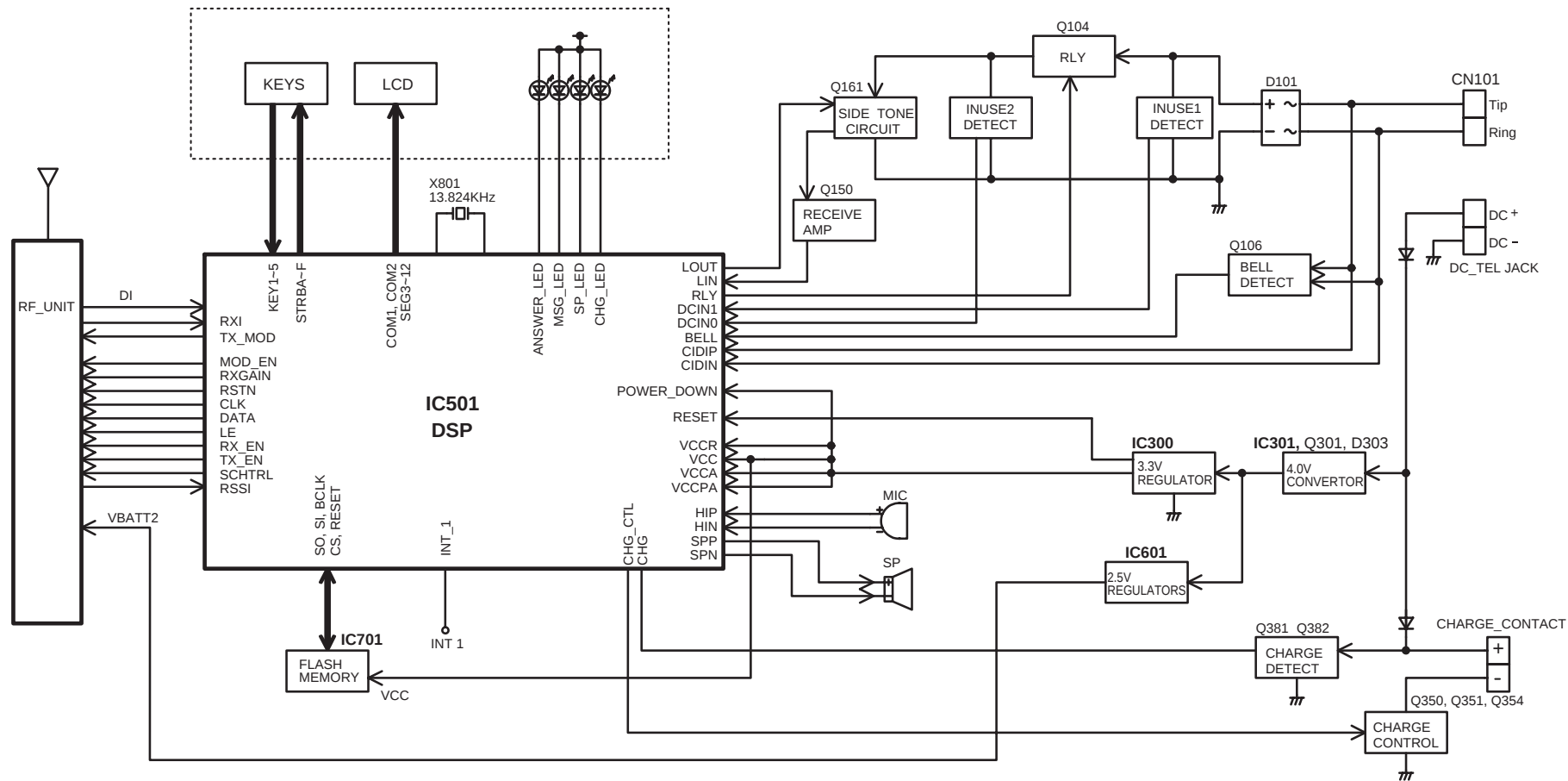


16 BLOCK DIAGRAM (Base Unit)



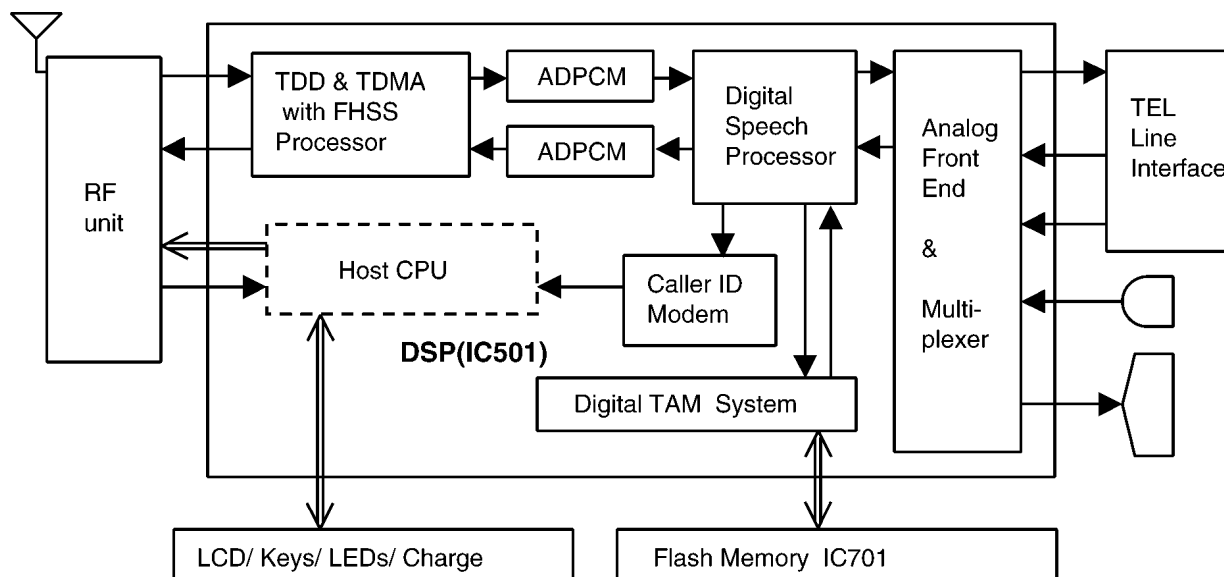
KX-TG2360JXS BLOCK DIAGRAM (Base Unit)

## 17 CIRCUIT OPERATION (Base Unit)

### General Description:

(DSP, Flash Memory) is a digital speech/signal processing system that implements all the functions of speech compression, record and playback, and memory management required in a digital telephone answering machine.

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



### 17.1. DSP (Digital Speech/Signal Processing: IC501)

#### 17.1.1. Function

- **Voice Message Recording/Play back**

The DSP system use a proprietary speech compression technique to record and store voice message in FLASH MEMORY. An error correction algorithm is used to enable playback of these messages from the FLASH MEMORY.

- **DTMF Detection/Generator**

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

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

- **Synthesized Voice (Pre-recorded message)**

The DSP implements synthesized Voice, utilizing the built in speech detector and an FLASH MEMORY, which stored the vocabulary.

- **Caller ID and Call Waiting CID demodulation**

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

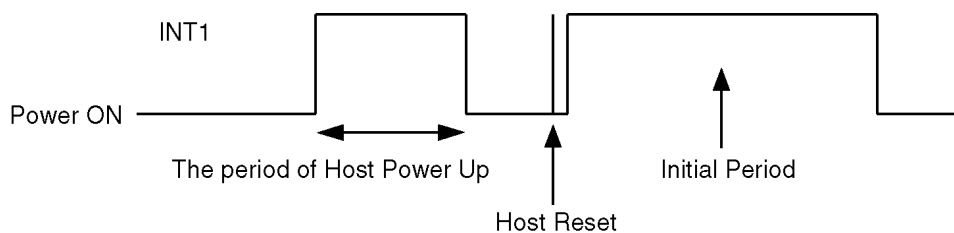
- **Analog Switching**

The voice signal from Handset is transmitted to the speaker or the voice signal from Digital TAM System is transmitted to the Telephone line, etc. They are determined by the signal path route operation of voice signal.

- **Block Interface Circuit**

RF unit, LED, Key scan, Speaker, Microphone, Telephone line, LCD.

### 17.1.2. The Meaning of the Motion of Pin 128



- **The period of Host Power Up (Hardware Initialization)**

In this period, the host sets up some registers in order to wake up the system.

- **The period of Host Reset (Software Initialization)**

In this period, the host reads the parameter from the memory and initializes module.

## 17.2. Flash Memory (IC701)

Following information data is stored.

- **Voice signal**

ex: Pre-recorded Greeting message, Incoming message

- **Telephone number, etc.**

ex: Telephone Directory number, Caller ID data, ID code

- **Settings**

ex: message numbers, caller ID numbers, pulse tone dial

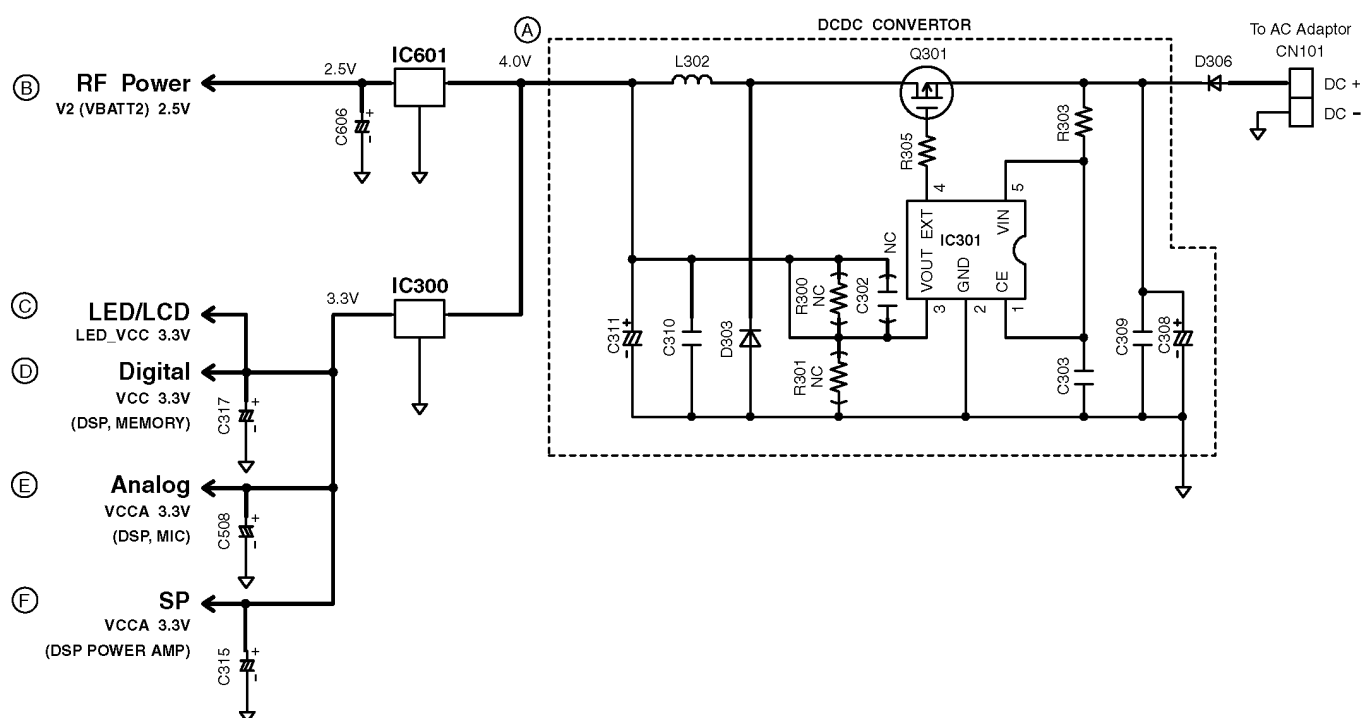
## 17.3. Power Supply Circuit

**Function:**

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

**Circuit Operation:**

- IC301, Q301 and D303: 4.0V DCDC Converter
- IC300: 3.3V Regulator
- IC601: 2.5V Regulator

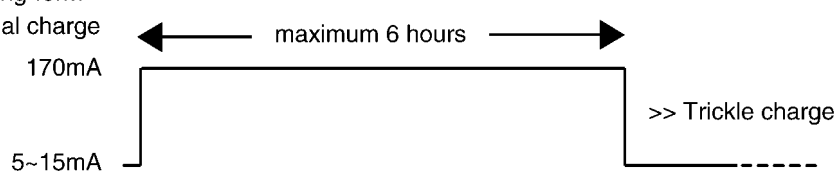


### 17.3.1. Charge Circuit

The voltage from the AC is supplied to the charge circuits. Normal charge of maximum 6-hours is started soon after the Handset is placed on the base unit. Then it changes to Trickle charge to prevent from overcharging.

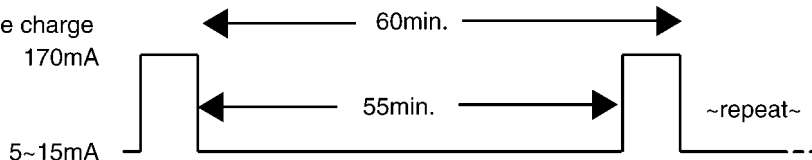
Charging-form

- Normal charge

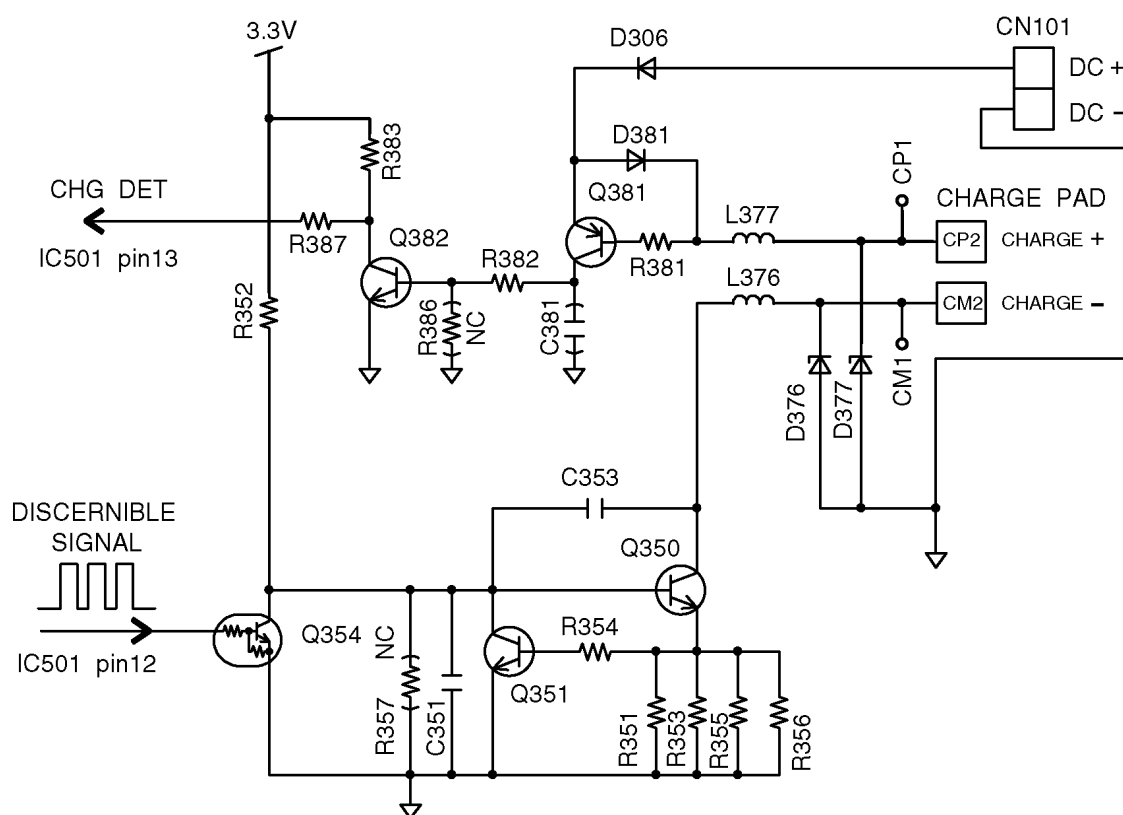


Handset controls  
Charging-form pattern

- Trickle charge



Q381 and Q382 detect the ON-HOOK state (Handset is placed on base unit).



Q350 and Q351 control the charge current.

Q352 sends a signal to the handset for about 5 seconds soon after the handset is placed on the base unit.

This signal tells that the handset is been charging on the base unit or the optional charger.

When the signal is received: charging on the base unit

No signal: charging on the optional charger.

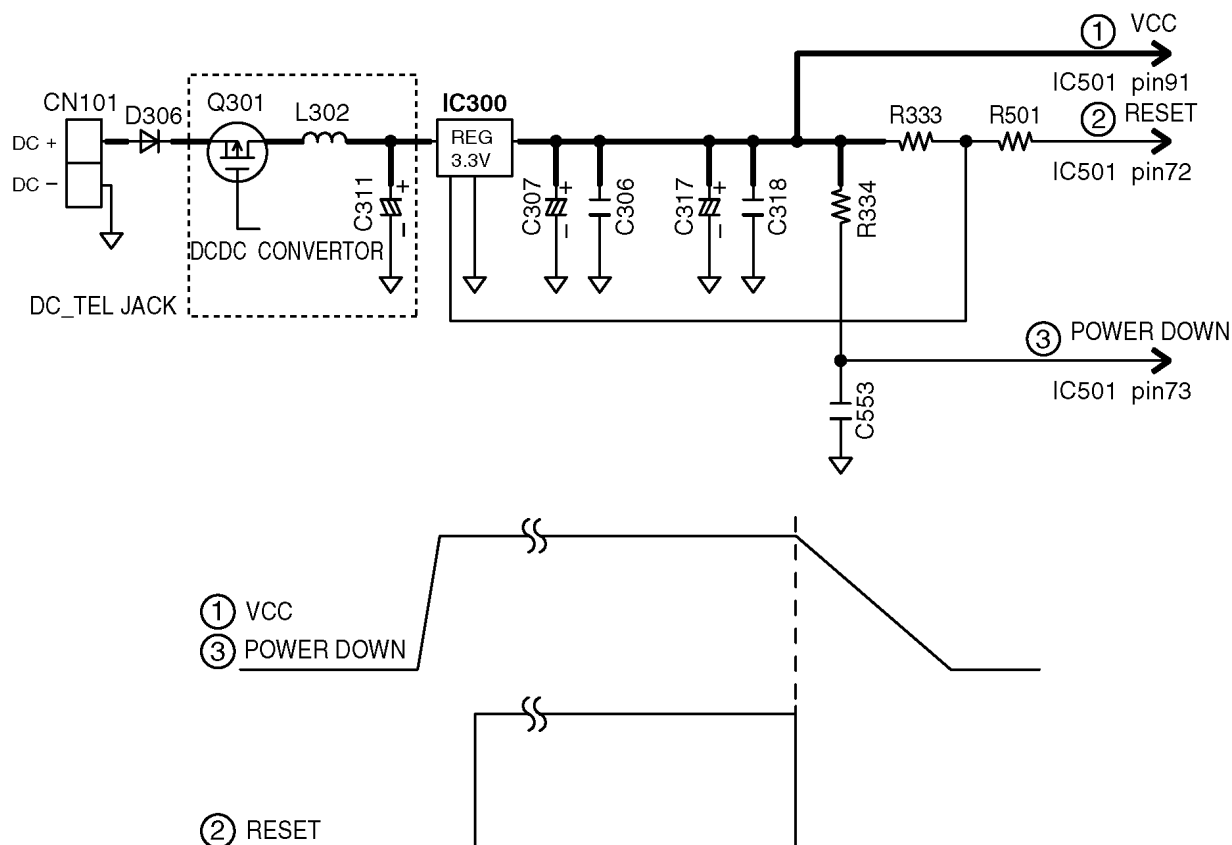
## 17.4. Reset Circuit

### Function:

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

### Circuit Operation:

When the AC Adaptor is inserted into the unit, then the voltage is shifted by IC300 and power is supplied to the DSP. The set starts to operate when VCC goes up to 3.3V or more in the circuit voltage diagram.



