27	PQMG10025W	RUBBER PARTS, MIC	
	28	PNHS1113Z	CUSHION, CABINET	
	29	PNKF1063Y1	CABINET COVER	PS-HB
	30	PQHA10023Z	RUBBER PARTS, FOOT CUSHION	

16.5.1.2. Main P.C. Board Parts

Note:

(*1) When replacing IC9, IC13 or X1, data needs to be written to them with PNZZTG3661JX. Refer to **How to download the data of Things to Do after Replacing IC** (P.48).

(*2) When removing E1, use special tools (ex. Hot air disordering tool)

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	PCB1	PNWP13661JXH	MAIN P.C. BOARD ASS'Y (RTL)	
			(ICs)	
	IC1	C1CB00002903	IC	
	IC4	C0CBAYG00016	IC	
	IC5	C0CBCDD00004	IC	
	IC7	C1BB00001024	IC	
	IC8	PSVISNLV273A	IC	S
	IC9	C1CB00002704	IC (BBIC) (*1)	
	IC10	PSVISNLV273A	IC	S
	IC13	PNWIG3661JXH	IC (FLASH) (*1)	
	IC14	C0JBAS000249	IC	
	IC15	C0JBAS000249	IC	
	IC16	C0CBCBC00205	IC	
	IC300	C0ABAA000067	IC	
	IC301	C1CB00001568	IC	
			(TRANSISTORS)	
	Q2	B1BBAP000021	TRANSISTOR (SI)	
	Q3	B1CCBR000001	TRANSISTOR (SI)	
	Q5	UN5213	TRANSISTOR (SI)	S
	Q6	2SB0709AR	TRANSISTOR (SI)	
	Q7	UN5213	TRANSISTOR (SI)	S
	Q8	UN5213	TRANSISTOR (SI)	S
	Q9	2SD1994A	TRANSISTOR (SI)	
	Q10	2SD1994A	TRANSISTOR (SI)	
	Q11	2SA1576R	TRANSISTOR (SI)	S
	Q12	2SC4081R	TRANSISTOR (SI)	S
	Q13	2SC4081R	TRANSISTOR (SI)	S
	Q14	UN5113	TRANSISTOR (SI)	S
	Q15	2SC4081R	TRANSISTOR (SI)	S
	Q16	UN5213	TRANSISTOR (SI)	S
	Q19	BLADGE000004	TRANSISTOR (SI)	
	Q20	2SC4081R	TRANSISTOR (SI)	S
	Q21	BLADGE000004	TRANSISTOR (SI)	
	Q24	PQVTDTC114EU	TRANSISTOR (SI)	S
	Q25	PQVTDTC114EU	TRANSISTOR (SI)	S
	Q26	PQVTDTC114EU	TRANSISTOR (SI)	S
			(DIODES)	
	D1	B0JCME000035	DIODE (SI)	
	D3	BOEDER000009	DIODE (SI)	

