# Service Manual

Caller ID Compatible **2LINE** 

Telephone Equipment Model No. KX-TG9385BXT KX-TGA939BXT

Digital Cordless Answering Systemstem T: Titanium Black Version (for Middle Near East and Africa)







KX-TG9385BXT (Base Unit)



(Charger Unit)

#### Configuration for each model

Model No	Base Unit	Handset	Charger Unit	Expandable
KX-TG9385	1 (TG9385)	1 (TGA939)		Up to 6
KX-TGA939*		1 (TGA939)	1	

<sup>\*</sup> KX-TGA939 is also an optional accessory, which contains a handset and a charger.

# **MARNING**

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  $\triangle$  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.

#### **Trademarks**

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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

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

## 2.1. About Lead Free Solder (Pbf: Pb free)

#### Note:

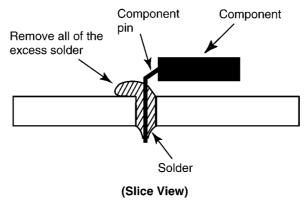
In the information below, Pb, the symbol for lead in the periodic table of elements, will refer to standard solder or solder that contains lead.

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

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

#### Caution

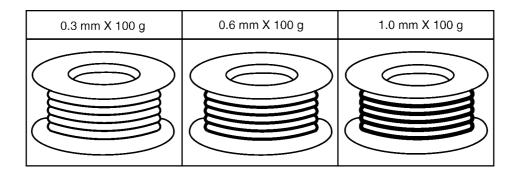
- PbF solder has a melting point that is 50 °F  $\sim$  70 °F (30 °C  $\sim$  40 °C) higher than Pb solder. Please use a soldering iron with temperature control and adjust it to 700 °F  $\pm$  20 °F (370 °C  $\pm$  10 °C).
- Exercise care while using higher temperature soldering irons.:
- Do not heat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



## 2.1.1. 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.



# 2.2. Discarding of P. C. Board

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

# 3 Specifications

■ Standard:

DECT (Digital Enhanced Cordless Telecommunications)

■ Number of channels:

60 Duplex Channels (DECT)

■ Frequency range:

1.92 GHz to 1.93 GHz (DECT)

■ Duplex procedure:

TDMA (Time Division Multiple Access)

■ Channel spacing:

1.728MHz (DECT)

■ Bit rate:

1.152Mbit/s (DECT)

■ Modulation:

GFSK (Gaussian Frequency Shift Keying)

■ RF transmission power:

115 mW (max)

■ Voice coding:

ADPCM 32 kbit/s (DECT)

	Base Unit	Handset	Charger
Power source	AC Adaptor	Rechargeable Ni-MH battery	AC Adaptor
	(PQLV219BXZ, 100-240 V AC,	AAA (R03) size (1.2 V 550 mAh)	(PQLV219BXZ, 100-240 V AC,
	50/60 Hz)		50/60 Hz)
Receiving Method	Super Heterodyne	Super Heterodyne	· <del></del>
Oscillation Method	PLL synthesizer	PLL synthesizer	
Detecting Method	Quadrature Discriminator	Quadrature Discriminator	
Tolerance of OSC Frequency	10.368 MHz ± 100 Hz	10.368 MHz ± 100 Hz	
Modulation Method	Frequency Modulation	Frequency Modulation	<del></del>
ID Code	40 bit	40 bit	<del></del>
Ringer Equivalence No. (REN)	0.1	<del></del>	<del></del>
Dialing Mode	Tone (DTMF)/Pulse	Tone (DTMF)/Pulse	
Redial	Up to 48 digits	Up to 48 digits	
Speed Dialer	Up to 24 digits (Phonebook)	Up to 24 digits (Phonebook)	
Power Consumption	Standby: Approx. 1.4 W	6 days at Standby,	Standby: Approx. 0.6 W,
	Maximum: Approx. 4.2 W	12 hours at talk.	Maximum: Approx. 3.6 W
Operating Conditions	0 °C - 40 °C 20 % – 80 % relative	0 °C - 40 °C 20 % – 80 % relative	0 °C - 40 °C 20 % – 80 % relative
	air humidity (dry)	air humidity (dry)	air humidity (dry)
Dimensions (H x W x D)	Approx. 68 mm $\times$ 221 mm $\times$ 129 mm	Approx. 156 mm $\times$ 49 mm $\times$ 32 mm	Approx. 51 mm × 75 mm × 88 mm
Mass (Weight)	Approx. 460 g	Approx. 130 g	Approx. 60 g

#### Note:

• Design and specifications are subject to change without notice.

#### Note for Service:

- Operation range: Up to 300 m outdoors, Up to 50 m indoors, depending on the condition.
- Analog telephone connection: Telephone Line

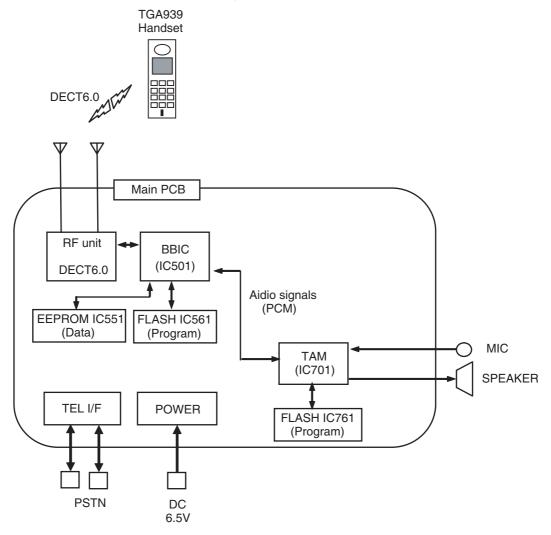
# 4 Technical Descriptions

# 4.1. Circuit Configuration of TG938x Series Phones

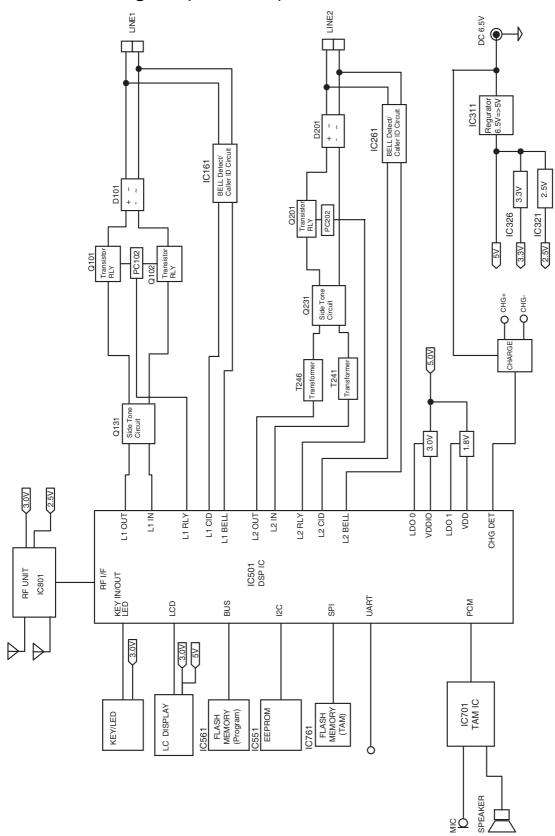
TG938x consists of DECT cordless telephone.

Both voices of transmission and reception are transferred by PCM.

BBIC on DECT side controls the cordless telephone system.



# 4.2. Block Diagram (Base Unit)



KX-TG9385 BLOCK DIAGRAM (Base Unit\_Main)

# 4.3. Circuit Operation (Base Unit)

#### 4.3.1. Outline

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

- DECT BBIC (Base Band IC): IC501
  - Handling all the audio, signal and data processing needed in a US DECT base unit
  - Controlling the US DECT specific physical layer and radio section (Burst Module Controller section)
  - ADPCM code filter for speech encoding and speech decoding (DSP section)
  - Echo-cancellation and Echo-suppression (DSP section)
  - Any tones (tone, sidetone, ringing tone, etc.) generation (DSP section)
  - DTMF receiver (DSP section)
  - Clock Generation for RF Module
  - ADC, DAC, timer, and power control circuitry
  - All interfaces (ex: RF module, EEPROM, LED, Analog Front End, etc.)
- RF Module: IC801
  - PLL Oscillator
  - Detector
  - Compress/Expander
  - First Mixer
  - Amplifier for transmission and reception
- EEPROM: IC551
  - Temporary operating parameters (for RF, etc.)
- FLASH MEMORY 1: IC761
  - Voice Prompt (TAM) D/L Area
  - ICM/OGM/Recording Area
- TAM Companion: IC701
  - Voice data compression and decompression
  - Speaker Amp
- · Additionally,
  - Power Supply Circuit (+5.0V, +3.3V, +3.0V, +2.5V, +1.8V output)
  - Crystal Circuit (10.368 MHz)
  - Charge Circuit
  - Telephone Line Interface Circuit
- FLASH MEMORY 2: IC561
  - Program DL
- LED Driver: IC641
- LCD Driver: IC641
- Key Matrix: IC631

#### 4.3.2. Power Supply Circuit

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

• DECT BBIC (IC501):

```
DC Jack (+6.5 V) \rightarrow F301 \rightarrow D301 \rightarrow IC311 \rightarrow D500 \rightarrow Q381 \rightarrow IC501 (+3.0V)
```

DC Jack (+6.5 V)  $\rightarrow$  F301  $\rightarrow$  D301  $\rightarrow$  IC311  $\rightarrow$  D500  $\rightarrow$  Q386  $\rightarrow$  IC501 (+1.8V)

• RF Module (IC801):

DC Jack (+6.5 V) → F301 → D301 → IC311 → IC321 → IC801 (+2.5V output) (to Power AMP/PLL)

DC Jack (+6.5 V)  $\rightarrow$  F301  $\rightarrow$  D301  $\rightarrow$  IC311  $\rightarrow$  D500  $\rightarrow$  Q381  $\rightarrow$  IC801 (+3.0V)

DC Jack (+6.5 V)  $\rightarrow$  F301  $\rightarrow$  D301  $\rightarrow$  IC311  $\rightarrow$  D500  $\rightarrow$  Q386  $\rightarrow$  IC801 (+1.8V)

• EEPROM (IC551)/FLASH MEMORY 1 (IC561)/FLASH MEMORY 2 (IC761)/Latch (IC631/641)/OP Amp (IC171):

DC Jack (+6.5 V)  $\rightarrow$  F301  $\rightarrow$  D301  $\rightarrow$  IC311  $\rightarrow$  D500  $\rightarrow$  Q381  $\rightarrow$  (+3.0V)

• TAM Companion (IC701):

DC Jack (+6.5 V)  $\rightarrow$  F301  $\rightarrow$  D301  $\rightarrow$  IC311  $\rightarrow$  IC326  $\rightarrow$  IC701 (+3.3V)

DC Jack (+6.5 V)  $\rightarrow$  F301  $\rightarrow$  D301  $\rightarrow$  IC311  $\rightarrow$  D500  $\rightarrow$  Q381  $\rightarrow$  IC701 (+3.0V)

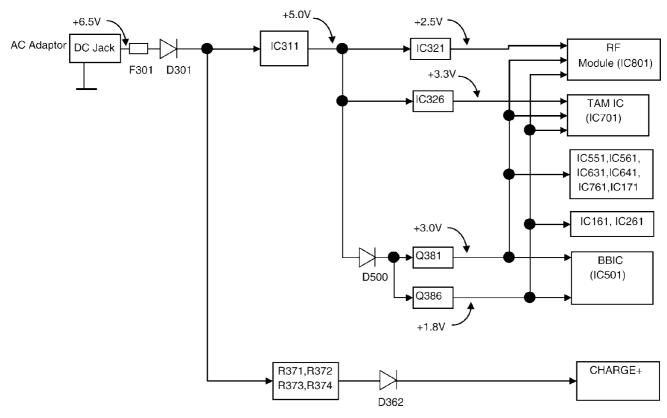
DC Jack (+6.5 V)  $\rightarrow$  F301  $\rightarrow$  D301  $\rightarrow$  IC311  $\rightarrow$  D500  $\rightarrow$  Q386  $\rightarrow$  IC701 (+1.8V)

• OP Amp (IC161, IC261):

DC Jack (+6.5 V)  $\rightarrow$  F301  $\rightarrow$  D301  $\rightarrow$  IC311  $\rightarrow$  D500  $\rightarrow$  Q386  $\rightarrow$  IC161/IC261(+1.8V)

CHARGE

DC Jack (+6.5V)  $\rightarrow$  F301  $\rightarrow$  D301  $\rightarrow$  R371, R372, R373, R374  $\rightarrow$  D362  $\rightarrow$  CHARGE+



<Fig.101>

#### 4.3.3. Telephone Line Interface

#### Note:

[ ]: Line 2

#### <Function>

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

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

In the standby mode, Q101 [Q201] is open to cut the DC loop current and decrease the ring load.

When ring voltage appears at the L1T (A) [L2T (C)] and L1R (B) [L2R (D)] leads (when the telephone rings), the AC ring voltage is transferred as follows:

#### **ON/OFF hook circuit:**

In the standby mode, Q101 [Q201] is open, and connected as to cut the DC loop current and to cut the voice signal. The unit is consequently in an **on-hook condition**.

When IC501 detects a ring signal or press the TALK Key onto the cordless handset, Q103 [Q203] turns on and then Q101, PC102, Q102 [Q201, PC202] turns on, thus providing an **off-hook condition** (DC current flows through the circuit) and the following signal flow makes the loop current.

 $A \ [C] \to D101 \ [D201] \to Q101 \ [Q201] \to Q131 \ [Q231] \to R124 \ [R224] \to R125 \ [R225] \to Q102 \ [-] \to D101 \ [D201] \to B \ [D]$ 

#### 4.3.4. Transmit/Receive the signal

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

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

#### Signal Path:

\*Refer to voice data of Signal Route (P.15).

Transmitter and receiver block of DECT RF describes as below.

#### 4.3.4.1. Transmitter Block of DECT RF (For receiving of voice signal)

The voice signal input from the TEL LINE interface goes to RF Module (IC801) through DECT BBIC (IC501) as shown in **Block Diagram (Base Unit)** (P.8)

The voice signal passes through the analog part of IC501 where it is amplified and converted to a digital audio stream signal. The burst switch controller processes this stream performing encryption and scrambling, adding the various other fields to produce the GAP (**G**eneric **A**ccess **P**rofile) standard DECT frame, assigning to a time slot and channel etc.

In IC801, the carrier frequency is changing, and frequency modulated RF signal is generated and amplified, and radiated from antenna. cordless handset detects the voice signal or data signal in the circuit same as the following explanation of Receiver Block.

#### 4.3.4.2. Receiver Block of DECT RF (For transmitting of voice signal)

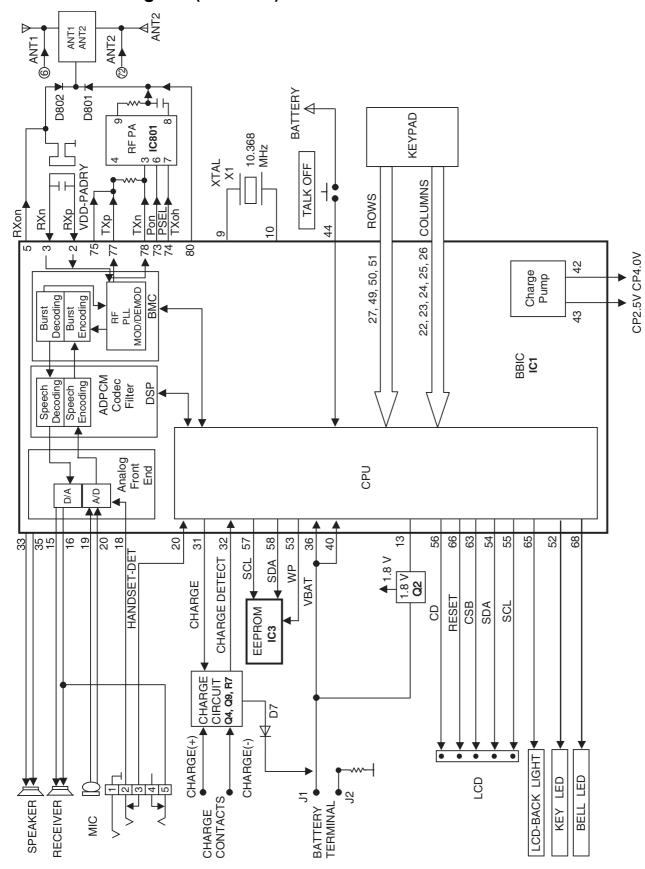
The signal of 1900 MHz band (1920 MHz ~ 1930 MHz) which is input from antenna is input to IC801 as shown in **Block Diagram (Base Unit)** (P.8).

In IC801, the signal of 1900 MHz band is downconverted to 864 kHz signal and demodulated, and goes to IC501 as GAP (**G**eneric **A**ccess **P**rofile) standard DECT frames. It passes through the decoding section burst switch controller where it separates out the frame information and performs de-encryption and de-scrambling as required. It then goes to the DSP section where it is turned back into analog audio. This is amplified by the analog front end, and goes to the TEL LINE Interface.

#### 4.3.5. Pulse Dialling

During pulse dialling the hookswitch (Q101, Q102, Q103, PC102/Q201, Q203, PC202) is used to generate the pulses using the HOOK control signal, which is set high during pulses. To force the line impedance low during the "pause" intervals between dial pulses, the PULSE DIAL signal turns on (Q101, Q102/Q201).

# 4.4. Block Diagram (Handset)



KX-TGA939 BLOCK DIAGRAM (Handset)

## 4.5. Circuit Operation (Handset)

#### 4.5.1. Outline

Handset consists of the following ICs as shown in Block Diagram (Handset) (P.12).

- DECT BBIC (Base Band IC): IC1
  - All data signals (forming/analyzing ACK or CMD signal)
  - All interfaces (ex: Key, Detector Circuit, Charge, DC/DC Converter, EEPROM, LCD, RF Power Amp.)
  - PLL Oscillator
  - Detector
  - Compress/Expander
  - Reception
- RF Power Amp: IC801
  - Amplifier for transmission
- EEPROM: IC3
  - Temporary operating parameters (for RF, etc.)

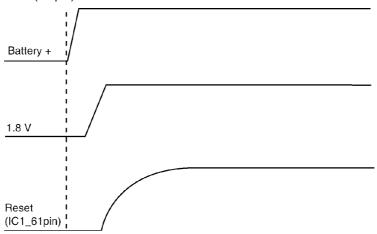
#### 4.5.2. Power Supply Circuit/Reset Circuit

#### **Circuit Operation:**

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

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

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



#### 4.5.3. Charge Circuit

#### **Circuit Operation:**

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

 $DC+(6.5 \text{ V}) \rightarrow F301 \rightarrow D301 \rightarrow R371$ , R372, R373, R374  $\rightarrow$  D362  $\rightarrow$  L361  $\rightarrow$  L362  $\rightarrow$  CHARGE+(Base)  $\rightarrow$  CHARGE+(Handset)  $\rightarrow$  L4  $\rightarrow$  Q4  $\rightarrow$  D7  $\rightarrow$  F1  $\rightarrow$  BATTERY+... Battery...

 $\mathsf{BATTERY} \to \mathsf{R45} \to \mathsf{GND} \to \mathsf{L5} \to \mathsf{CHARGE}\text{-}(\mathsf{Handset}) \to \mathsf{CHARGE}\text{-}(\mathsf{Base}) \to \mathsf{L371} \to \mathsf{GND} \to \mathsf{DC}\text{-}(\mathsf{GND})$ 

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

The charge current is controlled by switching Q4 of Handset.

Refer to Fig.101 in Power Supply Circuit (P.10).

#### 4.5.4. Battery Low/Power Down Detector

#### **Circuit Operation:**

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

The detected voltage is as follows;

· Battery Low

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

The BBIC detects this level and " starts flashing.

Power Down

Battery voltage: V(Batt) ≤ 2.0 V ± 50 mV The BBIC detects this level and power down.

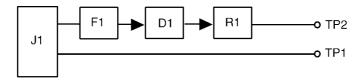
#### 4.5.5. Speakerphone

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

# 4.6. Circuit Operation (Charger Unit)

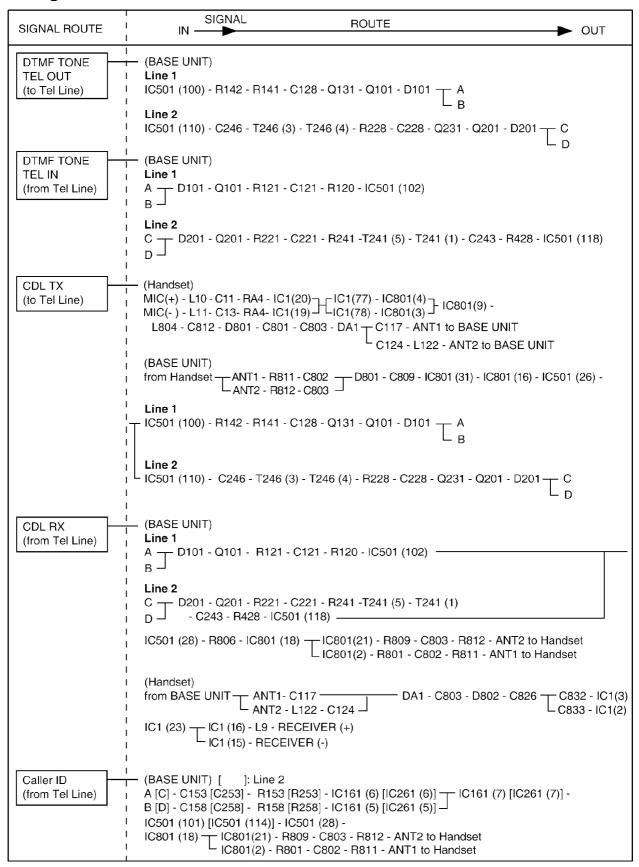
# 4.6.1. Power Supply Circuit

The power supply is as shown.



