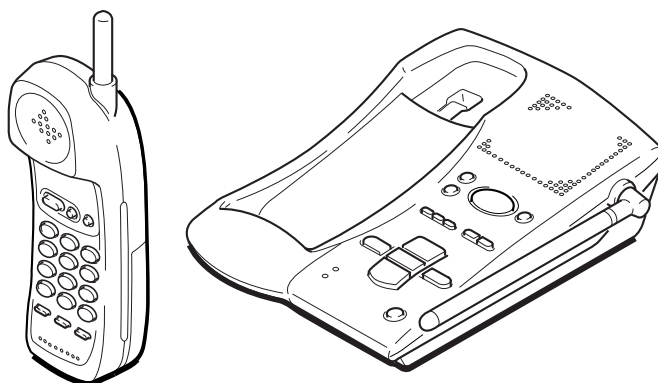


SPP-A941

SERVICE MANUAL

Ver 1.1 1999.11

*US Model
Canadian Model*



SPECIFICATIONS

General

Frequency band
902 - 928 MHz
Operating channel
30 channels
Dial signal
Tone, 10 PPS (pulse) selectable
Supplied accessories
AC power adaptor (AC-T130)
Telephone line cords (2)
Wall bracket for base unit
Rechargeable battery pack (BP-T23)

Handset

Power source
Rechargeable battery pack BP-T23
Battery charging time
Approx. 10 hours
Battery life
Standby: Approx. 6 days
Talk: Approx. 7 hours
Dimensions
Approx. 56 x 183 x 43 mm (w/h/d),
antenna excluded
(approx. 2 1/4 x 7 1/4 x 1 3/4 inches)
Antenna: Approx. 32 mm
(approx. 1 1/4 inches)
Mass
Approx. 230 g
(approx. 8 oz), battery included

Base unit

Power source
DC 9V from AC power adaptor
AC-T130
Battery charging time
Approx. 24 hours
Dimensions
Approx. 155 x 60 x 220 mm (w/h/d),
antenna excluded
(approx. 6 1/8 x 2 3/8 x 8 3/4 inches)
Antenna: Approx. 120 mm
(approx. 4 3/4 inches)
Mass
Approx. 520 g
(approx. 1 lb 2 oz), wall bracket excluded

Answering machine

Maximum recording time
About 15 minutes, using incorporated IC
Greeting message
Up to 90 seconds per each
Incoming and Memo message
Up to 4 minutes per message

Design and specifications are subject to
change without notice.

**CORDLESS TELEPHONE
WITH ANSWERING SYSTEM**



SONY®

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Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK $\triangle$ OR DOTTED LINE WITH MARK $\triangle$ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE $\triangle$ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

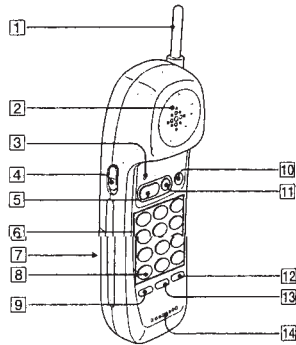
SECTION 1 GENERAL

This section is extracted from instruction manual.

Identifying the parts

Refer to the pages indicated in parentheses for details.

Handset

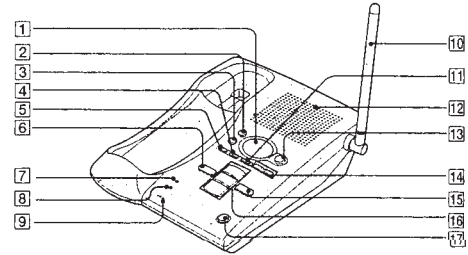


- | | |
|--|---|
| 1 Antenna | 9 PGM (Program) button (p. 21)
Used to store numbers for speed dialing. |
| 2 Speaker | 10 CHANNEL button (p. 16)
Used to select a better channel. |
| 3 TALK/BATT LOW lamp
Lights up during a call, flashes when you store a phone number for speed dialing. | 11 OFF button (p. 16)
Allows you to disconnect the call. |
| 4 VOL (volume) switch (p. 16)
Adjusts the handset volume. | 12 REDIAL button (p. 17)
Redials the last number called. |
| 5 TALK/FLASH button (p. 16, 18)
Lets you make or receive a call. | 13 SPEED DIAL button (p. 19)
Used to make a call with speed dialing. |
| 6 Dialing keys (p. 16) | 14 Microphone |
| 7 Battery compartment (p. 11) | |
| 8 * TONE button (p. 16)
Allows you to switch temporarily to tone dialing. | |

continued

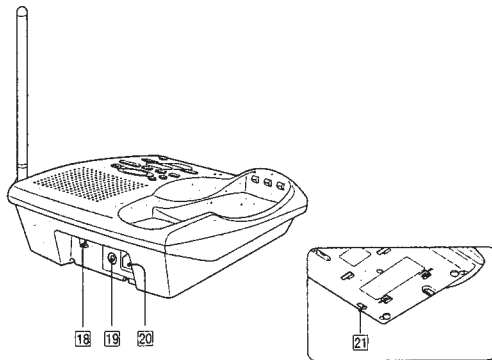
Identifying the parts (continued)

Base Unit



- | | |
|--|---|
| 1 Message counter (p. 29)
Indicates the number of new messages recorded. "A" appears in the announcement only mode. "F" appears when there is no space to record messages. | 6 REPEAT/SLOW button (p. 30)
Press to repeat the current message or go back to the previous message. Keep the button pressed for slow playback of messages. |
| 2 REC/MEMO button (p. 25, 34)
Records a greeting or memo message. | 7 CHARGE lamp (p. 11)
Lights while the battery is being charged. |
| 3 ERASE button (p. 26, 31)
Erases the recorded greeting or messages. | 8 IN USE lamp (p. 18)
Lights when the cordless handset is in use. |
| 4 SELECT button (p. 24) | 9 MIC (microphone) (p. 25, 34) |
| 5 TIME/SET button (p. 24, 35)
Press when setting the day and time, or to check the current time. Also used when setting the remote ID code (security code). | 10 Antenna (p. 9, 37) |
| | 11 MENU button (p. 24) |
| | 12 Speaker |

Getting Started | 13^{us} 14^{us} | Getting Started



- | | |
|---|--|
| 13 ANSWER ON/OFF button (p. 29)
Turns the answering function on or off. | 18 Hook for AC power adaptor cord (p. 9) |
| 14 VOLUME +/- buttons (p. 31)
Adjusts the speaker volume. | 19 DC IN 9V jack (p. 9, 37) |
| 15 SKIP/QUICK button (p. 30)
Press to skip to the next message. Keep the button pressed for quick playback of messages. | 20 LINE (telephone line) jack (p. 9, 37) |
| 16 PLAY/STOP (MAILBOX 1, 2, 3) buttons (p. 30)
Plays back the messages in each mailbox. | 21 DIAL MODE switch (p. 10)
Selects pulse or tone dialing. |
| 17 HANDSET LOCATOR button (p. 23)
Allows you to page the cordless handset. | |

Getting Started | 15^{us}

Step 2

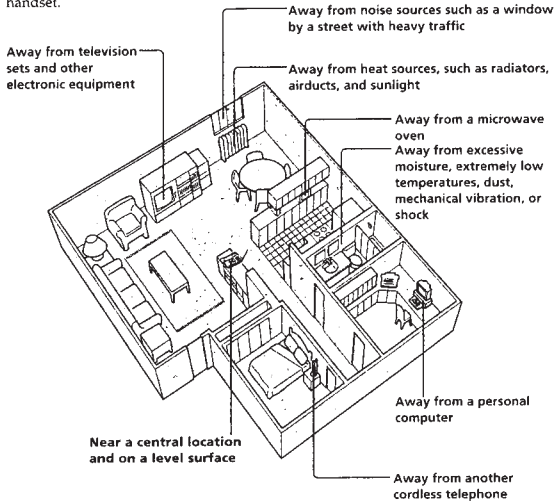
Setting up the base unit

Do the following steps:

- Choose the best location
- Connect the base unit
- Choose the dialing mode

Choose the best location

Where you place the base unit affects the reception quality of the handset.



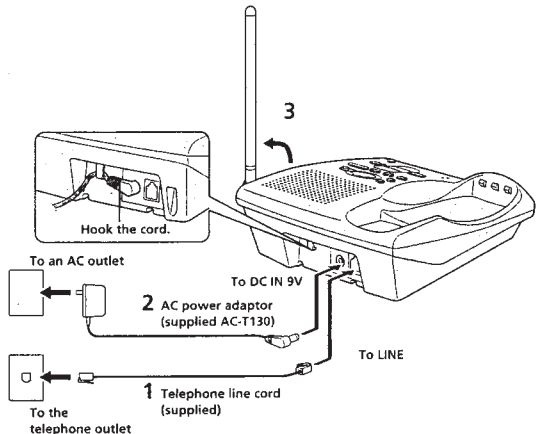
CAUTION:

- Should you experience intermittent loss of audio during a conversation, try moving closer to the base or move base unit away from other noise sources.
- The cordless telephone operates at a frequency that may cause interference to nearby TVs and VCRs; the base unit should not be placed near or on the top of a TV or VCR; and, if interference is experienced, moving the cordless telephone farther away from the TV or VCR will often reduce or eliminate the interference.

8^{us} Getting Started

Connect the base unit

If you want to hang the base unit on the wall, see page 37.



- 1 Connect the telephone line cord to the LINE jack and to a telephone outlet.
- 2 Connect the AC power adaptor to the DC IN 9V jack and to an AC outlet.
- 3 Raise the antenna. Make sure it points towards the ceiling.

continued

Getting Started

Step 2: Setting up the base unit (continued)

Notes

- Use only the supplied AC-T130 AC power adaptor. Do not use any other AC power adaptor.
- Connect the AC power adaptor to a continuous power supply.
- Place the base unit close to the AC outlet so that you can unplug the AC power adaptor easily.

Polarity of the plug



Tip

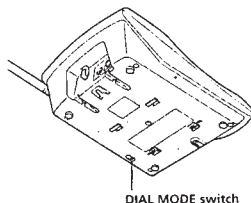
If your telephone outlet is not modular, contact your telephone service company for assistance.

Modular



Choose the dialing mode

For the telephone to work properly, select an appropriate dialing mode (tone or pulse).



Depending on your dialing system, set the DIAL MODE switch as follows:

If your dialing system is	Set the switch to
Tone	TONE
Pulse	PULSE

If you aren't sure of your dialing system

Make a trial call with the DIAL MODE switch set to TONE.

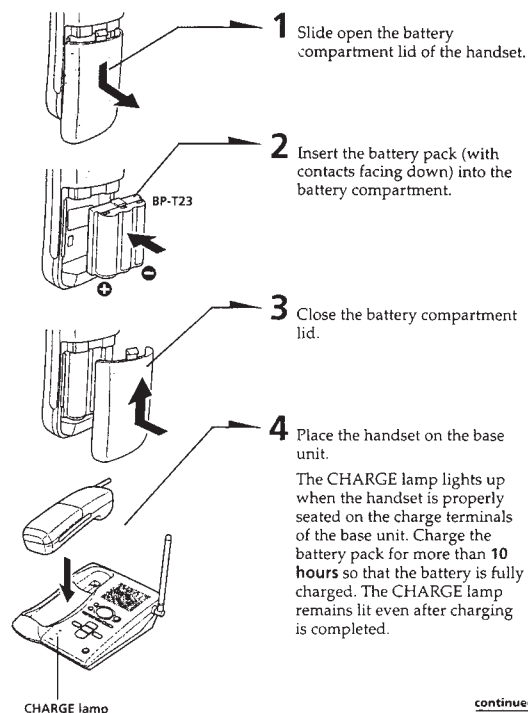
If the call connects, leave the switch as is; otherwise, set to PULSE.

10^{us} Getting Started

Step 3

Preparing the battery pack

Charge the battery pack for more than 10 hours before you start using your phone.



continued

Getting Started

Getting Started 11^{us}

Step 3: Preparing the battery pack (continued)

Battery duration

A fully charged battery pack lasts for about:

- Approx. 7 hours when you use the handset continuously
- Approx. 6 days when the handset is in standby mode.

Notes

- The battery pack will gradually discharge over a long period of time, even if not in use.
- If you leave the battery pack in the handset without charging it, the battery pack will be completely discharged.
It may require several times of charging to recover its full capacity.

To obtain the best performance from the battery

Do not place the handset on the base unit after each call. The battery works best if the handset is returned to the base unit after two or three calls. However, do not leave the handset off the base unit for a long period of time as this will completely discharge the battery pack.

When to purchase a new battery pack

If the battery lasts only a few minutes even after 10 hours of charging, the usable life of the battery has expired and needs replacement. Contact your local Sony authorized dealer or service center, and ask for a Sony BP-T23 rechargeable battery pack.

Note

Battery life may vary depending on usage condition and ambient temperature.

12^{us} | Getting Started

If the handset battery becomes weak during a call

You hear a beep every three seconds and the TALK/BATT LOW lamp on the handset flashes.

The call will disconnect soon. Replace the handset on the base unit to charge.

For optimum performance, charge the battery for a full 10 hours.

Note that during the first 10 - 15 minutes of charging, the phone will be inactive, i.e., unable to make or receive a call.

After this initial 10 - 15 minutes, you may be able to use the phone, but the battery duration will be very short; thus it is recommended that you fully charge the battery before the next usage.

Redialing

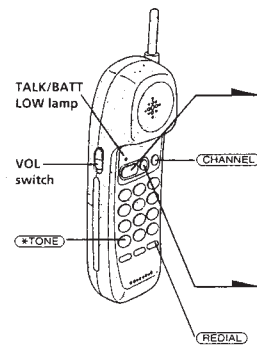
- 1 Press **TALK/FLASH**.
The TALK/BATT LOW lamp lights up.
- 2 Press **REDIAL** to redial the number last dialed.

Note

If the number last dialed exceeds 16 digits, only the first 16 digits are dialed.

Basics

Making calls



- 1 Pick up the handset from the base unit.
- 2 Press **TALK/FLASH**.
TALK/BATT LOW lamp lights up, then you'll hear a dial tone. If you hear beeps, move closer to the base unit.
- 3 Dial the phone number.
- 4 When you're done talking, press **OFF** or replace the handset on the base unit.
The TALK/BATT LOW lamp goes off.

Additional tasks

To	Do this
Select a better channel	Press CHANNEL .
Adjust the handset volume	Set the VOL switch to H (high), M (middle) or L (low).
Switch to tone dialing temporarily	Press *TONE while using the telephone after you're connected. The line remains in tone dialing until disconnected.
Switch to another call ("call waiting" service*)	Press TALK/FLASH to access the flash function. Press TALK/FLASH again to return to the first caller.

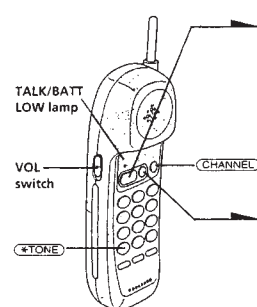
*Contact your telephone company to subscribe to this service.

Notes

- Before dialing, make sure you can hear the dial tone, otherwise you cannot dial correctly.
- When the TALK/BATT LOW lamp lights up by pressing **TALK/FLASH**, the IN USE lamp on the base unit lights up simultaneously.

16^{us} | Basics

Receiving calls



- 1 When you hear the phone ring:
 - Press **TALK/FLASH** (or any key except **OFF**).
 - or
 - Pick up the handset from the base unit when the handset is placed on the base unit.The TALK/BATT LOW lamp lights up at the same time the IN USE lamp on the base unit lights up.
- 2 When you're done talking, press **OFF** or replace the handset on the base unit.
The TALK/BATT LOW and IN USE lamps go off.

Additional tasks

To	Do this
Select a better channel	Press CHANNEL .
Adjust the handset volume	Set the VOL switch to H (high), M (middle) or L (low).
Switch to tone dialing temporarily	Press *TONE while using the telephone after you're connected. The line remains in tone dialing until disconnected.
Switch to another call ("call waiting" service*)	Press TALK/FLASH to access the flash function. Press TALK/FLASH again to return to the first caller.

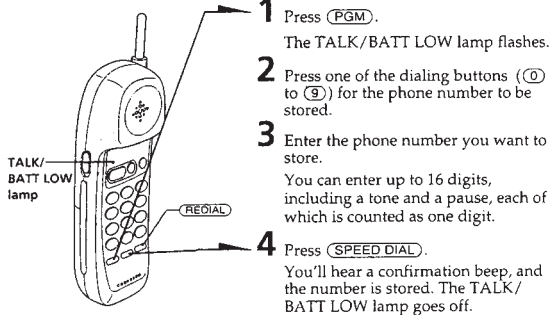
*Contact your telephone company to subscribe to this service.

Basics | 17^{us} | 18^{us} | Basics

Speed dialing

You can dial with a touch of a few buttons by storing a phone number on a dialing button. You can store up to 10 different phone numbers.

Storing phone numbers



- 1 Press **(PGM)**.
The TALK/BATT LOW lamp flashes.
- 2 Press one of the dialing buttons (**(0)** to **(9)**) for the phone number to be stored.
- 3 Enter the phone number you want to store.
You can enter up to 16 digits, including a tone and a pause, each of which is counted as one digit.
- 4 Press **(SPEED DIAL)**.
You'll hear a confirmation beep, and the number is stored. The TALK/BATT LOW lamp goes off.

Notes

- In step 3, if you don't enter the phone number, the previously stored number will be erased.
- Do not allow more than 30 seconds to elapse between each step of the procedure.
- Before storing phone numbers, make sure the handset is not in use.

Tips

- If you enter a wrong number, start from the beginning.
- Use the supplied directory to write down what you stored on the speed dialing numbers.

Speed dialing (continued)

To store the previous number dialed

Press **(REDIAL)** directly after step 2, then go to step 4.

To store a number to be dialed via Private Branch Exchange (PBX)

Before entering a phone number in step 3, do as follows:

- 1 Enter the outside line access digit (e.g. 9).
- 2 Press and hold the number button down before the position where the pause is to be inserted.
For example, 9, pause, 555-1234 would be programmed by pressing and holding the 9 button until it beeps twice, then entering 5, 5, 1, 2, 3, 4. The pause is two seconds in length. To enter a longer pause, press and hold the button down until the handset beeps three or four times. Each additional beep indicates an additional two second pause.

Note

Each pause is counted as a digit.

To change a stored number

To store a new number, follow the instructions described previously.

Making calls with speed dialing

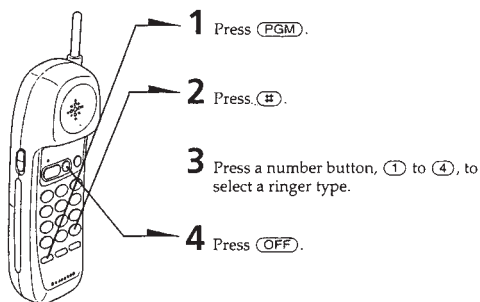
- 1 Press **(TALK/FLASH)**.
The TALK/BATT LOW lamp lights up.
- 2 Press **(SPEED DIAL)**.
- 3 Enter the desired speed dialing number (**(0)** to **(9)**).
The phone number stored in the speed dialing number will be dialed.

continued

Telephone Features | 19^{us} 20^{us} | Telephone Features

Setting the ringer type

You can select a ringer type from four types.



- 1 Press **(PGM)**.
- 2 Press **(#)**.
- 3 Press a number button, **(1)** to **(4)**, to select a ringer type.
- 4 Press **(OFF)**.

Turning off the ringer

- 1 Press **(PGM)**.
- 2 Press **(#)**.
- 3 Press **(5)**.
- 4 Press **(OFF)**.

The ringer on the handset is turned off.

To turn the ringer on again

Follow the instructions described in "Setting the ringer type."

Checking the ringer type

- 1 Press **(PGM)**.
- 2 Press **(#)**.
- 3 Press **(0)**.
- 4 Press **(OFF)**.

The currently selected ringer sounds.

Note

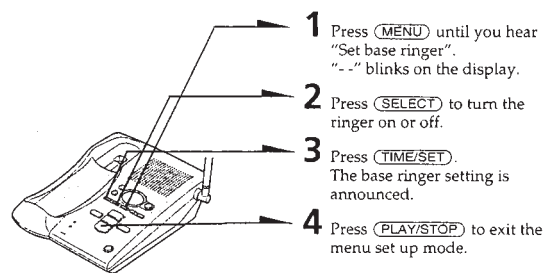
If you hear no sound (only key beep), the ringer on the handset has been turned off.

continued

Telephone Features | 21^{us} 22^{us} | Telephone Features

Setting the ringer type (continued)

Setting the base ringer



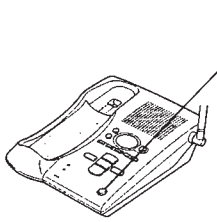
- 1 Press **(MENU)** until you hear "Set base ringer".
"- -" blinks on the display.
- 2 Press **(SELECT)** to turn the ringer on or off.
- 3 Press **(TIME/SET)**.
The base ringer setting is announced.
- 4 Press **(PLAY/STOP)** to exit the menu set up mode.

Note

The base ringer is preset to on.

Paging

You can page the handset from the base unit.
Note that you cannot page if the handset is in use.



To Page

Press **(HANDSET LOCATOR)**.
The handset rings for about one minute.
To stop ringing, press **(OFF)** on the handset.

Tips

- You can page the handset even when "RINGER" is set to "RINGER OFF".
- To stop ringing at the base unit, press **(HANDSET LOCATOR)**.

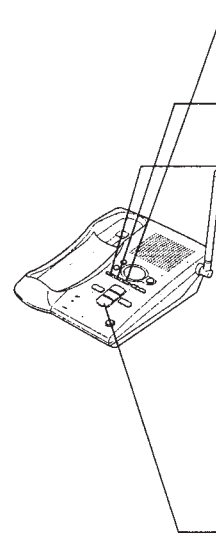
Note

If a call comes in paging, paging is cancelled.

Answering Machine Features

Setting up the answering machine

Setting the time and day of the week



- 1 Press **(MENU)** repeatedly until you hear "Set day and time". "--" blinks on the display.
- 2 Press **(SELECT)** repeatedly to select the day of the week.
- 3 Press **(TIME/SET)**. The day is set and the hour is announced.
- 4 Press **(SELECT)** repeatedly to select the hour.
- 5 Press **(TIME/SET)**. The hour is set and the minute is announced.
- 6 Press **(SELECT)** repeatedly to select the minute.
- 7 Press **(TIME/SET)**. The day and time you just entered is announced and the clock restarts.
- 8 Press **(PLAY/STOP)** to exit the menu setup mode. You will hear a long confirmation beep.

Notes

- Press and hold **(SELECT)** to increase the minute setting by 10.
- The time and day are preset to Monday, 12:00 A.M.
- "CL" flashes when the day and time is cleared or delayed due to a power interruption, or when you connect the base unit to the AC outlet for the first time.

Telephone Features | 23^{us} | 24^{us} | Answering Machine Features

Tip

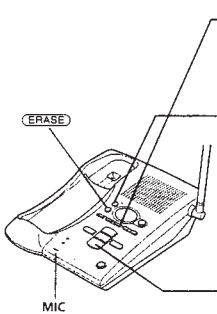
All the mailbox buttons (**(MAILBOX 1)**, **(MAILBOX 2)** and **(MAILBOX 3)**) work as the **(PLAY/STOP)** button; press any of the three in this case.

To hear the current time

Press **(TIME/SET)**. The current time setting is announced.

Recording the greeting

You can record your own greeting for the "normal" and "announcement only" modes (see page 32).



- 1 Press **(MENU)** repeatedly until "Set out-going message" is announced. "--" blinks on the display.
- 2 Press **(REC/MEMO)**. "Now recording" is announced and a long beep sounds.
- 3 Speak into the base unit microphone (MIC). The display starts counting. You can record up to 90 seconds.
- 4 To stop recording, press **(PLAY/STOP)**. Your greeting replays automatically.

Notes

- If you do not record your own greeting, the prerecorded greeting will be assigned automatically (see page 26).
- If your greeting is less than two seconds, the greeting is not recorded. The prerecorded greeting will be assigned automatically.
- If a call comes in during recording, recording stops automatically.
- If 90 seconds have passed or memory becomes full in step 3, recording stops automatically.
- "Memory full" is announced if no recording space is available when you press **(REC/MEMO)**. Erase unnecessary messages (see page 31).

