Service Manual

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ORDER NO. KM49905420C1

F1

Telephone Equipment

SOUND CHARGER PLUS

KX-TC1000B/KX-TC1001W

Cordless Phone

Black Version

White Version

(for U.S.A.)

(HANDSET) (BASE UNIT)

SPECIFICATIONS

General

Modulation:	FM, 5kHz Deviation	Pause:	3.5 seconds per pause
Frequency Stability:	± 2.5 kHz	Memory Capacity:	11 telephone numbers, up to 22 digits per station
Dial Type:	Tone (DTMF)/Pulse		
Redial:	Last dialed number each time the Redial button is pressed		

	Base Unit	Handset
Power Sourse:	AC adaptor KX-TCA1 (DC 9 V)	Built-in rechargeable Ni-Cd battery
(Receiver Section)		
Receiving Frequency:	25 channels within 48.76 to 49.97 MHz	25 channels within 43.72 to 46.97 MHz
Adjacent Channel Rejection:	40 dB	40 dB
Sensitivity:	1dBμV for 20 dB S/N	2 dBμV for 20 dB S/N
(Transmitter Section)		
Transmitting Frequency:	25 channels within 43.72 to 46.97 MHz	25 channels within 48.76 to 49.99 MHz
Jacks:	DC IN, Telephone line	
Antenna:	Telescopic	Rubber Flexible
Speaker:	2" (6.5 cm) PM dynamic	$1^{3}/_{16}$" (3 cm) dynamic
Microphone:	Condenser microphone	Condenser microphone
Dimensions (H X W X D):	$2^{5}/_{32}$" X $4^{17}/_{32}$" X $8^{15}/_{32}$" (55 X 115 X 215 mm)	$10^{1}/_{2}$" X $2^{3}/_{32}$" X $1^{1}/_{32}$" (267 X 53 X 38 mm)
Weight:	0.56 lbs. (250 g)	0.46 lbs. (210g) with battery

Design and specifications are subject to change without notice.

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1 STANDARD BATTERY LIFE

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If your Panasonic battery is fully charged;

While in use (TALK)	Up to about 8 hours
While not in use (Stand-by)	Up to about 30 days

Battery life may vary depending on usage conditions and

ambient temperature.

The battery cannot be overcharged.

Clean the handset and the base unit charge contacts with a soft dry cloth once a month. Clean more often if the unit is subject to grease, dust or high humidity. If not, the battery may not charge propery.

If the battery is fully charged, you do not have to place the handset on the base unit until the RECHARGE indicator flashes. This will maximize the battery life.

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2 LOCATION OF CONTROLS

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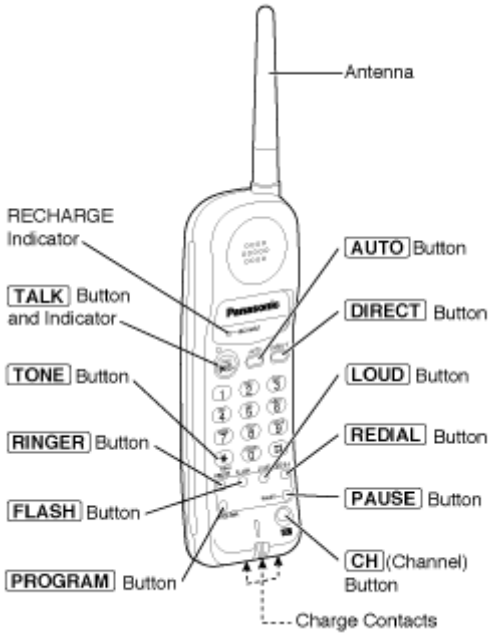

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3 CONNECTION

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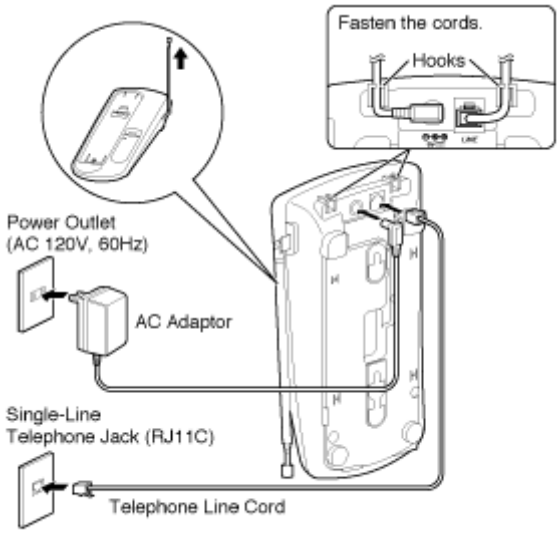
1. Connect as shown.



2. USE ONLY WITH Panasonic ACADAPTOR KX-TCA1.
3. The AC adaptor must remain connected at all times.

   (It is normal for the adaptor to feel warm during use.)
4. Raise the antenna. Extend it fully.
5. Charge the battery.

   KX-TC1000B/KX-TC1001W: for 10 hours

To select the dialing mode TONE (preset) or PULSE

You can program the dialing mode by using the handset near the base unit. The TALK indicator light must be off before programming.

Press **PROGRAM** ➡ **AUTO** ➡ **#** twice (PULSE) OR **✱** twice (TONE) ➡ **PROGRAM** .

- To cancel during programming, press **PROGRAM**, then start from the beginning.
- If 3 beeps sound during programming, a wrong key was pressed. Restart from the beginning.
- If a power failure occurs, the mode will return to the factory preset (TONE). Reprogram if necessary.

3.1 Adding Another Phone

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3.1 Adding Another Phone

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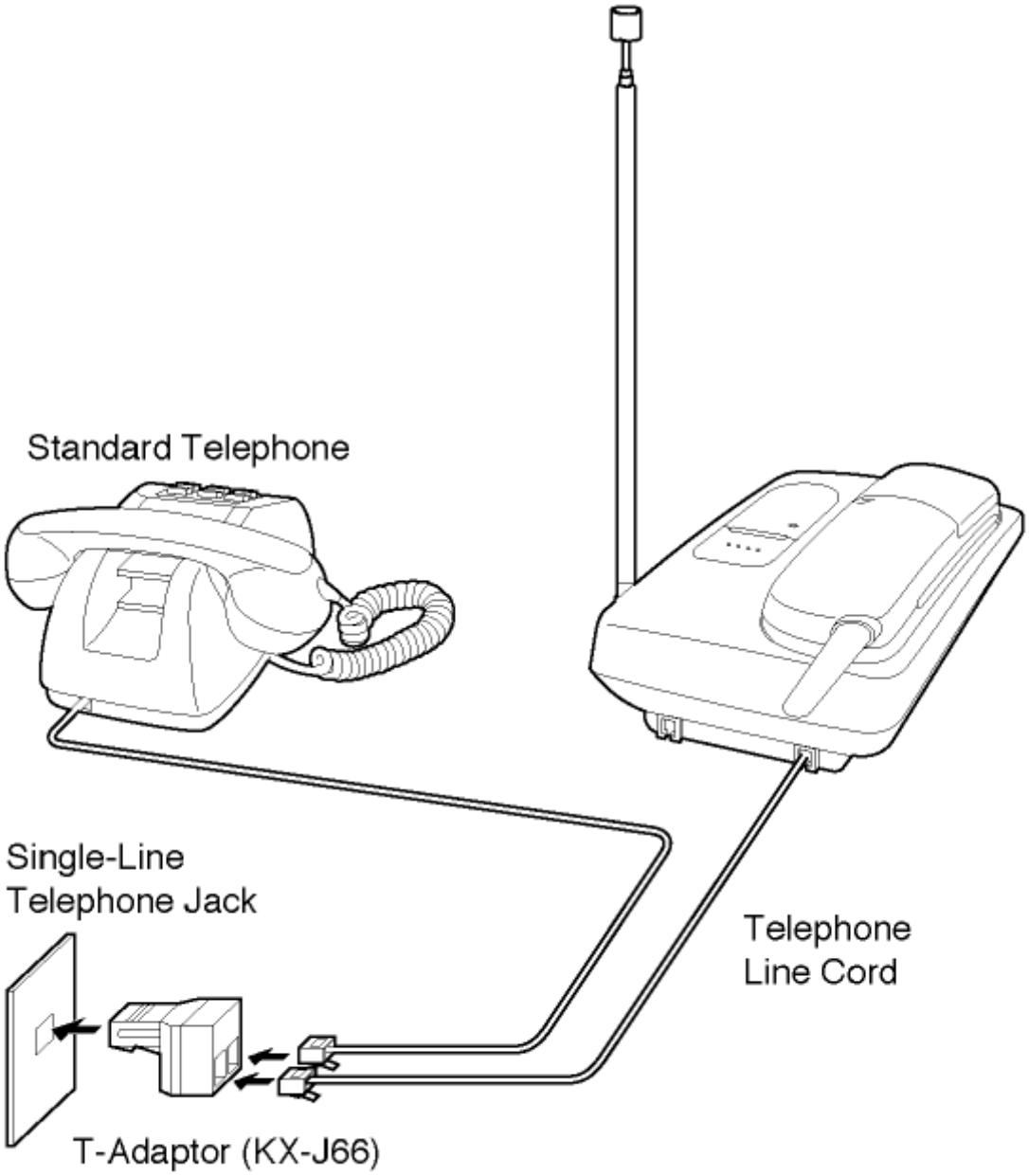
This unit will not function during a power failue. To connect a standard telephone on the same line, use the Panasonic

T-adaptor KX-J66.



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4 DISASSEMBLY INSTRUCUTNS

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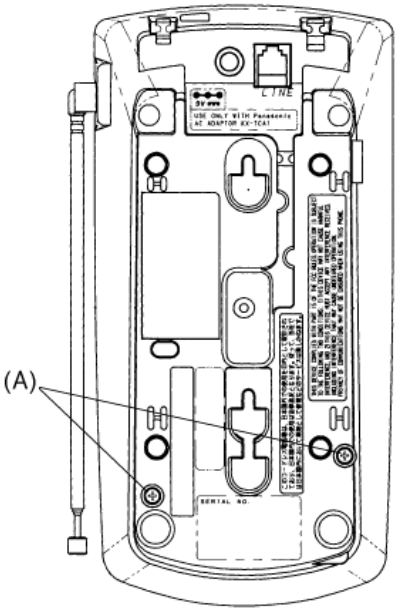

Fig. 1

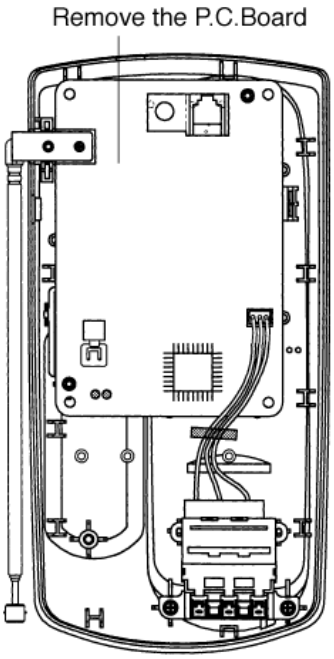

Fig. 2

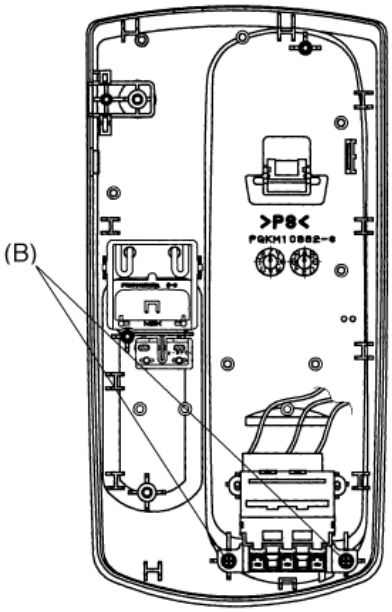

Fig. 3

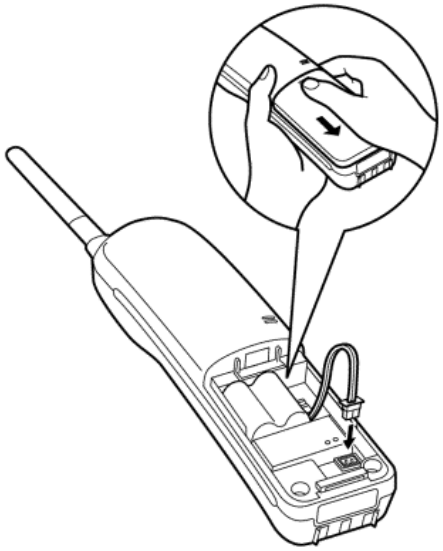

Fig. 4

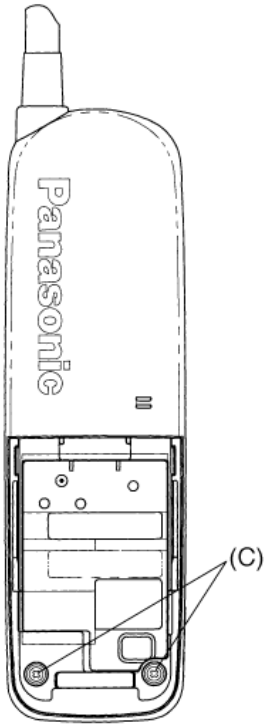

Fig. 5

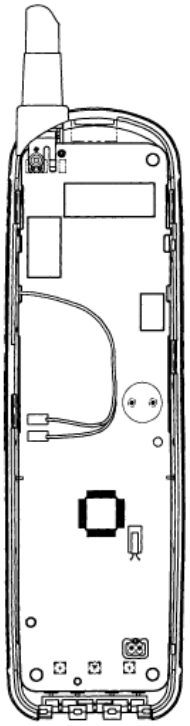

Fig. 6

Ref. No.	Procedure	Shown in Fig.—	To remove—.	Remove—.
1	1	1	Lower Cabinet	Screws (3 X 14) ..... (A) X 2
2	1, 2	2	Main Printed Circuit Board	Remove the P.C.Board
3	1, 2, 3	3	Operation Printed Circuit Board	Screws (3 X 10) ..... (B) X 2
4	4, 5	4	Rear Cabinet	Remove the battery compartment cover
5		5		Screw (2.6 X 14) ..... (C) X 2
6	4~6	6	Main Printed Circuit Board	Remove the P.C.Board

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5 HOW TO REPLACE FLAT PACKAGE IC

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5.1 PREPARATION

5.2 PROCEDURE

5.3 MODIFICATION PROCEDURE OF BRIDGE

TOP PREVIOUS NEXT

5.1 PREPARATION

TOP PREVIOUS NEXT

SOLDER/Sparkle Solder 115A-1, 115B-1 or Almit Solder KR-19,KR-19RMA

Soldering iron/Recommended power consumption will be between 30 W to 40 W./Temperature of Copper Rod 662± 50°F (350± 10°C)/(An expert may handle between 60 W to 40 W iron, but beginner might damagefoil by overheating.)

Flux/HI115 Specific gravity 0.863/(Original flux will be replaced daily.)

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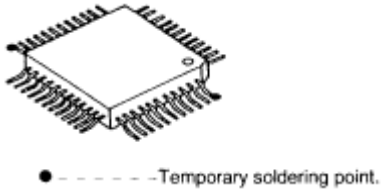
5.2 PROCEDURE

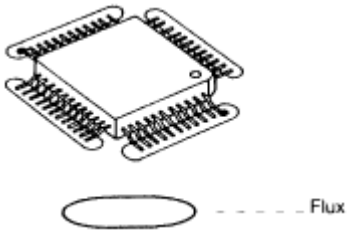
TOP PREVIOUS NEXT

1. Temporary fix FLAT PACKAGE IC by soldering on two marked 2 pins.

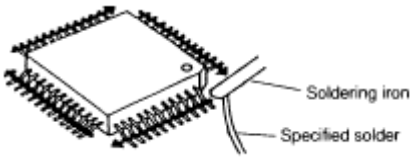
   *Most important matter is accurate setting of IC to the corresponding soldering foil.



2. Apply flux for all pins of FLAT PACKAGE IC.



3. Solder employing specified solder to direction of arrow, as sliding the soldering iron.

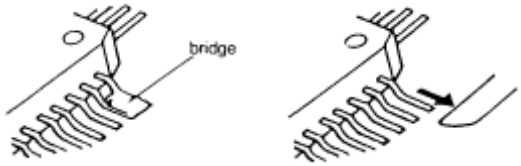


TOP PREVIOUS NEXT

5.3 MODIFICATION PROCEDURE OF BRIDGE

TOP PREVIOUS NEXT

1. Re-solder slightly on bridged portion.
2. Remove remained solder along pins employing soldering iron as shown in below figure.