AC Adaptor

# 4.7. Signal Route



```
SIGNAL
                                                                                                                                         ROUTE
SIGNAL ROUTE
                                                                 IN -
                                                                                                                                                                                                                                 OUT
                                               - (BASE UNIT)
Base Unit
                                                  SP-PHONE TX
(to Tel Line)
                                                  MIC (-) - C723 - R723- IC701 (31)
                                                  -IC501 (100) - R142 - R141 - C128 - Q131- Q101 - D101 -
                                                                                                                                                                           LB
                                                  Line 2
                                                -IC501 (110) - C246 - T246 (3) - T246 (4) - R228 - C228 - Q231 -Q201 - D201 -
Base Unit

    (BASE UNIT)

SP-PHONE RX
                                                  Line 1
(from Tel Line)
                                                             - D101 - Q101 - R121 - C121 - R120 - IC501 (102) -
                                                  Line 2
                                                  C - D201 - Q201 - R221 - C221 - R241 -T241 (5)
                                                  D ☐ - T241 (1) - C243 - R428 - IC501 (118) -
                                                  IC501 (53) - R659 - IC701(1) — IC701 (16) - L746 - L742 - SP (-)
                                                                                                                 LIC701 (14) - L745 - L741 - SP (+)
Handset
                                                  (Handset)
                                                  MIC(+) - L10 - C11 - RA4 - IC1(20) - IC1(77) - IC801(4) - IC801(9) - IC1(78) - IC801(3) - IC801(9) 
SP-PHONE TX
(to Tel Line)
                                                     L804 - C812 - D801 - C801 - C803 - DA1 \upphi C117 - ANT1 to BASE UNIT
                                                                                                                                              L C124 - L122 - ANT2 to BASE UNIT
                                                   (BASE UNIT)
                                                  from Handset — ANT1 - R811 - C802 — D801 - C809 - IC801 (31) - IC801 (16) - IC501 (26) -
                                                                                   LANT2 - R812 - C803 J
                                                   Line 1
                                                 - IC501 (100) - R142 - R141 - C128 - Q131 - Q101 - D101 -
                                                  Line 2
                                                  IC501 (110) - C246 - T246 (3) - T246 (4) - R228 - C228 - Q231 - Q201 - D201 -
                                                   (BASE UNIT)
Handset
SP-PHONE RX
                                                   Line 1
(from Tel Line)
                                                              - D101 - Q101 - R121 - C121 - R120 - IC501 (102) -
                                                   Line 2
                                                   C __ D201 - Q201 - R221 - C221 - R241 -T241 (5) - T241 (1)
                                                                 - C243 - R428 - IC501 (118) -
                                                   IC501 (28) - R806 - IC801 (18) — IC801(21) - R809 - C803 - R812 - ANT2 to Handset
                                                                                                                        └ IC801(2) - R801 - C802 - R811 - ANT1 to Handset
                                                   (Handset)
                                                  from BASE UNIT - ANT1 - C117 \longrightarrow DA1 ANT2 - L122 - C124 \longrightarrow
```

```
SIGNAL
                                                                   ROUTE
SIGNAL ROUTE
                                IN -
                                                                                                             → OUT
                         (BASE UNIT)
Message Play
(to Tel Line)
                         IC761 (2) - IC501 (79)
                             Line 1
                            - IC501 (100) - R142 - R141 - C128 - Q131 - Q101 - D101 ___ A
                          └ IC501 (110) - C246 - T246 (3) - T246 (4) - R228 - C228 - Q231 - Q201 -
                             - D201 T C
OGM Rec
                         (BASE UNIT)
                         MIC ⊕ - C724 - R724 - IC701 (27) ☐ IC701 (2) - R658 - IC501 (54) - IC501 (94) - IC761 (5) MIC ⊙ - C723 - R723 - IC701 (31) ☐
(from Base Unit)
                         (BASE UNIT)
ICM Recording
                         Line 1
(from Tel Line)
                         A __ D101 - Q101 - R121 - C121 - R120 - IC501 (102) —
                        C ___ D201 - Q201 - R221 - C221 - R241-T241 (5) - T241 (1) - C243 - R428 - IC501 (118) _
                         IC501 (94) - IC761 (5)
                         (BASE UNIT)
Message Play
                         IC761 (2) - IC501 (79) - IC501 (28) - R806 -
(to Handset)
                         IC801 (18) IC801(2) - R801 - C802 - R811 - ANT1 to Handset IC801(21) - R809 - C803 - C812 - ANT2 to Handset
                         (Handset)
                         from Base UNIT ANT1 - R107 DA1 - C803 - D802 -
                                C832 - IC1 (3) IC1 (33) - SP(+)
C833 - IC1 (2) IC1 (30) - SP(-)
                         (BASE UNIT)
Message Play
                         IC761 (2) - IC501 (79) - IC501(53) - R659 - IC701(1) — IC701 (16) - L746 - L742 - SP (-)
(to Base Unit)
                                                                                  └ IC701 (14) - L745 - L741 - SP (+)
```

# 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.

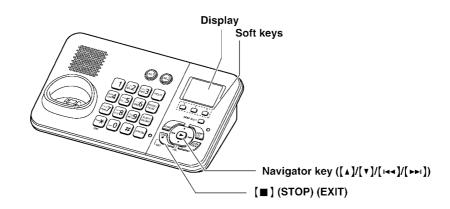
# 8 Service Mode

# 8.1. Engineering Mode

#### 8.1.1. Base Unit

## Important:

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



## B/U key operation

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



Engineering Mode Read EEPROM

Write EEPROM

BACK SELECT

- 2). Enter "7", "2", "6", "2", "7", "6", "6", "4".

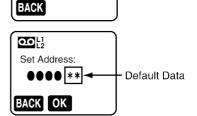
  Note: 7262 7664 = PANA SONI

  (see letters printed on dial keys)
- 3). Select "Write EEPROM" by Navigator key.
- Engineering Mode
  Read EEPROM
  Write EEPROM
  BACK SELECT

Set Address:

oo!;

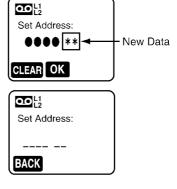
- 4). Press "SELECT" (middle soft key).
- 5). Enter "●", "●", "●", "●" (Address). (\*1)



19

- 6). Enter "\*", "\*" (New Data). (\*1)
- 7). Press " ok " (middle soft key).

  A long confirmation beep will be heard.



8). Press "[ (STOP) (EXIT) " to return to standby mode.

After that, turn the base unit power off and then power on.

#### Frequently Used Items (Base Unit)

ex.)

Items	Address(*1)	Default Data	New	Data	Remarks
C-ID (FSK) sensitivity	03 53	00	01 (6 dB up)	02 (12 dB up)	When hex changes from "00" to "01" or "02", gain
					increases by 6 dB or 12 dB.
C-ID (DTMF) sensitivity	03 61	50	60 (6 dB up)	70 (12 dB up)	When hex changes from "50" to "60" or "70", gain
					increases by 6 dB or 12 dB.
Frequency	00 01	60	-	-	Use these items in a <b>READ-ONLY</b> mode to confirm
ID	00 10~00 14	Given value	-		the contents. Careless rewriting may cause serious
					damage to the computer system.
Bell length	02 11	64 (10 sec) (*2)	1E (3 sec)	14 (2 sec)	This is time until bell stops ringing.
					(Unit: 100 ms)
PULSE Dial speed	02 4D	28 (40 msec) (*2)	14 (20 msec)	-	This is pulse make time. (Unit:1 ms)
(10PPS -> 20PPS)	02 4E	3C (60 msec) (*2)	1E (30 msec)	-	This is pulse break time. (Unit:1 ms)
	01 FB	58 (870 msec)	2D (440 msec)	-	This is inter-digit time in pulse mode.
		(*2)			(Unit:10 ms)

#### Note:

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

Desired Number (hex.)	Input Keys	Desired Number (hex.)	Input Keys
0	0	A	[FLASH] + 0
1	1	В	[FLASH] + 1
		С	[FLASH] + 2
	•	D	[FLASH] + 3
	•	E	[FLASH] + 4
9	9	F	[FLASH] + 5

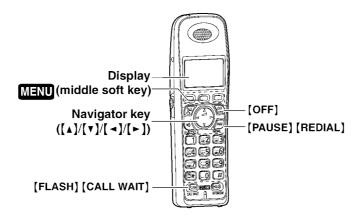
(\*2)

Bell length	$64(\text{hex}) = 100(\text{dec}) \rightarrow 100 \times 100 \text{ msec} = 10000 \text{ msec} (10 \text{ sec})$
PULSE Dial speed	28 (hex) = 40 (dec) → 40 × 1 msec = 40 msec
(10PPS -> 20PPS)	3C (hex) = $60 \text{ (dec)} \rightarrow 60 \times 1 \text{ msec} = 60 \text{ msec}$
	58 (hex) = 88 (dec) → (88 - 1) × 10 msec = 870 msec

#### 8.1.2. Handset

#### Important:

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



## H/S key operation

H/S LCD

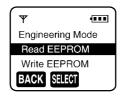
1). Press "MENU" (middle soft key).



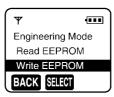
2). Enter "7", "2", "6", "2", "7", "6", "6", "4".

Note: 7262 7664 = PANA SONI

(see letters printed on dial keys)



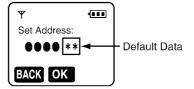
3). Select "Write EEPROM" by Navigator key.



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



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



- 6). Enter "\*", "\*" (New Data). (\*1)
- 7). Press " OK " (middle soft key).
  - Set Address:

Set Address:

-

New Data

8). Press " [OFF] " to return to standby mode.
After that, remove and reinsert the batteries.
Press the Power button for about 1 second if the power is not turned on.

A long confirmation beep will be heard.

#### Frequently Used Items (Handset)

ex.)

Items	Address	Default Data	New Data	Possible Adjusted Value MAX (hex)	Possible Adjusted Value MIN (hex)	Remarks
Battery Low	00 04	70	-	-	-	
Frequency	00 01~00 02	F6 02	-	-	-	(*2)
ID	00 10~00 14	Given value	-	-	-	,

#### Note:

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

Desired Number (hex.)	Input Keys	Desired Number (hex.)	Input Keys
0	0	A	[FLASH] + 0
1	1	В	[FLASH] + 1
		С	[FLASH] + 2
		D	[FLASH] + 3
	•	E	[FLASH] + 4
9	9	F	[FLASH] + 5

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

# 8.2. Copying Phonebook Items when Repairing

You can copy the base unit phonebook items(up to 100) to another (compatible Panasonic) handset.

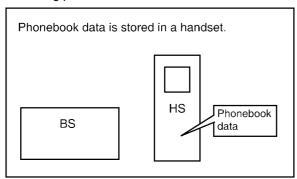
This will help to save the original phonebook data which the customer has registered.

\*You cannot save all of them if you registered more than 100 items.

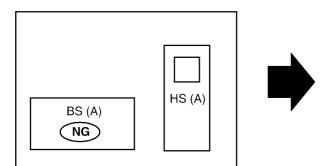
Because maximum number of base unit and handset unit are different. (Base unit: 600 items, Handset unit: 100 items)

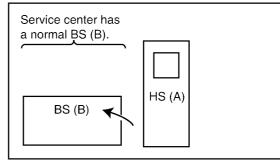
\* You cannot copy the base unit phonebook to another base unit.

Refer to the following procedures.



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

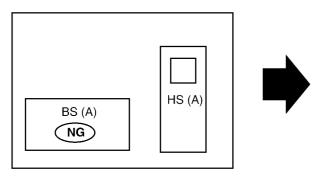


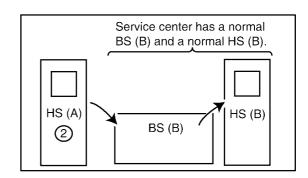


 Register HS (A) to BS (B).
 HS (A) is normal, therefore no need to copy the phonebook data.

Case 2: A base unit has a defect.

(Replacing both a base unit and a Handset)



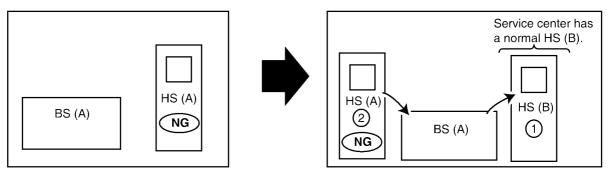


- 1. Register HS (A) to BS (B) as a handset no. 2.
- 2. Copy the phonebook data from HS (A) to BS (B) then copy the phonebook data from BS (B) to HS (B).
- 3. Cancel the HS 2 (HS (A)).

#### Note:

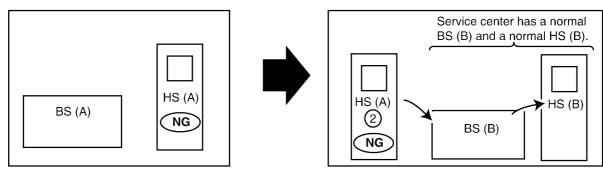
- BS=Base Unit, HS=Handset
- If the max number of handses are already registered to the base unit, a new handset cannot be registered.

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



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

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



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

#### Note:

- BS=Base Unit, HS=Handset
- If the max number of handsets are already registered to the base unit, a new handset cannot be registered.

## 8.3. How to Clear User Setting

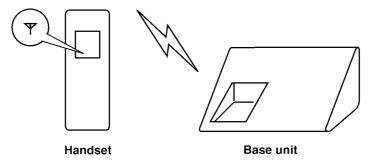
Units are reset to the Factory settings by this operation (Erase recorded voice messages, stored Phone numbers, Caller list and etc.)

#### Note:

- The reset menus differ depending on the following operations.
- · This operation should not be performed for a usual repair.

#### 8.3.1. Resetting both base unit and handset

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

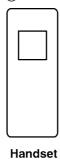


- ① Connect the AC adaptor to the base unit and install the charged batteries into the handset.
- ② Confirm the handset is registered to the base unit ( Y lights).

  If the handset is not registered to the base unit ( Y is flashing), register it.
- 3 Lift the handset and press [OFF] to put the handset in standby mode.
- 4 Press 1, 5, 9 and  $\times$  key of the handset simultaneously until a confirmation tone is heard.
- (5) Disconnect the AC adaptor, then remove the battery.

## 8.3.2. Resetting only handset

The only handset is reset by doing the following steps (1) to (4).



- (1) Install the charged batteries into the Handset.
- 2 Lift the handset and press (OFF) to put the handset in standby mode.
- (3) Press (3), (5), (7) and (#) key of the handset simultaneously until a confirmation tone is heard. (\*1)
- 4 Remove the battery.

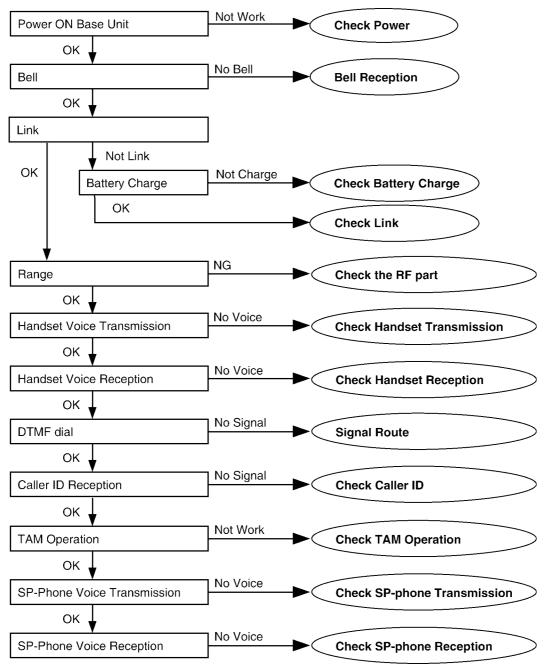
#### Note: (\*1)

- · The handset registration to the base unit is cancelled.
- If users do not bring the base unit with them, the registration procedure has to be done by users themselves.

# 9 Troubleshooting Guide

# 9.1. Troubleshooting Flowchart

#### **Flow Chart**



#### **Cross Reference:**

Check Power (P.27)

**Bell Reception (P.35)** 

**Check Battery Charge (P.28)** 

Check Link (P.29)

Check the RF part (P.31)

**Check Handset Transmission** (P.34)

**Check Handset Reception** (P.34)

Signal Route (P.15)

Check Caller ID (P.34)

**Check TAM Operation (P.35)** 

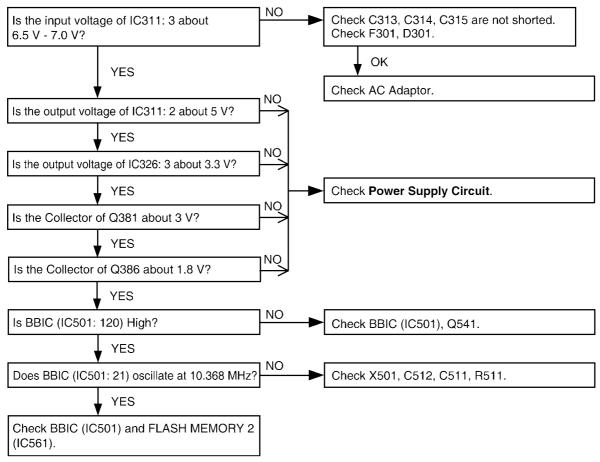
Check SP-phone Transmission (P.36)

Check SP-phone Reception (P.36)

#### 9.1.1. Check Power

#### 9.1.1.1. Base Unit

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



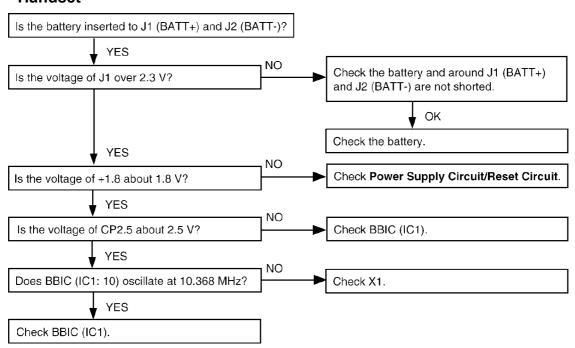
#### **Cross Reference:**

**Power Supply Circuit (P.10)** 

#### Note:

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

#### 9.1.1.2. Handset

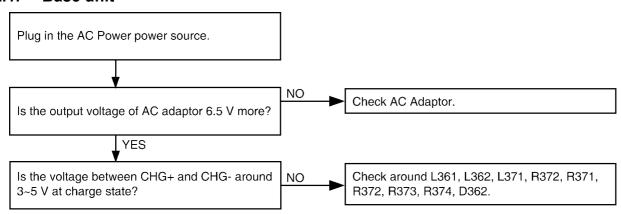


#### **Cross Reference:**

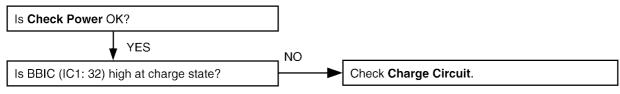
Power Supply Circuit/Reset Circuit (P.13)

## 9.1.2. Check Battery Charge

#### 9.1.2.1. Base unit



#### 9.1.2.2. Handset

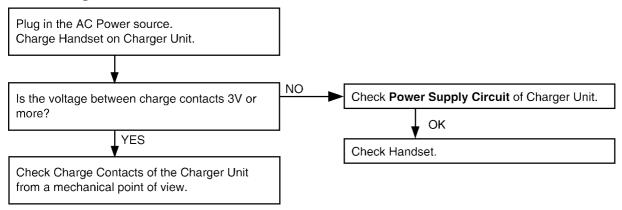


#### **Cross Reference:**

Check Power (P.27)

Charge Circuit (P.13)

## 9.1.2.3. Charger Unit

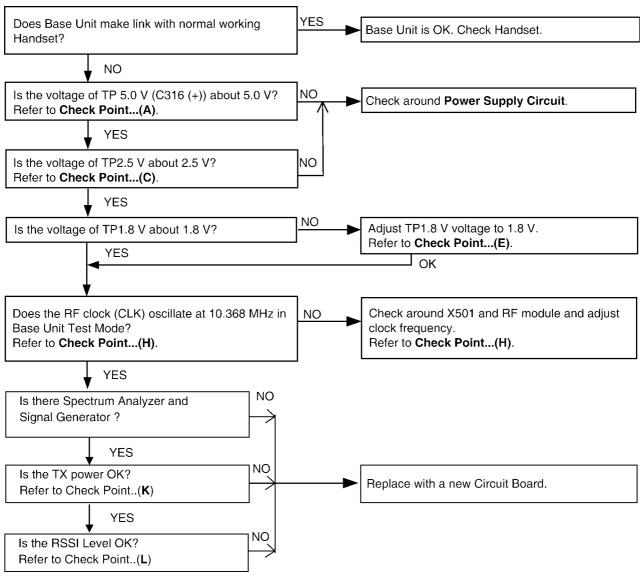


#### **Cross Reference:**

Power Supply Circuit (P.10)

#### 9.1.3. Check Link

#### 9.1.3.1. Base Unit

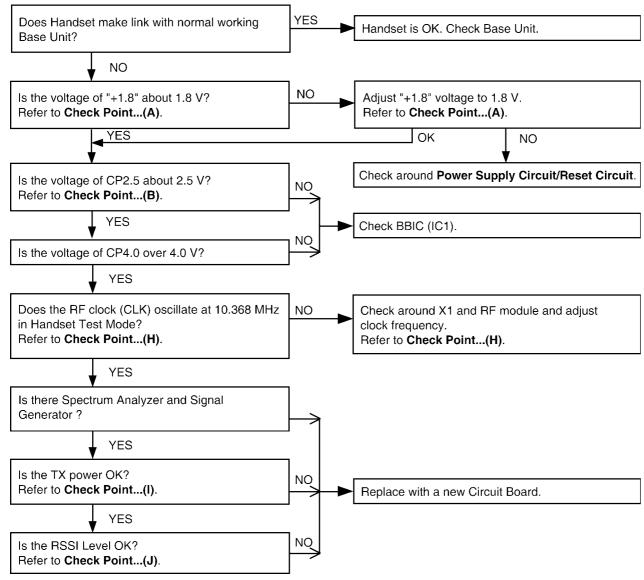


**Cross Reference:** 

**Power Supply Circuit** (P.10)

Check Point (Base Unit) (P.37)

#### 9.1.3.2. Handset



#### **Cross Reference:**

Power Supply Circuit/Reset Circuit (P.13)

Check Point (Handset) (P.40)

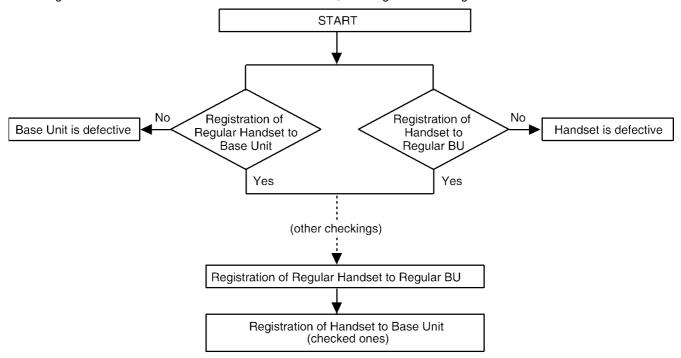
# 9.1.4. Check the RF part

## 9.1.4.1. Finding out the Defective part

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

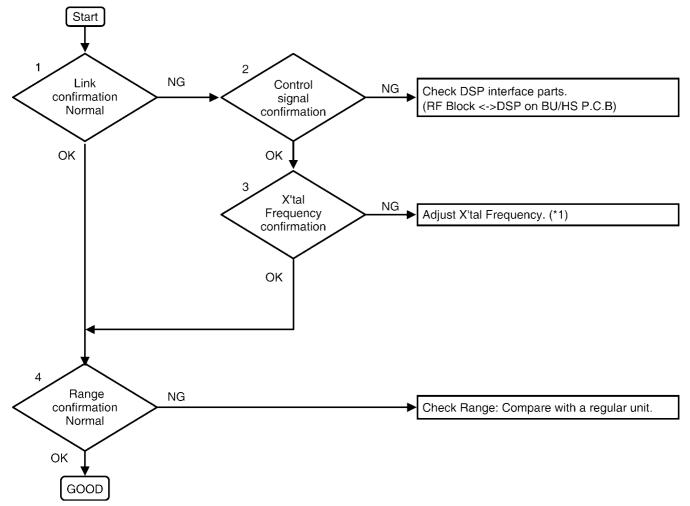
#### After All the Checkings or Repairing

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



#### 9.1.4.2. RF Check Flowchart

Each item (1  $\sim$  4) of RF Check Flowchart corresponds to **Check Table for RF part** (P.33). Please refer to the each item.