Tip

To record a greeting for the "announcement only" mode, select the announcement only mode first (see page 32), then follow the instructions above. Otherwise, the normal greeting will be recorded.

continued

Answering Machine Features | 25^{us} | 26^{us} | Answering Machine Features

Setting up the answering machine (continued)

To check the greeting

Press **(MENU)** repeatedly until "Set out-going message" is announced. Then press **(PLAY/STOP)** to play back the greeting.

To change the greeting

Record a new greeting by following the instructions on the previous page. The new greeting replaces the old one.

To erase the greeting

- 1 Press **(MENU)** repeatedly until "Set out-going message" is announced.
- 2 Press **(ERASE)**.

Notes

- You can also erase the greeting during playback.
- If you have erased your own greeting, the prerecorded greeting will be assigned automatically.

Prerecorded greetings

Normal mode:

"Hello, I'm unable to answer your call right now. Please leave your name, number and message after the tone."

Announcement only mode:

"Hello, I'm unable to answer your call right now. Please call again. Thank you."

Setting the number of rings

You can select the number of times the phone rings before it answers to take a message.
There are four modes: 2, 4, 6, and Toll Saver.

- 1 Press **(MENU)** repeatedly until you hear "Set number of rings".
"-.-" blinks on the display.
- 2 Press **(SELECT)** repeatedly to select a ring duration (2, 4, 6, or Toll Saver).
To answer after 2 rings, select "2".
To answer after 4 rings, select "4".
To answer after 6 rings, select "6".
Select "Toll Saver" to answer after 2 rings when there are new messages, and 4 rings where there are no new messages.
- 3 Press **(TIME/SET)**.
The ring duration setting is announced.
- 4 Press **(PLAY/STOP)** to exit the menu setup mode.

Notes

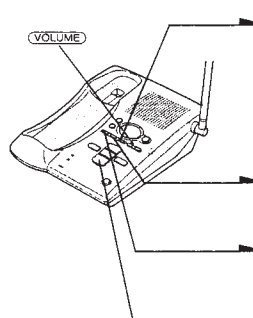
- When the number of rings is set to "Toll Saver", the phone answers after 2 rings if new messages are recorded. If no new message are recorded, it answers after 4 rings. When you hear 3 rings, you will know that there are no new messages. You can save the toll for the call when you pick up messages from an outside phone.
- The number of rings is preset to 4 rings.

continued

Setting up the answering machine (continued)

Setting the audible message alert

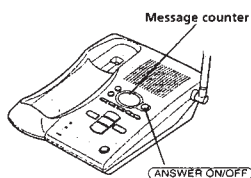
You have the option of having a beep tell you if you have received any new incoming messages.

- 
- 1 Press **(MENU)** repeatedly until you hear "Set audible message alert".
"-.-" blinks on the display.
 - 2 Press **(SELECT)** to set the audible message alert on or off.
 - 3 Press **(TIME/SET)**.
The setting is announced.
 - 4 Press **(PLAY/STOP)** to exit the menu setup mode.

Notes

- When the audible message alert is turned on, you will hear a beep every 10 seconds if there are any new messages.
- To stop the beep, press any button related to the answering machine function or **(VOLUME)** **(+)** / **(-)**.
- The audible message alert is preset to off.

Turning on the answering function



Press **(ANSWER ON/OFF)** on the base unit.
The ANSWER ON/OFF button lights up.

Mailbox usage

This phone offers you three voice mailboxes, providing a convenient way to share the mailbox feature with other members of your household or business.

When a caller calls

The caller can choose one of the two ways to leave a message:

- If calling from a touch-tone phone, the caller select a mailbox by pressing **(*)** **(1)** (MAILBOX 1), **(*)** **(2)** (MAILBOX 2) or **(*)** **(3)** (MAILBOX 3) while the caller hears the greeting. The greeting stops and a beep will sound, then the caller can start recording a message.
- Wait until the greeting finishes, then start recording a message. When the caller does not select a mailbox, the message is automatically recorded to MAILBOX 1.

Notes

- If four minutes have passed while recording the incoming message, the line will be disconnected automatically.
- If the message is shorter than two seconds, it will not be recorded.

To turn off the answering function

Press **(ANSWER ON/OFF)** on the base unit.
The ANSWER ON/OFF button goes off.

Note

The answering function is preset to on.

Tip

The answering machine will automatically answer a call after 10 rings, even if the answering function is off and announces "Please enter your security code" to prompt the caller to turn on the answering function.

When the memory is full

The total recording time of this answering machine is approximately 15 minutes (including the greeting, messages, and memo).

When the remaining recording time becomes less than 30 seconds, "F" flashes on the display and the answering machine goes into the memory full status.

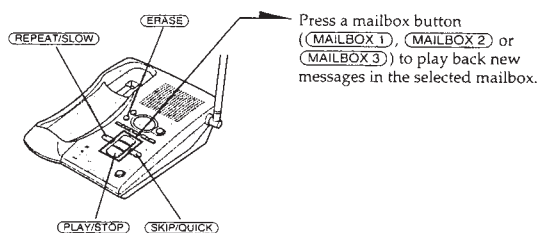
In this status, the answering machine will not answer a call until after 10 rings even if the answering function is on.

To avoid this erase unnecessary messages (see page 31). You can also erase the messages from an outside phone (see page 36).

Playing back messages

If there are new messages, the display flashes the number of new messages.

You will hear beeps if the audible message alert setting is on (see page 28).



Press a mailbox button (**(MAILBOX 1)**, **(MAILBOX 2)** or **(MAILBOX 3)**) to play back new messages in the selected mailbox.

Additional tasks when playing back messages

To	Do this
Stop playback	Press a mailbox button ((MAILBOX 1) , (MAILBOX 2) or (MAILBOX 3)).
Repeat the current message	Press (REPEAT/SLOW) during playback.
Skip the current message	Press (SKIP/QUICK) .
Go back to the previous message	Press (REPEAT/SLOW) within the first two seconds of the current message playback.
Play back slowly	Press and hold (REPEAT/SLOW) during playback. Release (REPEAT/SLOW) to return to normal.
Play back quickly	Press and hold (SKIP/QUICK) during playback. Release (SKIP/QUICK) to return to normal.

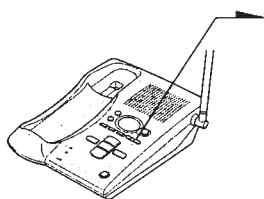
Notes

- If a call comes in, the play back will stop.
- A time and day stamp is announced after each message.

Tips

- If there are no new messages, all the previously reviewed messages are played back.
- The messages are saved even after a power failure.

Adjusting the speaker volume



To adjust the speaker volume, press **(VOLUME +)** or **(-)**.

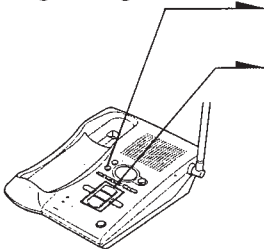
Notes

- When you have reached the minimum or maximum volume level, you will hear three short beeps.
- You cannot adjust the speaker volume while the phone is ringing.

Tip

There are 8 steps for the volume level (1 to 8). The volume level is preset to 5.

Erasing messages



- 1 Press and hold **(ERASE)** for more than two seconds.
- 2 Press a button for the mailbox you want to erase (**(MAILBOX 1)**, **(MAILBOX 2)** or **(MAILBOX 3)**). You will hear a long confirmation beep and all "old" messages in the selected mailbox are erased.

To erase individual messages

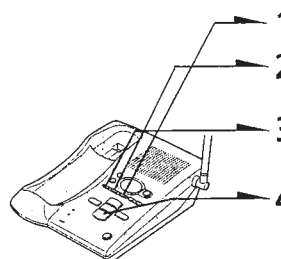
Press **(ERASE)** while playing back the message that you want to erase.

Note

The display shows the total number of "new" (i.e. unreviewed) messages. Therefore, the display is reset to "0" when you have played back all new messages, whether they have been erased or not. Be sure to erase unnecessary messages before the memory becomes full.

Selecting the Announcement Only Mode

You can set the answering machine to play the greeting without recording incoming messages (announcement only mode). You might want to select this mode when, for example, you expect to be away for a while and you cannot pick up messages.



- 1 Press **(MENU)** repeatedly until you hear "Set announce only".
- 2 Press **(SELECT)** to set the announcement only mode on or off.
- 3 Press **(TIME/SET)**. The setting is announced.
- 4 Press **(PLAY/STOP)** to exit the menu setup mode. The display shows "A" when the answering machine is set to the announcement only mode.

Notes

- To activate announcement only mode, you have to turn on the answering machine.
- The announcement only mode is preset to off.

Answering Machine Features

Answering Machine Features | 31⁴⁵

32⁴⁵ | Answering Machine Features

Screening calls

You can screen calls by leaving the answering machine on while you are at home. When a call is answered, you can hear the message being recorded through the base unit. You can decide either to continue recording or to answer the call. Alternatively, you may select to mute the message (see "Turning on/off the screening calls function" below). The message will be recorded, but to hear it you will need to play back the message (see page 30).

To answer the call

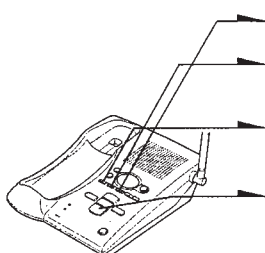
Press **(TALK)** on the handset.

Notes

- Press **(VOLUME +)** or **(-)** to adjust the speaker volume. If the speaker volume is set at its minimum level, you will not be able to hear incoming calls.
- The answering machine will stop automatically when the handset or a parallel phone is picked up. If the answering machine does not stop, press either **(PLAY/STOP)** on the base unit, or **(P)** on the handset or parallel phone. The recording will remain as a new message.

Turning on/off the screening calls function

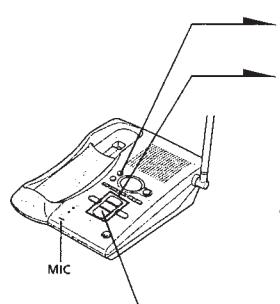
The screening calls function is preset to on at the factory.



- 1 Press **(MENU)** repeatedly until you hear "Set call screening".
- 2 Press **(SELECT)** to set the screening calls function on or off.
- 3 Press **(TIME/SET)**. The setting is announced.
- 4 Press **(PLAY/STOP)** to exit the menu setup mode.

Recording a memo message

You can leave messages for other users of the unit.



- 1 Press **(REC/MEMO)**.
- 2 Press a mailbox button (**(MAILBOX 1)**, **(MAILBOX 2)** or **(MAILBOX 3)**) to which you want to leave the message. "Now recording" is announced and counting starts.
- 3 Speak into the base unit microphone (MIC) to record your message. A memo can be up to four minutes in length.
- 4 Press **(PLAY/STOP)** to stop recording. The message number on the display increases by one.

Notes

- If the memory becomes full, the answering machine will stop recording.
- "Memory full" is announced if no recording space is available when you press **(REC/MEMO)**.
- If your message is shorter than two seconds, the recording will be canceled.
- The display flashes "99" if you record a memo for more than 99 seconds.
- If a call comes in during recording, the recording will be stopped.

Answering Machine Features

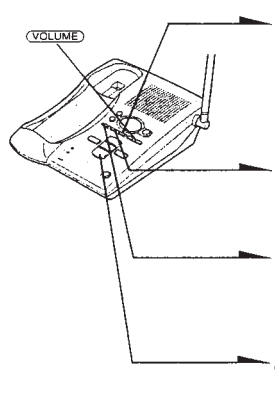
Answering Machine Features | 33⁴⁵

34⁴⁵ | Answering Machine Features

Operating from an outside phone

Setting the remote ID code (security code)

To operate the answering machine from a touch-tone phone while you are away from home, you need to set the remote ID code (security code).

- 
- 1 Press **(MENU)** repeatedly until you hear "Set security code".
 - 2 Press **(SELECT)** to change the remote ID code (security code) setting.
 - 3 Press **(TIME/SET)** to confirm your choice. The new remote ID code (security code) is announced.
 - 4 Press **(PLAY/STOP)** to exit the menu setup mode.

Note

Press and hold **(SELECT)** to increase the remote ID code (security code) by 10.

Answering Machine Features

continued

Operating from an outside phone (continued)

Picking up new messages

- 1 Call your telephone number from a touch-tone phone.
- 2 When you hear the greeting, press **(H)** and enter your remote ID code (security code). You will hear a confirmation beep. The number of new messages will be announced.
- 3 Press the keys in the "Table of control codes" below for the desired operation command.
- 4 When you are finished, disconnect the line.

Notes

- Do not let two seconds elapse between each digit of the remote ID code (security code) and the control code.
- If you did not turn on the answering machine, your phone answers automatically after 10 rings.
- If the message recording memory runs out, the answering machine turns off automatically. "Memory full. Please enter your security code" is announced.
- If you enter wrong remote ID code (security code) three times, the line will disconnect.
- If no keys are pressed within 20 seconds, the line will disconnect.

Tips

- Press **(*) (0)** on the touch-tone keypad or **(PLAY/STOP)** on the base unit to disconnect the line.
- Cut off the Remote Control Card and carry it with you to see how to operate from an outside phone.

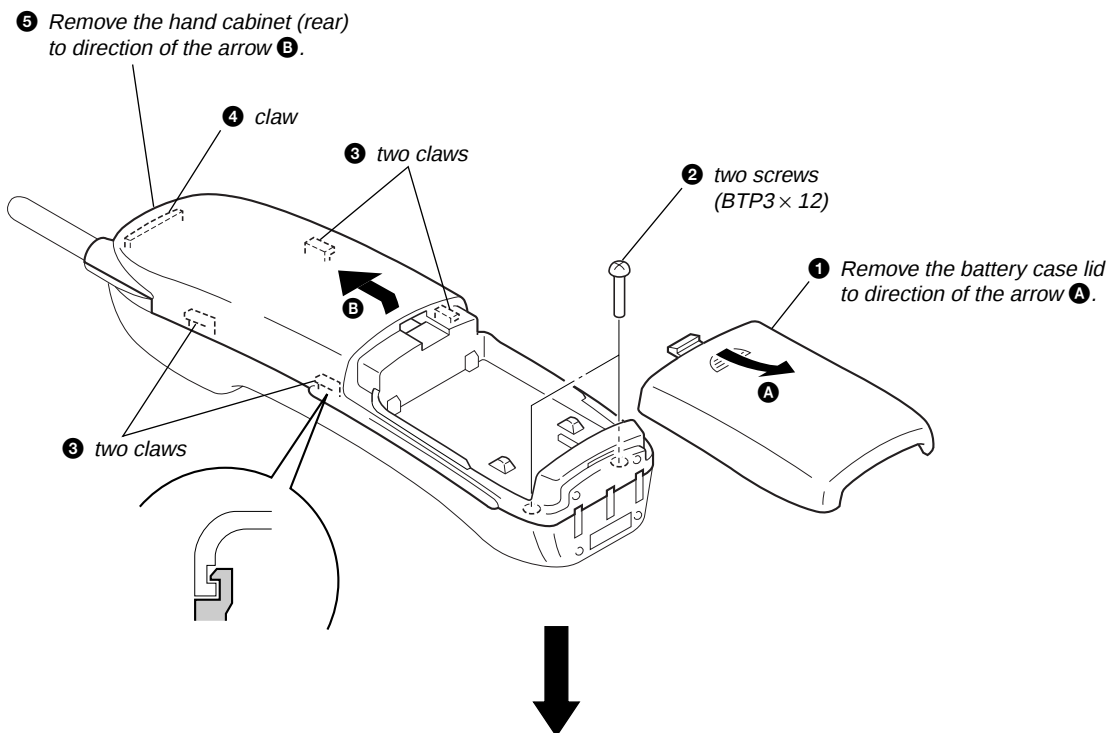
Table of control codes

To	Key	Notes
Play back messages in MAILBOX 1	(H) (1)	Plays back from the first new message.
Play back messages in MAILBOX 2	(H) (2)	Plays back from the first new message.
Play back messages in MAILBOX 3	(H) (3)	Plays back from the first new message.
Repeat/skip backward	(H) (4)	Press during play back to repeat a message. To skip backward, press within two seconds after the current message starts.
Get help	(*) (5)	Press to access simple voice menu. Press again to access advanced voice menu.
Stop operation	(H) (5)	Stops every function
Skip forward	(H) (6)	Press during play back to skip forward.
Record greeting	(*) (7)	"Now recording" is announced.
Check greeting	(H) (7)	Review your greeting
Record a memo	(*) (8)	Select the mailbox by entering "1", "2" or "3".
Erase individual messages	(H) (9)	Press during play back
Turn answering machine on/off	(H) (0)	Turns the system on/off. "Answer machine on" or "Answer machine off" is announced.

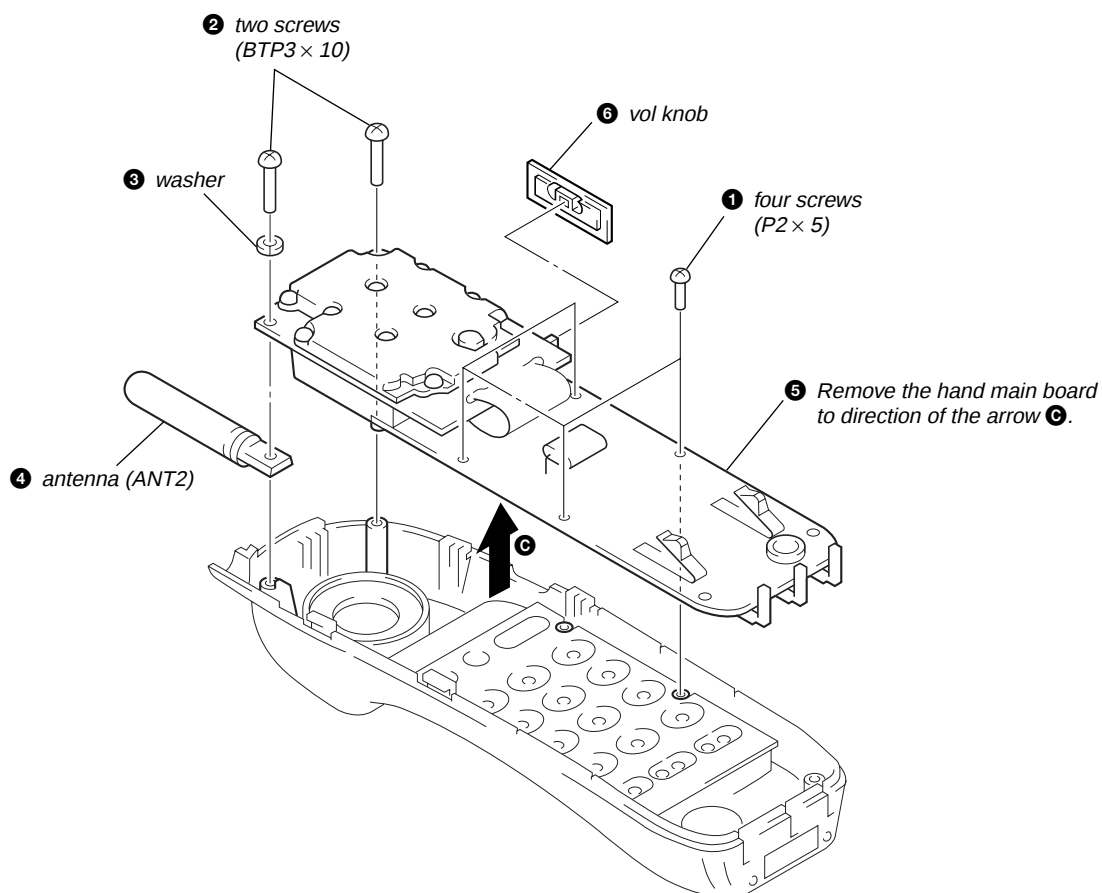
SECTION 2 DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

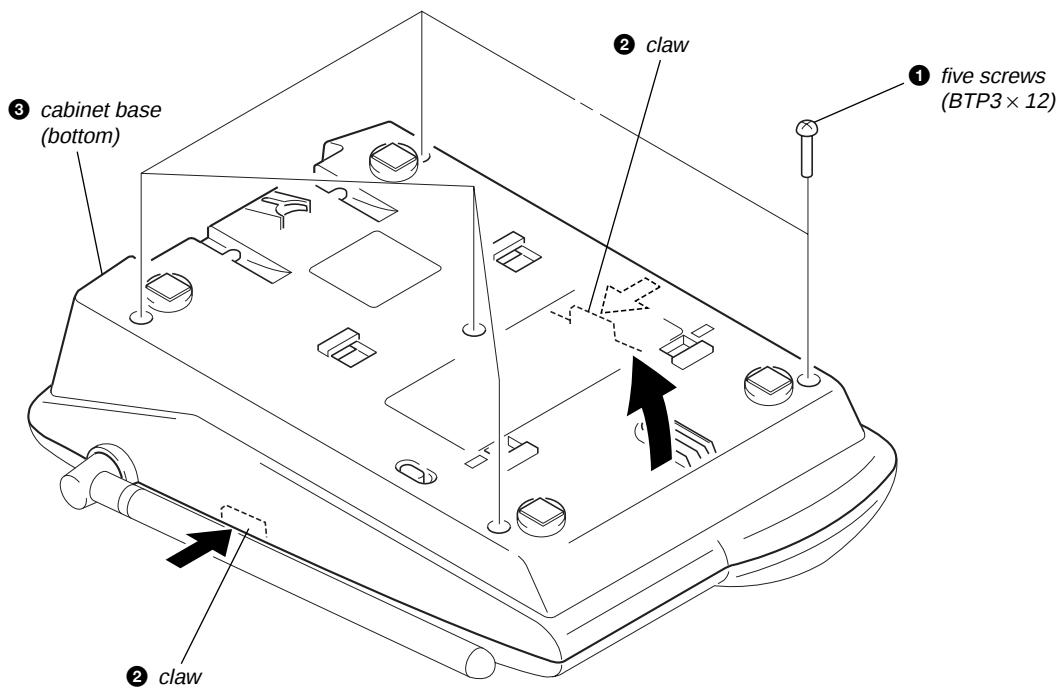
HAND CABINET (REAR)



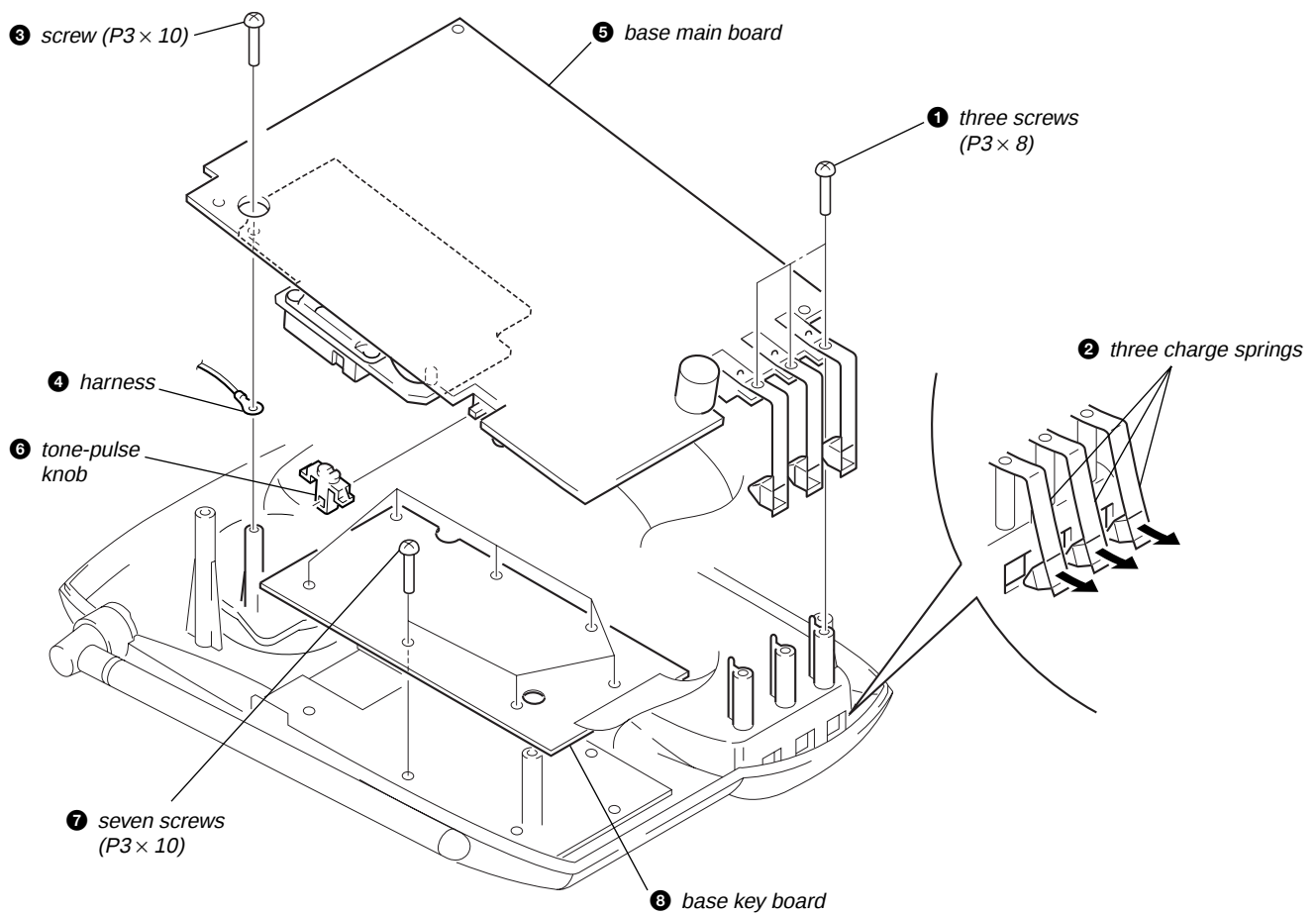
HAND MAIN BOARD



CABINET BASE (BOTTOM)



BASE MAIN BOARD, BASE KEY BOARD



SECTION 3

TEST MODE

BASE UNIT

1. Entering the Test Mode

1. While pressing the **HANDSET LOCATOR** key, turn the power ON, then change over the **DIAL MODE** switch from “PULSE” to “TONE” within 4 seconds.
2. When enter the test mode, Light up the **CHARGE** and **IN USE** LEDs.