## 17.5. Locator/Intercom Mode

1. Press the base LOCATOR/INTERCOM button, then a beep is output from pins 35 and 37 of IC501, and blinks on the SP-PHONE LED (LED 721) is caused by pin 15 of IC501.
2. At the same time, a beep is output from pin 35, pin 37 of IC501. This status is called "Intercom stand-by".
3. Then press TALK button of the Handset, the status is changed to "Intercom mode".
4. The receiving signal flows:  
RF → pins 35 and 37 of IC501 → SP  
The transmission signal flows:  
MIC → C447, C448 → RA401 → pins 60 and 61 of IC501 → RF

## 17.6. Telephone Line Interface

### Telephone Line Interface Circuit:

#### Function

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

#### Bell signal detection and OFF HOOK circuit:

In the idle mode, Q104 is open to cut the DC loop current and decrease the ring load. When ring voltage appears at the Tip (T) and Ring (R) leads (When the telephone rings), the AC ring voltage is transferred as follows:

T → L101 → R130 → C116 → Q106 → DSP pin 3. [BELL]

When the CPU (DSP) detects a ring signal, Q104 turns on, thus providing an off-hook condition (active DC current flow through the circuit). Following signal flow is the DC current flow.

T → L101 → D101 → Q104 → Q161 → R164 → D161 → D101 → L102 → P101 → R

#### ON HOOK Circuit:

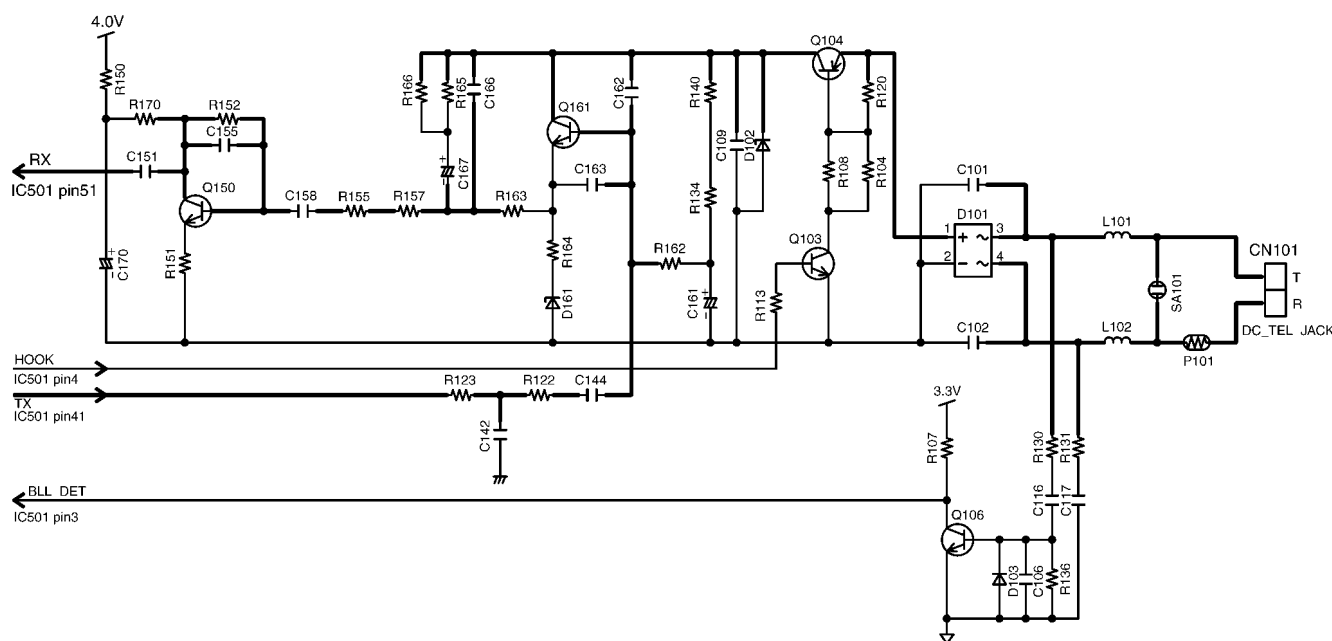
Q104 is open, Q104 is connected as to cut the DC loop current and to cut the voice signal. The unit is consequently in an on-hook condition.

#### Pulse Dial Circuit:

DSP pin 4 turns Q104 ON/OFF to make the pulse dialing.

#### Side Tone Circuit:

Basically this circuit prevents the TX signal from feeding back to RX signal. As for this unit, TX signal feed back from Q161 is canceled by the chancellor circuit of DSP.



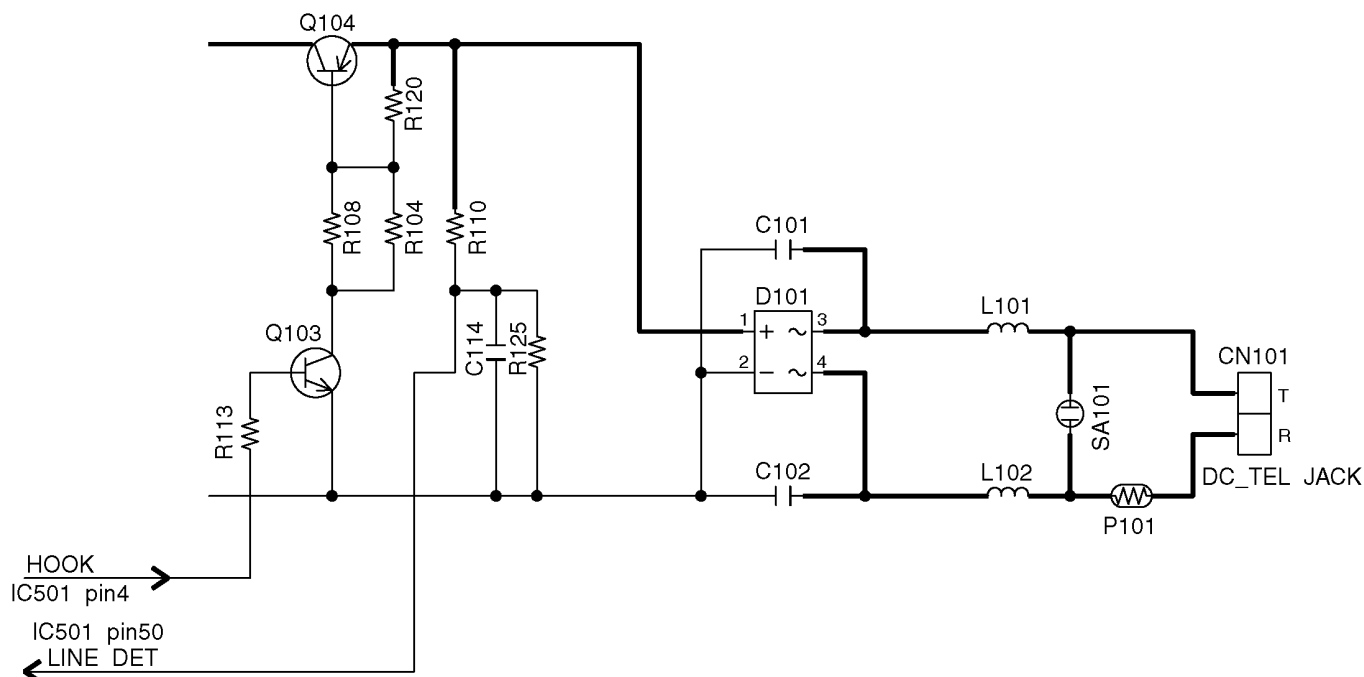
## 17.7. Auto Disconnect Circuit

### Function:

This circuit is used to detect the fact that another telephone connected to the same line is OFF-HOOK while the unit is in a receiving status or OGM transmitting status.

### Circuit Operation:

The voltage of pin50 of IC501 is monitored. If a parallel-connected telephone is put into OFF HOOK status, the presence/absence of a parallel connection is determined when the voltage changes by 0.2V or more. When the set detects the parallel-connected telephone is OFF HOOK status, the line is disconnected.



You can enable or disable the Auto Disconnect function.

See **Check Record** (P.45)

## 17.8. Parallel Connection Detect Circuit

### Function:

In order to disable call waiting and stutter tone functions when using telephones connected in parallel, it is necessary to have a circuit that judges whether a telephone connected in parallel is in use or not. This circuit determines whether the telephone connected in parallel is on hook or off hook by detecting changes in the T/R voltage.

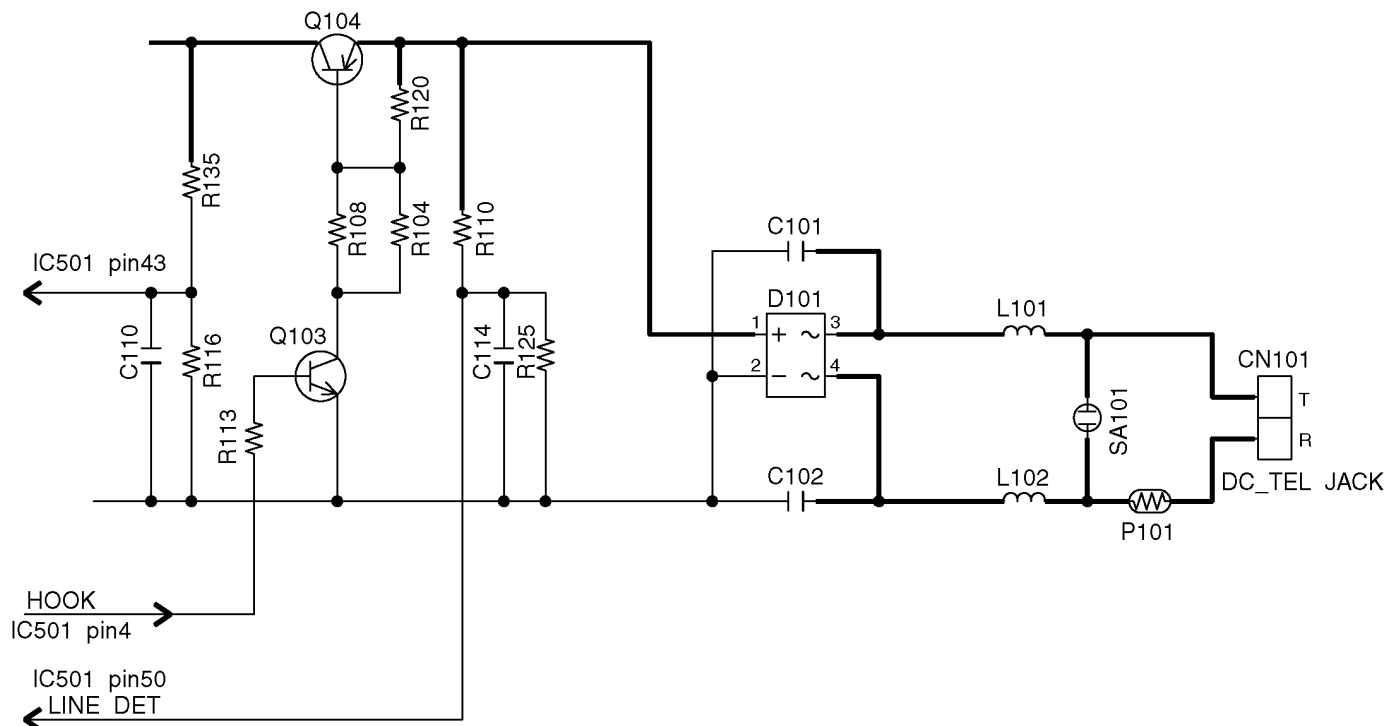
### Circuit Operation:

Parallel connection detection when on hook:

When the set is on hook, the voltage is monitored at DSP (DCIN0). There is no parallel connection if the voltage is 2.50 V or higher, while a parallel connection is deemed to exist if the voltage is lower.

Parallel connection detection when off hook:

When the set is off hook, the voltage is monitored at DSP (DCIN1); the presence/absence of a parallel connection is determined when the voltage changes by 0.2 V or more.



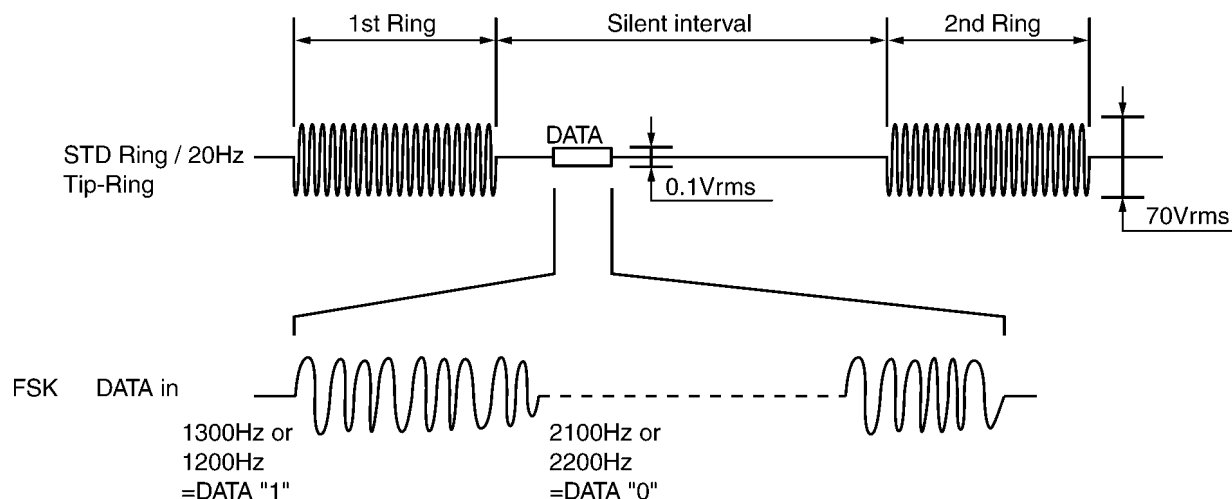
## 17.9. Calling Line Identification (Caller ID)

### Function:

The caller ID is a chargeable ID which the user of a telephone circuit obtains by entering a contract with the telephone company to utilize a caller ID service. For this reason, the operation of this circuit assumes that a caller ID service contract has been entered for the circuit being used.

The Caller-ID data from exchange is supplied to the telephone using either method of FSK or DTMF. The method is chosen according to the exchange of telephone office. This unit is available to receive the data with both methods and displays the received data on LCD.

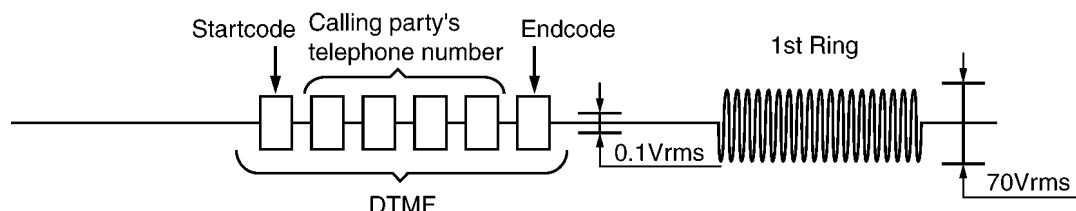
#### • FSK (Frequency Shift Keying) format



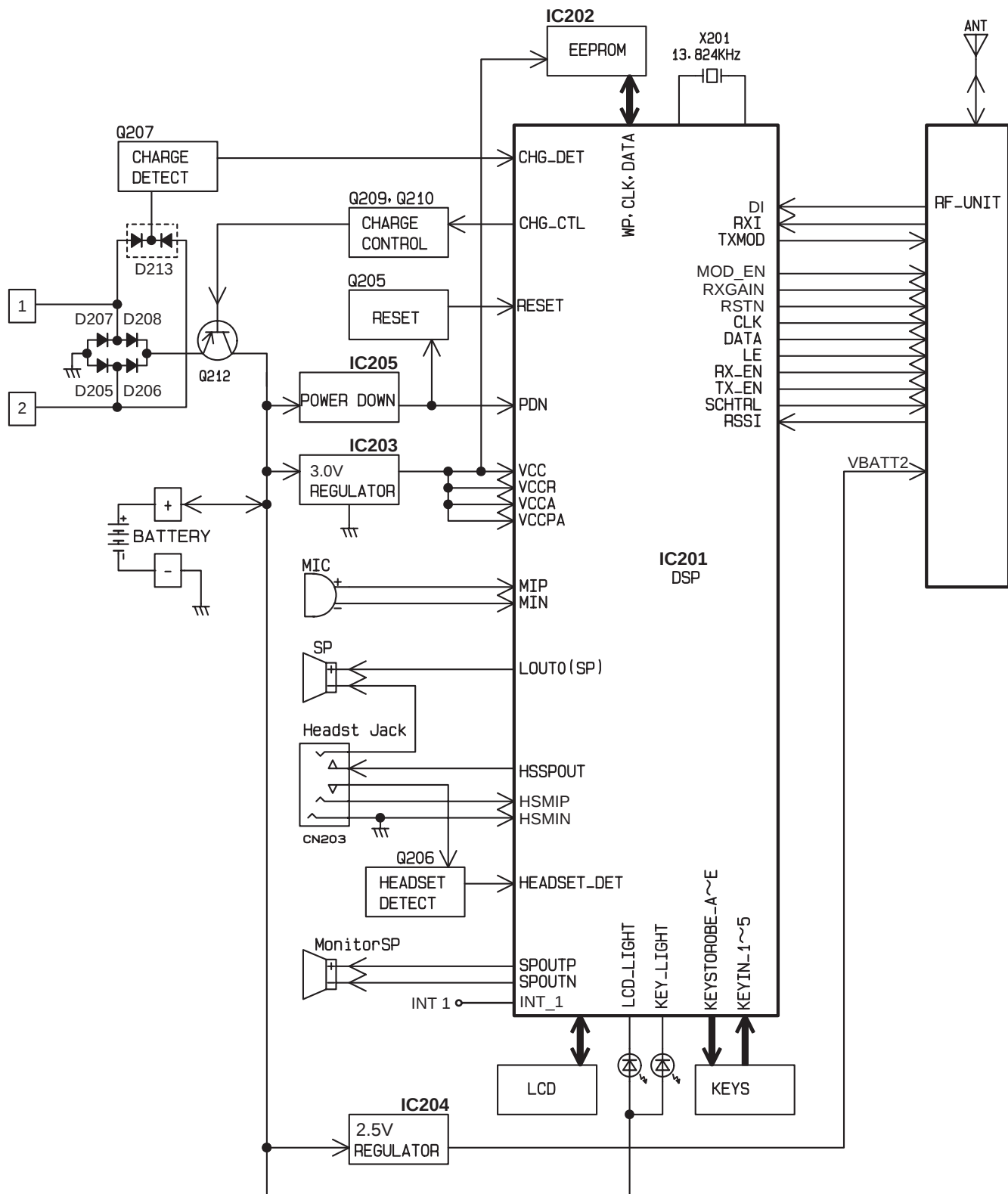
#### • DTMF format

It is the method to send the telephone number of calling party with DTMF to the telephone. DTMF is sent before the first bell signal. The data is sent in turn; first the start code, secondly the telephone number of calling party, lastly end code.