Note:

(\*1) Base unit - refer to (H) of Check Point (Base Unit) (P.37)

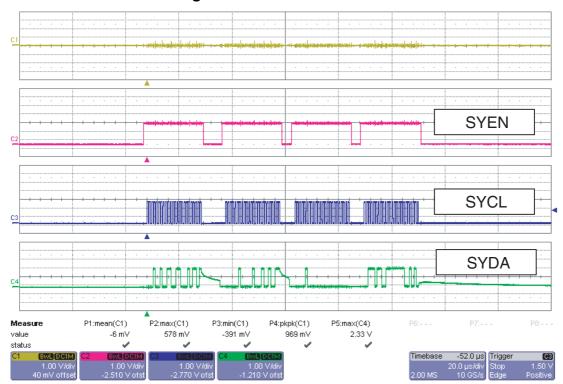
# 9.1.4.3. Check Table for RF part

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

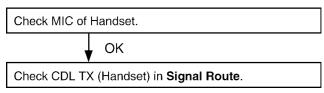
#### Note:

- (\*1) Refer to RF-BBIC Interface Signal Wave Form (P.34)
- (\*2) Refer to Adjustment Standard (Base Unit) (P.53)
- (\*3) Refer to Adjustment Standard (Handset) (P.57)

## 9.1.4.4. RF-BBIC Interface Signal Wave Form

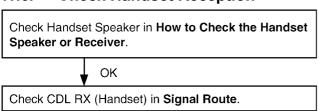


#### 9.1.5. Check Handset Transmission



Cross Reference: Signal Route (P.15)

## 9.1.6. Check Handset Reception



#### **Cross Reference:**

How to Check the Handset Speaker or Receiver (P.61). Signal Route (P.15)

#### 9.1.7. Check Caller ID

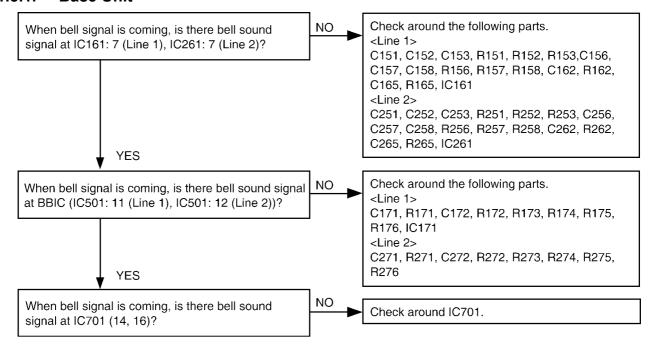
Check Caller ID in Signal Route.

Cross Reference:

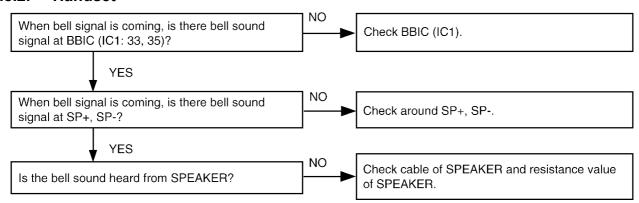
Signal Route (P.15)

#### 9.1.8. Bell Reception

#### 9.1.8.1. Base Unit



#### 9.1.8.2. Handset



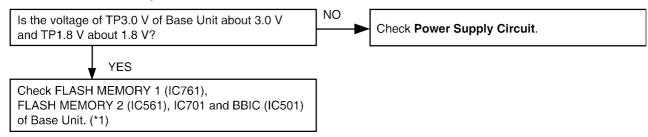
#### **Cross Reference:**

**Telephone Line Interface (P.11)** 

Check Link (P.29)

How to Check the Handset Speaker or Receiver (P.61)

#### 9.1.9. Check TAM Operation



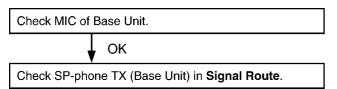
#### **Cross Reference:**

**Power Supply Circuit (P.10)** 

#### Note:

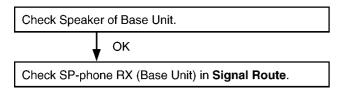
(\*1) When replacing FLASH MEMORY 1 (IC761), TAM data needs to be written to it. Refer to **How to download the data** (P.58) of **Things to Do after Replacing IC**.

# 9.1.10. Check SP-phone Transmission



Cross Reference: Signal Route (P.15)

# 9.1.11. Check SP-phone Reception



Cross Reference: Signal Route (P.15)

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

# 9.2.1. Check Point (Base Unit)

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

#### Note:

After the measuring, suck up the solder of TP.

The connections of simulator equipments are as shown in Adjustment Standard (Base Unit) (P.53).

	Items	Check	Procedure	Check or
		Point		Replace Parts
( <b>A</b> )	5.0 V Supply Confirma-	IC311	1. Confirm that the voltage between 4 pin of IC311 and GND is $5.0 \text{ V} \pm 0.2 \text{ V}$ .	IC311, D301,
	tion	C316 (+)		F301, C315,
				C313, C314,
				R311, R312,
				R316, C316,
<b>(D)</b>	2.2.1/ Complex Confirms	TD2 2 1/	4. Confirms that the welfage hat we are test reject TD2.2.V and CND is 2.2.V a. 0.2.V	C317
( <b>B</b> )	3.3 V Supply Confirma- tion	TP3.3 V	1. Confirm that the voltage between test point TP3.3 V and GND is 3.3 V ± 0.2 V.	IC326, C326, C327, R328,
	tion			R326, R327
(C)	2.5 V Supply Confirma-	TP2.5 V	1. Confirm that the voltage between test point TP2.5 V and GND is 2.5 V $\pm$ 0.2 V.	IC321, C321,
(C)	tion	1F2.5 V	1. Commit that the voltage between test point 172.5 v and GND is 2.5 v ± 0.2 v.	R322, R321,
	UOII			C322
( <b>D</b> )	3.0 V Supply Confirma-	TP3.0 V	1. Confirm that the voltage between test point TP3.0 V and GND is 3 V $\pm$ 0.2 V.	Q381, R381,
` '	tion		Ŭ I	R382, R383,
				C382, D500
( <b>E</b> )	1.8 V Supply Confirma-	TP1.8 V	1. Confirm that the voltage between test point TP1.8 V and GND is 1.8 V $\pm$ 0.1 V.	Q386, R386,
	tion			C387, C388
( <b>F</b> )*	BBIC Confirmation	-	BBIC Confirmation (Execute the command "getchk").	IC501, X501,
			Confirm the returned checksum value.	R511, C511,
			Connection of checksum value and program number is shown below.	C512, Around
			checksum value program number	IC561
			ex.) 8405 JE11BA	
( <b>G</b> )*	EEPROM Confirmation	-	EEPROM Confirmation (Execute the command "sendchar SLF").	IC551, R552,
			Confirm the returned value.	R553, R554,
			(Value for reference is written at "EEPROM C/SUM" in software_Version_Table.xls.)	C551
( <b>H</b> )*	BBIC Clock Adjustment	TP-RFCLK	1. Check X'tal Frequency. (10.368 MHz ± 100 Hz).	IC501, X501,
			Input Command "sendchar SFR", then you can confirm the current value.	C511, C512
			2. If the frequency is not 10.368 MHz ± 100 Hz, Adjust the frequency of CLK exe-	Around IC561
			cuting the command "sendchar SFR xx (where xx is the value)" so that the reading of the frequency counter is 10.368000 MHz ± 20 Hz.	
(I)*	Check line DC charac-		1. Connect CN101 (Line 1)/CN201 (Line 2) (Telephone Socket) to Tel-simulator	<line 1=""></line>
(1)	teristics.	-	which is connected with 600 $\Omega$ .	PO101, L101,
	teristics.		2. Set line voltage to 48 V and line current to 40 mA at off-hook condition of nor-	L102, D101,
			mal telephone.	Q101, R102,
			3. Press LINE1 key.	PC102, Q102,
			4. Confirm that the line current is 40 mA ± 5 mA.	Q131, R124,
			5. Press SP-PHONE key.	R125
			6. Confirm that the line current is less than + 0.8 mA.	<line 2=""></line>
			7. Check Line2 as same as Line1.	PO201, L201,
				L202, D201,
				Q201, D202,
				PC202, R224,
				R225
( <b>J</b> )	DTMF Generator Check	-	1. Connect CN101 (Line 1)/CN201 (Line 2) (Telephone Socket) to DTMF tester.	<line 1=""></line>
			(Road=600 Ω)	IC501, R141,
			Link Handset and push dial key.     Confirm DTMF character.	R142, C128,
			Confirm DTMF character.     Confirm that the high Group is -8 dBm ± 3 dBm.	Q131 <line 2=""></line>
			4. Confirm that the high Group is -8 dBm ± 3 dBm.  5. Confirm that the low Group is -10 dBm ± 3 dBm.	<line 2=""> IC501, C246,</line>
			5. Sommin that the low Group is -10 dollt ± 3 doll.	T246, R228,
				C228, Q231
$\Box$				J220, Q201

## KX-TG9385BXT/KX-TGA939BXT

	Items	Check	Procedure	Check or
		Point		Replace Parts
( <b>K</b> )*		-	Remove the Antenna Jumper starting from 1 to 4	IC501, IC801,
	firmation		Configure the Spectrum Analyzer as follows;	R807, R806,
			Center Frequency: 1924.992MHz	R804, R808,
			Frequency Span: 10MHz	C809, D801,
			• RBW: 3MHz	R801, R804,
			• VBW: 3MHz	L803, C802,
			Trace Mode: Max Hold     Trace who the command library 00 02 0!!	R811
			Execute the command "btx 00 02 0"     Execute the command "ANT 1"	
			4. Confirm that max power 15 ~ 20.5 dBm	
			·	
			Remove the Solder here and open the Antenna	
			R321  C811  C811  C812  C812  C814  C802  C805  C821  C817  C815  C807  C806  C807	
			C823 · C829 · C831 · R804 · C803 · C747 · C829 · C831 · R804 · C804 · C803 · C747 · C826 · C	
			C748 C748 R327 R326 R326 C326 C748 ANT-2 C326 C748 C748 ANT-2	
(L)*	RSSI Level Confirmation	-	Remove the Antenna Jumper starting from 1 to 5	IC501, IC801,
			Configure the Signal Generator as follows;	R807, R804,
			• Frequency 1924.992MHz	C809, D801,
			RF level = - 70 dBm  Mode CW(modulaiton off)	R801, R804,
			2. Execute the command "CRX 00 00"	L803, C802, R811
			3. Execute the command "ANT 1"	1.011
			Execute the command "RSI"	
			5. Confirm that the returned value is 22 ± A (hex).	
( <b>M</b> )	Audio Check	-	Link with Handset.	<line 1=""></line>
			2. Input -45 dBm/1kHz to MIC of Handset.	PO101, L101,
			Measure the Level at Line I/F and distortion level.	L102, D101,
			3. Confirm that the level is -15.5 dBm ± 3 dBm and that the distortion level is < 5	Q101, R102,
			% at TEL Line (600 Ω Load). 4. Input -20 dBm/1 kHz to Line I/F.	PC102, Q102,
			4. Input -20 dBm/1 kHz to Line I/F.  Measure the level at Receiver of Handset and distortion level	Q131, R124, R125
			(*Receive volume set to second position from minimum).	<line 2=""></line>
			5. Confirm that the level is -15 dBm ± 3 dBm and that the distortion level is < 5 %	PO201, L201,
			at Receiver (Volume 2, 150 $\Omega$ Load).	L202, D201,
				Q201, D202,
				PC202, R224,
				R225
( <b>N</b> )*	TAM Operation	-	TAM Confirmation (Execute the command "sendchar VPI")	IC701, IC761,
	Confirmation		Confirm the returned Value (Value is "DB07AA 01").	Q772, Q773

# 9.2.2. Check Point (Charger Unit)

	Items	Check	Procedure	Check or
		Point		Replace Parts
( <b>A</b> )	Charging Check	-	1. Connect Charge Contact 10 $\Omega/2$ W resistor between charge+ and charge	R2, R1,
			2. Measure and confirm voltage across the resistor is 3.3 V $\pm$ 0.2 V.	R3, R4

#### Note:

After the measuring, suck up the solder of TP.

The connection of adjustment equipment is as shown in Adjustment Standard (Charger Unit) (P.54).

# 9.3. Troubleshooting by Symptom (Handset)

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

#### Note:

- (\*1) A general repair is possible even if you don't have the DECT tester because it is for confirming the levels, such as Acoustic level in detail.
- (\*2) Refer to Check Point (Handset) (P.40)

## 9.3.1. Check Point (Handset)

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

#### Note:

After the measuring, suck up the solder of TP.

\*: How to install Batch file into P.C. (P.56) is required beforehand.

The connections of adjustment equipments are as shown in Adjustment Standard (Handset) (P.57).

	Items	Check Point	Procedure	Check or Replace Parts
( <b>A</b> )*	1.8 V Supply Adjustment	1.8V	<ol> <li>Confirm that the voltage between test point 1.8V and GND is 1.8 V ± 0.02 V.</li> <li>Execute the command "VDD", then check the current value.</li> <li>Adjust the 1.8V voltage of VDD1 executing command "sendchar VDD xx" (XX is the value).</li> </ol>	IC1, Q2, C48, D1, C1, C44,
( <b>B</b> )*	BBIC Confirmation	-	BBIC Confirmation (Execute the command "sendchar SLF").     Confirm the returned checksum value. Connection of checksum value and program number is shown below.	IC1, X1, RA61, R64, R66
(C)*	EEP-ROM Confirmation	-	EEPROM Confirmation (Execute the command "sendchar EPV").     Confirm the returned value. (Value for reference is written at "EEPROM C/SUM" in software_Version_Table.xls.)	IC1, IC3, R40~R42, C172
(D)	Charge Control Check & Charge Current Monitor Check	-	<ol> <li>Apply 3.5 V between CHG(+) and CHG(-) with DC power supply and set current limit to 250 mA.         Confirm the indication of "charging" on LCD.</li> <li>Confirm that the current limit LED of DC power supply is ON/OFF.         Confirm it after waiting over 1 minute at least.</li> <li>Decrease current limit of DC power supply to 100 mA.</li> <li>Confirm that the current limit LED of DC power supply is stable. (Current limiter is ON.)</li> <li>(If charge control cannot be confirmed by this procedure, please use battery to hand-set power supply and try again.)</li> </ol>	IC1, Q4 Q9, D7, D8, L4, L5, R6, R7, F1, C1, C3, R2, R30, R31, R8, C147, R45, C15, L8
(E)*	Charge Detection (OFF) Check	-	Stop supplying 3.5 V to CHG (+) and CHG (-).     Confirm the indication of "charging" has been cleared.	IC1, Q4 Q9, D7, D8, L4, L5, R6, R7, F1, C1, C3, R2, R30, R31, R8, C147, R45, C15

	Items	Check Point	Procedure	Check or Replace Parts
( <b>F</b> )*	Battery Monitor Check	-	Apply 2.25 V between BATT+ and BATT     Execute the command     sendchar PAD	IC1, F1, C1 C3, R12, R45
			sendchar LED 0 sendchar CRX 0 1	
			sendchar AD1  It assumes that the return value is XX.	
			<ul> <li>a) 6c ≤ XX ≤ 71: No need to adjust</li> <li>b) XX: 6A ~ 6B: Need to adjust</li> <li>XX: 72 ~ 74: Need to adjust</li> <li>Write AD value of 2.25 V to EEPROM.</li> </ul>	
			ex) read data: XX = 6A, write data: YY = 6A read data: XX = 73, write data: YY = 73 EEPROM = 0004(Low Voltage) write "YY"	
			Execute the command "wreeprom 00 04 01 YY".  EEPROM = 0005(No Voltage) write "YY - 1D"  Execute the command "×wreeprom 00 05 01 ZZ".	
			EEPROM = 000A(Low Voltage BL) write "YY - 16" Execute the command "wreeprom 00 0A 01 WW".  Note:	
			ZZ = YY - C No Voltage writing data limit is '00'. c) XX: 00 ~ 69: Reject	
			XX: 75 ~ FF: Reject	
( <b>G</b> )	Battery Low Confirma- tion	-	Apply 2.40 V between BATT+ and BATT     Confirm that there is no flashing of Battery Icon.	IC1, F1, C1 C3, R12, R45
			3. Apply 2.25 V $\pm$ 0.08 V between BATT+ and BATT	
(H)*	BBIC Clock Adjustment	CLK	Confirm that there is flashing of Battery Icon.     Apply 2.6 V between BATT+ and BATT- with DC power.	IC1, X1, C47
,	,		Input Command "sendchar sfr", then you can confirm the current value.	, , ,
			<ol> <li>Check X'tal Frequency. (10.368 MHz ± 100 Hz).</li> <li>If the frequency is not 10.368 MHz ± 100 Hz, adjust the frequency of CLK exe-</li> </ol>	
			cuting the command "sendchar sfr xx xx (where xx is the value)" so that the	
			reading of the frequency counter is 10.368000 MHz ± 5 Hz.  Note:	
			Clear the registered information for Base Unit before measurement, because the	
			Frequency will not possibly get stable due to the registered information.	
			Pressing the button of "3" "7" "9" "#" clears the registration.  Register to it on Base Unit after measurement.	
(I)*	Transmitted Power Con-	-	Remove the Antenna starting from 1 to 5	IC1,
	firmation		Configure the Spectrum Analyzer as follows;     Center frequency: 1924.992MHz	C808~ C815, L804, L805,
			Span: 10MHz	C825, C834,
			• RBW: 3MHz	C819, C840,
			VBW: 3MHz     Trace Max: Hold mode	IC801, R106, R107, C117,
			2. Execute the command "btx 00 02 0"	C118, C186,
			3. Execute the command "TPC 0" 4. Execute the command "ANT 1"	DA1, C802~ C804,
			5. Confirm that max power 15 ~ 20.5 dBm	D801,
(1)				R801~ R806
(J)*	RSSI Level Confirmation	-	Remove the Antenna starting from 1 to 5  1. Configure the Signal Generator as follows;	IC1, R106, R107, C117,
			• Frequency 1924.992MHz	C118, C186,
			RF level = - 70 dBm     Execute the command "CRX 00 00"	C125, C842, DA1,
			3. Execute the command "ANT 1"	C802~ C804,
			4. Execute the command "RSI"	D802, C826,
			5. Confirm that the returned value is 22 ± A (hex).	C822, C820, C832, C833, R807
( <b>K</b> )	Audio Check and Confir-	-	Link to BASE which is connected to Line Simulator.	IC1, R23, C12,
	mation		Set line voltage to 48 V and line current to 40 mA.     Input -45 dBm/1KHz to MIC and measure Line output level.	D19, D20, C96, C97,
			4. Confirm that the level is -15.5 dBm ± 3 dBm and that the distortion level is < 5%	R215, R27,
			at TEL Line (600 Ω Load).	RA4, C11,
			5. Input -20 dBm/1KHz to Line I/F and measure Receiving level at Receiver (150 $\Omega$ Load).	C13, R28, D3, D4, L10, L11,
			6. Confirm that the level is -15 dBm $\pm$ 3 dBm and that the distortion level is < 5%	MIC, L9
			at Receiver. (vol = 2)	

## KX-TG9385BXT/KX-TGA939BXT

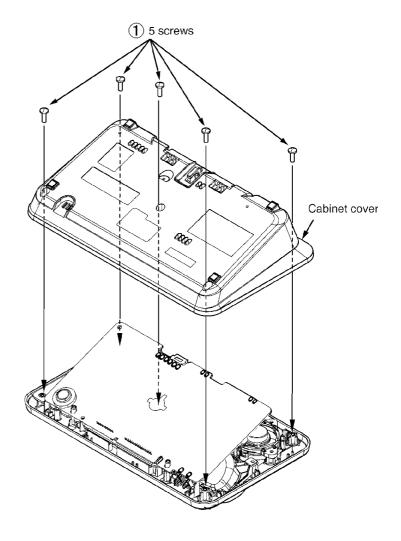
	Items	Check Point	Procedure	Check or Replace Parts
(L)	SP phone Audio Check and Confirmation	-	<ol> <li>Link to Base which is connected to Line Simulator.</li> <li>Set line voltage to 48 V and line current to 40 mA.</li> <li>Set the handset off-hook using SP-Phone key.</li> <li>Input -25 dBm/1KHz to Line I/F and measure Receiving level at SP+ and SP-(at 8 Ω Load).</li> <li>Confirm that the level is -9 dBm ± 4 dBm and that the distortion level is &lt; 5%. (vol = 3)</li> </ol>	MIC, C11,
( <b>M</b> )	Charge Pump 2.5V Sup- ply Confirmation	CP2.5V	<ol> <li>Confirm that the voltage between testpoint and CP2.5V and GND is 2.5V -0.1/ +0.3V.</li> </ol>	C52, C53, C49
( <b>N</b> )	Change Pump 4.0V Supply Confirmation	CP4.0V	Confirm that the voltage between testpoint CP4.0V and GND is 4.0V I0.2V.	C50, C51

# 10 Disassembly and Assembly Instructions

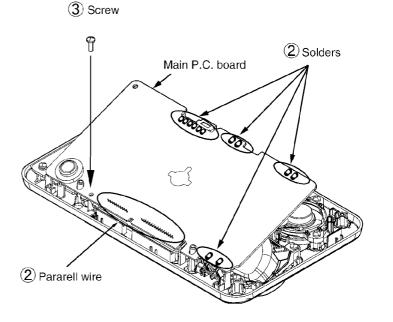
# 10.1. Disassembly Instructions

## 10.1.1. Base Unit

(1) Remove the 5 screws to remove the Cabinet Cover.

