

SPP-901

SERVICE MANUAL

Canadian Model



SPECIFICATIONS

General

Operating frequency	Base unit: 902 - 905 MHz (310 μ W) Handset: 925 - 928 MHz (400 μ W)
Dial signal	Tone, 10 PPS (pulse) selectable
Supplied accessories	AC power adaptor AC-T127 Telephone line cords (2) Rechargeable battery pack BP-T23 Directory Wall bracket

Handset

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

Base unit

Power source	DC 9 V from AC power adaptor
Battery charging time	Approx. 10 hours
Dimensions	Approx. 123 x 57 x 219 mm (w/h/d), antenna excluded (approx. 4 $\frac{7}{8}$ x 2 $\frac{1}{2}$ x 8 $\frac{1}{2}$ inches) Antenna: Approx. 120 mm (approx. 4 $\frac{3}{4}$ inches)
Mass	Approx. 350 g (approx. 12 $\frac{1}{3}$ oz)

Design and specifications are subject to change without notice.

CORDLESS TELEPHONE



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.

Setting up the phone

Choose the best location

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

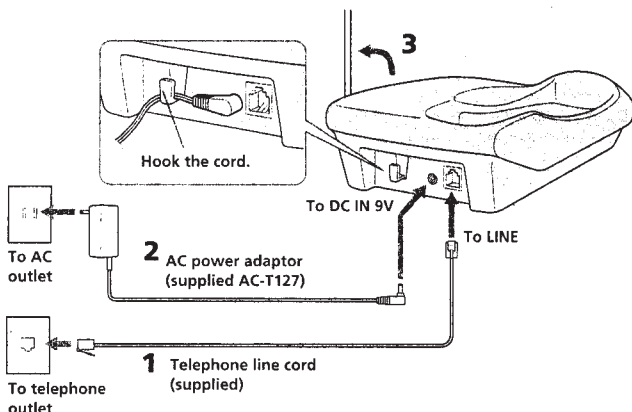
- near a central location and on a level surface
- away from television sets and other electronic equipment, a personal computer, or a microwave oven
- away from noise sources, such as a window by a street with heavy traffic
- away from another cordless telephone
- away from heat sources, such as radiators, airducts, and sunlight
- away from excessive moisture, extremely low temperatures, dust, mechanical vibration, or shock

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.

Connect the base unit

If you want to hang the base unit on the wall, see "Mounting the base unit on a wall".



- 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 vertically.

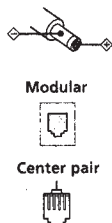
Notes

- Use only the supplied AC-T127 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.

Tips

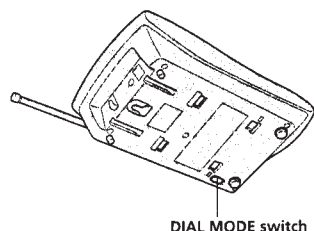
- If your telephone outlet is not modular, contact your telephone service company for assistance.
- If you have two phone lines on a single jack with the first phone line connected to a center pair of wires, and you need to connect the second phone line (outer pair of wires), contact your telephone company for rewiring.

Polarity of the plug



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.

Charge the battery pack

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

- 1 Slide open the battery compartment lid of the handset.
- 2 Insert the battery pack (with contacts facing down) into the battery compartment.
- 3 Replace the battery compartment lid.
- 4 Place the handset on the base unit.

The CHARGE lamp lights up when the handset is properly seated on the charge terminals of the base unit. Charge the battery pack for more than **10 hours** so that the battery is fully charged. The CHARGE lamp remains lit even after charging is complete.

Battery duration

A fully charged battery pack lasts for about:

- 7 hours when you use the handset continuously.
- 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.
- When the battery pack is completely discharged and place the handset on the base unit, the LINE lamp on the base unit flashes for about three minutes. When the LINE lamp goes off, the handset is ready for use.

To obtain the best performance from 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.

If the handset battery becomes weak

When not conversing with an outside caller, the TALK/BATT LOW lamp on the handset flashes if the handset is not placed on the base unit. Replace the handset to the base unit to recharge the battery for more than **10 hours**.

When to purchase a new battery pack

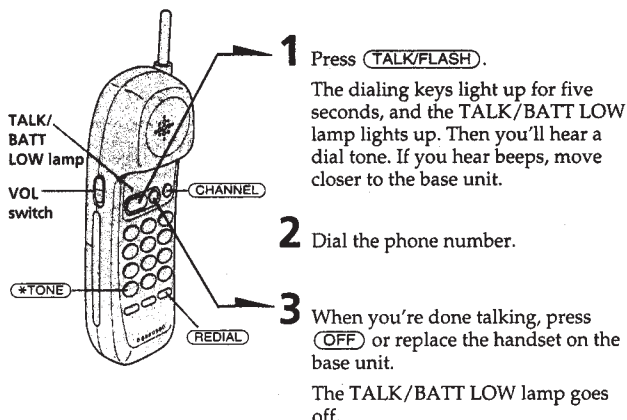
If the battery lasts only a few minutes even after **10 hours** of charging, the usable life of the battery has expired and needs replacement. Contact your local Sony authorized dealer or service center, and ask for a Sony **BP-T23** rechargeable battery pack.

Note

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

Making and receiving calls

Making calls



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 dialing keys light up for five seconds, and the TALK/BATT LOW lamp lights up at the same time the LINE 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 LINE lamps go off.

Additional tasks

To	Do this
Select a better channel	Press CHANNEL .
Adjust the ringer volume	Set the VOL switch to H (high), M (medium) 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 LINE lamp on the base unit lights up simultaneously.

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.

Redialing

- 1** Press **TALK/FLASH**.
The dialing keys light up for five seconds, and the TALK/BATT LOW lamp lights up.
- 2** Press **REDIAL** to redial the number last dialed.

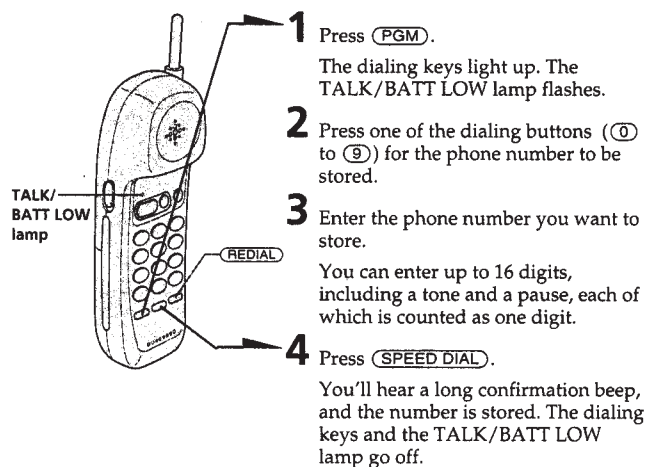
Note

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

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



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.

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

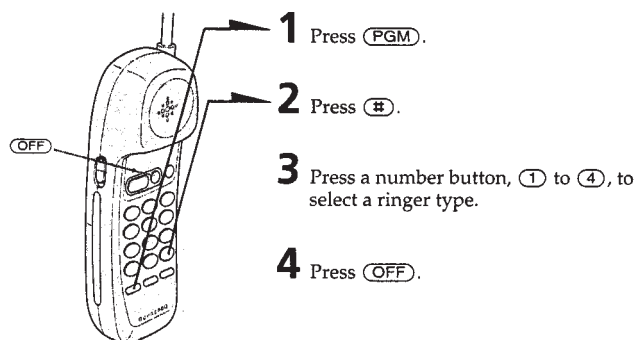
To store a new number, follow the instructions described previously.

Making calls with speed dialing

- 1** Press **TALK/FLASH**.
The dialing keys light up for five seconds, and 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.

Setting the ringer type

You can select a ringer type from four types.



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**.

The currently selected ringer sounds.

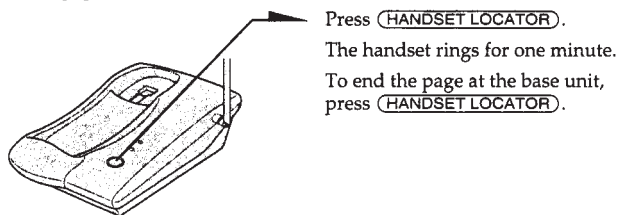
- 4 Press **OFF**.

Note

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

Paging

You can page from the base unit to the handset.



Note

If a call comes in during paging, paging is cancelled.

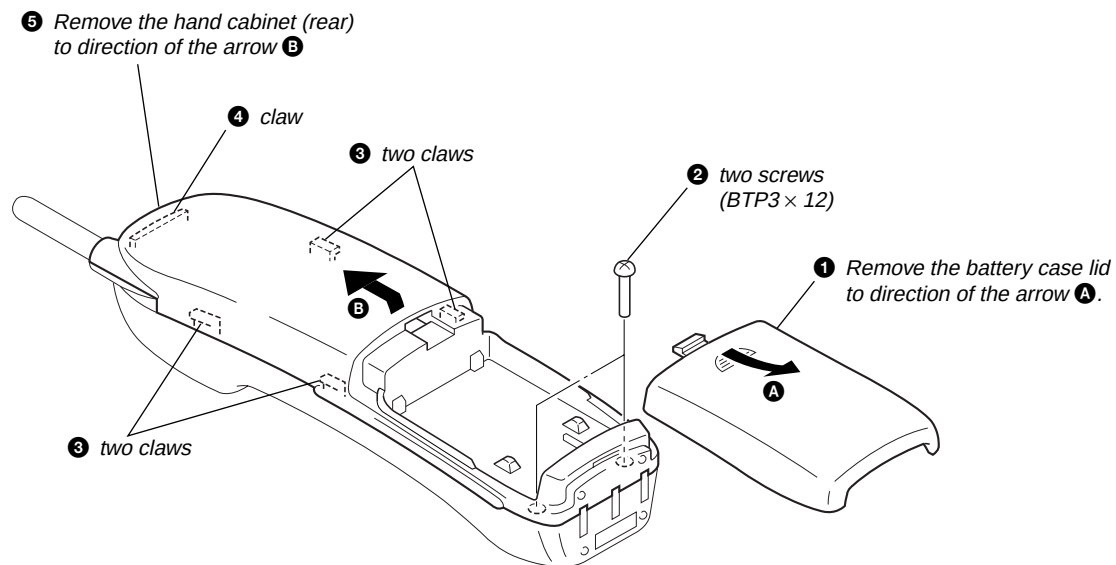
Tip

To end a page at the handset, press **OFF**.

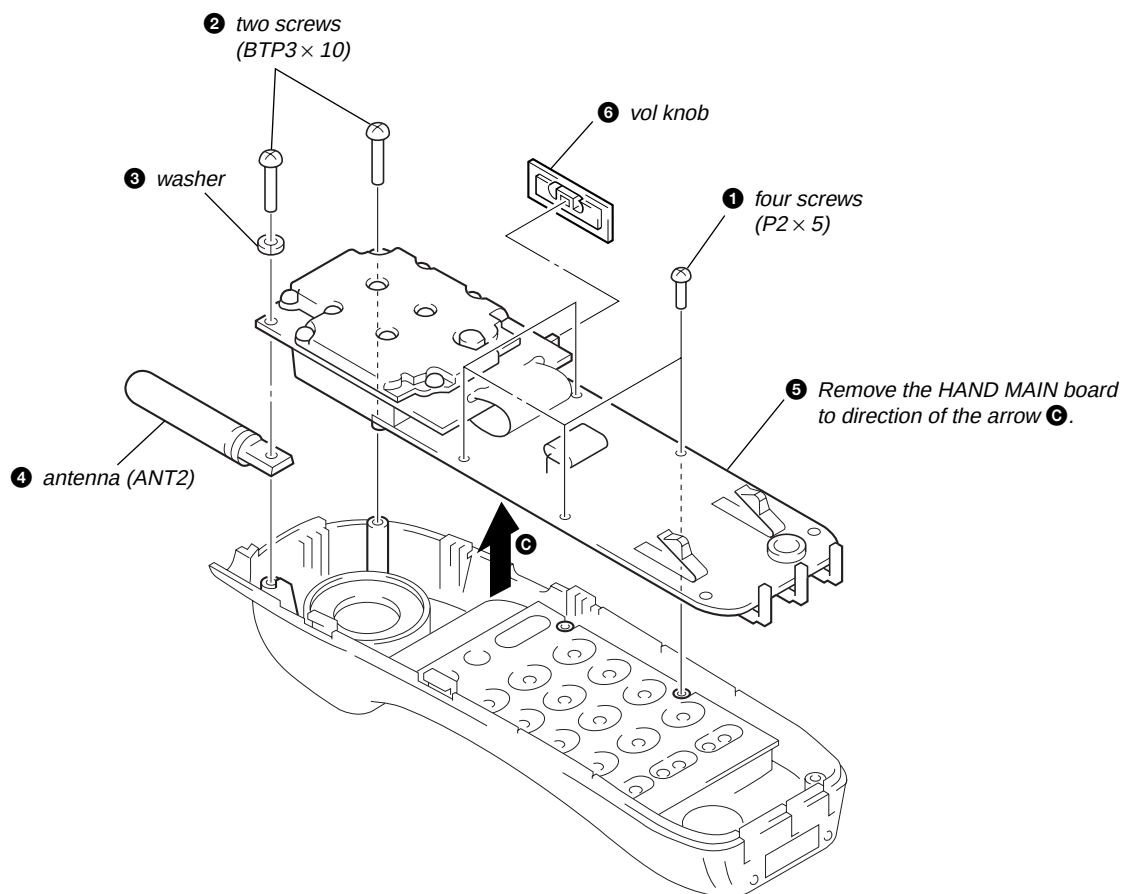
SECTION 2 DISASSEMBLY

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

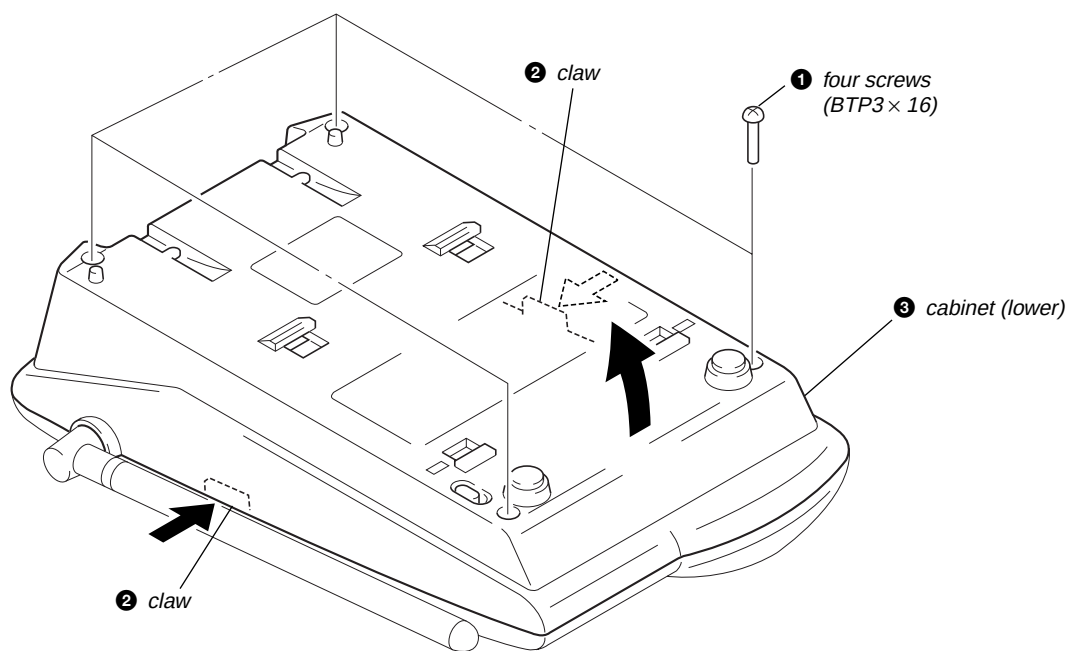
HAND CABINET (REAR)