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	D5	MA142WKT	DIODE (SI)	S
	D6	B0BC020A0219	DIODE (SI)	
	D7	MA111	DIODE (SI)	S
	D8	MA8033	DIODE (SI)	S
	D9	MA704WK	DIODE (SI)	S
	D10	MA8039	DIODE (SI)	S
	D11	MA8033	DIODE (SI)	S
	D12	MA8075	DIODE (SI)	S
	D13	MA21D3400L	DIODE (SI)	
	D14	B0ECKM000008	DIODE (SI)	
	D15	MA111	DIODE (SI)	S
	D16	MA8033	DIODE (SI)	S
	D17	MA8033	DIODE (SI)	S
	D18	MA8033	DIODE (SI)	S
	D19	MA8033	DIODE (SI)	S
	D20	MAZ80620ML	DIODE (SI)	
	D21	MAZ80620ML	DIODE (SI)	
	D22	MA111	DIODE (SI)	S
	D23	MA111	DIODE (SI)	S
	D24	MA111	DIODE (SI)	S
	D25	MA111	DIODE (SI)	S
	D26	MA111	DIODE (SI)	S
	D30	MA111	DIODE (SI)	S
	D31	MA111	DIODE (SI)	S
	D300	B0DDCD000001	DIODE (SI)	
	D301	B0DDCD000001	DIODE (SI)	
			(COILS)	
	L3	PQLQR4C22NJ	COIL	S
	L4	G1C68NJ00010	COIL	
	L8	PQLQR2KA20T	COIL	S
	L9	PQLQR2KA20T	COIL	S
	L10	PQLQR2KA20T	COIL	S
	L11	PQLQR2KA20T	COIL	S
	L12	PQLQR2KB113T	COIL	S
	L15	G1C100MA0072	COIL	
	L16	ELJRF33NJFB	COIL	S
	L300	G1C1N8Z00006	COIL	
	L301	G1C1N8Z00006	COIL	
	L302	G1C1N2Z00003	COIL	
	L303	G1C1N2Z00003	COIL	
	LF1	PFLE003	COIL	S
			(RESISTOR ARRAYS)	
	RA54	D1H84714A013	RESISTOR ARRAY	S
	RA55	D1H84714A013	RESISTOR ARRAY	S
	RA56	D1H84714A013	RESISTOR ARRAY	S
			(VARISTOR)	
	SA1	JOLF00000048	VARISTOR	
			(PHOTO ELECTRIC TRANS-DUCERS)	
	PC1	B3PBA0000297	PHOTO ELECTRIC TRANS-DUCER	
	PC2	B3PBA0000297	PHOTO ELECTRIC TRANS-DUCER	
			(RESISTORS)	
	R1	PQ4R18XJ272	2.7k	S
	R4	ERJ3GEYJ183	18k	S
	R5	ERG2SJ332E	3.3k	
	R8	ERJ3GEYJ104	100k	S
	R9	ERJ3GEYJ334	330k	S
	R10	ERJ3GEYJ335	3.3M	S
	R11	ERJ3GEYJ133	13k	S
	R13	ERJ3GEYJ223	22k	S
	R14	ERJ3GEYJ334	330k	S
	R15	ERJ3GEYJ223	22k	S
	R16	ERJ2GEJ222	2.2k	S
	R17	ERJ3GEYJ331	330	S
	R18	ERJ3GEYJ223	22k	S
	R19	ERJ3GEYJ562	5.6k	S
	R20	ERJ3GEYJ184	180k	S
	R21	ERJ3GEYJ105	1M	S
	R22	ERJ3GEYJ471	470	S
	R23	ERJ3GEYJ184	180k	S
	R24	ERJ3GEYJ105	1M	S
	R25	ERJ3EKF1870	187	

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	R26	ERJ3EKF3090	309	
	R27	D0GG390JA007	39	
	R28	ERJ6GEYJ8R2	8.2	S
	R29	ERJ3GEYJ391	390	S
	R30	ERJ3GEYJ331	330	S
	R32	ERJ3GEYJ183	18k	S
	R33	ERJ3GEYJ222	2.2k	S
	R34	ERJ2GEJ563	56k	S
	R35	ERJ3GEYJ104	100k	S
	R36	ERJ3GEYJ562	5.6k	S
	R37	ERJ3GEYJ102	1k	S
	R38	ERJ3GEYJ122	1.2k	S
	R39	ERJ2GEJ561	560	S
	R40	ERJ3GEYJ333	33k	S
	R41	ERJ3GEYJ103	10k	S
	R42	ERJ2GEJ472X	4.7k	S
	R43	ERJ3GEYJ823	82k	S
	R44	ERJ3GEYJ104	100k	S
	R45	ERJ3GEYJ152	1.5k	S
	R46	ERJ2GEJ472X	4.7k	S
	R47	ERJ2GEJ682	6.8k	S
	R48	ERJ2GEJ103	10k	S
	R49	ERJ2GEJ103	10k	S
	R50	ERJ2GEJ153	15k	S
	R51	ERJ2GEJ104	100k	S
	R52	ERJ3GEYJ123	12k	S
	R53	ERJ2GEJ104	100k	S
	R54	ERJ2GEJ223	22k	S
	R55	ERJ2GEJ101	100	S
	R56	ERJ2GEJ101	100	S
	R57	ERJ2GEJ224	220k	S
	R58	ERJ2GEJ123	12k	S
	R59	ERJ3GEYJ183	18k	S
	R60	ERJ2GEJ103	10k	S
	R61	ERJ2GEJ102	1k	S
	R62	ERJ2GEJ474X	470k	S
	R63	ERJ2GEJ153	15k	S
	R64	ERJ2GEJ221	220	S
	R65	ERJ2GEJ222	2.2k	S
	R66	ERJ2GEJ564	560k	S
	R68	ERJ2GEJ822	8.2k	S
	R69	ERJ3GEYJ562	5.6k	S
	R70	ERJ2GEJ104	100k	S
	R74	ERJ2GEJ102	1k	S
	R75	ERJ2GEJ472X	4.7k	S
	R76	ERJ2GEJ103	10k	S
	R77	ERJ3GEYF133	13k	S
	R78	ERJ3EKF5601	5.6k	
	R79	ERJ2GEJ563	56k	S
	R80	ERJ2GEJ154	150k	S
	R81	ERJ2GEJ154	150k	S
	R82	ERJ2GEJ101	100	S
	R83	ERJ2GEJ102	1k	S
	R86	ERJ2GEJ472X	4.7k	S
	R89	ERJ2GEJ101	100	S
	R90	ERJ2GEJ271	270	S
	R94	ERJ2GEJ102	1k	S
	R95	ERJ2GEJ473	47k	S
	R96	ERJ2GEJ104	100k	S
	R98	ERJ3GEYJ333	33k	S
	R99	ERJ2GEJ222	2.2k	S
	R100	ERJ2GEJ682	6.8k	S
	R101	ERJ2GEJ101	100	S
	R102	ERJ2GEJ102	1k	S
	R103	ERJ2GEJ104	100k	S
	R104	ERJ2GEJ222	2.2k	S
	R105	ERJ2GEJ102	1k	S
	R106	ERJ2GEJ103	10k	S
	R107	ERJ2GEJ102	1k	S
	R109	ERJ2GEJ102	1k	S
	R114	ERJ2GEJ271	270	S
	R115	ERJ2GEJ271	270	S
	R121	ERJ3GEYJ270	27	S