TOP PREVIOUS NEXT

6 CPU DATA (BASE UNIT)

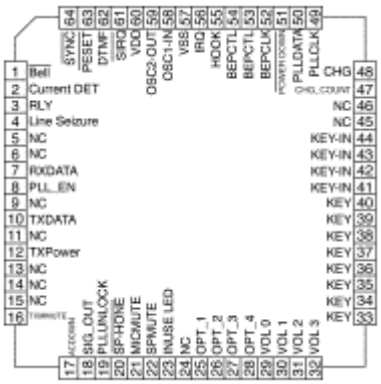
TOP PREVIOUS NEXT

6.1 IC201

TOP PREVIOUS NEXT

6.1 IC201

TOP PREVIOUS NEXT



Pin. No.	Description	I/O	High	High-Z	Low
1	BELL	D.I	HI	-	Low
2	Not Used	D.O	-	-	Fixed
3	RLY	D.O	ON	-	OFF
4	LINE SEIZURE	D.O	ON	-	OFF
5	Not Used	D.O	-	-	Fixed
6	Not Used	D.O	-	-	Fixed
7	RX DATA	D.I	DATA	-	DATA
8	PLL_EN	D.O	ON	-	OFF
9	Not Used	D.O	-	-	Fixed
10	TX DATA	D.O	DATA	-	DATA
11	Not Used	D.O	-	-	Fixed
12	TX POWER	D.O	OFF	-	ON
13	Not Used	D.O	-	-	Fixed
14	Not Used	D.O	-	-	Fixed
15	Not Used	D.O	-	-	Fixed
16	TX LINE MUTE	D.O	ON	-	OFF
17	AC DOWN	D.I	-	-	-
18	SIG OUT	D.I	Weak electric field	Strong electric field	-
19	Not Used	D.O	-	-	Fixed
20	Not Used	D.O	-	-	Fixed
21	Not Used	D.O	ON	-	OFF
22	Not Used	D.O	ON	-	OFF
23	IN USE LED	D.O	ON	-	OFF
24	Not Used	D.O	-	-	Fixed
25	POT_1	D.I	None	-	Provided
26	POT_2	D.I	None	-	Provided
27	POT_3	D.I	None	-	Provided
28	POT_4	D.I	None	-	Provided
29	Not Used	D.O	-	-	Fixed
30	Not Used	D.O	-	-	Fixed
31	Not Used	D.O	-	-	Fixed
32	Not Used	D.O	-	-	Fixed

Pin. No.	Description	I/O	High	High-Z	Low
33	OPT Strobe	D.O	-	Normal	Active
34	OPT Strobe	D.O	-	Normal	Active
35	OPT Strobe	D.O	-	Normal	Active
36	TEST PORT	D.I	None	-	Provided
37	Key Strobe	D.O	-	Active	Normal
38	Key Strobe	D.O	-	Active	Normal
39	Key Strobe	D.O	-	Active	Normal
40	Key Strobe	D.O	-	Active	Normal
41	KEY IN	D.I	KEY OFF	-	KEY ON
42	KEY IN	D.I	KEY OFF	-	KEY ON
43	KEY IN	D.I	KEY OFF	-	KEY ON
44	KEY IN	D.I	KEY OFF	-	KEY ON
45	Not Used	D.O	-	-	Fixed
46	Not Used	D.O	-	-	Fixed
47	CHG CLT	D.O	Ultra	-	Trickle
48	CHARGE	D.I	NON CHARGE	-	CHARGE
49	PLL CLOCK	D.O	Active	Normal	Active
50	PLL DATA	D.O	Active	Normal	Active
51	POWER DOWN	D.I	Normal	-	DOWN
52	Beep Clock	D.O	Active	Normal	Active
53	Beep CTL0	D.O	-	-	Fixed
54	Beep CTL1	D.O	-	-	Fixed
55	Not Used	D.O	-	-	Fixed
56	Ext. Interrupt	D.I	Normal	-	-
57	GND		-	-	Normal
58	OSC1	A.I	Active	-	Active
59	OSC2	A.O	Active	-	Active
60	Power	D.I	Normal	-	-
61	Ext. Interrupt		Normal	-	-
62		A.O	Active	Normal	Active
63	RESET	D.I	Normal	-	Reset
64	Sync Signal	D.O	Active	-	Active

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7 CPUDATA (HANDSET)

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7.1 IC901

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8 EXPLANTION OF IC TERMINALS

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8.1 Base Unit: IC801

8.2 HANDSET: IC101

TOP PREVIOUS NEXT

8.1 Base Unit: IC801

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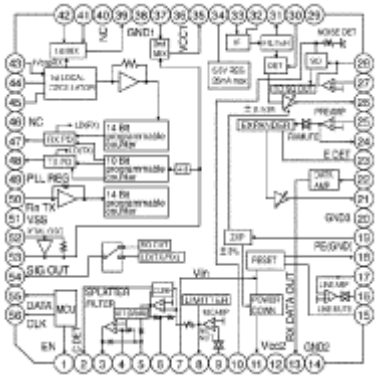

Pin. No.	Description	Pin. No.	Description
1	EN	29	IF-VREF
2	C-DET	30	QUAD
3	SF-OUT	31	BM-OUT
4	SF-C2	32	IF-REF
5	SF-C1	33	IF-IN
6	COMP-DC	34	VREG
7	PD-IN	35	MIX2-OUT
8	MIC-OUT	36	VCC1
9	MIC-IN	37	MIX2-IN
10	SQ-DET	38	GND1
11	PD-OUT	39	MIX1-OUT
12	VCC2	40	NC
13	D-OUT	41	MIX1-IN1
14	GND2	42	MIX1-IN2
15	RESC	43	VA-CONT
16	L IN-IOUT	44	VCOT1
17	L IN-IN	45	VCOT2
18	RESET	46	NC
19	PE	47	RX-PD
20	GND3	48	TX-PD
21	EXP-OUT	49	VDD
22	D-IN	50	fINT
23	E-DET	51	VSS
24	Pre-AMP-OUT	52	OSCI
25	Pre-AMP-IN	53	OSCO
26	DET-OUT	54	Sig-Out
27	NF-IN	55	DATA
28	NF-OUT	56	CLK

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8.2 HANDSET: IC101

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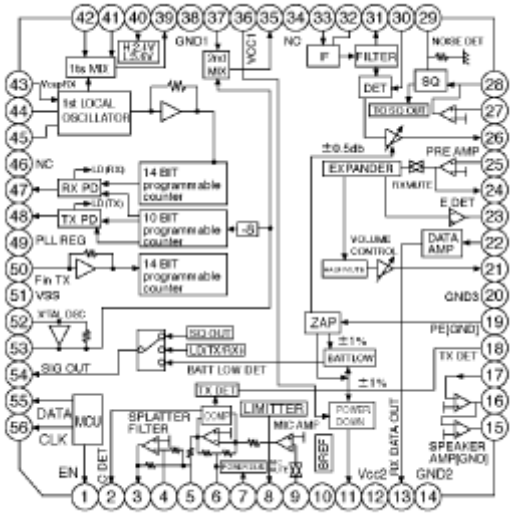

Pin. No.	Description	Pin. No.	Description
1	EN	29	N-DET
2	C-DET	30	QUAD
3	SF-OUT	31	PH-OUT
4	SF-P	32	IF-PASS
5	COMP-OUT	33	IF-IN
6	COMP-REF	34	IF-VREF
7	PD IN	35	2MIX-OUT
8	MIC-OUT	36	VCC 1
9	MIC-IN	37	2MIX-IN
10	BREF	38	GND 1
11	PD OUT	39	1MIX-OUT
12	VCC 2	40	PDSW
13	DATA-AMP-OUT	41	RF-IN2
14	GND 2	42	RF-IN1
15	SP-OUT2	43	VA-CONT
16	SP-OUT1	44	1st-Lo1
17	SP-IN	45	1st-Lo2
18	TX-DET	46	NC
19	PE	47	RX-PD
20	GND 3	48	TX-PD
21	VOL OUT	49	PLL-REG
22	DATA-AMP-IN	50	F IN TX
23	E-DET	51	VSS
24	Pre-AMP-OUT	52	2Lo-IN
25	Pre-AMP-IN	53	2Lo-OUT
26	DET-OUT	54	Sig-Out
27	N FIL-IN	55	DATA
28	N FIL-OUT	56	CLK

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9 EXPLANATION OF CPU DATA COMMUNICATION

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9.1 Standby→TALK

9.2 OUTGOING CALL MODE (STANDBY→TALK):

9.3 OUTGOING CALL MODE (STANDBY→ TALK):

9.4 OUTGOING CALL MODE (STANDBY→TALK):

9.5 CH CHANGE MODE:

9.6 To terminate Communication

9.7 Ringing

9.8 Ports for transmitting and receiving of data

9.9 Waveform of DATA used for cordless transmission and reception

9.9.1 HANDSET

9.9.2 BASE UNIT

9.10 When LINKing

9.11 Pulse Dial

9.12 Tone Dial

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9.1 Standby→TALK

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A. The base unit continuously scans the handset´s

TX frequencies of the 10 original channels (a). Also, the

base unit scans the handset´s TX frequencies of the 15 new

channels (b), until a vacant (b) channel is found. a. The base unit stores the number of the vacant (b)

channel, and the status of all 10 (a) channels into

memory.

1. When the user pushes the TALK button, the handset sends a TALK-ACK request to the base unit. [on the handset´s (a) TX frequency]
2. The base unit sends an ACK-OK to the handset. [on the base unit´s (a) TX frequency]

   a. This ACK-OK includes the number of the 2 vacant

   channels. One vacant (a) channel and the vacant (b) channel

   selected and stored in step A.
3. The handset checks the handset´s RX frequency of the vacant (b) channel selected& stored in step A. If this channel is vacant, then the handset proceeds to step 4a. If this channel is not vacant, then the handset proceedsto step 4b.
4. a. The handset sends a TALK-COMMAND. This

   TALK-COMMAND includes the number of the vacant

   (b) channel selected and stored in step Aa.

   This TALK-COMMAND is sent on the handset´s (a)

   TX frequency.

   After sending the TALK-COMMAND, the handset changes to the vacant (b) channel. Then, the base unit seizes the telephone line and changes to the vacant (b) channel.

   b. The handset sends a TALK-COMMAND.

   This TALK-COMMAND includes the number of the

   vacant (a) channel selected in step 2a.

   This TALK-COMMAND is sent on the handset´s (a)

   TX frequency.

After sending the TALK-COMMAND, the base unit seizes the telephone line. [The base unit and handset have been communicating on an (a) channel since step 1. Therefore they both remain on that (a) channel]

5. A dial tone is heard.

Notes:

All data communication between the handset and base unit is done on one of the (a) channels prior to completing the link in step 5. (a) - channels 16-25 (old) - these channels are paired,

as per FCC requirements (b) - channels 1-15 (new) - these channels are paired,

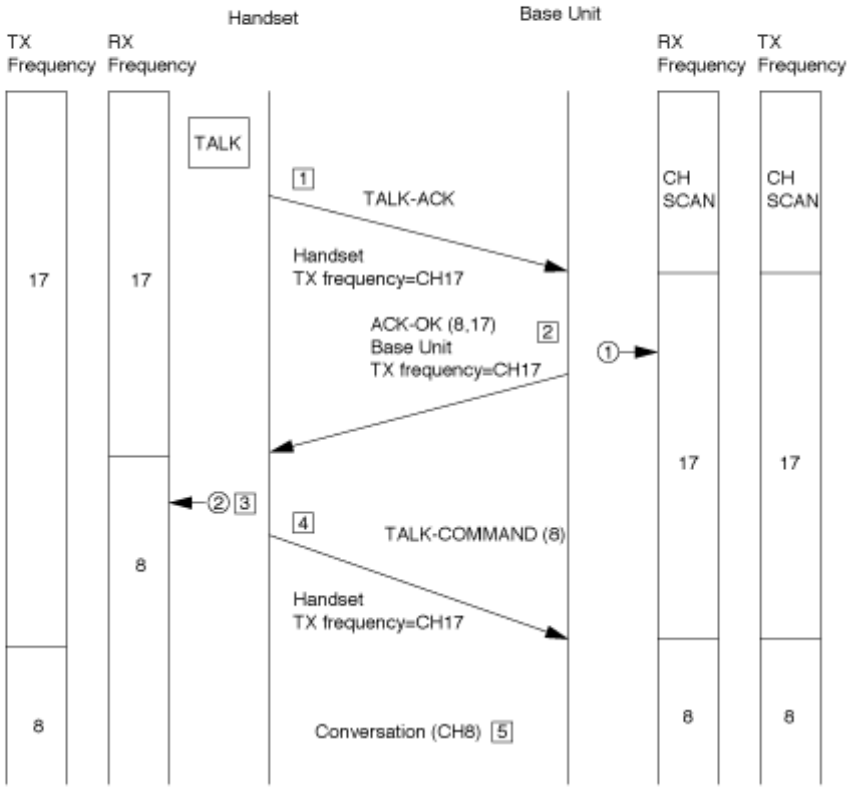
as per the manufacturer´s choice

TOP PREVIOUS NEXT

9.2 OUTGOING CALL MODE (STANDBY→TALK):

TOP PREVIOUS NEXT

ex) Base Unit : Select channel (b) is vacant ①
Handset : Select channel (b) is vacant ②



① When the base unit is scanning, the base unit's RX frequency CH8 is vacant.
The base unit sends an ACK-OK, which includes the numbers 8 and 17.

② The handset checks the handset RX frequency CH8.
The RX frequency CH is vacant.
The handset sends TALK-COMMAND, which includes the number 8.

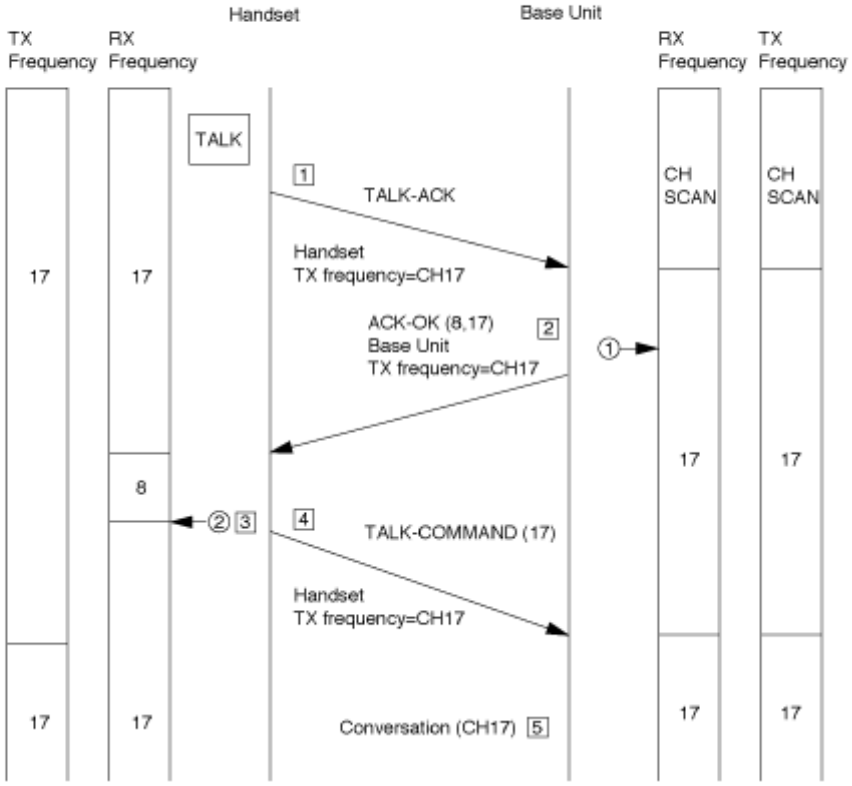
Note: Channel (a) 16-25
Channel (b) 1-15 (New Channel)

TOP PREVIOUS NEXT

9.3 OUTGOING CALL MODE (STANDBY→ TALK):

TOP PREVIOUS NEXT

ex) Base Unit : Select channel (b) is vacant ①
Handset : Select channel (b) is occupied ②



① When the base unit is scanning, the base unit's RX frequency CH8 is vacant.
The base unit sends an ACK-OK, which includes the numbers 8 and 17.

② The handset checks the handset RX frequency CH8.
The handset RX frequency CH8 is occupied.
The handset doesn't use CH8.
The handset sends TALK-COMMAND, which includes the number 17.

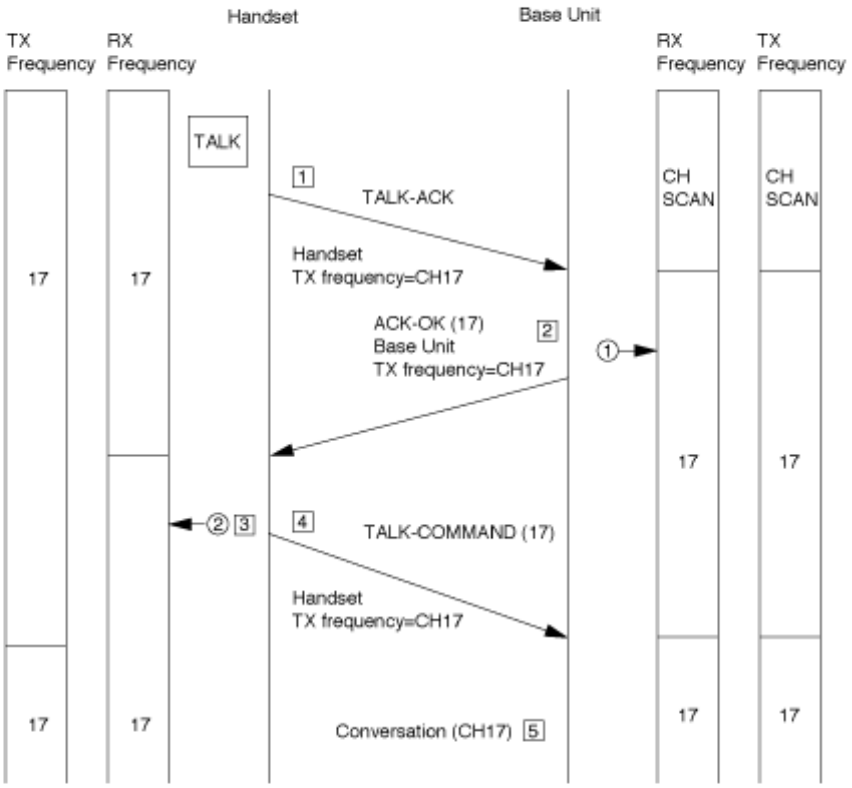
Note: Channel (a) 16-25
Channel (b) 1-15 (New Channel)

TOP PREVIOUS NEXT

9.4 OUTGOING CALL MODE (STANDBY→TALK):

TOP PREVIOUS NEXT

ex) Base Unit : All of channel (b) is occupied ①



① When the base unit is scanning, the base unit's RX frequency Channel (b) is vacant. The base unit sends an ACK-OK, which includes the number 17 only.