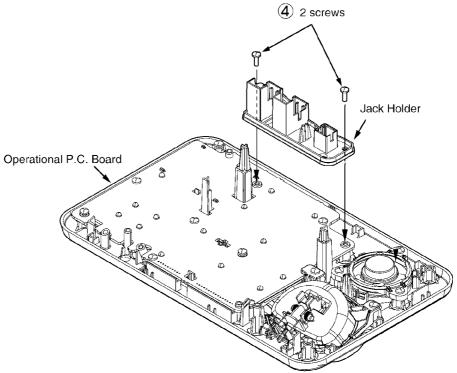


- (2) Remove the Solders and Pararell wire to remove the Main P.C.Board.
- (3) Remove the screw to remove the Main P.C.Board.

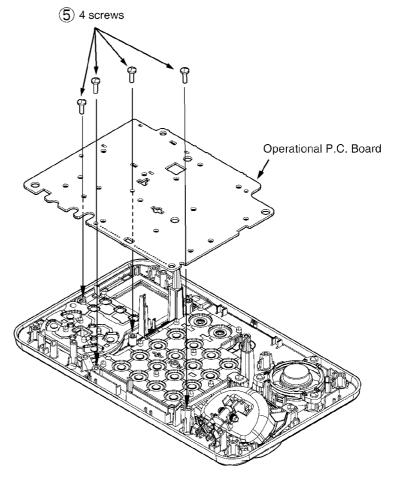


## KX-TG9385BXT/KX-TGA939BXT

A Remove the 2 screws to remove the Jack Holder.



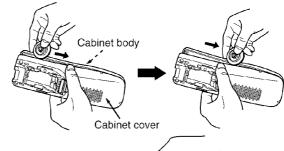
(5) Remove the 4 screws to remove the Operational P.C.Board.



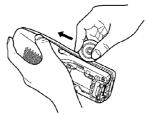
### 10.1.2. Handset

(1) Remove the 2 screws.

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



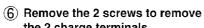
3 Likewise, open the other side of the cabinet.



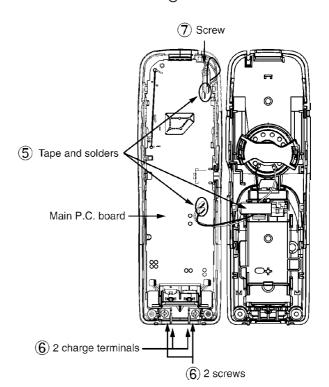
4 Remove the cabinet cover by pushing it upward.



(5) Remove the tapes and solders.

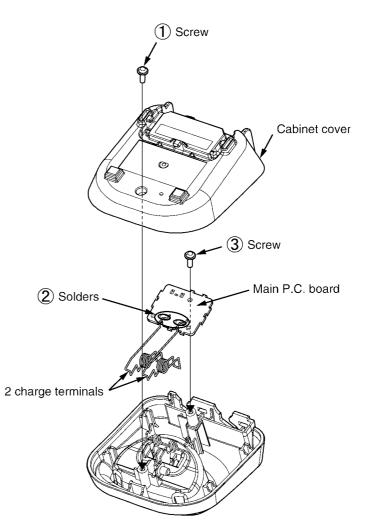


- the 2 charge terminals.
- (7) Remove the screw to remove the main P. C. board.



## 10.1.3. Charger Unit

(1) Remove the screw to remove the cabinet cover.

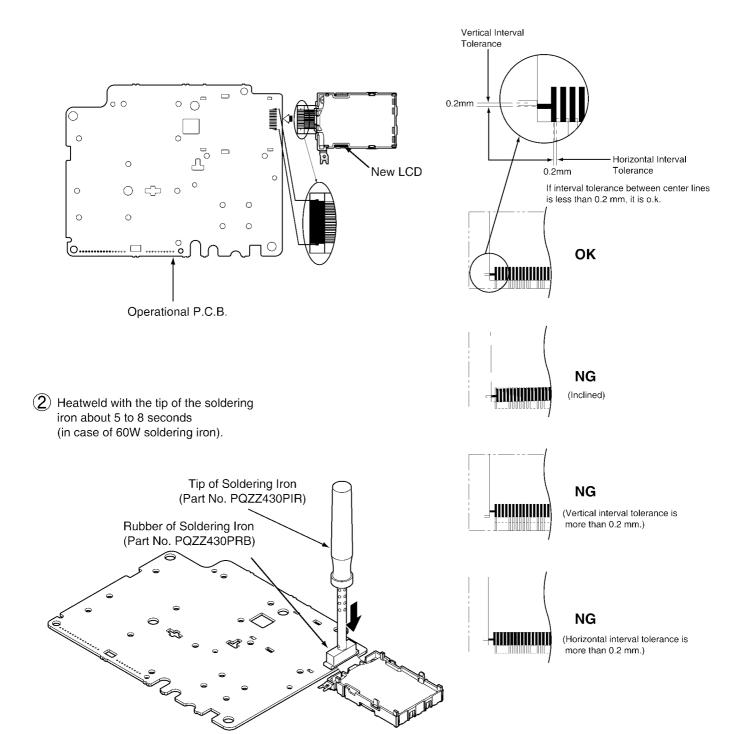


- (2) Remove the solders to remove the 2 charge terminals.
- (3) Remove the screw to remove the main P.C. board.

# 10.2. Assembly Instructions

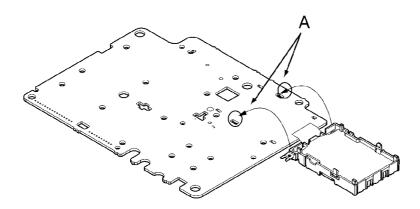
## 10.2.1. How to Replace the Base unit LCD

1 Fit the heatseal of a new LCD.

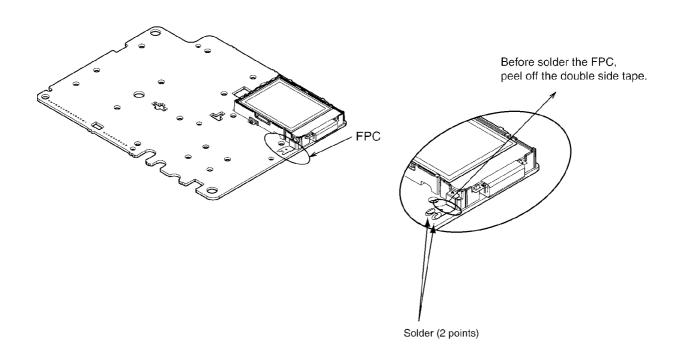


## KX-TG9385BXT/KX-TGA939BXT

3 Attach the LCD and fix by hook A (two points).



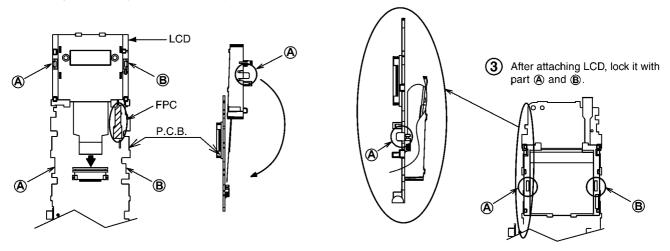
4 Solder the FPC on the P.C.B. .



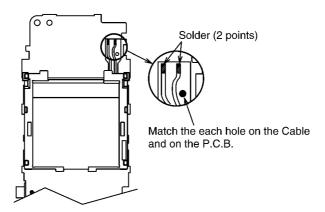
## 10.2.2. How to Replace the Handset LCD

- Attach LCD to P.C.B.

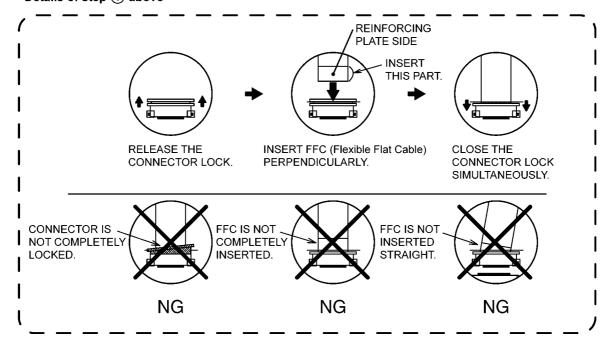
  \*When attaching the LCD holder,
  don't pull the FPC (Flexible Print Circuit).
- 2 Locate the Flat Cable inside as shown.



Solder the narrow Cable to the P.C.B.
\*When soldering, don't give the load to the FPC.



### <Details of step 1 above>



# 11 Measurements and Adjustments

This chapter explains the measuring equipment, the JIG connection, and the PC setting method necessary for the measurement in **Troubleshooting Guide** (P.26)

## 11.1. Equipment Required

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

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

## 11.2. The Setting Method of JIG (Base Unit)

This section explains the PC setting to use command required in Check Point (Base Unit) (P.37).

<Preparation>

Serial JIG cable: PQZZ1CD300E\*
PC which runs in DOS mode

• Batch file CD-ROM for setting: PNZZTG9385BX

(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 )

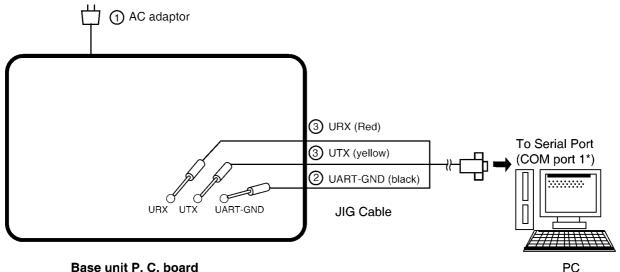
Resistor	Old value (kΩ)	New value (kΩ)
R2	22	3.3
R3	22	3.3
R4	22	4.7
R7	4.7	10

#### Note:

\*: If you have the JIG Cable for TCD500 series

## 11.2.1. Connections

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



Dase unit F. C. Doai

#### Note:

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

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

- 1. Insert the Batch file CD-ROM into CD-ROM drive and copy PNZZTG\*\*\*\* folder to your PC (example: D drive).
- 2. Open an MS-DOS mode window.

#### <Example for Windows>

On your computer, click [Start], select Programs (All Programs for Windows XP/Windows Server 2003), then click

**MS-DOS Prompt**. (for Windows 95/Windows 98) Or

Accessories-MS-DOS Prompt. (for Windows Me)

Command Prompt. (for Windows NT 4.0)

Or

**Accessories-Command Prompt.** 

(for Windows 2000/Windows XP/Windows Server 2003)

- **3.** At the DOS prompt, type "D:" (for example) to select the drive, then press the **Enter** key.
- **4.** Type "CD ¥PNZZTG\*\*\*\*", then press the Enter key.
- **5.** Type "SET\_COM=X", then press the Enter key
- (X: COM port number used for the serial connection on your PC).
- **6.** Type "**READID**", then press the **Enter** key.
  - •If any error messages appear, change the port number or check the cable connection.
  - •If any value appear, go to next step.
- 7. Type "DOSKEY", then press the Enter key.

#### <Example>

- C: ¥Documents and Settings>D:
- D: ¥>CD ¥PNZZTG\*\*\*\*
- D: ¥PNZZTG\*\*\*\* >SET COM=X
- D: ¥PNZZTG\*\*\*\*>READID
- 00 52 4F A8 A8
- D: ¥PNZZTG\*\*\*\*>DOSKEY
- D: ¥PNZZTG\*\*\*\*>\_
  - <Example: error happens>
- C: ¥Documents and Settings>D:
- D: ¥>CD ¥PNZZTG\*\*\*\*
- D: ¥PNZZTG\*\*\*\* >SET COM=X
- D: ¥PNZZTG\*\*\*\*>READID CreateFile error

ERROR 10: Can't open serial port

D: ¥PNZZTG \*\*\*\*>\_

#### Note:

• "\*\*\*\*" varies depending on the country or models.

## KX-TG9385BXT/KX-TGA939BXT

## **11.2.3.** Commands

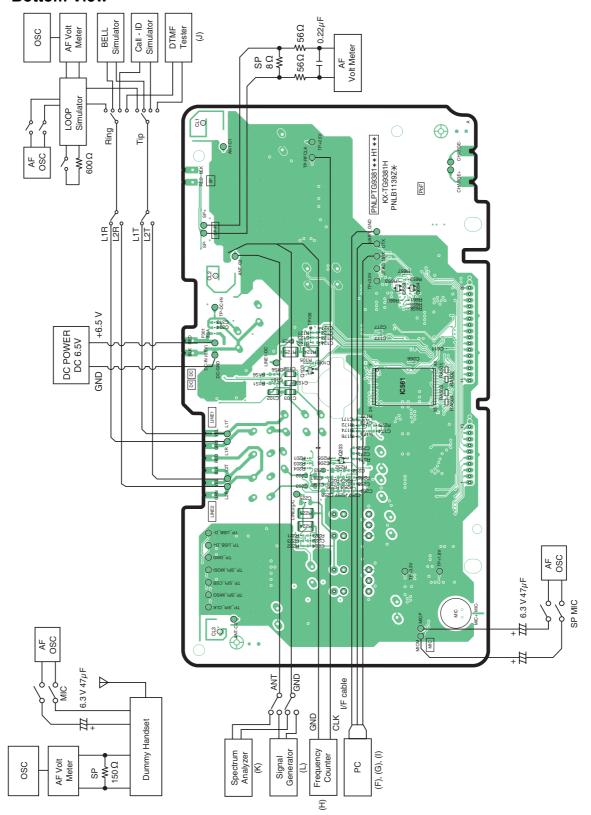
See the table below for frequently used commands.

Command name	Function	Example
rdeeprom	Read the data of EEPROM	Type "rdeeprom 00 00 FF", and the data from address
		"00 00" to "FF" is read out.
readid	Read ID (RFPI)	Type "readid", and the registered ID is read out.
writeid	Write ID (RFPI)	Type "writeid 00 18 E0 0E 98", and the ID "0018 E0 0E
		98" is written.
setfreq	Adjust Frequency of RFIC	Type "setfreq nn".
hookoff1/hookoff2	Off-hook mode on Base Line1 & Line2	Type "hookoff1" for Line1.
hookon1/hookon2	On-hook mode on Base Line1 & Line2	Type "hookon1" for Line1.
getchk	Read checksum	Type "getchk".
wreeprom	Write the data of EEPROM	Type "wreeprom 01 23 45". "01 23" is address and "45"
		is data to be written.
bursttx	Burst TX mode	Type "bursttx"
textrx	Test RX mode	Type "testrx"
tph	High TX mode	Type "tph"
tpl	Low TX mode	Type "tpl"

# 11.3. Adjustment Standard (Base Unit)

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

## 11.3.1. Bottom View



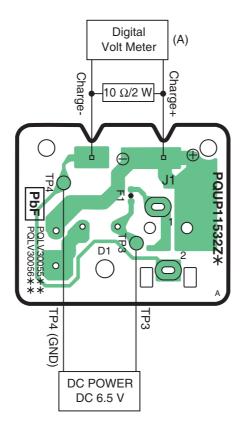
Note:

(F) - (L) is referred to Check Point (Base Unit) (P.37)

# 11.4. Adjustment Standard (Charger Unit)

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

## 11.4.1. Bottom View



#### Note:

(A) is referred to Check Point (Charger Unit) (P.39)

## 11.5. The Setting Method of JIG (Handset)

This section explains the PC setting to use command required in Check Point (Handset) (P.40).

<Preparation>

• Serial JIG cable: PQZZ1CD300E\*

• PC which runs in DOS mode

• Batch file CD-ROM for setting: PNZZTG9385BX

(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.)

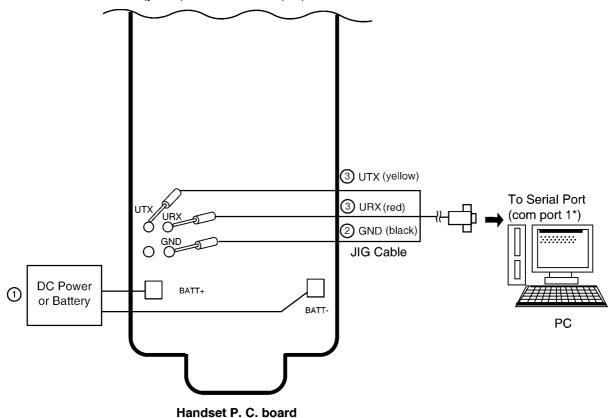
Resistor	Old value (kΩ)	New value (kΩ)
R2	22	3.3
R3	22	3.3
R4	22	4.7
R7	4.7	10

#### Noto:

\*: If you have the JIG Cable for TCD500 series

#### 11.5.1. Connections

- (1) Connect the DC Power or Battery to BATT+ and BATT-.
- ②Connect the JIG cable GND (black) to GND.
- (3) Connect the JIG cable UTX (yellow) to UTX and URX (red) to URX.



#### Note:

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

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

- 1. Insert the Batch file CD-ROM into CD-ROM drive and copy PNZZTG\*\*\*\*\* folder to your PC (example: D drive).
- 2. Open an MS-DOS mode window.

#### <Example for Windows>

On your computer, click [Start], select Programs (All Programs for Windows XP/Windows Server 2003), then click

MS-DOS Prompt. (for Windows 95/Windows 98)

Or

Accessories-MS-DOS Prompt. (for Windows Me)

Or

Command Prompt. (for Windows NT 4.0)

Or

Accessories-Command Prompt.

**3.** At the DOS prompt, type "**D**:" (for example) to select the (for Windows 2000/Windows XP/Windows Server 2003) drive, then press the **Enter** key.

- 4. Type "CD ¥PNZZTG\*\*\*\*\*", then press the Enter key.
- **5.** Type "SET RTX\_COM=X", then press the Enter key (X: COM port number used for the serial connection on your PC).
- **6.** Type "READID", then press the Enter key.
  - •If any error messages appear, change the port number or check the cable connection.
  - •If any value appear, go to next step.
- **7.** Type "DOSKEY", then press the Enter key.

#### <Example>

- C: ¥Documents and Settings>D:
- D: ¥>CD ¥PNZZTG\*\*\*\*\*
- D: ¥PNZZTG\*\*\*\* >SET RTX\_COM=X
- D: ¥PNZZTG\*\*\*\*\*>READID
- 00 52 4F A8 A8
- D: ¥PNZZTG\*\*\*\*\*>DOSKEY
- D: ¥PNZZTG\*\*\*\*\*> \_
  - <Example: error happens>
- C: ¥Documents and Settings>D:
- D: ¥>CD ¥PNZZTG\*\*\*\*\*
- D: \text{YPNZZTG\*\*\*\*\* > SET RTX\_COM=X}
- D: ¥PNZZTG\*\*\*\*\*>READID CreateFile error

ERROR 10: Can't open serial port

D: ¥PNZZTG\*\*\*\*\*> \_

#### Note:

• "\*\*\*\*" varies depending on the country or models.

#### **11.5.3.** Commands

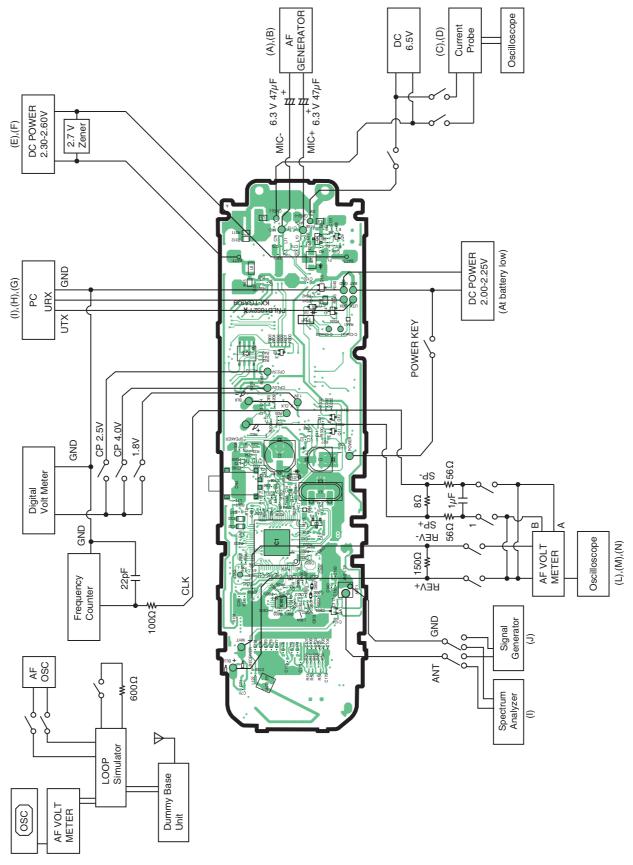
See the table below for frequently used commands.

Command name	Function	Example
rdeeprom	Read the data of EEPROM	Type "rdeeprom 00 00 FF", and the data from address "00 00" to "FF" is read out.
readid	Read ID (RFPI)	Type "readid", and the registered ID is read out.
writeid	Write ID (RFPI)	Type "writeid 00 18 E0 0E 98", and the ID "0018 E0 0E 98" is written.
setfreq	Adjust Frequency of RFIC	Type "setfreq nn".
getchk	Read checksum	Type "getchk".
wreeprom	Write the data of FLASH	Type "wreeprom 01 23 45". "01 23" is address and "45" is data to be written.
bursttx	Burst TX mode	Type "bursttx"
textrx	Test RX mode	Type "testrx"
tph	High TX mode	Type "tph"
tpl	Low TX mode	Type "tpi"

# 11.6. Adjustment Standard (Handset)

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

## 11.6.1. Component View



Note:

(A) - (N) is referred to Check Point (Handset) (P.40)

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

If repairing or replacing BBIC (FLASH type), EEPROM and X'tal, it is necessary to download the required data such as Programming data or adjustment data, etc in memory.

The set doesn't operate if it is not executed.

#### 11.7.1. How to download the data

### 11.7.1.1. Base Unit

First, operate the PC setting according to The Setting Method of JIG (Base Unit) (P.50).

Then download the appropriate data according to the following procedures.