2. Change the Mode

Press and hold the **HANDSET LOCATOR** key for about 2 seconds to change the mode like Mode 1, Mode 2, Mode 3, Mode 4, Mode 1....

Mode 1:

CHARGE LED : Lights up.
Function : Change the channel.
Operation : Each time the **HANDSET LOCATOR** key is pressed momentarily, change the channel like 0, 1, 2...9, 0... (default channel is 5ch)

Mode 2:

CHARGE LED : Goes off.
Function : Toggle TX power.
Operation : Each time the **HANDSET LOCATOR** key is pressed momentarily, change over ON/OFF. (default status is ON)

Mode 3:

CHARGE LED : Lights up.
Function : Not used in servicing.

Mode 4:

CHARGE LED : Goes off.
Function : Transmit the tone signal for 3 seconds.
Operation : Press the **HANDSET LOCATOR** key momentarily to transmit the tone signal, and blinks the **CHARGE** LED.
Each time transmit it, then change the frequency of signal tone like 697 Hz, 770 Hz, 852 Hz, 941 Hz, 1209 Hz, 1336 Hz, 1477 Hz, 1633 Hz, 697 Hz... (default frequency is 697 Hz)

3. Exiting the Test Mode

Disconnect the power.

HANDSET

1. Entering the Test Mode

1. Press two keys of **3** and **#** simultaneously.
2. When enter the test mode, the happy tone is emitted.

2. Key Functions

CHANNEL key

- Change the channel. (Each time the **CHANNEL** key is pressed, change the channel like 0, 1, 2...9, 0... (default channel is 5))
- Refresh PLL, RX/TX counters.

PGM key

- Toggle TX power. (ON: lights up the **TALK/BATT LOW** LED)
- Refresh PLL, TX counters.

SPEED DIAL key

- Toggle RX power.
- Refresh PLL REF, RX/TX counters.

REDIAL key

- Toggle TX attenuator.
- Refresh PLL status register.

TALK key

- Change PLL gain mode. (lowest → highest (4 steps))

OFF key

- Exit the test mode and emit the sad tone.

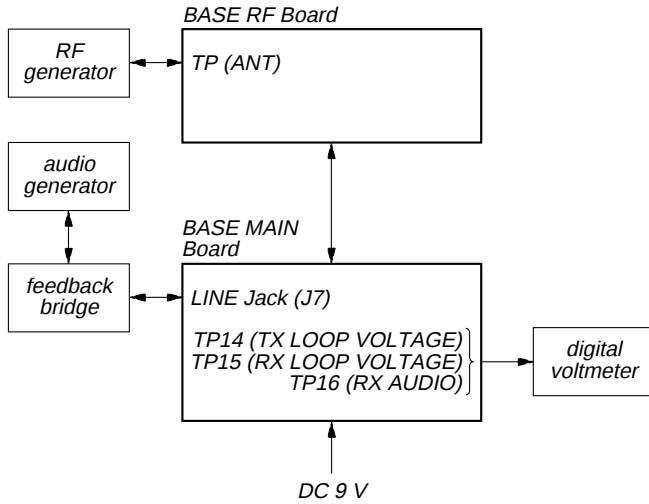
Note: All keys pressed will emit the key tone.

SECTION 4 ELECTRICAL ADJUSTMENTS

0 dBm = 0.775 V
0 dBv = 1 V

BASE UNIT

Adjustment Equipment and Connection



6. MOD Deviation Adjustment

1. Connect the RF generator to TP (ANT) on the MAIN RF board.
2. Connect the audio generator (to feedback bridge) to LINE jack (J7) on the BASE MAIN board.
3. Set the audio generator as follows.
output level : -17 dBv
output frequency: 1 kHz
4. Set the RF generator as follows.
input frequency : 903.8 MHz
filter frequency : 300 Hz to 3 kHz
detector : PK+1/2
5. Adjust VR2 on the BASE MAIN board for 25 ± 3 kHz reading on the RF generator.

Setting:

1. Enter the test mode. (refer to page 13)
2. Set the channel to 6ch.

1. RX Loop Voltage Confirmation

1. Connect the digital voltmeter to TP15 (RX LOOP VOLTAGE) on the BASE MAIN board.
2. Confirm that the value of digital voltmeter is 0.5 Vdc to 4.3 Vdc.

2. TX Loop Voltage Confirmation

1. Connect the digital voltmeter to TP14 (TX LOOP VOLTAGE) on the BASE MAIN board.
2. Confirm that the value of digital voltmeter is 0.5 Vdc to 4.3 Vdc.

3. TX Frequency Adjustment

1. Connect the RF generator to TP (ANT) on the BASE RF board.
2. Adjust C15 on the BASE MAIN board for $903.8 \text{ MHz} \pm 3 \text{ kHz}$ reading on the RF generator.

4. Quad-Voltage Adjustment

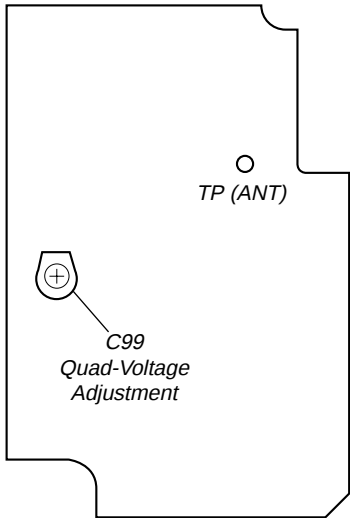
1. Connect the digital voltmeter to TP16 (RX AUDIO) on the BASE MAIN board.
2. Adjust C99 on the BASE RF board for $1.775 \pm 0.15 \text{ Vdc}$ reading on the digital voltmeter.

5. DEMOD Audio Level Adjustment

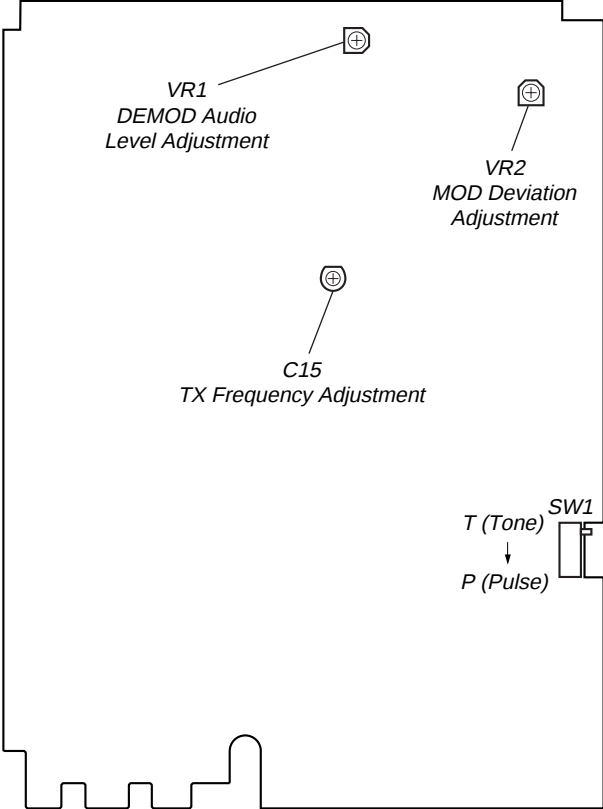
1. Connect the RF generator to TP (ANT) on the BASE RF board.
2. Connect the audio generator (to feedback bridge) to LINE jack (J7) on the BASE MAIN board.
3. Set the RF generator as follows.
output frequency : 926.55 MHz
output level : -50 dBm
FM deviation : 25 kHz
MOD tone frequency : 1 kHz
4. Adjust VR1 on the BASE MAIN board for -10 ± 1 dBv reading on the audio generator.

Adjustment Location:

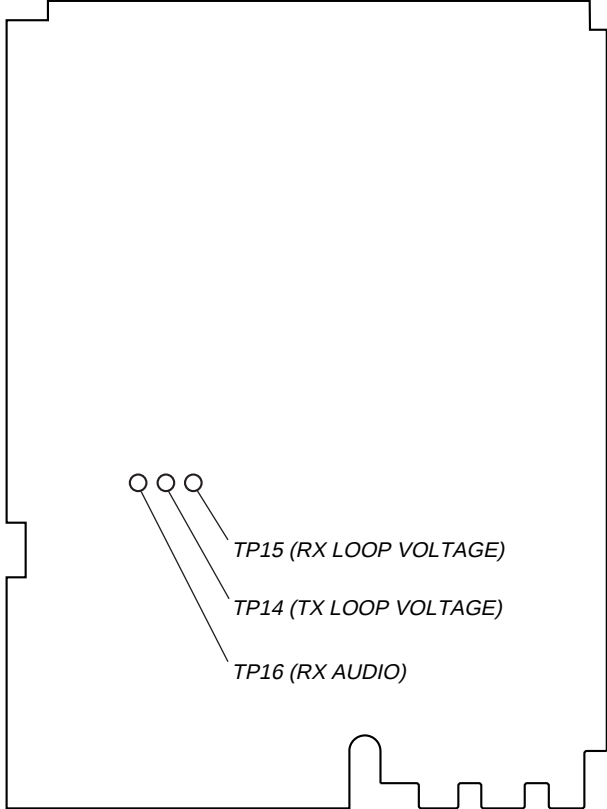
- BASE RF BOARD (Side A) -



- BASE MAIN BOARD (Component Side) -

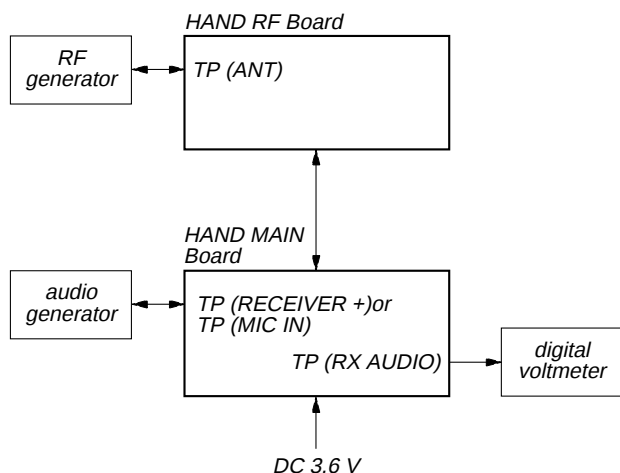


- BASE MAIN BOARD (Conductor Side) -



HANDSET

Adjustment Equipment and Connection



Setting:

1. Enter the test mode. (refer to page 13)
2. Set the channel to 6ch.
3. Set the **VOL** switch (S19) to the “L” position.
4. Disconnect the microphone (U9) wire at the HAND MAIN board.

1. TX Frequency Adjustment

1. Connect the RF generator to TP (ANT) on the HAND RF board.
2. Adjust C92 on the HAND MAIN board for $926.55 \text{ MHz} \pm 3 \text{ kHz}$ reading on the RF generator.

2. Quad-Voltage Adjustment

1. Connect the digital voltmeter to TP (RX AUDIO) on the HAND MAIN board.
2. Adjust C25 on the HAND RF board for $1.6 \pm 0.075 \text{ Vdc}$ reading on the digital voltmeter.

3. DEMOD Audio Level Adjustment

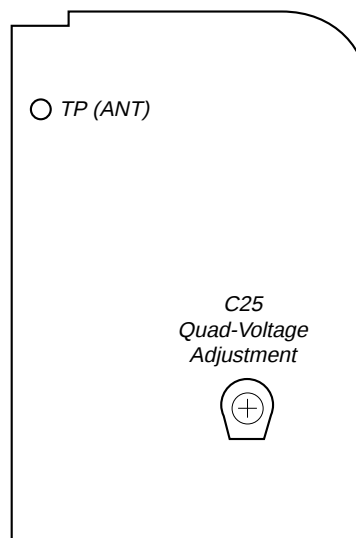
1. Connect the RF generator to TP (ANT) on the HAND RF board.
2. Connect the audio generator to TP (RECEIVER +) on the HAND MAIN board.
3. Set the RF generator as follows.
 - output frequency : 903.8 MHz
 - output level : -50 dBm
 - FM deviation : 25 kHz
 - MOD tone frequency : 1 kHz
4. Adjust R113 on the HAND MAIN board for $-90 \pm 5 \text{ mV}$ reading on the audio generator.

4. MOD Deviation Adjustment

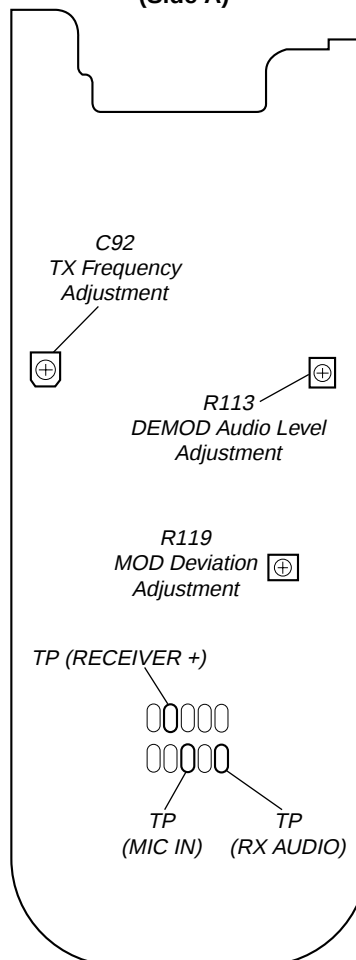
1. Connect the RF generator to TP (ANT) on the HAND RF board.
2. Connect the audio generator to TP (MIC IN) on the HAND MAIN board.
3. Set the audio generator as follows.
 - output level : 35 mV
 - output frequency: 1 kHz
4. Adjust R119 on the HAND MAIN board for $25 \pm 3 \text{ kHz}$ reading on the RF generator.

Adjustment Location:

– HAND RF BOARD – (Side B)

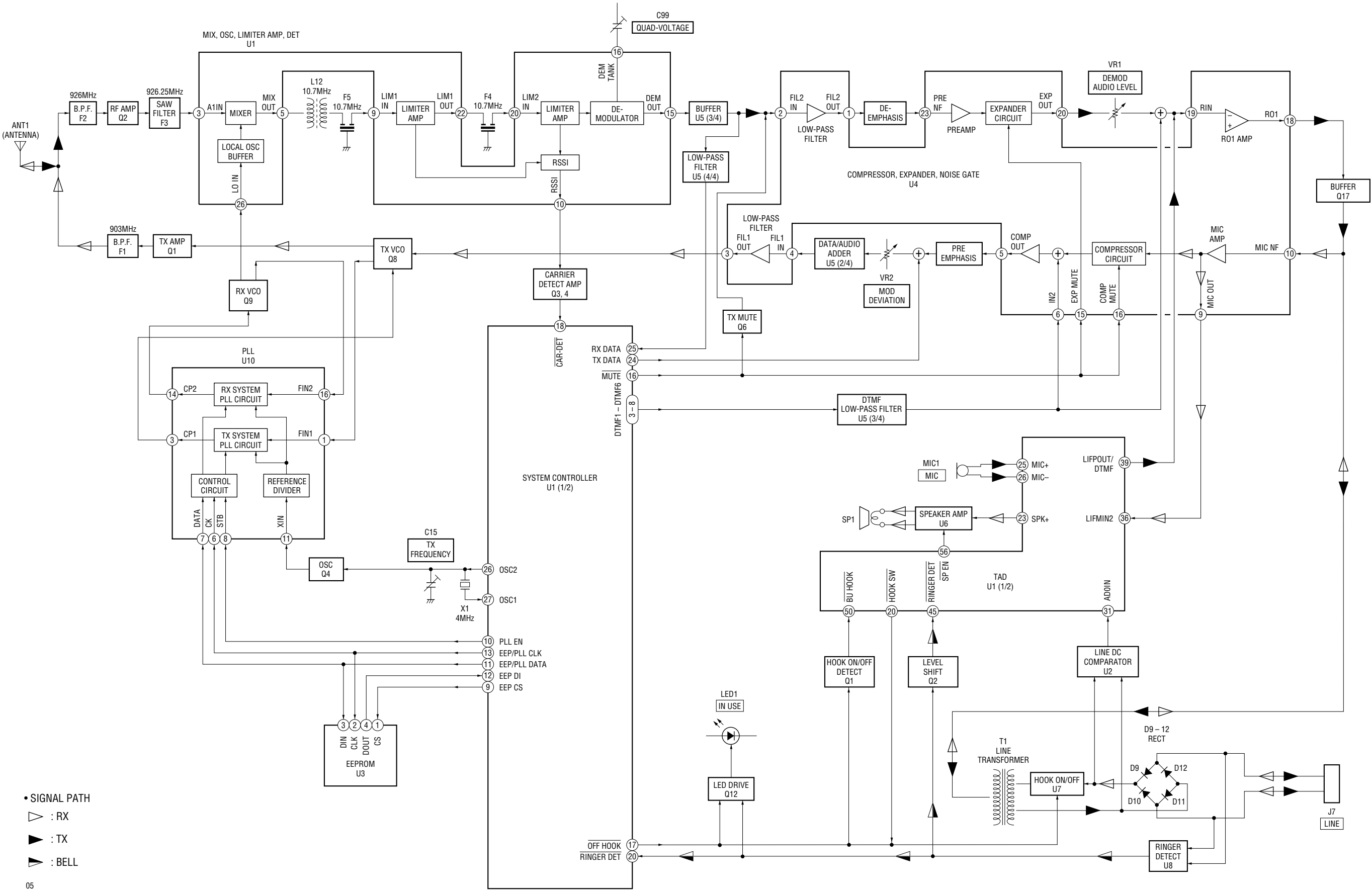


– HAND MAIN BOARD – (Side A)

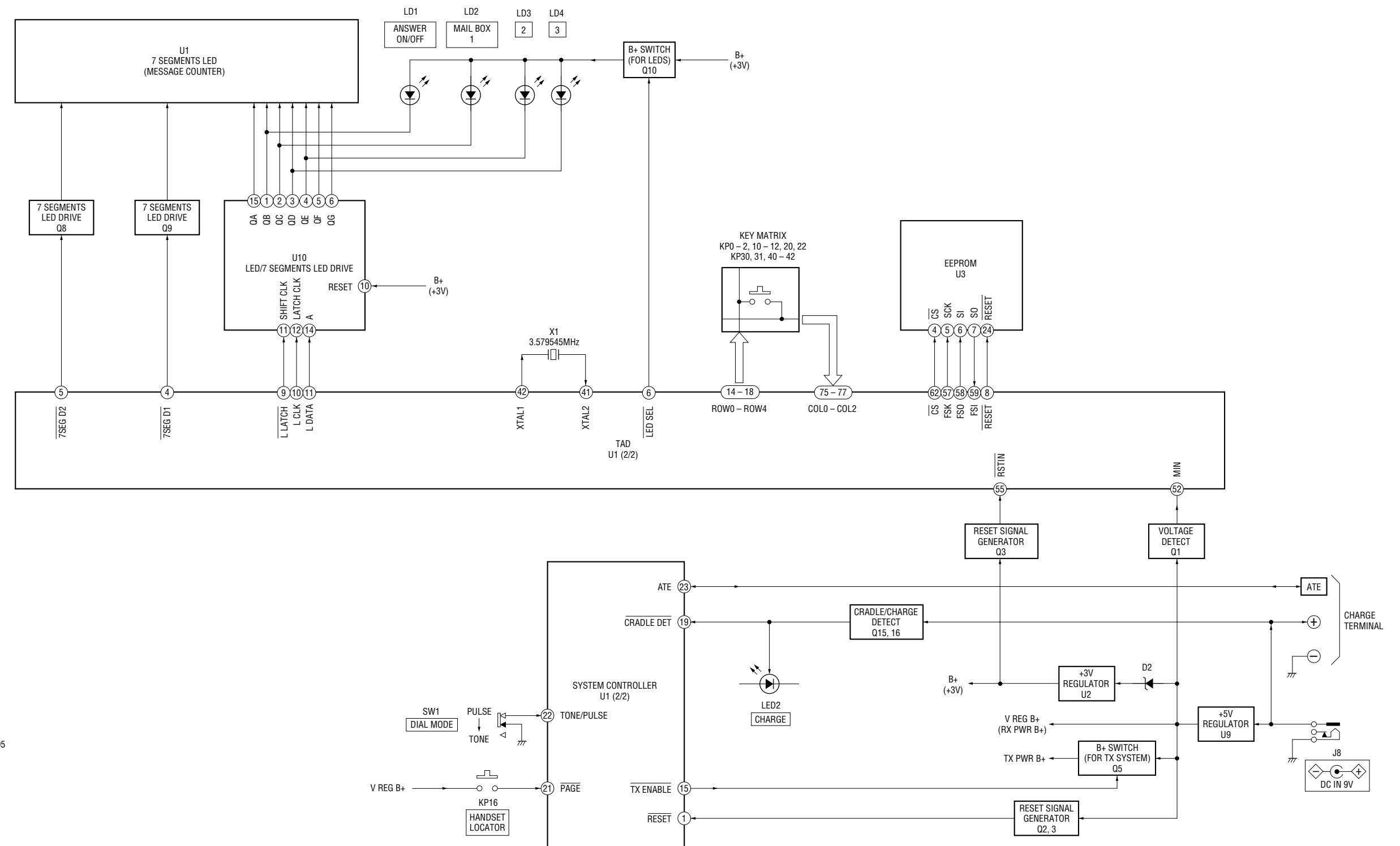


SECTION 5
DIAGRAMS

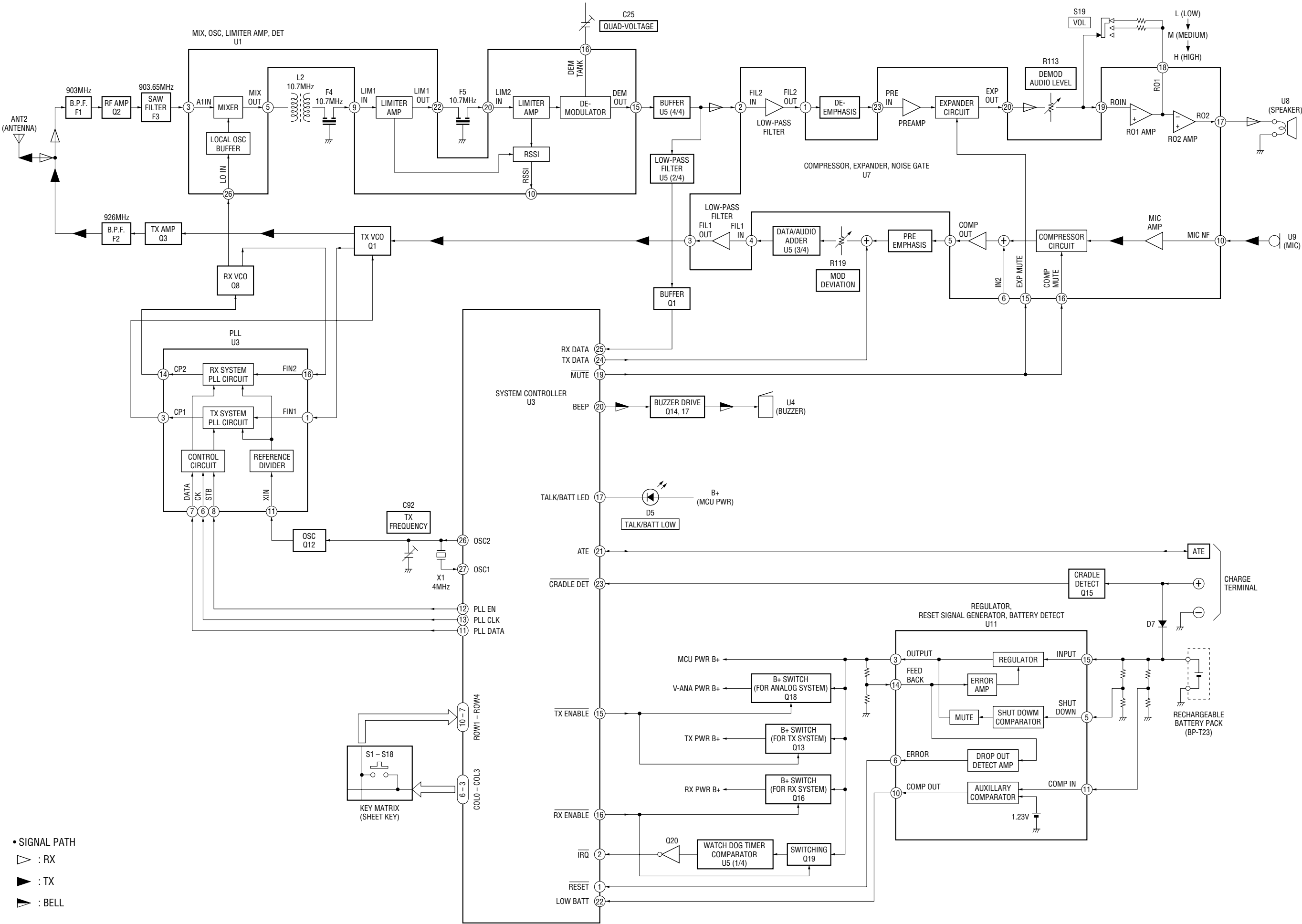
5-1. BLOCK DIAGRAM – BASE UNIT Section (1/2) –



5-2. BLOCK DIAGRAM – BASE UNIT Section (2/2) –



5-3. BLOCK DIAGRAM – HANDSET Section –



5-4. NOTE FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

- Note on Printed Wiring Board:**
- : parts extracted from the component side.
 - : parts extracted from the conductor side.
 - : parts mounted on the conductor side.
 - : indicates side identified with part number.
 - : Through hole.
 - △ : internal component.
 - ▨ : Pattern from the side which enables seeing.
- (The other layers' patterns are not indicated.)
- : connected by carbon pattern.