② The handset does not check the handset RX frequency. The handset sends TALK-COMMAND, which includes the number 17.

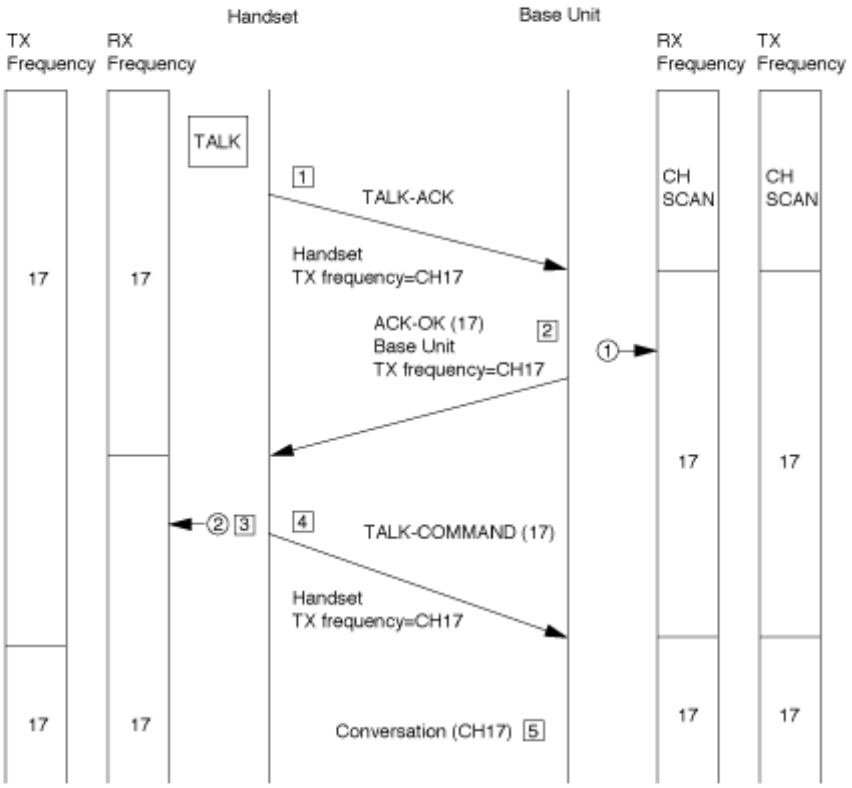
Note: Channel (a) 16-25
Channel (b) 1-15 (New Channel)

TOP PREVIOUS NEXT

9.4 OUTGOING CALL MODE (STANDBY→TALK):

TOP PREVIOUS NEXT

ex) Base Unit : All of channel (b) is occupied ①



① When the base unit is scanning, the base unit's RX frequency Channel (b) is vacant. The base unit sends an ACK-OK, which includes the number 17 only.

② The handset does not check the handset RX frequency. The handset sends TALK-COMMAND, which includes the number 17.

Note: Channel (a) 16-25
Channel (b) 1-15 (New Channel)

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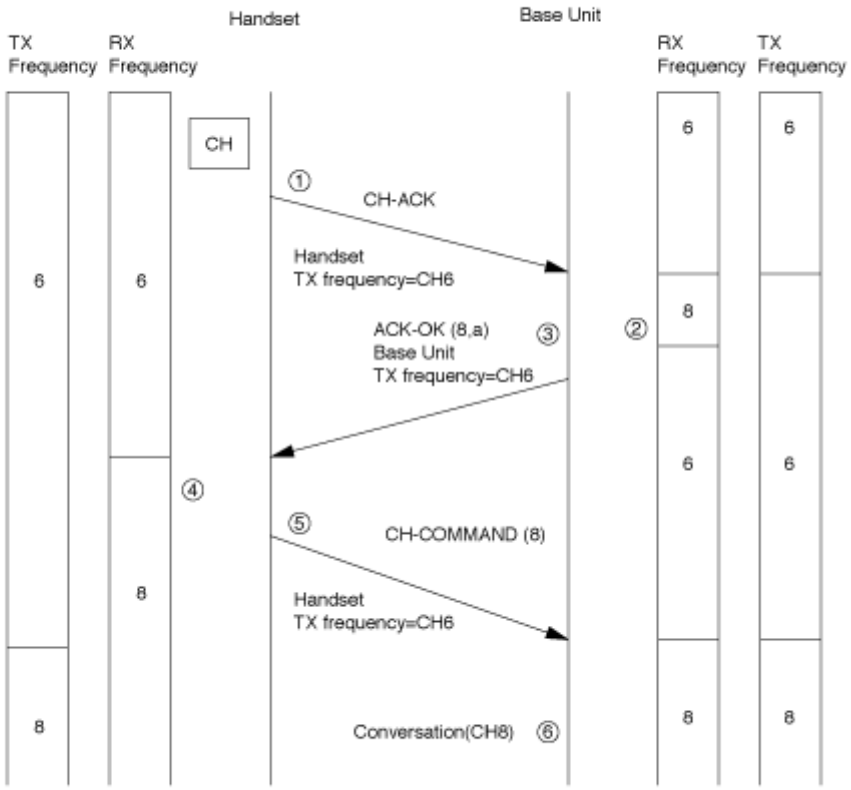
9.5 CH CHANGE MODE:

TOP PREVIOUS NEXT

ex): (CH6 →CH8)



① When the user pushes the CH button, the handset sends a CH-ACK request to the base unit. (on the handset's conversation frequency)

② The base unit checks the base unit's RX frequency of the vacant (b) channel selected at random.

③ The base unit sends a ACK-OK.
This ACK-OK includes the number of the 2 vacant channels.
One vacant (a) channel and the vacant (b) channel selected in step ②.

④ The handset checks the handset's RX frequency of the vacant (b) channel in step ②.

⑤ The handset sends a CH-COMMAND.
This CH-COMMAND includes the number of the vacant (b) channel.
After sending the CH-ACK, handset changes to a vacant (b) channel.

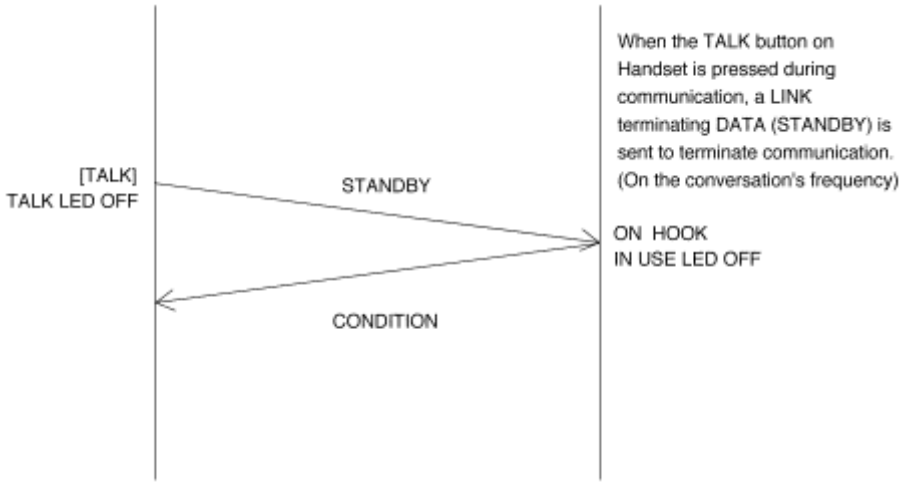
⑥ The base unit changes to the vacant (b) channel.
The a conversation can be accessed.

Note: (a) - Channels 16-25 (Old)
(b) - Channels 1-15 (New)

TOP PREVIOUS NEXT

9.6 To terminate Communication

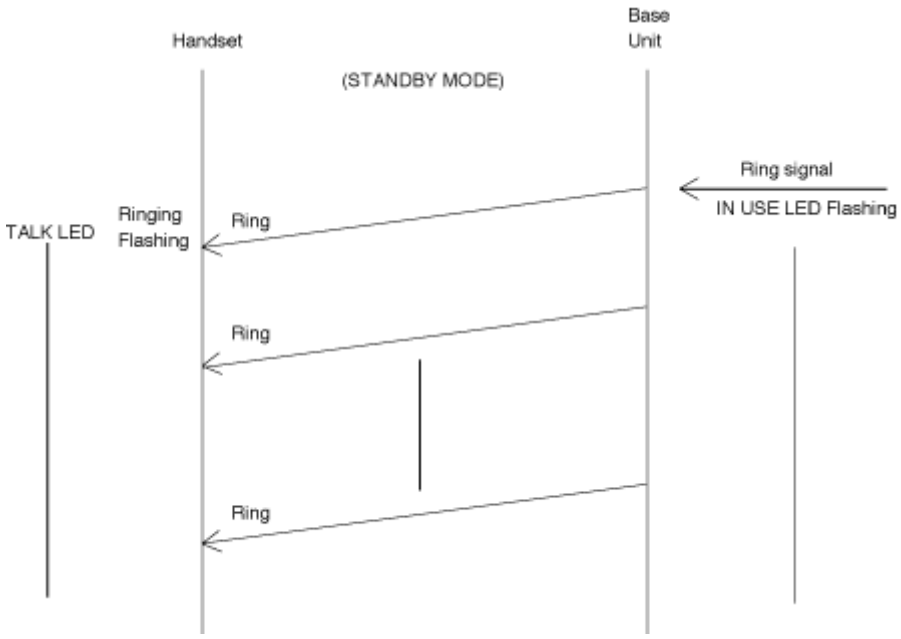
TOP PREVIOUS NEXT



TOP PREVIOUS NEXT

9.7 Ringing

TOP PREVIOUS NEXT



After detecting the Ring signal from circuit, Base Unit sends a ring signal DATA (Ring) on the base´s (a) TX frequency, then the Handset starts ringing.

Note: (a) is channels 16-25 (old)...cthese channels are paired as per FCC requirements.

TOP PREVIOUS NEXT

9.8 Ports for transmitting and receiving of data

TOP PREVIOUS NEXT

Handset : transmitting ... 44 Pin receiving ... 25 Pin

Base Unit : transmitting ... 10 Pin receiving ... 7 Pin

TOP PREVIOUS NEXT

9.9 Waveform of DATA used for cordless transmission and reception

TOP PREVIOUS NEXT

The DATA which is transmitted from the Handset to the Base Unit is combination of DATA 0, DATA 1, DATA Delimt, Pre data and End data of P1.

The DATA which is transmitted from the Base Unit to the Handset is combination of DATA 0, DATA 1, DATA Delimt, Pre data and End data of P2.

9.9.1 HANDSET

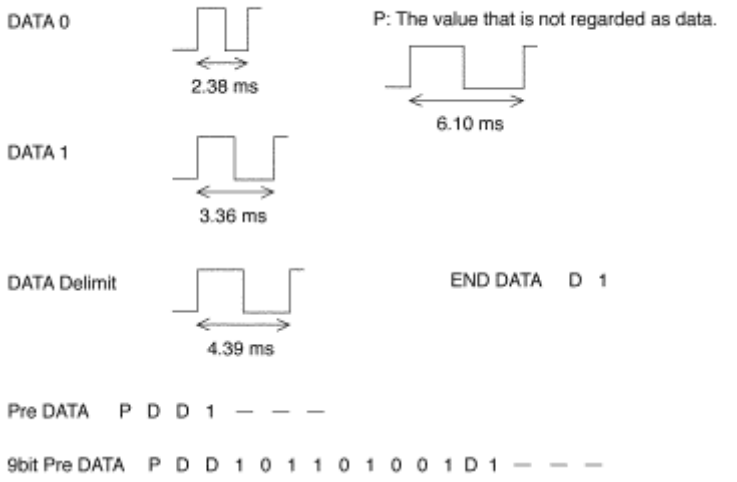
9.9.2 BASE UNIT

TOP PREVIOUS NEXT

9.9.1 HANDSET

TOP PREVIOUS NEXT

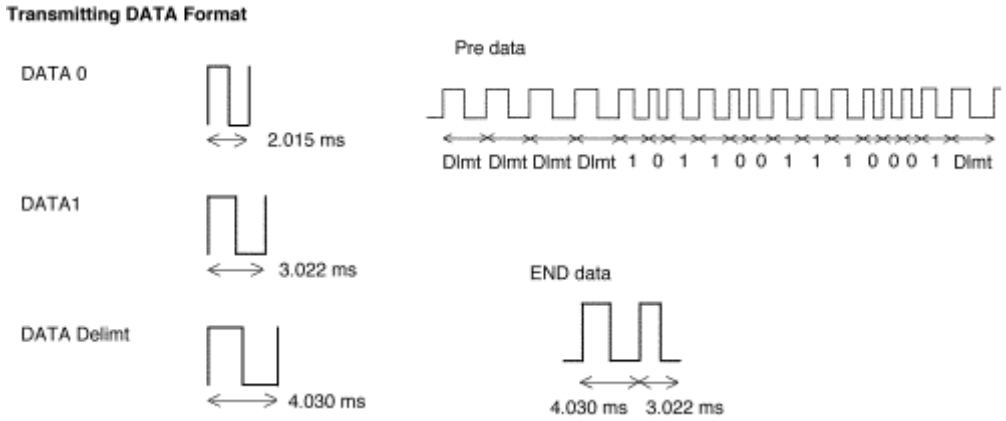
Transmitting DATA Format



TOP PREVIOUS NEXT

9.9.2 BASE UNIT

TOP PREVIOUS NEXT



TOP PREVIOUS NEXT

9.10 When LINKing

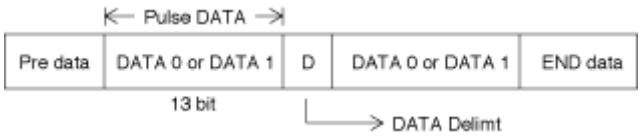
TOP PREVIOUS NEXT

When LINKing from the Handset (when becoming STBY to TALK), DATA is transmitted in above format. The combined portion of DATA 0 and DATA 1 is transmitted in LINK requesting DATA (40 bit) format first.Then,when LINK OK(ACK-OK) DATA(46bit) is returnedfrom the Base Unit, it is sent as LINK form DATA after changing the combination of DATA 0 and DATA 1. And the DATA Delimt is between each Frame as a stop.The contents of LINK requesting DATA and LINK form DATA are different depending on each operation.

TOP PREVIOUS NEXT

9.11 Pulse Dial

TOP PREVIOUS NEXT

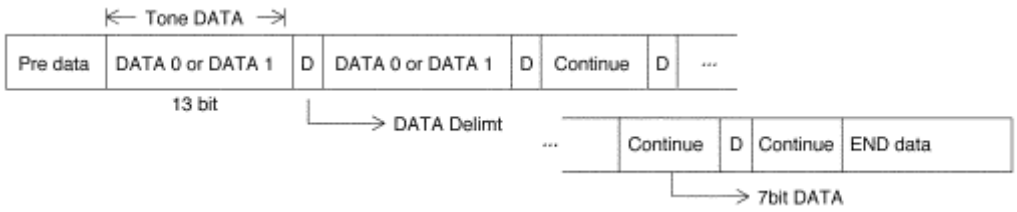


When executing Pulse Dial,the Pulse Dial DATA is transmitted from the Handset to the Base Unit in above format.The combination of DATA 0 and DATA 1 are changed by each Dial No. And the DATA Delimt is between each Frame as a stop. The number of Frame is2.

TOP PREVIOUS NEXT

9.12 Tone Dial

TOP PREVIOUS NEXT



When executing Tone Dial, Tone Dial DATA is transmitted from the Handset to the Base Unit in above format. The DATA is changed by Dial No. as same as Pulse Dial. When Tone Dialing, DATA (Continue DATA) that the key is pressed continuously is sentto the Base Unit during the key is pressed. When depressing the key, and the END data is sent finally.

NOTE

A million kinds of the security code are available for the model KX-TC1000B/KX-TC1001W. Each time the handset is set on the cradle of the base unit (for charging), the CPU automatically change the security code.