	Items	How to download/Required adjustment
BBIC (IC501)	Programming data is stored in memory.	1) Clock adjustment: Refer to Check Point (H). (*2)
EEPROM (IC551)	Adjusted parameter data is stored in memory. (country version batch file, default batch file, etc.)	1) Check the address "0000" of EEPROM should be "CC". If it wasn't "CC" then write "CC" to address "0000", and enter command "sendchar EPD F".  2) Default batch file: Execute the command "default.bat".  3) Country version batch file: Execute the command "TG9385XXrevYY.bat". (*1)  4) Clock adjustment: Refer to Check Point (F). (*2)  5) Voltage adjustment Refer to Check Point (D) 3.0V supply confirmation and (E) 1.8V supply confirmation.
FLASH1 (IC761)	Voice prompt data is stored in memory. (vary depending on country version)	1) Wait more than 15 seconds after connecting the JIG Cable. 2) Execute the command VPDL2009 _06_AAZZ.bin"(*1). (writing time: aprox. About 1 min)
FLASH2 (IC561)	Program D/L	1) Make sure to connect the JIG cable and disconnect the DC Power in order to download the data. 2) Execute the command "flw429 *******.hex". 3) Connect the DC Power. 4) Press the PC Enter key once. 5) After a few minutes, "Successful upgrade" is displayed on the PC indicating downloading has finished. 6) Detach the JIG cable, then disconnect the DC Power. 7) Connect the DC Power. 8) Connect the JIG cable again, and execute the command "getchk", then confirm the checksum value is correct. If the downloading fails, start again from step 1). 9) Default batch file: Execute the command "default.bat". 10) Country version batch file: Execute the command "TG9385XXrevYY.bat". (*1) 11) Clock adjustment: Refer to Check Point (H). (*2)
X'tal (X1)	System clock	Clock adjustment data is in EEPROM, adjust the data again after replacing it.  1) Refer to Check Point (H). (*2)

#### Note:

(\*1) XX: country code, YY: revision number, ZZ: Voice Prompt, AA: Bound rate

"XX", "YY" and "ZZ" vary depending on the country version. You can find them in the batch file, PNZZ- mentioned in **The Setting Method of JIG (Base Unit)** (P.50).

(\*2) Refer to Check Point (Base Unit) (P.37)

## 11.7.2. Handset

First, operate the PC setting according to The Setting Method of JIG (Handset) (P.55).

Then download the appropriate data according to the following procedures.

	Items	How to download/Required adjustment
BBIC (FLASH type) (IC1)	Programming data is stored in memory.  (Attention)  If the BBIC was MASK type, then the procedure from 2) to 8) are NOT necessary.  *** MASK type marking *** "C1CB00003015" on IC.	Make sure to connect the JIG cable and disconnect the DC Power in order to download the data.     Execute the command "flw480 ********.hex".
EEPROM (IC3)	Adjusted parameter data is stored in memory. (country version batch file, default batch file, etc.)	Point (A), (F) and (G). (*4).  1) Default batch file: Execute the command "default.bat".  2) Default batch file (remaining): Execute the Command "TGA939DEFrevYY.bat". (*3)
		3) Country version batch file: Execute the command "TGA939XXrevYY.bat". (*3) 4) Clock adjustment: Refer to Check Point (H). (*4) 5) 1.8 V setting and battery low detection: Refer to Check Point (A), (F) and (G). (*4)
X'tal (X1)	System clock	Clock adjustment data is in EEPROM, adjust the data again after replacing it.  1) Refer to Check Point (H). (*4)

#### Note:

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

"XX" and "YY" vary depending on the country version. You can find them in the batch file, PNZZ- mentioned in **The Setting Method of JIG (Handset)** (P.55).

(\*4) Refer to Check Point (Handset) (P.40)

KX-TG9385BXT/KX-TGA939BXT

# 11.8. RF Specification

# 11.8.1. Base Unit

Item	Value	Refer to *
TX Power	15 dBm ~ 20.5 dBm	Check Point (Base Unit) (K)
RSSI LEVEL	22±A (HEX)	Check Point (Base Unit) (L)

<sup>\*:</sup> Refer to Check Point (Base Unit) (P.37)

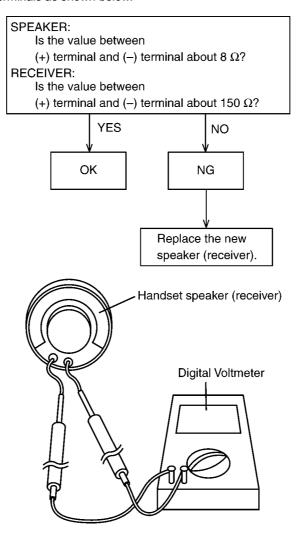
## 11.8.2. Handset

Item	Value	Refer to **
TX Power	15 dBm ~ 20.5 dBm	Check Point (Handset) (I)
RSSI LEVEL	22±A (HEX)	Check Point (Handset) (J)

<sup>\*\*:</sup> Refer to Check Point (Handset) (P.40)

# 11.9. How to Check the Handset Speaker or Receiver

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



# 11.10. Frequency Table (MHz)

	Ch. (hex)	TX/RX Frequency (MHz)
Channel 0	00	1928.448
Channel 1	01	1926.720
Channel 2	02	1924.992
Channel 3	03	1923.264
Channel 4	04	1921.536
Channel 5	05	1919.808
Channel 6	06	1918.080
Channel 7	07	1916.352
Channel 8	08	1914.624
Channel 9	09	1912.896

# 12 Miscellaneous

## 12.1. 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.

#### 12.1.1. 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  $\rightarrow$  0.82. Type  $\rightarrow$  RMA (lower residue, non-cleaning type)

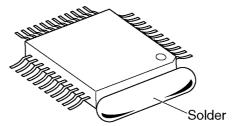
Note: See About Lead Free Solder (Pbf: Pb free) (P.4).

#### 12.1.2. How to Remove the IC

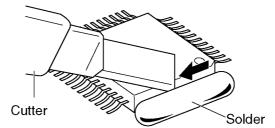
1. Put plenty of solder on the IC pins so that the pins can be completely covered.

Note:

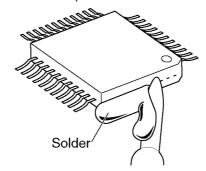
If the IC pins are not soldered enough, you may give pressure to the P.C. board when cutting the pins with a cutter.



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



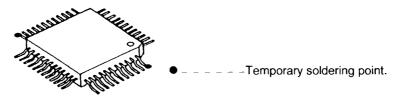
3. While the solder melts, remove it together with the IC pins.



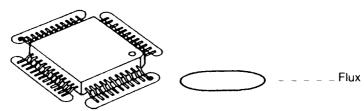
When you attach a new IC to the board, remove all solder left on the board with some tools like a soldering wire. If some solder is left at the joint on the board, the new IC will not be attached properly.

## 12.1.3. How to Install the IC

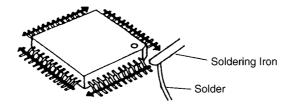
1. Temporarily fix the FLAT PACKAGE IC, soldering the two marked pins.



- \*Check the accuracy of the IC setting with the corresponding soldering foil.
  - 2. Apply flux to all pins of the FLAT PACKAGE IC.

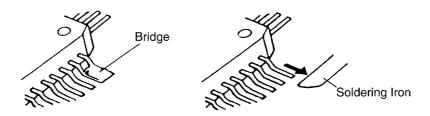


3. Solder the pins, sliding the soldering iron in the direction of the arrow.



## 12.1.4. 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.



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

## 12.2.1. Preparation

- PbF (: Pb free) Solder
- · Soldering Iron

Tip Temperature of 700 °F ± 20 °F (370 °C ± 10 °C)

#### Note:

We recommend a 30 to 40 Watt soldering iron. An expert may be able to use a 60 to 80 Watt iron where someone with less experience could overheat and damage the PCB foil.

· Hot Air Desoldering Tool

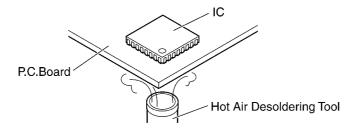
Temperature: 608 °F ± 68 °F (320 °C ± 20 °C)

#### 12.2.2. Caution

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

### 12.2.3. How to Remove the IC

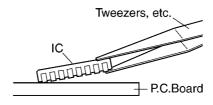
1. Heat the IC with a hot air desoldering tool through the P.C.Board.



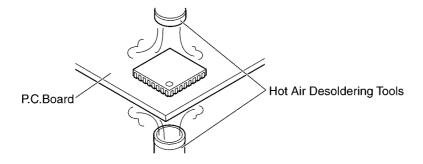
2. Pick up the IC with tweezers, etc. when the solder is melted completely.

#### Note:

• Be careful not to touch the peripheral parts with tweezers, etc. They are unstable.



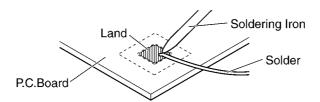
When it is hard to melt the solder completely, heat it with a hot air desoldering tool through the IC besides through the P.C.Board.



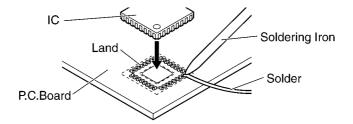
3. After removing the IC, clean the P.C.Board of residual solder.

### 12.2.4. How to Install the IC

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

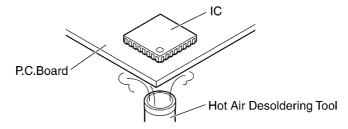


- 2. Place the solder a little on the land where IC pins are to be attached, then place the IC.
  - When placing the IC, the positioning should be done very carefully.



- 3. Heat the IC with a hot air desoldering tool through the P.C.Board until the solder on IC bottom is melted.

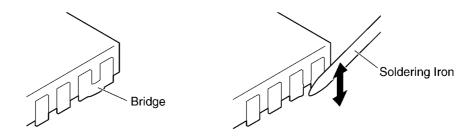
  Note:
  - Be sure to place it precisely, controlling the air volume of the hot air desoldering tool.



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

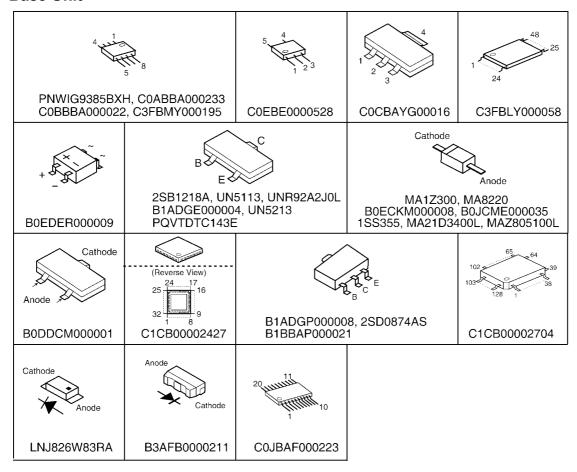
## 12.2.5. How to Remove a Solder Bridge

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

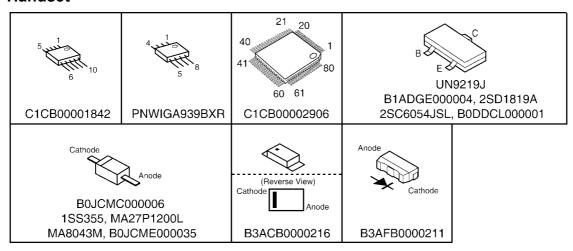


# 12.3. Terminal Guide of the ICs, Transistors and Diodes

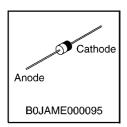
## 12.3.1. Base Unit



### 12.3.2. Handset



## 12.3.3. Charger



# 13 Schematic Diagram

## 13.1. For Schematic Diagram

## 13.1.1. Base Unit (Schematic Diagram (Base Unit\_Main))

#### Notes:

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

Important Safety Notice:

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

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

## 13.1.2. Handset (Schematic Diagram (Handset))

#### Notes:

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

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

#### Notes:

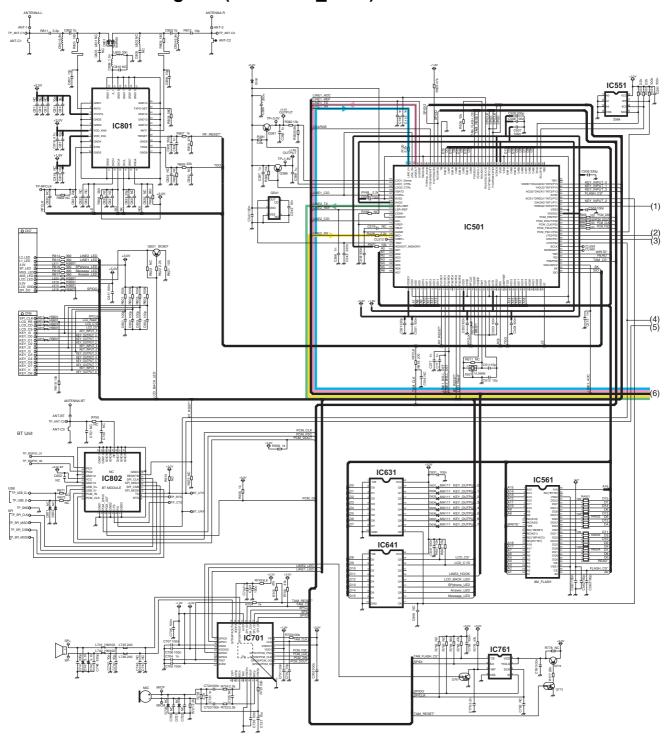
1. DC voltage measurements are taken with voltmeter from the negative voltage line.

Important Safety Notice:

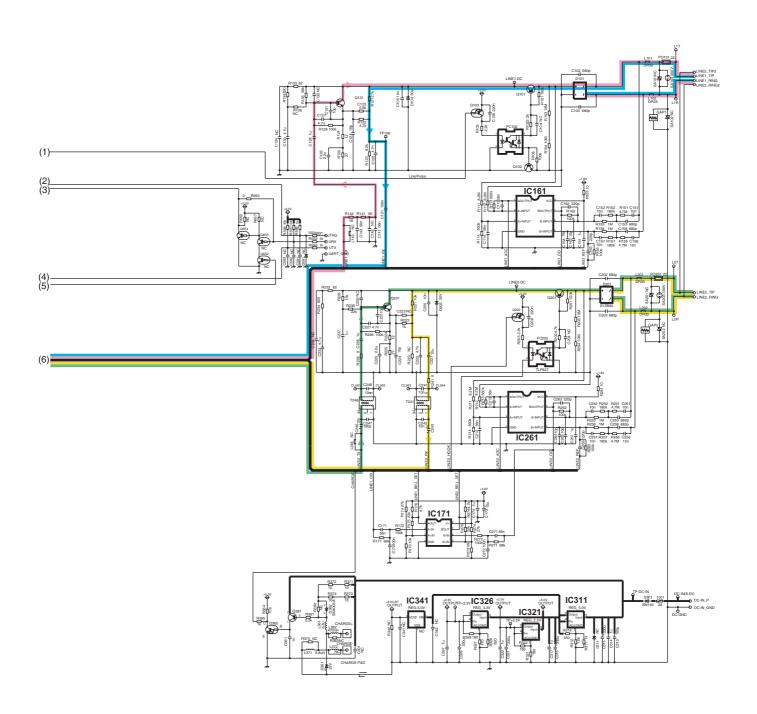
Components identified by  $\triangle$  mark have special characteristics important for safety. When replacing any of these components, use only the manufacturer's specified parts.

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

# 13.2. Schematic Diagram (Base Unit\_Main)

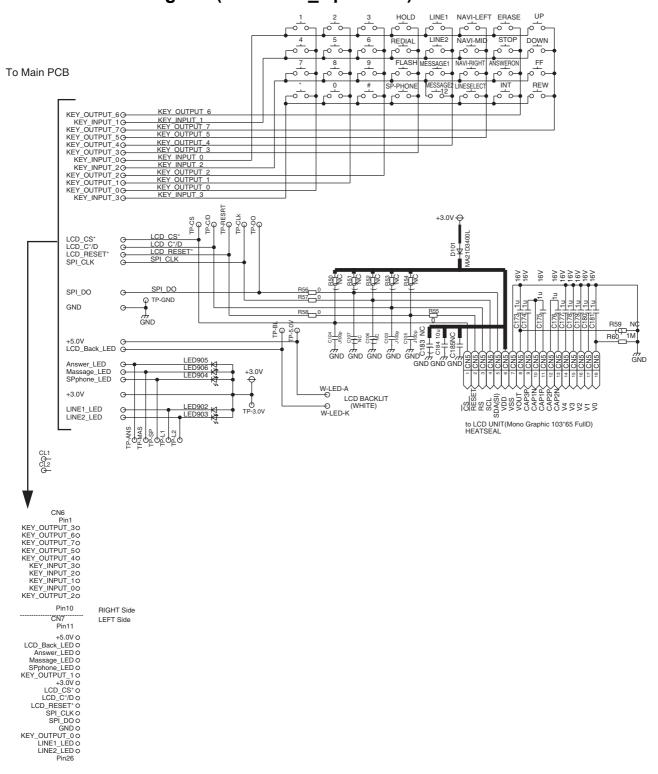


NC: No Components



NC: No Components KX-TG9385BX SCHEMATIC DIAGRAM (Base Unit\_Main)

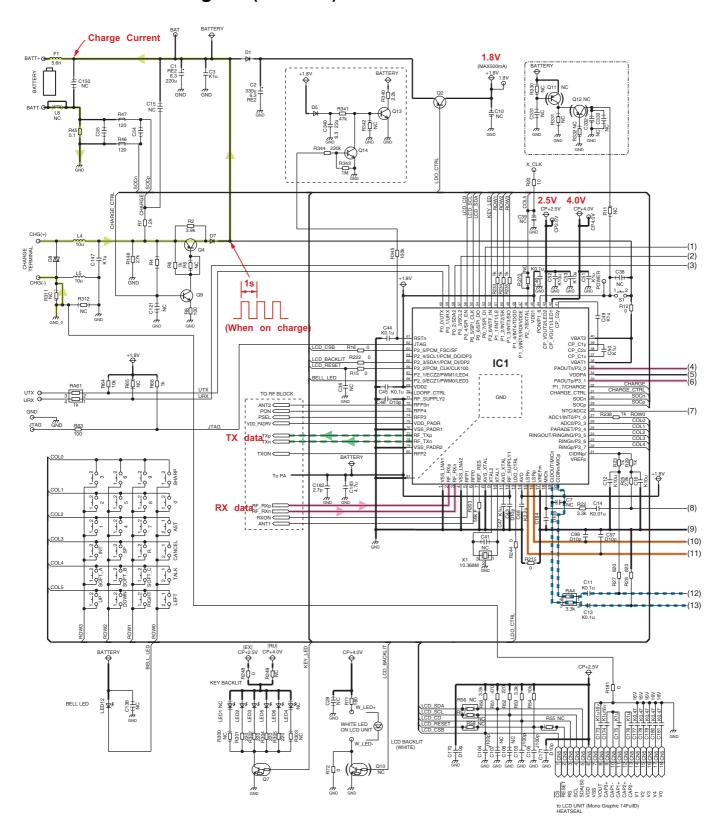
# 13.3. Schematic Diagram (Base Unit\_Operation)

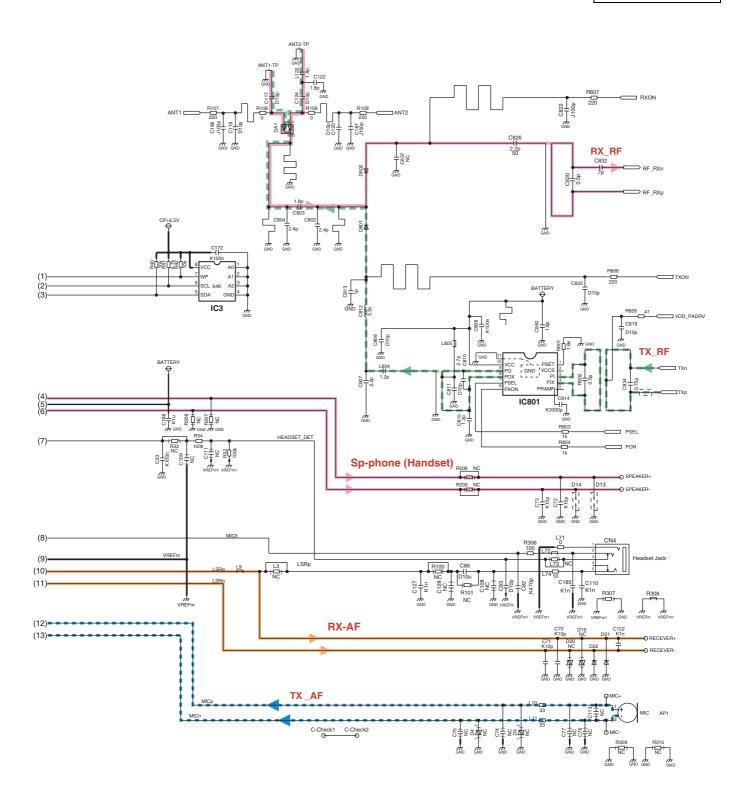


NC: No Components KX-TG9385 SCHEMATIC DIAGRAM (Base Unit\_Operation)

## Memo

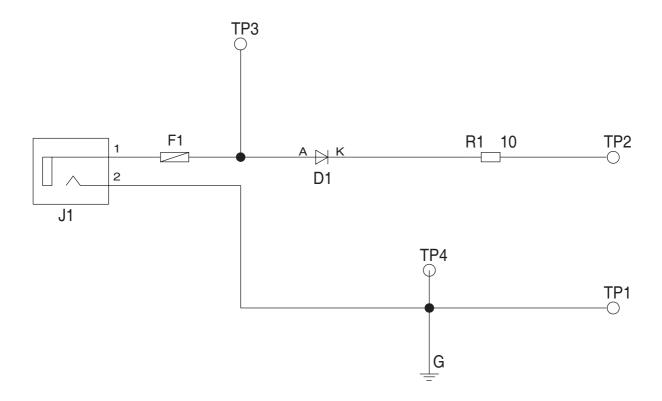
# 13.4. Schematic Diagram (Handset)





NC: No Components KX-TGA939 SCHEMATIC DIAGRAM (Handset\_Main)