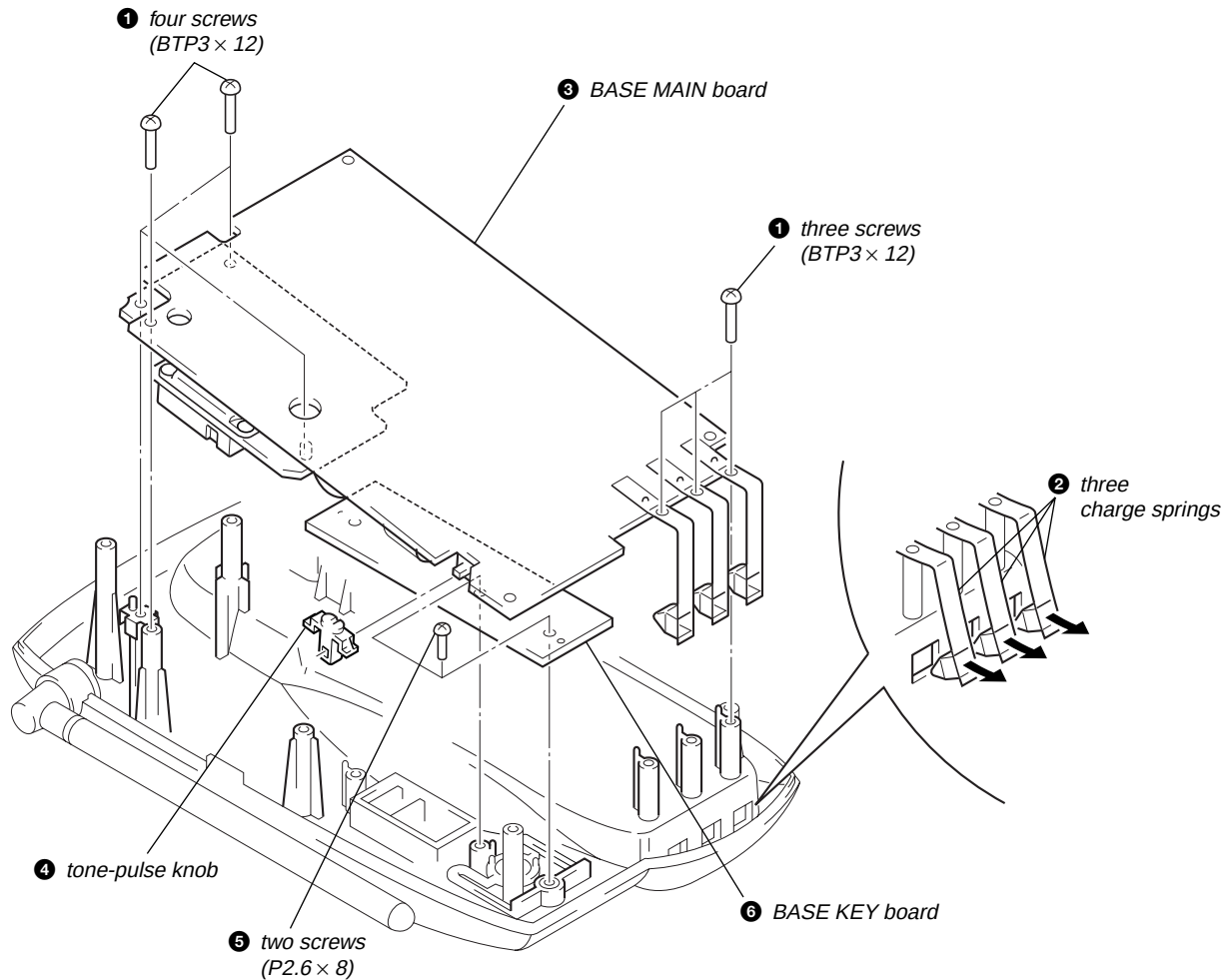
HAND MAIN BOARD



BASE CABINET



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 **LINE** 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.

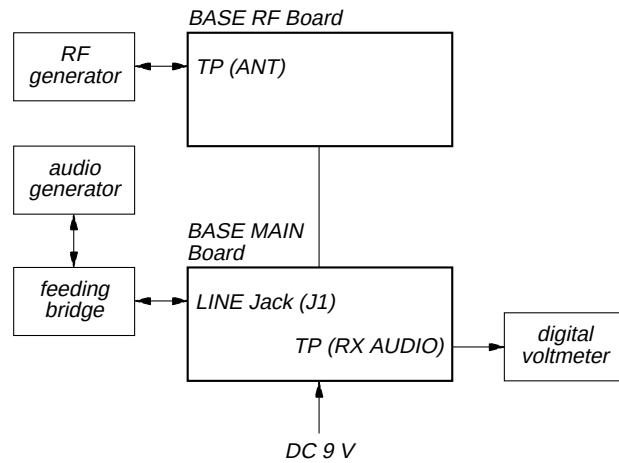
Note: All keys pressed will emit the key tone.

SECTION 4 ELECTRICAL ADJUSTMENTS

0 dBm = 0.775 V
0 dBv = 1 V

BASE UNIT

Adjustment Equipment and Connection



Setting:

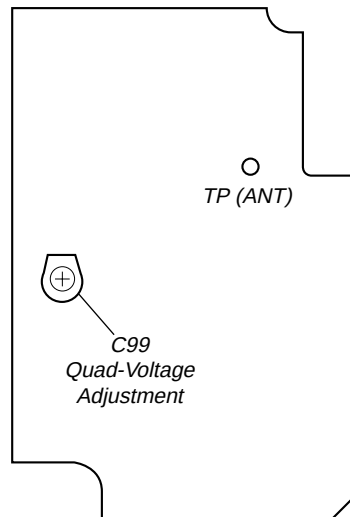
1. Enter the test mode. (refer to page 8)
2. Set the channel to 6ch.

1. TX Frequency Adjustment

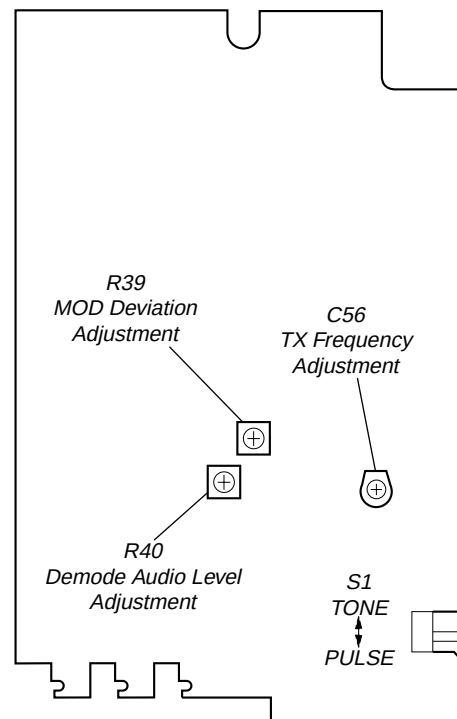
1. Connect the RF generator to TP (ANT) on the BASE RF board.
2. Adjust C56 on the BASE MAIN board for 903.8 MHz $\pm$ 3 kHz reading on the RF generator.

Adjustment Location:

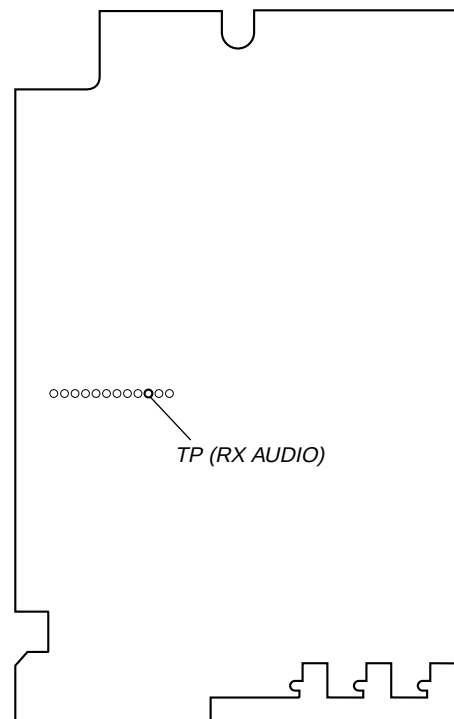
– BASE RF BOARD – (Side A)



– BASE MAIN BOARD – (Component Side)



– BASE MAIN BOARD – (Component Side)



2. Quad-Voltage Adjustment

1. Connect the digital voltmeter to TP (RX AUDIO) on the BASE MAIN board.
2. Adjust C99 on the BASE RF board for 1.6 $\pm$ 0.075 Vdc reading on the digital voltmeter.

3. DEMOD Audio Level Adjustment

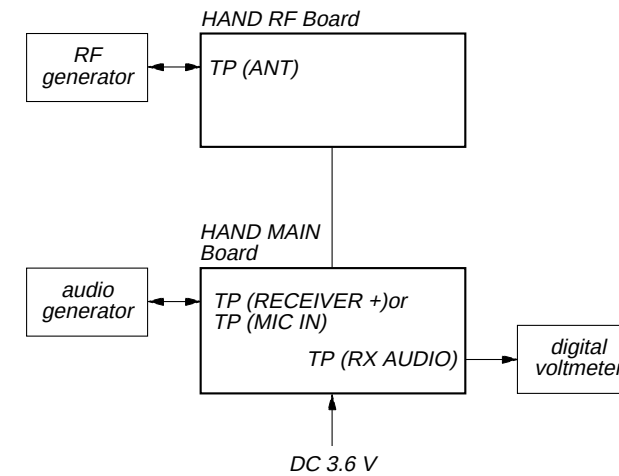
1. Connect the RF generator to TP (ANT) on the MAIN RF board.
2. Connect the audio generator (to feeding bridge) to LINE jack (J1) on the BASE MAIN board.
3. Set the RF generator as follows.
output frequency : 926.55 MHz
output level : -50 dBm
FM deviation : 25 kHz
MOD tone frequency : 1 kHz
4. Adjust R40 on the BASE MAIN board for -10 $\pm$ 1 dBv reading on the audio generator.

4. MOD Deviation Adjustment

1. Connect the RF generator to TP (ANT) on the MAIN RF board.
2. Connect the audio generator (to feeding bridge) to LINE jack (J1) on the BASE MAIN board.
3. Set the audio generator as follows.
output level : -13 dBv
output frequency: 1 kHz
4. Adjust R39 on the BASE MAIN board for 25 $\pm$ 3 kHz reading on the RF generator.

HANDSET

Adjustment Equipment and Connection



Setting:

1. Enter the test mode. (refer to page 8)
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 MHz $\pm$ 3 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 Vdc reading on the digital voltmeter.

3. DEMOD Audio Level Adjustment

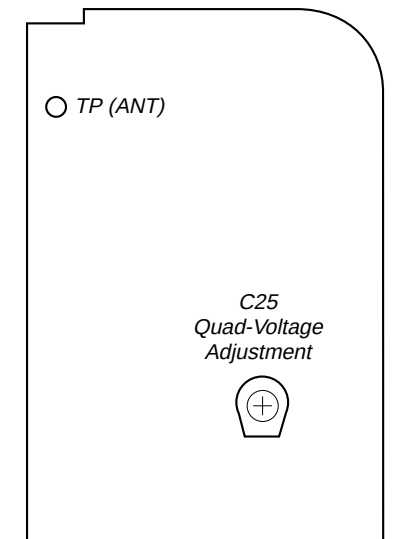
1. Connect the RF generator to TP (ANT) on the HAND RF board.
2. Connect the audio generator to TP (RECEIVER +) on the HAND MAIN board.
3. Set the RF generator as follows.
output frequency : 903.8 MHz
output level : -50 dBm
FM deviation : 25 kHz
MOD tone frequency : 1 kHz
4. Adjust R113 on the HAND MAIN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

4. MOD Deviation Adjustment

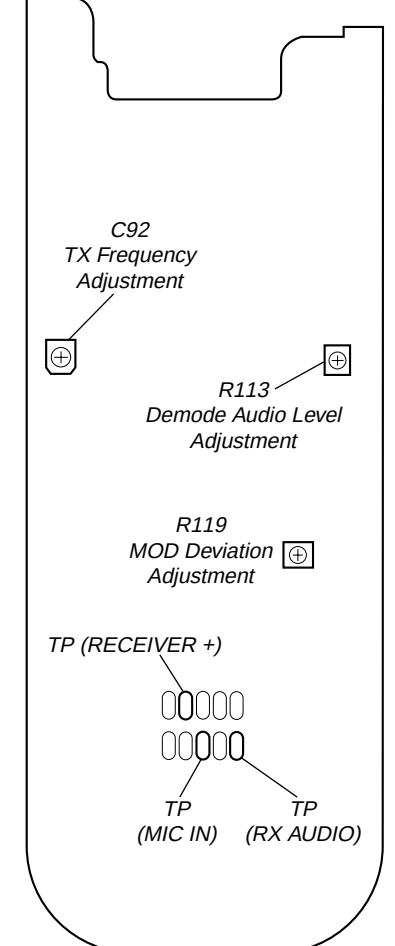
1. Connect the RF generator to TP (ANT) on the HAND RF board.
2. Connect the audio generator to TP (MIC IN) on the HAND MAIN board.
3. Set the audio generator as follows.
output level : 35 mV
output frequency: 1 kHz
4. Adjust R119 on the HAND MAIN board for 25 $\pm$ 3 kHz reading on the RF generator.