TOP PREVIOUS NEXT

10 TERMINAL GUIDE OF IC´S, TRANSISTORS AND DIODES

TOP PREVIOUS NEXT

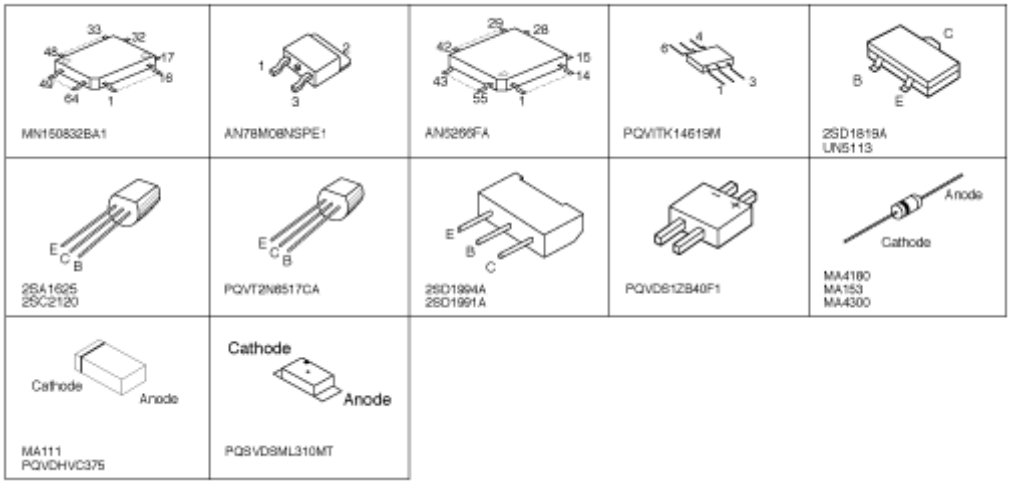
10.1 (BASE UNIT)

10.2 (HANDSET)

TOP PREVIOUS NEXT

10.1 (BASE UNIT)

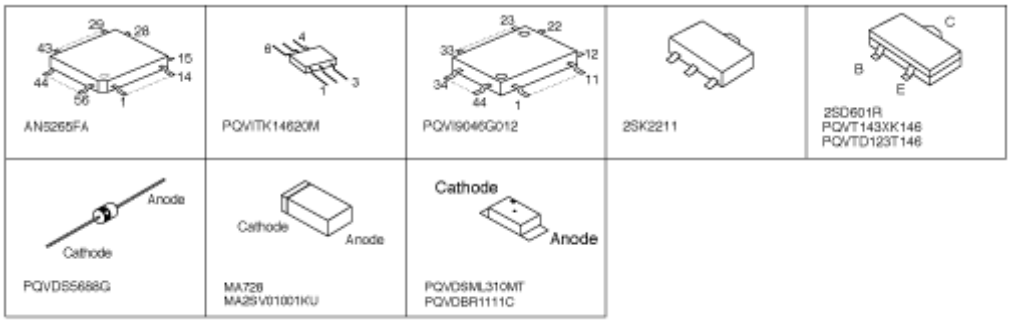
TOP PREVIOUS NEXT



TOP PREVIOUS NEXT

10.2 (HANDSET)

TOP PREVIOUS NEXT



TOP PREVIOUS NEXT

11 CPU OPTION

TOP PREVIOUS NEXT

11.1 Base Unit

11.2 Flash Button

TOP PREVIOUS NEXT

11.1 Base Unit

TOP PREVIOUS NEXT

0= Without

1= With

FLASH TIME	700 msec.	100 msec.	600 msec.	250 msec.	300 msec.	400 msec.	110 msec.	90 msec.
D906	0	0	0	0	1	1	1	1
D907	0	0	1	1	0	0	1	1
D908	0	1	0	1	0	1	0	1

D906-D908 are used for default setting.

When you charge the flash time, do the following procedure.

In case the program should be set frequency, change the default at D906-D908, then set the program.

TOP PREVIOUS NEXT

11.2 Flash Button

TOP PREVIOUS NEXT

Pressing **FLASH** allows you to use special features of your host PBX such as transferring an extension call or accessing special telephone services (optional), such as call waiting.

Selecting the flash time
The flash time depends on your telephone exchange or host PBX. You can select the following flash times; "90, 100, 110, 250, 300, 400, 600, 700 msec (milliseconds)", using the handset near the base unit. Your phone comes from the factory set to "700 msec". The TALK indicator light must be off before programming.

Press **PROGRAM** ➡ Dialing button (**1** to **8**) ➡ **AUTO** ➡ **FLASH** .

1: 90 msec **2: 100 msec** **3: 110 msec**
4: 250 msec **5: 300 msec** **6: 400 msec**
7: 600 msec **8: 700 msec**

- If 3 beeps sound after programming, a wrong key was pressed. Restart from the beginning.
- If a power failure occurs, the setting will return to the factory preset (700 msec). Reprogram if necessary.
- If you connect the unit to PBX, a longer flash time may be necessary to use PBX functions (transferring a call, etc). Consult your PBX installer for the correct setting.

TOP PREVIOUS NEXT

12 FOR SCHEMATIC DIAGRAM

TOP PREVIOUS NEXT

12.1 BASE UNIT (page 25)

12.2 HANDSET (page 26)

TOP PREVIOUS NEXT

12 FOR SCHEMATIC DIAGRAM

TOP PREVIOUS NEXT

12.1 BASE UNIT (page 25)

12.2 HANDSET (page 26)

TOP PREVIOUS NEXT

12.1 BASE UNIT (page 25)

TOP PREVIOUS NEXT

DC voltage measurements are taken with electronic voltmeter from negative voltage line. (Talk Position)

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

Important Safety Notice:The shaded area on this schematic diagram incorporatesspecial features important for protection from fire andelectrical shock hazards.When servicing it is essential that only manufacturer´sspecifiedparts be used for the critical components in theshaded areas of the schematic.

TOP PREVIOUS NEXT

12.2 HANDSET (page 26)

TOP PREVIOUS NEXT

DC voltage measurements are taken with electronic voltmeter from negative voltage line. (Talk Position)

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

TOP PREVIOUS NEXT

13 ADJUSTMENTS (BASE UNIT)

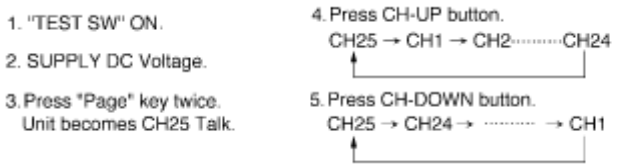
TOP PREVIOUS NEXT

If your unit have below symptoms, adjust each item using remedy column from the table.

Symptom	Remedy
The base unit dose not respond to a call from handset.	Make adjustments in item (A)
The base unit dose not transmit or the transmit frequency is off.	Make adjustments in item (B)
The transmit frequency is off.	Make comfirmation in item (C)
The transmit power output is low, and the operating distance between base unit and handset is less than normal.	Make adjustments in item (D)
The reception sensitivity of base unit is low with noise.	Make adjustments in item (E)
The transmit level is large or small.	Make adjustments in item (F)
The reception level is large or small.	Make adjustments in item (G)
The unit does not link.	Make comfirmation in item (H)

How to set the test mode.

CH25 Test Mode



While pressing "S2", supply DC voltage to base unit by S3.
Base unit is set to test mode then press "paging" key twice.

When replacing these parts, adjust as shown in table below table.

Replace Parts	Adjustment items	Test Mode	Adjustment Point	Procedure
IC801, L801 C841	(A) RX VCO Adjustment	Test Mode 25ch	L801	1. Set S3 to RX side. 2. Adjust L801 so that the reading of the Digital Voltmeter is 2.3 V ± 0.1 V.
IC802 , D851 L851	(B) TX VCO Adjustment	Test Mode 25ch	L851	1. Set S3 to TX side. 2. Adjust L851 so that the reading of the Digital Voltmeter is 2.3 V ± 0.1 V.
DUP802, X201 T202	(C) TX Frequency Confirmation	Test Mode 25ch	———	1. Set S4 to ON. 2. Comfirm so that the reading of the frequency counter is 46.970 MHz ±0.7 kHz.
VR852, IC802	(D) TX Power Adjustment	Test Mode 25ch	VR852	1. Set S8 to ON. 2. Adjust VR852 so that the reading of the RF VTVM is 220 mV ± 10 mV.

When replacing these parts, adjust as shown in table below.

Replace Parts	Adjustment items	Test Mode	Adjustment Point	Procedure
DUP801 CF801 CF802	(E) RX Sensitivity Confirmation (2nd IF output)	Test Mode 25ch		1. Set S6, S7 to ON. 2. Apply a 60dB μ Vemf output from S.S.G. (modulation frequency 1 kHz, dev. 0 kHz). 3. Confirm that the reading of the RF VTVM is maximum output (more than 20 mV).
IC801 Q105	(F) Line Output Level Confirmation	Test Mode 25ch		1. Set S6, S5 to ON. 2. Apply a 40dB μ Vemf output from S.S.G (modalation frequency 1kHz. dev. 3kHz). 3. Confirm that the reading of the AF VTVM is -5 dBm ± 2.0 dBm (600 Ω load).
IC801 D851	(G) Line Input Modulation Adjustment	Test Mode 25ch	VR851	1. Set S6, S9 and S10 to ON. 2. Input via loop simulator 1.0 kHz, -20.0 dBm (measured at T-R) signal. 3. Apply a 40 dB μ Vemf output from S.S.G. (modulation frequency 1 kHz, dev. 0 kHz). 4. Adjust VR851 so that the reading of the FM Deviation Meter is 4.0 kHz ± 0.1 kHz.
IC801 DUP801	(H) Noise Squelch Confirmation	Test Mode 25ch		1. Procedure 1. + Press S1 twice to set CHB. 2. Apply a 40dB μ Vemf output from S.S.G. (modulation frequency 4.0kHz, dev. 8kHz). 3. Oscilloscope become High. 4. Apply a 40dB μ Vemf output from S.S.G. (modulation frequency 4.0kHz, dev. 0kHz). 5. Oscilloscope become Low.

The connection of adjustment equipments are as shown in page 24.

TOP PREVIOUS NEXT

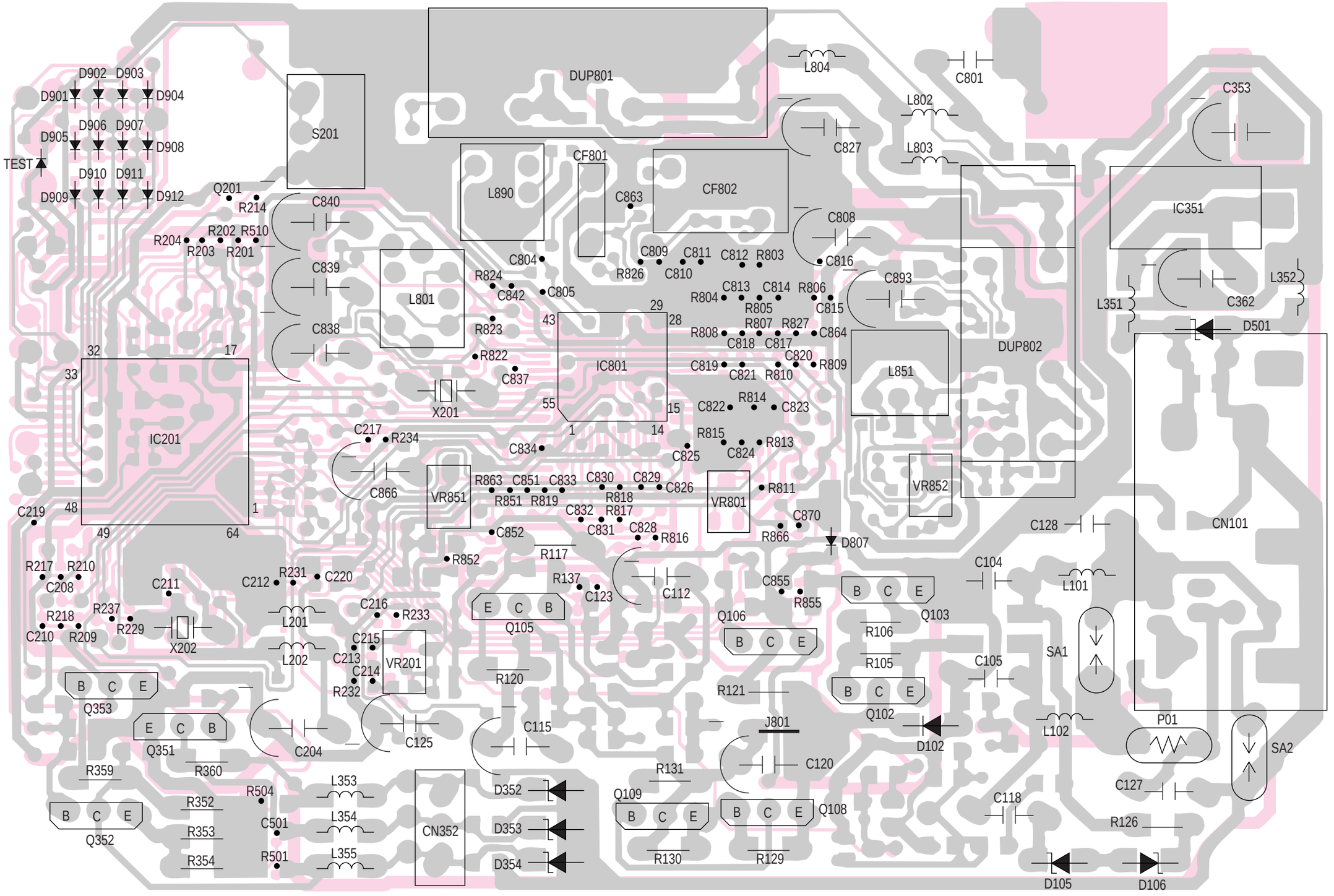
14 CIRCUIT BOARD AND WIRING CONNECTION DIAGRAM (BASE UNIT)

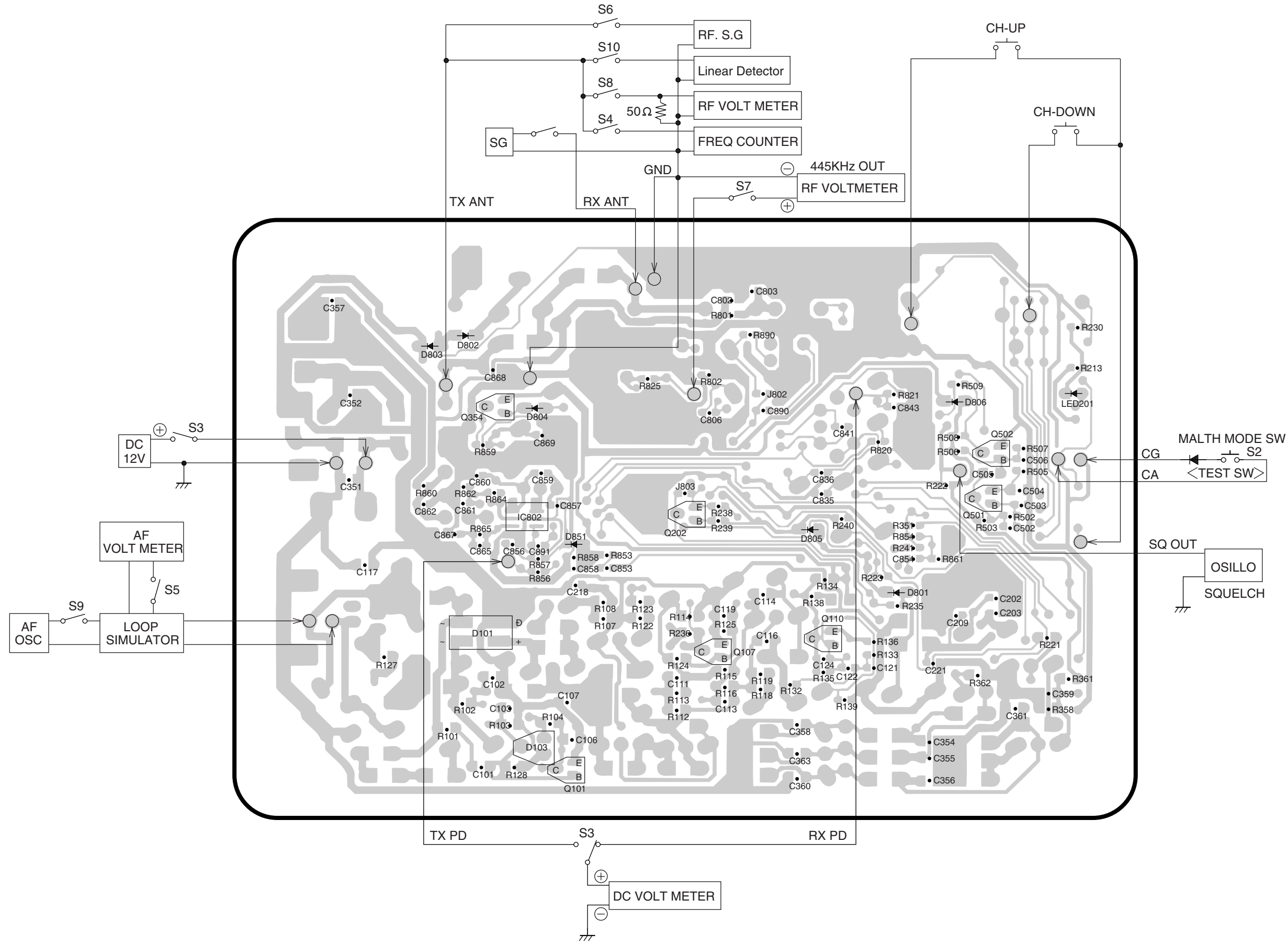
TOP PREVIOUS NEXT

14.1 Component View

14.2 Flow Solder Side View

TOP PREVIOUS NEXT


D902
D903
D901
D904
D906
D907
D905
D908
TEST
D910
D911
D909
D912
S201
Q201
R214
C840
R204
R202
R510
R203
R201
C839
C838
L801
C804
R824
C842
C805
R823
R822
C837
X201
IC201
32
17
33
48
1
49
64
C217
R234
C866
VR851
C219
C852
R852
R217
R210
C208
C211
C212
R231
C220
R218
R237
C210
R209
R229
X202
L201
L202
C216
R233
C215
C213
C214
R232
VR201
B C E
Q353
E C B
Q351
R359
R360
C204
C125
B C E
Q352
R352
R353
R354
R504
C501
R501
L353
L354
L355
CN352
DUP801
L890
CF801
C863
CF802
L804
C827
C808
C816
C809
C811
C812
R803
R826
C810
C813
C814
R806
R804
R805
C815
R807
R827
R808
C818
C817
C864
C820
C819
C821
R810
R809
IC801
29
28
43
55
15
1
14
C822
R814
C823
R815
C834
C825
R824
C813
C814
R806
R804
R805
C815
R807
R827
R808
C818
C817
C864
C820
C819
C821
R810
R809
R863
C851
C833
C830
C829
C826
R851
R819
R818
C832
R817
C831
C828
R816
R117
R137
C123
C112
E C B
Q105
C115
D352
D353
D354
R131
Q109
B C E
R130
B C E
Q108
R129
C120
J801
Q106
B C E
R121
C855
R855
C893
L802
L803
C801
VR801
R811
R866
C870
D807
B C E
Q103
R106
R105
B C E
Q102
D102
C105
L851
DUP802
VR852
C353
IC351
L352
L351
C362
D501
CN101
C128
C104
L101
SA1
L102
P01
SA2
C127
C118
R126
D105
D106