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	R122	ERJ3GEYJ151	150	S
	R123	ERJ3GEYJ391	390	S
	R130	ERJ2GEJ225	2.2M	S
	R133	ERJ2GEJ104	100k	S
	R134	ERJ2GEJ104	100k	S
	R135	ERJ2GEJ101	100	S
	R136	ERJ2GEJ101	100	S
	R137	ERJ2GEJ472X	4.7k	S
	R138	ERJ2GEJ472X	4.7k	S
	R139	ERJ2GEJ101	100	S
	R140	ERJ2GEJ101	100	S
	R141	ERJ2GEJ330	33	S
	R142	ERJ2GEJ330	33	S
	R143	ERJ2GEJ470	47	S
	R144	ERJ2GEJ470	47	S
	R145	ERJ2GEJ470	47	S
	R146	ERJ2GEJ470	47	S
	R147	ERJ2GEJ470	47	S
	R148	ERJ2GEJ470	47	S
	R149	ERJ2GEJ470	47	S
	R150	ERJ2GEJ470	47	S
	R152	ERJ2GEJ471	470	S
	R162	ERJ2GEJ103	10k	S
	R163	ERJ2GEJ103	10k	S
	R164	ERJ2GEJ103	10k	S
	R165	PQ4R10XJ120	12	S
	R300	ERJ2GEJ151	150	S
	R301	ERJ2GEJ271	270	S
	R302	ERJ2GEJ182	1.8k	S
	R303	ERJ2GEJ272	2.7k	S
	R304	ERJ2GEJ272	2.7k	S
	R305	ERJ2GEJ472X	4.7k	S
	R306	ERJ2GEJ182	1.8k	S
	R307	ERJ2GEJ432	4.3k	S
	R308	ERJ2GEJ102	1k	S
	R309	ERJ2GEJ102	1k	S
	R310	ERJ2GEJ102	1k	S
	R311	ERJ2GEJ102	1k	S
	R312	ERJ2GEJ103	10k	S
		(CAPACITORS)		
	C2	F2A1C4710073	470	
	C4	F1B2H681A070	680p	
	C5	F1B2H681A070	680p	
	C8	ECUV1C563KBV	0.056	
	C9	F0C2E1050005	1	
	C15	ECUV1H102KBV	0.001	
	C16	F2A1H4R70014	4.7	
	C18	ECUV1E104KBV	0.1	
	C19	ECUV1E104KBV	0.1	
	C20	F1K2E152A010	1.5n	
	C21	F1K2E152A010	1.5n	
	C22	ECUV1E104KBV	0.1	
	C23	ECUV1H3R0DCV	3	
	C24	ECEA0JKA221	220	S
	C25	ECUV1E104KBV	0.1	
	C27	ECUE1H3R0CCQ	3	
	C28	ECUV1E104KBV	0.1	
	C29	ECEA0JKA221	220	S
	C30	ECEA0JKA101	100	S
	C32	ECUV1H682KBV	0.0068	
	C33	F1K1C4750023	4.7	
	C34	ECUV1A105KBV	1	
	C36	ECEA1CK470	47	S
	C37	ECUV1H222KBV	0.0022	
	C38	ECUV1A105KBV	1	
	C39	ECUE1H102KBQ	0.001	
	C40	ECUE1C103KBQ	0.01	
	C41	ECUV1E104KBV	0.1	
	C42	ECUE1H101JCQ	100p	
	C43	ECUV1E104KBV	0.1	
	C44	F2A1A1020035	1M	
	C45	ECUE1H331KBQ	330p	
	C46	ECUE1C103KBQ	0.01	