Adjustment Location:

– HAND RF BOARD – (Side B)

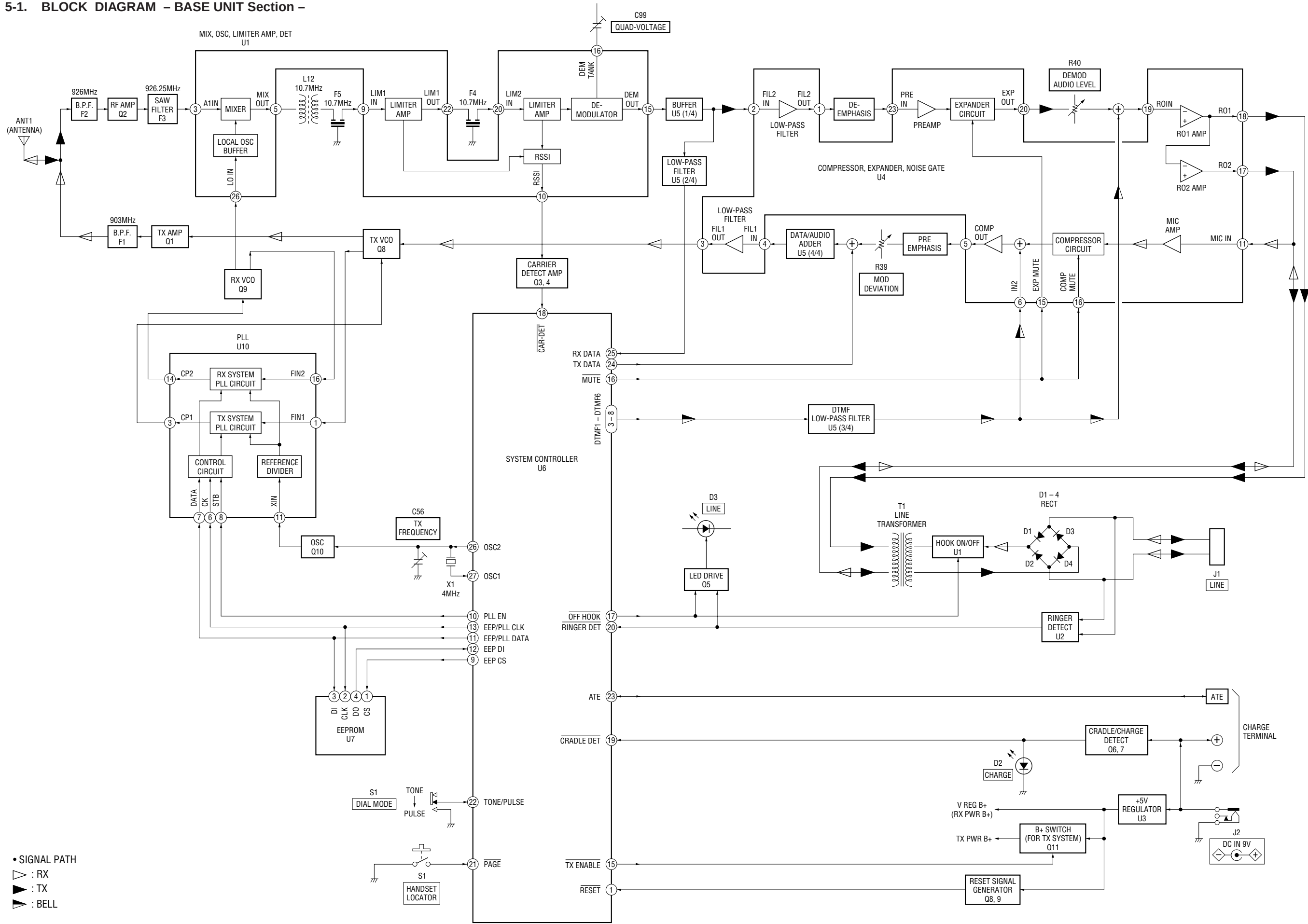


– HAND MAIN BOARD – (Side A)

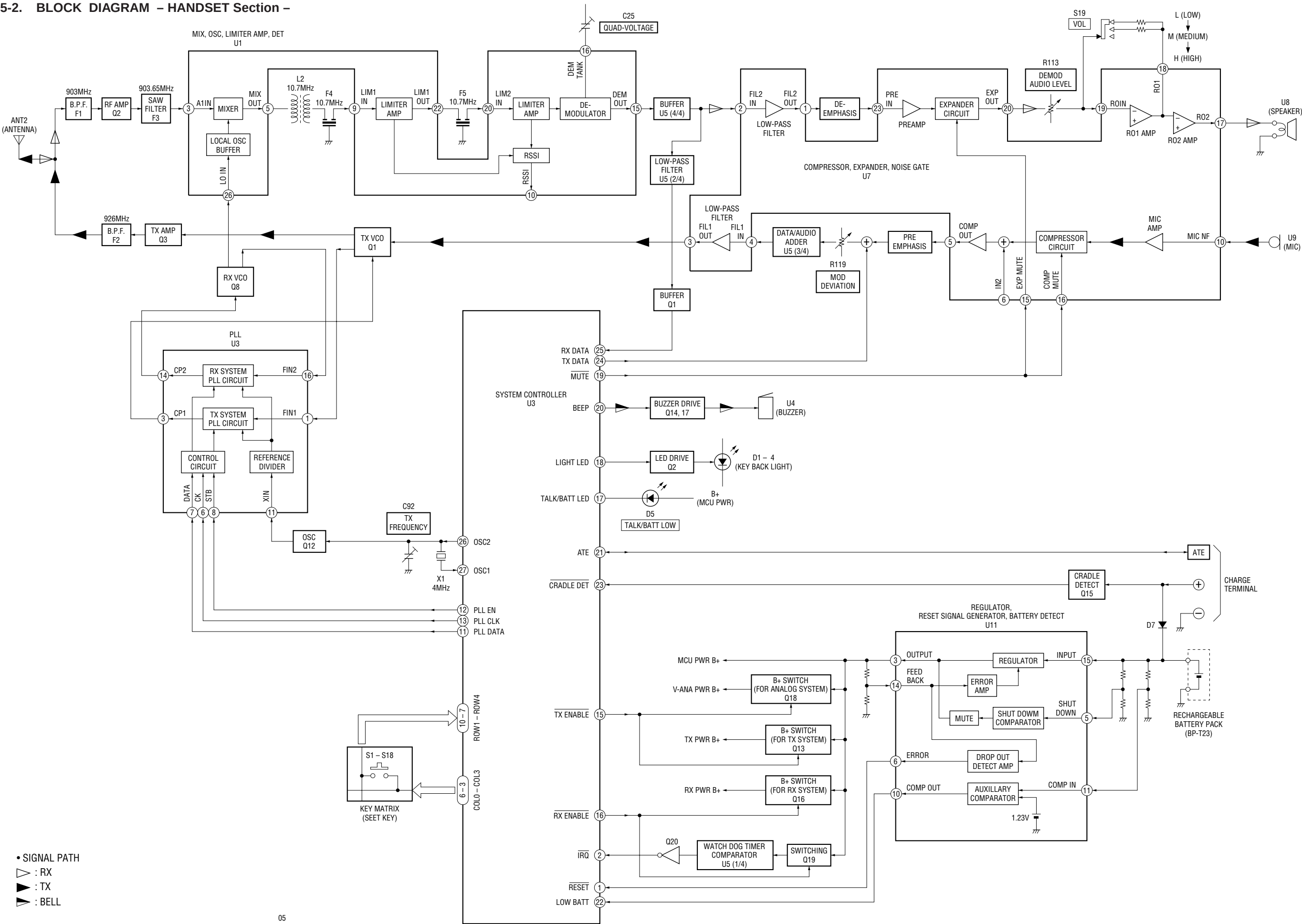


SECTION 5
DIAGRAMS

5-1. BLOCK DIAGRAM – BASE UNIT Section –



5-2. BLOCK DIAGRAM – HANDSET Section –



5-3. NOTE FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

Note on Printed Wiring Board:

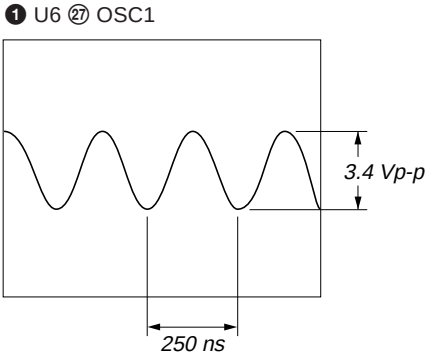
- : parts extracted from the component side.
 - : parts extracted from the conductor side.
 - : indicates side identified with part number.
 - △ : internal component.
 - ▨ : Pattern from the side which enables seeing.
- (The other layers' patterns are not indicated.)

Caution:
Pattern face side: Parts on the pattern face side seen from (Side B)
Parts face side: Parts on the parts face side seen from (Side A)

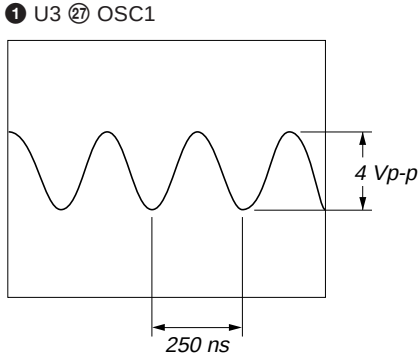
Note on Schematic Diagram:

- All capacitors are in μF unless otherwise noted. pF : $\mu\mu\text{F}$ 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4} \text{ W}$ or less unless otherwise specified.
- △ : internal component.
- : nonflammable resistor.
- : 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 (J2) on the BASE MAIN board, dc 12 V and fed with regulated dc power supply from modular jack (J1) 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.
- 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 an oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
 - ▷ : RX
 - ◀ : TX
 - ▷◀ : BELL