S6
RF. S.G
S10
Linear Detector
S8
50Ω
RF VOLT METER
S4
SG
FREQ COUNTER
GND
445KHz OUT
S7
RF VOLTMETER
TX ANT
RX ANT
CH-UP
CH-DOWN
MALTH MODE SW
S2
<TEST SW>
CG
CA
SQ OUT
OSILLO
SQUELCH
S3
DC
12V
AF
VOLT METER
S5
S9
AF
OSC
LOOP
SIMULATOR
TX PD
S3
RX PD
DC VOLT METER
C357
D803
D802
C868
C352
Q354
D804
C869
R859
C860
C859
R860
R862
R864
C862
C861
IC802
C857
C867
R865
C865
C856
C891
D851
R858
R853
R857
C858
C853
R856
C117
C218
R127
D101
R108
R123
R107
R122
C102
R102
C103
C107
R104
R103
R101
D103
C106
C101
R128
Q101
C803
C802
R801
R890
R825
R802
J802
C890
C806
J803
Q202
R238
R239
C836
C835
R240
D805
C841
R820
R821
C843
R509
D806
R508
R506
Q502
R507
C506
R505
C505
R222
C504
C503
Q501
R502
R503
C502
R351
R854
R241
C854
R861
R223
D801
R235
R134
R138
C202
C203
C209
R221
C114
C119
R125
R114
R236
C116
Q107
Q110
R136
R133
C121
C124
R135
C122
C221
R362
R361
C359
R358
C361
R124
C111
R113
R112
R115
R116
C113
R119
R118
R132
R139
C358
C363
C360
C354
C355
C356
R230
R213
LED201

15 SCHEMATIC DIAGRAM

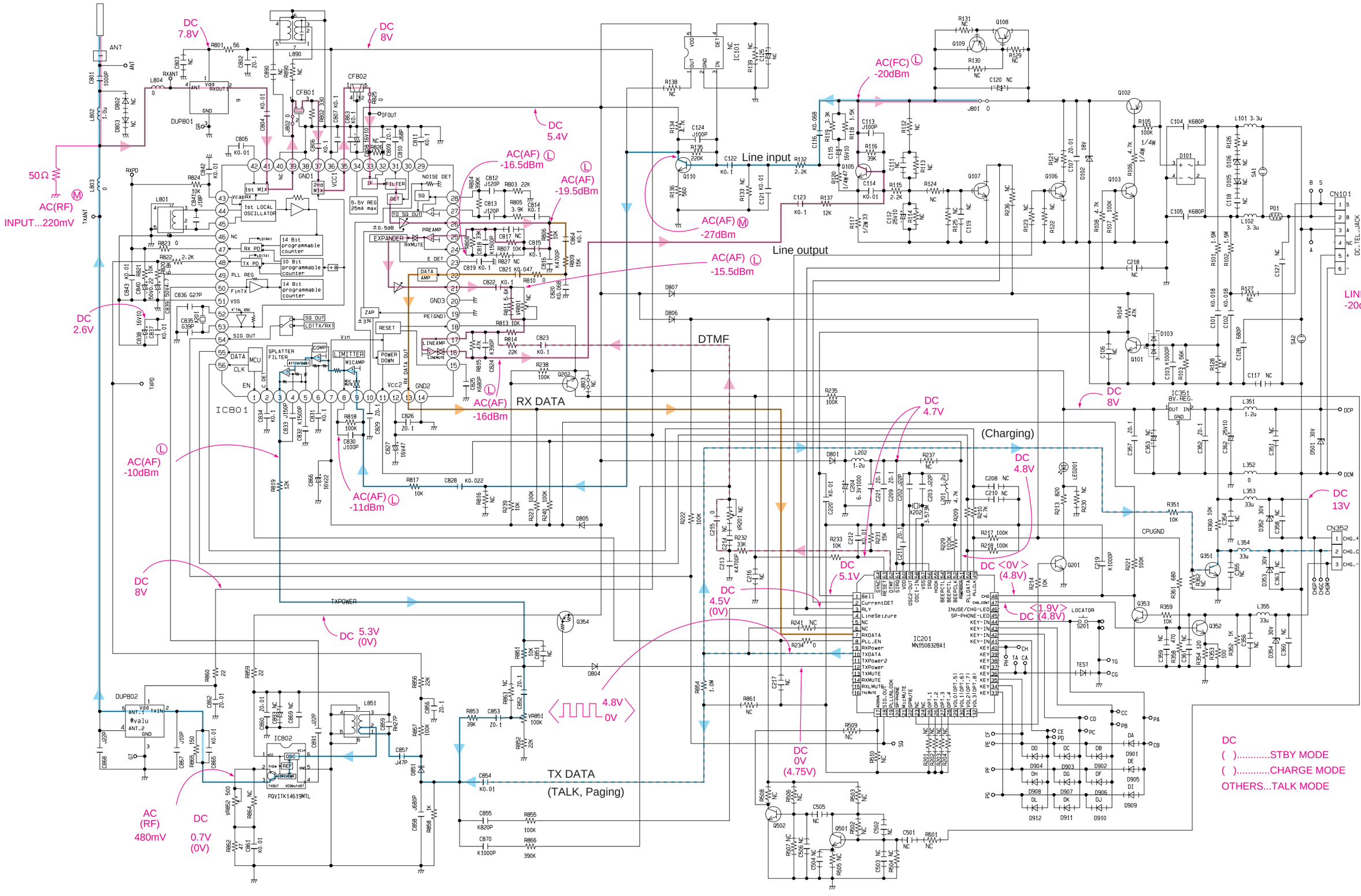
TOP PREVIOUS NEXT

15.1 BASE UNIT

15.2 HANDSET

TOP PREVIOUS NEXT

				Frequency	Deviation	
25ch	SG INPUT	49.970MHz,60dBm	Ⓛ:When measuring the line output	1kHz	3kHz.....Line output	600Ω Termination
			Ⓜ:When measuring the modulation	1kHz	0kHz.....Line input	-20dBm



25ch TALK
RX 46.970MHz
60 dBm

	MODULATION FREQUENCY	DEVIATION
RX	1k	3kHz
TX	1k	0kHz

2.55V(0.3V) ← TALK/STBY

DC 1.969
1.973

DC 2.596V TALK
2.613V STBY

50Ω
AC(RF)
SEND

AC(AF)

RX DATA

DC 2.405
2.416

2.599 TALK
2.614 STBY
DC

DC
2.482
2.497

DC
2.389
2.403

+2.6V

	TALK	STBY
31	55.4mV	2.413mV
32	2.397mV	2.412mV
33	2.388mV	2.402mV
36	0.283mV	2.394mV
37	2.380mV	2.394mV
41	4.5mV	0.1mV

AC(AF)
SEND

AC(AF)
BETWEEN
BOTH
TERMINALS

AC(AF)
25.53V
255mV

DC
2.046
2.05

TXDATA

TX DATA

DC
AC(RF)
SEND

MIC INPUT
-40 dBm

LED RAYOUT			
	RECHARGE (R)	LIN1 (B)	LINE2 (B)
TALK (B)	LED902	LED903	LED904
	LED901		

KEY RAYOUT(FACE)		
TALK	AUTO	INT'C
1	2	3
4	5	6
7	8	9
*	0	#
L	K	J	I
P	Q	N	M

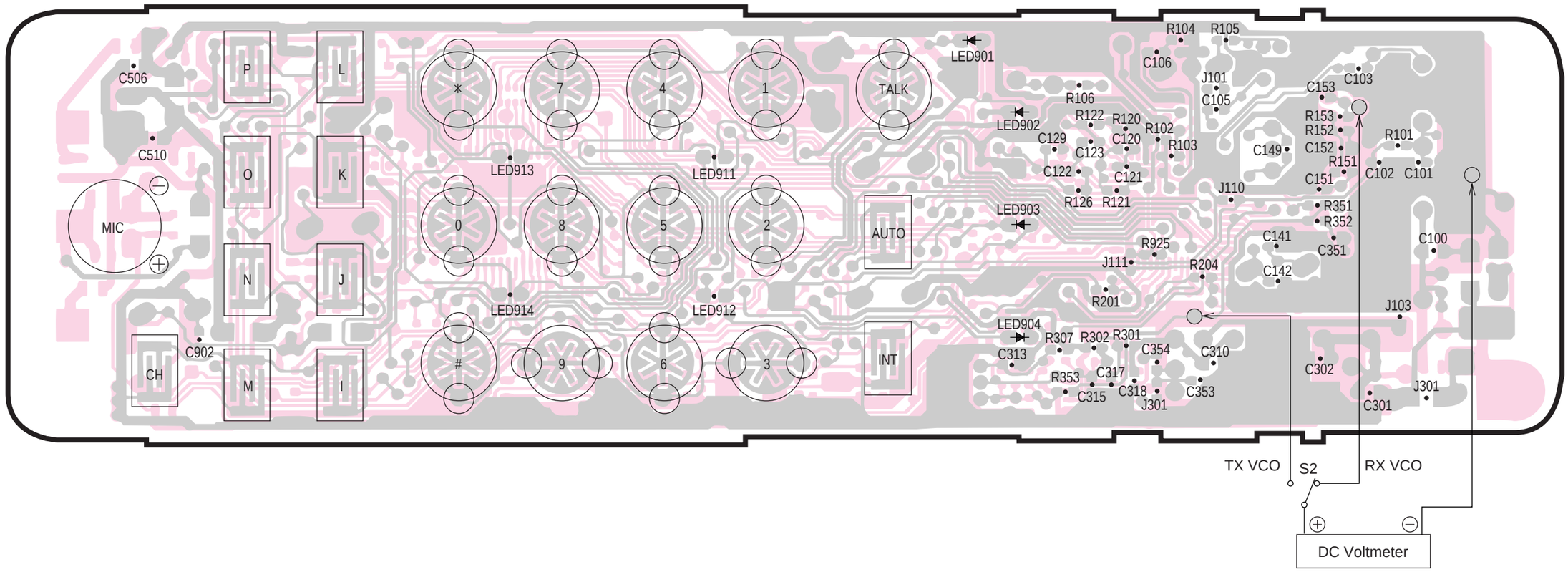
16 CIRCUIT BOARD AND WIARING CONNECTION DIAGRAM (HANDSET)

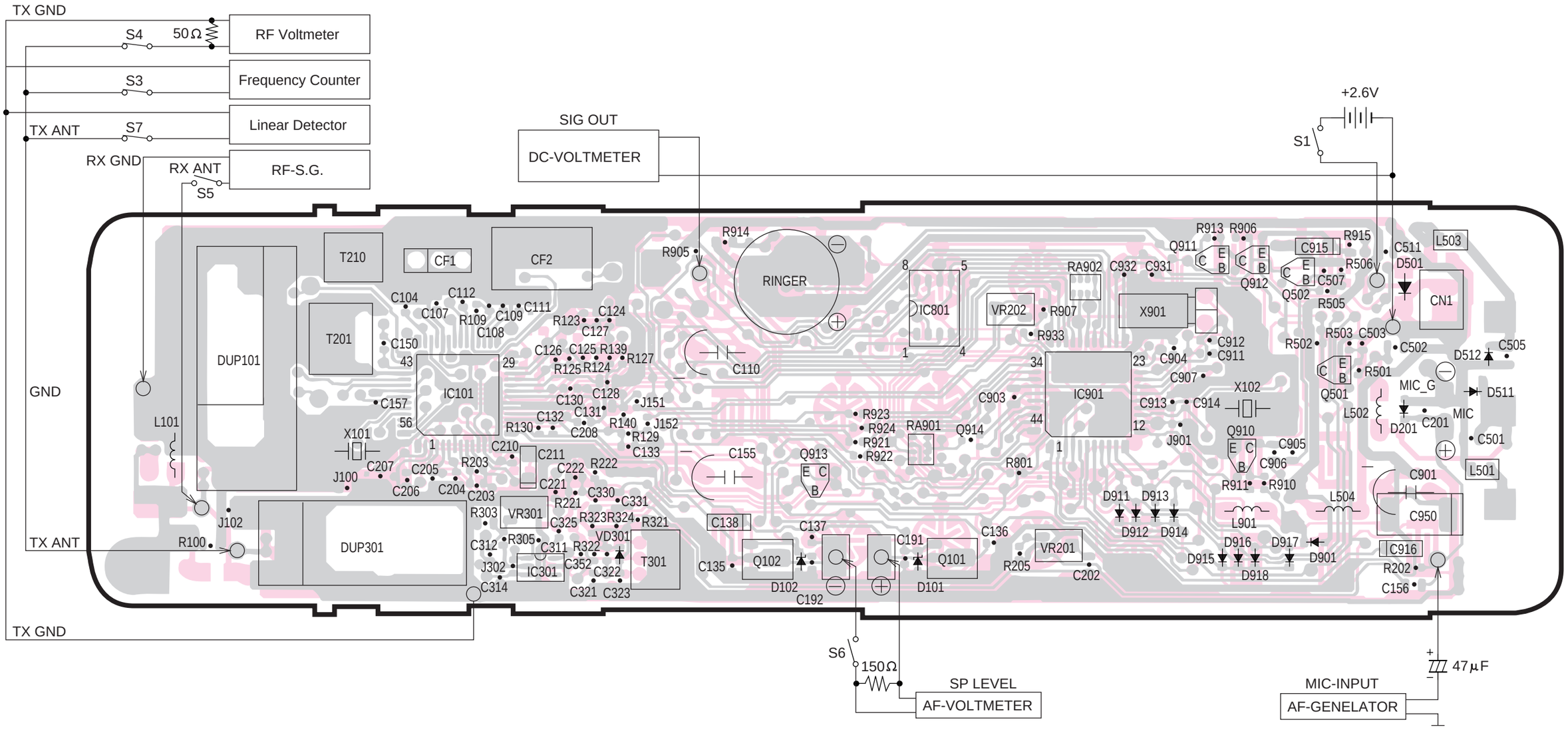
TOP PREVIOUS NEXT

16.1 Component View

16.2 Flow Solder Side View

TOP PREVIOUS NEXT


C506
C510
MIC
P
L
O
K
N
J
CH
M
I
C902
*
7
4
1
0
8
5
2
#
9
6
3
TALK
AUTO
INT
LED913
LED911
LED914
LED912
LED901
LED902
LED903
LED904
R104
R105
C106
J101
C105
R106
R122
R120
R102
C129
C123
C120
R103
C122
C121
R126
R121
C153
C103
R153
R152
C152
C149
R101
R151
C151
C102
C101
J110
R351
R352
C141
C351
C100
R925
J111
R204
C142
R201
J103
LED904
R307
R302
R301
C313
C354
C310
R353
C317
C315
C318
J301
C353
C302
J301
C301
TX VCO
S2
RX VCO
DC Voltmeter


TX GND
S4
50Ω
RF Voltmeter
S3
Frequency Counter
TX ANT
S7
Linear Detector
RX GND
RX ANT
S5
RF-S.G.
SIG OUT
DC-VOLTMETER
+2.6V
S1
GND
TX ANT
TX GND
L101
J102
R100
DUP101
DUP301
T210
T201
CF1
CF2
IC101
IC301
VR301
VD301
T301
X101
J100
J302
C314
C104
C107
C112
R109
C109
C111
C108
C150
C157
C207
C205
C206
C204
C203
C210
C211
C222
C221
R203
R303
R221
C325
R323
R324
R321
R305
C311
R322
C352
C322
C321
C323
R123
C124
C127
C126
C125
R139
R125
R124
R127
C130
C128
J151
C131
C132
R130
C208
R140
J152
R129
C133
C330
C331
C312
R914
R905
RINGER
C110
C155
C138
C135
Q102
D102
C192
C137
C191
Q101
D101
Q913
R923
R924
R921
R922
RA901
Q914
R801
IC801
VR202
R907
R933
C903
IC901
C904
C907
C913
C914
J901
RA902
C932
C931
X901
C912
C911
X102
Q910
C905
C906
R911
R910
D911
D913
D912
D914
L901
D916
D917
D915
D918
D901
L504
C136
VR201
R205
C202
R913
R906
Q911
Q912
C915
R915
C511
L503
D501
CN1
Q502
C507
R505
R506
R502
R503
C503
C502
C505
D512
R501
Q501
MIC_G
D511
L502
D201
C201
MIC
C501
L501
C901
C950
C916
R202
C156
S6
150Ω
SP LEVEL
AF-VOLTMETER
47μF
MIC-INPUT
AF-GENELATOR

17 ADJUSTMENTS (HANDSET)

TOP PREVIOUS NEXT

If your unit have below symptoms, adjust each item using remedy column from the table.