# 13.5. Schematic Diagram (Charger Unit)

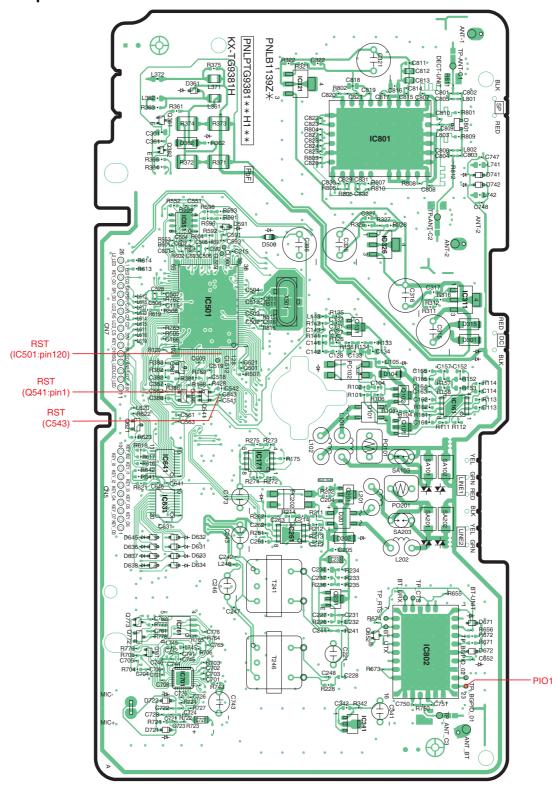


SCHEMATIC DIAGRAM (Charger Unit)

# **14 Printed Circuit Board**

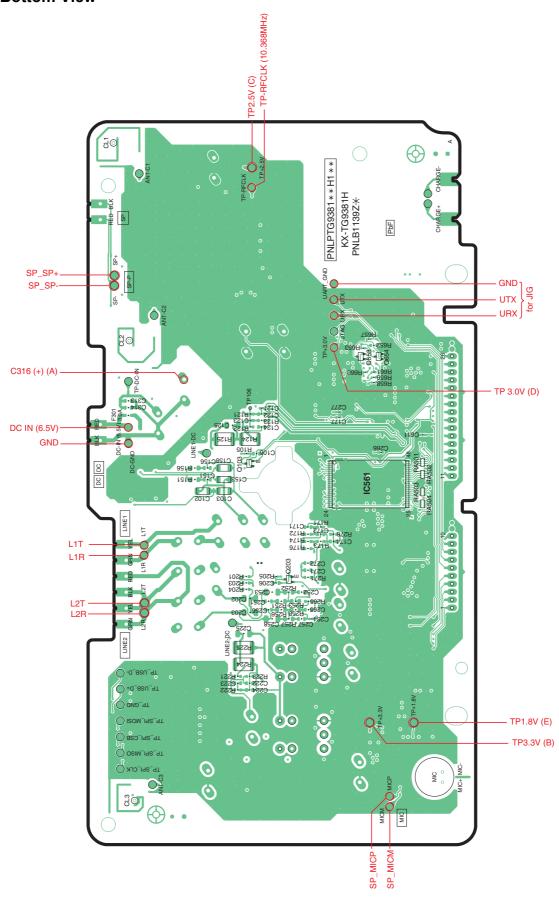
# 14.1. Circuit Board (Base Unit\_Main)

### 14.1.1. Component View



KX-TG9385 CIRCUIT BOARD (Base Unit\_Main (Component View))

#### 14.1.2. Bottom View



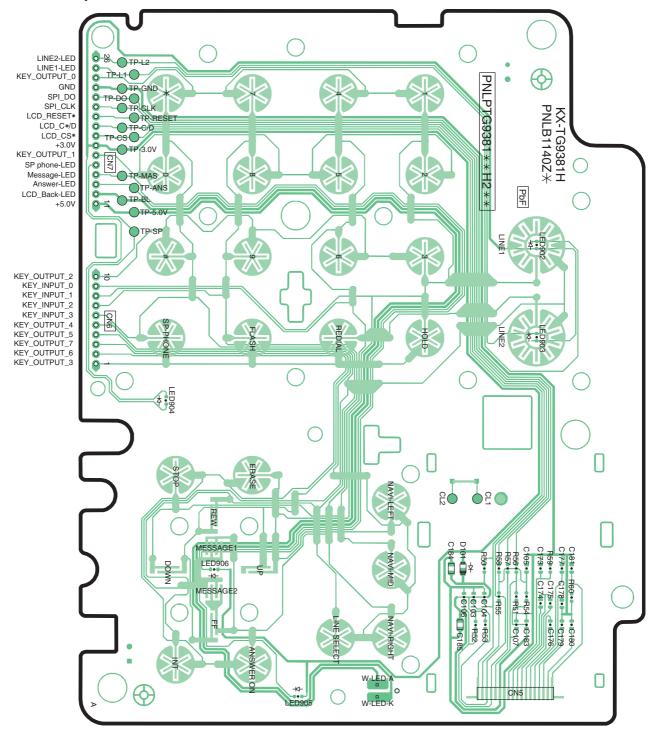
KX-TG9385 CIRCUIT BOARD (Base Unit\_Main (Bottom View))

Note:

(A) - (E) is referred to Check Point (Base Unit) (P.37)

### 14.2. Circuit Board (Base Unit\_Operation)

### 14.2.1. Component View

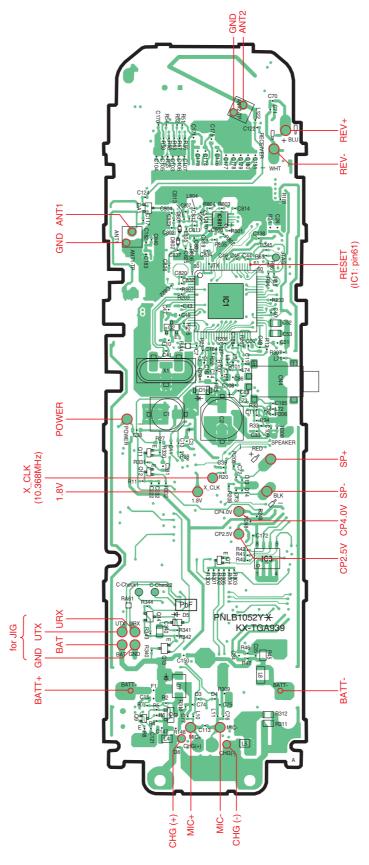


KX-TG9385 CIRCUIT BOARD (Base Unit\_Operation (Component View))

Memo

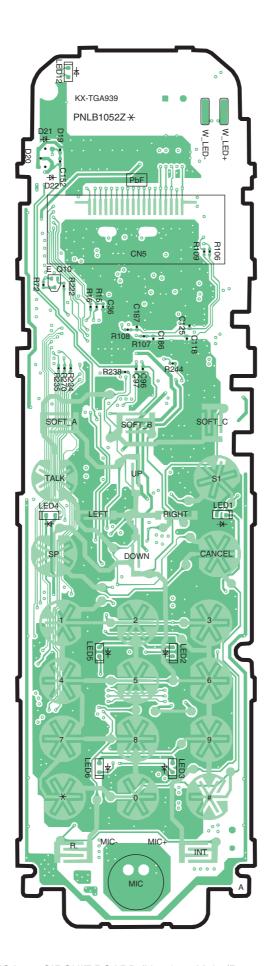
# 14.3. Circuit Board (Handset)

### 14.3.1. Component View



KX-TGA939 CIRCUIT BOARD (Handset\_Main (Component View))

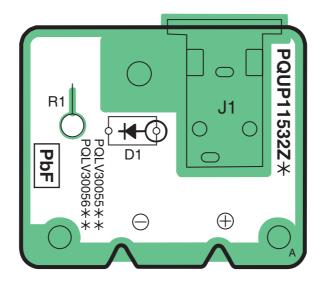
#### 14.3.2. Bottom View



KX-TGA939 CIRCUIT BOARD (Handset\_Main (Bottom View))

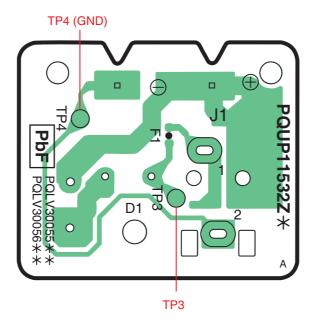
# 14.4. Circuit Board (Charger Unit)

# 14.4.1. Component View



CIRCUIT BOARD (Charger unit (Component View))

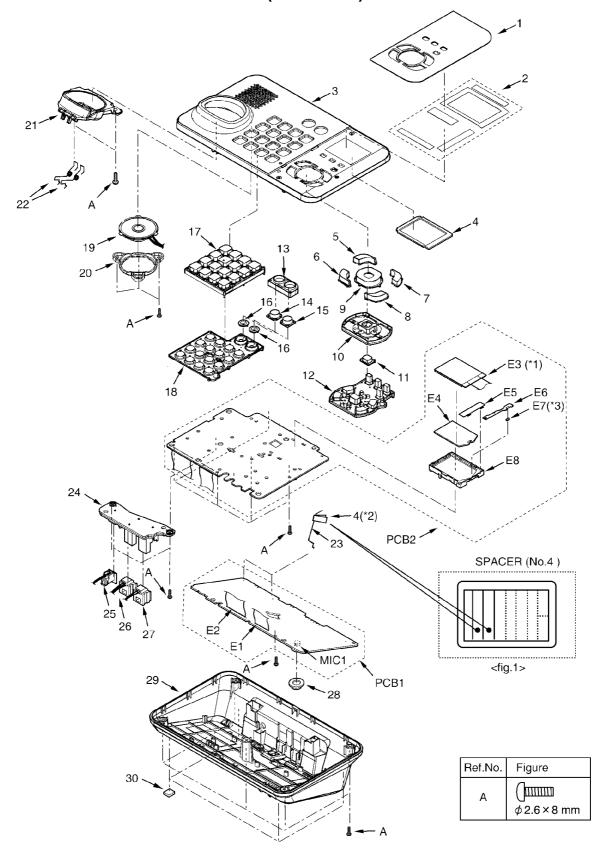
#### 14.4.2. Bottom View



CIRCUIT BOARD (Charger unit (Bottom View))

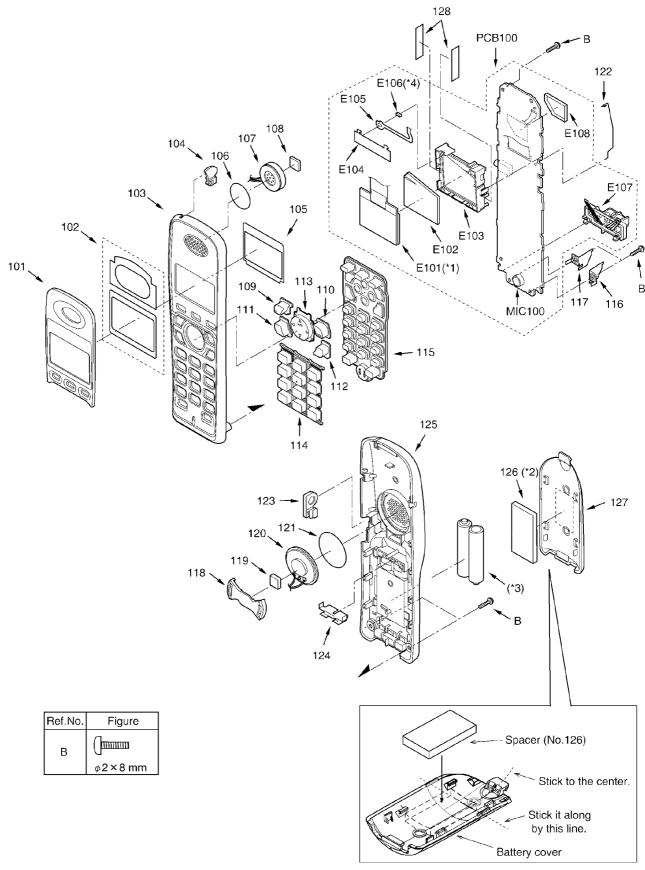
# 15 Exploded View and Replacement Parts List

### 15.1. Cabinet and Electrical Parts (Base Unit)



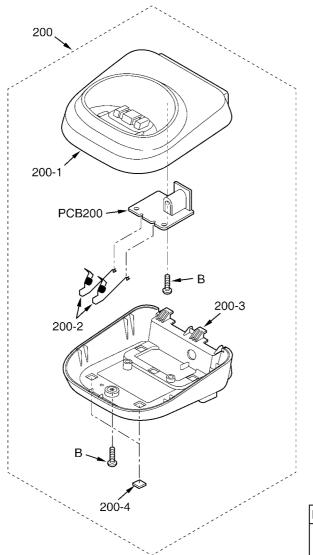
- (\*1) This cable is fixed by welding. Refer to **How to Replace the Base unit LCD** (P.47)
- (\*2) Take the necessary parts according to the figure above <fig.1>. Attach the SPACER (No. 4) to the ANNTENA (No.23).
- (\*3) Refer to Base Unit (P.66) of Terminal Guide of the ICs, Transistors and Diodes.

### 15.2. Cabinet and Electrical Parts (Handset)



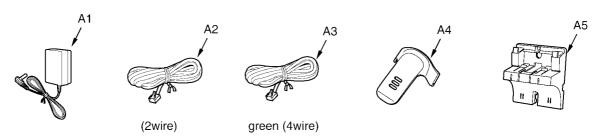
- (\*1) This cable is fixed by soldering. Refer to **How to Replace the Handset LCD** (P.49).
- (\*2) Attach the spacer (No. 126) to the exact location described above.
- (\*3) The rechargeable Ni-MH battery HHR-4MPT is available through sales route of Panasonic.
- (\*4) Refer to Handset (P.66) of Terminal Guide of the ICs, Transistors and Diodes.

# 15.3. Cabinet and Electrical Parts (Charger Unit)



Ref.No.	Figure
В	(Jumuu ø2×8 mm

# 15.4. Accessories



#### 15.5. Replacement Parts List

1. RTL (Retention Time Limited)

#### Note

The "RTL" marking indicates that its Retention Time is Limited.

When production is discontinued, this item will continue to be available only for a specific period of time.

This period of time depends on the type of item, and the local laws governing parts and product retention. At the end of this period, the item will no longer be available.

#### 2. Important safety notice

Components identified by the  $\triangle$  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.
- 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 ( $\Omega$ ) k=1000 $\Omega$ , M=1000k $\Omega$  All capacitors are in MICRO FARADS ( $\mu F$ ) p= $\mu \mu F$  \*Type & Wattage of Resistor

#### Type

ERC:Solid ERDS:Carbon ERJ:Chip		PQ4R:Chip ERS:Fusible Resistor ERF:Cement Resistor
--------------------------------------	--	--

#### Wattage

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

\*Type & Voltage Of Capacitor Type

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

#### Voltage

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

#### 15.5.1. Base Unit

#### 15.5.1.1. Cabinet and Electrical Parts

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	1	PNGP1072Y1	PANEL	PMMA-HB
	2	PNYE1017Z	TAPE, DOUBLESIDED	
	3	PNKM1105Y1	UPPER CABINET	PS-HB
	4	PNHS1030Z	SPACER, LCD CUSHION	
	5	PNBC1005Y2	BUTTON, ERASE	ABS-HB
	6	PNBC1006Y2	BUTTON, STOP	ABS-HB
	7	PNBC1004Y2	BUTTON, ANSWER ON	ABS-HB
	8	PNBC1007Y2	BUTTON, LOCATOR	ABS-HB
	9	PNBC1002Z2	BUTTON, NAVIGATOR	ABS-HB

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	10	PNHR1001Z	GUIDE, BUTTON	PS-HB
	11	PNBC1001Z2	BUTTON, MESSAGE	AS-HB
	12	PNJK1033Z	KEYBOARD SWITCH, TAM	
	13	PNHR1063Z	GUIDE, LINE BUTTON	PS-HB
	14	PNBC1246Z1	BUTTON, LINE1	AS-HB
	15	PNBC1247Z1	BUTTON, LINE2	AS-HB
	16	PNHR1066Z	PLASTIC PARTS, LENS	PS-HB
	17	PNBX1060Y1	KEYBOARD SWITCH, DIAL	ABS-HB
	18	PNJK1059Z	RUBBER SWITCH, DIAL	
	19	L0AA04A00028	SPEAKER	
	20	PQHR11082Z	GUIDE, SPEAKER	POM-HB
	21	PNKE1038Z1	CASE, CHARGE TERMINAL	PS-HB
	22	PNJT1038Z	CHARGE TERMINAL	
	23	PNLA1024Z	ANTENNA, DECT	
	24	PNHR1193Z	GUIDE, JACK HOLDER	PS-HB
	25	K2ECYZ000001	JACK, DC	
	26	PNJJ041001Y	JACK, MODULAR	
	27	PQJJ1T039R	JACK, MODULAR	
	28	PQMG10025W	RUBBER PARTS, MIC	
	29	PNKF1079Y1	LOWER CABINET	PS-HB
	30	PQHA10023Z	RUBBER PARTS, FOOT CUSHION	

### 15.5.1.2. Main P.C.Board Parts

- (\*1) When replacing IC551, IC561, IC761 or X501, data needs to be written to them with PNZZTG9385BX. Refer to How to download the data (P.58) of Things to Do after Replacing IC or X'tal (P.58).
- (\*2) When replacing IC701, refer to **How to Replace the LLP (Leadless Leadframe Package) IC** (P.64).
- (\*3) IC561 and IC761 need software downloading. Refer to How to download the data (P.58) of Things to Do after Replacing IC or X'tal.
- (\*4) When replacing IC, it is necessary to adjust using JIG.

Safety	Ref.	Part No.	Part Name & Description	Domarke
Salety	No.	Part No.	rait Name & Description	Kemarks
	PCB1	PNWP19385BXH	MAIN P.C.BOARD ASS'Y (RTL) (*4)	
			(ICs)	
	IC161	C0ABBA000233	IC	
	IC171	C0BBBA000022	IC	
	IC261	C0ABBA000233	IC	
	IC311	COCBAYG00016	IC	S
	IC321	COCBAYG00016	IC	S
	IC326	COCBAYG00016	IC	S
	IC501	C1CB00002704	IC	
	IC551	PNWIG9385BXH	IC (EEPROM) (*1)	
	IC561	C3FBLY000058	IC (FLASH MEMORY 1) (*1) (*3)	
	IC631	C0JBAF000223	IC	
	IC641	C0JBAF000223	IC	
	IC701	C1CB00002427	IC (*2)	
	IC761	C3FBMY000195	IC (FLASH MEMORY 2) (*1) (*3)	
	Q541	C0EBE0000528	IC	
			(TRANSISTORS)	
	Q101	B1ADGP000008	TRANSISTOR(SI)	
	Q102	B1BBAP000021	TRANSISTOR(SI)	
	Q103	UN5113	TRANSISTOR (SI)	S
	Q131	2SD0874AS	TRANSISTOR(SI)	
	Q201	B1ADGP000008	TRANSISTOR(SI)	
	Q203	UN5113	TRANSISTOR (SI)	S
	Q231	2SD0874AS	TRANSISTOR(SI)	S
	Q361	2SB1218A	TRANSISTOR(SI)	
	Q362	UNR92A2J0L	TRANSISTOR(SI)	
	Q381	B1ADGE000004	TRANSISTOR(SI)	
	Q386	B1ADGE000004	TRANSISTOR(SI)	

Safety	Ref.	Part No.	Part Name & Description	Remarks
	No. Q621	P1 ADCEOGOGG	TRANSISTOR(SI)	c
				s
	Q761	PQVTDTC143E	TRANSISTOR (SI)	S
	Q772		TRANSISTOR (SI)	
	Q773	UN5213	TRANSISTOR (SI)	
	-101		(DIODES)	
	D101	B0EDER000009		_
	D104	MA1Z300	DIODE(SI)	s
	D201	B0EDER000009	DIODE (SI)	
	D202	MA1Z300	DIODE(SI)	s
	D301	војсме000035	DIODE(SI)	
	D361	MA8220	DIODE(SI)	s
	D362	B0ECKM000008	DIODE(SI)	
	D500	MA21D3400L	DIODE(SI)	
	D631	188355	DIODE(SI)	s
	D632	1SS355	DIODE(SI)	S
	D633	1ss355	DIODE(SI)	s
	D634	1SS355	DIODE(SI)	S
	D636	1SS355	DIODE(SI)	s
	D637	1SS355	DIODE(SI)	S
	D638	188355	DIODE(SI)	S
	D645	1ss355	DIODE(SI)	s
	D741	MAZ805100L	DIODE(SI)	
	D742	MAZ805100L	DIODE(SI)	
	D801	B0DDCM000001		
			(COILS)	
	L361	G1C6R8MA0072		
	L362	G1CR47J00005		
	L371	G1C6R8MA0072		
	L611	PQLQR4F601ST	COIL	S
	L612	PQLQR4F601ST	COIL	s
	L613	PQLQR4F601ST	COIL	s
	L614	PQLQR4F601ST	COIL	s
	L615	PQLQR4F601ST	COIL	s
	L616	PQLQR4F601ST		S
	L617	PQLQR4F601ST		s
	L618	PQLQR4F601ST		S
	L619	PQLQR4F601ST		s
	L620	PQLQR4F601ST		S
	L741	PQLQR1WT	COIL	s
	L742	PQLQR1WT	COIL	S
	L745	PQLQR1RS241	COIL	s
	L746	PQLQR1RS241	COIL	s
	L803	ELJRF33NJFB	COIL	s
	C801	MQLRF6N8JFB	COIL	
	C804	MQLRF6N8JFB	COIL	
	C809	ELJRF1N5ZFB		s
	C809	ELUKE INSZED	COIL	٥
			(COMPONENTS PARTS)	
	L101	EXCELDR35	COMPONENTS PARTS	
	L102	EXCELDR35	COMPONENTS PARTS	
	L201	EXCELDR35	COMPONENTS PARTS	
	L202	EXCELDR35	COMPONENTS PARTS	
	RA501	EXB28V101JX	RESISTOR ARRAY	
	RA502	EXB28V101JX	RESISTOR ARRAY	
	RA503	EXB28V101JX	RESISTOR ARRAY	
	RA504	EXB28V101JX	RESISTOR ARRAY	
			(PHOTO ELECTRIC TRANS- DUCERS)	
	PC102	B3PBB0000039	(PHOTO ELECTRIC TRANS- DUCERS) PHOTO ELECTRIC TRANS- DUCER	
	PC102 PC202		DUCERS) PHOTO ELECTRIC TRANS-	
			DUCERS) PHOTO ELECTRIC TRANS- DUCER PHOTO ELECTRIC TRANS-	
			DUCERS) PHOTO ELECTRIC TRANS- DUCER PHOTO ELECTRIC TRANS- DUCER	s
	PC202	B3PBB0000039	DUCERS) PHOTO ELECTRIC TRANS- DUCER PHOTO ELECTRIC TRANS- DUCER (VARISTORS)	s
	PC202 SA103	B3PBB0000039	DUCERS) PHOTO ELECTRIC TRANS- DUCER PHOTO ELECTRIC TRANS- DUCER (VARISTORS) VARISTOR VARISTOR	
	PC202 SA103 SA203	B3PBB0000039 PQVDDSS301L PQVDDSS301L	DUCERS) PHOTO ELECTRIC TRANS- DUCER PHOTO ELECTRIC TRANS- DUCER (VARISTORS) VARISTOR VARISTOR (TRANSFORMERS)	
	PC202 SA103 SA203	B3PBB0000039  PQVDDSS301L PQVDDSS301L PFLT8D001	DUCERS) PHOTO ELECTRIC TRANS- DUCER PHOTO ELECTRIC TRANS- DUCER (VARISTORS) VARISTOR VARISTOR (TRANSFORMERS) TRANSFORMER	
	PC202 SA103 SA203	B3PBB0000039 PQVDDSS301L PQVDDSS301L	DUCERS) PHOTO ELECTRIC TRANS- DUCER PHOTO ELECTRIC TRANS- DUCER (VARISTORS) VARISTOR VARISTOR (TRANSFORMERS) TRANSFORMER TRANSFORMER	
	PC202 SA103 SA203	B3PBB0000039  PQVDDSS301L PQVDDSS301L PFLT8D001	DUCERS) PHOTO ELECTRIC TRANS- DUCER PHOTO ELECTRIC TRANS- DUCER (VARISTORS) VARISTOR VARISTOR (TRANSFORMERS) TRANSFORMER	
	PC202 SA103 SA203	B3PBB0000039  PQVDDSS301L PQVDDSS301L PFLT8D001	DUCERS) PHOTO ELECTRIC TRANS- DUCER PHOTO ELECTRIC TRANS- DUCER (VARISTORS) VARISTOR VARISTOR (TRANSFORMERS) TRANSFORMER TRANSFORMER	
	PC202 SA103 SA203 T241 T246	B3PBB0000039  PQVDDSS301L PQVDDSS301L  PFLT8D001  PFLT8D001	DUCERS) PHOTO ELECTRIC TRANS- DUCER PHOTO ELECTRIC TRANS- DUCER (VARISTORS) VARISTOR VARISTOR (TRANSFORMERS) TRANSFORMER TRANSFORMER (RESISTORS)	
	PC202  SA103  SA203  T241  T246  R101	B3PBB0000039  PQVDDSS301L PQVDDSS301L  PFLT8D001  PFLT8D001  ERJ3GEYJ104	DUCERS) PHOTO ELECTRIC TRANS- DUCER PHOTO ELECTRIC TRANS- DUCER (VARISTORS) VARISTOR VARISTOR (TRANSFORMERS) TRANSFORMER TRANSFORMER (RESISTORS) 100k	s
	PC202 SA103 SA203 T241 T246 R101 R102	PQVDDSS301L PQVDDSS301L PQVDDSS301L PFLT8D001 PFLT8D001 ERJ3GEYJ104 PQ4R10XJ222	DUCERS) PHOTO ELECTRIC TRANS- DUCER PHOTO ELECTRIC TRANS- DUCER (VARISTORS) VARISTOR VARISTOR (TRANSFORMERS) TRANSFORMER TRANSFORMER (RESISTORS) 100k 2.2k	s
	PC202  SA103  SA203  T241  T246  R101  R102  R103	PQVDDSS301L PQVDDSS301L PQVDDSS301L PFLT8D001 PFLT8D001 ERJ3GEYJ104 PQ4R10XJ222 ERJ3GEYJ106	DUCERS) PHOTO ELECTRIC TRANS- DUCER PHOTO ELECTRIC TRANS- DUCER (VARISTOR) VARISTOR (TRANSFORMERS) TRANSFORMER TRANSFORMER (RESISTORS) 100k 2.2k 10M	s