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	C47	ECUV1A105KBV	1	
	C48	PQCUV0J475KB	4.7	S
	C49	ECUV1A105KBV	1	
	C50	ECUV1A105KBV	1	
	C51	ECUE1A333KBQ	0.033	
	C52	ECUE1C153KBQ	0.015	
	C53	ECUE1C103KBQ	0.01	
	C54	ECUE1C103KBQ	0.01	
	C55	ECUV1A105KBV	1	
	C56	ECUE1H471KBQ	470p	
	C58	ECUE1H331KBQ	330p	
	C59	PQCUV0J475KB	4.7	S
	C60	ECUE1H3R0CCQ	3	
	C61	ECUV1A105KBV	1	
	C62	ECUV1A334KBV	0.33	
	C63	ECUE1H150JCQ	15p	
	C64	ECUE1H331KBQ	330p	
	C65	ECUE1H152KBQ	0.0015	
	C66	ECUV1A105KBV	1	
	C67	ECUE1H102KBQ	0.001	
	C68	ECUE1H331KBQ	330p	
	C70	ECUV1E104KBV	0.1	
	C71	ECUE1H102KBQ	0.001	
	C73	ECUV1A105KBV	1	
	C74	ECUE1A104KBQ	0.1	
	C75	ECUE1C103KBQ	0.01	
	C76	ECJ0EB0J224K	0.22	S
	C77	ECUE1A104KBQ	0.1	
	C78	ECEA1CK101	100	S
	C79	ECUE1H101JCQ	100p	
	C80	ECUE1C103KBQ	0.01	
	C82	ECUE1A104KBQ	0.1	
	C85	ECUV1A105KBV	1	
	C86	ECUE1H3R0CCQ	3	
	C87	ECUE1C103KBQ	0.01	
	C88	ECUE1H680JCQ	68p	
	C89	ECUE1A104KBQ	0.1	
	C90	ECUE1H101JCQ	100p	
	C91	ECUE1A104KBQ	0.1	
	C92	ECUV1A105KBV	1	
	C93	ECUE1H1R0BCQ	1	
	C94	ECUE1A104KBQ	0.1	
	C95	ECUE1H100DCQ	10p	
	C97	ECUE1C103KBQ	0.01	
	C98	ECUE1C103KBQ	0.01	
	C99	ECUE1H2R0BCQ	2	
	C102	ECUE1H680JCQ	68p	
	C103	ECUE1H100DCQ	10p	
	C106	ECUE1H101JCQ	100p	
	C107	ECUE1H102KBQ	0.001	
	C109	ECUE1A104KBQ	0.1	
	C110	ECUE1C103KBQ	0.01	
	C114	ECUE1H101JCQ	100p	
	C116	ECUE1H150JCQ	15p	
	C120	ECUE1H100DCQ	10p	
	C121	ECUE1H100DCQ	10p	
	C128	ECUE1A104KBQ	0.1	
	C132	ECUE1A104KBQ	0.1	
	C133	ECUE1H150JCQ	15p	
	C134	PQCUV1C105KB	1	
	C135	ECUE1C103KBQ	0.01	
	C136	ECUE1C103KBQ	0.01	
	C137	ECUV1H102KBV	0.001	
	C138	ECUV1H102KBV	0.001	
	C139	ECUE1H101JCQ	100p	
	C140	ECUE1H101JCQ	100p	
	C141	ECUE1H332KBQ	0.0033	
	C142	ECUE1H332KBQ	0.0033	
	C143	ECUE1H182KBQ	0.0018	
	C144	ECUE1H182KBQ	0.0018	
	C145	ECUE1H101JCQ	100p	
	C146	ECUE1H101JCQ	100p	
	C157	ECUE1H101JCQ	100p	