Symptom	Remedy
The movement of Battery Low Indicator is wrong.	Make confirmation in item (A)
The base unit does not respond to a call from handset.	Make adjustment in item (B)
The base unit does not transmit or the transmit frequency is off.	Make adjustment in item (C)
The transmit frequency is off.	Make confirmation in item (D)
The transmit power output is low, and the operating distancebetween base unit and handset is less than normal.	Make confirmation in item (E)
The reception sensitivity of base unit is low with noise.	Make adjustment in item (F)
Does not link between base unit and handset.	Make confirmation in item(G)
The reception level is high or low.	Make adjustment in item (H)
The transmit level is high or low.	Make adjustment in item (I)

Unit condltion:

1. Remove the antenna lead wire from P.C Board of

   handset.

2. Power Supply: DC 2.6V
3. Volume: HIGH (When P.C. Borad of handset is in test mode, volume condition is medium.Press "LOUD" key once.)
4. Speaker Load: 150Ω

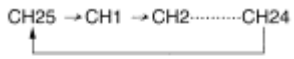
CH	TX Frequency	RX Frequency
CH25	49.970MHz	46.970MHz

How to set the test mode.

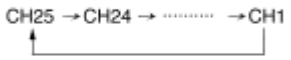
CH25 Test Mode

1. After connecting the diode D912 and apply a power supply DC 2.6 V.
   (The unit becomes CH25 Talk)
2. Press the talk switch.
   (The unit becomes CH25 standby)
3. Press the Talk Switch.

4. Press the channel switch,



5. Press the "FLASH" switch,



When replacing these parts, adjust as shown in table below.

Replace Parts	Adjustment items	Test Mode	Adjustment Point	Procedure
IC101	(A) Battery Low Confirmation	CH25 Talk	—	1. Set S1 to ON. 2. Set the power supply voltage to DC 2.40 V, and confirm so that the reading of oscilloscope is High. 3. Set the power voltage to DC 2.30 V, and confirm so that the reading of oscilloscope is Low.
IC101, X101, T301, VD301	(B) TX VCO Voltage Adjustment	CH25 Talk	T301	1. Set S2 to TX VCO side. 2. Adjust T301 so that the reading of digital voltmeter is 1.5 V ±0.1 V (After adjusting, set S2 to OFF).
IC101, X101, T201	(C) RX VCO Voltage Adjustment	CH25 Talk	T201	1. Set S2 to RX VCO side. 2. Adjust L5 so that the reading of digital voltmeter is 1.5 V ± 0.1 V (After adjusting, set S2 to OFF).
X101, IC101 C141, C142	(D) TX frequency Confirmation	CH25 Talk	—	1. Set S3 to ON. 2. Confirm that the reading of frequency counter is 49.970 MHz ±700 Hz .
DUP301	(E) TX Power Confirmation	CH25 Talk	—	1. Set S4 to ON (S3:OFF). 2. Output level should be over 300 mV on RF VTVM (50 Ω load).
DUP101 IC101 CF1 CF2	(F)RX Confirmation (2nd IF Output)	CH25 Talk	—	1. Set S7 to ON. 2. Apply a 60 dB μVemf output from S.S.G. (modulation frequency 1kHz, dev. 3kHz) 3. Comfirm 2nd IF output so that its reading of RF VTVM is more than 15mV.
	(I) Noise Squelch Confirmation	CH25 Talk		1. Procedure 1. + Press "1" key to set Noise Squelch Mode. 2. Apply a -2dB μVemf output from S.S.G. (modulation frequency 1.0kHz, dev. 3kHz). 3. Oscilloscope become High. 4. Apply a +8dB μVemf output from S.S.G. (modulation frequency 1.0kHz, dev. 3kHz). 5. Oscilloscope become Low.
	(H) Speaker Output Level Adjustment	CH25 Talk	—	1. Set S5, S6 to ON. 2. Apply a 40 dB μVemf output from S.S.G.(modulation frequency 1kHz, dev. 3kHz). 3. Confirm that SP output level is -15 ±2dBm. (distortion: less than 6%) (volume: High)
VR201	(i) MIC Modulation Factor Adjustment	CH25 Talk	VR201	1. Set S9, S11 to ON. 2. Apply a MIC signal (1kHz, -40 dBm at 600 Ω load). 3. Adjust VR 201 so that the reading of FM Deviation Meter is 2.8kHz ±0.3kHz.
	(G) Data Moudulation Confirmation	CH25Talk	—	1. Set S7 to ON. 2. Keep pressing the "1" button. 3. Confirm for a 4.5~6.5 kHz FM Deviation Meter reading.

The connections of adjustment equipments are as shown in page 28.

TOP PREVIOUS NEXT

18 FREQUENCY TABLE (MHz)

TOP PREVIOUS NEXT

	BASE UNIT		HANDSET	
	Transmit Frequency	Receive Frequency	Transmit Frequency	Receive Frequency
1	43.720	48.760	48.760	43.720
2	43.740	48.840	48.840	43.740
3	43.820	48.860	48.860	43.820
4	43.840	48.920	48.920	43.840
5	43.920	49.020	49.020	43.920
6	43.960	49.080	49.080	43.960
7	44.120	49.100	49.100	44.120
8	44.160	49.160	49.160	44.160
9	44.180	49.200	49.200	44.180
10	44.200	49.240	49.240	44.200
11	44.320	49.280	49.280	44.320
12	44.360	49.360	49.360	44.360
13	44.400	49.400	49.400	44.400
14	44.460	49.460	49.460	44.460
15	44.480	49.500	49.500	44.480
16	46.610	49.670	49.670	46.610
17	46.630	49.845	49.845	46.630
18	46.670	49.860	49.860	46.670
19	46.710	49.770	49.770	46.710
20	46.730	49.875	49.875	46.730
21	46.770	49.830	49.830	46.770
22	46.830	49.890	49.890	46.830
23	46.870	49.930	49.930	46.870
24	46.930	49.990	49.990	46.930
25	46.970	49.970	49.970	46.970

TOP PREVIOUS NEXT

19 RF SPECIFICATION

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

19.1 BASE UNIT

TOP PREVIOUS NEXT

Item	Value	Refer to —.	Remarks
TX Frequency	46.970 MHz ± 700Hz	Page 21 (C)	at CH25
TX Power	220 mV ± 10 mV (CH25)	Page 21 (D)	at CH25
Line Modulation factor	3.9 kHz~4.1 kHz	———	
Line Modulation Distortion	Less than 7%	———	
Line Modulation factor (Max.)	4.7 kHz~7.7 kHz	———	
Data Modulation factor	4.5 kHz~7.5 kHz	———	

TOP PREVIOUS NEXT

19.2 HANDSET

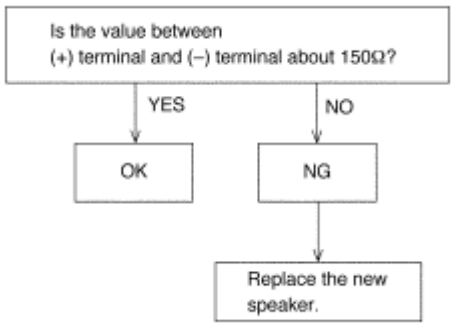
TOP PREVIOUS NEXT

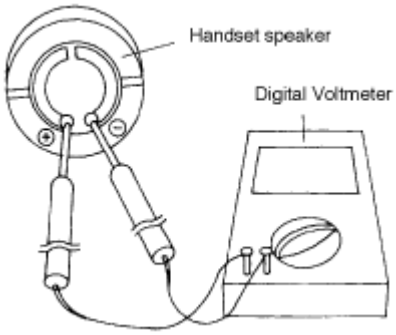
Item	Value	Refer to —.	Remarks
Practical Sensitivity	Less than 9 dBμV	———	at CH25
TX Frequency	49.970 MHz ±700Hz	Page 30 (D)	at CH25
TX Power	Over 300 mV	Page 30 (E)	at CH25 (Antenna soldering point 50 Ω Load)
Data Modulation factor	4.5 kHz/dev~6.5 kHz/dev	Page 30 (G)	at CH25
MIC Modulation factor	2.5 kHz/dev~3.1 kHz/dev	Page 32 (H)	at CH25 (MIC terminal -40dBm Input)

TOP PREVIOUS NEXT

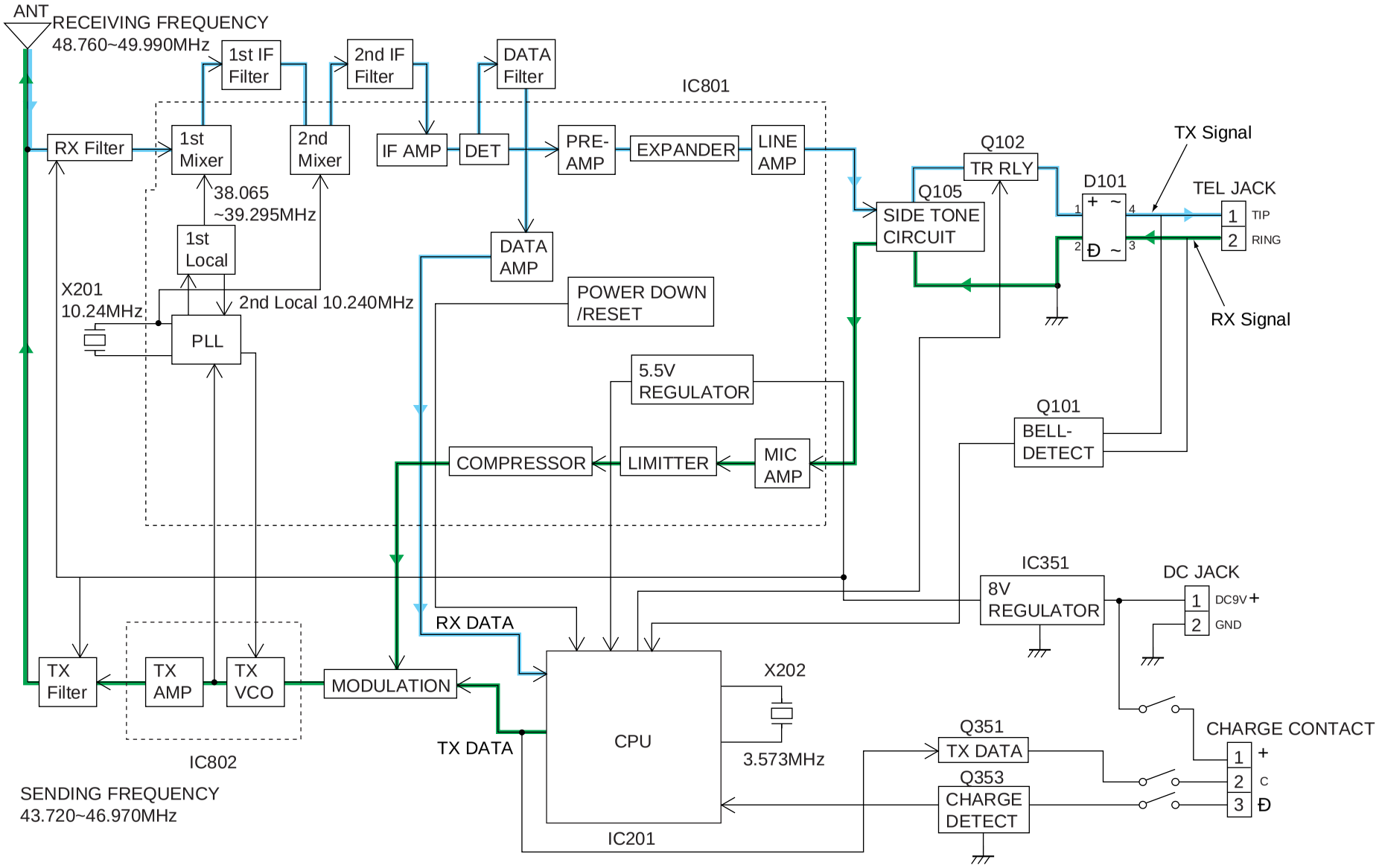
20 HOW TO CHECK THE HANDSET SPEAKER

TOP PREVIOUS NEXT

1. Prepare the digitial voltmeter, and set the selector knob to ohm meter.
2. Put the probes at the speaker terminals as shown in Fig.7
3. 



TOP PREVIOUS NEXT


ANT
RECEIVING FREQUENCY
48.760~49.990MHz
1st IF Filter
2nd IF Filter
DATA Filter
IC801
RX Filter
1st Mixer
2nd Mixer
IF AMP
DET
PRE-AMP
EXPANDER
LINE AMP
38.065
~39.295MHz
1st Local
DATA AMP
X201
10.24MHz
2nd Local 10.240MHz
PLL
POWER DOWN /RESET
5.5V REGULATOR
COMPRESSOR
LIMITTER
MIC AMP
Q102
TR RLY
Q105
SIDE TONE CIRCUIT
D101
TX Signal
TEL JACK
TIP
RING
RX Signal
Q101
BELL-DETECT
IC351
8V REGULATOR
DC JACK
DC9V +
GND
RX DATA
TX Filter
TX AMP
TX VCO
MODULATION
CPU
X202
3.573MHz
TX DATA
IC802
IC201
Q351
TX DATA
Q353
CHARGE DETECT
CHARGE CONTACT
+
C
SENDING FREQUENCY
43.720~46.970MHz

22 NEW CIRCUIT OPERATION (BASE UNIT)

TOP PREVIOUS NEXT

22.1 TRANSMITTER CIRCUIT

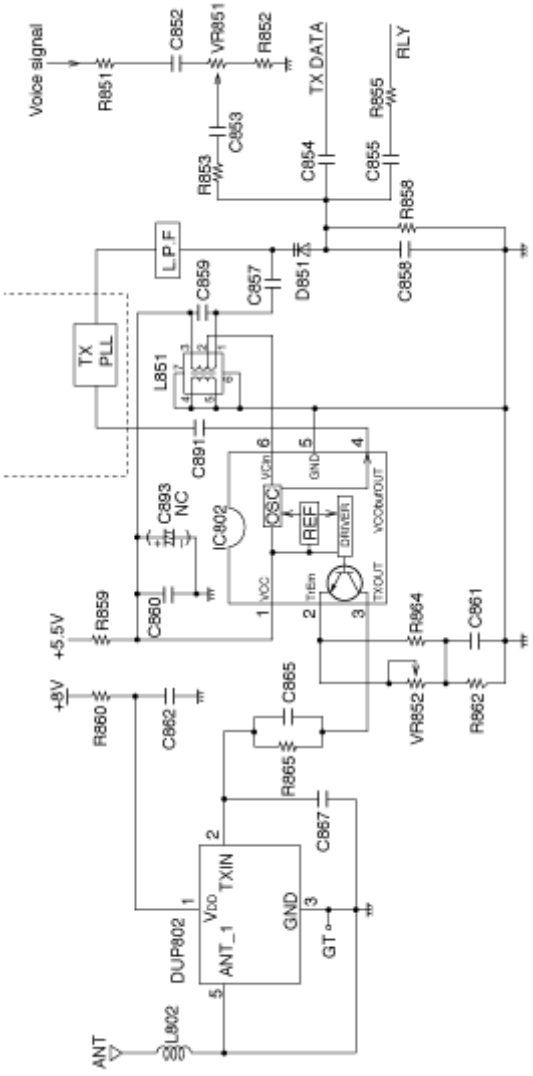
22.2 TRANSMITTER OUTPPUT AMP CIRCUIT

TOP PREVIOUS NEXT

22.1 TRANSMITTER CIRCUIT

TOP PREVIOUS NEXT

The voice signal or the data signal sent to the handset is applied in the anode of the variable capacitor diode (VARICAP) D851.VR851 is used for changing the voice signal level, thus changing the modulation level.