• Waveforms
– BASE MAIN Board –



– HAND MAIN Board –

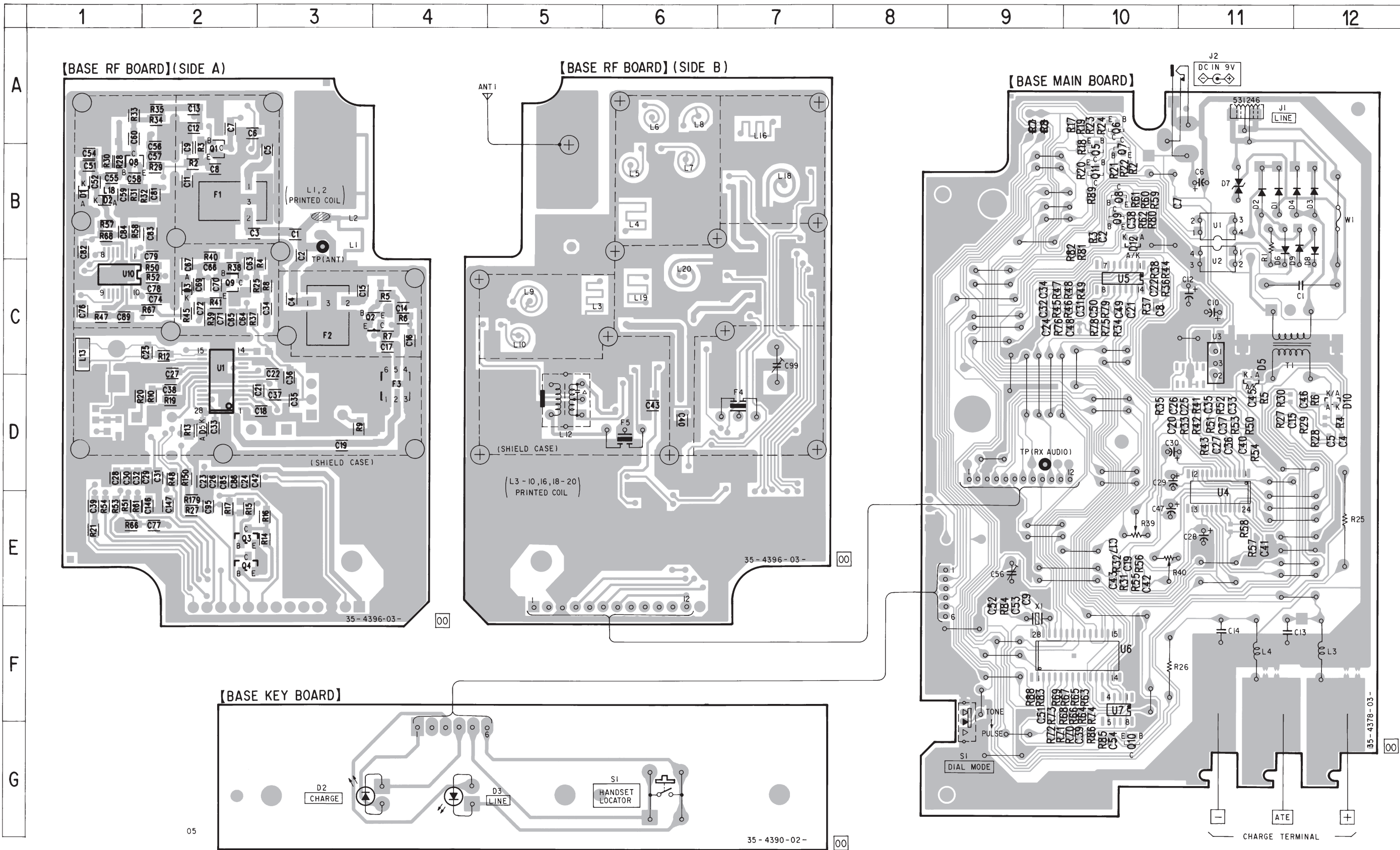


• Semiconductor Location

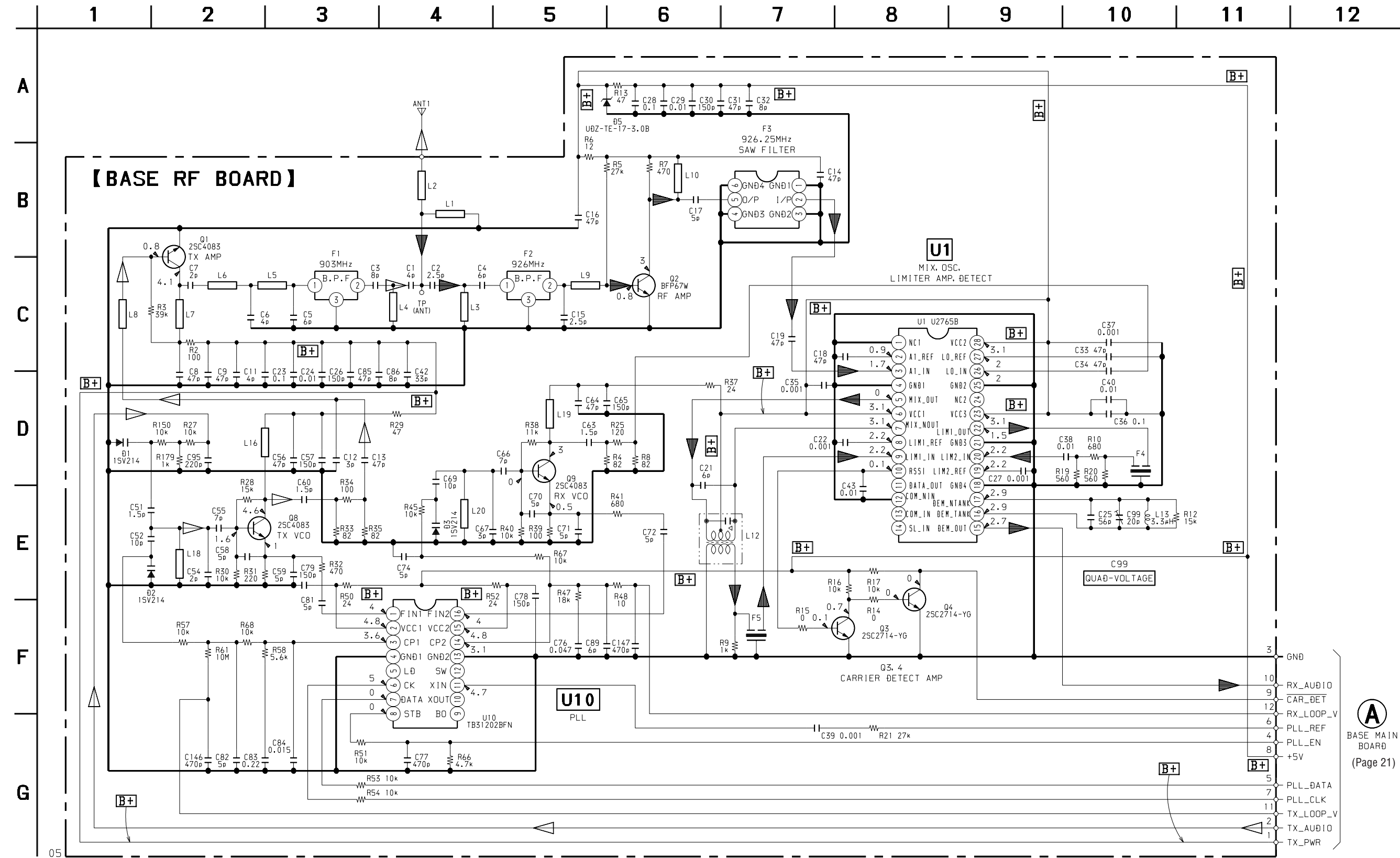
Ref. No.	Location
D1	B-11
D1 *1	B-1
D2	B-11
D2 *1	B-1
D2 *2	G-3
D3	B-12
D3 *1	C-2
D3 *2	G-4
D4	B-12
D5	D-11
D5 *1	D-2
D6	B-11
D7	B-11
D8	B-12
D9	B-12
D10	D-12
D12	B-10
Q1 *1	B-2
Q2 *1	C-4
Q3 *1	E-2
Q4 *1	E-2
Q5	B-10
Q6	A-10
Q7	B-10
Q8	B-10
Q8 *1	B-1
Q9	B-10
Q9 *1	C-2
Q10	G-10
Q11	B-10
U1	B-11
U1 *1	D-2
U2	B-11
U3	C-11
U4	E-11
U5	C-10
U6	F-10
U7	F-10
U10 *1	C-1

Note:
no mark: Mounted on the BASE MAIN board.
*1 : Mounted on the BASE RF board.
*2 : Mounted on the BASE KEY board.

5-4. PRINTED WIRING BOARDS - BASE UNIT Section -

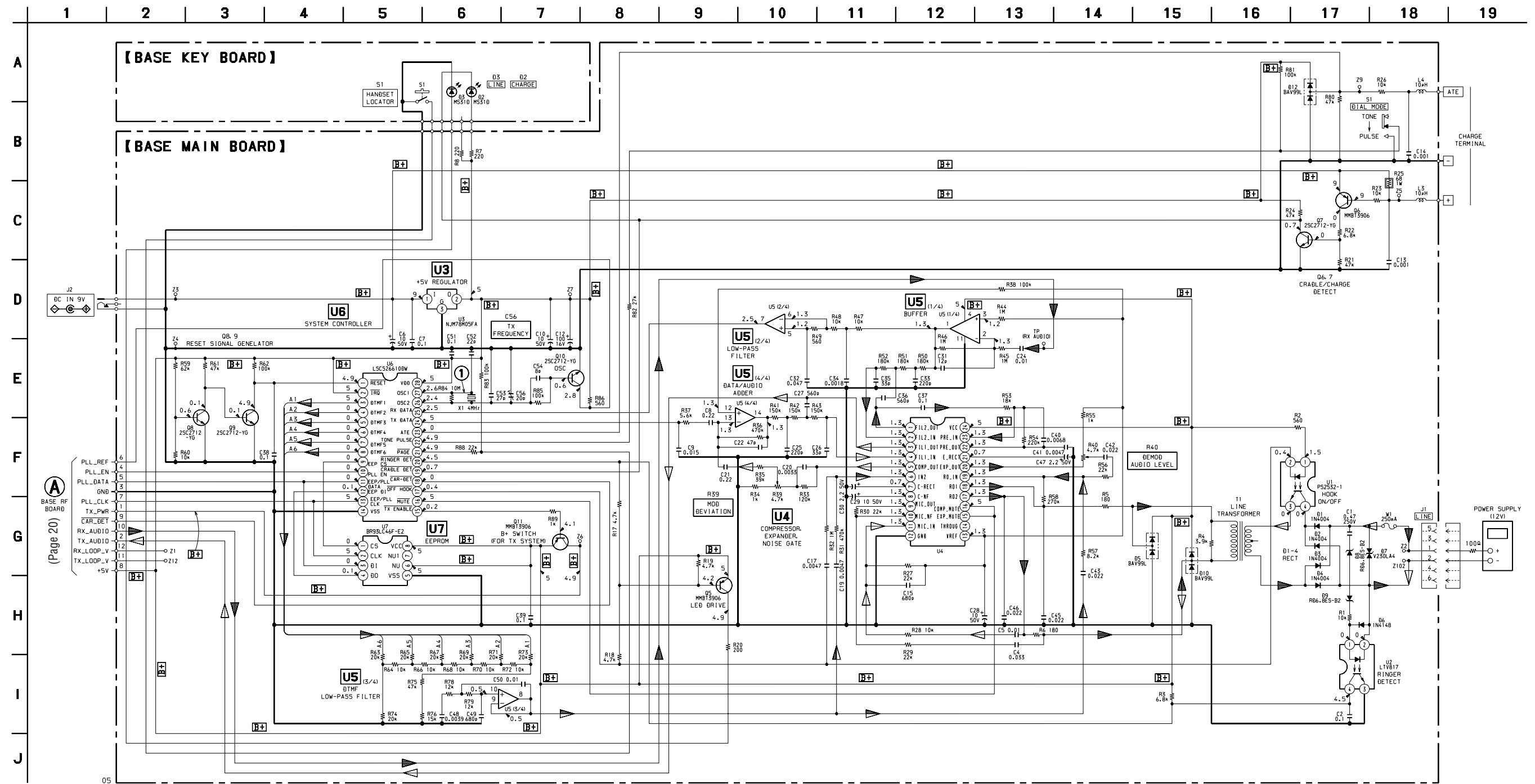


5-5. SCHEMATIC DIAGRAM – BASE RF Board – • See page 29 for IC Block Diagrams.

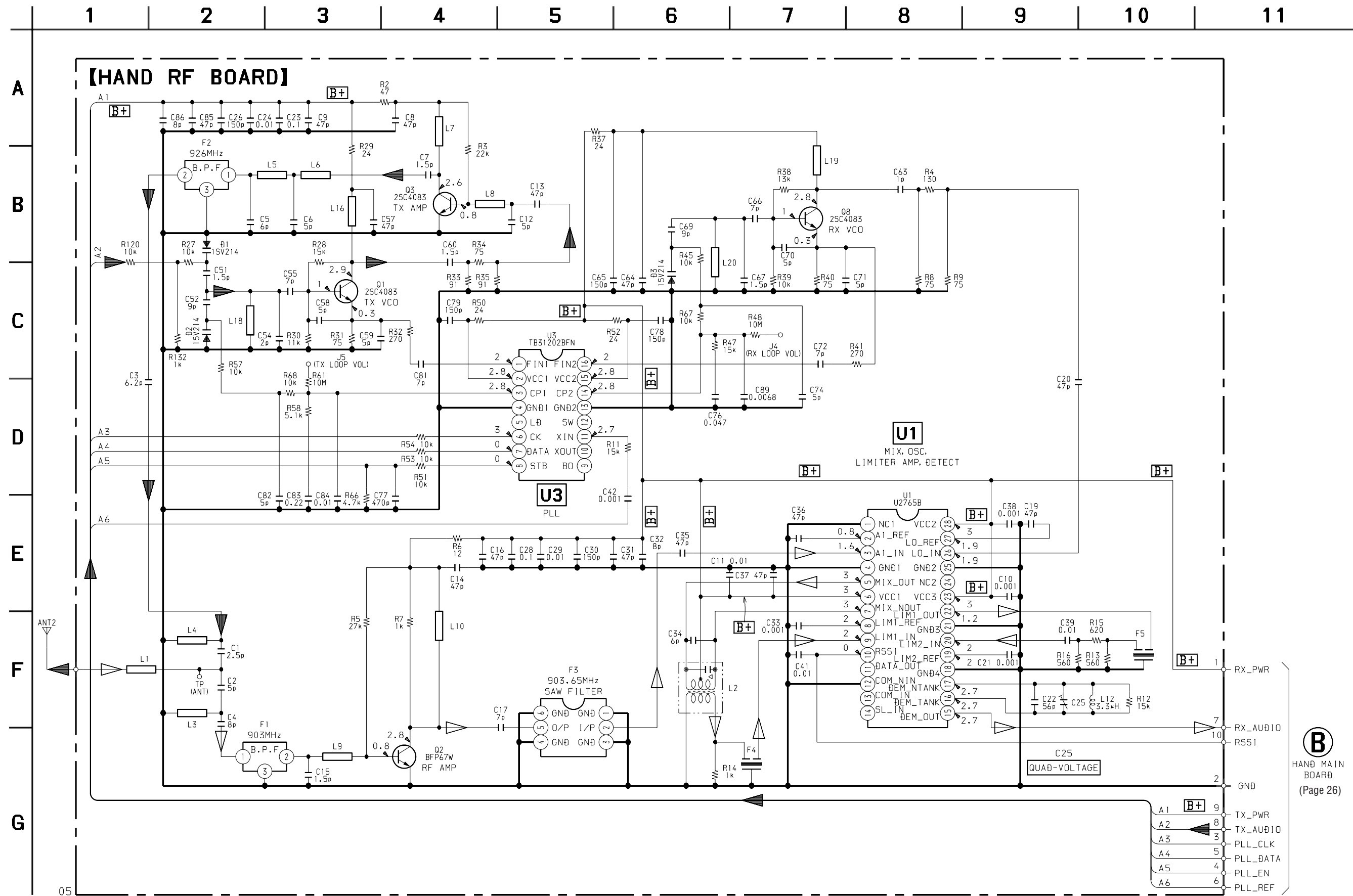


A
BASE MAIN BOARD
(Page 21)

5-6. SCHEMATIC DIAGRAM – BASE MAIN/BASE KEY Boards – • See page 16 for Waveform. • See page 30 for IC Block Diagrams.



5-7. SCHEMATIC DIAGRAM – HAND RF Board – • See page 29 for IC Block Diagrams.

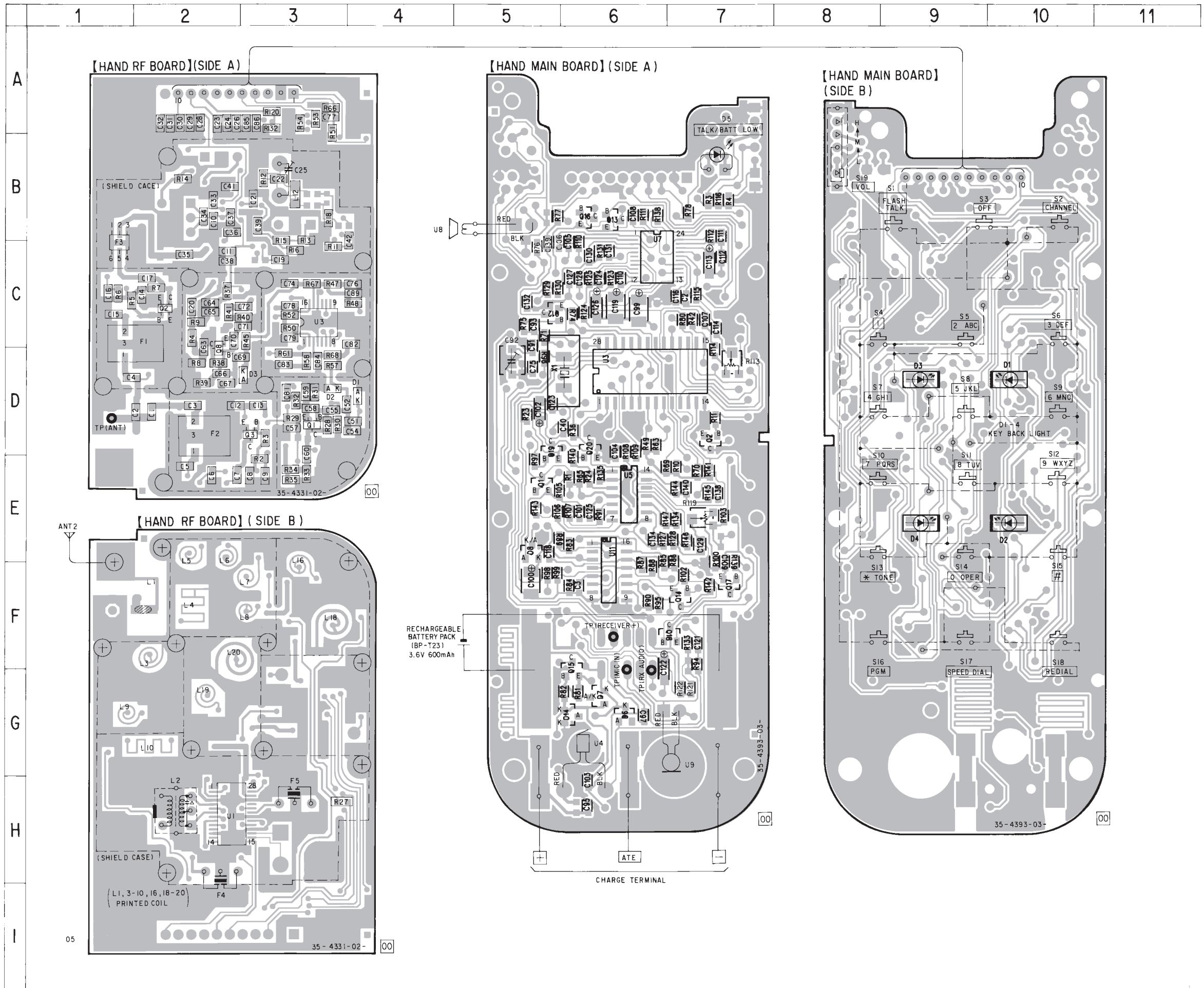


– 25 –



Ref. No.	Location
D1	D-10
D1 *	D-4
D2	E-10
D2 *	D-3
D3	D-9
D3 *	D-3
D4	E-9
D5	B-7
D6	G-6
D7	G-6
D8	E-5
D14	G-6
Q1	E-5
Q1 *	D-3
Q2	D-7
Q2 *	C-2
Q3 *	D-3
Q8 *	D-2
Q12	C-5
Q13	B-6
Q14	F-7
Q15	G-6
Q16	B-6
Q17	F-7
Q18	F-7
Q19	D-5
Q20	D-6
U1 *	H-2
U3	D-6
U3 *	C-3
U5	E-6
U7	C-6
U11	F-6