The DTMF is chosen from A (1633Hz and 697Hz), B (1633Hz and 770Hz), C (1633Hz and 852Hz) and D (1633Hz and 941Hz) as the start code and end code according to the exchange.



# 18 BLOCK DIAGRAM (Handset)



KX-TGA236JXS BLOCK DIAGRAM (Handset)

## 19 CIRCUIT OPERATION (Handset)

### 19.1. Construction

The circuit mainly consists of DSP and RF unit as shown in the block diagram.

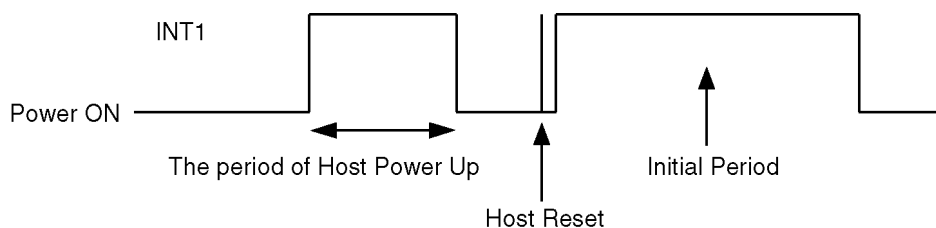
#### 19.1.1. DSP:IC201

##### 19.1.1.1. Function

- Battery Low, Power down defect circuit
- Ringer Generation
- Interface circuit

RF unit, speaker, mic, LED, Key scan, LCD, Headset

##### 19.1.1.2. The Meaning of the Motion of Pin 100



- **The period of Host Power Up (Hardware Initialization)**  
In this period, the host sets up some registers in order to wake up the system.
- **The period of Host Reset (Software Initialization)**  
In this period, the host reads the parameter from the memory and initializes module.

#### 19.1.2. RF unit

Mainly voice signal is modulated to RF, or it goes the other way.

#### 19.1.3. EEPROM: IC202

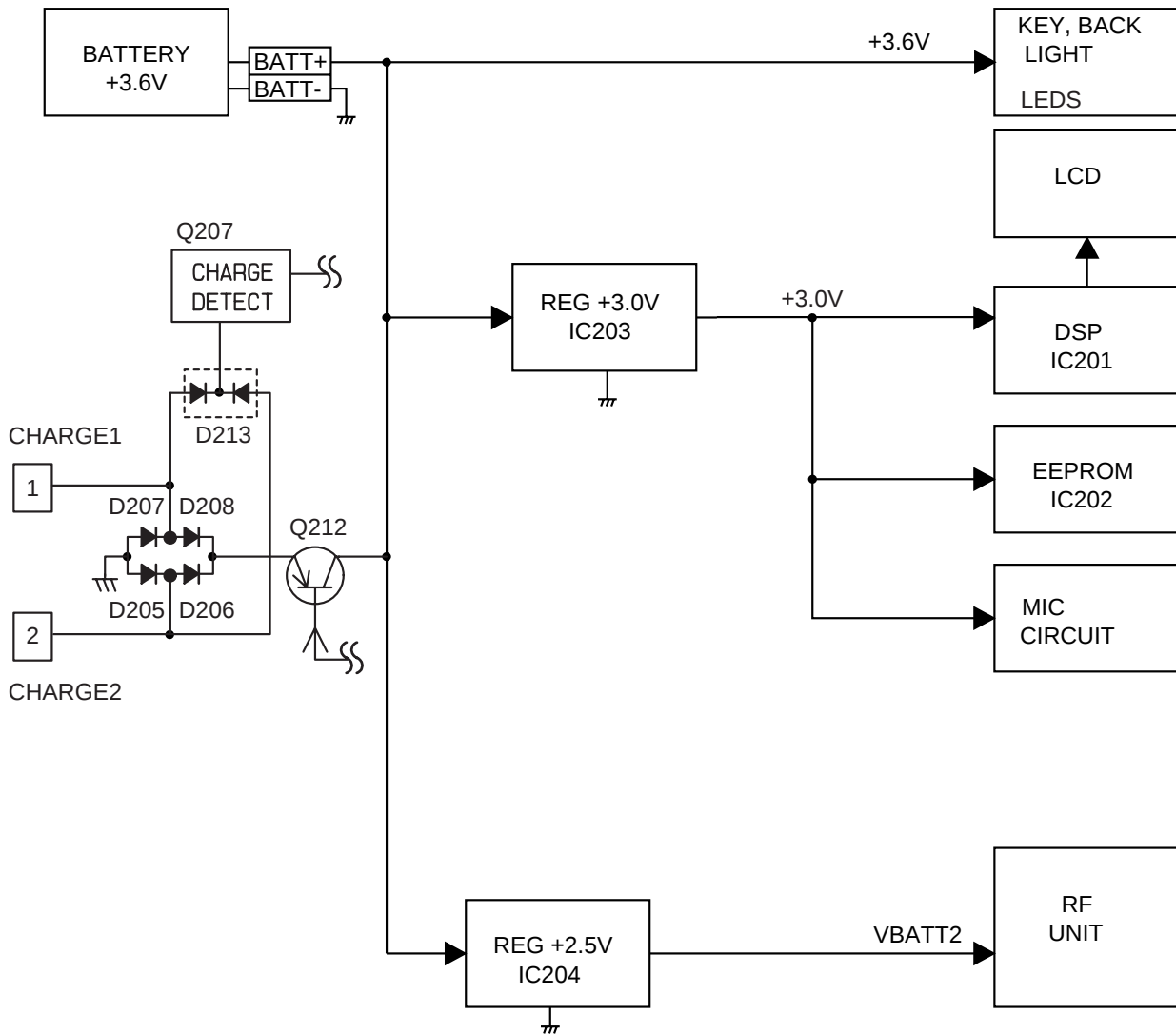
All setting data is stored.

ex: ID code, user setting (Flash Time, Tone/Pulse)

## 19.2. Power Supply Circuit

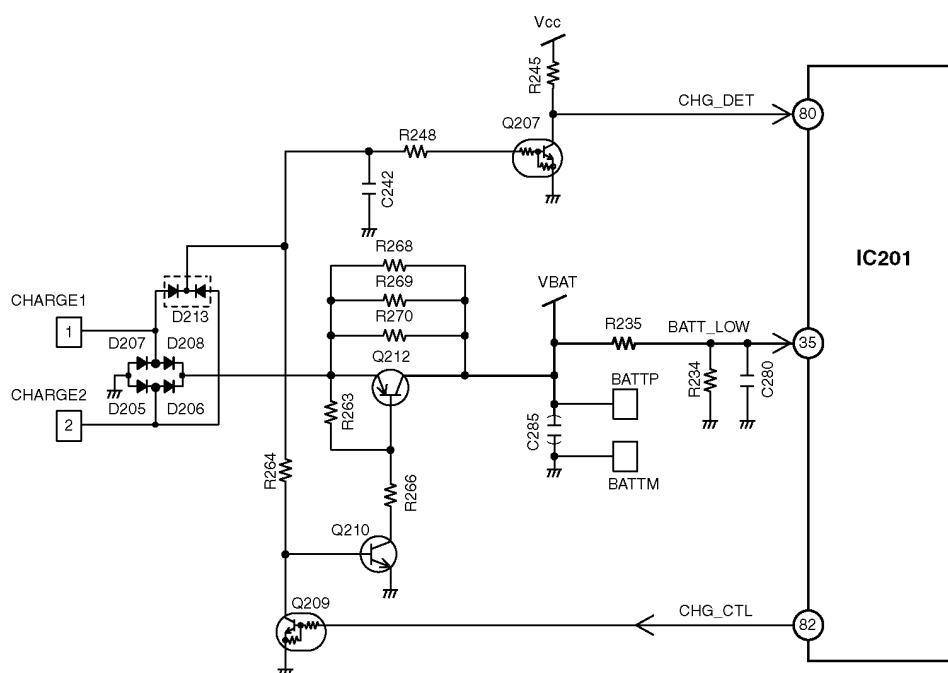
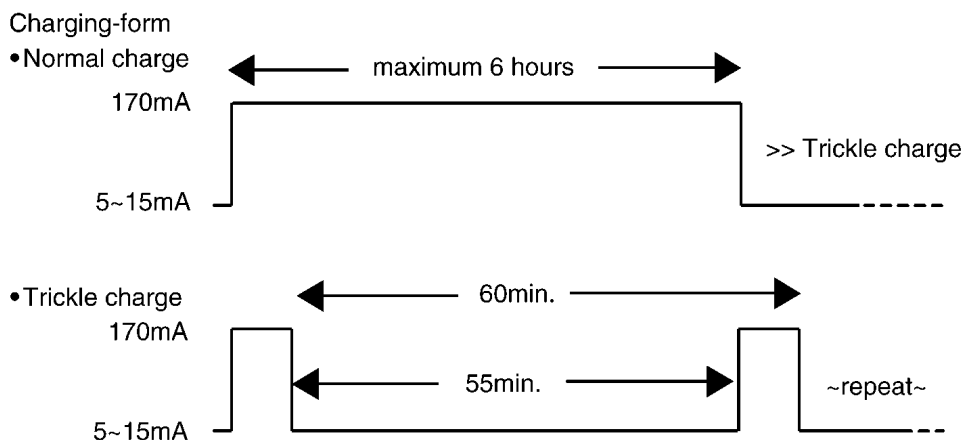
Voltage is supplied separately to each block.

Block Diagram (Handset Power)



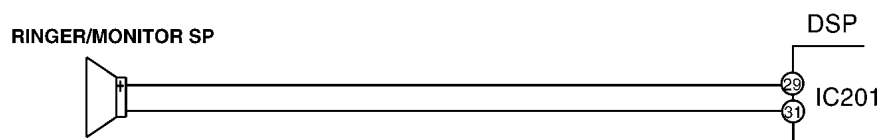
### 19.3. Charge Circuit

When the handset is put on the cradle of the Base unit or the optional charger, the power is supplied from CHARGE2 and CHARGE1 terminals to charge the battery via D205 (D207), R268, Q212. The voltage between CHARGE2 and CHARGE1 flows D213 -> R248 -> Q207 -> pin80 of IC201, where the charge is detected. Then IC201 calculates the battery consumption amount from the previous charge, and it controls Q212/Q210/Q209 by pin82 of IC201 until charging is complete. When charging is complete, the control pattern is switched to Trickle charging form from Normal charging form.



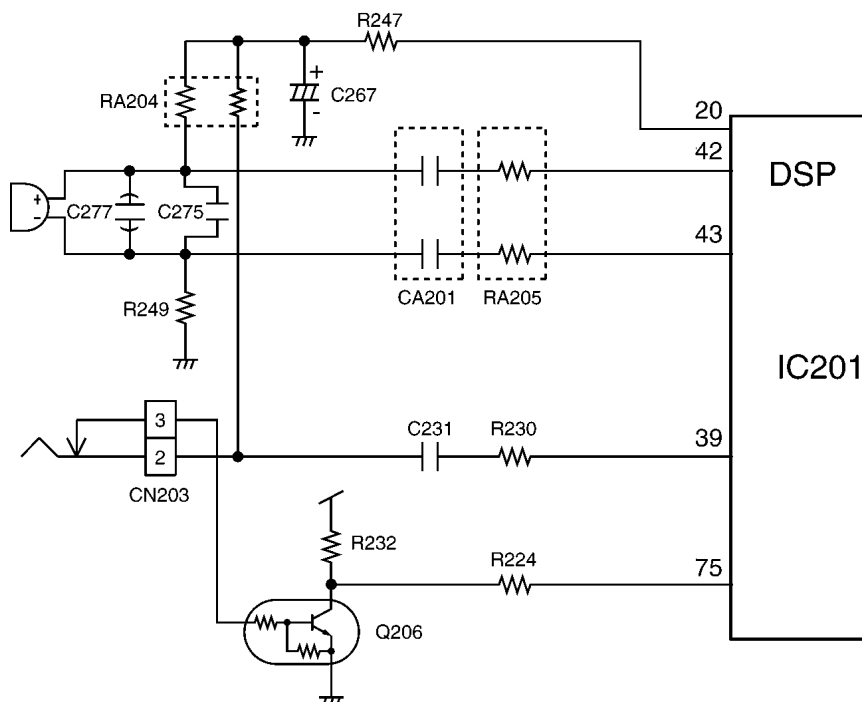
Pin 35 of IC201 monitors the battery voltage and detect BATT LOW at 3.50V.

### 19.4. Ringer and Handset SP-Phone



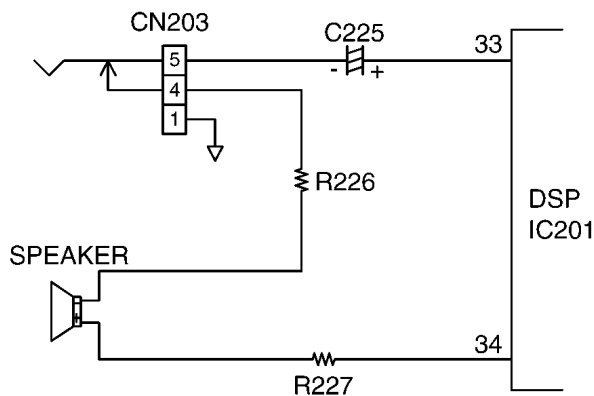
## 19.5. Sending Signal

The voice signal from the microphone input to DSP (42-43). CN203 is the headset jack. When the headphone is connected, the Q206 detect it. The input from the microphone of the handset (MIN, MIP) is cut and the microphone signal from the headset is input to DSP (39). Also the power for the microphone is supplied from DSP (20), and the power is turned OFF on standby.



## 19.6. Reception Signal

The voice signal from the base unit is output to DSP (33) (HSSPOUT). This signal is led to the headset jack (CN203). The signal through the headset jack and the other signal output from DSP (34) to drive the speaker. When the headset is inserted to the jack, the voice signal is cut at the jack, so the sound does not come out from the speaker, but from the headset only.



## 20 SIGNAL ROUTE

Each signal route is as follows.

| SIGNAL ROUTE                        | IN  signal ROUTE  OUT                                                                                                                |
|-------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| HANDSET TX                          | <div> <div>HANDSET MIC - CA201 - RA205 - IC201 (43/42 - 57)</div> <div>- IC901 (27) ---</div> <div>--- IC901 (16) - IC501 (84 - 41) - R123 - R122 - C144 - Q161</div> <div>- Q104 - D101 - L101/L102 - CN101 (TEL LINE)</div> </div>                                                                     |
| HANDSET RX                          | <div> <div>CN101 (TEL LINE) - L101/L102 - D101 - Q104 - C166 - R157</div> <div>- R155 - C158 - Q150 - C151 - R127 - IC501 (51 - 75)</div> <div>- IC901 (27) ---</div> <div>--- IC901 (16) - IC201 (66 - 33/34)</div> <div>- C225 - L206 - HEADSET JACK (5 - 4) - R226/R227- HANDSET SPEAKER</div> </div> |
| HEADSET TX                          | <div> <div>HEADSET JACK (2) - L204 - C231 - R230 - IC201 (36 - 57)</div> <div>- IC901 (27) ---</div> <div>--- IC901 (16) - IC501 (84 - 41) - R123 - R122 - C144 - Q161</div> <div>- Q104 - D101 - L101/L102 - CN101 (TEL LINE)</div> </div>                                                              |
| HEADSET RX                          | <div> <div>CN101 (TEL LINE) - L101/L102 - D101 - Q104 - C166 - R157</div> <div>- R155 - C158 - Q150 - C151 - R127 - IC501 (51 - 75)</div> <div>- IC901 (27) ---</div> <div>--- IC901 (16) - IC201 (66 - 33) - C225 - L206 - HEADSET JACK (5)</div> </div>                                                |
| SP-Phone TX                         | <div> <div>MIC - C447/C448 - RA401 - IC501 (60/61 - 41) - R123 - R122 - C144 - Q161</div> <div>- Q104 - D101 - L101/L102 - CN101 (TEL LINE)</div> </div>                                                                                                                                                 |
| SP-Phone RX                         | <div> <div>CN101 (TEL LINE) - L101/L102 - D101 - Q104 - C166 - R157 - R155- C158</div> <div>- Q150 - C151 - R127 - IC501 (51 - 35/37) - L401/L402 - SPEAKER</div> </div>                                                                                                                                 |
| HANDSET<br>SP-Phone TX              | <div> <div>HANDSET MIC - CA201 - RA205 - IC201 (43/42 - 57)</div> <div>- IC901 (27) ---</div> <div>--- IC901 (16) - IC501 (84 - 41) - R123 - R122 - C144 - Q161</div> <div>- Q104 - D101 - L101/L102 - CN101 (TEL LINE)</div> </div>                                                                     |
| HANDSET<br>SP-Phone RX              | <div> <div>CN101 (TEL LINE) - L101/L102 - D101 - Q104 - C166 - R157</div> <div>- R155 - C158 - Q150 - C151 - R127 - IC501 (51 - 75)</div> <div>- IC901 (27) ---</div> <div>--- IC901 (16) - IC201 (66 - 29/31) - MONITOR SP</div> </div>                                                                 |
| INTERCOM<br>HANDSET TO<br>BASE UNIT | <div> <div>HANDSET MIC - CA201 - RA205 - IC201 (43/42 - 57)</div> <div>- IC901 (27) ---</div> <div>--- IC901 (16) - IC501 (84 - 35/37) - L401/L402 - SPEAKER</div> </div>                                                                                                                                |
| INTERCOM<br>BASE UNIT<br>TO HANDSET | <div> <div>MIC - C447/C448 - RA401 - IC501 (60/61 - 75)</div> <div>- IC901 (27) ---</div> <div>--- IC901 (16) - IC201 (66 - 33/34)</div> <div>- C225 - L206 - HEADSET JACK (5 - 4) - R226/R227- HANDSET SPEAKER</div> </div>                                                                             |
| GREETING<br>RECORDING               | <div> <div>MIC - C447/C448 - RA401 - IC501 (60/61 - 77/78) - IC701</div> </div>                                                                                                                                                                                                                          |
| GREETING PLAY<br>TO TEL LINE        | <div> <div>IC701 - IC501 (77/78 - 41) - R123 - R122 - C144 - Q161 - Q104 - D101</div> <div>- L101/L102 - CN101 (TEL LINE)</div> </div>                                                                                                                                                                   |
| ICM RECORDING                       | <div> <div>CN101 (TEL LINE) - L101/L102 - D101 - Q104 - C166 - R157 - R155</div> <div>- C158 - Q150 - C151 - R127 - IC501 (51 - 77/78) - IC701</div> </div>                                                                                                                                              |
| ICM PLAY TO<br>SPEAKER              | <div> <div>IC701 - IC501 (77/78 - 35/37) - L401/L402 - SPEAKER</div> </div>                                                                                                                                                                                                                              |
| DTMF SIGNAL<br>TO TEL LINE          | <div> <div>IC501 (41) - R123 - R122 - C144 - Q161 - Q104 - D101 - L101/L102</div> <div>- CN101 (TEL LINE)</div> </div>                                                                                                                                                                                   |
| DTMF DETECTION                      | <div> <div>CN101 (TEL LINE) - L101/L102 - D101 - Q104 - C166 - R157 - R155</div> <div>- C158 - Q150 - C151 - R127 - IC501 (51)</div> </div>                                                                                                                                                              |
| CALLER ID                           | <div> <div>CN101 (TEL LINE) - L101/L102 - C111/112 - R114/115 - C120/121 - IC501 (57/58)</div> </div>                                                                                                                                                                                                    |
| BELL DETECTION                      | <div> <div>CN101 (TEL LINE) - L101/L102 - R130/R131 - C116/C117 - Q106 - IC501 (3)</div> </div>                                                                                                                                                                                                          |