TOP PREVIOUS NEXT

22.2 TRANSMITTER OUTPPUT AMP CIRCUIT

TOP PREVIOUS NEXT

The signal which is oscillated at TXVCO is amplified by DUP802, whose gain is adjusted by moving VR852.The signal passes through the duplexer and it is radiated from the antenna.

TOP PREVIOUS NEXT

23 NORMAL CIRCUIT OPERATION (BASE UNIT)

TOP PREVIOUS NEXT

23.1 TELEPHONE LINE INTERFACE

23.1.1 Circuit operation:

23.1.2 ON HOOK

23.1.3 SPECIFICATIONS

23.2 TELEPHONE MODE OPERATION

23.2.1 When a ring signal enters from the Line

23.2.2 Circuit-making from the handset

23.3 TRANSMITTER SIGNAL CIRCUIT

23.3.1 Circuit Operation:

23.4 RECEIVER RF IF CIRCUIT

23.4.1 Circuit Operation:

23.5 RECEIVER SIGNAL CIRCUIT

23.5.1 Circuit Operation:

23.6 INITIALIZATION CIRCUIT

23.6.1 Function:

23.6.2 Circuit Operation:

23.7 CHARGE DETECT CIRCUIT

23.7.1 Circuit Operation:

23.8 POWER SUPPLY CIRCUIT

23.8.1 Function:

23.8.2 Circuit Operation:

23.9 CPU OPERATION

TOP PREVIOUS NEXT

23.1 TELEPHONE LINE INTERFACE

TOP PREVIOUS NEXT

23.1.1 Circuit operation:

23.1.2 ON HOOK

23.1.3 SPECIFICATIONS

TOP PREVIOUS NEXT

23.1.1 Circuit operation:

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

23.1.2 ON HOOK

TOP PREVIOUS NEXT

Q102 is open; it is connected for cutting the DC loop current and to cut the voice signal.The unit is consequently in an ON-HOOK condition.

TOP PREVIOUS NEXT

23.1.3 SPECIFICATIONS

TOP PREVIOUS NEXT

In the ON-HOOK state (idle), the telephone line current flows as follows:T→ L101→ R101→ C101→ Q101 B→ Q101 E→ C102→ R102→ L102→ PO1→ RThe 48V DCcomponent is blocked by C101, C102, thereby providing an ON-HOOK condition.

TOP PREVIOUS NEXT

23.2 TELEPHONE MODE OPERATION

TOP PREVIOUS NEXT

23.2.1 When a ring signal enters from the Line

23.2.2 Circuit-making from the handset

TOP PREVIOUS NEXT

23.2.1 When a ring signal enters from the Line

TOP PREVIOUS NEXT

1. The ring detection circuit. (Transistor Q101) begins to operate,so Q101 is active mode, thus input a low level to the BELL pin 1 of the IC201 (CPU).

2. To show the arrival of the ring signal to the handset, Pin 12 of IC201 enters into the transmit mode thus becoming a High and the ring data, having the code set by Pin 10 of IC201 is sent to the handset as a modulated output

   signal.

3. Upon receiving the ring data, and the handset is switched from standby to the talk mode, the base unit receives a carrier modulated by the data indicating a switch from standby to talk.This data is then demodulated at the base unit and passesthrough a data signal amplifier of IC801,

   This signal is then input to Pin 7 of IC201, which causes Q102 and Q103 release the muting and enable the talk mode.

TOP PREVIOUS NEXT

23.2.2 Circuit-making from the handset

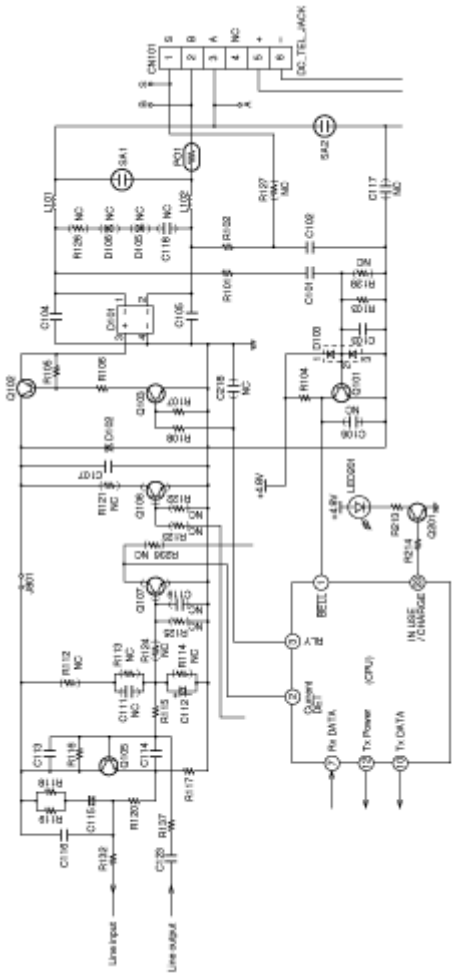
TOP PREVIOUS NEXT

1. When the operator of the handset presses the talk button, data is transmitted to the base unit. This data is then

   demodulated by the base unit and passed through data signal amplifier of IC801 and enters Pin 7of IC201(CPU).

2. When the codes coincide, Pin 3 of IC201 becomes a HIGH voltage level. At this time,the transmit condition is enabled and the transistor Q103 is turned on.

3. Pin 23 of IC201 becomes HIGH (HIGH level voltage)and the IN USE LED LED201 is on.



TOP PREVIOUS NEXT

23.2.1 When a ring signal enters from the Line

TOP PREVIOUS NEXT

1. The ring detection circuit. (Transistor Q101) begins to operate,so Q101 is active mode, thus input a low level to the BELL pin 1 of the IC201 (CPU).

2. To show the arrival of the ring signal to the handset, Pin 12 of IC201 enters into the transmit mode thus becoming a High and the ring data, having the code set by Pin 10 of IC201 is sent to the handset as a modulated output

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3. Upon receiving the ring data, and the handset is switched from standby to the talk mode, the base unit receives a carrier modulated by the data indicating a switch from standby to talk.This data is then demodulated at the base unit and passesthrough a data signal amplifier of IC801,

   This signal is then input to Pin 7 of IC201, which causes Q102 and Q103 release the muting and enable the talk mode.

TOP PREVIOUS NEXT

23.2.2 Circuit-making from the handset

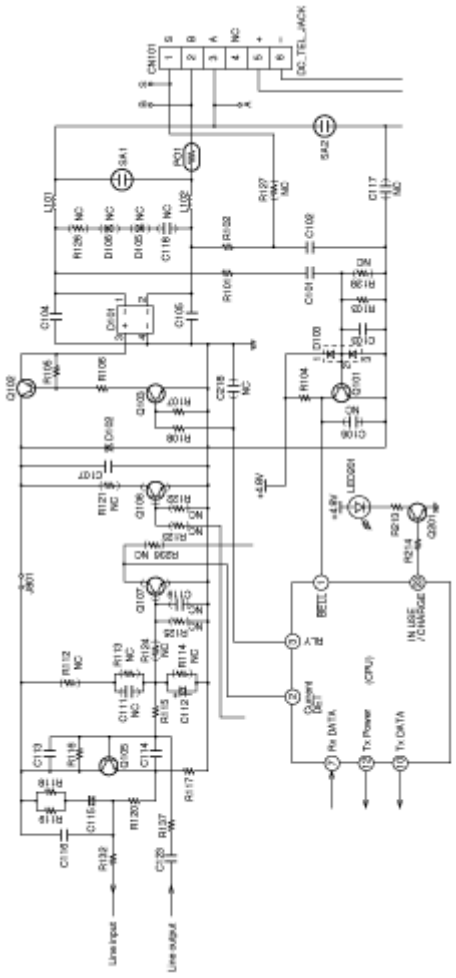
TOP PREVIOUS NEXT

1. When the operator of the handset presses the talk button, data is transmitted to the base unit. This data is then

   demodulated by the base unit and passed through data signal amplifier of IC801 and enters Pin 7of IC201(CPU).

2. When the codes coincide, Pin 3 of IC201 becomes a HIGH voltage level. At this time,the transmit condition is enabled and the transistor Q103 is turned on.

3. Pin 23 of IC201 becomes HIGH (HIGH level voltage)and the IN USE LED LED201 is on.



TOP PREVIOUS NEXT

23.3 TRANSMITTER SIGNAL CIRCUIT

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

23.3.1 Circuit Operation:

TOP PREVIOUS NEXT

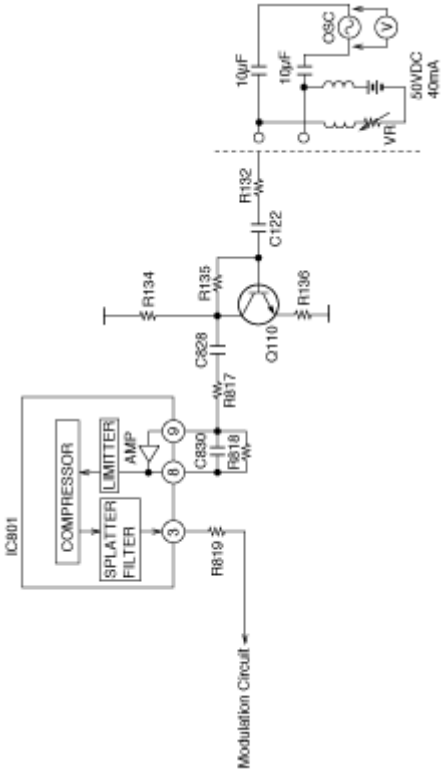
1. The signal input from the TEL LINE goes through

   R132→ Q110→ C828→ R817 and it is input to the

   signal amplifier of IC801, pin 9 .

   This amplifier is included in a limiter circuit.Signal goes through the compressor and

   SPLATTER FILTER, it is output in the pin 3 of IC801. Then it goes out to the modulation circuit.



TOP PREVIOUS NEXT

23.4 RECEIVER RF IF CIRCUIT

TOP PREVIOUS NEXT

23.4.1 Circuit Operation:

TOP PREVIOUS NEXT

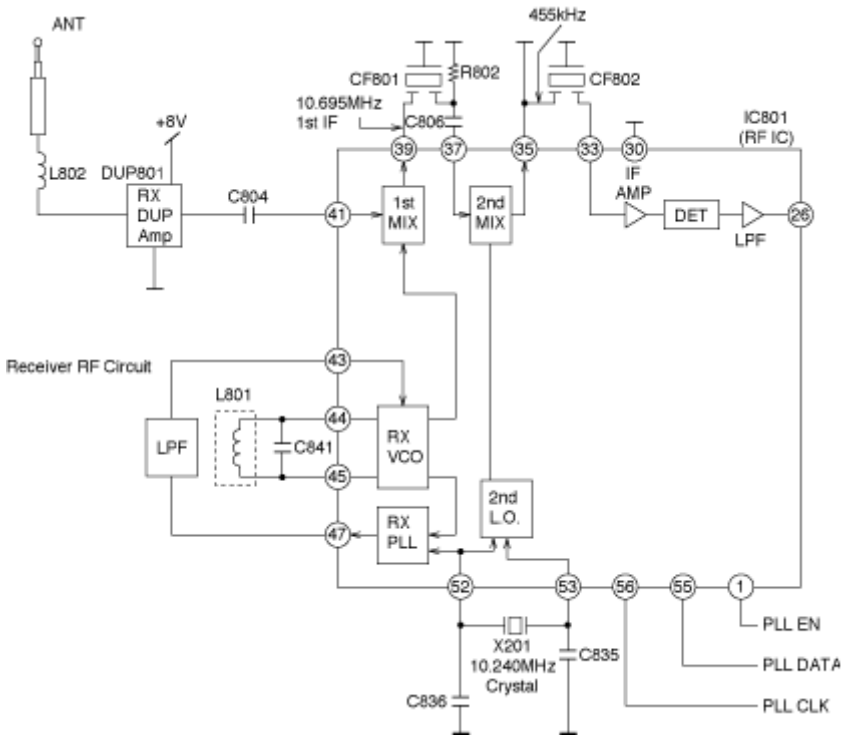
23.4.1 Circuit Operation:

TOP PREVIOUS NEXT

The signal of 49 MHz band (48.76~49.99MHz) which is input from ANT is filtered at DUP801, passes through the filter AMP of 49 MHz band input to Pin 41 of IC801.RX VCO which oscillates at L801 and Pins 44 , 45 of IC801 is input to program controlat inside of IC801, 1st local frequency is controlled to assigned channel by serial data which is output from Pins 8 , 49 and 50 of IC201 (CPU), makes loop with Phase Detector Out and RX VCO, and locks 1st local

frequency.The input signal, Pin 41 of IC801 and 1st local frequency output from RX VCO are mixed at inside of IC801, then it passesthrough CF801, and 1st IF frequency of 10.695 MHz is

generated. Further, 10.240 MHz which is oscillated at X201 and Pins 52 , 53 of IC801 are mixed at inside of IC801 and filtered at CF802, and 2nd IF 455 Hz is output.



TOP PREVIOUS NEXT

23.5 RECEIVER SIGNAL CIRCUIT

TOP PREVIOUS NEXT

23.5.1 Circuit Operation:

TOP PREVIOUS NEXT

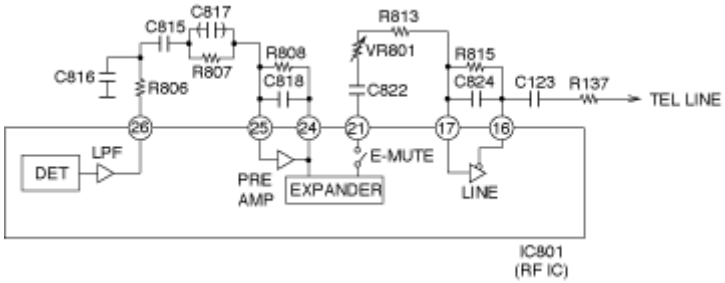
23.5.1 Circuit Operation:

TOP PREVIOUS NEXT

1. The detected signal passes through R806→ C815→ R807 and it is input to the Pre Amplifier inside of IC801; it passes through the expander and goes out from pin 21 of IC801.

2. The signal passes through C822→ VR801→ R813 and it is input to the Receiver Amplifier of IC801, on pin 17 .

3. The signal is output from the amplifier on pin 16 of IC801 and it goes through C123 and R137, to the telephone line.



TOP PREVIOUS NEXT

23.6 INITIALIZATION CIRCUIT

TOP PREVIOUS NEXT

23.6.1 Function:

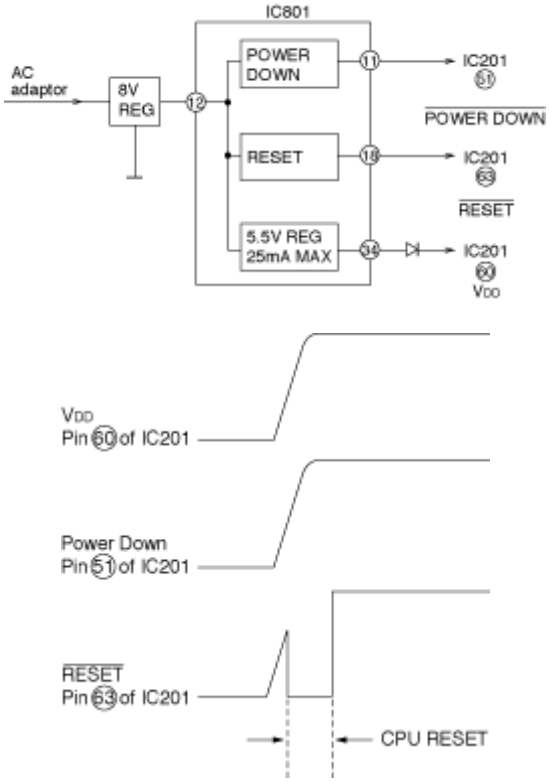
23.6.2 Circuit Operation:

TOP PREVIOUS NEXT

23.6.2 Circuit Operation:

TOP PREVIOUS NEXT

When the unit is switched ON, then the voltage is regulated to 5.5V in IC801 and power is supplied to the CPU.