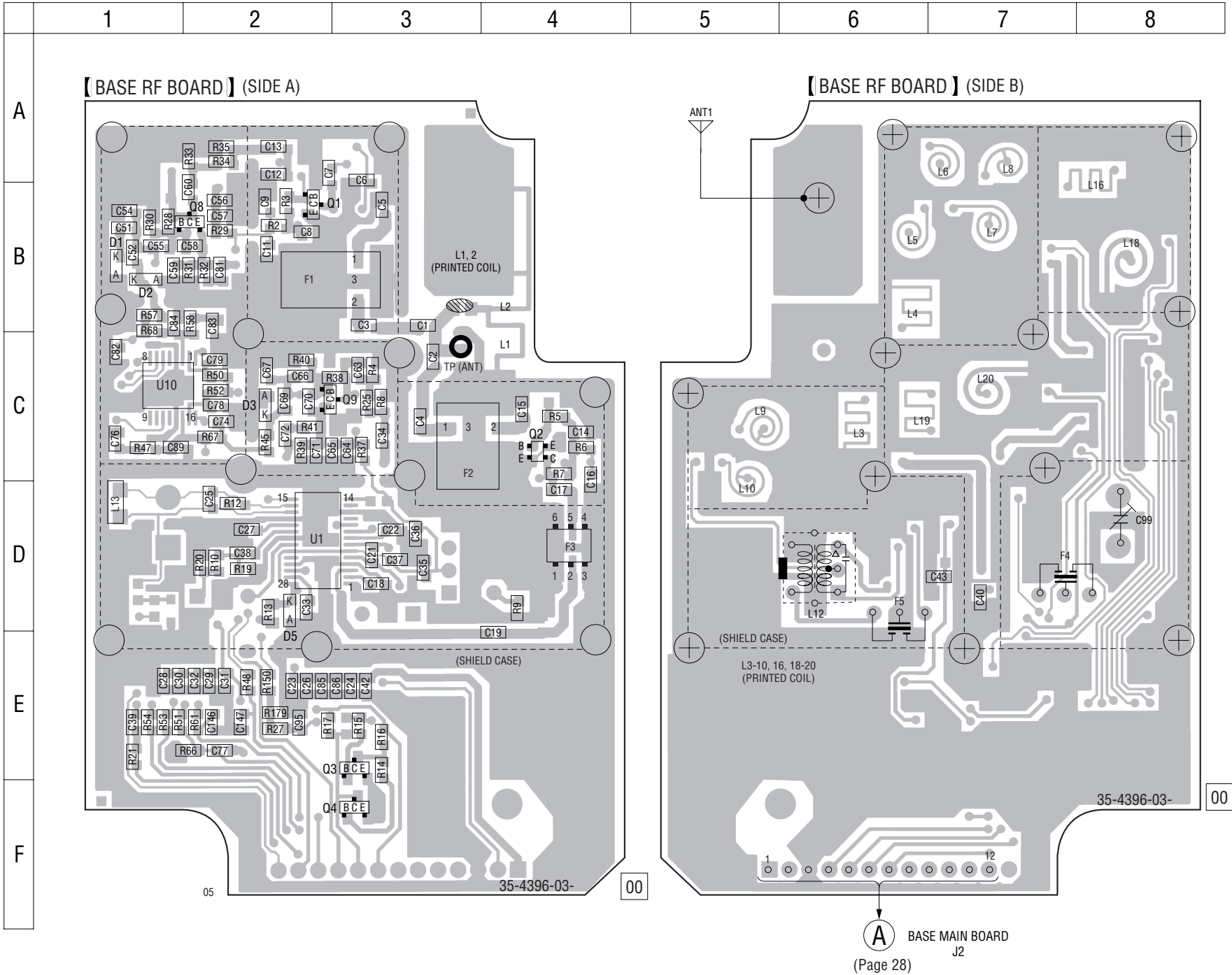
Caution:

Pattern face side: Parts on the pattern face side seen from the pattern face are indicated.
(Side B)

Parts face side: Parts on the parts face side seen from the parts face are indicated.
(Side A)

- Note on Schematic Diagram:**
- All capacitors are in μF unless otherwise noted. pF : μF 50 WV or less are not indicated except for electrolytics and tantalums.
 - All resistors are in Ω and $\frac{1}{4}W$ or less unless otherwise specified.
 - △ : internal component.
 - : printed coil.
 - : panel designation.
 - B+ : B+ Line.
 - : adjustment for repair.
 - Power voltages are dc 9 V and fed with regulated dc power supply from external power voltage jack (J8) on the BASE MAIN board, dc 12 V and fed with regulated dc power supply from modular jack (J7) on the BASE MAIN board with 100 Ω in series, and dc 3.6 V and fed with regulated dc power supply from battery terminal on the HAND MAIN board.
 - Voltages and waveforms are dc with respect to ground in test mode.
 - * : Impossible to measure
 - Voltages are taken with a VOM (Input impedance 10 M Ω). Voltage variations may be noted due to normal production tolerances.
 - Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
 - Circled numbers refer to waveforms.
 - Signal path.
 - ▷ : RX
 - ◀ : TX
 - ◁ : BELL

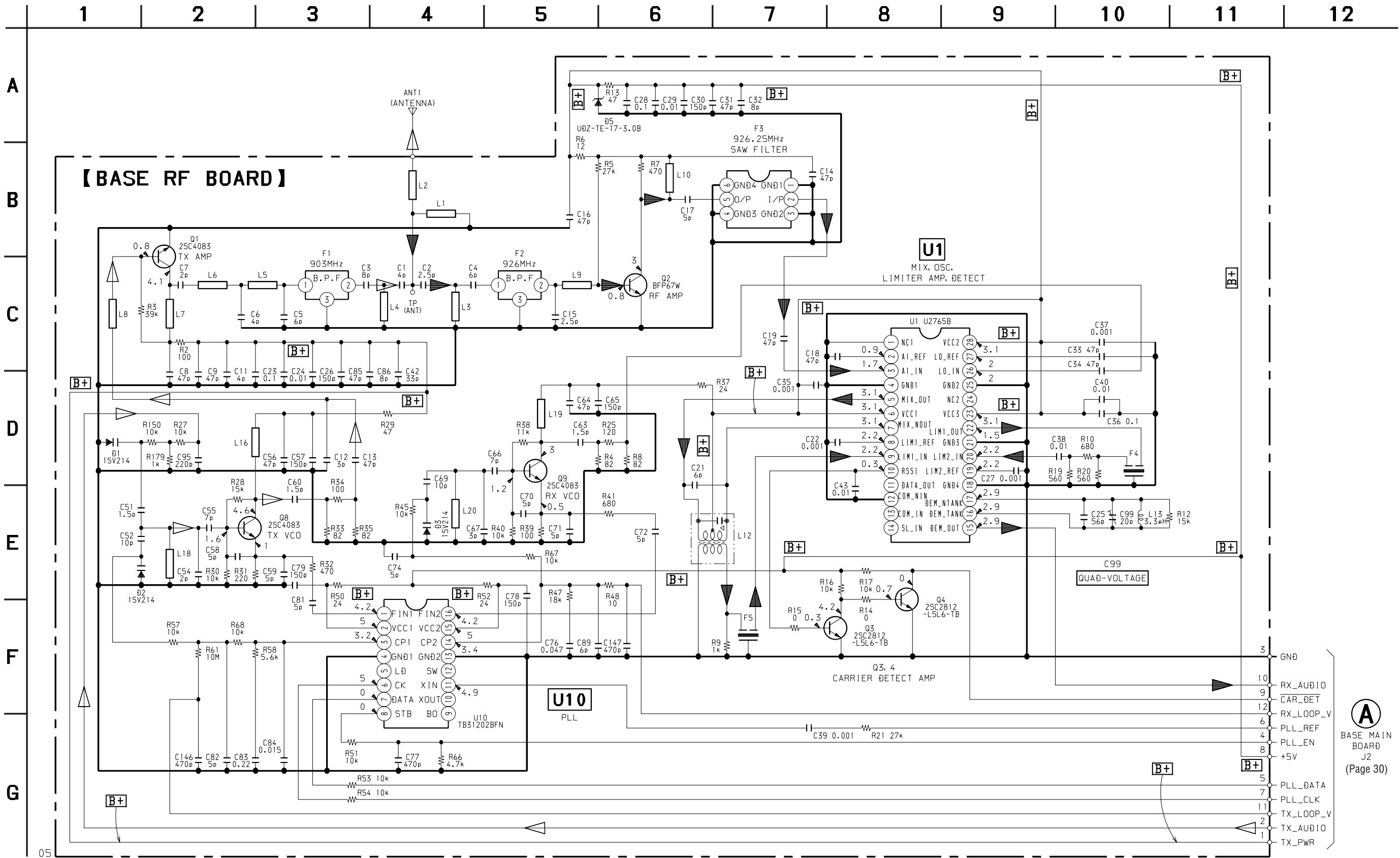
5-5. PRINTED WIRING BOARD – BASE RF Board –



• Semiconductor Location

Ref. No.	Location
D1	B-1
D2	B-1
D3	C-2
D5	E-2
Q1	B-2
Q2	C-4
Q3	E-3
Q4	F-3
Q8	B-2
Q9	C-3
U1	D-2
U10	C-1

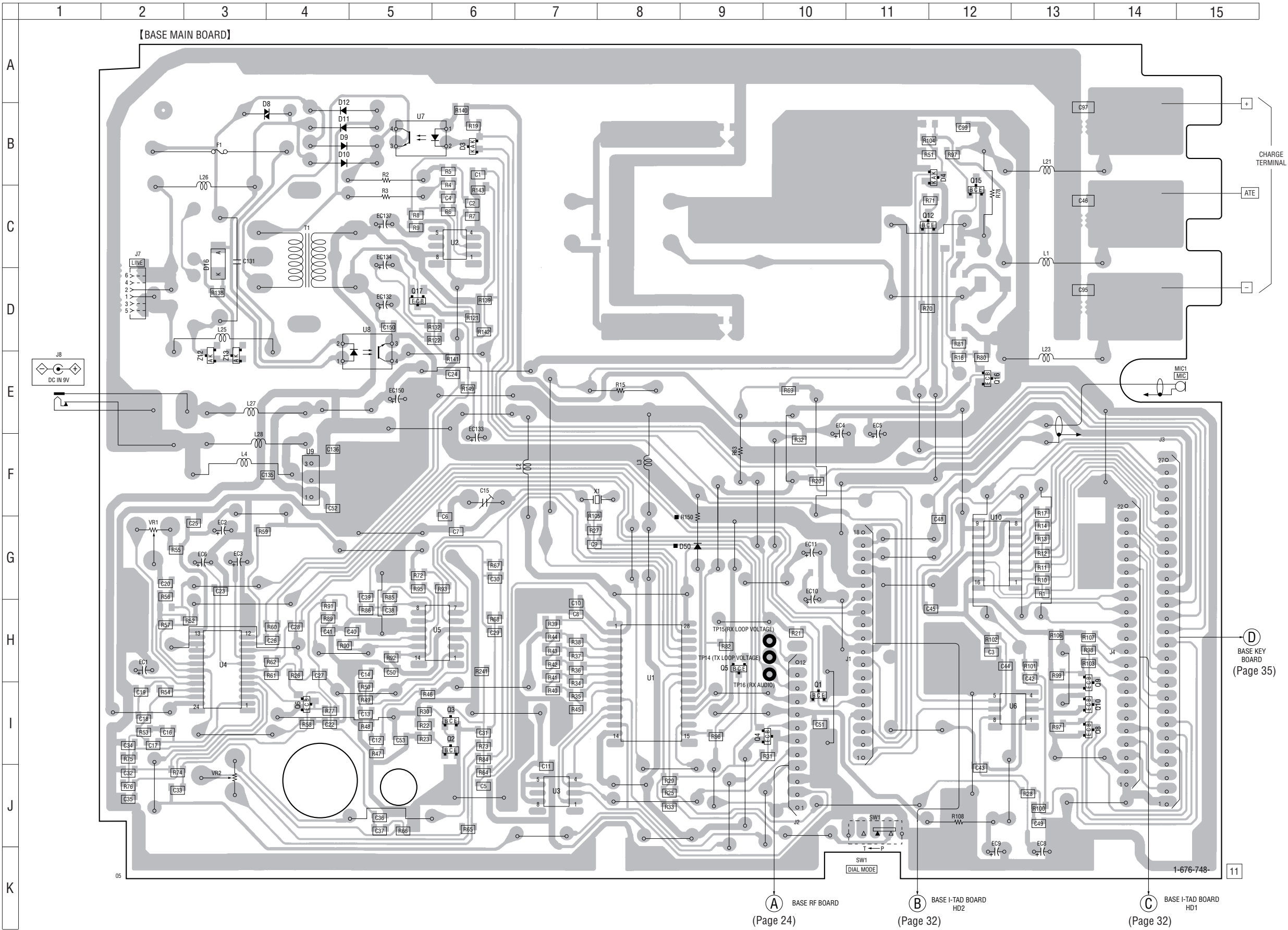
5-6. SCHEMATIC DIAGRAM – BASE RF Board – • See page 43 for IC Block Diagrams.



5-7. PRINTED WIRING BOARD – BASE MAIN Board –

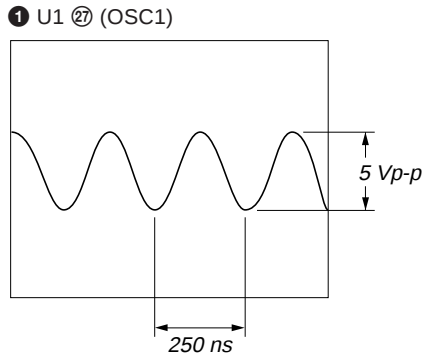
• Semiconductor Location

Ref. No.	Location
D3	B-6
D4	B-12
D8	B-4
D9	B-4
D10	B-4
D11	B-4
D12	B-4
D16	C-3
D50	G-9
Z12	E-3
Z13	E-3
Q1	I-10
Q2	I-6
Q3	I-6
Q4	I-9
Q5	H-9
Q6	I-4
Q8	I-14
Q9	I-14
Q10	I-14
Q12	C-11
Q15	B-12
Q16	E-12
Q17	D-5
U1	H-8
U2	C-6
U3	J-7
U4	H-3
U5	H-6
U6	I-13
U7	B-5
U8	D-5
U9	F-4
U10	G-12