**Note:**

 : inside of Handset

## 21 CPU DATA (Base Unit)

### 21.1. IC501

| Pin | Description | I/O | High       | High_Z | Low       |
|-----|-------------|-----|------------|--------|-----------|
| 1   | INT0        | D.O | --         | --     | --        |
| 2   | NC          | D.O | --         | --     | --        |
| 3   | L1_BELL     | D.I | OFF        | --     | ON        |
| 4   | L1_RLY      | D.O | Off Hook   | --     | On Hook   |
| 5   | AC_DOWN_DET | D.I | High       | --     | Low       |
| 6   | KEY_STB_F   | D.O | Active     | Not    | --        |
| 7   | KEY_STB_E   | D.O | Active     | Not    | --        |
| 8   | KEY_STB_D   | D.O | Active     | Not    | --        |
| 9   | KEY_STB_C   | D.O | Active     | Not    | --        |
| 10  | KEY_STB_B   | D.O | Active     | Not    | --        |
| 11  | KEY_STB_A   | D.O | Active     | Not    | --        |
| 12  | CHG_CTRL    | D.O | NoCharge   | --     | Charge    |
| 13  | CHG_DET     | D.I | Off Charge | --     | On Charge |
| 14  | CHG_LED     | D.O | --         | Off    | On        |
| 15  | SP_LED      | D.O | --         | Off    | On        |
| 16  | VCC         | VCC | VCC        | --     | --        |
| 17  | GND         | GND | --         | --     | GND       |
| 18  | NC          | D.O | --         | --     | --        |
| 19  | NC          | D.O | --         | --     | --        |
| 20  | NC          | D.O | --         | --     | --        |
| 21  | KEY_IN5     | D.I | Non        | --     | Key In    |
| 22  | KEY_IN4     | D.I | Non        | --     | Key In    |
| 23  | KEY_IN3     | D.I | Non        | --     | Key In    |
| 24  | KEY_IN2     | D.I | Non        | --     | Key In    |
| 25  | KEY_IN1     | D.I | Non        | --     | Key In    |
| 26  | NC          | D.O | --         | --     | --        |
| 27  | NC          | D.O | --         | --     | --        |
| 28  | NC          | D.O | --         | --     | --        |
| 29  | SERIAL_DATA | D.O | High       | --     | Low       |
| 30  | SERIAL_LE   | D.O | Not        | --     | Active    |
| 31  | SERIAL_CLK  | D.O | High       | --     | Low       |
| 32  | SERIAL_IO   | D.O | High       | --     | Low       |
| 33  | NC          | D.O | --         | --     | --        |
| 34  |             | GND |            |        |           |
| 35  |             | A.O |            |        |           |
| 36  |             | GND |            |        |           |
| 37  |             | A.O |            |        |           |
| 38  |             | VCC |            |        |           |
| 39  | HSSPOUT     | A.O |            |        |           |
| 40  | LOUT0       | A.O |            |        |           |
| 41  | LOUT1       | A.O |            |        |           |
| 42  | VREFO       | A.O |            |        |           |
| 43  | DCIN0       | A.I |            |        |           |
| 44  | LIN0        | A.I |            |        |           |
| 45  | LGS0        | A.I |            |        |           |
| 46  | CIDO0       | A.I |            |        |           |
| 47  | CIDIN0      | A.I |            |        |           |
| 48  | CIDIP0      | A.I |            |        |           |
| 49  | VCCA        | VCC |            |        |           |
| 50  | DCIN1       | A.I |            |        |           |
| 51  | LIN1        | A.I |            |        |           |
| 52  | LGS1        | A.I |            |        |           |
| 53  | CIDO1       | A.I |            |        |           |
| 54  | CIDIN1      | A.I |            |        |           |
| 55  | CIDIP1      | A.I |            |        |           |
| 56  | GND         | GND |            |        |           |
| 57  | HSMIP       | A.I |            |        |           |
| 58  | HSMIN       | A.I |            |        |           |
| 59  | VREF        | A.O |            |        |           |
| 60  | MIN         | A.I |            |        |           |
| 61  | MIP         | A.I |            |        |           |
| 62  | GNDR        | GND |            |        |           |

| Pin | Description | I/O | High   | High_Z | Low        |
|-----|-------------|-----|--------|--------|------------|
| 63  | TXMOD       | A.O |        |        |            |
| 64  | VREFR       | A.O |        |        |            |
| 65  | RSSI        | A.I |        |        |            |
| 66  | VCCR        | VCC |        |        |            |
| 67  | GNDPLL      | GND |        |        |            |
| 68  | VCCPLL      | VCC |        |        |            |
| 69  | XOUT        | A.O |        |        |            |
| 70  | XIN         | A.I |        |        |            |
| 71  | GND         | GND |        |        |            |
| 72  | Reset       | D.I | Normal | --     | Reset      |
| 73  | Power Down  | D.I | Normal | --     | Power Down |
| 74  | FLASH_RST   | *   | High   | Middle | Low        |
| 75  | TX_OUT      | D.O | High   | --     | Low        |
| 76  | MOD_EN      | D.O | Active | --     | Not        |
| 77  | FLASH_SO    | *   | High   | Middle | Low        |
| 78  | FLASH_SI    | *   | High   | Middle | Low        |
| 79  | FLASH_CS    | *   | High   | Middle | Low        |
| 80  | NC          | D.O | --     | --     | --         |
| 81  | RXEN        | D.O | Active | --     | Off        |
| 82  | TXEN        | D.O | Active | --     | Off        |
| 83  | RXGAIN      | D.O | High   | --     | Low        |
| 84  | RXI         | D.I | High   | --     | Low        |
| 85  | INUSE_LED   | D.O | --     | Off    | On         |
| 86  | ANS_LED     | D.O | --     | Off    | On         |
| 87  | MSG/VM_LED  | D.O | --     | Off    | On         |
| 88  | RF_RST      | D.O | Normal | --     | WakeUp     |
| 89  | RADIO_EN    | D.O | Active | --     | Not        |
| 90  | GND         | GND | --     | --     | GND        |
| 91  | VCC         | VCC | VCC    | --     | --         |
| 92  | NC          | D.O | --     | --     | --         |
| 93  | NC          | D.O | --     | --     | --         |
| 94  | NC          | D.O | --     | --     | --         |
| 95  | SHCTRL      | D.O | Active | --     | Not        |
| 96  | NC          | D.O | --     | --     | --         |
| 97  | NC          | D.O | --     | --     | --         |
| 98  | TCK         | D.O | --     | --     | --         |
| 99  | TMS         | D.O | --     | --     | --         |
| 100 | TDI         | D.I | --     | --     | --         |
| 101 | TDO         | D.O | --     | --     | --         |
| 102 | NC          | D.O | --     | --     | --         |
| 103 | NC          | D.O | --     | --     | --         |
| 104 | NC          | D.O | --     | --     | --         |
| 105 | NC          | D.I | --     | --     | --         |
| 106 | GND         | GND | --     | --     | GND        |
| 107 | VCC         | VCC | VCC    | --     | --         |
| 108 | SEG12       | D.O | High   | --     | Low        |
| 109 | SEG11       | D.O | High   | --     | Low        |
| 110 | SEG10       | D.O | High   | --     | Low        |
| 111 | SEG9        | D.O | High   | --     | Low        |
| 112 | SEG8        | D.O | High   | --     | Low        |
| 113 | SEG7        | D.O | High   | --     | Low        |
| 114 | SEG6        | D.O | High   | --     | Low        |
| 115 | SEG5        | D.O | High   | --     | Low        |
| 116 | SEG4        | D.O | High   | --     | Low        |
| 117 | SEG3        | D.O | High   | --     | Low        |
| 118 | COM2        | D.O | High   | Middle | Low        |
| 119 | COM1        | D.O | High   | Middle | Low        |
| 120 | UART_TX     | D.O | High   | --     | Low        |
| 121 | UART_RX     | D.I | High   | --     | Low        |
| 122 | NC          | D.O | --     | --     | --         |
| 123 | WDT CTL     | D.O | --     | Normal | Low        |
| 124 | GND         | GND | --     | --     | GND        |

| Pin | Description | I/O | High | High_Z | Low |
|-----|-------------|-----|------|--------|-----|
| 125 | VCC         | VCC | VCC  | --     | --  |
| 126 | NC          | D.O | --   | --     | --  |
| 127 | FLASH_SCK   | *   | High | Middle | Low |
| 128 | WDT_CLK     | D.O | High | --     | Low |

**Note:**

- The mark "\*" in the I/O column means the port is controlled by the firmware.
- Data in the blank columns are omitted because of the Analog I/O.

## 22 CPU DATA (Handset)

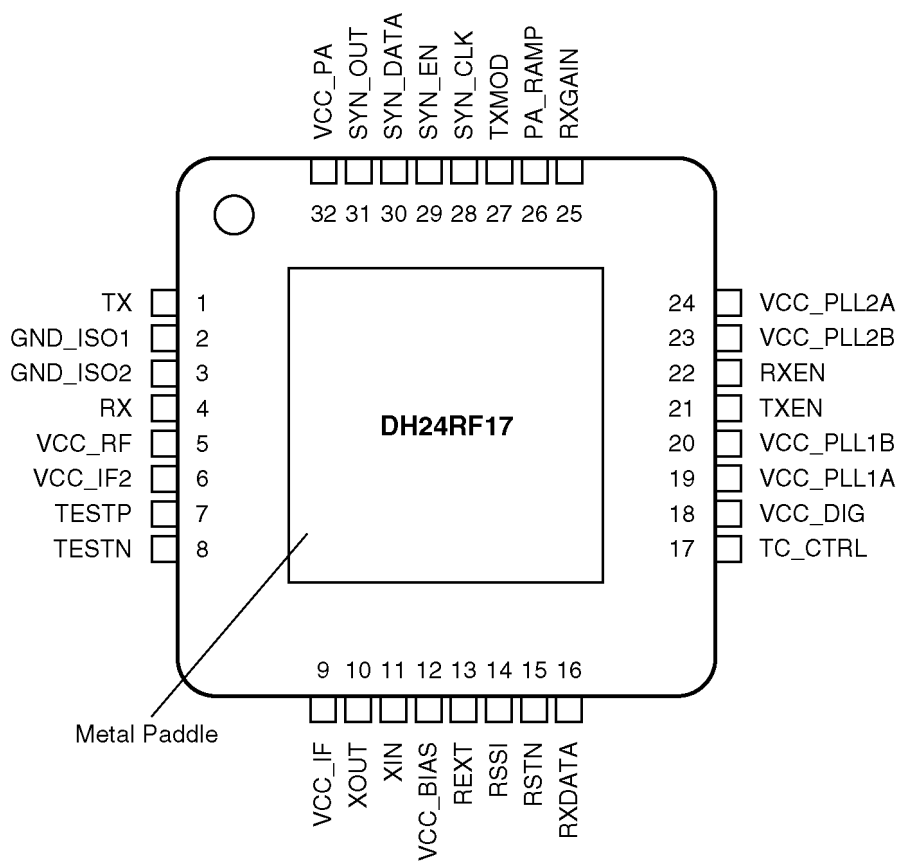
### 22.1. IC201

| Pin | Description      | I/O   | High    | High_Z | Low      |
|-----|------------------|-------|---------|--------|----------|
| 1   | NC               | D.O   | --      | --     | Normal   |
| 2   | NC               | D.O   | --      | --     | Normal   |
| 3   | DOT_LCD_RS       | D.O   | Data    | --     | Instruct |
| 4   | DOT_LCD_RW_WR    | D.O   | Read    | --     | Write    |
| 5   | DOT_LCD_E_R D    | D.O   | Active  | --     | Not      |
| 6   | DOT_LCD_D4       | D.O   | High    | --     | Low      |
| 7   | DOT_LCD_D5       | D.O   | High    | --     | Low      |
| 8   | DOT_LCD_D6       | D.O   | High    | --     | Low      |
| 9   | DOT_LCD_D7       | D.O   | High    | --     | Low      |
| 10  | DOT_LCD_POWER_SW | D.O   | on      | --     | off      |
| 11  | DOT_LCD_RESET    | D.O   | Normal  | --     | Reset    |
| 12  | NC               | D.O   | --      | --     | Normal   |
| 13  | MIPS_CHANGE      | D.I   | 73MIPS  | --     | 65MIPS   |
| 14  | VCC              | VCC   | VCC     | --     | --       |
| 15  | GND              | GND   | --      | --     | GND      |
| 16  | EEPROM_DATA      | D.I.O | High    | --     | Low      |
| 17  | EEPROM_CLK       | D.O   | High    | --     | Low      |
| 18  | EEPROM_WP        | D.O   | WP      | --     | Write    |
| 19  | ANT_LED          | D.O   | Off     | --     | On       |
| 20  | MIC POWER SW     | D.O   | Bias on | --     | Bias off |
| 21  | UART_TX          | D.O   | High    | --     | Low      |
| 22  | UART_RX          | D.I   | High    | --     | Low      |
| 23  | SERIAL_DATA      | D.O   | High    | --     | Low      |
| 24  | SERIAL_LE        | D.O   | High    | --     | Low      |
| 25  | SERIAL_CLK       | D.O   | High    | --     | Low      |
| 26  | SERIAL DI        | D.I   | High    | --     | Low      |
| 27  | EEPROM det       | D.O   | 64K     | --     | 16K      |
| 28  | GND              | GND   | --      | --     | GND      |
| 29  | SPOUTP           | A.O   | --      | --     | --       |
| 30  | GNDPA            | GND   | --      | --     | GND      |
| 31  | SPOUTN           | A.O   | --      | --     | --       |
| 32  | VCCPA            | VCC   | VCC     | --     | --       |
| 33  | HSSPOUT          | A.O   | --      | --     | --       |
| 34  | LOUT0            | A.O   | --      | --     | --       |
| 35  | DCIN0            | A.I   | --      | --     | --       |
| 36  | LIN0             | A.I   | --      | --     | --       |
| 37  | VCCA             | VCC   | VCC     | --     | --       |
| 38  | GNDA             | GND   | --      | --     | GND      |
| 39  | HSMIP            | A.I   | --      | --     | --       |
| 40  | HSMIN            | A.I   | --      | --     | --       |
| 41  | VREF             | A.O   | --      | --     | --       |
| 42  | MIN              | A.I   | --      | --     | --       |
| 43  | MIP              | A.I   | --      | --     | --       |
| 44  | GNDR             | GND   | --      | --     | GND      |
| 45  | TXMOD            | A.O   | --      | --     | --       |
| 46  | VREFR            | A.O   | --      | --     | --       |
| 47  | RSSI             | A.I   | --      | --     | --       |
| 48  | VCCR             | VCC   | VCC     | --     | --       |
| 49  | GNDPLL           | GND   | --      | --     | GND      |
| 50  | VCCPLL           | VCC   | VCC     | --     | --       |

| Pin | Description      | I/O   | High       | High_Z | Low        |
|-----|------------------|-------|------------|--------|------------|
| 51  | XOUT             | A.O   | --         | --     | --         |
| 52  | XIN              | A.I   | --         | --     | --         |
| 53  | GND              | GND   | --         | --     | GND        |
| 54  | RESET            | D.I   | Normal     | --     | Reset      |
| 55  | PDN              | D.I   | Power On   | --     | Power Down |
| 56  | (FLASH_RESET)    | D.O   | --         | --     | Normal     |
| 57  | TX OUT           | D.O   | High       | --     | Low        |
| 58  | MOD_EN           | D.O   | On         | --     | Off        |
| 59  | (FLASH_SO)       | D.O   | --         | --     | Normal     |
| 60  | (FLASH_SI)       | D.O   | High       | --     | Low        |
| 61  | (FLASH_CS)       | D.O   | --         | --     | Normal     |
| 62  | OSC_Buf          | D.O   | --         | --     | --         |
| 63  | RXEN             | D.O   | Active     | --     | Off        |
| 64  | TXEN             | D.O   | Active     | --     | Off        |
| 65  | RXGAIN           | D.O   | High       | --     | Low        |
| 66  | RXI              | D.I   | --         | --     | --         |
| 67  | VE_LED(NC)       | D.O   | --         | Off    | On         |
| 68  | Talk_LED(NC)     | D.O   | --         | Off    | On         |
| 69  | RECHARGE_LED(NC) | D.O   | --         | Off    | On         |
| 70  | LED(NC)          | D.O   | --         | --     | Normal     |
| 71  | nc               | D.O   | On         | --     | Off        |
| 72  | GND              | GND   | --         | --     | GND        |
| 73  | VCC              | VCC   | VCC        | --     | --         |
| 74  | SHCTRL           | D.O   | On         | --     | Off        |
| 75  | HEADSET_DET      | D.I   | Headset In | --     | Non        |
| 76  | TEST_CLK         | D.I   | --         | --     | --         |
| 77  | TEST_MODE_SELECT | D.I   | --         | --     | --         |
| 78  | TEST_DATA_IN     | D.I   | --         | --     | --         |
| 79  | TEST_DATA_OUT    | D.O   | --         | --     | --         |
| 80  | CHARGE_DET       | D.I   | Off Charge | --     | On Charge  |
| 81  | RF_RESET         | D.O   | Normal     | --     | Reset      |
| 82  | CHARGE_CNT       | D.O   | Trickle    | --     | Normal     |
| 83  | KEYIN5           | D.I   | Non        | --     | Key In     |
| 84  | KEYIN4           | D.I   | Non        | --     | Key In     |
| 85  | KEYIN3           | D.I   | Non        | --     | Key In     |
| 86  | KEYIN2           | D.I   | Non        | --     | Key In     |
| 87  | KEYIN1           | D.I   | Non        | --     | Key In     |
| 88  | LIGHTED          | D.O   | On         | --     | Off        |
| 89  | LCD_BACKLIGHT    | D.O   | On         | --     | Off        |
| 90  | KEYSTROBE_F      | D.O   | --         | Not    | Active     |
| 91  | KEYSTROBE_E      | D.O   | --         | Not    | Active     |
| 92  | KEYSTROBE_D      | D.O   | --         | Not    | Active     |
| 93  | KEYSTROBE_C      | D.O   | --         | Not    | Active     |
| 94  | KEYSTROBE_B      | D.O   | --         | Not    | Active     |
| 95  | KEYSTROBE_A      | D.O   | --         | Not    | Active     |
| 96  | GND              | GND   | --         | --     | GND        |
| 97  | VCC              | VCC   | VCC        | --     | --         |
| 98  | NC               | D.I.O | High       | --     | Low        |
| 99  | (FLASH_SCK)      | D.O   | High       | --     | Low        |
| 100 | NC               | D.O   | --         | --     | Normal     |

23 EXPLANATION OF IC TERMINALS (RF Unit)

23.1. IC901



| Pin | Description | I/O     | Pin | Description | I/O |
|-----|-------------|---------|-----|-------------|-----|
| 1   | TX          | O & VCC | 18  | VCC_DIG     | VCC |
| 2   | GND_ISO1    | GND     | 19  | VCC_PLL1A   | VCC |
| 3   | GND_ISO2    | GND     | 20  | VCC_PLL1B   | VCC |
| 4   | RX          | I       | 21  | TXEN        | I   |
| 5   | VCC_RF      | VCC     | 22  | RXEN        | I   |
| 6   | VCC_IF2     | VCC     | 23  | VCC_PLL2B   | VCC |
| 7   | TESTP       | O       | 24  | VCC_PLL2A   | VCC |
| 8   | TESTN       | O       | 25  | RXGAIN      | I   |
| 9   | VCC_IF      | VCC     | 26  | PA_RAMP     | I   |
| 10  | XOUT        | XI/XO   | 27  | TXMOD       | I   |
| 11  | XIN         | XI/XO   | 28  | SYN_CLK     | I   |
| 12  | VCC_BIAS    | VCC     | 29  | SYN_EN      | I   |
| 13  | REXT        | I       | 30  | SYN_DATA    | I   |
| 14  | RSSI        | O       | 31  | SYN_OUT     | O   |
| 15  | RSTN        | I       | 32  | VCC_PA      | VCC |
| 16  | RXDATA      | O       | PKG | PADDLE_GND  | GND |
| 17  | TC_CTRL     | I       |     |             |     |

## 24 HOW TO REPLACE A FLAT PACKAGE IC

### 24.1. Preparation

- PbF (: Pb free) Solder
- Soldering Iron

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

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

- Flux

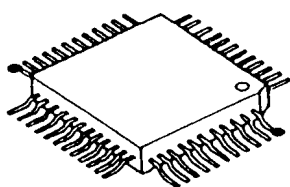
Recommended Flux: Specific Gravity → 0.82.