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	C158	ECUE1H101JCQ	100p	
	C159	ECUE1H101JCQ	100p	
	C160	ECUE1H101JCQ	100p	
	C161	ECUE1H100DCQ	10p	
	C162	ECUE1H100DCQ	10p	
	C300	F1G1H3R0A480	3p	
	C301	F1G1H3R0A480	3p	
	C302	F1G1H2R0A480	2p	
	C303	F1G1H1R0A480	1p	
	C304	ECUE1H100DCQ	10p	
	C306	ECUE1H100DCQ	10p	
	C308	F1G1H1R0A480	1p	
	C309	F1G1H2R0A480	2p	
	C310	ECUE1H100DCQ	10p	
	C311	ECUE1H472KBQ	0.0047	
	C312	ECUE1A104KBQ	0.1	
	C313	ECUE1H100DCQ	10p	
	C314	ECUE1H100DCQ	10p	
	C315	F1G1H1R0A480	1p	
	C316	ECUE1H100DCQ	10p	
	C317	ECUE1H100DCQ	10p	
	C320	ECUE1H100DCQ	10p	
	C321	ECUE1H101JCQ	100p	
	C322	ECUE1H221JCQ	220p	
	C323	ECUE1C103KBQ	0.01	
	C324	F1H1H182A831	1800p	
	C325	ECUE1H100DCQ	10p	
	C326	ECUE1C103KBQ	0.01	
	C327	ECUE1A104KBQ	0.1	
	C328	ECUE1H100DCQ	10p	
	C329	ECUE1H100DCQ	10p	
	C330	ECUE1H100DCQ	10p	
	C331	ECUE1H100DCQ	10p	
	C332	ECUE1H100DCQ	10p	
	C333	F1G1H1R2A480	1.2p	
	C334	F1G1H2R4A480	2.4p	
	C335	ECUE1H102KBQ	0.001	
	C336	ECUE1H100DCQ	10p	
	C337	ECJ0EB1C822K	0.0082	S
	C338	ECUE1C103KBQ	0.01	
	C339	ECUE1C103KBQ	0.01	
	C340	F1G1H2R4A480	2.4p	
	C341	F1G1H2R0A480	2p	
	C342	F1G1H1R0A480	1p	
	C343	F1G1H2R4A480	2.4p	
	C344	PQCUV0J475KB	4.7	S
			(OTHERS)	
	E1	PNMC1013Z	CASE, MAGNETIC SHIELD (*2)	
△	F1	K5H302Y00003	FUSE	
	P1	D4DAY220A022	THERMISTOR (POSISTOR)	
	X1	H0J103500022	CRYSTAL OSCILLATOR (*1)	
	MIC1	L0CBAY000016	MICROPHONE	

16.5.1.3. Operational P.C. Board Parts

(*1) When replacing the Base Unit LCD, See **How to Replace the Base unit LCD** (P.37).

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	PCB2	PNWP2TG71CNH	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
	LED913	PQVDBR1111C	DIODE (SI)	S
			(CAPACITORS)	
	C931	ECUE1H101JCQ	100p	
	C932	ECUE1H150JCQ	15p	
	C933	ECUE1H150JCQ	15p	

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	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	
	R951	ERJ3GEY0R00	0	
			(OTHERS)	
	E2	L5DYAYY00004	LIQUID CRYSTAL DISPLAY (*1)	
	E3	PNHX1156Z	COVER, LCD	
	E4	PNHR1129Z	TRANSPARENT PLATE, LCD	
	E5	PNHR1128Z	GUIDE, LCD	
	SW901	K0L1LB000021	SPECIAL SWITCH	

16.5.2. Cordless Handset

16.5.2.1. Cabinet and Electrical Parts

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	101	PQGP10326X9	PANEL, LCD	AS-HB
	102	PQHS10776Z	TAPE, DOUBLE SIDED	
	103	PQKM10763V4	CABINET BODY	ABS-HB
	104	PQHS10467Z	COVER, SP NET	
	105	LOAD02A00028	RECEIVER	
	106	PQHG10756Z	RUBBER PARTS, RECEIVER	
	107	PQHS10722Y	SPACER, LCD CUSHION	
	108	PQBC10504Z1	BUTTON, NAVIGATORKEY	ABS-HB
	109	PQSX10349UB	KEYBOARD SWITCH	
	110	PQJT10254Z	CHARGE TERMINAL (R)	
	111	PQJT10253Z	CHARGE TERMINAL (L)	
	112	PQHR11313Z	GUIDE, SPEAKER	ABS-HB
	113	PQHG10729Z	RUBBER PARTS, SPEAKER	
	114	L0AA02A00072	SPEAKER	
	115	PQHS10622Z	SPACER, SPEAKER NET	
	116	PNJC1012Z	BATTERY TERMINAL	
	117	PNJC1013Z	BATTERY TERMINAL	
	118	PQKF10745Z2	CABINET COVER	ABS-HB
	119	PQHS10561Y	SPACER, BATTERY	
	120	PQKK10603Z2	LTD, BATTERY	ABS-HB

16.5.2.2. Main P.C.Board Parts

Note:

(*1) When replacing IC1, IC2 or X1, data needs to be written to them with PNZZTG3661JX. refer to **How to download the data of Things to Do after Replacing IC** (P.48).