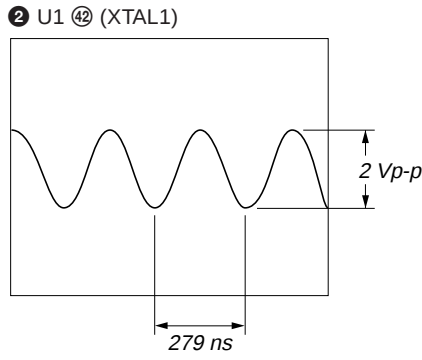




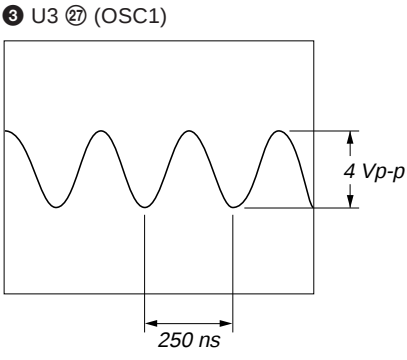
• Waveforms
– BASE MAIN Board –



– BASE I-TAD Board –



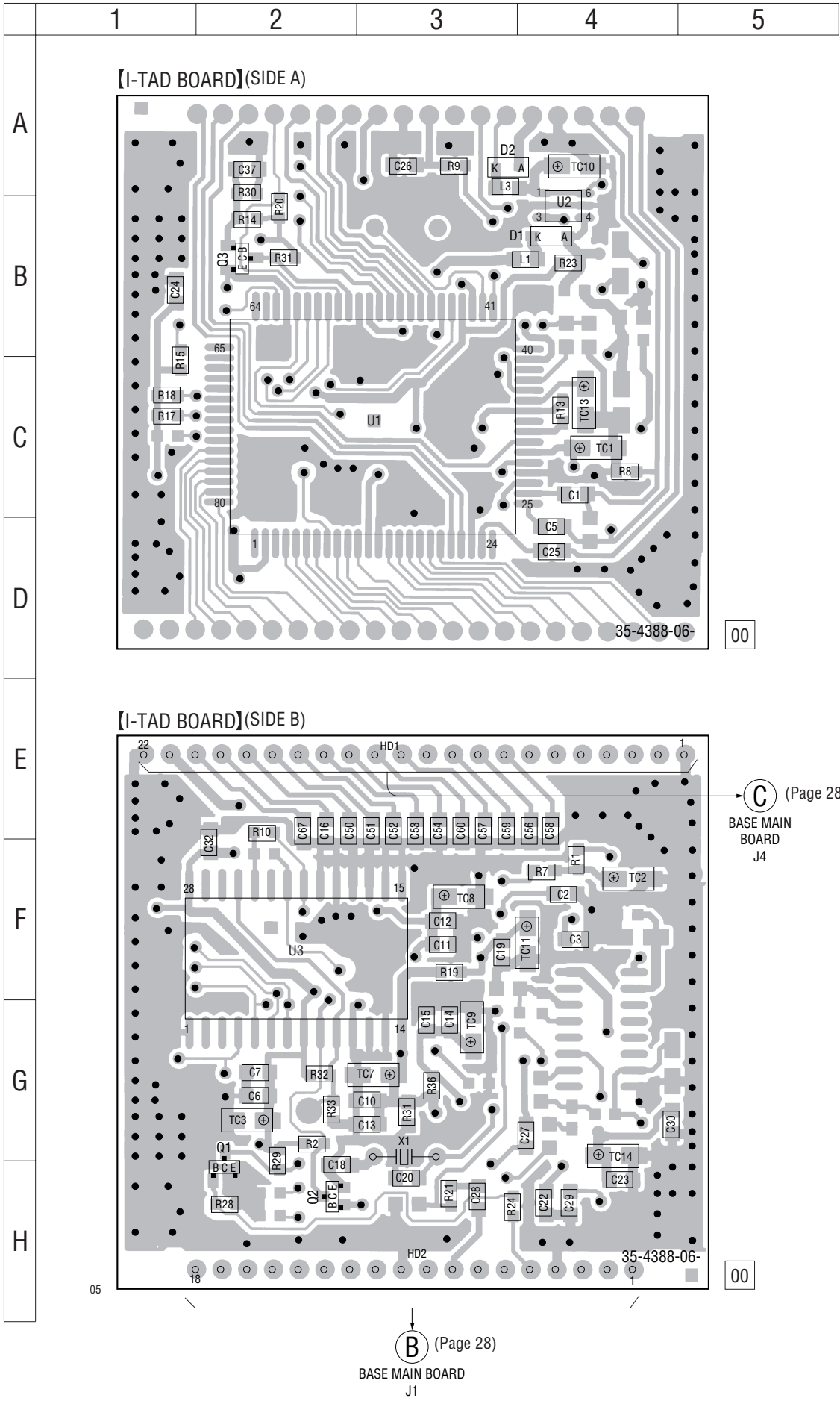
– HAND MAIN Board –



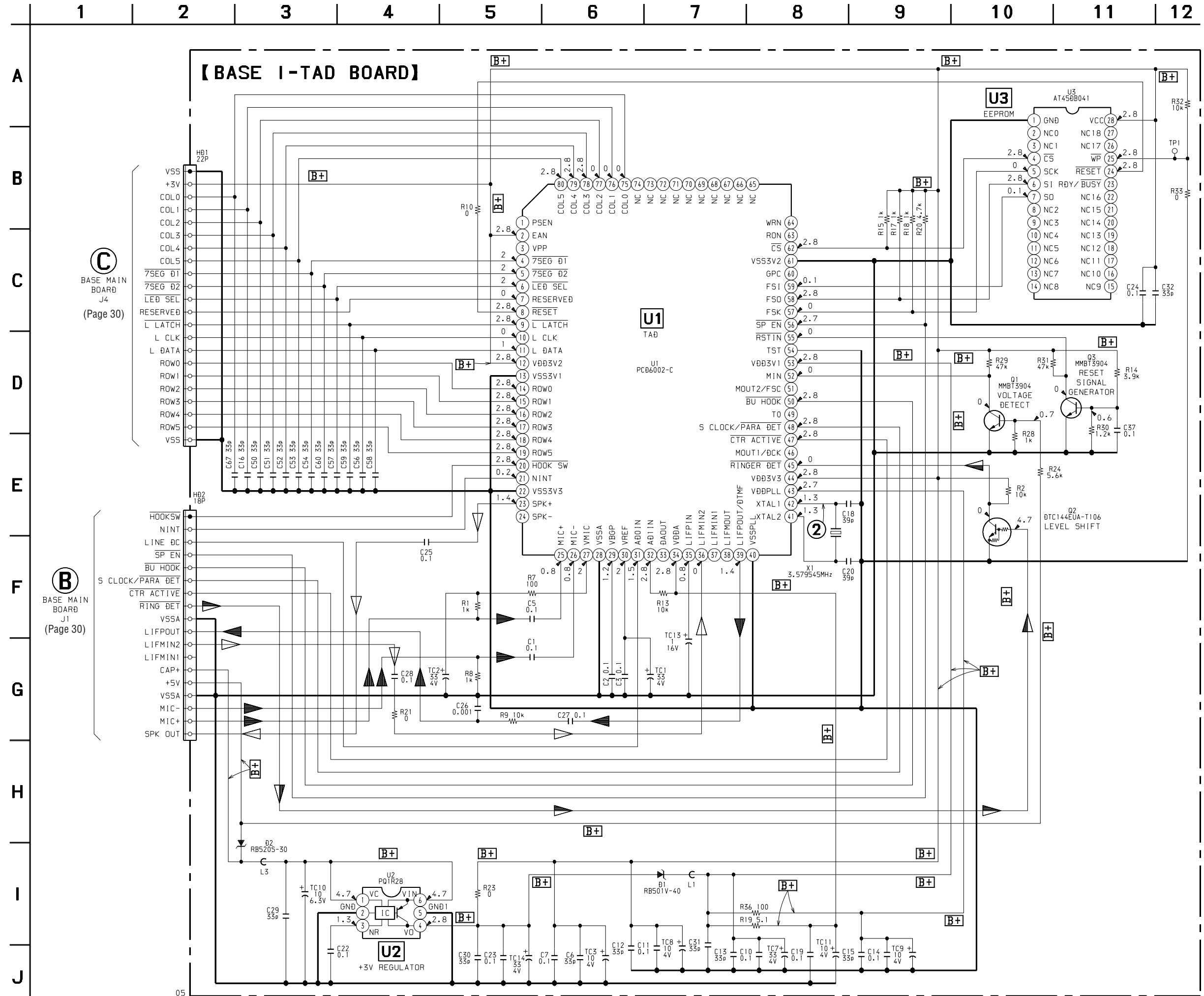
• Semiconductor Location

Ref. No.	Location
D1	B-4
D2	A-3
Q1	H-2
Q2	H-2
Q3	B-2
U1	C-3
U2	B-4
U3	F-2

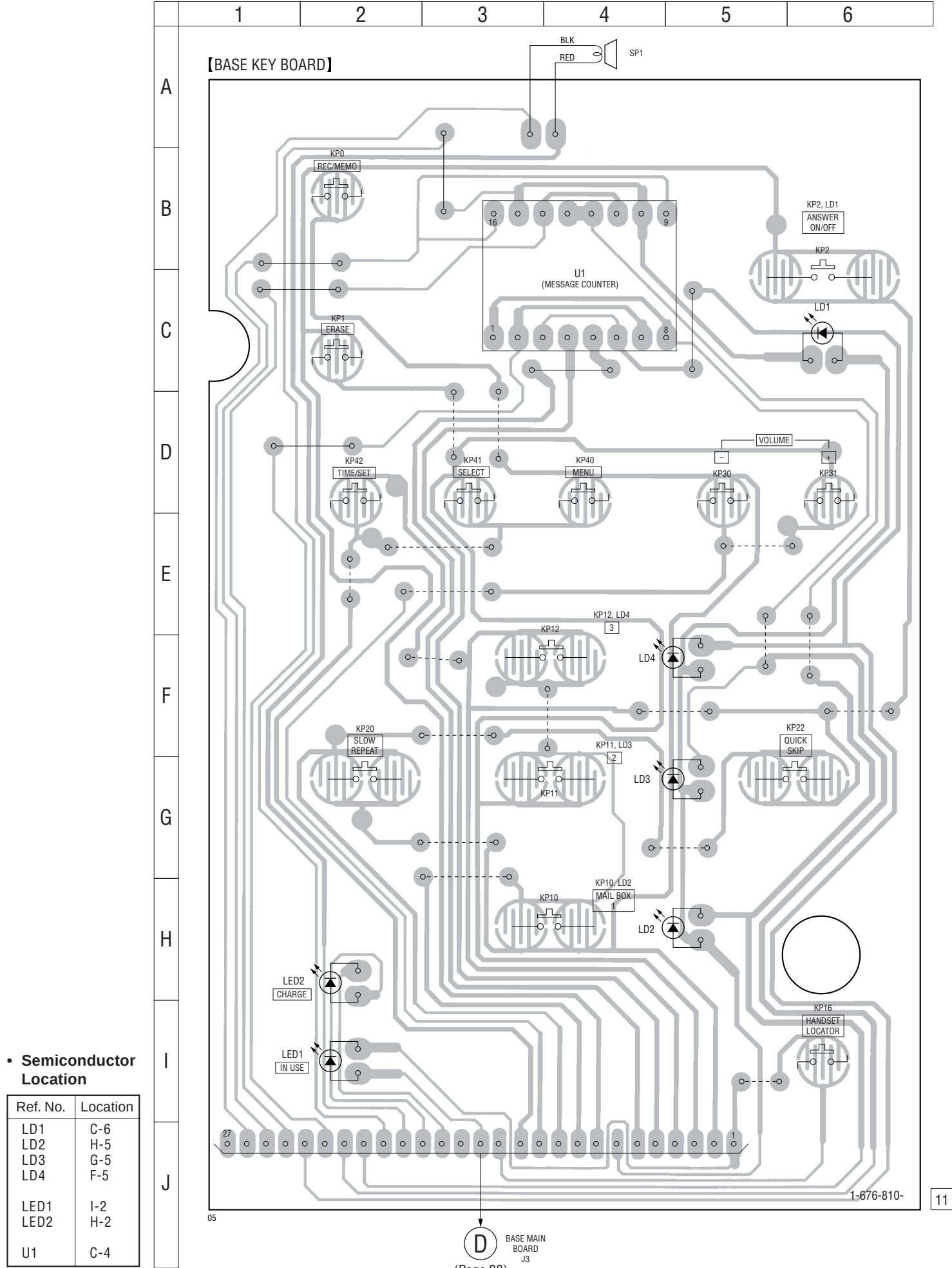
5-9. PRINTED WIRING BOARD – BASE I-TAD Board –



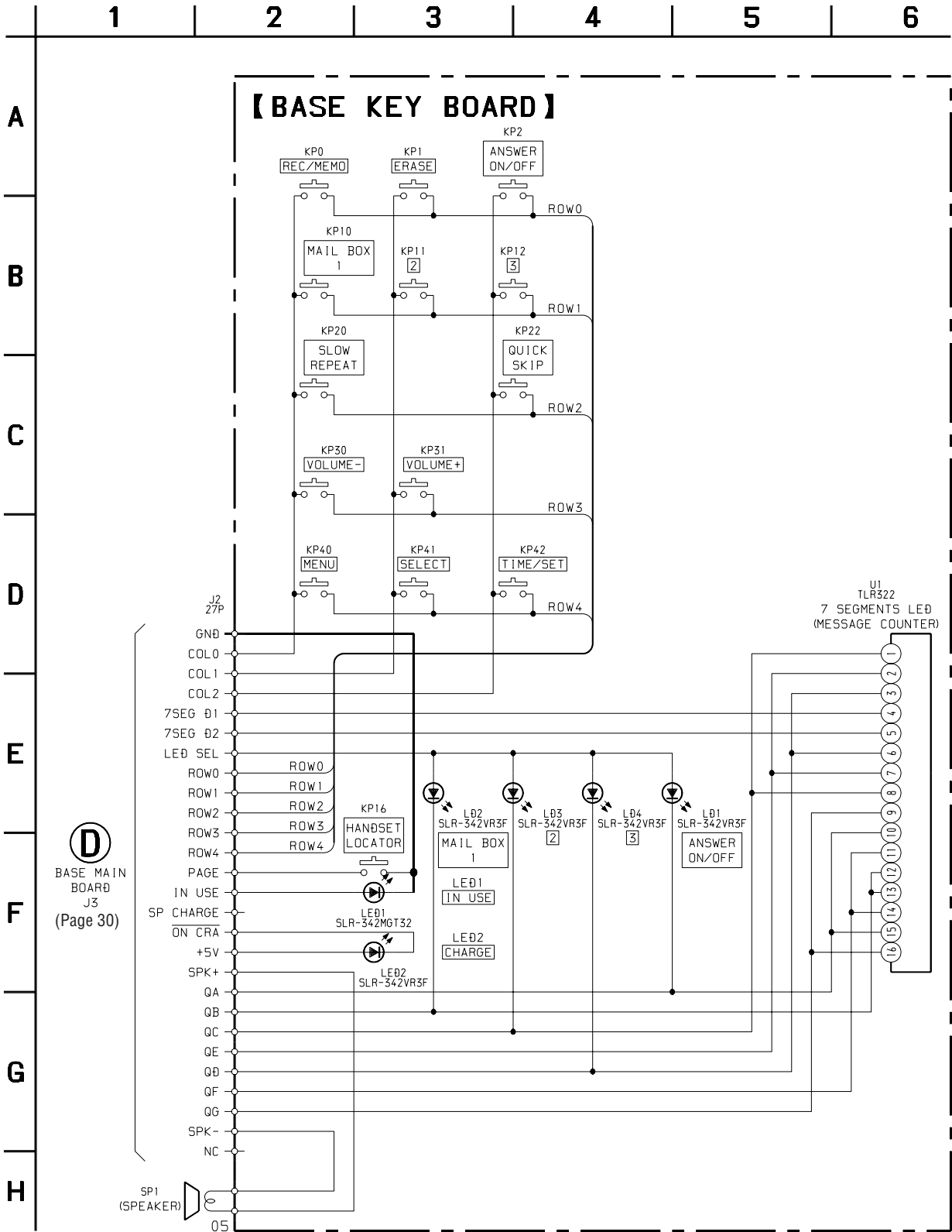
5-10. SCHEMATIC DIAGRAM – BASE I-TAD Board – • See page 31 for Waveform.

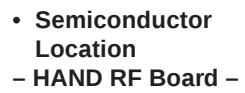


5-11. PRINTED WIRING BOARD – BASE KEY Board –



5-12. SCHEMATIC DIAGRAM – BASE KEY Board –

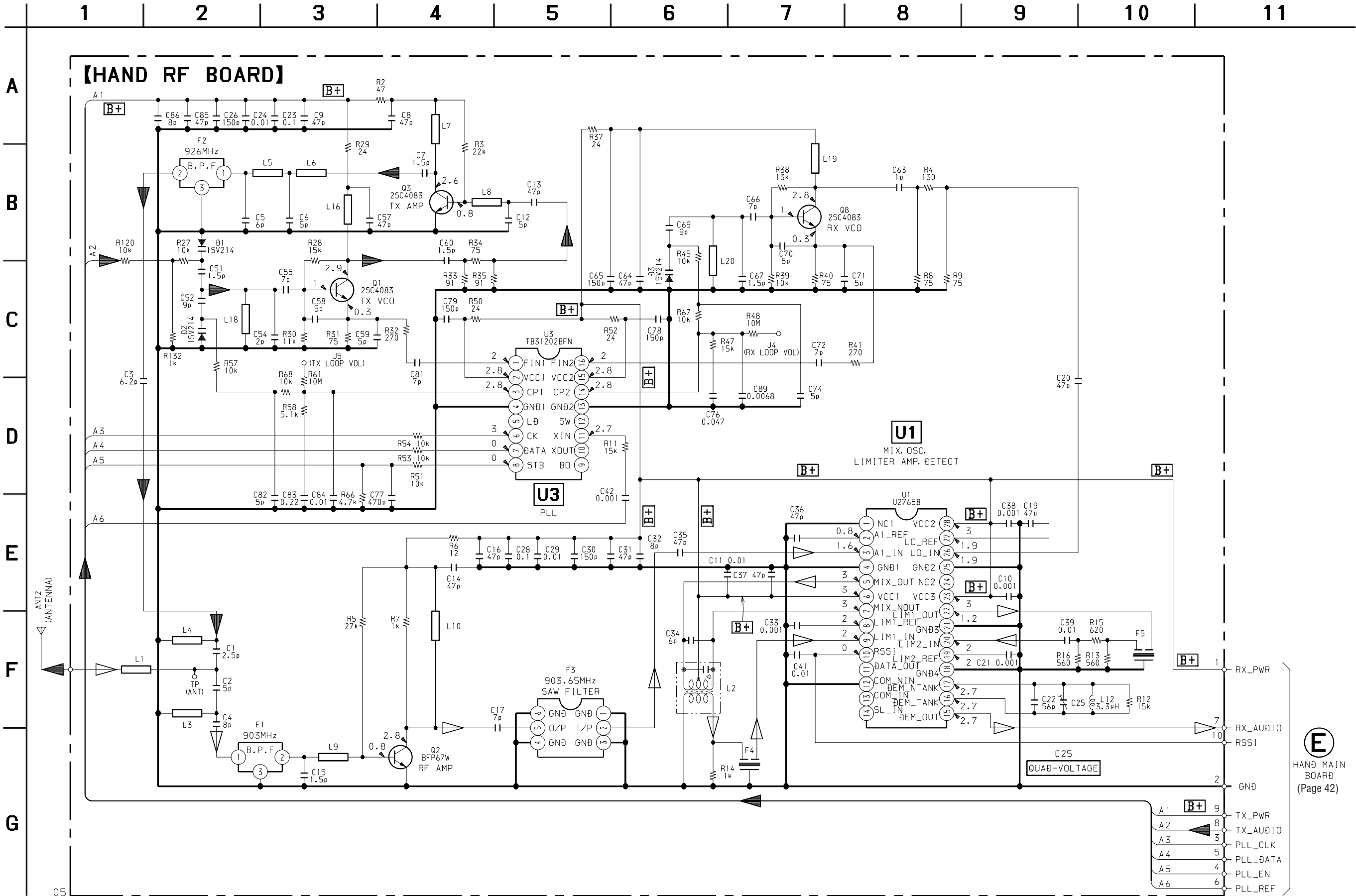




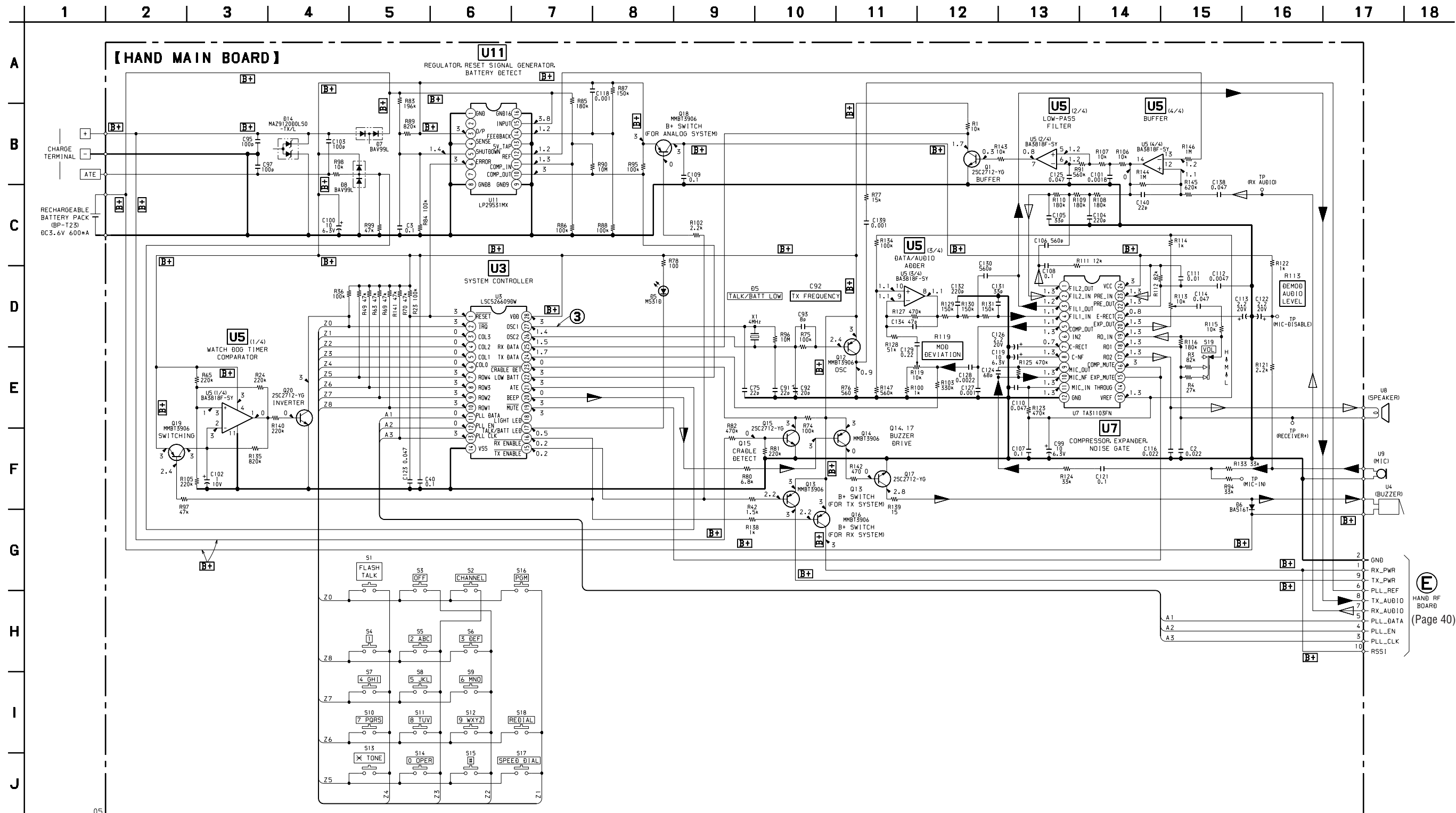
- **Semiconductor Location**
- **HAND MAIN Board –**

Ref. No.	Location
D5	B-8
D6	H-7
D7	G-7
D8	F-6
D14	H-6
Q1	E-6
Q12	C-6
Q13	B-7
Q14	G-7
Q15	G-6
Q16	B-6
Q17	F-8
Q18	G-7
Q19	E-6
Q20	E-6
U3	D-7
U5	E-7
U7	C-7
U11	F-7

5-14. SCHEMATIC DIAGRAM – HAND RF Board – • See page 43 for IC Block Diagrams.

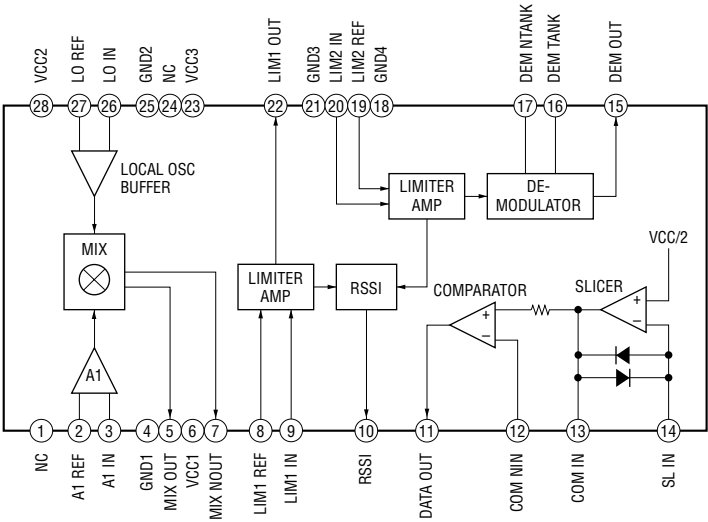


- 42 -

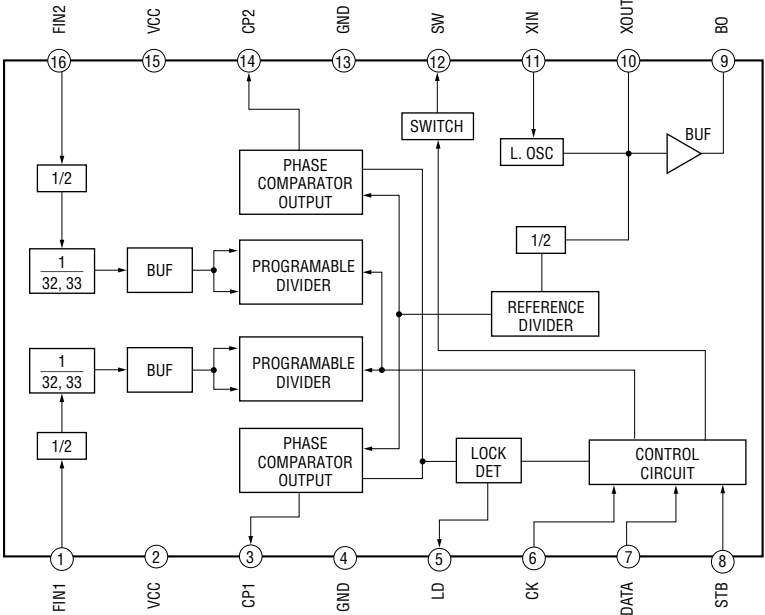


• IC Block Diagrams

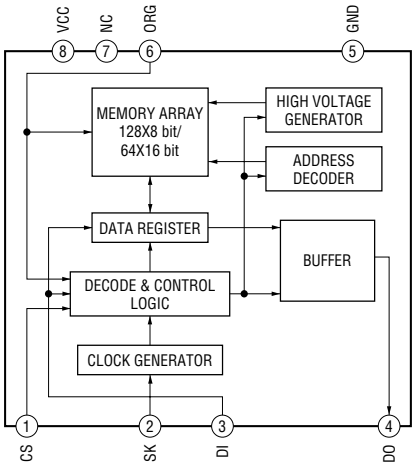
U1 U2765B-AFSG3 (BASE RF Board)
U1 U2765B-AFSG3 (HAND RF Board)



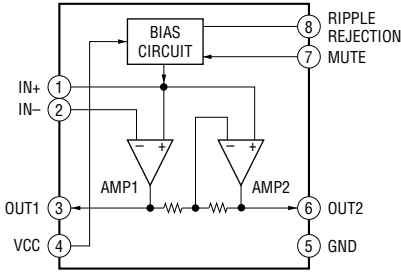
U3 TB31202BFN-EL (HAND RF Board)
U10 TB31202BFN-EL (BASE RF Board)



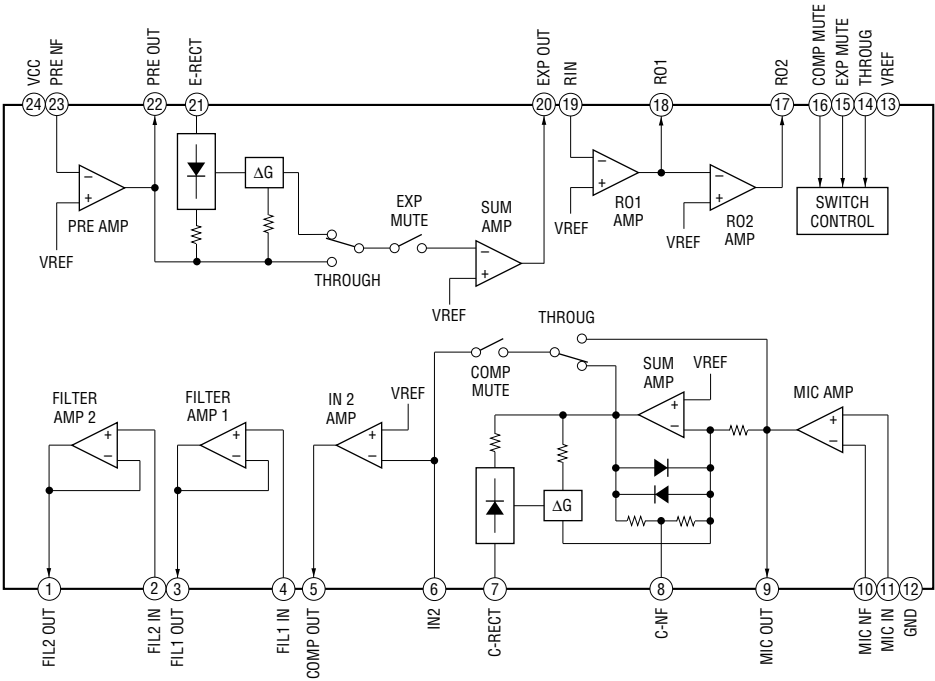
U3 CAT93C46KI (BASE MAIN Board)