Type → RMA (lower residue, non-cleaning type)

**Note:** See **ABOUT LEAD FREE SOLDER (PbF: Pb free)** (P.4).

### 24.2. Procedure

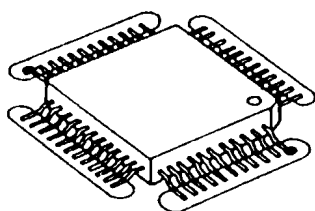
1. Tack the flat pack IC to the PCB by temporarily soldering two diagonally opposite pins in the correct positions on the PCB.



● - - - - - Temporary soldering point.

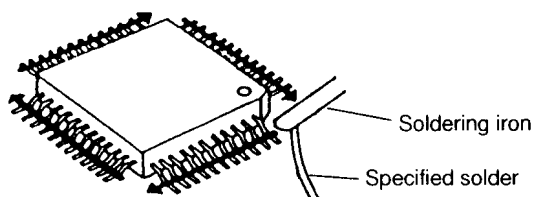
Be certain each pin is located over the correct pad on the PCB.

2. Apply flux to all of the pins on the IC.



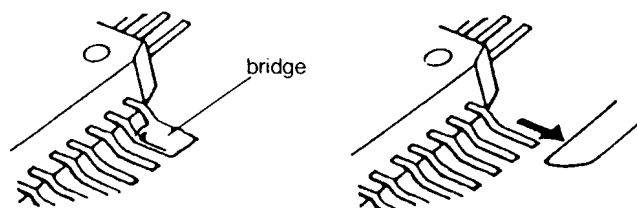
○ - - - - - Flux

3. Being careful to not unsolder the tack points, slide the soldering iron along the tips of the pins while feeding enough solder to the tip so that it flows under the pins as they are heated.

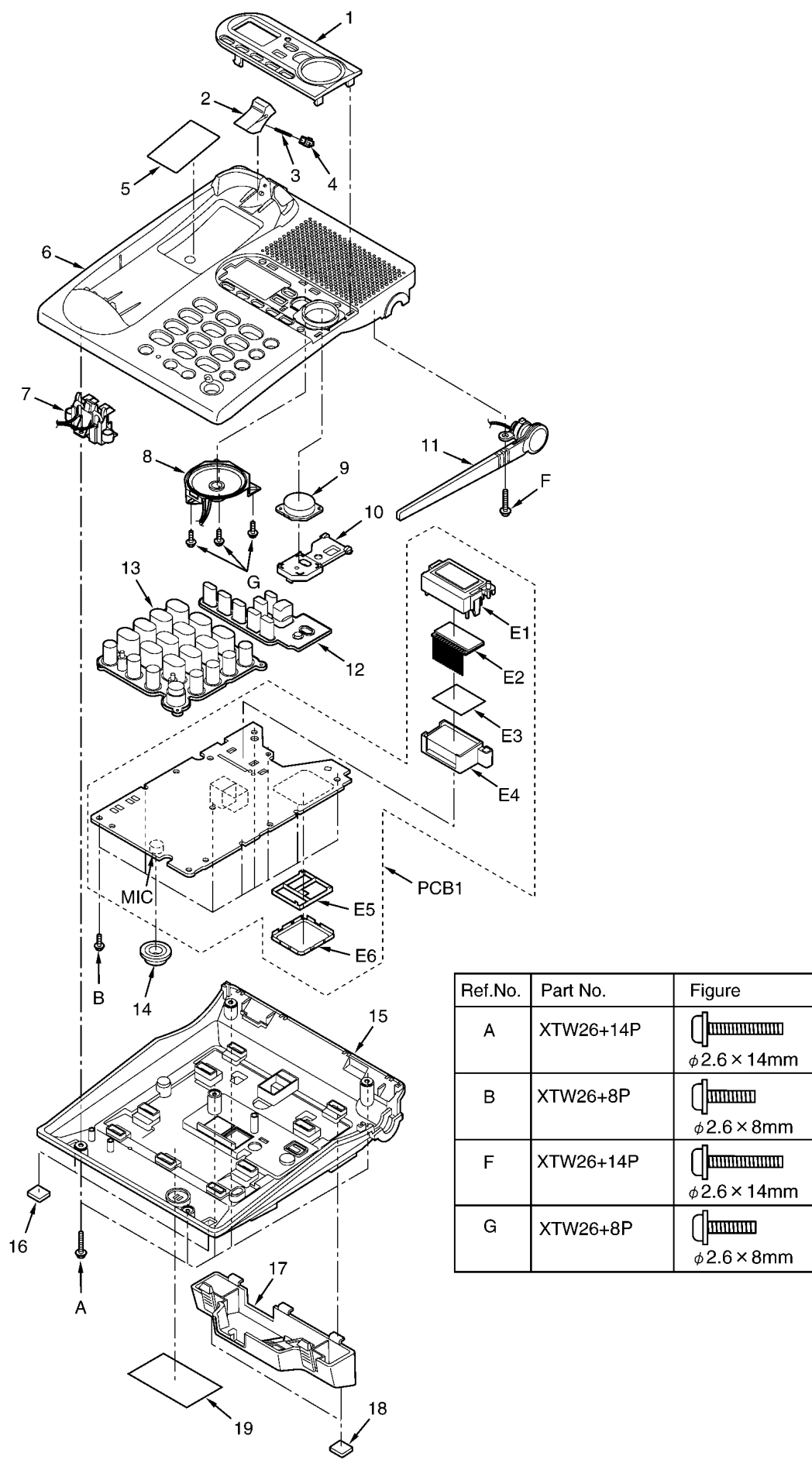


### 24.3. Removing Solder from Between Pins

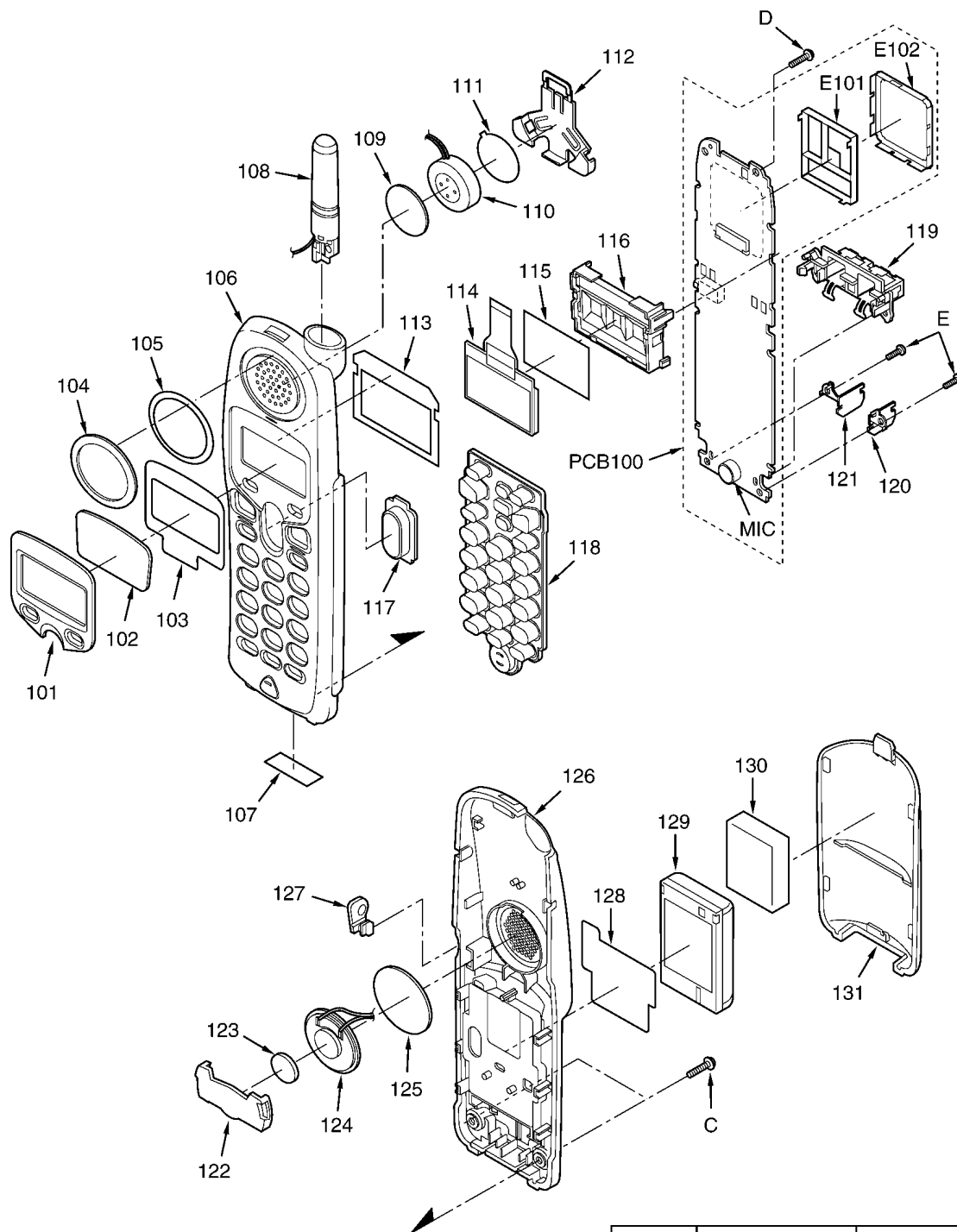
1. Add a small amount of solder to the bridged pins.
2. With a hot iron, use a sweeping motion along the flat part of the pin to draw the solder from between the adjacent pads.

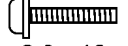
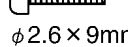


25 CABINET AND ELECTRICAL PARTS (Base Unit)

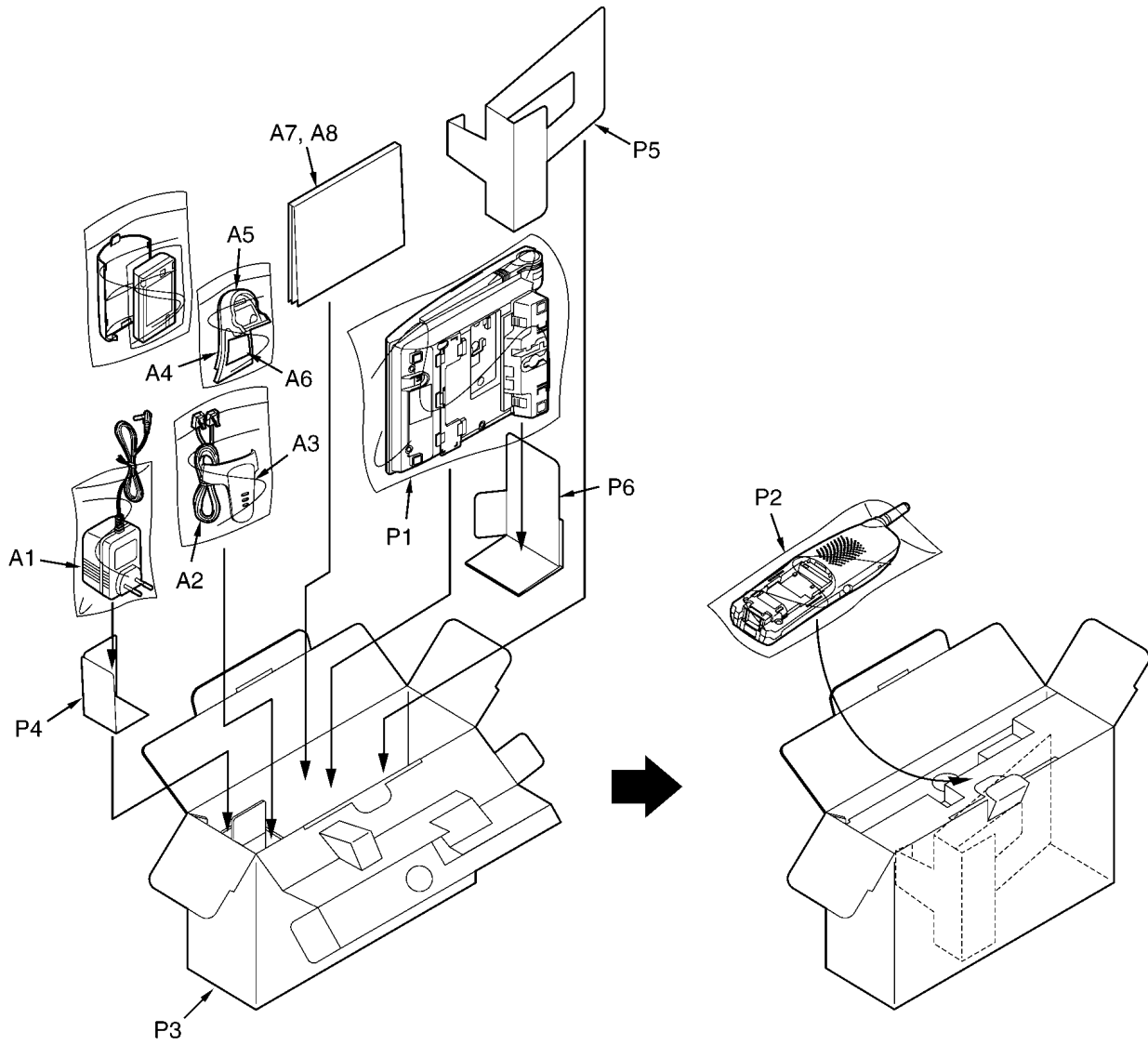


## 26 CABINET AND ELECTRICAL PARTS (Handset)



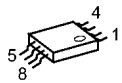
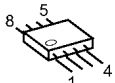
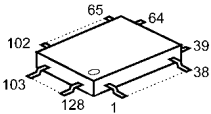
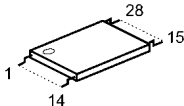
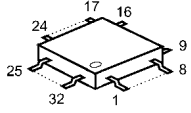
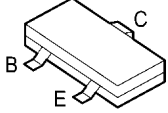
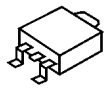
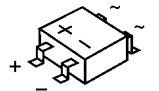
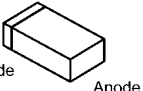
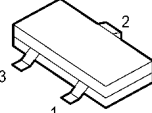
| Ref.No. | Part No.  | Figure                                                                                                |
|---------|-----------|-------------------------------------------------------------------------------------------------------|
| C       | XTW26+12P | <br>φ 2.6 × 12mm |
| D       | XTW26+12P | <br>φ 2.6 × 12mm |
| E       | XTB26+9J  | <br>φ 2.6 × 9mm  |

## 27 ACCESSORIES AND PACKING MATERIALS

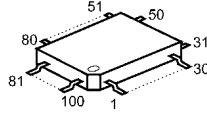
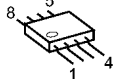
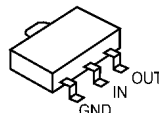
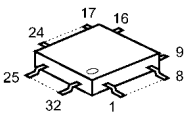
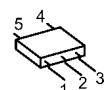
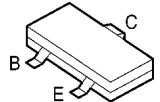
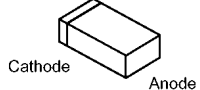
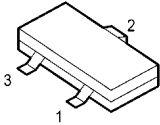
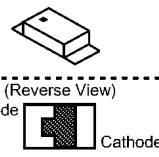


## 28 TERMINAL GUIDE OF THE IC'S, TRANSISTORS AND DIODES

### 28.1. Base Unit

|                                                                                                       |                                                                                                                                                     |                                                                                                                                                           |                                                                                                                                       |                                                                                                         |
|-------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
|  <p>PQVINJM2904V</p> |  <p>C0DBFGD00017<br/>C0CBAAD00054</p>                              |  <p>C0DBAGZ00023</p>                                                     |  <p>C2HBBL000006</p>                                |  <p>PQWIG2358BXH</p> |
|  <p>C1CB00001657</p> |  <p>2SB1218A, UN5213<br/>B1DHCD000016, 2SC39300CL<br/>2SD1819A</p> |                                                                                                                                                           |  <p>B1BBAP000011<br/>B1ADGP000001<br/>2SD0874AS</p> |  <p>2SD1758Q</p>     |
|  <p>PQVDM5S</p>      |  <p>PQVDRLZ2R0<br/>PQVDRLZ20A</p>                                  |  <p>MA111, MA8220<br/>B0DCCD000011<br/>B0JCME000035<br/>B0ECKM000008</p> |  <p>MA147</p>                                       |  <p>PQVDSML210L</p>  |

### 28.2. Handset

|                                                                                                                                                 |                                                                                                                                                                    |                                                                                                                          |                                                                                                                                                |                                                                                                           |
|-------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
|  <p>C2HBBK000037</p>                                         |  <p>PQWIG2358BXR</p>                                                            |  <p>C0CBABD00019<br/>C0CBAAD00018</p> |  <p>PQVIC61CN32N</p>                                       |  <p>C1CB00001657</p> |
|  <p>PSVTUMG11NTR</p>                                         |  <p>2SB1197KQ, 2SC39300CL<br/>2SD1819A, PQVTDTC123JU<br/>PQVTDTC143E, UN521</p> |                                                                                                                          |  <p>B0JCMD000010<br/>B0DCCD000011<br/>MA8047<br/>MA111</p> |  <p>MA132WK</p>      |
|  <p>(Reverse View)<br/>Anode Cathode</p> <p>PQVDSML310MT</p> |  <p>Anode Cathode</p> <p>B3AAB0000170</p>                                       |                                                                                                                          |                                                                                                                                                |                                                                                                           |

# 29 REPLACEMENT PARTS LIST

## Note:

### 1. RTL (Retention Time Limited)

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

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

### 2. Important safety notice

Components identified by the  $\triangle$  ; 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.