(*2) When replacing the cordless handset LCD, See **How to Replace the Cordless Handset LCD** (P.38).

(*3) When removing E106, use special tools (ex. Hot air disordering tool).

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	PCB100	PNWP1G365JXR	MAIN P.C.BOARD ASS'Y (RTL)	
			(ICs)	
	IC1	C1CB00003421	IC (BBIC) (*1)	
	IC2	PNWIGA365BXR	IC (EEPROM) (*1)	
	IC300	C0ABAA000067	IC	
	IC301	C1CB00001568	IC	
	IC701	C0CBCBC00205	IC	
			(TRANSISTORS)	
	Q101	B1GBCFYY0010	TRANSISTOR (SI)	
	Q102	B1GBCFYY0010	TRANSISTOR (SI)	
	Q300	PQVTFDN335N	TRANSISTOR (SI)	S
	Q302	B1ADGE000004	TRANSISTOR (SI)	
	Q303	B1ADGE000004	TRANSISTOR (SI)	
	Q500	B1ABCF000017	TRANSISTOR (SI)	
	Q501	B1GBCFYY0010	TRANSISTOR (SI)	
	Q503	B1ADGE000004	TRANSISTOR (SI)	
			(DIODES)	
	D100	B0JCME000035	DIODE (SI)	
	D300	B0DDCD000001	DIODE (SI)	
	D401	B0BC3R4A0006	DIODE (SI)	
	D402	B0BC3R4A0006	DIODE (SI)	
	D450	B0BC3R4A0006	DIODE (SI)	
	D451	B0BC3R4A0006	DIODE (SI)	
	D501	B0JCGD000009	DIODE (SI)	
			(LEDs)	
	LED1	B3ACB0000133	LED	
	LED2	B3ACB0000133	LED	
	LED3	B3ACB0000133	LED	
	LED4	B3ACB0000133	LED	
	LED5	B3ACB0000133	LED	
	LED6	B3ACB0000133	LED	
	LED7	B3ACB0000133	LED	
	LED8	B3ACB0000133	LED	
	LED9	B3ACB0000133	LED	
			(COILS)	
	L1	G1C68NJ00010	COIL	
	L101	G1C470M00025	COIL	
	L300	G1C1N8Z00006	COIL	
	L301	G1C1N8Z00006	COIL	
	L302	G1C1N2Z00003	COIL	
	L303	G1C1N2Z00003	COIL	
	L401	PQLQR2KA20T	COIL	S
	L402	PQLQR2KA20T	COIL	S
	L420	G1C100MA0072	COIL	
	L421	G1C100MA0072	COIL	
	L500	G1C100MA0072	COIL	
	L501	G1C100MA0072	COIL	
			(IC FILTER)	
	L2	J0JCC0000275	IC FILTER	
			(RESISTOR ARRAYS)	
	RA50	EXB28V103	RESISTOR ARRAY	
	RA70	D1H410320002	RESISTOR ARRAY	
	RA101	EXB28V470JX	RESISTOR ARRAY	
	RA102	D1H447020001	RESISTOR ARRAY	
	RA103	EXB28V470JX	RESISTOR ARRAY	
			(VARISTOR)	
	D500	D4ED1270A014	VARISTOR (SURGE ABSORBER)	
			(RESISTORS)	
	R1	ERJ2GEJ101	100	S
	R2	ERJ2GEJ271	270	S
	R5	ERJ2GEJ471	470	S
	R6	ERJ2GEJ471	470	S
	R7	ERJ3GEY0R00	0	S
	R8	ERJ3GEY0R00	0	S
	R60	ERJ2GEJ225	2.2M	S
	R70	ERJ2GEJ102	1k	S
	R71	ERJ2GEJ102	1k	S
	R72	ERJ3GEYJ102	1k	S
	R100	ERJ3GEYJ680	68	S
	R101	ERJ6RSJR10V	0.1	