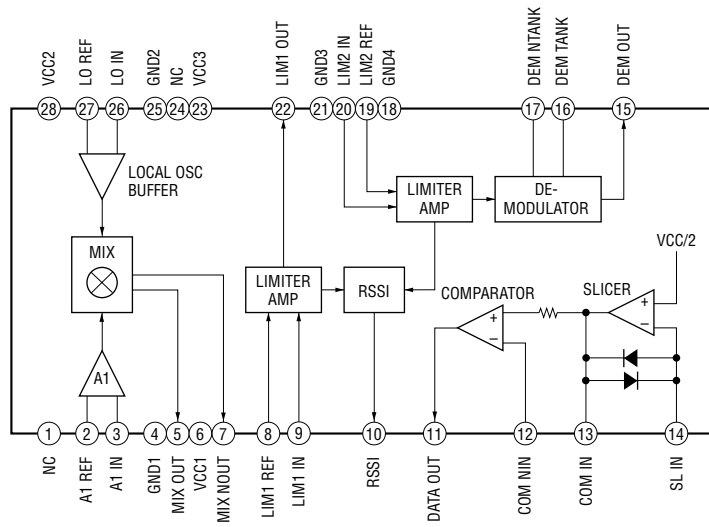
Note:
no mark: Mounted on the HAND MAIN board.
* : Mounted on the HAND RF board.



• IC Block Diagrams

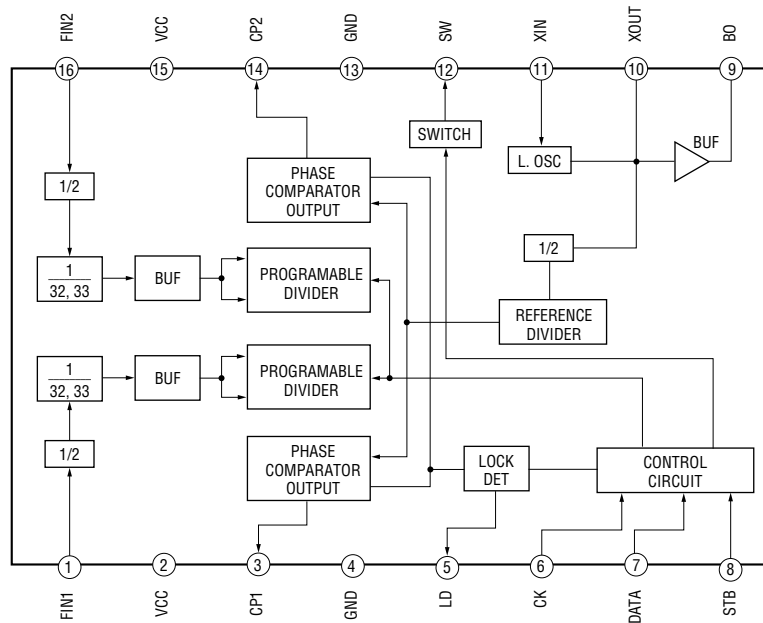
U1 U2765B-AFSG3 (BASE RF Board)

U1 U2765B-AFSG3 (HAND RF Board)

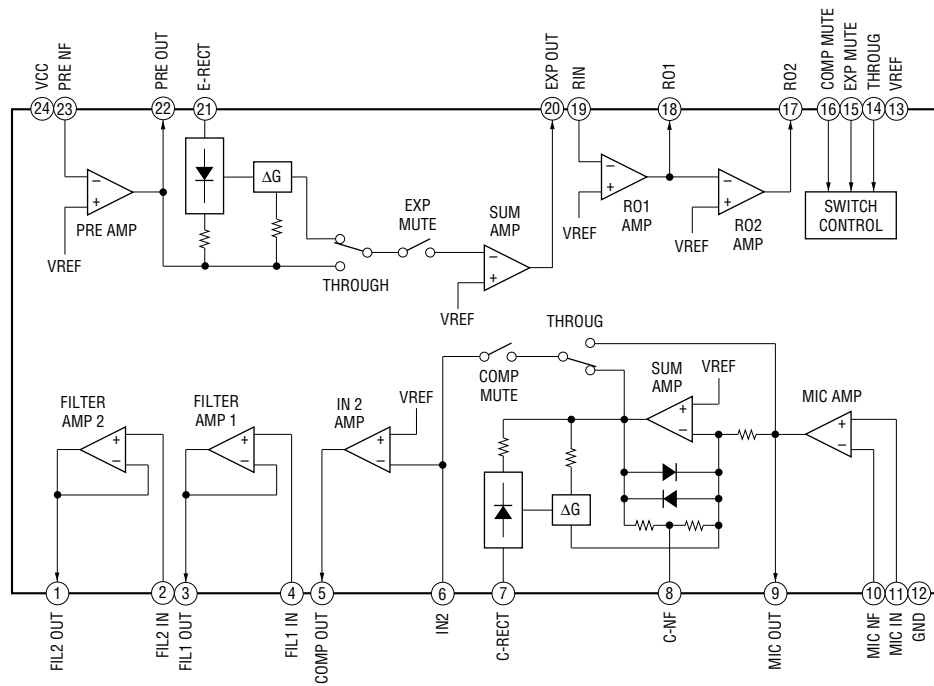


U2 TB31202BFN-EL (HAND RF Board)

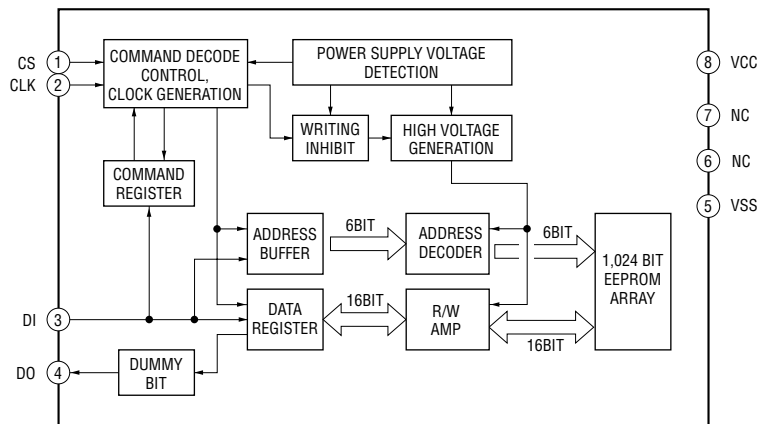
U10 TB31202BFN-EL (BASE RF Board)



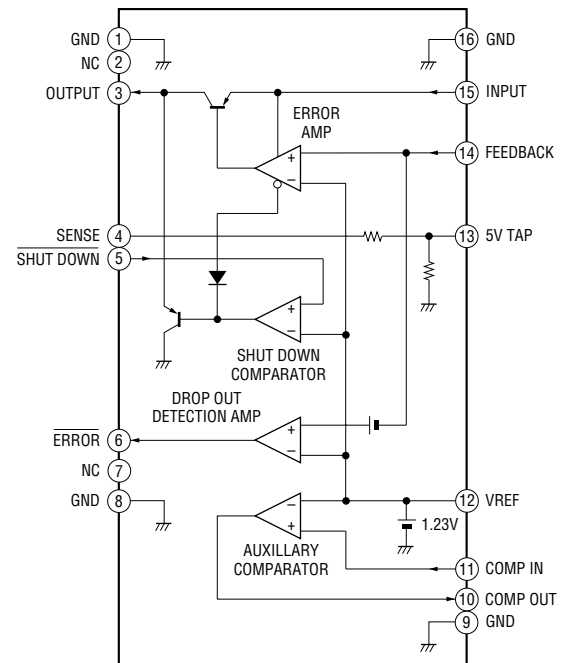
U4 TA31103F (BASE MAIN Board)
U7 TA31103F (HAND MAIN Board)



U7 BR93LC46F-E2 (BASE MAIN Board)



U11 LP2953IM (HAND MAIN Board)



5-10. IC PIN FUNCTION DESCRIPTION

• BASE MAIN BOARD U6 LSC526610DW (SYSTEM CONTROLLER)

Pin No.	Pin Name	I/O	Description
1	$\overline{\text{RESET}}$	I	System reset signal input from the reset signal generator (Q8, 9) “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 (U7) “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 (U7)
12	EEP DI	I	Serial data input from the EEPROM (U7)
13	EEP/PLL CLK	O	Serial data transfer clock signal output to the TB31202BFN (U10) and EEPROM (U7)
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 (S1) input terminal “L” is input when key pressing
22	TONE/PULSE	I	DIAL MODE select switch (S1) 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)

• HAND MAIN BOARD U3 LSC526609DW (SYSTEM CONTROLLER)

Pin No.	Pin Name	I/O	Description
1	<u>RESET</u>	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	<u>IRQ</u>	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	<u>TX ENABLE</u>	O	TX system power supply on/off control signal output “L”: TX system power on
16	<u>RX ENABLE</u>	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 (D1 to D4) “L”: LED on
19	<u>MUTE</u>	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	<u>CRADLE DET</u>	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:

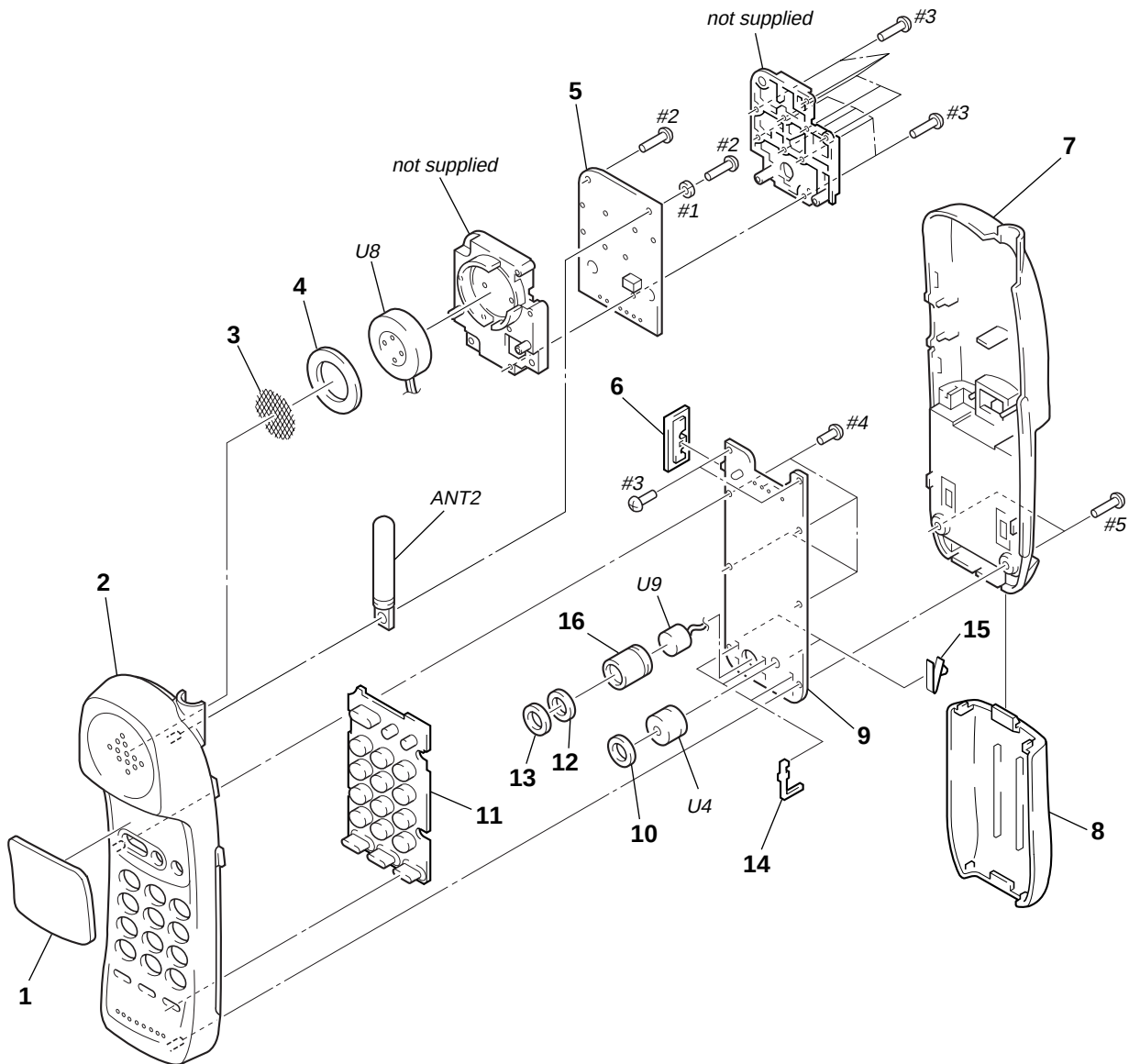
- XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
Example:
KNOB, BALANCE (WHITE) . . . (RED)