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

### 5. RESISTORS & CAPACITORS

Unless otherwise specified;

All resistors are in ohms ( $\Omega$ ) K=1000 $\Omega$ , M=1000k $\Omega$

All capacitors are in MICRO FARADS ( $\mu$ F) P= $\mu$ F

\*Type & Wattage of Resistor

#### Type

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

#### Wattage

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

\*Type & Voltage Of Capacitor

#### Type

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

#### Voltage

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

## 29.1. Base Unit

### 29.1.1. Cabinet and Electrical Parts

| Ref. No. | Part No.    | Part Name & Description | Remarks   |
|----------|-------------|-------------------------|-----------|
| 1        | PQGG10250Y1 | GRILLE, TAM             | ABS-HB    |
| 2        | PQKE10131Z7 | HANGER, HOOK LEVER      | PC+ABS-HB |
| 3        | PQUS10285Z  | SPRING, HOOK            |           |
| 4        | PQKE10134Z1 | HANGER, HOOK KNOB       | POM-HB    |
| 5        | PQQT22706Z  | LABEL, CHARGE           |           |
| 6        | PQKM10624T1 | CABINET BODY            | PS-HB     |
| 7        | PQWE10027Z  | BATTERY TERMINAL        |           |

| Ref. No. | Part No.    | Part Name & Description    | Remarks |
|----------|-------------|----------------------------|---------|
| 8        | PQAS5P13Y   | SPEAKER                    |         |
| 9        | PQBC10404Z1 | BUTTON, MESSAGE            | AS-HB   |
| 10       | PQHR11030Z  | GUIDE, LED                 | ABS-HB  |
| 11       | PQSA10098U  | ANTENNA                    |         |
| 12       | PQSX10258Z  | KEYBOARD SWITCH, TAM       |         |
| 13       | PQSX10261V  | KEYBOARD SWITCH, DIAL      |         |
| 14       | PQMG10025Z  | RUBBER PARTS, MIC          |         |
| 15       | PQKF10611Y1 | CABINET COVER              | PS-HB   |
| 16       | PQHA10018Z  | RUBBER PARTS, FOOT CUSHION |         |
| 17       | PQKL10061Z1 | STAND, WALL MOUNT          | PS-HB   |
| 18       | PQHA10017Z  | RUBBER PARTS, LEG CUSHION  |         |
| 19       | PQGT17060Z  | NAME PLATE                 |         |

### 29.1.2. Main P.C. Board Parts

#### Note:

(\*1) When you have replaced IC501 or IC701, adjust X801. refer to **Check and Adjustment X801 (Base Unit) Frequency** (P.61)

| Ref. No. | Part No.     | Part Name & Description    | Remarks |
|----------|--------------|----------------------------|---------|
| PCB1     | PQWPG2358BXH | MAIN P.C.BOARD ASS'Y (RTL) |         |
|          |              | (ICs)                      |         |
| IC201    | PQVINJM2904V | IC                         | S       |
| IC300    | C0DBFGD00017 | IC                         |         |
| IC301    | C0DBAGZ00023 | IC                         |         |
| IC501    | C2HBBL000006 | IC (*1)                    |         |
| IC601    | C0CBAAD00054 | IC                         |         |
| IC701    | PQWIG2358BXH | IC (*1)                    |         |
| IC901    | C1CB00001657 | IC                         |         |
|          |              | (TRANSISTORS)              |         |
| Q103     | B1BBAP000011 | TRANSISTOR(SI)             | S       |
| Q104     | B1ADGP000001 | TRANSISTOR(SI)             | S       |
| Q106     | 2SD1819A     | TRANSISTOR(SI)             |         |
| Q150     | 2SD1819A     | TRANSISTOR(SI)             |         |
| Q161     | 2SD0874AS    | TRANSISTOR(SI)             |         |
| Q201     | 2SD1819A     | TRANSISTOR(SI)             |         |
| Q202     | UN5213       | TRANSISTOR(SI)             | S       |
| Q301     | B1DHCD000016 | TRANSISTOR(SI)             |         |
| Q350     | 2SD1758Q     | TRANSISTOR(SI)             | S       |
| Q351     | 2SD1819A     | TRANSISTOR(SI)             |         |
| Q354     | UN5213       | TRANSISTOR(SI)             | S       |
| Q381     | 2SB1218A     | TRANSISTOR(SI)             |         |
| Q382     | 2SD1819A     | TRANSISTOR(SI)             |         |
| Q570     | 2SD1819A     | TRANSISTOR(SI)             |         |
| Q800     | 2SC39300CL   | TRANSISTOR(SI)             |         |
|          |              | (DIODES)                   |         |
| D101     | PQVDMDS      | DIODE(SI)                  |         |
| D102     | PQVDRLZ20A   | DIODE(SI)                  | S       |
| D103     | MA111        | DIODE(SI)                  | S       |
| D161     | PQVDRLZ2R0   | DIODE(SI)                  | S       |
| D303     | B0JCME000035 | DIODE(SI)                  |         |
| D306     | B0JCME000035 | DIODE(SI)                  |         |
| D376     | MA8220       | DIODE(SI)                  | S       |
| D377     | MA8220       | DIODE(SI)                  | S       |
| D381     | B0ECKM000008 | DIODE(SI)                  |         |
| D903     | B0DCCD000011 | DIODE(SI)                  |         |
| D904     | B0DCCD000011 | DIODE(SI)                  |         |
| DA101    | MA147        | DIODE(SI)                  | S       |
| LED720   | PQVDSML210L  | LED                        | S       |
| LED721   | PQVDSML210L  | LED                        | S       |
| LED723   | PQVDSML210L  | LED                        | S       |
| LED724   | PQVDSML210L  | LED                        | S       |
|          |              | (COILS)                    |         |
| L101     | PQLQXF330K   | COIL                       | S       |
| L102     | PQLQXF330K   | COIL                       | S       |
| L302     | G1C220M00037 | COIL                       |         |
| L376     | G1C6R8MA0072 | COIL                       |         |
| L377     | G1C6R8MA0072 | COIL                       |         |
| L401     | G1C6R8MA0072 | COIL                       |         |
| L402     | G1C6R8MA0072 | COIL                       |         |
| L501     | PQLQR2KA213  | COIL                       | S       |

| Ref. No. | Part No.     | Part Name & Description   | Remarks |
|----------|--------------|---------------------------|---------|
| L901     | MQLRE18NJF   | COIL                      |         |
| L903     | MQLRF4N7DF2  | COIL                      |         |
| L904     | MQLRE22NJF   | COIL                      |         |
| L905     | MQLRF10NJF   | COIL                      |         |
| L909     | MQLRF3N3DF2  | COIL                      |         |
| L911     | MQLRF2N2DF2  | COIL                      |         |
| L913     | MQLRF10NJF   | COIL                      |         |
| L990     | PQLQR4D1R0K  | COIL                      | S       |
| R903     | MQLRE10NJF   | COIL                      |         |
|          |              | (COMPONENTS PARTS)        |         |
| RA401    | D1H42222A006 | RESISTOR ARRAY            |         |
| RA501    | EXRV8V472JV  | RESISTOR ARRAY            |         |
| RA705    | EXRV8V104JV  | RESISTOR ARRAY            |         |
| RA901    | D1H810240004 | RESISTOR ARRAY            |         |
|          |              | (VARISTORS)               |         |
| SA101    | PQVDDSS301L  | VARISTOR (SURGE ABSORBER) | S       |
| SA102    | PQVDDSS301L  | VARISTOR (SURGE ABSORBER) | S       |
|          |              | (RESISTORS)               |         |
| R104     | ERJ3GEYJ103  | 10K                       |         |
| R105     | ERJ2GEJ102   | 1K                        |         |
| R107     | ERJ3GEYJ473  | 47K                       |         |
| R108     | ERJ3GEYJ103  | 10K                       |         |
| R110     | ERJ3GEYJ106  | 10M                       |         |
| R112     | ERJ3GEYJ102  | 1K                        |         |
| R113     | ERJ3GEYJ473  | 47K                       |         |
| R114     | ERJ3GEYJ394  | 390K                      |         |
| R115     | ERJ3GEYJ394  | 390K                      |         |
| R116     | ERJ3GEYJ335  | 3.3M                      |         |
| R120     | ERJ3GEYJ104  | 100K                      |         |
| R122     | ERJ2GEJ333   | 33K                       |         |
| R125     | ERJ3GEYJ105  | 1M                        |         |
| R127     | ERJ2GEJ102   | 1K                        |         |
| R130     | ERJ3GEYJ104  | 100K                      |         |
| R131     | ERJ3GEYJ104  | 100K                      |         |
| R135     | ERJ3GEYJ106  | 10M                       |         |
| R136     | ERJ3GEYJ472  | 4.7K                      |         |
| R140     | ERJ3GEYJ102  | 1K                        |         |
| R150     | ERJ2GEJ101   | 100                       |         |
| R151     | ERJ2GEJ5R6   | 5.6                       |         |
| R152     | ERJ2GEJ823   | 82K                       |         |
| R155     | ERJ2GEJ102   | 1K                        |         |
| R157     | ERJ2GE0R00   | 0                         |         |
| R162     | ERJ3GEYJ393  | 39K                       |         |
| R163     | ERJ2GEJ470   | 47                        |         |
| R164     | ERJ12YJ330   | 33                        |         |
| R165     | ERJ2GEJ681   | 680                       |         |
| R166     | ERJ2GEJ122   | 1.2K                      |         |
| R170     | ERJ2GEJ221   | 220                       |         |
| R201     | ERJ2GEJ105X  | 1M                        |         |
| R202     | ERJ2GEJ224   | 220K                      |         |
| R203     | ERJ2GEJ104   | 100K                      |         |
| R204     | ERJ2GEJ103   | 10K                       |         |
| R205     | ERJ2GEJ103   | 10K                       |         |
| R303     | ERJ3GEYJ121  | 120                       |         |
| R305     | PQ4R10XJ101  | 100                       | S       |
| R333     | ERJ2GEJ473   | 47K                       |         |
| R334     | ERJ2GEJ103   | 10K                       |         |
| R351     | PQ4R10XJ150  | 15                        | S       |
| R352     | ERJ3GEYJ681  | 680                       |         |
| R353     | PQ4R10XJ150  | 15                        | S       |
| R354     | ERJ2GEJ101   | 100                       |         |
| R355     | PQ4R10XJ150  | 15                        | S       |
| R356     | PQ4R10XJ120  | 12                        | S       |
| R381     | ERJ2GEJ332   | 3.3K                      |         |
| R382     | ERJ2GEJ472X  | 4.7K                      |         |
| R383     | ERJ2GEJ103   | 10K                       |         |
| R387     | ERJ2GEJ102   | 1K                        |         |
| R409     | ERJ2GEJ101   | 100                       |         |
| R415     | ERJ2GEJ222   | 2.2K                      |         |
| R416     | ERJ2GEJ222   | 2.2K                      |         |
| R501     | ERJ2GEJ102   | 1K                        |         |
| R507     | ERJ2GEJ102   | 1K                        |         |
| R516     | ERJ2GEJ151   | 150                       |         |

| Ref. No. | Part No.     | Part Name & Description | Remarks |
|----------|--------------|-------------------------|---------|
| R543     | ERJ2GEJ472X  | 4.7K                    |         |
| R570     | ERJ2GEJ473   | 47K                     |         |
| R571     | ERJ3GEYJ123  | 12K                     |         |
| R572     | ERJ3GEYJ102  | 1K                      |         |
| R612     | ERJ2GEJ101   | 100                     |         |
| R706     | ERJ2GEJ104   | 100K                    |         |
| R720     | ERJ2GEJ271   | 270                     |         |
| R721     | ERJ2GEJ271   | 270                     |         |
| R723     | ERJ2GEJ391   | 390                     |         |
| R724     | ERJ2GEJ391   | 390                     |         |
| R803     | ERJ2GEJ182   | 1.8K                    |         |
| R804     | ERJ2GEJ151   | 150                     |         |
| R805     | ERJ2GEJ393X  | 39K                     |         |
| R806     | ERJ2GEJ561   | 560                     |         |
| R807     | ERJ2GEJ681   | 680                     |         |
| R906     | ERJ3GEYF103  | 330                     |         |
| R909     | ERJ2GEJ331   | 1K                      |         |
| R919     | ERJ2GEJ102   | 1K                      |         |
| R930     | ERJ2GEJ102   |                         |         |
| R931     | ERJ2GEJ102   | 1K                      |         |
| R932     | ERJ2GEJ102   | 1K                      |         |
| R933     | ERJ2GEJ331   | 330                     |         |
| R940     | ERJ2GEJ4R7   | 4.7                     |         |
| R941     | ERJ2GEJ100   | 10                      |         |
| R942     | ERJ2GEJ100   | 10                      |         |
| R943     | ERJ2GE0R00   | 0                       |         |
| R991     | ERJ2GEJ102   | 1K                      |         |
| R992     | ERJ2GEJ102   | 1K                      |         |
|          |              | (CAPACITORS)            |         |
| C101     | ECUV2H681KB  | 680P                    | S       |
| C102     | ECUV2H681KB  | 680P                    | S       |
| C106     | PQCUV1A684KB | 0.68                    |         |
| C109     | ECUV1H103KBV | 0.01                    |         |
| C110     | ECUV1H103KBV | 0.01                    |         |
| C111     | ECUV1H681JCV | 680P                    | S       |
| C112     | ECUV1H681JCV | 680P                    | S       |
| C114     | ECUV1H103KBV | 0.01                    |         |
| C116     | PQCUV1H154KR | 0.15                    |         |
| C117     | PQCUV1H154KR | 0.15                    |         |
| C124     | ECUE1E562KBQ | 0.0056                  |         |
| C144     | ECUE1A104KBQ | 0.1                     |         |
| C149     | ECUE1A104KBQ | 0.1                     |         |
| C151     | ECUE1A473KBQ | 0.047                   |         |
| C155     | ECUE1H272KBQ | 0.0027                  | S       |
| C158     | ECUV1A224KBV | 0.22                    |         |
| C161     | EEE1EA100SR  | 10                      |         |
| C162     | ECUV1H101JCV | 100P                    |         |
| C163     | ECUV1H472KBV | 0.0047                  | S       |
| C166     | ECUE1A473KBQ | 0.047                   |         |
| C167     | EEE1CA100SR  | 10                      |         |
| C170     | EEE0JA331P   | 330                     |         |
| C201     | ECUE1C103KBQ | 0.01                    | S       |
| C202     | ECUV1C224KBV | 0.22                    |         |
| C300     | ECUV1C474KBV | 0.47                    |         |
| C303     | ECUV1E104KBV | 0.1                     |         |
| C308     | F261E1010011 | 100                     | S       |
| C309     | ECUV1E104KBV | 0.1                     |         |
| C310     | ECUV1A105KBV | 1                       |         |
| C311     | EEEFK1C470P  | 47                      |         |
| C315     | EEE0JA331P   | 330                     |         |
| C317     | EEE0JA331P   | 330                     |         |
| C318     | ECUE1A104KBQ | 0.1                     |         |
| C351     | ECUE1A104KBQ | 0.1                     |         |
| C353     | ECUE1C103KBQ | 0.01                    | S       |
| C382     | ECUE1C103KBQ | 0.01                    | S       |
| C415     | EEE0JA470SR  | 47                      |         |
| C440     | ECUE1C103KBQ | 0.01                    | S       |
| C441     | ECUE1A104KBQ | 0.1                     |         |
| C447     | ECUE1A223KBQ | 0.022                   |         |
| C448     | ECUE1A223KBQ | 0.022                   |         |
| C502     | F1G0J1050007 | 1                       |         |
| C509     | ECUE1A104KBQ | 0.1                     |         |
| C510     | ECUE1A104KBQ | 0.1                     |         |

| Ref. No. | Part No.     | Part Name & Description | Remarks |
|----------|--------------|-------------------------|---------|
| C511     | ECUE1A104KBQ | 0.1                     |         |
| C512     | ECUE1A104KBQ | 0.1                     |         |
| C553     | ECUE1A104KBQ | 0.1                     |         |
| C554     | ECUE1A104KBQ | 0.1                     |         |
| C560     | ECST0JY106   | 10                      |         |
| C591     | ECUV1C104KBV | 0.1                     |         |
| C606     | EEE0GA331WP  | 330                     |         |
| C609     | ECUE1A104KBQ | 0.1                     |         |
| C618     | ECUE1H471KBQ | 470P                    |         |
| C713     | ECUE1A104KBQ | 0.1                     |         |
| C801     | ECUE1A104KBQ | 0.1                     |         |
| C803     | F1J0J1060006 | 10                      |         |
| C804     | ECUE1H2R0CCQ | 2P                      |         |
| C805     | ECUE1H2R0CCQ | 2P                      |         |
| C806     | ECUE1A104KBQ | 0.1                     |         |
| C809     | ECUE1H3R0CCQ | 3P                      |         |
| C810     | ECUE1A104KBQ | 0.1                     |         |
| C812     | ECUE1A104KBQ | 0.1                     |         |
| C813     | ECUE1A104KBQ | 0.1                     |         |
| C901     | ECUE1H100DCQ | 10P                     | S       |
| C903     | ECUE1H100DCQ | 10P                     | S       |
| C904     | ECUE1H010CCQ | 1P                      | S       |
| C910     | ECUE1H010CCQ | 1P                      | S       |
| C911     | ECUE1H100DCQ | 10P                     | S       |
| C915     | ECUE1H100DCQ | 10P                     | S       |
| C917     | ECUE1H100DCQ | 10P                     | S       |
| C918     | ECUE1H100DCQ | 10P                     | S       |
| C921     | ECUE1H100DCQ | 10P                     | S       |
| C922     | ECUE1H100DCQ | 10P                     | S       |
| C937     | ECUE1H471KBQ | 470P                    | S       |
| C938     | ECUE1H100DCQ | 10P                     | S       |
| C939     | ECUE1H100DCQ | 10P                     | S       |
| C940     | ECUE1C103KBQ | 0.01                    | S       |
| C941     | ECUE1H102KBQ | 0.001                   | S       |
| C942     | ECSTAJ0JA106 | 10                      | S       |
| C944     | ECUE1A104KBQ | 0.1                     |         |
| C946     | ECUE1H222KBQ | 0.0022                  | S       |
| C952     | ECUE1H2R0CCQ | 2P                      |         |
| C956     | ECUE1H100DCQ | 10P                     | S       |
| C960     | ECUE1H100DCQ | 10P                     | S       |
| C962     | ECUE1H100DCQ | 10P                     | S       |
| C963     | ECUE1H100DCQ | 10P                     | S       |
| C964     | ECUV1H102KBV | 0.001                   |         |
| C965     | ECUE1H221JCQ | 220P                    | S       |
| C976     | ECUE1A104KBQ | 0.1                     |         |
| C977     | ECUE1H102KBQ | 0.001                   | S       |
| C979     | ECUE1H102KBQ | 0.001                   | S       |
| C980     | ECUE1C103KBQ | 0.01                    | S       |
| C983     | ECUE1H102KBQ | 0.001                   | S       |
| C984     | ECUE1H1R5CCQ | 1.5P                    | S       |
| C990     | ECUE1H102KBQ | 0.001                   | S       |
| C991     | ECUE1H100DCQ | 10P                     | S       |
| C992     | ECUE1H121JCQ | 120P                    |         |
| C993     | ECUE1A104KBQ | 0.1                     |         |
| C995     | ECUE1H102KBQ | 0.001                   | S       |
| C996     | ECUE1A104KBQ | 0.1                     |         |
| R126     | ECUE1C103KBQ | 0.01                    | S       |
|          |              | (OTHERS)                |         |
| MIC      | L0CBAB000052 | MICROPHONE              |         |
| E1       | PQGP10254Z1  | PANEL, LCD              | S       |
| E2       | L5DCBCB00015 | LIQUID CRYSTAL DISPLAY  |         |
| E3       | PQHS10327Z   | TAPE, LCD               |         |
| E4       | PQHR11031Z   | GUIDE, LCD              |         |
| E5       | PQMC10471Z   | MAGNETIC SHIELD, FRAME  |         |
| E6       | PQMC10472Z   | MAGNETIC SHIELD, COVER  |         |
| CN101    | PQJJ2H003Z   | JACK                    | S       |
| FL901    | J0E2457B0008 | LCR FILTER              |         |
| P101     | PFRT002      | THERMISTOR (POSISTOR)   | S       |
| X801     | H0J138500003 | CRYSTAL OSCILLATOR      |         |