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	R300	ERJ2GEJ151	150	S
	R301	ERJ2GEJ271	270	S
	R302	ERJ2GEJ202	2k	S
	R303	ERJ2GEJ272	2.7k	S
	R304	ERJ2GEJ272	2.7k	S
	R305	ERJ2GEJ472X	4.7k	S
	R306	ERJ2GEJ182	1.8k	S
	R307	ERJ2GEJ432	4.3k	S
	R308	ERJ2GEJ102	1k	S
	R309	ERJ2GEJ102	1k	S
	R310	ERJ2GEJ102	1k	S
	R311	ERJ2GEJ102	1k	S
	R312	ERJ2GEJ103	10k	S
	R401	ERJ3GEYJ680	68	S
	R402	ERJ3GEYJ680	68	S
	R450	ERJ3GEYJ330	33	S
	R451	ERJ3GEYJ330	33	S
	R452	ERJ2GEJ102	1k	S
	R453	ERJ2GEJ101	100	S
	R454	ERJ2GEJ102	1k	S
	R455	ERJ2GEJ101	100	S
	R456	ERJ2GEJ272	2.7k	S
	R457	ERJ2GEJ272	2.7k	S
	R500	ERJ6RSJR10V	0.1	
	R501	ERJ3GEYJ562	5.6k	S
	R502	ERJ3GEYJ562	5.6k	S
	R503	ERJ3GEYJ224	220k	S
	R504	ERJ2GEJ102	1k	S
	R505	ERJ2GEJ103	10k	S
	R506	ERJ2GEJ471	470	S
	R700	ERJ2GEJ682	6.8k	S
	R701	ERJ2GEJ473	47k	S
	R703	ERJ2GEJ104	100k	S
	R707	ERJ2GEJ102	1k	S
			(CAPACITORS)	
	C1	ECUE1C103KBQ	0.01	
	C2	ECUE1C103KBQ	0.01	
	C3	ECUE1C103KBQ	0.01	
	C4	ECUV1A105KBV	1	
	C5	F1H0J4750004	4.7	
	C6	ECUE1C103KBQ	0.01	
	C7	ECUE1C103KBQ	0.01	
	C8	ECUE1A104KBQ	0.1	
	C9	ECUV1A224KBV	0.22	
	C10	ECUE1H102KBQ	0.001	
	C11	ECUE1A104KBQ	0.1	
	C12	ECUE1A104KBQ	0.1	
	C13	ECUE1A104KBQ	0.1	
	C14	ECUE1A104KBQ	0.1	
	C50	ECUE1A104KBQ	0.1	
	C60	ECUE1H270JCQ	27p	
	C61	ECUE1H9R0DCQ	9	
	C201	ECUV1C474KBV	0.47	
	C202	ECUV1A474KBV	0.47	
	C203	ECUV1A474KBV	0.47	
	C204	ECUV1A474KBV	0.47	
	C205	ECUV1A474KBV	0.47	
	C206	ECUV1A105KBV	1	
	C207	ECUV1A105KBV	1	
	C208	ECUV1C105KBV	1	
	C209	ECUV1C105KBV	1	
	C214	ECUV1A224KBV	0.22	
	C300	F1G1H3R0A480	3p	
	C301	F1G1H3R0A480	3p	
	C302	F1G1H2R0A480	2p	
	C303	F1G1H1R0A480	1p	
	C304	ECUE1H100DCQ	10p	
	C306	ECUE1H100DCQ	10p	
	C308	F1G1H1R0A480	1p	
	C309	F1G1H2R0A480	2p	
	C310	ECUE1H100DCQ	10p	
	C311	ECUE1H472KBQ	0.0047	
	C312	ECUE1A104KBQ	0.1	