↑
Parts Color

↑
Cabinet's Color

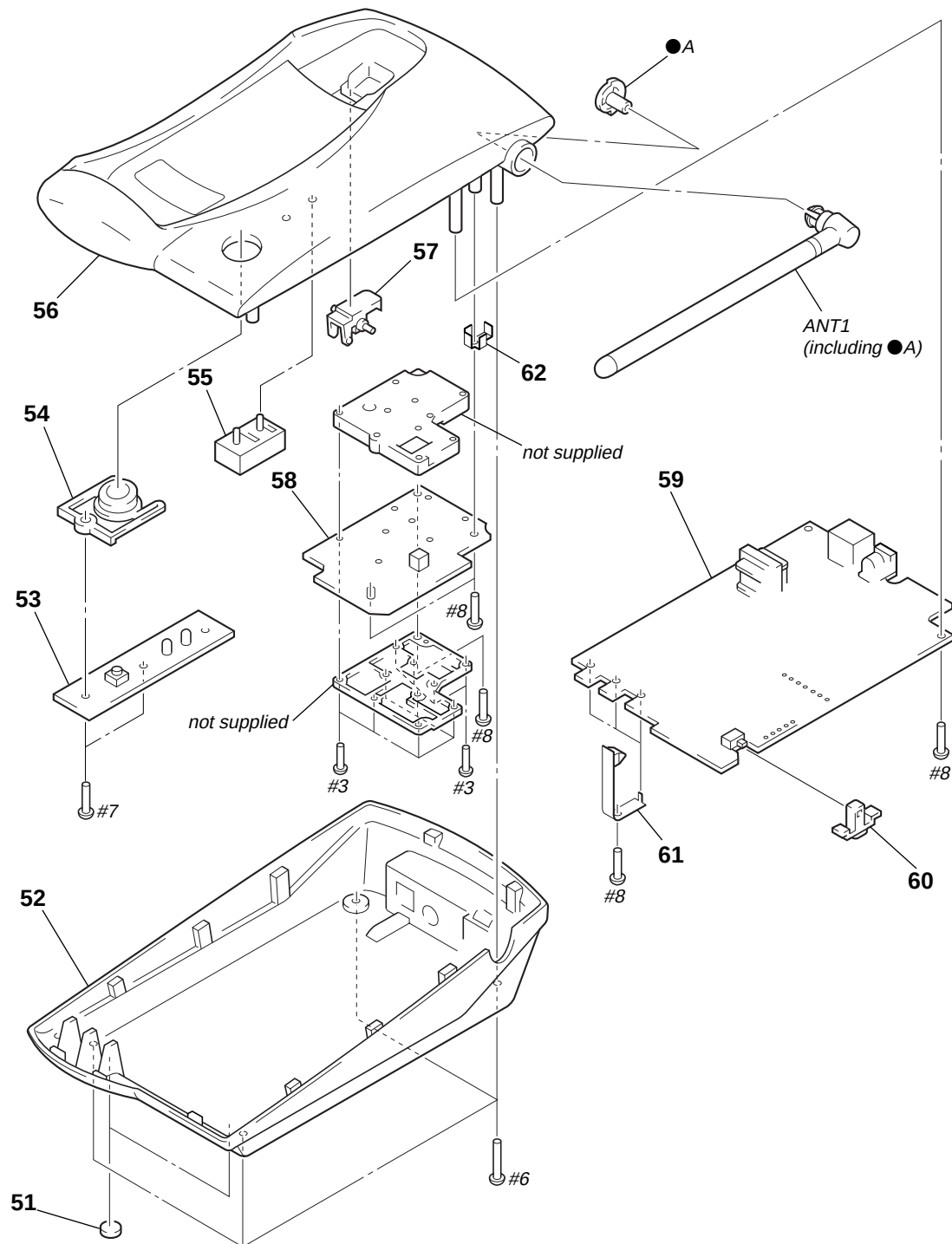
- Items marked “*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are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

(1) HANDSET SECTION



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	3-036-130-01	PANEL (HS)		11	1-771-715-11	SWITCH, RUBBER KEY	
2	3-036-122-01	FRONT (HS), CABINET		12	3-038-992-01	PACKING (MIC)	
3	3-012-611-01	SHEET (RECEIVER)		13	3-038-991-01	CUSHION (MIC)	
4	3-371-005-01	GASKET (RECEIVER) (TWN)		14	3-036-126-01	TERMINAL (HANDSET), CHARGE	
* 5	A-3672-725-A	HAND RF BOARD, COMPLETE		15	3-036-647-01	SPRING, BATTERY	
6	3-036-120-01	KNOB, VOL		16	3-036-646-01	HOLDER (MIC)	
7	3-036-123-01	CABINET (REAR (HS))		ANT2	1-501-951-31	ANTENNA	
8	3-036-121-01	LID, BATTERY CASE		U4	1-544-603-11	BUZZER	
* 9	A-3672-726-A	HAND MAIN BOARD, COMPLETE		U8	1-505-593-11	SPEAKER (2.8cm)	
10	3-036-642-01	BUZZER, HOLDER		U9	1-542-260-31	MICROPHONE, ELECTRET CONDENSER	

(2) BASE UNIT SECTION



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
51	3-037-011-01	FOOT, RUBBER		* 58	A-3672-728-A	BASE RF BOARD, COMPLETE	
52	3-036-125-01	CABINET (LOWER (BASE))		* 59	A-3672-729-A	BASE MAIN BOARD, COMPLETE	
* 53	A-3672-727-A	BASE KEY BOARD, COMPLETE		60	3-023-846-01	KNOB, TONE-PULSE	
54	3-036-128-01	PAGE, BUTTON		61	3-036-141-01	SPRING, CHARGE	
55	3-036-129-01	GUIDE, LIGHT		62	3-038-993-01	TERMINAL, ANTENNA	
56	3-036-124-21	CABINET (UPPER (BASE))		ANT1	1-501-999-31	ANTENNA	
57	3-036-127-01	HOOK					

SECTION 7 ELECTRICAL PARTS LIST

BASE KEY

BASE MAIN

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

- 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-3672-727-A	BASE KEY BOARD, COMPLETE *****		C31	1-162-916-11	CERAMIC CHIP 12PF 5%	50V
		< DIODE >		C32	1-165-176-11	CERAMIC CHIP 0.047uF 10%	16V
D2	8-719-062-55	DIODE MS31D (CHARGE)		C33	1-162-957-11	CERAMIC CHIP 220PF 5%	50V
D3	8-719-062-54	DIODE MG31D (LINE)		C34	1-162-977-11	CERAMIC CHIP 0.0018uF 10%	50V
		< SWITCH >		C35	1-162-921-11	CERAMIC CHIP 33PF 5%	50V
S1	1-554-937-11	SWITCH, KEY BOARD (HANDSET LOCATOR)		C36	1-164-739-11	CERAMIC CHIP 560PF 10%	16V
*****				C37	1-107-826-11	CERAMIC 0.1uF 10%	16V
*	A-3672-729-A	BASE MAIN BOARD, COMPLETE *****		C38	1-107-826-11	CERAMIC 0.1uF 10%	16V
	3-023-846-01	KNOB, TONE-PULSE		C39	1-107-826-11	CERAMIC 0.1uF 10%	16V
	3-036-141-01	SPRING, CHARGE		C40	1-162-969-11	CERAMIC CHIP 0.0068uF 10%	25V
	7-685-105-19	SCREW +P 2X8 TYPE2 NON-SLIT		C41	1-162-968-11	CERAMIC CHIP 0.0047uF 10%	50V
		< CAPACITOR >		C42	1-164-227-11	CERAMIC CHIP 0.022uF 10%	25V
C1	1-136-193-11	FILM 0.47uF 5%	250V	C43	1-164-227-11	CERAMIC CHIP 0.022uF 10%	25V
C2	1-107-826-11	CERAMIC 0.1uF 10%	16V	C45	1-164-227-11	CERAMIC CHIP 0.022uF 10%	25V
C4	1-164-677-11	CERAMIC CHIP 0.033uF 10%	16V	C46	1-164-227-11	CERAMIC CHIP 0.022uF 10%	25V
C5	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V	C47	1-126-961-11	ELECT 2.2uF 20%	50V
C6	1-126-964-11	ELECT 10uF 20%	50V	C48	1-164-173-11	CERAMIC CHIP 0.0039uF 10%	50V
C7	1-107-826-11	CERAMIC 0.1uF 10%	16V	C49	1-162-963-11	CERAMIC CHIP 680PF 10%	50V
C8	1-164-489-11	CERAMIC CHIP 0.22uF 10%	16V	C50	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C9	1-164-245-11	CERAMIC CHIP 0.015uF 10%	25V	C51	1-107-826-11	CERAMIC 0.1uF 10%	16V
C10	1-126-964-11	ELECT 10uF 20%	50V	C52	1-162-919-11	CERAMIC CHIP 22PF 5%	50V
C12	1-126-933-11	ELECT 100uF 20%	16V	C53	1-162-920-11	CERAMIC CHIP 27PF 5%	50V
C13	1-102-074-00	CERAMIC 0.001uF 10%	50V	C54	1-162-913-11	CERAMIC CHIP 8PF 0.5PF	50V
C14	1-102-074-00	CERAMIC 0.001uF 10%	50V	C56	1-141-374-11	CAP, TRIMMER 20PF	
C15	1-115-412-11	CERAMIC CHIP 680PF 5%	25V			< DIODE/VARISTOR >	
C17	1-162-968-11	CERAMIC CHIP 0.0047uF 10%	50V	D1	8-719-911-55	DIODE U05G	
C19	1-162-968-11	CERAMIC CHIP 0.0047uF 10%	50V	D2	8-719-911-55	DIODE U05G	
C20	1-162-967-11	CERAMIC CHIP 0.0033uF 10%	50V	D3	8-719-911-55	DIODE U05G	
C21	1-164-489-11	CERAMIC CHIP 0.22uF 10%	16V	D4	8-719-911-55	DIODE U05G	
C22	1-162-923-11	CERAMIC CHIP 47PF 5%	50V	D5	8-719-909-90	DIODE BAV99	
C24	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V	D6	8-719-055-76	DIODE 1N4148	
C25	1-162-957-11	CERAMIC CHIP 220PF 5%	50V	D7	1-801-730-11	VARISTOR	
C26	1-162-921-11	CERAMIC CHIP 33PF 5%	50V	D8	8-719-109-97	DIODE RD6.8ES-B2	
C27	1-164-739-11	CERAMIC CHIP 560PF 5%	50V	D9	8-719-109-97	DIODE RD6.8ES-B2	
C28	1-126-964-11	ELECT 10uF 20%	50V	D10	8-719-909-90	DIODE BAV99	
C29	1-126-964-11	ELECT 10uF 20%	50V	D12	8-719-909-90	DIODE BAV99	
C30	1-126-961-11	ELECT 2.2uF 20%	50V			< JACK >	
				J1	1-565-999-11	JACK, MODULAR 2P (LINE)	
				J2	1-580-727-11	JACK (DC IN 9V)	

BASE MAIN

Ref. No.	Part No.	Description				Remark	Ref. No.	Part No.	Description				Remark
< COIL >							R52	1-216-848-11	METAL CHIP	180K	5%	1/16W	
							R53	1-216-836-11	METAL CHIP	18K	5%	1/16W	
L3	1-408-117-00	INDUCTOR	10uH										
L4	1-408-117-00	INDUCTOR	10uH				R54	1-216-849-11	METAL CHIP	220K	5%	1/16W	
< TRANSISTOR >							R55	1-216-821-11	METAL CHIP	1K	5%	1/16W	
							R56	1-216-837-11	METAL CHIP	22K	5%	1/16W	
							R57	1-216-832-11	METAL CHIP	8.2K	5%	1/16W	
Q5	8-729-026-07	TRANSISTOR	MMBT3906LT1				R58	1-216-850-11	METAL CHIP	270K	5%	1/16W	
Q6	8-729-026-07	TRANSISTOR	MMBT3906LT1										
Q7	8-729-230-49	TRANSISTOR	2SC2712-YG				R59	1-218-735-11	METAL CHIP	62K	0.5%	1/16W	
Q8	8-729-230-49	TRANSISTOR	2SC2712-YG				R60	1-218-716-11	METAL CHIP	10K	0.5%	1/16W	
Q9	8-729-230-49	TRANSISTOR	2SC2712-YG				R61	1-216-841-11	METAL CHIP	47K	5%	1/16W	
							R62	1-216-845-11	METAL CHIP	100K	5%	1/16W	
Q10	8-729-230-49	TRANSISTOR	2SC2712-YG				R63	1-218-723-11	METAL CHIP	20K	0.5%	1/16W	
Q11	8-729-026-07	TRANSISTOR	MMBT3906LT1										
< RESISTOR >							R64	1-218-716-11	METAL CHIP	10K	0.5%	1/16W	
							R65	1-218-723-11	METAL CHIP	20K	0.5%	1/16W	
							R66	1-218-716-11	METAL CHIP	10K	0.5%	1/16W	
R1	1-247-855-11	CARBON	10K	5%	1/4W		R67	1-218-723-11	METAL CHIP	20K	0.5%	1/16W	
R2	1-216-818-11	METAL CHIP	560	5%	1/16W		R68	1-218-716-11	METAL CHIP	10K	0.5%	1/16W	
R3	1-216-831-11	METAL CHIP	6.8K	5%	1/16W								
R4	1-216-828-11	METAL CHIP	3.9K	5%	1/16W		R69	1-218-723-11	METAL CHIP	20K	0.5%	1/16W	
R5	1-216-812-11	METAL CHIP	180	5%	1/16W		R70	1-218-716-11	METAL CHIP	10K	0.5%	1/16W	
							R71	1-218-723-11	METAL CHIP	20K	0.5%	1/16W	
R6	1-216-812-11	METAL CHIP	180	5%	1/16W		R72	1-218-716-11	METAL CHIP	10K	0.5%	1/16W	
R7	1-216-813-11	METAL CHIP	220	5%	1/16W		R73	1-218-723-11	METAL CHIP	20K	0.5%	1/16W	
R8	1-216-813-11	METAL CHIP	220	5%	1/16W								
R17	1-216-829-11	METAL CHIP	4.7K	5%	1/16W		R74	1-218-723-11	METAL CHIP	20K	0.5%	1/16W	
R18	1-216-829-11	METAL CHIP	4.7K	5%	1/16W		R75	1-216-841-11	METAL CHIP	47K	5%	1/16W	
							R76	1-216-835-11	METAL CHIP	15K	5%	1/16W	
R19	1-216-829-11	METAL CHIP	4.7K	5%	1/16W		R78	1-216-834-11	METAL CHIP	12K	5%	1/16W	
R20	1-218-287-11	RES, CHIP	200	5%	1/16W		R79	1-216-834-11	METAL CHIP	12K	5%	1/16W	
R21	1-216-841-11	METAL CHIP	47K	5%	1/16W								
R22	1-216-831-11	METAL CHIP	6.8K	5%	1/16W		R80	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R23	1-216-833-11	METAL CHIP	10K	5%	1/16W		R81	1-216-845-11	METAL CHIP	100K	5%	1/16W	
							R82	1-216-838-11	METAL CHIP	27K	5%	1/16W	
R24	1-216-841-11	METAL CHIP	47K	5%	1/16W		R83	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R25	1-215-862-11	METAL OXIDE	68	5%	1W F		R84	1-219-570-11	METAL CHIP	10M	5%	1/16W	
R26	1-216-833-11	METAL CHIP	10K	5%	1/16W								
R27	1-216-837-11	METAL CHIP	22K	5%	1/16W		R85	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R28	1-216-833-11	METAL CHIP	10K	5%	1/16W		R86	1-216-818-11	METAL CHIP	560	5%	1/16W	
							R88	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R29	1-216-837-11	METAL CHIP	22K	5%	1/16W		R89	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R30	1-216-837-11	METAL CHIP	22K	5%	1/16W								
R31	1-216-853-11	METAL CHIP	470K	5%	1/16W								
R32	1-216-857-11	METAL CHIP	1M	5%	1/16W								
R33	1-216-846-11	METAL CHIP	120K	5%	1/16W		S1	1-571-377-11	SWITCH, SLIDE (DIAL MODE)				
R34	1-216-821-11	METAL CHIP	1K	5%	1/16W								
R35	1-216-840-11	METAL CHIP	36K	5%	1/16W								
R36	1-216-853-11	METAL CHIP	470K	5%	1/16W								
R37	1-216-830-11	METAL CHIP	5.6K	5%	1/16W		T1	1-431-965-11	TRANSFORMER, LINE				
R38	1-216-845-11	METAL CHIP	100K	5%	1/16W								
< PHOTO COUPLER/IC >													
R39	1-228-993-00	RES, ADJ, METAL	4.7K				U1	8-719-024-09	PHOTO COUPLER	PS2532-1			
R40	1-228-993-00	RES, ADJ, METAL	4.7K				U2	8-719-018-89	PHOTO COUPLER	LTV817-C			
R41	1-216-847-11	METAL CHIP	150K	5%	1/16W		U3	8-759-701-56	IC	NJM78M05FA			
R42	1-216-847-11	METAL CHIP	150K	5%	1/16W		U4	8-759-479-97	IC	TA31103F			
R43	1-216-847-11	METAL CHIP	150K	5%	1/16W		U5	8-759-998-45	IC	BA3818F-SY			
R44	1-216-857-11	METAL CHIP	1M	5%	1/16W		U6	8-759-590-84	IC	LSC526610DW			
R45	1-216-857-11	METAL CHIP	1M	5%	1/16W		U7	8-759-488-17	IC	BR93LC46F-E2			
R46	1-216-857-11	METAL CHIP	1M	5%	1/16W								
R47	1-216-833-11	METAL CHIP	10K	5%	1/16W								
R48	1-216-833-11	METAL CHIP	10K	5%	1/16W								
< FUSE >													
							W1	1-533-842-11	FUSE (250mA)				
R49	1-216-854-11	METAL CHIP	560K	5%	1/16W								
R50	1-216-848-11	METAL CHIP	180K	5%	1/16W								
R51	1-216-848-11	METAL CHIP	180K	5%	1/16W								