## 29.2. Handset

### 29.2.1. Cabinet and Electrical Parts

| Ref. No. | Part No.     | Part Name & Description            | Remarks |
|----------|--------------|------------------------------------|---------|
| 101      | PQGG10254Z1  | GRILLE, LCD                        |         |
| 102      | PQGP10234Z1  | PANEL, LCD                         |         |
| 103      | PQHS10630Z   | TAPE, DOUBLE SIDE                  |         |
| 104      | PQKE10373Z3  | SPACER, SPEAKER RING               |         |
| 105      | PQHS10623Z   | TAPE, DOUBLE SIDE                  |         |
| 106      | PQKM10628Z1  | CABINET BODY                       |         |
| 107      | PQGT17061Z   | NAME PLATE                         |         |
| 108      | PQSA10146X   | ANTENNA                            |         |
| 109      | PQHS10592Z   | SPACER, SPEAKER                    |         |
| 110      | L0AD02A00020 | SPEAKER                            |         |
| 111      | PQHS10634Z   | SPACER, SPEAKER                    |         |
| 112      | PQHR10984Z   | GUIDE, SPEAKER                     |         |
| 113      | PQHS10624Z   | SPACER, LCD CUSHION                |         |
| 114      | L5DCBDC00009 | LIQUID CRYSTAL DISPLAY             |         |
| 115      | PQHX11186Z   | SPACER, LCD                        |         |
| 116      | PQHR11028Z   | GUIDE, LCD                         |         |
| 117      | PQBC10405Z1  | BUTTON, VOLUME                     |         |
| 118      | PQSX10264V   | KEYBOARD SWITCH                    |         |
| 119      | PQWE10032Z   | BATTERY TERMINAL                   |         |
| 120      | PQJT10211Z   | BATTERY TERMINAL (L)               |         |
| 121      | PQJT10212Z   | BATTERY TERMINAL (R)               |         |
| 122      | PQHR10778Z   | GUIDE, SPEAKER                     |         |
| 123      | PQHG10689Z   | SPACER, SP RUBBER SHEET            |         |
| 124      | L0AD02A00010 | SPEAKER                            |         |
| 125      | PQHS10622Z   | SPACER, SPEAKER NET                |         |
| 126      | PQKF10612Z1  | CABINET COVER                      |         |
| 127      | PQKE10374Z3  | COVER, EARPHONE                    |         |
| 128      | PQHX11247X   | PLASTIC PARTS, BATTERY COVER SHEET |         |
| 129      | HHR-P104     | BATTERY                            |         |
| 130      | PQHE10151Z   | SPACER, BATTERY                    |         |
| 131      | PQKK10141Z1  | LID, BATTERY COVER                 |         |

### 29.2.2. Main P.C. Board Parts

#### Note:

(\*2) When you have replaced IC201 or IC202, adjust X201.  
refer to **Check and Adjustment X201 (Handset)**  
**Frequency (P.61)**

| Ref. No. | Part No.     | Part Name & Description    | Remarks |
|----------|--------------|----------------------------|---------|
| PCB100   | PQWPG2358BXR | MAIN P.C.BOARD ASS'Y (RTL) |         |
|          |              | (ICs)                      |         |
| IC201    | C2HBBK000037 | IC (*2)                    |         |
| IC202    | PQWIG2358BXR | IC (*2)                    |         |
| IC203    | C0CBABD00019 | IC                         |         |
| IC204    | C0CBAAD00018 | IC                         |         |
| IC205    | PQVIC61CN32N | IC                         | S       |
| IC901    | C1CB00001657 | IC                         |         |
|          |              | (TRANSISTORS)              |         |
| Q201     | PSVTUMG11NTR | TRANSISTOR(SI)             | S       |
| Q204     | 2SC39300CL   | TRANSISTOR(SI)             |         |
| Q205     | 2SD1819A     | TRANSISTOR(SI)             |         |
| Q206     | PQVTDTC143E  | TRANSISTOR(SI)             | S       |
| Q207     | UN521        | TRANSISTOR(SI)             | S       |
| Q208     | 2SD1819A     | TRANSISTOR(SI)             |         |
| Q209     | PQVTDTC143E  | TRANSISTOR(SI)             | S       |
| Q210     | 2SD1819A     | TRANSISTOR(SI)             |         |
| Q212     | 2SB1197KQ    | TRANSISTOR(SI)             |         |
| Q213     | PQVTDTC123JU | TRANSISTOR(SI)             | S       |
|          |              | (DIODES)                   |         |
| D203     | MA111        | DIODE(SI)                  | S       |
| D205     | B0JCMD000010 | DIODE(SI)                  |         |
| D206     | B0JCMD000010 | DIODE(SI)                  |         |
| D207     | B0JCMD000010 | DIODE(SI)                  |         |
| D208     | B0JCMD000010 | DIODE(SI)                  |         |
| D213     | MA132WK      | DIODE(SI)                  | S       |

| Ref. No. | Part No.     | Part Name & Description | Remarks |
|----------|--------------|-------------------------|---------|
| D217     | MA8047       | DIODE(SI)               | S       |
| D218     | MA8047       | DIODE(SI)               | S       |
| D219     | MA8047       | DIODE(SI)               | S       |
| D220     | MA8047       | DIODE(SI)               | S       |
| D903     | B0DCCD000011 | DIODE(SI)               |         |
| D904     | B0DCCD000011 | DIODE(SI)               |         |
| LED201   | PQVDSML310MT | LED                     | S       |
| LED202   | PQVDSML310MT | LED                     | S       |
| LED203   | PQVDSML310MT | LED                     | S       |
| LED204   | PQVDSML310MT | LED                     | S       |
| LED205   | PQVDSML310MT | LED                     | S       |
| LED206   | PQVDSML310MT | LED                     | S       |
| LED207   | PQVDSML310MT | LED                     | S       |
| LED208   | B3AAB0000170 | LED                     |         |
|          |              | (COILS)                 |         |
| L204     | PQLQR2KB113T | COIL                    | S       |
| L205     | PQLQR2KB113T | COIL                    | S       |
| L206     | PQLQR2KB113T | COIL                    | S       |
| L207     | G1CR47J00005 | COIL                    |         |
| L208     | G1CR47J00005 | COIL                    |         |
| L209     | G1CR47J00005 | COIL                    |         |
| L210     | G1CR47J00005 | COIL                    |         |
| L901     | MQLRE18NJF   | COIL                    |         |
| L903     | MQLRF4N7DF2  | COIL                    |         |
| L904     | MQLRE22NJF   | COIL                    |         |
| L905     | MQLRF10NJF   | COIL                    |         |
| L909     | MQLRF3N3DF2  | COIL                    |         |
| L911     | MQLRF2N2DF2  | COIL                    |         |
| L913     | MQLRF10NJF   | COIL                    |         |
| L990     | PQLQR4D1R0K  | COIL                    | S       |
| R903     | MQLRE10NJF   | COIL                    |         |
|          |              | (COMPONENTS PARTS)      |         |
| CA201    | F5A421030002 | CAPACITOR ARRAY         |         |
| CA202    | F5A424740002 | CAPACITOR ARRAY         |         |
| CA203    | F5A841040004 | CAPACITOR ARRAY         |         |
| RA201    | EXRV8V472JV  | RESISTOR ARRAY          |         |
| RA204    | D1H42222A006 | RESISTOR ARRAY          |         |
| RA205    | D1H41022A006 | RESISTOR ARRAY          |         |
| RA207    | EXB28V221JX  | RESISTOR ARRAY          |         |
| RA901    | D1H810240004 | RESISTOR ARRAY          |         |
|          |              | (CONNECTOR AND JACK)    |         |
| CN201    | K1MN22B00096 | CONNECTOR               |         |
| CN203    | K2HD103D0001 | JACK                    |         |
|          |              | (RESISTORS)             |         |
| R201     | ERJ2GEJ331   | 330                     |         |
| R202     | ERJ2GEJ331   | 330                     |         |
| R203     | ERJ2GEJ331   | 330                     |         |
| R204     | ERJ2GEJ331   | 330                     |         |
| R208     | ERJ2GEJ121   | 120                     |         |
| R217     | ERJ3GEYF434  | 430K                    | S       |
| R218     | ERJ3GEYF824  | 820K                    | S       |
| R220     | ERJ2GEJ274   | 270K                    |         |
| R222     | ERJ2GEJ102   | 1K                      |         |
| R223     | ERJ2GEJ102   | 1K                      |         |
| R224     | ERJ2GEJ103   | 10K                     |         |
| R226     | ERJ2GEJ180   | 18                      |         |
| R227     | ERJ2GEJ180   | 18                      |         |
| R228     | ERJ2GEJ224   | 220K                    |         |
| R230     | ERJ2GEJ102   | 1K                      |         |
| R232     | ERJ2GEJ103   | 10K                     |         |
| R234     | ERJ2GEJ225   | 2. 2M                   |         |
| R235     | ERJ2GEJ225   | 2. 2M                   |         |
| R236     | ERJ2GEJ223   | 22K                     |         |
| R241     | ERJ2GEJ183   | 18K                     |         |
| R242     | ERJ2GEJ223   | 22K                     |         |
| R245     | ERJ2GEJ103   | 10K                     |         |
| R247     | ERJ2GEJ391   | 390                     |         |
| R248     | ERJ2GEJ223   | 22K                     |         |
| R249     | ERJ2GEJ222   | 2. 2K                   |         |
| R260     | ERJ2GEJ104   | 100K                    |         |
| R263     | ERJ2GEJ473   | 47K                     |         |
| R264     | ERJ2GEJ473   | 47K                     |         |
| R266     | ERJ2GEJ102   | 1K                      |         |

| Ref. No. | Part No.     | Part Name & Description | Remarks |
|----------|--------------|-------------------------|---------|
| R268     | ERJ3GEYJ102  | 1K                      |         |
| R269     | ERJ3GEYJ102  | 1K                      |         |
| R270     | ERJ3GEYJ102  | 1K                      |         |
| R275     | ERJ2GEJ104   | 100K                    |         |
| R276     | ERJ2GEJ561   | 560                     |         |
| R277     | ERJ2GEJ104   | 100K                    |         |
| R279     | ERJ2GEJ104   | 100K                    |         |
| R284     | ERJ2GEJ182   | 1. 8K                   |         |
| R285     | ERJ2GEJ151   | 150                     |         |
| R286     | ERJ2GEJ393X  | 39K                     |         |
| R906     | ERJ3GEYF103  | 10K                     |         |
| R909     | ERJ2GEJ331   | 330                     |         |
| R919     | ERJ2GEJ102   | 1K                      |         |
| R930     | ERJ2GEJ102   | 1K                      |         |
| R931     | ERJ2GEJ102   | 1K                      |         |
| R932     | ERJ2GEJ102   | 1K                      |         |
| R933     | ERJ2GEJ331   | 330                     |         |
| R940     | ERJ2GEJ4R7   | 4. 7                    |         |
| R941     | ERJ2GEJ100   | 10                      |         |
| R942     | ERJ2GEJ100   | 10                      |         |
| R943     | ERJ2GE0R00   | 0                       |         |
| R991     | ERJ2GEJ102   | 1K                      |         |
| R992     | ERJ2GEJ102   | 1K                      |         |
|          |              | (CAPACITORS)            |         |
| C203     | ECUE1A104KBQ | 0. 1                    |         |
| C206     | ECUE1H101JCQ | 100P                    | S       |
| C208     | ECUE1C103KBQ | 0. 01                   | S       |
| C209     | ECUE1C103KBQ | 0. 01                   | S       |
| C210     | ECUV1C104KBV | 0. 1                    |         |
| C211     | ECUV1C474KBV | 0. 47                   |         |
| C212     | ECUE1C103KBQ | 0. 01                   | S       |
| C213     | EEE0GA331WP  | 330                     |         |
| C214     | ECUE1A104KBQ | 0. 1                    |         |
| C215     | ECUE1C103KBQ | 0. 01                   | S       |
| C216     | ECST0JY226   | 22                      |         |
| C217     | F1G0J1050007 | 1                       | S       |
| C218     | F1G0J1050007 | 1                       | S       |
| C219     | ECUE1A104KBQ | 0. 1                    |         |
| C220     | EEE0JA101SP  | 100P                    |         |
| C221     | ECUE1A104KBQ | 0. 1                    |         |
| C222     | ECUE1A104KBQ | 0. 1                    |         |
| C224     | ECUE1A104KBQ | 0. 1                    |         |
| C225     | ECST0JY226   | 22                      |         |
| C226     | ECUE1H100DCQ | 10P                     | S       |
| C228     | ECUE1A104KBQ | 0. 1                    |         |
| C229     | ECUE1H100DCQ | 10P                     | S       |
| C230     | ECUE1C103KBQ | 0. 01                   | S       |
| C231     | ECUE1C103KBQ | 0. 01                   | S       |
| C234     | ECUE1A104KBQ | 0. 1                    |         |
| C236     | ECUE1H4R0CCQ | 4P                      |         |
| C237     | ECUE1H4R0CCQ | 4P                      |         |
| C239     | ECUE1C103KBQ | 0. 01                   | S       |
| C240     | ECUE1A104KBQ | 0. 1                    |         |
| C242     | ECUE1A104KBQ | 0. 1                    |         |
| C267     | ECST0JY226   | 22                      |         |
| C268     | ECST0JY225   | 2. 2                    |         |
| C271     | ECUV1H103KBV | 0. 01                   |         |
| C272     | ECUV1C224KBV | 0. 22                   |         |
| C273     | ECUV1H103KBV | 0. 01                   |         |
| C274     | ECUV1C224KBV | 0. 22                   |         |
| C275     | ECUE1A683KBQ | 0. 068                  |         |
| C277     | ECUE1H100DCQ | 10P                     | S       |
| C278     | ECUE1H100DCQ | 10P                     | S       |
| C280     | ECUE1A104KBQ | 0. 1                    |         |
| C284     | ECUE1C103KBQ | 0. 01                   | S       |
| C291     | ECUE1A104KBQ | 0. 1                    |         |
| C294     | ECUE1A104KBQ | 0. 1                    |         |
| C296     | ECUE1A104KBQ | 0. 1                    |         |
| C298     | ECUE1A104KBQ | 0. 1                    |         |
| C303     | F1J0J1060006 | 10                      |         |
| C306     | ECUE1H471KBQ | 470P                    | S       |
| C308     | F1G0J1050007 | 1                       | S       |
| C309     | ECUE1A104KBQ | 0. 1                    |         |

| Ref. No. | Part No.     | Part Name & Description | Remarks |
|----------|--------------|-------------------------|---------|
| C311     | ECUE1H3R0CCQ | 3P                      |         |
| C312     | ECUE1A104KBQ | 0.1                     |         |
| C901     | ECUE1H100DCQ | 10P                     | S       |
| C903     | ECUE1H100DCQ | 10P                     | S       |
| C904     | ECUE1H010CCQ | 1P                      | S       |
| C910     | ECUE1H010CCQ | 1P                      | S       |
| C911     | ECUE1H100DCQ | 10P                     | S       |
| C915     | ECUE1H100DCQ | 10P                     | S       |
| C917     | ECUE1H100DCQ | 10P                     | S       |
| C918     | ECUE1H100DCQ | 10P                     | S       |
| C921     | ECUE1H100DCQ | 10P                     | S       |
| C922     | ECUE1H100DCQ | 10P                     | S       |
| C937     | ECUE1H471KBQ | 470P                    | S       |
| C938     | ECUE1H100DCQ | 10P                     | S       |
| C939     | ECUE1H100DCQ | 10P                     | S       |
| C940     | ECUE1C103KBQ | 0.01                    | S       |
| C941     | ECUE1H102KBQ | 0.001                   | S       |
| C942     | ECSTAJ0JA106 | 10                      | S       |
| C944     | ECUE1A104KBQ | 0.1                     |         |
| C946     | ECUE1H222KBQ | 0.0022                  | S       |
| C952     | ECUE1H2R0CCQ | 2P                      |         |
| C956     | ECUE1H100DCQ | 10P                     | S       |
| C960     | ECUE1H100DCQ | 10P                     | S       |
| C962     | ECUE1H100DCQ | 10P                     | S       |
| C963     | ECUE1H100DCQ | 10P                     | S       |
| C964     | ECUV1H102KBV | 0.001                   |         |
| C965     | ECUE1H221JCQ | 220P                    | S       |
| C976     | ECUE1A104KBQ | 0.1                     |         |
| C977     | ECUE1H102KBQ | 0.001                   | S       |
| C979     | ECUE1H102KBQ | 0.001                   | S       |
| C980     | ECUE1C103KBQ | 0.01                    | S       |
| C983     | ECUE1H102KBQ | 0.001                   | S       |
| C984     | ECUE1H1R5CCQ | 1.5P                    | S       |
| C990     | ECUE1H102KBQ | 0.001                   | S       |
| C991     | ECUE1H100DCQ | 10P                     | S       |
| C992     | ECUE1H121JCQ | 120P                    |         |
| C993     | ECUE1A104KBQ | 0.1                     |         |
| C995     | ECUE1H102KBQ | 0.001                   | S       |
| C996     | ECUE1A104KBQ | 0.1                     |         |
|          |              | (OTHERS)                |         |
| MIC      | L0CBAB000052 | MICROPHONE              |         |
| E101     | PQMC10471Z   | MAGNETIC SHIELD, FRAME  |         |
| E102     | PQMC10472Z   | MAGNETIC SHIELD, COVER  |         |
| FL901    | J0E2457B0008 | LCR FILTER              |         |
| X201     | H0J138500003 | CRYSTAL OSCILLATOR      |         |

### 29.3. Accessories and Packing Materials

| Ref. No. | Part No.    | Part Name & Description          | Remarks   |
|----------|-------------|----------------------------------|-----------|
| A1       | PQLV1BXZ    | AC ADAPTOR                       | ⚠         |
| A2       | PQJA10075Z  | CORD, TELEPHONE                  |           |
| A3       | PQKE10375Z3 | HANGER, BELT CLIP                | PC+ABS-HB |
| A4       | PQHG10680Z  | RUBBER PARTS, SHEET              |           |
| A5       | PQKE10364Z1 | PLASTIC PARTS, SHOULDER REST     |           |
| A6       | PQQT22597Z  | LABEL, CAUTION                   |           |
| A7       | PQQX14265Z  | INSTRUCTION BOOK                 |           |
| A8       | PQQW13435Z  | QUICK GUIDE                      |           |
| P1       | PQPP170Y    | PROTECTION COVER (for Base Unit) |           |
| P2       | XZB10X35A02 | PROTECTION COVER (for Handset)   |           |
| P3       | PQPK14372Y  | GIFT BOX                         |           |
| P4       | PQPD10595Z  | CUSHION                          |           |
| P5       | PQPD10596Z  | CUSHION                          |           |
| P6       | PQPD10597Z  | CUSHION                          |           |