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	C313	ECUE1H100DCQ	10p	
	C315	F1G1H1R0A480	1p	
	C317	ECUE1H100DCQ	10p	
	C320	ECUE1H100DCQ	10p	
	C321	ECUE1H101JCQ	100p	
	C322	ECUE1H221JCQ	220p	
	C323	ECUE1C103KBQ	0.01	
	C324	F1H1H182A831	1800p	
	C325	ECUE1H100DCQ	10p	
	C326	ECUE1C103KBQ	0.01	
	C327	ECUE1A104KBQ	0.1	
	C328	ECUE1H100DCQ	10p	
	C329	ECUE1H100DCQ	10p	
	C330	ECUE1H100DCQ	10p	
	C331	ECUE1H100DCQ	10p	
	C332	ECUE1H100DCQ	10p	
	C333	F1G1H1R2A480	1.2p	
	C334	F1G1H2R4A480	2.4p	
	C335	ECUE1H102KBQ	0.001	
	C336	ECUE1H100DCQ	10p	
	C337	ECJ0EB1C822K	0.0082	S
	C338	ECUE1C103KBQ	0.01	
	C339	ECUE1C103KBQ	0.01	
	C340	F1G1H2R4A480	2.4p	
	C341	F1G1H2R0A480	2p	
	C342	F1G1H1R0A480	1p	
	C343	F1G1H2R4A480	2.4p	
	C344	PQCUV0J475MB	4.7	
	C400	ECUV1E104KBV	0.1	
	C420	ECUE1H102KBQ	0.001	
	C421	ECUE1H102KBQ	0.001	
	C450	ECUE1H100DCQ	10p	
	C451	ECST0JY226	22	S
	C452	ECUE1A104KBQ	0.1	
	C453	ECUE1A104KBQ	0.1	
	C500	ECUV1A105KBV	1	
	C501	ECUV1A224KBV	0.22	
	C502	ECUV1E104KBV	0.1	
	C504	ECUV1A105KBV	1	
	C700	ECUV1E104KBV	0.1	
	C702	EEE0JA101SP	100	
	C703	EEE0JA331P	330	
	C704	F1J0J2260002	22	
	C705	ECUV1A105KBV	1	
	C706	ECUE0J105KBQ	1	
	C707	ECUE0J105KBQ	1	
	C708	ECUE1H100DCQ	10p	
	C709	ECUE1H680JCQ	68p	
	C710	ECUE0J105KBQ	1	
	C711	ECUE0J105KBQ	1	
	C712	ECUV1E104KBV	0.1	
	C714	F1G1H2R0A480	2p	
		(OTHERS)		
	MIC100	L0CBAY000018	MICROPHONE	
	E101	L5DZBY000007	LIQUID CRYSTAL DISPLAY (*2)	
	E102	PQHX11378Z	COVER, LCD	
	E103	PQHR11195Z	TRANSPARENT PLATE, LCD	PMMA-HB
	E104	PQHR11205Z	GUIDE, LCD	ABS-HB
	E105	PQWE10050Z	BATTERY TERMINAL	
	E106	PNMC1013Z	CASE, MAGNETIC SHIELD (*3)	
	X1	H0J103500022	CRYSTAL OSCILLATOR (*1)	

16.5.3. Small P.C.Board Parts

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	PCB101	PNWP2G365JXR	SMALL P.C.BOARD ASS'Y (RTL)	
			(OTHERS)	
	CF1	D4FB1R100010	FUSE	

16.5.4. Charger Unit

16.5.4.1. Cabinet and Electrical Parts

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	200	PQLV30055ZM	CHARGER UNIT without NAME PLATE (RTL)	
	200-1	PQKM10764Z4	CABINET BODY	PS-HB
	200-2	PQJT10252Y	CHARGE TERMINAL	
	200-3	PQKF10746Y2	CABINET COVER	PS-HB
	200-4	PQHA10023Z	RUBBER PARTS, FOOT CUSHION	

16.5.4.2. 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/SOCKET	
			(RESISTOR)	
	R1	ERG2SJ100E	10	
			(FUSE)	
△	F1	K5H302Y00003	FUSE	

16.5.5. Accessories and Packing Materials

Note:

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

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
△	A1	PQLV219BXY	AC ADAPTOR (for KX-TG3661JXM) (for KX-TG3662JXM)	
△	A1	PQLV219EW	AC ADAPTOR (for KX-TG3668JXM) (for KX-TG3669JXM)	
	A2	PQJA10075Z	CORD TELEPHONE	
	A3	PQJA212V	CORD, HANDSET	
	A4	PNQX3196Z	INSTRUCTION BOOK (*1)	
	A5	PNLXP1006Z	HANDSET	ABS-HB
	A6	PQKL10035Z1	STAND, WALL MOUNT	

16.5.6. Screws

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	A	XTB26+8GFJ	TAPPING SCREW	
	B	XTW2+R8PFJ	TAPPING SCREW	
	C	XTW2+R10PFJ	TAPPING SCREW	

16.5.7. Fixtures and Tools

Note:

(*1) See Equipment Required (P.39), and The Setting Method of JIG (Cordless Handset) (P.44).

(*2) When replacing the Base Unit LCD, and Cordless Handset, See How to Replace the Base unit LCD (P.37) and How to Replace the Cordless Handset LCD (P.38).

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
		PQZZ430PIR	TIP OF SOLDERING IRON (*2)	
		PQZZ430PRB	RUBBER OF SOLDERING IRON (*2)	

KX-TG3661JXM/KX-TG3662JXM/KX-TG3668JXM/KX-TG3669JXM/KX-TGA365JXM

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
		PQZZ1CD300E	JIG CABLE (*1)	
		PNZZTG3661JX	BATCH FILE CD-ROM (*1)	

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KXTG3661JXM
KXTG3662JXM
KXTG3668JXM
KXTG3669JXM
KXTGA365JXM