BASE MAIN
BASE RF

Ref. No.	Part No.	Description	Remark		
< VIBRATOR >					
X1	1-577-130-11	VIBRATOR, CRYSTAL (4MHz)			

*	A-3672-728-A	BASE RF BOARD, COMPLETE			

< 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
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	33P	5%	50V
C43	1-162-970-11	CERAMIC	0.01uF	10%	25V
C51	1-162-906-11	CERAMIC CHIP	1.5PF	0.25PF	50V
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
C56	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C57	1-164-217-11	CERAMIC CHIP	150PF	5%	50V
C58	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V
C59	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V
C60	1-162-906-11	CERAMIC CHIP	1.5PF	0.25PF	50V
C63	1-162-906-11	CERAMIC CHIP	1.5PF	0.25PF	50V
C64	1-162-923-11	CERAMIC CHIP	47PF	5%	50V

Ref. No.	Part No.	Description	Remark		
C65	1-164-217-11	CERAMIC CHIP 150PF	5%	50V	
C66	1-162-912-11	CERAMIC CHIP 7PF	0.5PF	50V	
C67	1-162-908-11	CERAMIC CHIP 3PF	0.25PF	50V	
C69	1-162-915-11	CERAMIC CHIP 10PF	0.5PF	50V	
C70	1-162-910-11	CERAMIC CHIP 5PF	0.25PF	50V	
C71	1-162-910-11	CERAMIC CHIP 5PF	0.25PF	50V	
C72	1-162-910-11	CERAMIC CHIP 5PF	0.25PF	50V	
C74	1-162-910-11	CERAMIC CHIP 5PF	0.25PF	50V	
C76	1-165-176-11	CERAMIC CHIP 0.047uF	10%	16V	
C77	1-162-962-11	CERAMIC CHIP 470PF	10%	50V	
C78	1-164-217-11	CERAMIC CHIP 150PF	5%	50V	
C79	1-164-217-11	CERAMIC CHIP 150PF	5%	50V	
C81	1-162-910-11	CERAMIC CHIP 5PF	0.25PF	50V	
C82	1-162-910-11	CERAMIC CHIP 5PF	0.25PF	50V	
C83	1-115-467-11	CERAMIC CHIP 0.22uF	10%	10V	
C84	1-164-245-11	CERAMIC CHIP 0.015uF	10%	25V	
C85	1-162-923-11	CERAMIC CHIP 47PF	5%	50V	
C86	1-162-913-11	CERAMIC CHIP 8PF	0.5PF	50V	
C89	1-162-911-11	CERAMIC CHIP 6PF	0.5PF	50V	
C95	1-162-957-11	CERAMIC CHIP 220PF	5%	50V	
C99	1-141-374-11	CAP, TRIMMER 20PF			
C146	1-162-962-11	CERAMIC CHIP 470PF	10%	50V	
C147	1-162-962-11	CERAMIC CHIP 470PF	10%	50V	
< DIODE >					
D1	8-719-820-71	DIODE 1SV214			
D2	8-719-820-71	DIODE 1SV214			
D3	8-719-820-71	DIODE 1SV214			
D5	8-719-056-74	DIODE UDJ-TE-17-3.0B			
< FILTER >					
F1	1-234-331-11	FILTER, BAND PASS			
F2	1-234-332-11	FILTER, BAND PASS			
F3	1-781-499-11	FILTER, SAW			
F4	1-567-107-71	FILTER, CERAMIC			
F5	1-760-785-11	FILTER, CERAMIC			
< TRANSFORMER/COIL >					
L12	1-433-901-11	TRANSFORMER, IF			
L13	1-412-599-11	INDUCTOR CHIP 3.3uH			
< TRANSISTOR >					
Q1	8-729-923-31	TRANSISTOR 2SC4083-P			
Q2	8-729-049-14	TRANSISTOR BFP67W			
Q3	8-729-230-49	TRANSISTOR 2SC2712-YG			
Q4	8-729-230-49	TRANSISTOR 2SC2712-YG			
Q8	8-729-923-31	TRANSISTOR 2SC4083-P			
Q9	8-729-923-31	TRANSISTOR 2SC4083-P			
< RESISTOR >					
R2	1-216-809-11	METAL CHIP 100	5%	1/16W	
R3	1-216-840-11	METAL CHIP 39K	5%	1/16W	
R4	1-216-808-11	METAL CHIP 82	5%	1/16W	
R5	1-216-838-11	METAL CHIP 27K	5%	1/16W	
R6	1-216-798-11	METAL CHIP 12	5%	1/16W	
R7	1-216-817-11	METAL CHIP 470	5%	1/16W	
R8	1-216-808-11	METAL CHIP 82	5%	1/16W	

BASE RF

HAND MAIN

Ref. No.	Part No.	Description	Remark
R9	1-216-821-11	METAL CHIP 1K 5%	1/16W
R10	1-216-819-11	METAL CHIP 680 5%	1/16W
R12	1-216-835-11	METAL CHIP 15K 5%	1/16W
R13	1-216-619-11	METAL CHIP 47 0.5%	1/10W
R14	1-216-864-11	METAL CHIP 0 5%	1/16W
R15	1-216-864-11	METAL CHIP 0 5%	1/16W
R16	1-216-833-11	METAL CHIP 10K 5%	1/16W
R17	1-216-833-11	METAL CHIP 10K 5%	1/16W
R19	1-216-818-11	METAL CHIP 560 5%	1/16W
R20	1-216-818-11	METAL CHIP 560 5%	1/16W
R21	1-216-838-11	METAL CHIP 27K 5%	1/16W
R25	1-216-810-11	RES, CHIP 120 5%	1/16W
R27	1-216-833-11	METAL CHIP 10K 5%	1/16W
R28	1-218-720-11	METAL CHIP 15K 0.5%	1/16W
R29	1-216-805-11	METAL CHIP 47 5%	1/16W
R30	1-218-716-11	METAL CHIP 10K 0.5%	1/16W
R31	1-218-676-11	METAL CHIP 220 0.5%	1/16W
R32	1-216-817-11	METAL CHIP 470 5%	1/16W
R33	1-216-808-11	METAL CHIP 82 5%	1/16W
R34	1-216-809-11	METAL CHIP 100 5%	1/16W
R35	1-216-808-11	METAL CHIP 82 5%	1/16W
R37	1-218-653-11	METAL CHIP 24 0.5%	1/16W
R38	1-218-717-11	METAL CHIP 11K 0.5%	1/16W
R39	1-218-668-11	METAL CHIP 100 0.5%	1/16W
R40	1-218-716-11	METAL CHIP 10K 0.5%	1/16W
R41	1-216-819-11	METAL CHIP 680 5%	1/16W
R45	1-216-833-11	METAL CHIP 10K 5%	1/16W
R47	1-216-836-11	METAL CHIP 18K 5%	1/16W
R48	1-219-570-11	METAL CHIP 10M 5%	1/16W
R50	1-218-653-11	METAL CHIP 24 0.5%	1/16W
R51	1-216-833-11	METAL CHIP 10K 5%	1/16W
R52	1-218-653-11	METAL CHIP 24 0.5%	1/16W
R53	1-216-833-11	METAL CHIP 10K 5%	1/16W
R54	1-216-833-11	METAL CHIP 10K 5%	1/16W
R57	1-216-833-11	METAL CHIP 10K 5%	1/16W
R58	1-216-830-11	METAL CHIP 5.6K 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
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	

*	A-3672-726-A	HAND MAIN BOARD, COMPLETE	

	7-685-105-19	SCREW +P2X8 TYPE2 NON-SLIT	
< CAPACITOR >			
C2	1-164-227-11	CERAMIC CHIP 0.022uF 10%	25V
C3	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V
C40	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V
C75	1-162-919-11	CERAMIC CHIP 22PF 5%	50V
C91	1-162-919-11	CERAMIC CHIP 22PF 5%	50V

Ref. No.	Part No.	Description	Remark
C92	1-141-374-11	CAP, TRIMMER 20PF	
C93	1-162-913-11	CERAMIC CHIP 8PF 0.5PF	50V
C95	1-162-927-11	CERAMIC CHIP 100PF 5%	50V
C97	1-162-927-11	CERAMIC CHIP 100PF 5%	50V
C99	1-135-157-21	TANTALUM CHIP 10uF 20%	6.3V
C100	1-135-157-21	TANTALUM CHIP 10uF 20%	6.3V
C101	1-162-977-11	CERAMIC CHIP 0.0018uF 10%	50V
C102	1-135-208-11	TANTALUM CHIP 1uF 10%	10V
C103	1-162-927-11	CERAMIC CHIP 100PF 5%	50V
C104	1-162-957-11	CERAMIC CHIP 220PF 5%	50V
C105	1-162-921-11	CERAMIC CHIP 33PF 5%	50V
C106	1-164-739-11	CERAMIC CHIP 560PF 5%	50V
C107	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V
C108	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V
C109	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V
C110	1-165-176-11	CERAMIC CHIP 0.047uF 10%	16V
C111	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C112	1-162-968-11	CERAMIC CHIP 0.0047uF 10%	50V
C113	1-135-212-21	TANTALUM CHIP 2.2uF 20%	20V
C114	1-165-176-11	CERAMIC CHIP 0.047uF 10%	16V
C116	1-164-227-11	CERAMIC CHIP 0.022uF 10%	25V
C118	1-162-964-11	CERAMIC CHIP 0.001uF 10%	50V
C119	1-135-157-21	TANTALUM CHIP 10uF 20%	6.3V
C121	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V
C122	1-135-212-21	TANTALUM CHIP 2.2uF 20%	20V
C123	1-165-176-11	CERAMIC CHIP 0.047uF 10%	16V
C124	1-162-925-11	CERAMIC CHIP 68PF 5%	50V
C125	1-165-176-11	CERAMIC CHIP 0.047uF 10%	16V
C126	1-135-212-21	TANTALUM CHIP 2.2uF 20%	20V
C127	1-162-964-11	CERAMIC CHIP 0.001uF 10%	50V
C128	1-162-966-11	CERAMIC CHIP 0.0022uF 10%	50V
C129	1-164-489-11	CERAMIC CHIP 0.22uF 10%	16V
C130	1-164-739-11	CERAMIC CHIP 560PF 5%	50V
C131	1-162-921-11	CERAMIC CHIP 33PF 5%	50V
C132	1-162-957-11	CERAMIC CHIP 220PF 5%	50V
C134	1-162-923-11	CERAMIC CHIP 47PF 5%	50V
C138	1-165-176-11	CERAMIC CHIP 0.047uF 10%	16V
C139	1-162-964-11	CERAMIC CHIP 0.001uF 10%	50V
C140	1-162-919-11	CERAMIC CHIP 22PF 5%	50V
< DIODE >			
D1	8-719-062-55	DIODE MS31D	
D2	8-719-062-55	DIODE MS31D	
D3	8-719-062-55	DIODE MS31D	
D4	8-719-062-55	DIODE MS31D	
D5	8-719-062-55	DIODE MS31D	
D6	8-719-047-37	DIODE BAS16	
D7	8-719-909-90	DIODE BAV99	
D8	8-719-909-90	DIODE BAV99	
D14	8-719-067-59	DIODE MAZ9120D0LS0-TX/L	
< TRANSISTOR >			
Q1	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q2	8-729-026-07	TRANSISTOR MMBT3906LT1	
Q12	8-729-026-07	TRANSISTOR MMBT3906LT1	
Q13	8-729-026-07	TRANSISTOR MMBT3906LT1	
Q14	8-729-026-07	TRANSISTOR MMBT3906LT1	