## 30 FOR SCHEMATIC DIAGRAM

### 30.1. Base Unit (SCHEMATIC DIAGRAM (Base Unit))

**Notes:**

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

**Important Safety Notice:**

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

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

### 30.2. Handset (SCHEMATIC DIAGRAM (Handset))

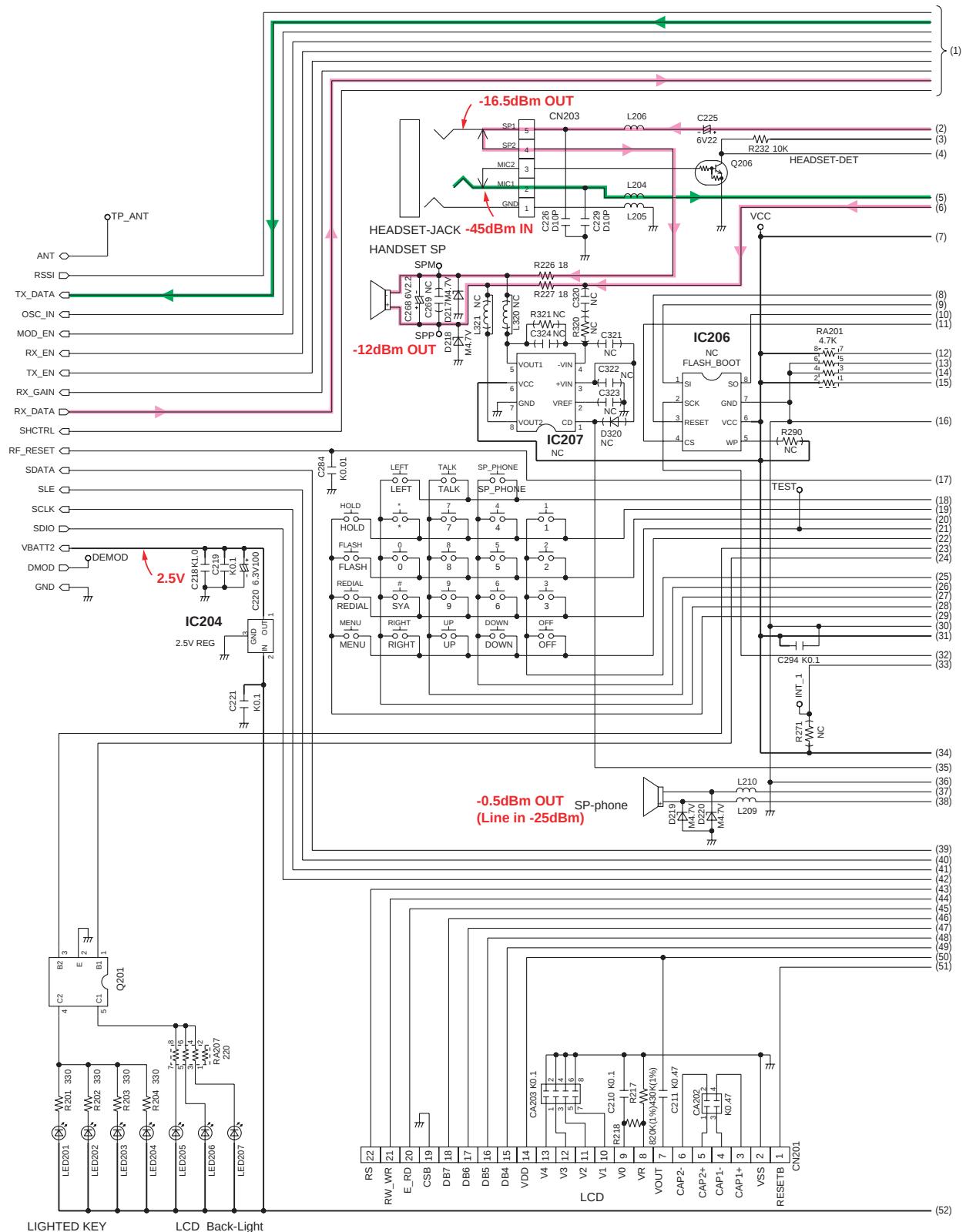
**Notes:**

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

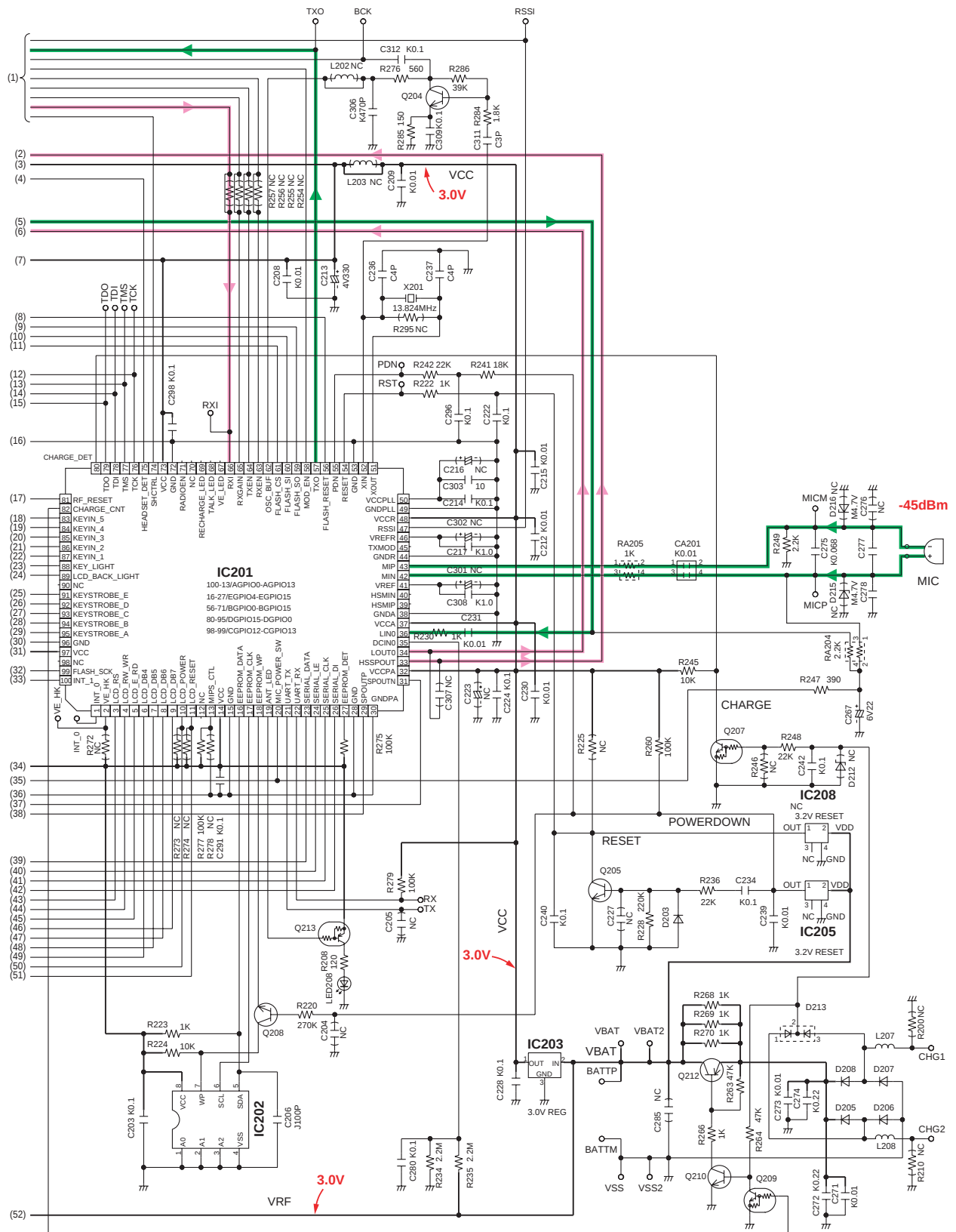


KX-TG2360JXS SCHEMATIC DIAGRAM (Base Unit)

### 32 SCHEMATIC DIAGRAM (Handset)



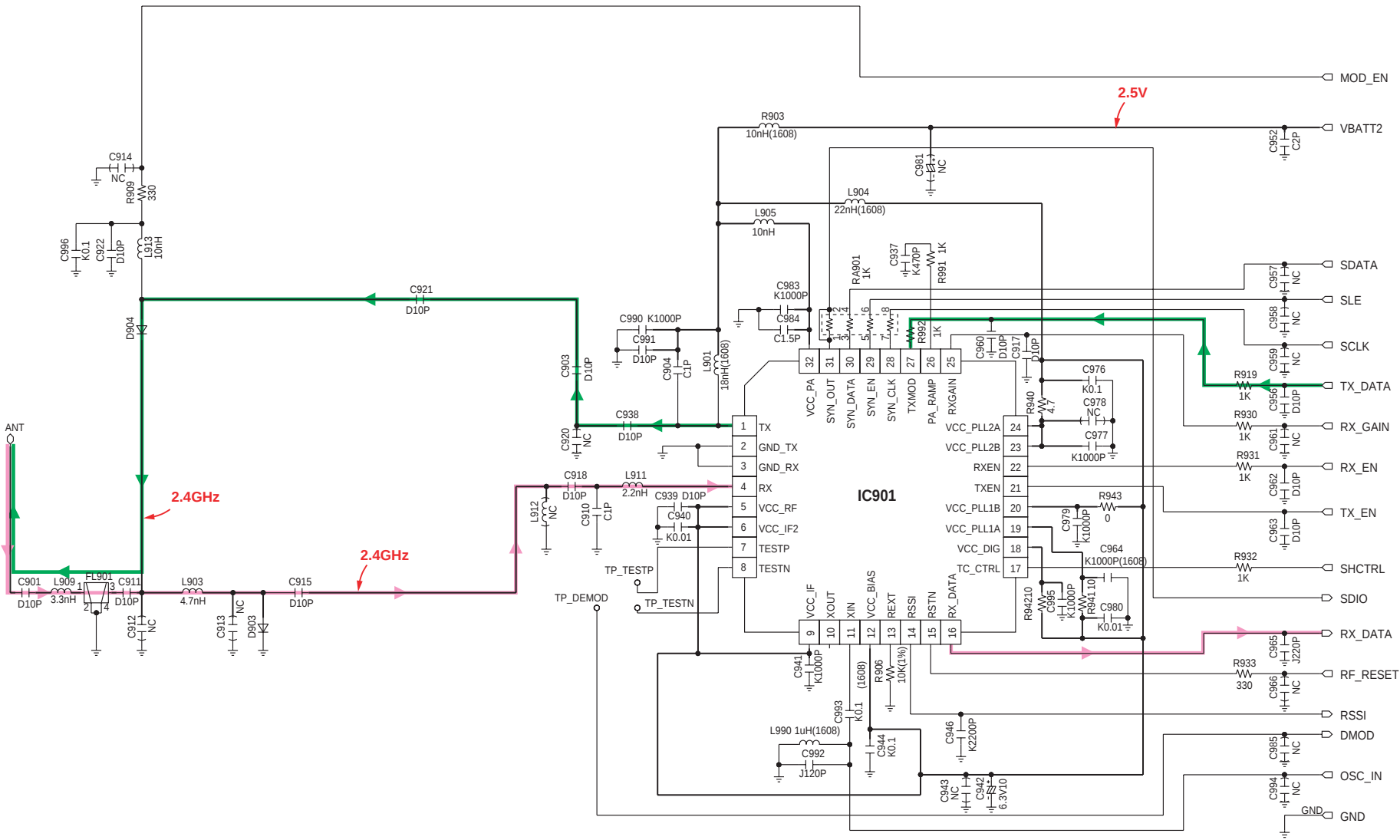
NC: No Components



NC: No Components

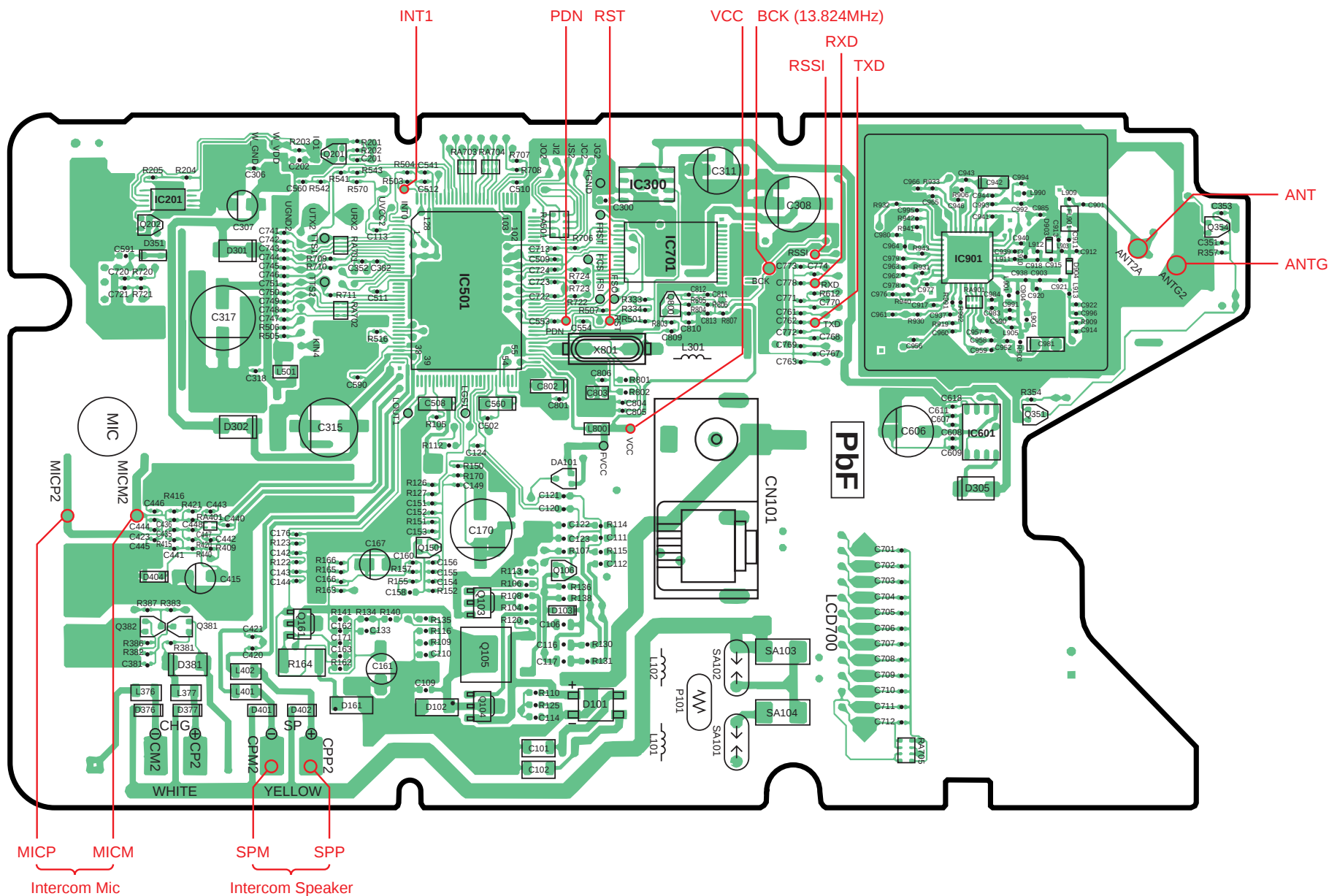
KX-TGA236JXS SCHEMATIC DIAGRAM (Handset)

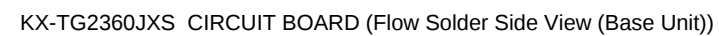
33 SCHEMATIC DIAGRAM (RF PART)



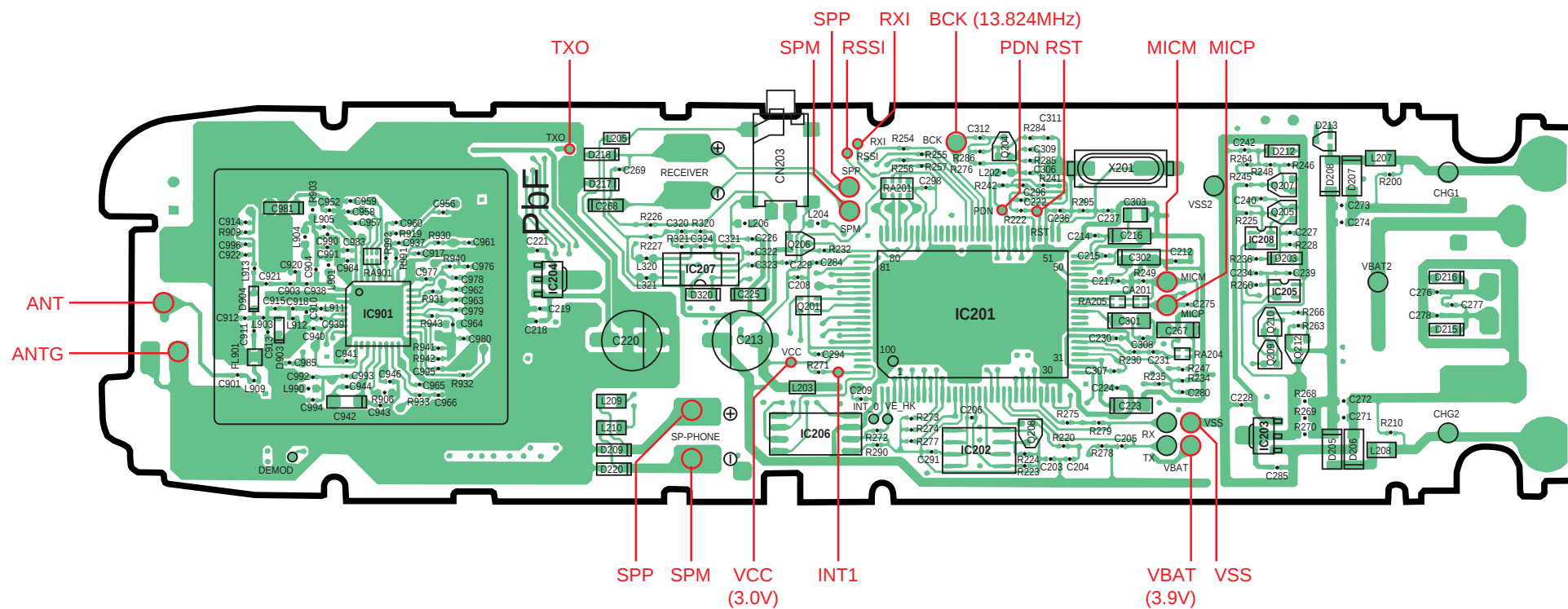
NC: No Components

### 34.1. Component View



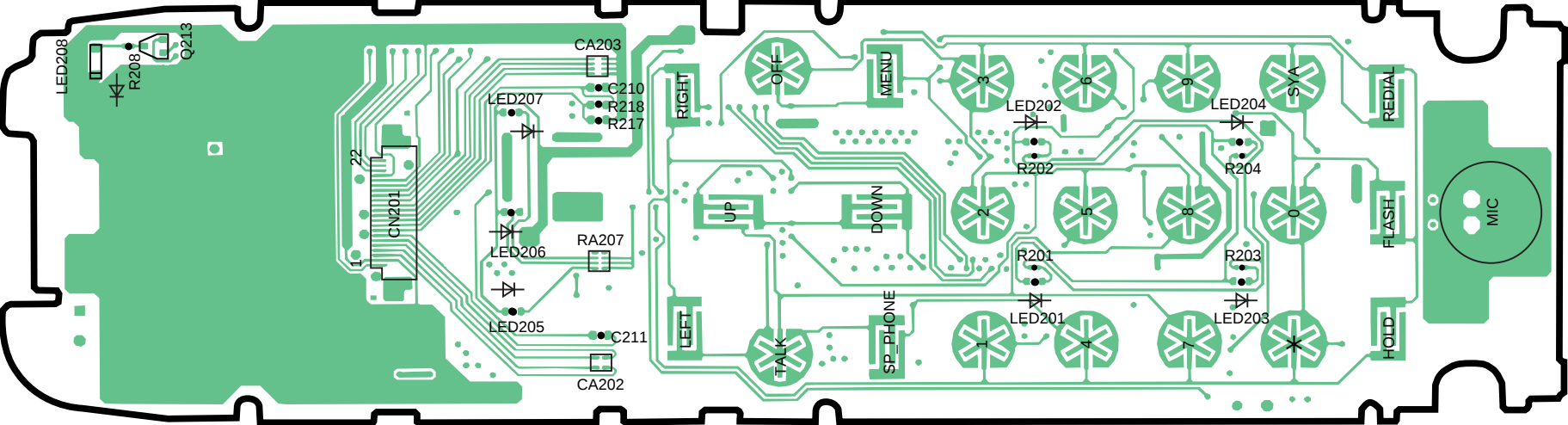


## 35.1. Component View



KX-TGA236JXS CIRCUIT BOARD (Component View (Handset))

# 35.2. Flow Solder Side View



KX-TGA236JXS CIRCUIT BOARD (Flow Solder Side View (Handset))