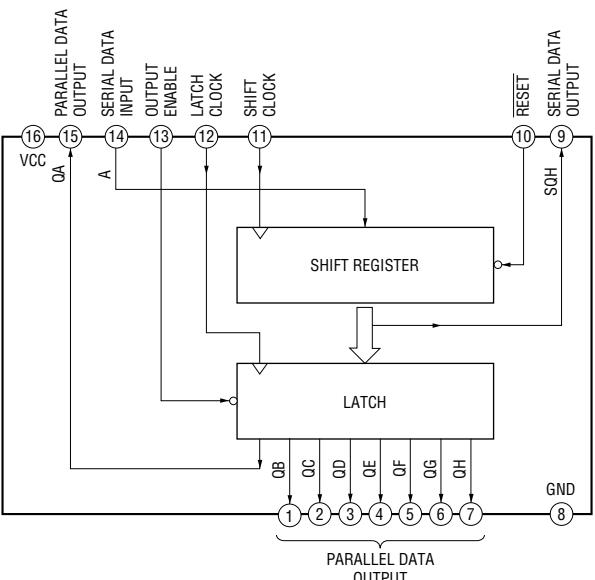
U6 KA8602D (BASE MAIN Board)



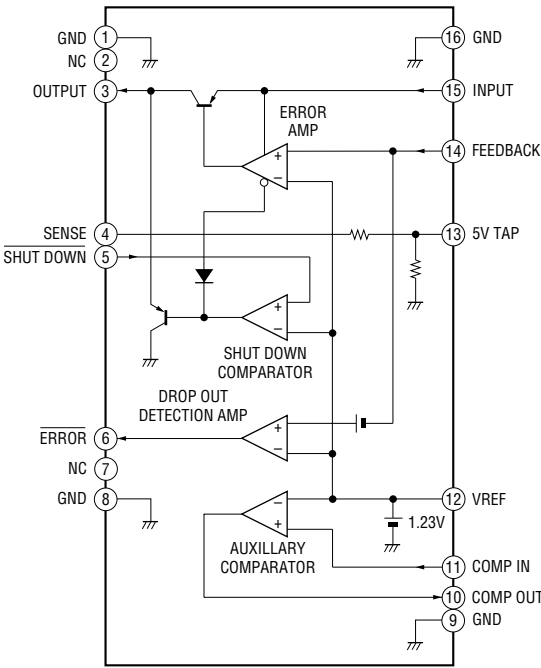
U4 TA31103F (BASE MAIN Board)
U7 TA31103F (HAND MAIN Board)



U10 MC74HC595AF (BASE MAIN Board)



U11 LP2953IM (HAND MAIN Board)



5-16. IC PIN FUNCTION DESCRIPTION

• BASE MAIN BOARD U1 LSC527738DW-A94100FB (SYSTEM CONTROLLER)

Pin No.	Pin Name	I/O	Description
1	$\overline{\text{RESET}}$	I	System reset signal input from the reset signal generator (Q2, 3) “L”: reset For several hundreds msec. after the power supply rises, “L” is input, then it changes to “H”
2	$\overline{\text{IRQ}}$	I	Interrupt request signal input terminal Not used (fixed at “H”)
3 to 8	DTMF1 to DTMF6	O	DTMF signal output terminal
9	EEP CS	O	Chip select signal output to the EEPROM (U3) “L”: un-select, “H”: select
10	PLL EN	O	Chip enable signal output to the TB31202BFN (U10) When PLL EN goes from “L” to “H”, it load data from PLL DATA
11	EEP/PLL DATA	O	Serial data output to the TB31202BFN (U10) and EEPROM (U3)
12	EEP DI	I	Serial data input from the EEPROM (U3)
13	EEP/PLL CLK	O	Serial data transfer clock signal output to the TB31202BFN (U10) and EEPROM (U3)
14	VSS	—	Ground terminal
15	$\overline{\text{TX ENABLE}}$	O	TX system power supply on/off control signal output “L”: TX system power on
16	$\overline{\text{MUTE}}$	O	RX and TX muting control signal output to the TA31103F (U4) “L”: muting on RX mode: After receiving preamble bits from handset muting it until data sent finished TX mode: During sending data to handset, muting it
17	$\overline{\text{OFF HOOK}}$	O	Hook on/off control signal output terminal “L”: off hook, “H”: on hook
18	$\overline{\text{CAR-DET}}$	I	Carrier detect signal input from the U2765B (U1) “L”: signal, “H”: no signal
19	$\overline{\text{CRADLE DET}}$	I	Detect signal input of the handset unit on cradle or off cradle “L”: on cradle, “H”: off cradle
20	$\overline{\text{RINGER DET}}$	I	Detect signal input of the ringer coming “L”: ringer is detected
21	$\overline{\text{PAGE}}$	I	HANDSET LOCATOR switch (KP16) input terminal “L” is input when key pressing
22	TONE/PULSE	I	DIAL MODE select switch (SW1) input terminal “L”: pulse, “H”: tone
23	ATE	I/O	Communication in/out terminal with ATE program
24	TX DATA	O	Transmit data output terminal
25	RX DATA	I	Receive data input terminal
26	OSC2	O	Main system clock output terminal (4 MHz)
27	OSC1	I	Main system clock input terminal (4 MHz)
28	VDD	—	Power supply terminal (+5V)

• BASE I-TAD BOARD U1 PCD6002-C (TAD)

Pin No.	Pin Name	I/O	Description
1	PSEN	O	Not used (open)
2	EAN	I	Not used (fixed at “L”)
3	VPP	—	Not used (open)
4	<u>7SEG D1</u>	O	LED drive signal output of the 7 Segments LED (U1) “L”: LED on
5	<u>7SEG D2</u>	O	LED drive signal output of the 7 Segments LED (U1) “L”: LED on
6	<u>LED SEL</u>	O	B+ switch (for LEDs) (Q10) control signal output “L”: B+ switch on
7	RESERVED	O	Not used
8	<u>RESET</u>	O	Reset signal output to the EEPROM (U3) “H”: reset
9	<u>L LATCH</u>	O	Serial data latch pulse output to the 7 segments LED drive (U10)
10	L CLK	O	Serial data transfer clock signal output to the 7 segments LED drive (U10)
11	L DATA	O	Serial data output to the 7 segments LED drive (U10)
12	VDD3V2	—	Power supply terminal (+3V) (digital system)
13	VSS3V1	—	Ground terminal
14 to 18	ROW0 to ROW4	O	Key send signal output to the key matrix
19	ROW5	O	Key send signal output to the key matrix Not used
20	<u>HOOK SW</u>	O	Hook on/off control signal output terminal “L”: off hook, “H”: on hook
21	NINT	I/O	Not used
22	VSS3V3	—	Ground terminal
23	SPK+	O	Analog audio signal (+) output to the speaker (SP1)
24	SPK–	O	Analog audio signal (–) output terminal Not used (open)
25	MIC+	I	Analog audio signal (+) input from the microphone (MIC1)
26	MIC–	I	Analog audio signal (–) input from the microphone (MIC1)
27	VMIC	O	Reference voltage output terminal (+2V)
28	VSSA	—	Ground terminal
29	VBBP	O	Band gap voltage output terminal (+1.2V) Not used
30	VMIC	O	Reference voltage output terminal (+2V)
31	AD0IN	I	Line DC input terminal
32	AD1IN	I	Analog input to the internal A/D converter Not used (pull up)
33	DAOUT	O	Analog output from the internal D/A converter Not used (open)
34	VDDA	—	Power supply terminal (+3V) (analog system)
35	LIFPIN	I	Analog audio signal input terminal Not used
36	LIFMIN2	I	Analog audio signal input from the TEL line
37	LIFMIN1	I	Analog audio signal input from the greeting recorder (U4)
38	LIFMOUT	O	Analog audio signal output terminal Not used (open)
39	LIFMOUT/DTMF	O	Analog audio/DTMF signal output to the TEL line
40	VSSPLL	—	Ground terminal
41	XTAL2	O	System clock output terminal (3.579545MHz)
42	XTAL1	I	System clock input terminal (3.579545MHz)
43	VDDPLL	—	Power supply terminal (+3V) (system clock and PLL circuit)
44	VDD3V3	—	Power supply terminal (+3V) (digital system)
45	<u>RINGER DET</u>	I	Detect signal input of the ringer coming “L”: ringer is detected
46	<u>MOUT1/DCK</u>	I/O	Not used (open)
47	<u>CTR ACTIVE</u>	I	Not used
48	S CLOCK/PARA DET	I/O	Not used
49	T0	I/O	Not used (open)
50	<u>BU HOOK</u>	I	Hook on/off detect signal input terminal “L”: off hook, “H”: on hook

Pin No.	Pin Name	I/O	Description
51	MOUT2/FSC	I/O	Not used
52	MIN	I	Voltage detect signal input from voltage detect (Q1)
53	VDD3V1	—	Power supply terminal (+3V) (digital system)
54	TST	I	Setting terminal for the test mode Normally: fixed at “L” “H”: test mode
55	$\overline{\text{RSTIN}}$	I	Reset signal input from the reset signal generator (Q3) “H”: reset
56	$\overline{\text{SP EN}}$	O	Speaker output on/off control signal output to the speaker amp (U6)
57	FSK	O	Serial data transfer clock signal output to the EEPROM (U3)
58	FSO	O	Serial data output to the EEPROM (U3)
59	FSI	I	Serial data input from the EEPROM (U3)
60	GPC	O	GP clock output terminal Not used (open)
61	VSS3V2	—	Ground terminal
62	$\overline{\text{CS}}$	O	Chip select signal output to the EEPROM (U3) “L”: select, “H”: un-select
63	RON	—	Not used (open)
64	WRN	—	Not used (open)
65 to 74	NC	—	Not used (open)
75 to 77	COL0 to COL2	I	Key return signal input from the key matrix
78 to 80	COL3 to COL5	I	Key return signal input from the key matrix Not used

• HAND MAIN BOARD U3 LSC526609DW (SYSTEM CONTROLLER)

Pin No.	Pin Name	I/O	Description
1	$\overline{\text{RESET}}$	I	System reset signal input from the LP2953IM (U11) “L”: reset For several hundreds msec. after the power supply rises, “L” is input, then it changes to “H”
2	$\overline{\text{IRQ}}$	I	Interrupt request signal input terminal
3 to 6	COL3 to COL0	O	Key scan signal output to the key matrix
7 to 10	ROW4 to ROW1	I	Key scan signal input from the key matrix
11	PLL DATA	O	Serial data output to the TB31202BFN (U3)
12	PLL EN	O	Chip enable signal output to the TB31202BFN (U3) When PLL EN goes from “L” to “H”, it load data from PLL DATA
13	PLL CLK	O	Serial data transfer clock signal output to the TB31202BFN (U3)
14	VSS	—	Ground terminal
15	$\overline{\text{TX ENABLE}}$	O	TX system power supply on/off control signal output “L”: TX system power on
16	$\overline{\text{RX ENABLE}}$	O	RX system power supply on/off control signal output “L”: RX system power on
17	TALK/BATT LED	O	LED drive signal output of the TALK/BATT LOW indicator (D5) “L”: LED on
18	LIGHT LED	O	LED drive signal output of the key back light Not used (open)
19	$\overline{\text{MUTE}}$	O	RX and TX muting control signal output to the TA31103F (U7) “L”: muting on RX mode: After receiving preamble bits from base unit muting it until data sent finished TX mode: During sending data to base unit, muting it
20	BEEP	O	Buzzer sound drive signal output terminal
21	ATE	I/O	Communication in/out terminal with ATE program
22	LOW BATT	I	Battery level detect signal input from the LP2953IM (U11)
23	$\overline{\text{CRADLE DET}}$	I	Detect signal input of the handset unit on cradle or off cradle “L”: on cradle, “H”: off cradle
24	TX DATA	O	Transmit data output terminal
25	RX DATA	I	Receive data input terminal
26	OSC2	O	Main system clock output terminal (4 MHz)
27	OSC1	I	Main system clock input terminal (4 MHz)
28	VDD	—	Power supply terminal (+5V)

SECTION 6

EXPLODED VIEWS

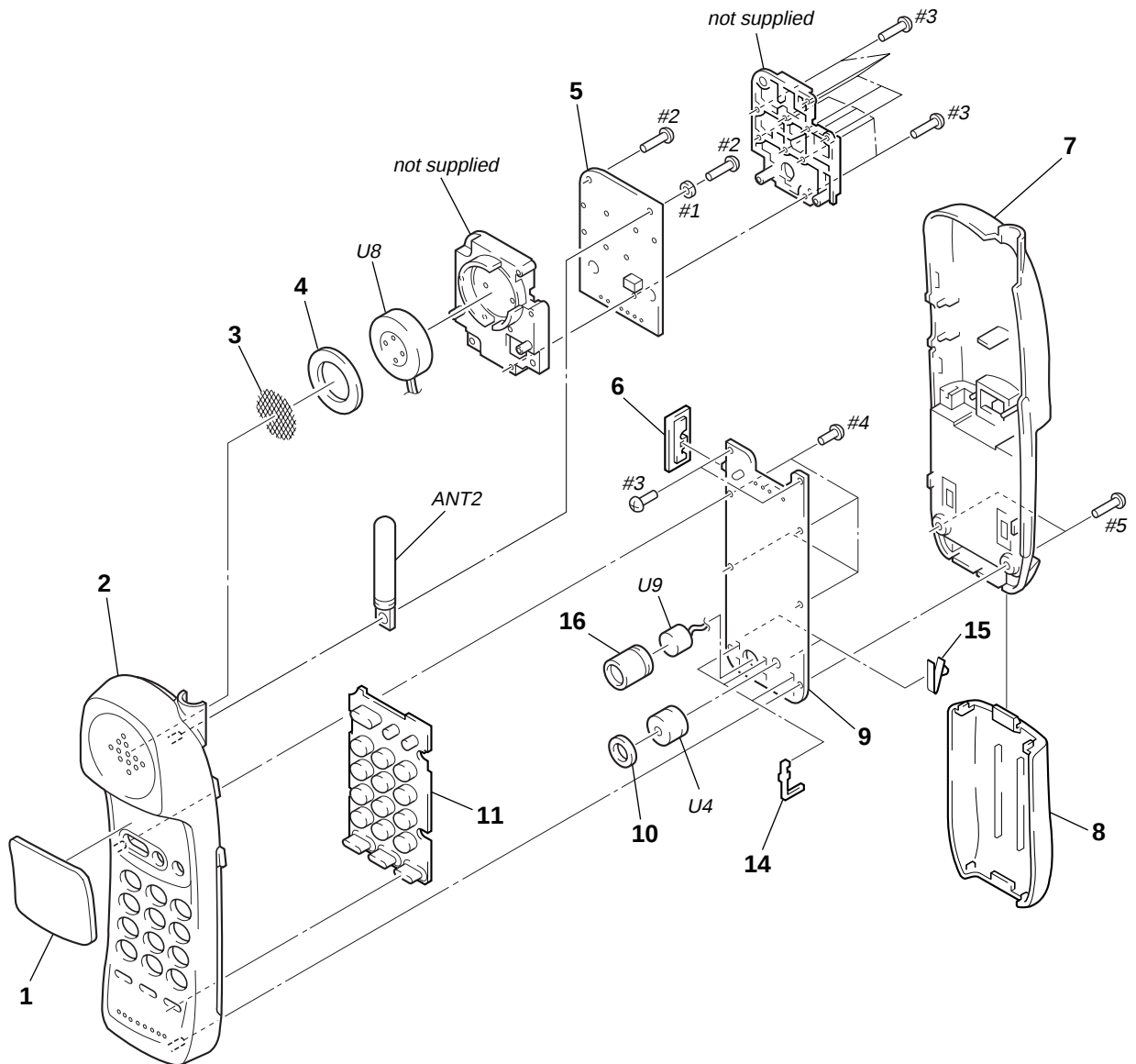
NOTE:

- XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
Example:
KNOB, BALANCE (WHITE) . . . (RED)

Parts Color Cabinet's Color

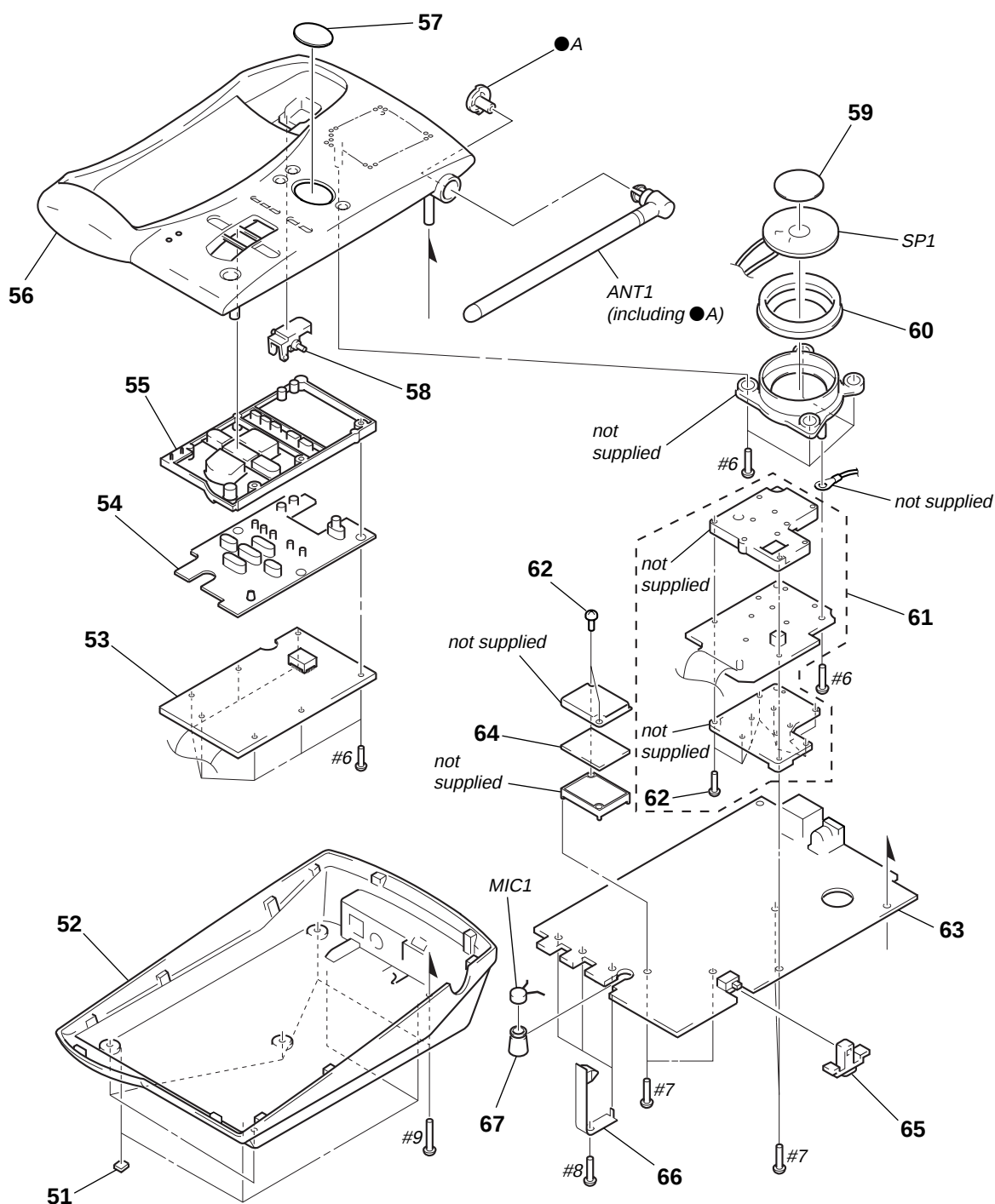
- Items marked “*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of the electrical parts list.

(1) HANDSET SECTION



<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remark</u>	<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remark</u>
1	3-036-130-01	PANEL (HS)		10	3-036-642-01	BUZZER, HOLDER	
2	3-036-122-01	FRONT (HS), CABINET		11	1-771-715-11	SWITCH, RUBBER KEY	
3	3-012-611-01	SHEET (RECEIVER)		14	3-036-126-01	TERMINAL (HANDSET), CHARGE	
4	3-371-005-01	GASKET (RECEIVER) (TWN)		15	3-036-647-01	SPRING, BATTERY	
* 5	A-3672-725-A	HAND RF BOARD, COMPLETE		16	3-036-646-01	HOLDER (MIC)	
6	3-036-120-01	KNOB, VOL		ANT2	1-501-951-31	ANTENNA	
7	3-036-123-01	CABINET (REAR (HS))		U4	1-544-603-11	BUZZER	
8	3-036-121-01	LID, BATTERY CASE		U8	1-505-593-11	SPEAKER (2.8cm)	
* 9	A-3672-726-A	HAND MAIN BOARD, COMPLETE		U9	1-542-260-31	MICROPHONE, ELECTRET CONDENSER	

(2) BASESET SECTION



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
51	3-041-534-01	FOOT, RUBBER		* 61	A-3672-914-A	BASE RF BOARD, COMPLETE	
52	3-042-404-01	BASE (BOTTOM), CABINET		62	4-356-741-11	SCREW, TAPPING (BIND 2X6)	
* 53	1-676-810-11	BASE KEY BOARD		* 63	A-3672-915-A	BASE MAIN BOARD, COMPLETE	
54	3-042-412-01	RUBBER, KEY		* 64	A-3672-917-A	BASE I-TAD BOARD, COMPLETE	
55	3-042-405-01	KEY, BASE		65	3-023-846-01	KNOB, TONE-PULSE	
56	3-042-403-01	BASE (TOP), CABINET		66	3-042-407-01	SPRING, CHARGE	
57	3-042-406-01	LENS (LED) (BASE)		* 67	3-042-428-01	CUSHION, MIC	
58	3-036-127-01	HOOK		ANT1	1-501-999-21	ANTENNA	
* 59	3-042-428-01	CUSHION, MIC		SP1	1-544-035-11	SPEAKER (5cm)	
60	3-041-275-01	PACKING, SP		MIC1	1-542-260-31	MICROPHONE, ELECTRET CONDENSER (MIC)	

SECTION 7 ELECTRICAL PARTS LIST

BASE I-TAD

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
All resistors are in ohms.
METAL: Metal-film resistor.
METAL OXIDE: Metal oxide-film resistor.
F: nonflammable
- Abbreviation
CND: Canadian model

- Items marked “*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
In each case, u: μ , for example:
uA. . : μ A. . uPA. . : μ PA. .
uPB. . : μ PB. . uPC. . : μ PC. .
uPD. . : μ PD. .
- CAPACITORS
uF: μ F
- COILS
uH: μ H