HAND MAIN

HAND RF

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
Q15	8-729-230-49	TRANSISTOR	2SC2712-YG			R114	1-216-821-11	METAL CHIP	1K	5%	1/16W
Q16	8-729-026-07	TRANSISTOR	MMBT3906LT1			R115	1-216-833-11	METAL CHIP	10K	5%	1/16W
Q17	8-729-230-49	TRANSISTOR	2SC2712-YG			R116	1-216-848-11	METAL CHIP	180K	5%	1/16W
Q18	8-729-026-07	TRANSISTOR	MMBT3906LT1			R119	1-238-664-11	RES, ADJ, CERMET 10K			
Q19	8-729-026-07	TRANSISTOR	MMBT3906LT1			R121	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
Q20	8-729-230-49	TRANSISTOR	2SC2712-YG			R122	1-216-821-11	METAL CHIP	1K	5%	1/16W
		< RESISTOR >				R123	1-216-853-11	METAL CHIP	470K	5%	1/16W
						R124	1-216-839-11	METAL CHIP	33K	5%	1/16W
R1	1-216-833-11	METAL CHIP	10K	5%	1/16W	R125	1-216-853-11	METAL CHIP	470K	5%	1/16W
R3	1-216-844-11	METAL CHIP	82K	5%	1/16W	R127	1-216-853-11	METAL CHIP	470K	5%	1/16W
R4	1-216-838-11	METAL CHIP	27K	5%	1/16W						
R10	1-216-809-11	METAL CHIP	100	5%	1/16W	R128	1-218-331-11	RES, CHIP	51K	5%	1/16W
R11	1-216-821-11	METAL CHIP	1K	5%	1/16W	R129	1-216-847-11	METAL CHIP	150K	5%	1/16W
						R130	1-216-847-11	METAL CHIP	150K	5%	1/16W
R23	1-216-845-11	METAL CHIP	100K	5%	1/16W	R131	1-216-847-11	METAL CHIP	150K	5%	1/16W
R24	1-216-849-11	METAL CHIP	220K	5%	1/16W	R133	1-216-839-11	METAL CHIP	33K	5%	1/16W
R36	1-216-845-11	METAL CHIP	100K	5%	1/16W						
R42	1-216-823-11	METAL CHIP	1.5K	5%	1/16W	R134	1-216-845-11	METAL CHIP	100K	5%	1/16W
R49	1-216-841-11	METAL CHIP	47K	5%	1/16W	R135	1-216-856-11	METAL CHIP	820K	5%	1/16W
						R138	1-216-821-11	METAL CHIP	1K	5%	1/16W
R63	1-216-841-11	METAL CHIP	47K	5%	1/16W	R139	1-216-799-11	METAL CHIP	15	5%	1/16W
R65	1-216-849-11	METAL CHIP	220K	5%	1/16W	R140	1-216-849-11	METAL CHIP	220K	5%	1/16W
R69	1-216-841-11	METAL CHIP	47K	5%	1/16W						
R70	1-216-841-11	METAL CHIP	47K	5%	1/16W	R141	1-216-841-11	METAL CHIP	47K	5%	1/16W
R71	1-216-809-11	METAL CHIP	100	5%	1/16W	R142	1-216-817-11	METAL CHIP	470	5%	1/16W
						R143	1-216-833-11	METAL CHIP	10K	5%	1/16W
R74	1-216-845-11	METAL CHIP	100K	5%	1/16W	R144	1-216-857-11	METAL CHIP	1M	5%	1/16W
R75	1-216-845-11	METAL CHIP	100K	5%	1/16W	R145	1-218-274-11	RES, CHIP	620K	5%	1/16W
R76	1-216-818-11	METAL CHIP	560	5%	1/16W						
R77	1-216-835-11	METAL CHIP	15K	5%	1/16W	R146	1-216-857-11	METAL CHIP	1M	5%	1/16W
R78	1-216-809-11	METAL CHIP	100	5%	1/16W	R147	1-216-854-11	METAL CHIP	560K	5%	1/16W
R80	1-216-831-11	METAL CHIP	6.8K	5%	1/16W						
R81	1-216-849-11	METAL CHIP	220K	5%	1/16W			<SWITCH>			
R82	1-216-853-11	METAL CHIP	470K	5%	1/16W						
R83	1-211-755-11	METAL CHIP	196K	0.5%	1/16W	S19	1-771-303-11	SLIDE SWITCH (VOL)			
R84	1-218-740-11	METAL CHIP	100K	0.5%	1/16W			< IC/BUZZER/SPEAKER/MIC >			
R85	1-218-746-11	METAL CHIP	180K	0.5%	1/16W						
R86	1-218-740-11	METAL CHIP	100K	0.5%	1/16W	U3	8-759-590-85	IC LSC526609DW			
R87	1-218-744-11	METAL CHIP	150K	0.5%	1/16W	U4	1-544-603-11	BUZZER			
R88	1-218-740-11	METAL CHIP	100K	0.5%	1/16W	U5	8-759-998-45	IC BA3818F-SY			
R89	1-216-856-11	METAL CHIP	820K	5%	1/16W	U7	8-759-479-97	IC TA31103F			
						U8	1-505-593-11	SPEAKER (2.8cm)			
R90	1-219-570-11	METAL CHIP	10M	5%	1/16W						
R91	1-216-854-11	METAL CHIP	560K	5%	1/16W	U9	1-542-260-31	MICROPHONE, ELECTRET CONDENSER			
R94	1-216-839-11	METAL CHIP	33K	5%	1/16W	U11	8-759-480-76	IC LP2953IM			
R95	1-216-845-11	METAL CHIP	100K	5%	1/16W						
R96	1-219-570-11	METAL CHIP	10M	5%	1/16W			< VIBRATOR >			
R97	1-216-841-11	METAL CHIP	47K	5%	1/16W	X1	1-577-130-11	VIBRATOR, CRYSTAL (4MHz)			
R98	1-216-833-11	METAL CHIP	10K	5%	1/16W	*****					
R99	1-216-841-11	METAL CHIP	47K	5%	1/16W						
R100	1-216-821-11	METAL CHIP	1K	5%	1/16W	*	A-3672-725-A	HAND RF BOARD, COMPLETE			
R102	1-216-825-11	METAL CHIP	2.2K	5%	1/16W			*****			
R103	1-216-851-11	METAL CHIP	330K	5%	1/16W			< CAPACITOR >			
R105	1-216-849-11	METAL CHIP	220K	5%	1/16W						
R106	1-216-833-11	METAL CHIP	10K	5%	1/16W	C1	1-162-933-11	CERAMIC CHIP	2.5PF	0.25PF	50V
R107	1-216-833-11	METAL CHIP	10K	5%	1/16W	C2	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V
R108	1-216-848-11	METAL CHIP	180K	5%	1/16W	C3	1-162-911-11	CERAMIC CHIP	6PF	0.5PF	50V
						C4	1-162-913-11	CERAMIC CHIP	8PF	0.5PF	50V
R109	1-216-848-11	METAL CHIP	180K	5%	1/16W	C5	1-162-911-11	CERAMIC CHIP	6PF	0.5PF	50V
R110	1-216-848-11	METAL CHIP	180K	5%	1/16W						
R111	1-216-834-11	METAL CHIP	12K	5%	1/16W	C6	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V
R112	1-216-844-11	METAL CHIP	82K	5%	1/16W	C7	1-162-906-11	CERAMIC CHIP	1.5PF	0.25PF	50V
R113	1-238-664-11	RES, ADJ, CERMET 10K				C8	1-162-923-11	CERAMIC CHIP	47PF	5%	50V

HAND RF

Ref. No.	Part No.	Description				Remark	Ref. No.	Part No.	Description				Remark
C9	1-162-923-11	CERAMIC CHIP	47PF	5%	50V		C85	1-162-923-11	CERAMIC CHIP	47PF	5%	50V	
C10	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V		C86	1-162-913-11	CERAMIC CHIP	8PF	0.5PF	50V	
							C89	1-162-969-11	CERAMIC CHIP	0.0068uF	10%	25V	
C11	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V								
C12	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V				< DIODE >				
C13	1-162-923-11	CERAMIC CHIP	47PF	5%	50V								
C14	1-162-923-11	CERAMIC CHIP	47PF	5%	50V		D1	8-719-820-71	DIODE 1SV214				
C15	1-162-906-11	CERAMIC CHIP	1.5PF	0.25PF	50V		D2	8-719-820-71	DIODE 1SV214				
							D3	8-719-820-71	DIODE 1SV214				
C16	1-162-923-11	CERAMIC CHIP	47PF	5%	50V								
C17	1-162-912-11	CERAMIC CHIP	7PF	0.5PF	50V				< FILTER >				
C19	1-162-923-11	CERAMIC CHIP	47PF	5%	50V								
C20	1-162-923-11	CERAMIC CHIP	47PF	5%	50V		F1	1-234-331-11	FILTER, BAND PASS				
C21	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V		F2	1-234-332-11	FILTER, BAND PASS				
							F3	1-781-500-11	FILTER, SAW				
C22	1-162-924-11	CERAMIC CHIP	56PF	5%	50V		F4	1-567-107-71	FILTER, CERAMIC				
C23	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V		F5	1-760-785-11	FILTER, CERAMIC				
C24	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V								
C25	1-141-374-11	CAP, TRIMMER	20PF						< TRANSFORMER/COIL >				
C26	1-164-217-11	CERAMIC CHIP	150PF	5%	50V								
							L2	1-433-901-11	TRANSFORMER, IF				
C28	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V		L12	1-412-599-11	INDUCTOR CHIP 3.3uH				
C29	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V								
C30	1-164-217-11	CERAMIC CHIP	150PF	5%	50V				< TRANSISTOR >				
C31	1-162-923-11	CERAMIC CHIP	47PF	5%	50V								
C32	1-162-913-11	CERAMIC CHIP	8PF	0.5PF	50V		Q1	8-729-921-56	TRANSISTOR 2SC4083T106				
							Q2	8-729-049-14	TRANSISTOR BFP67W				
C33	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V		Q3	8-729-921-56	TRANSISTOR 2SC4083T106				
C34	1-162-911-11	CERAMIC CHIP	6PF	0.5PF	50V		Q8	8-729-921-56	TRANSISTOR 2SC4083T106				
C35	1-162-923-11	CERAMIC CHIP	47PF	5%	50V								
C36	1-162-923-11	CERAMIC CHIP	47PF	5%	50V				< RESISTOR >				
C37	1-162-923-11	CERAMIC CHIP	47PF	5%	50V								
							R2	1-216-805-11	METAL CHIP 47 5% 1/16W				
C38	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V		R3	1-216-837-11	METAL CHIP 22K 5% 1/16W				
C39	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		R4	1-218-671-11	METAL CHIP 130 0.5% 1/16W				
C41	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		R5	1-216-838-11	METAL CHIP 27K 5% 1/16W				
C42	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V		R6	1-216-798-11	RES, CHIP 12 5% 1/16W				
C51	1-162-906-11	CERAMIC CHIP	1.5PF	0.25PF	50V								
							R7	1-216-821-11	METAL CHIP 1K 5% 1/16W				
C52	1-162-914-11	CERAMIC CHIP	9PF	0.5PF	50V		R8	1-218-665-11	METAL CHIP 75 5% 1/16W				
C54	1-162-907-11	CERAMIC CHIP	2PF	0.25PF	50V		R9	1-218-665-11	METAL CHIP 75 5% 1/16W				
C55	1-162-912-11	CERAMIC CHIP	7PF	0.5PF	50V		R11	1-218-720-11	METAL CHIP 15K 0.5% 1/16w				
C57	1-162-923-11	CERAMIC CHIP	47PF	5%	50V		R12	1-216-835-11	METAL CHIP 15K 5% 1/16W				
C58	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V								
							R13	1-216-818-11	METAL CHIP 560 5% 1/16W				
C59	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V		R14	1-216-821-11	METAL CHIP 1K 5% 1/16W				
C60	1-162-906-11	CERAMIC CHIP	1.5PF	0.25PF	50V		R15	1-220-373-11	RES, CHIP 620 5% 1/16W				
C63	1-162-905-11	CERAMIC CHIP	1PF	0.25PF	50V		R16	1-216-818-11	METAL CHIP 560 5% 1/16W				
C64	1-162-923-11	CERAMIC CHIP	47PF	5%	50V		R27	1-218-716-11	METAL CHIP 10K 0.5% 1/16w				
C65	1-164-217-11	CERAMIC CHIP	150PF	5%	50V								
							R28	1-218-720-11	METAL CHIP 15K 0.5% 1/16W				
C66	1-162-912-11	CERAMIC CHIP	7PF	0.5PF	50V		R29	1-218-653-11	RES, CHIP 24 0.5% 1/16W				
C67	1-162-906-11	CERAMIC CHIP	1.5PF	0.25PF	50V		R30	1-218-717-11	METAL CHIP 11K 0.5% 1/16W				
C69	1-162-914-11	CERAMIC CHIP	9PF	0.5PF	50V		R31	1-218-285-11	RES, CHIP 75 5% 1/16W				
C70	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V		R32	1-216-814-11	METAL CHIP 270 5% 1/16W				
C71	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V								
							R33	1-218-286-11	RES, CHIP 91 5% 1/16W				
C72	1-162-912-11	CERAMIC CHIP	7PF	0.5PF	50V		R34	1-218-665-11	METAL CHIP 75 0.5% 1/16W				
C74	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V		R35	1-218-286-11	RES, CHIP 91 5% 1/16W				
C76	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V		R37	1-218-653-11	RES, CHIP 24 0.5% 1/16W				
C77	1-162-962-11	CERAMIC CHIP	470PF	10%	50V		R38	1-218-719-11	METAL CHIP 13K 0.5% 1/16W				
C78	1-164-217-11	CERAMIC CHIP	150PF	5%	50V								
							R39	1-218-716-11	METAL CHIP 10K 0.5% 1/16W				
C79	1-164-217-11	CERAMIC CHIP	150PF	5%	50V		R40	1-218-285-11	RES, CHIP 75 5% 1/16W				
C81	1-162-912-11	CERAMIC CHIP	7PF	0.5PF	50V		R41	1-216-814-11	METAL CHIP 270 5% 1/16W				
C82	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V		R45	1-216-833-11	METAL CHIP 10K 5% 1/16W				
C83	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V		R47	1-218-720-11	METAL CHIP 15K 0.5% 1/16W				
C84	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V								
							R48	1-219-570-11	METAL CHIP 10M 5% 1/16W				

Ref. No.	Part No.	Description	Remark		
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	
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 1-501-999-31 ANTENNA
ANT2 1-501-951-31 ANTENNA
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 SW 3, 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 7-685-650-79 SCREW +BTP 3X16 TYPE2 N-S
#7 7-685-134-19 SCREW +P 2.6X8 TYPE2 SLIT
#8 7-685-648-79 SCREW +BVTP 3X12 TYPE2 IT-3

ACCESSORIES & PACKING MATERIALS

△ 1-418-436-11 ADAPTOR, AC (AC-T127)
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)
(2m15cm)
3-010-356-11 LABEL (MEMORY)
3-012-379-21 CASE (WALL HOOK)
3-866-265-21 MANUAL, INSTRUCTION (ENGLISH, FRENCH)

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.