				L	KX-	TG	385	BXT/F	(X-T	GA939BXT
Safety	Ref. No.	Part No.	Part	Name	£	De	scr	ipti	on	Remarks
	R111	ERJ3GEYJ825	8.2M							
	R112	ERJ3GEYJ825	8.2M							
	R113	ERJ3GEYJ564	560k							
	R114 R120	ERJ3GEYJ564 ERJ2GEJ222	560k							
	R121	ERJ3GEYJ273	2.2k 27k							
	R122	ERJ3GEYJ472	4.7k							
	R123	ERJ3GEYJ822	8.2k							
	R124	ERJ12YJ120	12							
	R125	ERJ12YJ270	27							
	R126	ERJ3GEYJ104	100k							
	R133	ERJ3GEYJ820	82							
	R134 R135	ERJ3GEYJ821 ERJ3GEYJ393	820 39k							
	R141	ERJ3GEYJ560	56							
	R142	ERJ3GEYJ180	18							
	R151	PQ4R10XJ475	4.7M							s
	R152	PQ4R10XJ184	180k							s
	R153	PQ4R10XJ105	1M							s
	R156	PQ4R10XJ475	4.7M							s
	R157	PQ4R10XJ184	180k							S
	R158	PQ4R10XJ105	1M							S
ļ	R161	ERJ2GEJ100	10							
	R162	ERJ3GEYJ563	56k							
	R165	ERJ3GEYJ563 ERJ2GEJ222	56k 2.2k							
	R168 R171	ERJ3GEYJ273	27k							
	R172	ERJ3GEYJ104	100k							
	R173	ERJ3GEYJ103	10k							
	R174	ERJ3GEYJ273	27k							
	R175	ERJ3GEYJ223	22k							
	R176	ERJ3GEYJ472	4.7k							
	R201	ERJ3GEYJ104	100k							
	R202	PQ4R10XJ472	4.7k							s
	R203	ERJ3GEYJ106	10M							
	R204 R205	ERJ3GEYJ106 ERJ2GEJ222	10M 2.2k							
	R211	ERJ3GEYJ825	8.2M							
	R212	ERJ3GEYJ825	8.2M							
	R213	ERJ3GEYJ564	560k							
	R214	ERJ3GEYJ564	560k							
	R221	ERJ3GEYJ103	10k							
	R222	ERJ3GEYJ102	1k							
	R224	ERJ12YJ120	12							
	R225	ERJ12YJ270	27							
	R226 R228	ERJ3GEYJ104 ERJ3GEY0R00	100k 0							
	R233	ERJ3GEYJ820	82							
	R234	ERJ3GEYJ821	820							
	R235	ERJ3GEYJ153	15k							
	R236	ERJ3GEYJ223	22k							
	R241	ERJ3GEY0R00	0							
	R251	PQ4R10XJ475	4.7M							s
	R252	PQ4R10XJ184	180k							S
<b></b>	R253	PQ4R10XJ105	1M							S
	R256 R257	PQ4R10XJ475 PQ4R10XJ184	4.7M 180k							s
	R258	PQ4R10XJ105	160K							s
	R261	ERJ2GEJ100	10							-
	R262	ERJ3GEYJ563	56k							
	R265	ERJ3GEYJ563	56k							
	R271	ERJ3GEYJ273	27k							
	R272	ERJ3GEYJ104	100k							
ļ	R273	ERJ3GEYJ103	10k							
	R274	ERJ3GEYJ273	27k							
	R275	ERJ3GEYJ223	22k							
	R276 R311	ERJ3GEYJ472 ERJ3GEYJ102	4.7k 1k							
	R311	ERJ2GEJ122	1.2k							
	R316	ERJ3GEYJ181	180							
	R321	ERJ3GEYJ181	180							
	R322	ERJ3GEYJ181	180							
	R326	ERJ3GEYJ821	820							
		•								

Safety   Ref.   Part No.   Part Name & Description   Remark   R327   REAJGEN/101   100	KX-10930		•		
R327	Safety		Part No.	Part Name & Description	Remarks
R328 ERJ3GEYJ181 180 R361 ERJ3GEYJ1932 3.3k R364 ERJ3GEYJ103 10k R365 ERJ3GEYJ102 1k R371 ERJ1ZYJ100 10 R372 ERJ1ZYJ100 10 R373 ERJ1ZYJ100 10 R374 ERJ1ZYJ100 10 R374 ERJ3GEYJ133 13k S R383 ERJ3GEYJ133 13k S R383 ERJ3GEYJ133 13k S R383 ERJ3GEYJ133 13k S R386 ERJ2GEJ133 15k R428 ERJ2GEJ133 15k R428 ERJ2GEJ133 15k R428 ERJ2GEZ153 15k R428 ERJ2GEZ153 15k R556 ERJ3GEYJ103 10k R516 ERJ3GEYJ103 10k R516 ERJ3GEZYJ103 10k R518 ERJ3GEZYJ103 10k R519 ERJ3GEZYJ102 1k R553 ERJ3GEZYJ102 1k R554 ERJ3GEZYJ102 1k R557 ERJ3GEZYJ102 1k R558 ERJ3GEZYJ103 10k R601 ERJ3GEZYJ103 10k R616 ERJ3GEZYJ103 10k R616 ERJ3GEZYJ103 10k R617 ERJ3GEZYJ103 10k R618 ERJ3GEZYJ103 10k R619 ERJ3GEZYJ103 10k R610 ERJ3GEZYJ103 10k R611 ERJ3GEZYJ103 10k R612 ERJ3GEZYJ103 10k R613 ERJ3GEZYJ103 10k R614 ERJ3GEZYJ103 10k R615 ERJ3GEZYJ103 10k R616 ERJ3GEZYJ103 10k R617 ERJ3GEZYJ103 10k R618 ERJ3GEZYJ103 10k R619 ERJ3GEZYJ103 10k R619 ERJ3GEZYJ103 10k R610 ERJ2GEJ104 1000k R704 ERJ3GEZYJ103 10k R611 ERJ3GEZYJ103 10k R612 ERJ3GEZYJ103 10k R613 ERJ3GEZYJ103 10k R614 ERJ3GEZYJ103 10k R615 ERJ3GEZYJ103 10k R616 ERJ2GEJ104 1000k R617 ERJ3GEZYJ103 10k R618 ERJ3GEZYJ103 10k R619 ERJ3GEZYJ103 10k R619 ERJ3GEZYJ103 10k R619 ERJ3GEZYJ103 10k R610 ERJ2GEJ104 1000k R600 ERJ3GEZYJ103 10k R600			ER.T2GE.T471	470	
R361 ERJ3GEYJ132 3.3k R364 ERJ3GEYJ102 1k R3765 ERJ3GEYJ102 1k R3711 ERJ12YJ100 10 R3772 ERJ12YJ100 10 R373 ERJ12YJ100 10 R374 ERJ12YJ100 10 R374 ERJ12YJ100 10 R374 ERJ3GEYJ512 5.6k R382 ERJ3GEYJ513 13k S R383 ERJ3GEYJ513 13k S R383 ERJ3GEYJ513 15k R428 ERJ3GEYJ513 15k R428 ERJ3GEYJ103 10k R507 ERJ3GEYJ103 10k R508 ERJ3GEYJ103 10k R516 ERJ3GEYJ103 10k R516 ERJ3GEYJ103 10k R516 ERJ3GEYJ103 10k R591 ERJ3GEYJ103 10k R591 ERJ3GEYJ103 10k R591 ERJ3GEYJ103 10k R592 ERJ3GEYJ103 10k R593 ERJ3GEYJ103 10k R594 ERJ3GEYJ103 10k R596 ERJ3GEYJ103 10k R696 ERJ3GEYJ103 10k R697 ERJ3GEYJ103 10k R698 ERJ3GEYJ103 10k R601 ERJ3GEYJ103 10k R614 ERJ3GEYJ103 10k R618 ERJ3GEYJ103 10k R619 ERJ3GEYJ103 10k R619 ERJ3GEYJ103 10k R610 ERJ3GEYJ103 10k R611 ERJ3GEYJ103 10k R612 ERJ3GEYJ103 10k R613 ERJ3GEYJ103 10k R614 ERJ3GEYJ103 10k R615 ERJ3GEYJ103 10k R616 ERJ3GEYJ103 10k R617 ERJ3GEYJ103 10k R618 ERJ3GEYJ103 10k R619 ERJ3GEYJ103 10k R619 ERJ3GEYJ103 10k R619 ERJ3GEYJ103 10k R610 ERJ3GEYJ103 10k R611 ERJ3GEYJ103 10k R612 ERJ3GEYJ103 10k R613 ERJ3GEYJ103 10k R614 ERJ3GEYJ103 10k R618 ERJ3GEYJ103 10k R619 ERJ3GEYJ103 10k R619 ERJ3GEYJ103 10k R619 ERJ3GEYJ103 10k R610 ERJ3GEY					
R365 ERJ3GEYJ102 1k R371 ERJ12YJ100 10 R373 ERJ12YJ100 10 R373 ERJ12YJ100 10 R374 ERJ12YJ100 10 R381 ERJ3GEYJ562 5.6k R382 ERJ3GEYJ562 5.6k R382 ERJ3GEYJ53 13k S R383 ERJ3EKF561 5.6k R386 ERJ2GEJ53 15k R428 ERJ2GEJ2153 15k R428 ERJ2GEJ22 2.2k R505 ERJ2GEJ473 47k R507 ERJ3GEYJ103 10k R508 ERJ3GEYJ102 10k R551 ERJ2GEJ21 2.2k R554 ERJ2GEJ22 2.2k R554 ERJ3GEYJ102 1k R591 ERJ3GEYJ102 1k R592 ERJ3GEYJ102 1k R593 ERJ3GEYJ102 1k R596 ERJ3GEYJ102 1k R597 ERJ3GEYJ103 10k R691 ERJ3GEYJ103 10k R691 ERJ3GEYJ104 100k R601 ERJ2GEJ104 100k R603 ERJ3GEYJ103 10k R601 ERJ3GEYJ103 10k R601 ERJ2GEJ104 100k R604 ERJ2GEJ104 100k R605 ERJ3GEYJ103 10k R606 ERJ3GEYJ103 10k R601 ERJ2GEJ104 100k R601 ERJ2GEJ104 100k R604 ERJ2GEJ104 100k R605 ERJ3GEYJ103 10k R606 ERJ3GEYJ103 10k R606 ERJ3GEYJ103 10k R601 ERJ2GEJ104 100k R601 ERJ2GEJ104 100k R604 ERJ2GEJ104 100k R605 ERJ3GEYJ103 10k R606 ERJ3GEYJ103 10k R606 ERJ3GEYJ103 10k R616 ERJ3GEYJ103 10k R616 ERJ3GEYJ103 10k R617 ERJ3GEYJ103 10k R618 ERJ3GEYJ103 10k R619 ERJ3GEYJ103 10k R619 ERJ3GEYJ103 10k R610 ERJ3GEYJ103 10k R611 ERJ3GEYJ103 10k R612 ERJ3GEYJ103 10k R613 ERJ3GEYJ103 10k R614 ERJ3GEYJ103 10k R615 ERJ3GEYJ103 10k R616 ERJ3GEYJ103 10k R617 ERJ3GEYJ103 10k R618 ERJ3GEYJ103 10k R619 ERJ3GEYJ103 10k R619 ERJ3GEYJ103 10k R619 ERJ3GEYJ103 10k R619 ERJ3GEYJ103 10k R610 ERJ2GEJ101 100 R611 ERJ3GEYJ103 10k R612 ERJ3GEYJ103 10k R614 ERJ3GEYJ103 10k R615 ERJ3GEYJ103 10k R616 ERJ3GEYJ103 10k R617 ERJ3GEYJ103 10k R618 ERJ3GEYJ103 10k R619 ERJ3GEYJ103 10k R610 ERJ3GEYJ103 10k R611 ERJ3GEYJ103 10k R611 ERJ3GEYJ103 10k R612 ERJ3GEYJ103 10k R614 ERJ3GEYJ103 10k R615 ERJ2GEJ101 100 R618 ERJ3GEYJ103 10k R619 ERJ3GEYJ103 10k R610 ERJ3GEYJ103 10k R610 E					
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R723 ERJ2GEJ222 2.2k R724 ERJ2GEJ222 2.2k R727 ERJ2GEJ331 330 R743 ERJ3GEYJ6R8 6.8 R764 ERJ2GEJ561 560 R765 ERJ2GEJ473 47k R776 ERJ2GEJ473 47k R777 ERJ3GEYJ223 22k R801 ERJ3GEYJ181 180 R803 ERJ2GEJ561 560 R804 ERJ2GEJ561 560 R806 ERJ2GEJ331 330 R807 ERJ3GEYJ102 1k R808 ERJ2GEJ561 560 R809 ERJ3GEYJ181 180 R810 ERJ3GEYJ102 1k R811 FIG1H3R3A562 1k R811 FIG1H3R3A562 1k				·	
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R727 ERJ2GEJ331 330  R743 ERJ3GEYJ6R8 6.8  R764 ERJ2GEJ561 560  R765 ERJ2GEJ473 47k  R776 ERJ2GEJ473 47k  R777 ERJ3GEYJ223 22k  R801 ERJ3GEYJ181 180  R803 ERJ2GEJ561 560  R804 ERJ2GEJ561 560  R806 ERJ2GEJ331 330  R807 ERJ3GEYJ102 1k  R808 ERJ2GEJ561 560  R809 ERJ3GEYJ181 180  R810 ERJ3GEYJ102 1k  R811 FIG1H3R3A562 1k  R812 ECUE1H100DCQ 10p					
R743 ERJ3GEYJ6R8 6.8  R764 ERJ2GEJ561 560  R765 ERJ2GEJ473 47k  R776 ERJ2GEJ473 47k  R777 ERJ3GEYJ223 22k  R801 ERJ3GEYJ181 180  R803 ERJ2GEJ561 560  R804 ERJ2GEJ561 560  R806 ERJ2GEJ331 330  R807 ERJ3GEYJ102 1k  R808 ERJ2GEJ561 560  R809 ERJ3GEYJ181 180  R810 ERJ2GEJ561 560					
R764 ERJ2GEJ561 560  R765 ERJ2GEJ473 47k  R776 ERJ2GEJ473 47k  R777 ERJ3GEYJ223 22k  R801 ERJ3GEYJ181 180  R803 ERJ2GEJ561 560  R804 ERJ2GEJ561 560  R806 ERJ2GEJ331 330  R807 ERJ3GEYJ102 1k  R808 ERJ2GEJ561 560  R809 ERJ3GEYJ181 180  R810 ERJ2GEJ561 560  R811 F1G1H3R3A562 1k  R812 ECUE1H100DCQ 10p					
R765 ERJ2GEJ473 47k  R776 ERJ2GEJ473 47k  R777 ERJ3GEYJ223 22k  R801 ERJ3GEYJ181 180  R803 ERJ2GEJ561 560  R804 ERJ2GEJ561 560  R806 ERJ2GEJ331 330  R807 ERJ3GEYJ102 1k  R808 ERJ2GEJ561 560  R809 ERJ3GEYJ181 180  R810 ERJ2GEJ561 560  R811 F1G1H3R3A562 1k  R812 ECUE1H100DCQ 10p					
R776 ERJ2GEJ473 47k  R777 ERJ3GEYJ223 22k  R801 ERJ3GEYJ181 180  R803 ERJ2GEJ561 560  R804 ERJ2GEJ561 560  R806 ERJ2GEJ331 330  R807 ERJ3GEYJ102 1k  R808 ERJ2GEJ561 560  R809 ERJ3GEYJ181 180  R810 ERJ2GEJ473 47k  R811 F1G1H3R3A562 1k  R812 ECUE1H100DCQ 10p					
R777 ERJ3GEYJ223 22k  R801 ERJ3GEYJ181 180  R803 ERJ2GEJ561 560  R804 ERJ2GEJ561 560  R806 ERJ2GEJ331 330  R807 ERJ3GEYJ102 1k  R808 ERJ2GEJ561 560  R809 ERJ3GEYJ181 180  R810 ERJ2GEJ473 47k  R811 F1G1H3R3A562 1k  R812 ECUE1H100DCQ 10p					
R801 ERJ3GEYJ181 180  R803 ERJ2GEJ561 560  R804 ERJ2GEJ561 560  R806 ERJ2GEJ331 330  R807 ERJ3GEYJ102 1k  R808 ERJ2GEJ561 560  R809 ERJ3GEYJ181 180  R810 ERJ2GEJ473 47k  R811 F1G1H3R3A562 1k  R812 ECUE1H100DCQ 10p					
R803 ERJ2GEJ561 560  R804 ERJ2GEJ561 560  R806 ERJ2GEJ331 330  R807 ERJ3GEYJ102 1k  R808 ERJ2GEJ561 560  R809 ERJ3GEYJ181 180  R810 ERJ2GEJ473 47k  R811 F1G1H3R3A562 1k  R812 ECUE1H100DCQ 10p					
R804 ERJ2GEJ561 560  R806 ERJ2GEJ331 330  R807 ERJ3GEYJ102 1k  R808 ERJ2GEJ561 560  R809 ERJ3GEYJ181 180  R810 ERJ2GEJ473 47k  R811 F1G1H3R3A562 1k  R812 ECUE1H100DCQ 10p					
R806 ERJ2GEJ331 330  R807 ERJ3GEYJ102 1k  R808 ERJ2GEJ561 560  R809 ERJ3GEYJ181 180  R810 ERJ2GEJ473 47k  R811 F1G1H3R3A562 1k  R812 ECUE1H100DCQ 10p					
R807 ERJ3GEYJ102 1k R808 ERJ2GEJ561 560 R809 ERJ3GEYJ181 180 R810 ERJ2GEJ473 47k R811 F1G1H3R3A562 1k R812 ECUE1H100DCQ 10p					
R808 ERJ2GEJ561 560 R809 ERJ3GEYJ181 180 R810 ERJ2GEJ473 47k R811 F1G1H3R3A562 1k R812 ECUE1H100DCQ 10p					
R809 ERJ3GEYJ181 180 R810 ERJ2GEJ473 47k R811 F1G1H3R3A562 1k R812 ECUE1H100DCQ 10p					
R810 ERJ2GEJ473 47k R811 F1G1H3R3A562 1k R812 ECUE1H100DCQ 10p					
R811 F1G1H3R3A562 1k R812 ECUE1H100DCQ 10p					1
R812 ECUE1H100DCQ 10p					
				=	
		!	!	1	<u> </u>