The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
*	A-3672-917-A	BASE I-TAD BOARD, COMPLETE *****				< DIODE >	
		< CAPACITOR >		D1	8-719-058-24	DIODE RB501V-40TE-17	
C1	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V		D2	8-719-069-29	DIODE RB520S-30TE61	
C2	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V				< FERRITE BEAD >	
C3	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V		L1	1-500-237-11	BEAD, FERRITE (CHIP)	
C5	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V		L3	1-500-237-11	BEAD, FERRITE (CHIP)	
C6	1-162-921-11	CERAMIC CHIP 33PF 5% 50V				< TRANSISTOR >	
C7	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V		Q1	8-729-026-06	TRANSISTOR MMBT3904LT1	
C10	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V		Q2	8-729-029-14	TRANSISTOR DTC144EUA-T106	
C11	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V		Q3	8-729-026-06	TRANSISTOR MMBT3904LT1	
C12	1-162-921-11	CERAMIC CHIP 33PF 5% 50V				< RESISTOR >	
C13	1-162-921-11	CERAMIC CHIP 33PF 5% 50V		R1	1-216-821-11	METAL CHIP 1K 5% 1/16W	
C14	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V		R2	1-216-833-11	METAL CHIP 10K 5% 1/16W	
C15	1-162-921-11	CERAMIC CHIP 33PF 5% 50V		R7	1-216-809-11	METAL CHIP 100 5% 1/16W	
C16	1-162-921-11	CERAMIC CHIP 33PF 5% 50V		R8	1-216-821-11	METAL CHIP 1K 5% 1/16W	
C18	1-162-922-11	CERAMIC CHIP 39PF 5% 50V		R9	1-216-833-11	METAL CHIP 10K 5% 1/16W	
C19	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V		R10	1-216-864-11	METAL CHIP 0 5% 1/16W	
C20	1-162-922-11	CERAMIC CHIP 39PF 5% 50V		R13	1-216-833-11	METAL CHIP 10K 5% 1/16W	
C22	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V		R14	1-216-828-11	METAL CHIP 3.9K 5% 1/16W	
C23	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V		R15	1-216-821-11	METAL CHIP 1K 5% 1/16W	
C24	1-164-156-11	CERAMIC CHIP 0.1uF 25V		R17	1-216-821-11	METAL CHIP 1K 5% 1/16W	
C25	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V		R18	1-216-821-11	METAL CHIP 1K 5% 1/16W	
C26	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V		R19	1-211-736-11	RES, CHIP 5.1 5% 1/16W	
C27	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V		R20	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
C28	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V		R21	1-216-864-11	METAL CHIP 0 5% 1/16W	
C29	1-162-921-11	CERAMIC CHIP 33PF 5% 50V		R23	1-216-864-11	METAL CHIP 0 5% 1/16W	
C30	1-162-921-11	CERAMIC CHIP 33PF 5% 50V		R24	1-216-830-11	METAL CHIP 5.6K 5% 1/16W	
C31	1-162-921-11	CERAMIC CHIP 33PF 5% 50V		R28	1-216-821-11	METAL CHIP 1K 5% 1/16W	
C32	1-162-921-11	CERAMIC CHIP 33PF 5% 50V		R29	1-216-841-11	METAL CHIP 47K 5% 1/16W	
C37	1-164-156-11	CERAMIC CHIP 0.1uF 25V		R30	1-216-822-11	RES, CHIP 1.2K 5% 1/16W	
C50	1-162-921-11	CERAMIC CHIP 33PF 5% 50V		R31	1-216-841-11	METAL CHIP 47K 5% 1/16W	
C51	1-162-921-11	CERAMIC CHIP 33PF 5% 50V		R32	1-216-833-11	METAL CHIP 10K 5% 1/16W	
C52	1-162-921-11	CERAMIC CHIP 33PF 5% 50V		R33	1-216-864-11	METAL CHIP 0 5% 1/16W	
C53	1-162-921-11	CERAMIC CHIP 33PF 5% 50V		R36	1-216-809-11	METAL CHIP 100 5% 1/16W	
C54	1-162-921-11	CERAMIC CHIP 33PF 5% 50V				< CAPACITOR >	
C56	1-162-921-11	CERAMIC CHIP 33PF 5% 50V		TC1	1-104-752-11	TANTALUM CHIP 33MF 20% 4V	
C57	1-162-921-11	CERAMIC CHIP 33PF 5% 50V		TC2	1-104-752-11	TANTALUM CHIP 33MF 20% 4V	
C58	1-162-921-11	CERAMIC CHIP 33PF 5% 50V		TC3	1-135-201-11	TANTALUM CHIP 10uF 20% 4V	
C59	1-162-921-11	CERAMIC CHIP 33PF 5% 50V					
C60	1-162-921-11	CERAMIC CHIP 33PF 5% 50V					
C67	1-162-921-11	CERAMIC CHIP 33PF 5% 50V					

BASE I-TAD							BASE KEY							BASE MAIN						
Ref. No.	Part No.	Description				Remark	Ref. No.	Part No.	Description				Remark							
TC7	1-104-752-11	TANTALUM CHIP	33MF	20%	4V		C27	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V								
TC8	1-135-201-11	TANTALUM CHIP	10uF	20%	4V		C28	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V								
TC9	1-135-201-11	TANTALUM CHIP	10uF	20%	4V		C29	1-165-128-11	CERAMIC CHIP	0.22uF		16V								
TC10	1-135-259-11	TANTALUM CHIP	10MF	20%	6.3V		C30	1-162-923-11	CERAMIC CHIP	47PF	5%	50V								
TC11	1-135-201-11	TANTALUM CHIP	10uF	20%	4V		C31	1-164-230-11	CERAMIC CHIP	220PF	5%	50V								
TC13	1-135-177-21	TANTALUM CHIP	1uF	20%	20V		C32	1-162-921-11	CERAMIC CHIP	33PF	5%	50V								
TC14	1-104-752-11	TANTALUM CHIP	33MF	20%	4V		C33	1-164-739-11	CERAMIC CHIP	560PF	5%	50V								
< IC >																				
U1	8-759-652-79	IC	PCD6002-C					C34	1-162-921-11	CERAMIC CHIP	33PF	5%	50V							
U2	8-759-664-08	IC	PQ1R28					C35	1-164-230-11	CERAMIC CHIP	220PF	5%	50V							
U3	8-759-664-06	IC	AT45DB041					C36	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V							
< VIBRATOR >																				
X1	1-527-396-31	OSCILLATOR, CRYSTAL (3.579545MHz)					C37	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V								

*	1-676-810-11	BASE KEY BOARD					C38	1-162-909-11	CERAMIC CHIP	4PF	0.25PF	50V								

< LED >																				
LED1	8-719-052-06	LED	SLR-342MGT32 (IN USE)					C39	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V							
LED2	8-719-059-40	LED	SLR-342VR3F (CHARGE)					C40	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V							
LD1	8-719-059-40	LED	SLR-342VR3F (ANSWER ON/OFF)					C41	1-162-977-11	CERAMIC CHIP	0.0018uF	10%	50V							
LD2	8-719-059-40	LED	SLR-342VR3F (MAIL BOX 1)					C42	1-162-967-11	CERAMIC CHIP	0.0033uF	10%	50V							
LD3	8-719-059-40	LED	SLR-342VR3F (2)					C43	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V							
LD4	8-719-059-40	LED	SLR-342VR3F (3)					C44	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V							
U1	8-719-803-22	LED	TLR322 (MESSAGE COUNTER)					C45	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V							

*	A-3672-915-A	BASE MAIN BOARD, COMPLETE					C46	1-162-927-11	CERAMIC CHIP	100PF	5%	50V								

< CAPACITOR/RESISTOR >																				
C1	1-164-156-11	CERAMIC CHIP	0.1uF		25V		C48	1-110-563-11	CERAMIC CHIP	0.068uF	10%	16V								
C2	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		C49	1-164-156-11	CERAMIC CHIP	0.1uF		25V								
C3	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V		C50	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V								
C4	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		C51	1-162-927-11	CERAMIC CHIP	100PF	5%	50V								
C5	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V		C52	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V								
C6	1-162-919-11	CERAMIC CHIP	22PF	5%	50V		C53	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V								
C7	1-162-917-11	CERAMIC CHIP	15PF	5%	50V		C95	1-216-864-11	METAL CHIP	0	5%	1/16W								
C8	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V		C97	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V								
C9	1-162-913-11	CERAMIC CHIP	8PF	0.5PF	50V		C99	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V								
C10	1-164-156-11	CERAMIC CHIP	0.1uF		25V		C131	1-136-193-11	MYLAR	0.47uF	5%	250V								
C11	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V		C135	1-164-156-11	CERAMIC CHIP	0.1uF		25V								
C12	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		C136	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V								
C13	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		C150	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V								
C14	1-162-963-11	CERAMIC CHIP	680PF	10%	50V		< DIODE/VARISTOR >													
C15	1-141-374-11	CAP, TRIMMER	20PF				D3	8-719-820-05	DIODE	1SS181-TE85L										
C16	1-165-128-11	CERAMIC CHIP	0.22uF		16V		D4	8-719-909-90	DIODE	BAV99										
C17	1-164-739-11	CERAMIC CHIP	560PF	5%	50V		D8	1-801-730-11	VARISTOR											
C18	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V		D9	8-719-911-55	DIODE	1N4004										
C19	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V		D10	8-719-911-55	DIODE	1N4004										
C20	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		D11	8-719-911-55	DIODE	1N4004										
C22	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V		D12	8-719-911-55	DIODE	1N4004										
C23	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V		D16	8-719-976-19	DIODE	RLS-4148										
C24	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V		D50	8-719-055-76	DIODE	1N4148										
C25	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V		< CAPACITOR >													
C26	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V		EC1	1-126-961-11	ELECT	2.2uF	20%	50V								
							EC2	1-104-664-11	ELECT	47uF	20%	25V								
							EC3	1-126-964-11	ELECT	10uF	20%	50V								
							EC4	1-126-964-11	ELECT	10uF	20%	50V								
							EC5	1-126-964-11	ELECT	10uF	20%	50V								
							EC6	1-126-961-11	ELECT	2.2uF	20%	50V								
							EC8	1-126-964-11	ELECT	10uF	20%	50V								
							EC9	1-126-968-11	ELECT	100uF	20%	50V								
							EC10	1-126-935-11	ELECT	470uF	20%	6.3V								
							EC11	1-126-968-11	ELECT	100uF	20%	50V								
							EC132	1-126-964-11	ELECT	10uF	20%	50V								

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
EC133	1-126-964-11	ELECT	10uF	20%	50V	R20	1-216-819-11	METAL CHIP	680	5%	1/16W
EC134	1-115-868-11	ELECT	0.22uF	20%	50V	R21	1-216-839-11	METAL CHIP	33K	5%	1/16W
EC137	1-104-664-11	ELECT	47uF	20%	16V						
EC150	1-126-964-11	ELECT	10uF	20%	50V	R22	1-216-725-11	RES, CHIP	56K	1%	1/10W
< FUSE >						R23	1-208-806-11	RES, CHIP	10K	1%	1/10W
F1	1-533-842-11	FUSE (250mA)				R25	1-216-845-11	METAL CHIP	100K	5%	1/16W
< JACK >						R26	1-216-833-11	METAL CHIP	10K	5%	1/16W
J7	1-565-999-11	JACK, MODULAR 2P (LINE)				R27	1-216-845-11	METAL CHIP	100K	5%	1/16W
J8	1-580-727-11	JACK (DC IN 9V)				R28	1-216-837-11	METAL CHIP	22K	5%	1/16W
< COIL >						R29	1-216-845-11	METAL CHIP	100K	5%	1/16W
L1	1-408-117-00	INDUCTOR	10uH			R30	1-216-841-11	METAL CHIP	47K	5%	1/16W
L2	1-408-117-00	INDUCTOR	10uH			R31	1-216-821-11	METAL CHIP	1K	5%	1/16W
L3	1-408-117-00	INDUCTOR	10uH			R32	1-216-839-11	METAL CHIP	33K	5%	1/16W
L4	1-408-117-00	INDUCTOR	10uH			R33	1-216-837-11	METAL CHIP	22K	5%	1/16W
L21	1-408-117-00	INDUCTOR	10uH			R34	1-216-724-11	RES, CHIP	20K	1%	1/10W
L23	1-408-117-00	INDUCTOR	10uH			R35	1-216-724-11	RES, CHIP	20K	1%	1/10W
L25	1-408-117-00	INDUCTOR	10uH			R36	1-216-724-11	RES, CHIP	20K	1%	1/10W
L26	1-408-117-00	INDUCTOR	10uH			R37	1-216-724-11	RES, CHIP	20K	1%	1/10W
L27	1-408-117-00	INDUCTOR	10uH			R38	1-216-724-11	RES, CHIP	20K	1%	1/10W
L28	1-408-117-00	INDUCTOR	10uH			R39	1-216-724-11	RES, CHIP	20K	1%	1/10W
< TRANSISTOR >						R40	1-208-806-11	RES, CHIP	10K	1%	1/10W
Q1	T-941-615-31	TRANSISTOR	MMBT3904LT1			R41	1-208-806-11	RES, CHIP	10K	1%	1/10W
Q2	T-941-615-31	TRANSISTOR	MMBT3904LT1			R42	1-208-806-11	RES, CHIP	10K	1%	1/10W
Q3	T-941-615-31	TRANSISTOR	MMBT3904LT1			R43	1-208-806-11	RES, CHIP	10K	1%	1/10W
Q4	T-941-615-31	TRANSISTOR	MMBT3904LT1			R44	1-208-806-11	RES, CHIP	10K	1%	1/10W
Q5	8-729-026-07	TRANSISTOR	MMBT3906LT1			R45	1-216-724-11	RES, CHIP	20K	1%	1/10W
Q6	8-729-026-07	TRANSISTOR	MMBT3906LT1			R46	1-216-837-11	METAL CHIP	22K	5%	1/16W
Q8	8-729-026-07	TRANSISTOR	MMBT3906LT1			R47	1-218-344-11	RES, CHIP	7.5K	5%	1/16W
Q9	8-729-026-07	TRANSISTOR	MMBT3906LT1			R48	1-216-864-11	METAL CHIP	0	5%	1/16W
Q10	8-729-026-07	TRANSISTOR	MMBT3906LT1			R49	1-216-834-11	METAL CHIP	12K	5%	1/16W
Q12	8-729-026-07	TRANSISTOR	MMBT3906LT1			R50	1-216-834-11	METAL CHIP	12K	5%	1/16W
Q15	8-729-026-07	TRANSISTOR	MMBT3906LT1			R51	1-216-841-11	METAL CHIP	47K	5%	1/16W
Q16	T-941-615-31	TRANSISTOR	MMBT3904LT1			R52	1-216-853-11	METAL CHIP	470K	5%	1/16W
Q17	T-941-615-31	TRANSISTOR	MMBT3904LT1			R53	1-218-345-11	RES, CHIP	9.1K	5%	1/16W
< RESISTOR >						R54	1-216-845-11	METAL CHIP	100K	5%	1/16W
R1	1-218-287-11	RES, CHIP	200	5%	1/16W	R55	1-216-821-11	METAL CHIP	1K	5%	1/16W
R2	1-211-895-11	METAL FILM	10M	10%	1/4W	R56	1-216-850-11	METAL CHIP	270K	5%	1/16W
R3	1-211-895-11	METAL FILM	10M	10%	1/4W	R57	1-216-852-11	METAL CHIP	390K	5%	1/16W
R4	1-219-570-11	METAL CHIP	10M	5%	1/16W	R58	1-216-850-11	METAL CHIP	270K	5%	1/16W
R5	1-219-570-11	METAL CHIP	10M	5%	1/16W	R59	1-216-837-11	METAL CHIP	22K	5%	1/16W
R6	1-216-863-11	RES, CHIP	3.3M	5%	1/16W	R60	1-218-292-11	RES, CHIP	20K	5%	1/16W
R7	1-216-863-11	RES, CHIP	3.3M	5%	1/16W	R61	1-216-853-11	METAL CHIP	470K	5%	1/16W
R8	1-216-828-11	METAL CHIP	3.9K	5%	1/16W	R62	1-216-857-11	METAL CHIP	1M	5%	1/16W
R9	1-216-839-11	METAL CHIP	33K	5%	1/16W	R63	1-247-847-11	CARBON	4.7K	5%	1/4W
R10	1-218-287-11	RES, CHIP	200	5%	1/16W	R64	1-218-908-11	RES, CHIP	360K	5%	1/16W
R11	1-218-287-11	RES, CHIP	200	5%	1/16W	R65	1-216-864-11	METAL CHIP	0	5%	1/16W
R12	1-218-287-11	RES, CHIP	200	5%	1/16W	R66	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R13	1-218-287-11	RES, CHIP	200	5%	1/16W	R67	1-216-853-11	METAL CHIP	470K	5%	1/16W
R14	1-218-287-11	RES, CHIP	200	5%	1/16W	R68	1-216-847-11	METAL CHIP	150K	5%	1/16W
R15	1-247-855-11	CARBON	10K	5%	1/4W	R69	1-216-833-11	METAL CHIP	10K	5%	1/16W
R16	1-216-833-11	METAL CHIP	10K	5%	1/16W	R70	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R17	1-218-287-11	RES, CHIP	200	5%	1/16W	R71	1-216-819-11	METAL CHIP	680	5%	1/16W
R19	1-216-833-11	METAL CHIP	10K	5%	1/16W	R72	1-216-845-11	METAL CHIP	100K	5%	1/16W
						R73	1-216-847-11	METAL CHIP	150K	5%	1/16W
						R74	1-216-847-11	METAL CHIP	150K	5%	1/16W
						R75	1-216-848-11	METAL CHIP	180K	5%	1/16W
						R76	1-216-848-11	METAL CHIP	180K	5%	1/16W
						R77	1-216-848-11	METAL CHIP	180K	5%	1/16W

BASE MAIN

BASE RF

Ref. No.	Part No.	Description	Remark
R78	1-249-406-11	CARBON (SMALL)120	5% 1/4W
R79	1-216-833-11	METAL CHIP 10K	5% 1/16W
R80	1-216-841-11	METAL CHIP 47K	5% 1/16W
R81	1-216-831-11	METAL CHIP 6.8K	5% 1/16W
R82	1-216-841-11	METAL CHIP 47K	5% 1/16W
R84	1-216-841-11	METAL CHIP 47K	5% 1/16W
R85	1-216-857-11	METAL CHIP 1M	5% 1/16W
R86	1-216-857-11	METAL CHIP 1M	5% 1/16W
R89	1-216-833-11	METAL CHIP 10K	5% 1/16W
R90	1-216-854-11	METAL CHIP 560K	5% 1/16W
R91	1-216-833-11	METAL CHIP 10K	5% 1/16W
R92	1-216-837-11	METAL CHIP 22K	5% 1/16W
R93	1-216-864-11	METAL CHIP 0	5% 1/16W
R95	1-220-372-11	RES, CHIP 200K	5% 1/16W
R96	1-216-821-11	METAL CHIP 1K	5% 1/16W
R97	1-216-845-11	METAL CHIP 100K	5% 1/16W
R98	1-216-833-11	METAL CHIP 10K	5% 1/16W
R99	1-216-845-11	METAL CHIP 100K	5% 1/16W
R100	1-216-831-11	METAL CHIP 6.8K	5% 1/16W
R101	1-216-836-11	METAL CHIP 18K	5% 1/16W
R102	1-216-841-11	METAL CHIP 47K	5% 1/16W
R103	1-216-833-11	METAL CHIP 10K	5% 1/16W
R104	1-216-833-11	METAL CHIP 10K	5% 1/16W
R105	1-219-570-11	METAL CHIP 10M	5% 1/16W
R106	1-216-845-11	METAL CHIP 100K	5% 1/16W
R107	1-216-833-11	METAL CHIP 10K	5% 1/16W
R108	1-216-797-11	RES, CHIP 10	5% 1/16W
R121	1-216-818-11	METAL CHIP 560	5% 1/16W
R122	1-216-085-00	METAL CHIP 33K	5% 1/10W
R132	1-216-785-11	RES, CHIP 3.3K	1% 1/10W
R138	1-216-833-11	METAL CHIP 10K	5% 1/16W
R139	1-216-827-11	RES, CHIP 3.3K	5% 1/16W
R140	1-216-815-11	METAL CHIP 330	5% 1/16W
R141	1-218-730-11	METAL CHIP 39K	0.5% 1/16W
R142	1-218-702-11	METAL CHIP 2.7K	0.5% 1/16W
R143	1-216-049-11	METAL CHIP 1K	5% 1/10W
R149	1-216-821-11	METAL CHIP 1K	5% 1/16W
R150	1-216-821-11	METAL CHIP 1K	5% 1/16W
R241	1-216-845-11	METAL CHIP 100K	5% 1/16W
< SWITCH >			
SW1	1-571-377-11	SWITCH, SLIDE (DIAL TONE)	
< TRANSFORMER >			
T1	1-431-965-11	TRANSFORMER, LINE	
< IC/PHOTO COUPLER >			
U1	8-759-658-48	IC LSC527738DW-A94100FB	
U2	8-759-502-80	IC LM358M	
U3	8-759-583-87	IC CAT93C46K1	
U4	8-759-479-97	IC TA31103F	
U5	8-759-912-77	IC LM324N	
U6	8-759-658-47	IC KA8602D	
U7	8-719-821-66	PHOTO COUPLER TLP627	
U8	8-719-018-89	PHOTO COUPLER LTV817-C	
U9	8-759-701-56	IC NJM78M05FA	
U10	8-759-032-59	IC MC74HC595AF	

Ref. No.	Part No.	Description	Remark
< VARIABLE RESISTOR >			
VR1	1-237-517-21	RES, ADJ 5K	
VR2	1-238-193-11	RES, ADJ 5K	
< VIBRATOR >			
X1	1-760-096-11	VIBRATOR, CRYSTAL (4.194304MHz)	
< DIODE >			
Z12	8-719-025-55	DIODE 02CZ27-TE85L	
Z13	8-719-025-55	DIODE 02CZ27-TE85L	