Safety	Ref. No. PO101	Part No.	Part Name & Description	
	PO101	PFRT002 PFRT002	0k 0k	s s
	PO201	PFRTUUZ	(CAPACITORS)	5
	C102	F1K2J681A006		
	C103	F1K2J681A006	_	
	C105	ECUV1H103KBV	-	
	C106	ECUV1A224KBV		
	C113	ECUV1C563KBV	0.056	
	C114	ECUV1C563KBV	0.056	
	C115	ECUE1H102KBQ	0.001	
	C121	ECUE1A104KBQ	0.1	
	C122	ECUV1H472KBV	0.0047	
	C124	ECUV1H100DCV	10p	
	C125	F1K1C2250005		
	C127	ECUV1H472KBV		
	C128	ECUV1A105KBV		
	C131	ECUE1H100DCQ	_	
	C133	F1K1C4750023		
	C141	ECUV1C563KBV		
	C143	ECJ0EB1A563K		s
	C151	ECUV1C103KBV		
	C152	ECUV1C103KBV		
	C153	F1K2J681A006 ECUV1C103KBV		
	C156	ECUVICIO3KBV		
	C157	F1K2J681A006		
	C161	ECUV1A105KBV	_	
	C162	ECUV1H221JCV		
	C163	ECUE1H100DCQ	-	
	C164	ECUE1H100DCQ	-	
	C165	ECUV1H221JCV	-	
	C166	ECUE1H102KBQ	-	
	C172	ECUV1C104KBV	0.1	
	C173	F2A1C1000030	10	
	C174	ECUV1A105KBV	1	
	C177	ECUE1H102KBQ	0.001	
	C202	F1K2J681A006	680p	
	C203	F1K2J681A006	680p	
	C205	ECUV1H103KBV	0.01	
	C206	ECUV1A224KBV	0.22	
	C213	ECUV1C563KBV		
	C214	ECUV1C563KBV		s
	C215	ECUE1H102KBQ		
	C221	F2A1C1000030		
	C222	ECUV1H472KBV		
	C224	ECUV1H100DCV	_	
	C225	F1K1C2250005		
	C227	ECUV1H472KBV		
	C228	ECUV1A105KBV		
	C231	ECUE1H100DCQ F1K1C4750023	=	
	C233	ECUV1C105KBV		
	C237	ECUE1C103KBQ		
	C241	ECUE1C103KBQ		
	C243	ECEA1HKS010	1	
	C246	F2A1C1000030		
	C247	ECUE1H181JCQ		
	C248	ECUE1C103KBQ	_	
	C251	ECUV1C103KBV		
	C252	ECUV1C103KBV		
	C253	F1K2J681A006		
	C256	ECUV1C103KBV	0.01	
	C257	ECUV1C103KBV	0.01	
	C258	F1K2J681A006	680p	
	C261	ECUV1A105KBV	1	
	C262	ECUV1H221JCV	220p	
	C263	ECUE1H100DCQ	10p	
	C264	ECUE1H100DCQ	10p	
	C265	ECUV1H221JCV	220p	
	C266	ECUE1H102KBQ		
	C272	ECUV1C104KBV		
	C277	ECUE1H102KBQ		
-	C313	ECUV1H101JCV	100p	

Safety	Ref. No.	Part No.	Part Name & Description	Remark
	C314	ECUV1A105KBV	1	
	C315	F2A1C3310029	330	
	C316	ECEA0JK331	330	s
	C317	ECUV1A105KBV	1	
	C321	ECEA0JK331	330	s
	C322	ECUV1A105KBV	1	s
	C326	ECEA0JK331	330	s
	C327	ECUV1A105KBV	1	
	C361	ECUE1H102KBQ	0.001	
	C382	ECUV1A105KBV		
		ECEA0JK331	330	c
	C386			S
	C387	ECUV1A105KBV		
	C388	ECUV1A105KBV		
	C501	ECUE1A104KBQ		
	C502	ECUE1A104KBQ	0.1	
	C503	ECUE1A104KBQ	0.1	
	C504	ECUE1A104KBQ	0.1	
	C505	ECUE1A104KBQ	0.1	
	C506	ECUE1H331KBQ	330p	
	C507	ECUE1A104KBQ	-	1
	C508	ECUE1A104KBQ		
	C509	ECUE1A104KBQ		1
				-
	C511	ECUE1H150JCQ	_	
	C512	ECUE1H120JCQ	_	
	C518	ECUE1A104KBQ		
	C521	ECUE1H331KBQ	330p	
	C528	ECUE1H331KBQ	330p	
	C541	ECUE1A104KBQ	0.1	
	C542	ECUV1H103KBV	0.01	
	C543	ECUE1A224KBQ	0.22	
	C551	ECUE1A104KBQ		
	C561	ECUE1A104KBQ		
		_		
	C562	ECUE1H101JCQ	_	
	C563	ECUE1H101JCQ	-	
	C601	ECUE1H101JCQ	-	
	C602	ECUE1H101JCQ	-	
	C603	ECUE1H101JCQ	100p	
	C604	ECUE1H101JCQ	100p	
	C611	ECUE1A104KBQ	0.1	
	C631	ECUE1A104KBQ	0.1	
	C641	ECUE1A104KBQ	0.1	
	C701	ECUE1A104KBQ	0.1	
	C702	ECUE1H100DCO		
	C702		•	
		ECUE1A104KBQ		
	C704	ECUE1H102KBQ		
	C705	ECUE1A104KBQ		
	C706	ECUE1A104KBQ		
	C707	ECUE1A104KBQ	0.1	
	C708	ECUE1A104KBQ	0.1	
	C721	ECUE1H102KBQ	0.001	
	C723	ECUE1A104KBQ	0.1	
	C724	ECUE1A104KBQ	0.1	
	C726	ECUE1A104KBQ		
	C727	ECST0JY106	10	s
				-
	C741	ECUE1H100DCQ	_	-
	C742	ECUE1H100DCQ	-	
	C743	ECEA0JKA101	100	s
	C744	ECUE0J105KBQ		
	C747	ECUE1H331KBQ	_	<u> </u>
	C748	ECUE1H331KBQ	330p	
	C761	ECUE1A104KBQ	0.1	
	C765	ECUE1A104KBQ	0.1	
	C776	ECUE1H222KBQ		1
	C802	ECUE1H7R0CCQ		<del>                                     </del>
		-	_	<u> </u>
	C803	ECUE1H7R0CCQ		
	C807	ECUE1H100DCQ	=	
	C808	ECUE1H100DCQ	_	
	C814	ECUE1H100DCQ	_	
	C815	ECUE1H3R0CCQ	3p	
	C816	PQCUV0J475MB	4.7	
	C817	ECUE1H100DCQ	10p	1
	C819	ECUE1H100DCQ	=	1
	C821	ECUE1H220JCQ	_	-

Safety	Ref.	Part No.	Part Name & Description Remarks
	No.		
	C824	ECUE1H220JCQ	22p
	C831	ECUE1H151JCQ	150p
	C832	ECUE1H102KBQ	0.001
			(OTHERS)
	IC801	PQLP10293Z	RF UNIT (for DECT) (*4)
	MIC1	L0CBAY000016	MICROPHONE
	E1	PNWHK10SD05C	PARALLEL LEADWIRE
	E2	PNWHK16SD05C	PARALLEL LEADWIRE
	F301	K5H302Y00003	FUSE
	R515	J0JCC0000275	IC FILTER
	X501	ној103500022	CRYSTALOSCILLATOR (*1)

# 15.5.1.3. Operational P.C.Board parts

(\*1) When replacing the Handset LCD, See **How to Replace the Handset LCD** (P.49).

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	PCB2	PNWP2TG9381H	OPERATIONAL P.C.BOARD	
			ASS'Y (RTL)	
			(DIODES)	
	D101	MA21D3400L	DIODE(SI)	
	LED902	LNJ826W83RA	DIODE(SI)	
	LED903	LNJ826W83RA	DIODE(SI)	
	LED904	LNJ826W83RA	DIODE(SI)	
	LED905	LNJ826W83RA	DIODE(SI)	
	LED906	LNJ826W83RA	DIODE(SI)	
			(RESISTORS)	
	R55	ERJ3GEY0R00	0	
	R56	ERJ3GEY0R00	0	
	R57	ERJ3GEY0R00	О	
	R58	ERJ3GEY0R00	О	
	R60	ERJ3GEYJ105	1м	
			(CAPACITORS)	
	C103	ECUV1H101JCV	100p	
	C104	ECUV1H101JCV	100p	
	C105	ECUV1H101JCV	100p	
	C173	ECUV1C105KBV	1	
	C174	ECUV1C105KBV	1	
	C175	ECUV1C105KBV	1	
	C176	ECUV1C105KBV	1	
	C177	ECUV1C105KBV	1	
	C178	ECUV1C105KBV	1	
	C179	ECUV1C105KBV	1	
	C180	ECUV1C105KBV	1	
	C181	ECUV1C105KBV	1	
	C184	PQCUV0J106KB	10	
			(OTHERS)	
	E3	L5DZBYY00015	LIQUID CRYSTAL DISPLAY	
	_		(*1)	
	E4	PNHR1192Z	LCD PLATE	PMMA-HE
	E5	PNHX1080Z	COVER, LCD	
	E6	PNJE1014Z	LEAD WIRE, FPC	
	E7	B3AFB0000211	LED	
	E8	PNHR1191Z	GUIDE, LCD	ABS-HB

### 15.5.2. Handset

### 15.5.2.1. Cabinet and Electrical Parts

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	101	PNGP1002X1	PANEL	AS-HB
	102	PNHS1002Z	TAPE, DOUBLE SIDED	
	103	PNKM1052Z1	CABINET BODY	PS-HB
	104	PNHR1005Z	OPTIC CONDUCTIVE PARTS, LED LENS	PS-HB
	105	PQHS10722Y	SPACER, LCD	
	106	PNHS1001Z	COVER, SP NET	
	107	L0AD02A00043	RECEIVER	
	108	PQHG10756Z	RUBBER PARTS, RECEIVER	

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	109	PNBC1008Y2	BUTTON, TALK	ABS-HB
	110	PNBC1009Y2	BUTTON, OFF	ABS-HB
	111	PNBC1010Y2	BUTTON, SP	ABS-HB
	112	PNBC1011Y2	BUTTON, PAUSE	ABS-HB
	113	PNBC1003X4	BUTTON, NAVIGATOR	ABS-HB
	114	PNBX1027Y1	KEYBOARD SWITCH	PMMA-HB
	115	PNJK1031Z	RUBBER SWITCH	
	116	PNJT1002Y	CHARGE TERMINAL (R)	
	117	PNJT1001Y	CHARGE TERMINAL (L)	
	118	PQHR11313Z	GUIDE, SPEAKER	ABS-HB
	119	PQHG10729Z	RUBBER PARTS, SPEAKER	
	120	L0AD02A00026	SPEAKER	
	121	PQHS10622Z	SPACER, NET	
	122	PNLA1005Z	ANTENNA	
	123	PNKE1002Z2	COVER, EP CAP	
	124	PQJC10056X	BATTERY TERMINAL	
	125	PNKF1006Z1	CABINET COVER	ABS-HB
	126	PQHS10561Y	SPACER, BATTERY	
	127	PNKK1001Z2	LCD, BATTERY	ABS-HB
	128	PNHX1036Z	COVER, LCD	

#### 15.5.2.2. Main P.C.Board Parts

- (\*1) When replacing IC1, IC3 or X1, data needs to be written to them with PNZZTG9385BX. Refer to **Handset** (P.59) of **Things to Do after Replacing IC or X'tal** (P.58).
- (\*2) Flash type of BBIC needs software downloading. Refer to **Handset** (P.59) of **Things to Do after Replacing IC or X'tal** (P.58).
- (\*3) When replacing the Handset LCD, See How to Replace the Handset LCD (P.49).

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	PCB100	PNWPGA939BXR	MAIN P.C.BOARD ASS'Y (RTL)	
			(ICs)	
	IC1	C1CB00002906	IC (BBIC (FLASH)) (*1) (*2)	
	IC3	PNWIGA939BXR	IC (EEPROM) (*1)	
	IC801	C1CB00001842	IC	
			(TRANSISTORS)	
	Q2	B1ADGE000004	TRANSISTOR(SI)	
	Q4	B1ADGE000004	TRANSISTOR(SI)	
	Q7	UN9219J	TRANSISTOR(SI)	s
	Q9	2SC6054JSL	TRANSISTOR(SI)	s
	Q13	2SD1819A	TRANSISTOR(SI)	
	Q14	2SD1819A	TRANSISTOR(SI)	
			(DIODES)	
	D1	B0JCMC000006	DIODE(SI)	
	D5	1SS355	DIODE(SI)	s
	D7	B0JCME000035	DIODE(SI)	
	D21	MA8043M	DIODE(SI)	s
	D22	MA8043M	DIODE(SI)	s
	D801	MA27P1200L	DIODE(SI)	
	D802	MA27P1200L	DIODE(SI)	
	DA1	B0DDCL000001	DIODE(SI)	
	LED2	B3ACB0000216	DIODE(SI)	
	LED3	B3ACB0000216	DIODE(SI)	
			(LEDS)	
	LED5	B3ACB0000216	LED	
	LED6	B3ACB0000216	LED	
	LED12	B3ACB0000216	LED	
			(JACK)	
	CN4	K2HD103D0001	JACK	
			(COILS)	
	L4	G1C100MA0072	COIL	
	L5	G1C100MA0072	COIL	
	L805	PQLQR4F121ST	COIL	s
	C812	ELJRF3N3ZFB	COIL	
	F1	PQLQR2M5N6K	COIL	s

Safety	Ref. No.	Part No.	Part Name & Description Remarks
			(IC FILTERS)
	L9 L72	J0JCC0000287 J0JCC0000276	IC FILTER
	R46	J0JDC0000045	
	R47	J0JDC0000045	
	R308	J0JCC0000286	IC FILTER
			(VARISTORS)
	D8	D4ED1270A014	
	D13 D14	D4ZZ00000032 D4ZZ00000032	
	DI4	D42200000032	(RESISTORS)
	R2	ERJ2GEJ392	3.9k
	R6	ERJ2GEJ102	1k
	R7	ERJ2GEJ122	1.2k
	R8 R12	ERJ2GEJ101 ERJ2GE0R00	0
	R15	ERJ2GE0R00	0
	R16	ERJ2GE0R00	0
	R20	ERJ2GEJ100	10
	R22	ERJ2GEJ332	3.3k
	R23	ERJ2GEJ102	1k
	R25 R27	ERJ2GEJ222 ERJ3GEYJ821	2.2k 820
	R28	ERJ3GE13821 ERJ2GEJ821	820
	R29	ERJ2GEJ102	1k
	R32	ERJ2GEJ104	100k
	R34	ERJ2GEJ104	100k
	R40	ERJ2GEJ103	10k
	R41 R42	ERJ2GEJ472X ERJ2GEJ103	4.7k 10k
	R45	ERJ6RSJR10V	0.1
	R50	ERJ2GEJ332	3.3k
	R51	ERJ2GEJ471	470
	R52	ERJ2GEJ221	220
	R53 R54	ERJ2GEJ332 ERJ2GEJ103	3.3k 10k
	R63	ERJ2GEJ101	100
	R64	ERJ2GEJ103	10k
	R66	ERJ2GEJ102	1k
	R71	ERJ3GEYJ181	180
	R72 R106	ERJ2GE0R00 ERJ2GE0R00	0
	R107	ERJ2GEJ221	220
	R108	ERJ2GEJ221	220
	R109	ERJ2GE0R00	0
	R148	ERJ3GEYJ273	27k
	R181	ERJ2GE0R00	0
	R203 R215	D0GA563ZA006 ERJ2GE0R00	0
	R222	ERJ2GE0R00	0
	R233	ERJ2GEJ102	1k
	R234	ERJ2GEJ102	1k
	R235	ERJ2GEJ102	1k
	R238 R244	ERJ2GEJ102 ERJ2GE0R00	1k 0
	R244	ERJ2GE0R00	0
	R301	ERJ2GEJ221	220
	R302	ERJ2GEJ221	220
	R304	ERJ2GEJ221	220
	R305	ERJ2GEJ221 ERJ2GEJ101	220
	R306 R340	ERJ2GEJ101 ERJ2GEJ222	100 2.2k
	R341	ERJ2GEJ473	47k
	R343	ERJ2GEJ105X	1M
	R344	ERJ2GEJ224	220k
	R345	ERJ2GEJ104	100k
	R801 R802	ERJ2GEJ182 F1G1HR50A480	1.8k 0.5p
	R803	ERJ2GEJ102	1k
	R804	ERJ2GEJ102	1k
	R805	ERJ2GEJ470	47
	R806	ERJ2GEJ221	220
	R807	ERJ2GEJ221	220

Safety	Ref. No.	Part No.	Part Name & Description	Remark
	RA4	D1H433220001	3.3k	
	RA61	D1H410220001	1k	
	L10	ERJ2GEJ330	33	
	L11	ERJ2GEJ330	33	
	L71	ERJ2GE0R00	0	
	L74	ERJ2GEJ100	10	
			(CAPACITORS)	
	C1	EEE0JA221WP	220	
	C2	EEE0JA331P	330	
	C3	ECUV1A105KBV	1	
	C11	ECUE1A104KBQ		
	C12	PQCUV0J106KB		
	C13	ECUE1A104KBQ		
	C14	ECUE1C103KBQ		
	C14	PQCUV0J106KB		
	C33	ECUE1A104KBQ		
	C40	ECUE1A104KBQ		
	C43	ECUE1H100DCQ	•	
	C44	ECUE1A104KBQ		
	C45	ECUE1A104KBQ		
	C46	ECUE1H100DCQ	_	
	C47	ECUV1A105KBV	1	
	C48	ECUV1A225KB	2.2	
	C49	ECUV1A105KBV	1	
	C50	ECUV1A105KBV	1	
	C51	ECUV1A105KBV	1	
	C52	PQCUV0J106KB	10	
	C53	PQCUV0J106KB	10	
	C70	ECUE1H100DCQ	10p	
	C71	ECUE1H100DCQ	_	
	C72	ECUE1H100DCQ		
	C73	ECUE1H100DCQ	-	
	C82		_	
		ECUE1H471KBQ	_	
	C83	ECUE1H100DCQ	_	
	C86	PQCUV0J106KB		
	C96	ECUE1H100DCQ	_	
	C97	ECUE1H100DCQ	_	
	C103	ECUE1H101JCQ		
	C104	ECUE1H101JCQ	_	
	C105	ECUE1H101JCQ	_	
	C110	ECUE1H102KBQ		
	C117	ECUE1H100DCQ	_	
	C118	ECUE1H100DCQ	_	
	C122	F1G1H1R8A480	1.8p	
	C124	ECUE1H100DCQ	10p	
	C125	ECUE1H100DCQ	10p	
	C127	ECUE1H102KBQ	0.001	
	C147	ECUV1A105KBV	1	
	C152	ECUE1H102KBQ		
	C170	ECUE1H100DCQ		
	C171	ECUV1H100DCV	_	
	C172	ECUV1C104KBV	_	
	C173	ECUV1C105KBV		
	C174	ECUV1C105KBV		-
	C175	ECUV1C105KBV		-
	C176	ECUVICIOSKBV ECUVICIOSKBV		-
				-
	C177	ECUV1C474KBV		
	C178	ECUV1C474KBV		
	C179	ECUV1C474KBV		
	C180	ECUV1C474KBV		
	C181	ECUV1C474KBV		
	C182	F1G1H2R7A480	_	
	C183	F1H0J4750002		
	C184	ECUE1H100DCQ	=	
	C185	ECUE1H102KBQ	0.001	
	C186	ECUE1H101JCQ	100p	
	C187	ECUE1H101JCQ	100p	
	C188	ECUE0J105KBQ	1	
	C340	F1J0J2260004		
	C802	F1G1H2R4A480		
	C803	F1G1H1R8A480	-	
				1
	C804	F1G1H2R4A480		

			KX-1G9383BX1/KX-1	GASSSEAT
Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	C808	ECUE1A104KBQ	0.1	
	C809	ECUE1H100DCQ	10p	
	C810	F1G1H2R7A480	1.8p	
	C811	ECUE1H100DCQ	10p	
	C813	ECUE1H1R0BCQ	1	
	C814	ECUE1H332KBQ	0.0033	
	C815	F1G1H1R2A480	1.2p	
	C819	ECUE1H100DCQ	10p	
	C820	F1G1HR50A480	0.5p	
	C822	ECUE1H101JCQ	100p	
	C825	ECUE1H100DCQ	10p	
	C826	F1G1H2R2A480	1.2p	
	C832	F1G1H7R0A480	7p	
	C834	F1G1HR75A480	0.75p	
	C840	F1G1H1R8A480	1.8p	
	L804	F1G1H1R2A480	1.2p	
	L122	F1G1H1R8A480	1.8p	
			(OTHERS)	
	MIC100	L0CBAY000016	MICROPHONE	
	E101	L5DZBYY00013	LIQUID CRYSTAL DISPLAY (*3)	
	E102	PQHR11279Z	TRANSPARENT PLATE	PMMA-HB
	E103	PNHR1006Z	GUIDE, LCD	ABS-HB
	E104	PNHX1004Z	LCD COVER SHEET	
	E105	PQJE10179V	LEAD WIRE, FPC	
	E106	B3AFB0000211	LED	
	E107	PQWE10050Z	BATTERY TERMINAL	
	E108	PNMC1003Z	CASE, MAGNETIC SHIELD	
	X1	ној103500033	CRYSTALOSCILLATOR (*1)	

### 15.5.3. Charger Unit

### 15.5.3.1. Cabinet and Electrical Parts

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	200	PNLC1001YT	CHARGER UNIT ASS'Y without NAME PLATE (RTL)	
	200-1	PNKM1015Y2	CABINET BODY	PS-HB
	200-2	PNJT1010Z	CHARGE TERMINAL	
	200-3	PNKF1012Z1	CABINET COVER	PS-HB
	200-4	PQHA10023Z	RUBBER PARTS, FOOT CUSHION	

### 15.5.3.2. Main P.C.Board Parts

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

### 15.5.4. Accessories

#### Note:

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

Safety	Ref. No.	Part No.	Part Name & Description Remarks
⚠	A1	PQLV219BXZ	AC ADAPTOR
	A2	PQJA10075Z	CORD, TELEPHONE, 2wire for Line 1
	A3	PQJA10088Z	CORD, TELEPHONE, 4wire for Line 2

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	A4	PNKE1004Z1	HANGER, BELT CLIP	ABS-HB
	A5	PQKL10078Z2	STAND, WALLMOUNT	

### 15.5.5. Screws

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

#### 15.5.6. Fixtures and Tools

- (\*1) See Equipment Required (P.50), and The Setting Method of JIG (Handset) (P.55).
- $(\mbox{$^{*}$2)}$  When replacing the Base unit and Handset LCD, See  $\mbox{\bf Assembly Instructions}$  (P.47) .

Safety	Ref.	Part No.	Part Name & Description	Remarks
	No.			
		PQZZ1CD300E	JIG CABLE (*1)	
		PNZZTG9385BX	BATCH FILE CD-ROM (*1)	
		PQZZ430PIR	TIP OF SOLDERING IRON (*2)	
		PQZZ430PRB	RUBBER OF SOLDERING IRON (*2)	