*	A-3672-914-A	BASE RF BOARD, COMPLETE	*****
4-356-741-11 SCREW, TAPPING (BIND 2X6)			
< CAPACITOR >			
C1	1-162-909-11	CERAMIC CHIP 4PF 0.25PF 50V	
C2	1-162-933-11	CERAMIC CHIP 2.5PF 0.25PF 50V	
C3	1-162-913-11	CERAMIC CHIP 8PF 0.5PF 50V	
C4	1-162-911-11	CERAMIC CHIP 6PF 0.5PF 50V	
C5	1-162-911-11	CERAMIC CHIP 6PF 0.5PF 50V	
C6	1-162-909-11	CERAMIC CHIP 4PF 0.25PF 50V	
C7	1-162-907-11	CERAMIC CHIP 2PF 0.25PF 50V	
C8	1-162-923-11	CERAMIC CHIP 47PF 5% 50V	
C9	1-162-923-11	CERAMIC CHIP 47PF 5% 50V	
C11	1-162-909-11	CERAMIC CHIP 4PF 0.25PF 50V	
C12	1-162-908-11	CERAMIC CHIP 3PF 0.25PF 50V	
C13	1-162-923-11	CERAMIC CHIP 47PF 5% 50V	
C14	1-162-923-11	CERAMIC CHIP 47PF 5% 50V	
C15	1-162-933-11	CERAMIC CHIP 2.5PF 0.25PF 50V	
C16	1-162-923-11	CERAMIC CHIP 47PF 5% 50V	
C17	1-162-910-11	CERAMIC CHIP 5PF 0.25PF 50V	
C18	1-162-923-11	CERAMIC CHIP 47PF 5% 50V	
C19	1-162-923-11	CERAMIC CHIP 47PF 5% 50V	
C21	1-162-911-11	CERAMIC CHIP 6PF 0.5PF 50V	
C22	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	
C23	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	
C24	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C25	1-162-924-11	CERAMIC CHIP 56PF 5% 50V	
C26	1-164-217-11	CERAMIC CHIP 150PF 5% 50V	
C27	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	
C28	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	
C29	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C30	1-164-217-11	CERAMIC CHIP 150PF 5% 50V	
C31	1-162-923-11	CERAMIC CHIP 47PF 5% 50V	
C32	1-162-913-11	CERAMIC CHIP 8PF 0.5PF 50V	
C33	1-162-923-11	CERAMIC CHIP 47PF 5% 50V	
C34	1-162-923-11	CERAMIC CHIP 47PF 5% 50V	
C35	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	
C36	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	
C37	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	
C38	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C39	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	
C40	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C42	1-162-921-11	CERAMIC CHIP 33PF 5% 50V	
C43	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
						Q9	8-729-923-31	TRANSISTOR	2SC4083-T106P		
C51	1-162-906-11	CERAMIC CHIP	1.5PF	0.25PF	50V			< RESISTOR >			
C52	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V						
C54	1-162-907-11	CERAMIC CHIP	2PF	0.25PF	50V						
C55	1-162-912-11	CERAMIC CHIP	7PF	0.5PF	50V	R2	1-216-809-11	METAL CHIP	100	5%	1/16W
C56	1-162-923-11	CERAMIC CHIP	47PF	5%	50V	R3	1-216-840-11	METAL CHIP	39K	5%	1/16W
						R4	1-216-808-11	METAL CHIP	82	5%	1/16W
C57	1-164-217-11	CERAMIC CHIP	150PF	5%	50V	R5	1-216-838-11	METAL CHIP	27K	5%	1/16W
C58	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V	R6	1-216-798-11	RES, CHIP	12	5%	1/16W
C59	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V						
C60	1-162-906-11	CERAMIC CHIP	1.5PF	0.25PF	50V	R7	1-216-817-11	METAL CHIP	470	5%	1/16W
C63	1-162-906-11	CERAMIC CHIP	1.5PF	0.25PF	50V	R8	1-216-808-11	METAL CHIP	82	5%	1/16W
						R9	1-216-821-11	METAL CHIP	1K	5%	1/16W
C64	1-162-923-11	CERAMIC CHIP	47PF	5%	50V	R10	1-216-819-11	METAL CHIP	680	5%	1/16W
C65	1-164-217-11	CERAMIC CHIP	150PF	5%	50V	R12	1-216-835-11	METAL CHIP	15K	5%	1/16W
C66	1-162-912-11	CERAMIC CHIP	7PF	0.5PF	50V						
C67	1-162-908-11	CERAMIC CHIP	3PF	0.25PF	50V	R13	1-216-619-11	METAL CHIP	47	0.5%	1/10W
C69	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V	R14	1-216-864-11	METAL CHIP	0	5%	1/16W
						R15	1-216-864-11	METAL CHIP	0	5%	1/16W
C70	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V	R16	1-216-833-11	METAL CHIP	10K	5%	1/16W
C71	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V	R17	1-216-833-11	METAL CHIP	10K	5%	1/16W
C72	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V						
C74	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V	R19	1-216-818-11	METAL CHIP	560	5%	1/16W
C76	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V	R20	1-216-818-11	METAL CHIP	560	5%	1/16W
						R21	1-216-838-11	METAL CHIP	27K	5%	1/16W
C77	1-162-962-11	CERAMIC CHIP	470PF	10%	50V	R25	1-216-810-11	RES, CHIP	120	5%	1/16W
C78	1-164-217-11	CERAMIC CHIP	150PF	5%	50V	R27	1-216-833-11	METAL CHIP	10K	5%	1/16W
C79	1-164-217-11	CERAMIC CHIP	150PF	5%	50V						
C81	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V	R28	1-218-720-11	METAL CHIP	15K	0.5%	1/16W
C82	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V	R29	1-216-805-11	METAL CHIP	47	5%	1/16W
						R30	1-218-716-11	METAL CHIP	10K	0.5%	1/16W
C83	1-165-128-11	CERAMIC CHIP	0.22uF		16V	R31	1-218-676-11	METAL CHIP	220	0.5%	1/16W
C84	1-164-245-11	CERAMIC CHIP	0.015uF	10%	50V	R32	1-216-817-11	METAL CHIP	470	5%	1/16W
C85	1-162-923-11	CERAMIC CHIP	47PF	5%	50V						
C86	1-162-913-11	CERAMIC CHIP	8PF	0.5PF	50V	R33	1-216-808-11	METAL CHIP	82	5%	1/16W
C89	1-162-911-11	CERAMIC CHIP	6PF	0.5PF	50V	R34	1-216-809-11	METAL CHIP	100	5%	1/16W
						R35	1-216-808-11	METAL CHIP	82	5%	1/16W
C95	1-164-230-11	CERAMIC CHIP	220PF	5%	50V	R37	1-218-653-11	METAL CHIP	24	0.5%	1/16W
C99	1-141-374-11	CAP, TRIMMER	20PF			R38	1-218-717-11	METAL CHIP	11K	0.5%	1/16W
C146	1-162-962-11	CERAMIC CHIP	470PF	10%	50V						
C147	1-162-962-11	CERAMIC CHIP	470PF	10%	50V	R39	1-218-668-11	METAL CHIP	100	0.5%	1/16W
		< DIODE >				R40	1-218-716-11	METAL CHIP	10K	0.5%	1/16W
D1	8-719-820-71	DIODE 1SV214				R41	1-216-819-11	METAL CHIP	680	5%	1/16W
D2	8-719-820-71	DIODE 1SV214				R45	1-216-833-11	METAL CHIP	10K	5%	1/16W
D3	8-719-820-71	DIODE 1SV214				R47	1-216-836-11	METAL CHIP	18K	5%	1/16W
D5	8-719-056-74	DIODE UDZ-TE-17-3.0B									
		< FILTER >				R48	1-216-797-11	RES, CHIP	10	5%	1/16W
F1	1-234-331-11	FILTER, BAND PASS				R50	1-218-653-11	METAL CHIP	24	0.5%	1/16W
F2	1-234-332-11	FILTER, BAND PASS				R51	1-216-833-11	METAL CHIP	10K	5%	1/16W
F3	1-781-499-11	FILTER, SAW				R52	1-218-653-11	METAL CHIP	24	0.5%	1/16W
F4	1-567-107-71	FILTER, CERAMIC				R53	1-216-833-11	METAL CHIP	10K	5%	1/16W
F5	1-760-785-11	FILTER, CERAMIC									
		< COIL >				R54	1-216-833-11	METAL CHIP	10K	5%	1/16W
L12	1-433-901-11	TRANSFORMER, IF				R57	1-216-833-11	METAL CHIP	10K	5%	1/16W
L13	1-412-599-11	INDUCTOR CHIP 3.3uH				R58	1-216-830-11	METAL CHIP	5.6K	5%	1/16W
		< TRANSISTOR >				R61	1-219-570-11	METAL CHIP	10M	5%	1/16W
Q1	8-729-923-31	TRANSISTOR	2SC4083-T106P			R66	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
Q2	8-729-049-14	TRANSISTOR	BFP67W								
Q3	8-729-230-49	TRANSISTOR	2SC2812-L5L6-TB			R67	1-216-833-11	METAL CHIP	10K	5%	1/16W
Q4	8-729-230-49	TRANSISTOR	2SC2812-L5L6-TB			R68	1-216-833-11	METAL CHIP	10K	5%	1/16W
Q8	8-729-923-31	TRANSISTOR	2SC4083-T106P			R150	1-216-833-11	METAL CHIP	10K	5%	1/16W
						R179	1-216-821-11	METAL CHIP	1K	5%	1/16W
								< IC >			
						U1	8-759-591-48	IC U2765B-AFSG3			
						U10	8-759-591-78	IC TB31202BFN-EL			

HAND MAIN

Ref. No.	Part No.	Description				Remark	Ref. No.	Part No.	Description				Remark
*	A-3672-726-A	HAND MAIN BOARD, COMPLETE ***** < CAPACITOR >					Q12	8-729-026-07	TRANSISTOR	MMBT3906LT1			
							Q13	8-729-026-07	TRANSISTOR	MMBT3906LT1			
							Q14	8-729-026-07	TRANSISTOR	MMBT3906LT1			
							Q15	8-729-230-49	TRANSISTOR	2SC2712-YG			
C2	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V		Q16	8-729-026-07	TRANSISTOR	MMBT3906LT1			
C3	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V		Q17	8-729-230-49	TRANSISTOR	2SC2712-YG			
C40	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V		Q18	8-729-026-07	TRANSISTOR	MMBT3906LT1			
C75	1-162-919-11	CERAMIC CHIP	22PF	5%	50V		Q19	8-729-026-07	TRANSISTOR	MMBT3906LT1			
C91	1-162-919-11	CERAMIC CHIP	22PF	5%	50V		Q20	8-729-230-49	TRANSISTOR	2SC2712-YG			
C92	1-141-374-11	CAP, TRIMMER	20PF				< RESISTOR >						
C93	1-162-913-11	CERAMIC CHIP	8PF	0.5PF	50V		R1	1-216-833-11	METAL CHIP	10K	5%	1/16W	
C95	1-162-927-11	CERAMIC CHIP	100PF	5%	50V		R3	1-216-844-11	METAL CHIP	82K	5%	1/16W	
C97	1-162-927-11	CERAMIC CHIP	100PF	5%	50V		R4	1-216-838-11	METAL CHIP	27K	5%	1/16W	
C99	1-135-157-21	TANTALUM CHIP	10uF	20%	6.3V		R23	1-216-845-11	METAL CHIP	100K	5%	1/16W	
							R24	1-216-849-11	METAL CHIP	220K	5%	1/16W	
C100	1-135-157-21	TANTALUM CHIP	10uF	20%	6.3V								
C101	1-162-977-11	CERAMIC CHIP	0.0018uF	10%	50V		R36	1-216-845-11	METAL CHIP	100K	5%	1/16W	
C102	1-135-208-11	TANTALUM CHIP	1uF	10%	10V		R42	1-216-823-11	METAL CHIP	1.5K	5%	1/16W	
C103	1-162-927-11	CERAMIC CHIP	100PF	5%	50V		R49	1-216-841-11	METAL CHIP	47K	5%	1/16W	
C104	1-162-957-11	CERAMIC CHIP	220PF	5%	50V		R63	1-216-841-11	METAL CHIP	47K	5%	1/16W	
							R65	1-216-849-11	METAL CHIP	220K	5%	1/16W	
C105	1-162-921-11	CERAMIC CHIP	33PF	5%	50V								
C106	1-164-739-11	CERAMIC CHIP	560PF	5%	50V		R69	1-216-841-11	METAL CHIP	47K	5%	1/16W	
C107	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V		R70	1-216-841-11	METAL CHIP	47K	5%	1/16W	
C108	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V		R74	1-216-845-11	METAL CHIP	100K	5%	1/16W	
C109	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V		R75	1-216-845-11	METAL CHIP	100K	5%	1/16W	
							R76	1-216-818-11	METAL CHIP	560	5%	1/16W	
C110	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V								
C111	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		R77	1-216-835-11	METAL CHIP	15K	5%	1/16W	
C112	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V		R78	1-216-809-11	METAL CHIP	100	5%	1/16W	
C113	1-135-212-21	TANTALUM CHIP	2.2uF	20%	20V		R80	1-216-831-11	METAL CHIP	6.8K	5%	1/16W	
C114	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V		R81	1-216-849-11	METAL CHIP	220K	5%	1/16W	
							R82	1-216-853-11	METAL CHIP	470K	5%	1/16W	
C116	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V								
C118	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V		R83	1-211-755-11	METAL CHIP	196K	0.5%	1/16W	
C119	1-135-157-21	TANTALUM CHIP	10uF	20%	6.3V		R84	1-218-740-11	METAL CHIP	100K	0.5%	1/16W	
C121	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V		R85	1-218-746-11	METAL CHIP	180K	0.5%	1/16W	
C122	1-135-212-21	TANTALUM CHIP	2.2uF	20%	20V		R86	1-218-740-11	METAL CHIP	100K	0.5%	1/16W	
							R87	1-218-744-11	METAL CHIP	150K	0.5%	1/16W	
C123	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V								
C124	1-162-925-11	CERAMIC CHIP	68PF	5%	50V		R88	1-218-740-11	METAL CHIP	100K	0.5%	1/16W	
C125	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V		R89	1-216-856-11	METAL CHIP	820K	5%	1/16W	
C126	1-135-212-21	TANTALUM CHIP	2.2uF	20%	20V		R90	1-219-570-11	METAL CHIP	10M	5%	1/16W	
C127	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V		R91	1-216-854-11	METAL CHIP	560K	5%	1/16W	
							R94	1-216-839-11	METAL CHIP	33K	5%	1/16W	
C128	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V								
C129	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V		R95	1-216-845-11	METAL CHIP	100K	5%	1/16W	
C130	1-164-739-11	CERAMIC CHIP	560PF	5%	50V		R96	1-219-570-11	METAL CHIP	10M	5%	1/16W	
C131	1-162-921-11	CERAMIC CHIP	33PF	5%	50V		R97	1-216-841-11	METAL CHIP	47K	5%	1/16W	
C132	1-162-957-11	CERAMIC CHIP	220PF	5%	50V		R98	1-216-833-11	METAL CHIP	10K	5%	1/16W	
							R99	1-216-841-11	METAL CHIP	47K	5%	1/16W	
C134	1-162-923-11	CERAMIC CHIP	47PF	5%	50V								
C138	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V		R100	1-216-821-11	METAL CHIP	1K	5%	1/16W	
C139	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V		R102	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
C140	1-162-919-11	CERAMIC CHIP	22PF	5%	50V		R103	1-216-851-11	METAL CHIP	330K	5%	1/16W	
							R105	1-216-849-11	METAL CHIP	220K	5%	1/16W	
		< DIODE >					R106	1-216-833-11	METAL CHIP	10K	5%	1/16W	
D5	8-719-062-55	LED MS31D (TALK/BATT LOW)											
D6	8-719-047-37	DIODE BAS16					R107	1-216-833-11	METAL CHIP	10K	5%	1/16W	
D7	8-719-909-90	DIODE BAV99					R108	1-216-848-11	METAL CHIP	180K	5%	1/16W	
D8	8-719-909-90	DIODE BAV99					R109	1-216-848-11	METAL CHIP	180K	5%	1/16W	
D14	8-719-067-59	DIODE MAZ9120D0LS0-TX/L					R110	1-216-848-11	METAL CHIP	180K	5%	1/16W	
							R111	1-216-834-11	METAL CHIP	12K	5%	1/16W	
		< TRANSISTOR >											
							R112	1-216-844-11	METAL CHIP	82K	5%	1/16W	
Q1	8-729-230-49	TRANSISTOR	2SC2712-YG				R113	1-238-664-11	RES. ADJ. CERMET	10K			

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
R114	1-216-821-11	METAL CHIP	1K	5%	1/16W	C14	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
R115	1-216-833-11	METAL CHIP	10K	5%	1/16W	C15	1-162-906-11	CERAMIC CHIP	1.5PF	0.25PF	50V
R116	1-216-848-11	METAL CHIP	180K	5%	1/16W						
R119	1-238-664-11	RES, ADJ, CERMET	10K			C16	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
R121	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	C17	1-162-912-11	CERAMIC CHIP	7PF	0.5PF	50V
R122	1-216-821-11	METAL CHIP	1K	5%	1/16W	C19	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
R123	1-216-853-11	METAL CHIP	470K	5%	1/16W	C20	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
R124	1-216-839-11	METAL CHIP	33K	5%	1/16W	C21	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
R125	1-216-853-11	METAL CHIP	470K	5%	1/16W	C22	1-162-924-11	CERAMIC CHIP	56PF	5%	50V
R127	1-216-853-11	METAL CHIP	470K	5%	1/16W	C23	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
R128	1-218-331-11	RES, CHIP	51K	5%	1/16W	C24	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
R129	1-216-847-11	METAL CHIP	150K	5%	1/16W	C25	1-141-374-11	CAP, TRIMMER	20PF		
R130	1-216-847-11	METAL CHIP	150K	5%	1/16W	C26	1-164-217-11	CERAMIC CHIP	150PF	5%	50V
R131	1-216-847-11	METAL CHIP	150K	5%	1/16W	C28	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
R133	1-216-839-11	METAL CHIP	33K	5%	1/16W	C29	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
R134	1-216-845-11	METAL CHIP	100K	5%	1/16W	C30	1-164-217-11	CERAMIC CHIP	150PF	5%	50V
R135	1-216-856-11	METAL CHIP	820K	5%	1/16W	C31	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
R138	1-216-821-11	METAL CHIP	1K	5%	1/16W	C32	1-162-913-11	CERAMIC CHIP	8PF	0.5PF	50V
R139	1-216-799-11	METAL CHIP	15	5%	1/16W	C33	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
R140	1-216-849-11	METAL CHIP	220K	5%	1/16W	C34	1-162-911-11	CERAMIC CHIP	6PF	0.5PF	50V
R141	1-216-841-11	METAL CHIP	47K	5%	1/16W	C35	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
R142	1-216-817-11	METAL CHIP	470	5%	1/16W	C36	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
R143	1-216-833-11	METAL CHIP	10K	5%	1/16W	C37	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
R144	1-216-857-11	METAL CHIP	1M	5%	1/16W	C38	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
R145	1-218-274-11	RES, CHIP	620K	5%	1/16W	C39	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
R146	1-216-857-11	METAL CHIP	1M	5%	1/16W	C41	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
R147	1-216-854-11	METAL CHIP	560K	5%	1/16W	C42	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
		<SWITCH>				C51	1-162-906-11	CERAMIC CHIP	1.5PF	0.25PF	50V
S19	1-771-303-11	SLIDE SWITCH (VOL)				C52	1-162-914-11	CERAMIC CHIP	9PF	0.5PF	50V
		< IC >				C54	1-162-907-11	CERAMIC CHIP	2PF	0.25PF	50V
U3	8-759-590-85	IC LSC526609DW				C55	1-162-912-11	CERAMIC CHIP	7PF	0.5PF	50V
U5	8-759-998-45	IC BA3818F-SY				C57	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
U7	8-759-479-97	IC TA31103F				C58	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V
U11	8-759-480-76	IC LP2953IM				C59	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V
		< VIBRATOR >				C60	1-162-906-11	CERAMIC CHIP	1.5PF	0.25PF	50V
X1	1-577-130-11	VIBRATOR, CRYSTAL (4MHz)				C63	1-162-905-11	CERAMIC CHIP	1PF	0.25PF	50V
*****						C64	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
*	A-3672-725-A	HAND RF BOARD, COMPLETE				C65	1-164-217-11	CERAMIC CHIP	150PF	5%	50V
		*****				C66	1-162-912-11	CERAMIC CHIP	7PF	0.5PF	50V
		< CAPACITOR >				C67	1-162-906-11	CERAMIC CHIP	1.5PF	0.25PF	50V
C1	1-162-933-11	CERAMIC CHIP	2.5PF	0.25PF	50V	C69	1-162-914-11	CERAMIC CHIP	9PF	0.5PF	50V
C2	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V	C70	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V
C3	1-162-911-11	CERAMIC CHIP	6PF	0.5PF	50V	C71	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V
C4	1-162-913-11	CERAMIC CHIP	8PF	0.5PF	50V	C72	1-162-912-11	CERAMIC CHIP	7PF	0.5PF	50V
C5	1-162-911-11	CERAMIC CHIP	6PF	0.5PF	50V	C74	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V
C6	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V	C76	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C7	1-162-906-11	CERAMIC CHIP	1.5PF	0.25PF	50V	C77	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C8	1-162-923-11	CERAMIC CHIP	47PF	5%	50V	C78	1-164-217-11	CERAMIC CHIP	150PF	5%	50V
C9	1-162-923-11	CERAMIC CHIP	47PF	5%	50V	C79	1-164-217-11	CERAMIC CHIP	150PF	5%	50V
C10	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V	C81	1-162-912-11	CERAMIC CHIP	7PF	0.5PF	50V
C11	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C82	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V
C12	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V	C83	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C13	1-162-923-11	CERAMIC CHIP	47PF	5%	50V	C84	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
						C85	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
						C86	1-162-913-11	CERAMIC CHIP	8PF	0.5PF	50V
						C89	1-162-969-11	CERAMIC CHIP	0.0068uF	10%	25V

HAND RF

Ref. No.	Part No.	Description	Remark
< DIODE >			
D1	8-719-820-71	DIODE 1SV214	
D2	8-719-820-71	DIODE 1SV214	
D3	8-719-820-71	DIODE 1SV214	
< FILTER >			
F1	1-234-331-11	FILTER, BAND PASS	
F2	1-234-332-11	FILTER, BAND PASS	
F3	1-781-500-11	FILTER, SAW	
F4	1-567-107-71	FILTER, CERAMIC	
F5	1-760-785-11	FILTER, CERAMIC	
< TRANSFORMER/COIL >			
L2	1-433-901-11	TRANSFORMER, IF	
L12	1-412-599-11	INDUCTOR CHIP 3.3uH	
< TRANSISTOR >			
Q1	8-729-921-56	TRANSISTOR 2SC4083T106	
Q2	8-729-049-14	TRANSISTOR BFP67W	
Q3	8-729-921-56	TRANSISTOR 2SC4083T106	
Q8	8-729-921-56	TRANSISTOR 2SC4083T106	
< RESISTOR >			
R2	1-216-805-11	METAL CHIP 47 5% 1/16W	
R3	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R4	1-218-671-11	METAL CHIP 130 0.5% 1/16W	
R5	1-216-838-11	METAL CHIP 27K 5% 1/16W	
R6	1-216-798-11	RES, CHIP 12 5% 1/16W	
R7	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R8	1-218-665-11	METAL CHIP 75 5% 1/16W	
R9	1-218-665-11	METAL CHIP 75 5% 1/16W	
R11	1-218-720-11	METAL CHIP 15K 0.5% 1/16w	
R12	1-216-835-11	METAL CHIP 15K 5% 1/16W	
R13	1-216-818-11	METAL CHIP 560 5% 1/16W	
R14	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R15	1-220-373-11	RES, CHIP 620 5% 1/16W	
R16	1-216-818-11	METAL CHIP 560 5% 1/16W	
R27	1-218-716-11	METAL CHIP 10K 0.5% 1/16w	
R28	1-218-720-11	METAL CHIP 15K 0.5% 1/16W	
R29	1-218-653-11	RES, CHIP 24 0.5% 1/16W	
R30	1-218-717-11	METAL CHIP 11K 0.5% 1/16W	
R31	1-218-285-11	RES, CHIP 75 5% 1/16W	
R32	1-216-814-11	METAL CHIP 270 5% 1/16W	
R33	1-218-286-11	RES, CHIP 91 5% 1/16W	
R34	1-218-665-11	METAL CHIP 75 0.5% 1/16W	
R35	1-218-286-11	RES, CHIP 91 5% 1/16W	
R37	1-218-653-11	RES, CHIP 24 0.5% 1/16W	
R38	1-218-719-11	METAL CHIP 13K 0.5% 1/16W	
R39	1-218-716-11	METAL CHIP 10K 0.5% 1/16W	
R40	1-218-285-11	RES, CHIP 75 5% 1/16W	
R41	1-216-814-11	METAL CHIP 270 5% 1/16W	
R45	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R47	1-218-720-11	METAL CHIP 15K 0.5% 1/16W	
R48	1-219-570-11	METAL CHIP 10M 5% 1/16W	
R50	1-218-653-11	RES, CHIP 24 0.5% 1/16W	
R51	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R52	1-218-653-11	RES, CHIP 24 0.5% 1/16W	
R53	1-216-833-11	METAL CHIP 10K 5% 1/16W	

Ref. No.	Part No.	Description	Remark
R54	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R57	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R58	1-218-272-11	RES, CHIP 5.1K 5% 1/16W	
R61	1-219-570-11	METAL CHIP 10M 5% 1/16W	
R66	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R67	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R68	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R120	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R132	1-216-821-11	METAL CHIP 1K 5% 1/16W	
< IC >			
U1	8-759-591-48	IC U2765B-AFSG3	
U3	8-759-591-78	IC TB31202BFN-EL	

MISCELLANEOUS			

11	1-771-715-11	SWITCH, RUBBER KEY	
ANT1	1-501-999-21	ANTENNA	
ANT2	1-501-951-31	ANTENNA	
MIC1	1-542-260-31	MICROPHONE, ELECTRET CONDENSER (MIC)	
SP1	1-544-035-11	SPEAKER (5cm)	
U4	1-544-603-11	BUZZER	
U8	1-505-593-11	SPEAKER (2.8cm)	
U9	1-542-260-31	MICROPHONE, ELECTRET CONDENSER	

HARDWARE LIST			

#1	7-623-208-22	SW3,TYPE 2	
#2	7-685-547-19	SCREW +BTP 3X10 TYPE2 N-S	
#3	7-685-105-19	SCREW +P 2X8 TYPE2 NON-SLIT	
#4	7-685-103-19	SCREW +P 2X5 TYPE2 NON-SLIT	
#5	7-685-548-19	SCREW +BTP 3X12 TYPE2 N-S	
#6	7-685-647-79	SCREW +P 3X10 TYPE2 NON-SLIT	
#7	7-685-536-19	SCREW +BTP 2.6X12 TYPE2 N-S	
#8	7-685-146-11	SCREW +P 3X8 TYPE2 NON-SLIT	
#9	7-685-648-79	SCREW +P 3X12 TYPE2 NON-SLIT	

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remark</u>
ACCESSORIES & PACKING MATERIALS			

⚠	1-418-832-11	ADAPTOR, AC (AC-T130)	
	1-528-769-11	BATTERY PACK (BP-T23)	
	1-696-453-21	CORD (WITH MODULAR PLUG) (LINE) (22cm)	
	1-696-454-11	CORD (WITH MODULAR PLUG) (LINE)	
			(215cm)
	3-012-379-11	CASE (WALL HOOK)	
	3-041-521-11	GUIDE, QUICK START (US)	
	3-041-521-21	GUIDE, QUICK START (CND)	
	3-041-522-11	CARD, REMOTE CONTROL (US)	
	3-041-522-21	CARD, REMOTE CONTROL (CND)	
	3-868-127-11	MANUAL, INSTRUCTION (ENGLISH, SPANISH)	
			(US)
	3-868-127-21	MANUAL, INSTRUCTION (ENGLISH, FRENCH)	
			(CND)

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