TOP PREVIOUS NEXT

23.7 CHARGE DETECT CIRCUIT

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

23.7.1 Circuit Operation:

TOP PREVIOUS NEXT

CHARGE MODE

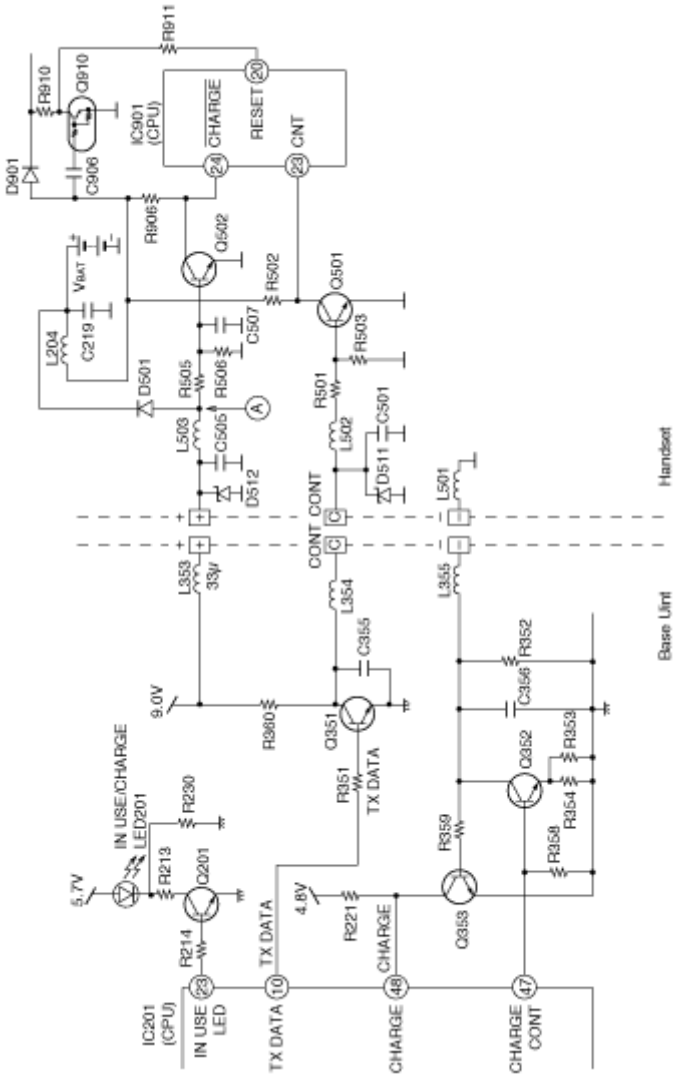
When charging the handset on the base unit, CH. ID CODES are sent from the CONT terminal to the handset, and charging current is supplied to the handset from the battery charge

contacts via R352, R353, R354 on base unit:When - contact on base unit is input to Pin 48 of IC201 (CPU) through Q353. When the A point on the handset is High level, Q502 on handset goes on and Pin 24 of IC901 becomes Low, In this way the CPUon handset detects the fact that the

battery is charged.

Set up of the handset

When charging the handset on the base unit, the data signal is sent from CONT terminal to handset. The Q351 switching is affected by Pin 10 of IC201 on base unit, the sending data are CH data, ID code, tone or pulse mode data etc. The data signal issent to Pin 23 of IC901 (CPU) via Q501 on handset.While charging these data continue to be sent to the CPU of handset.



When charging the handset on the base unit, the data signal is sent from CONT terminal to handset. The Q351 switching is affected by Pin 10 of IC201 on base unit, the sending data are CH data, ID code, tone or pulse mode data etc. The data signal issent to Pin 23 of IC901 (CPU) via Q501 on handset.While charging these data continue to be sent to the CPU of handset.

TOP PREVIOUS NEXT

23.8 POWER SUPPLY CIRCUIT

TOP PREVIOUS NEXT

23.8.1 Function:

23.8.2 Circuit Operation:

TOP PREVIOUS NEXT

23.8.1 Function:

TOP PREVIOUS NEXT

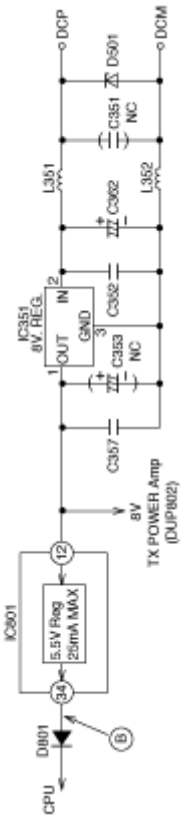
Power from the AC adaptor passes through and is provided to a system voltage of 5.5 V.

TOP PREVIOUS NEXT

23.8.2 Circuit Operation:

TOP PREVIOUS NEXT

Power from the AC adaptor is supplied directly to the charge circuit its voltage. Its voltage is regulated in IC801. The voltage at point B is regulated to 5.5 V. The 5.5 V voltage is dropped by D801 to 5.0 V.



TOP PREVIOUS NEXT

23.9 CPU OPERATION

TOP PREVIOUS NEXT

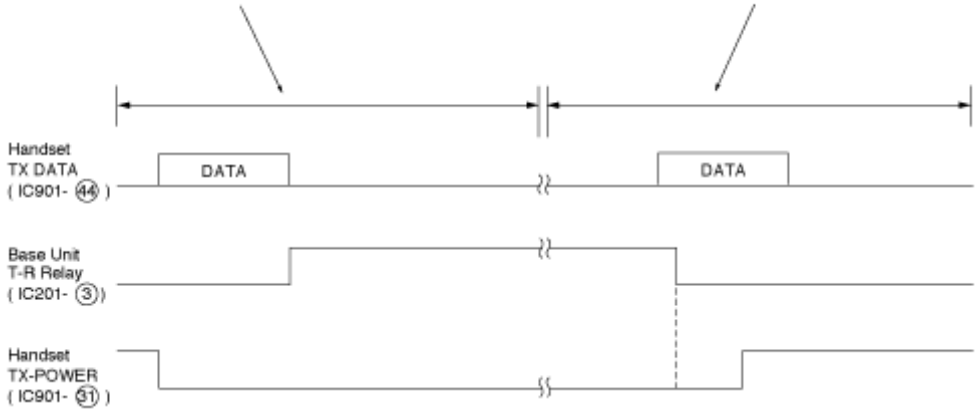
1. TEL MODE

CPU Terminals / Operation Mode	12 TX POW	10 TX DATA	3 TR-RLY
STANDBY	H	L	L
TALK	L	L	H
Base Unit → Handset Ring	L	DATA	L
Base Unit → Handset Paging	L	DATA	L
CHARGE	H	DATA	L

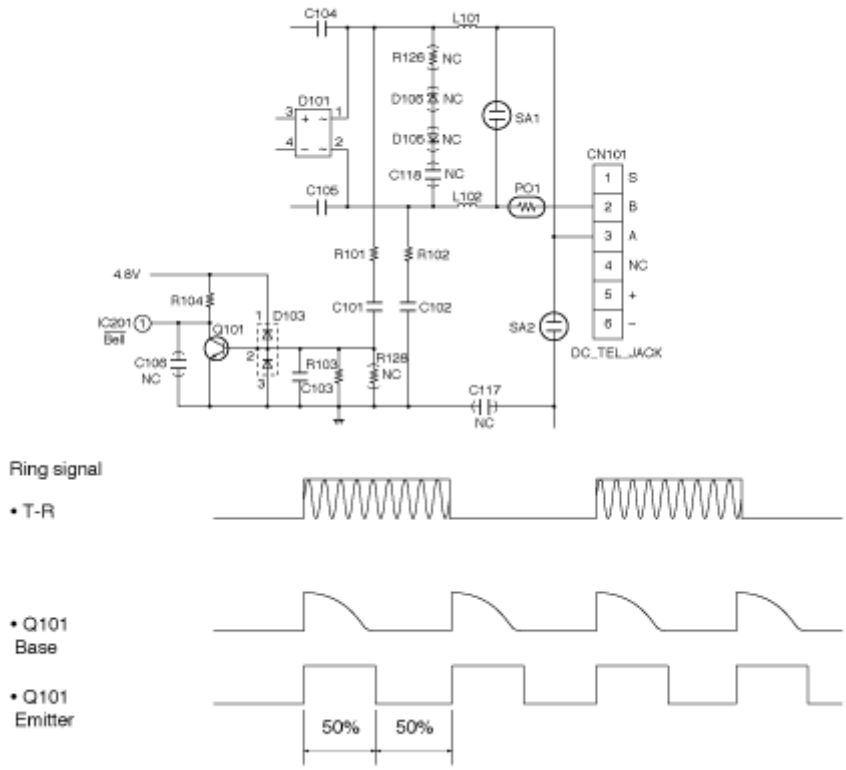
2. TIMING OF IC801 (CPU) OUTPUT PORT WITH THE BASE UNIT IN HANDSET LOCATOR MODE

3. WHEN PRESSING THE TALK SWITCH OF THE HANDSET

4. WHEN PRESSING THE TALK SWITCH OF THE HANDSET TO OFF



5. RESONANCE PREVENTION CIRCUIT



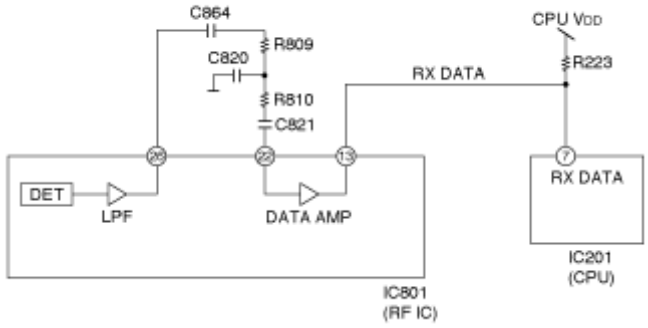
Make/break ratio when dialing with the Handset: 40%: 60%

High/low ratio upon ring signal: 50%: 50%

Therefore, if the low/high ratio is greater than 45% at IC201- 1 (CPU), it is judged as a ring signal.

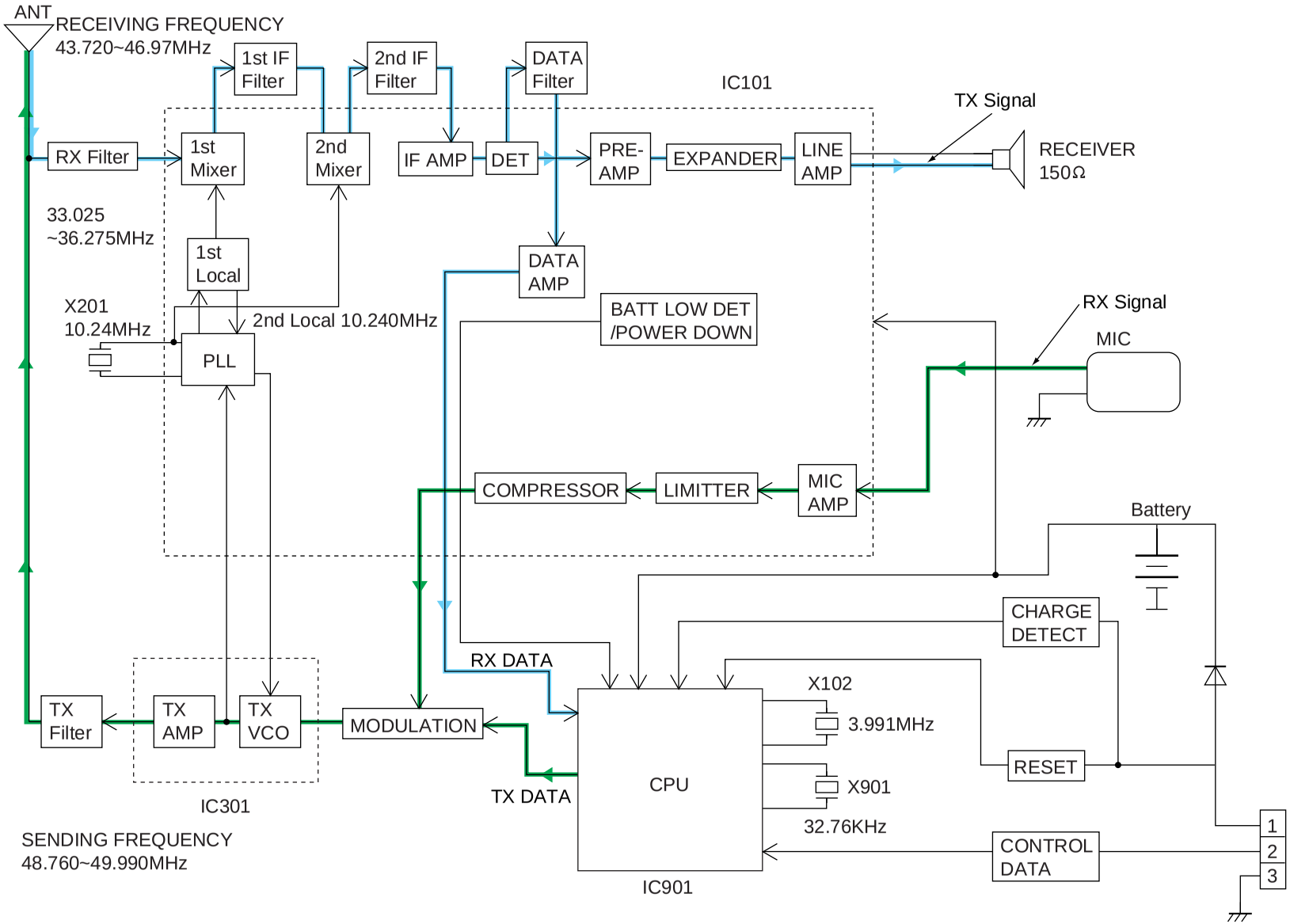
6. EXPLANATION OF THE DATA RECEPTION CIRCUIT OF BASSE UNIT

6-1. Signal Flow



In area where the transmission power from the handset is extremely weak, noise is superimposed on the data and the chance of an error can become extremely great upon reception of the data. To help prevent this, the above circuit is used.

TOP PREVIOUS NEXT


ANT
RECEIVING FREQUENCY
43.720~46.97MHz
1st IF Filter
2nd IF Filter
DATA Filter
IC101
TX Signal
RECEIVER
150Ω
RX Filter
1st Mixer
2nd Mixer
IF AMP
DET
PRE-AMP
EXPANDER
LINE AMP
33.025
~36.275MHz
1st Local
DATA AMP
X201
10.24MHz
2nd Local 10.240MHz
BATT LOW DET
/POWER DOWN
RX Signal
MIC
PLL
COMPRESSOR
LIMITTER
MIC AMP
Battery
CHARGE DETECT
RX DATA
X102
3.991MHz
TX Filter
TX AMP
TX VCO
MODULATION
CPU
RESET
X901
32.76KHz
TX DATA
IC301
SENDING FREQUENCY
48.760~49.990MHz
CONTROL DATA
IC901
1
2
3

25 NEW CIRCUIT OPERATION (HANDSET)

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

25.1 RECEIVER RF IF CIRCUIT

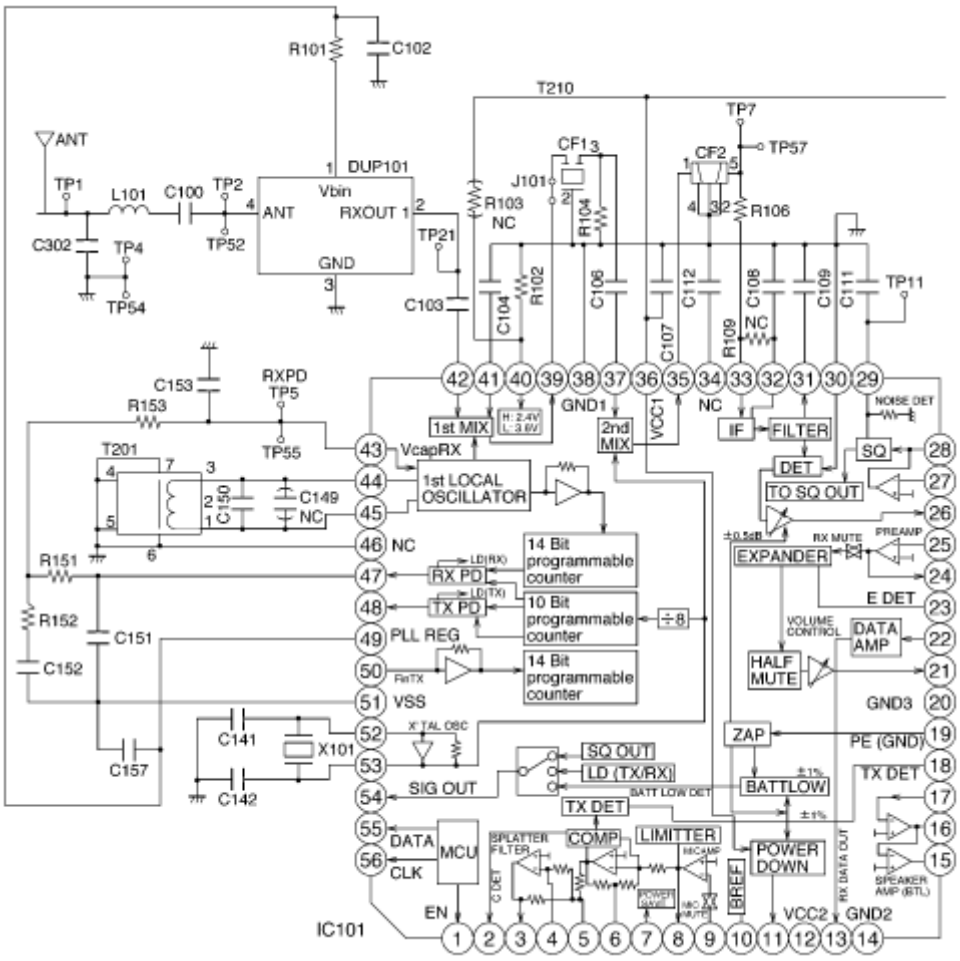
TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

25.1.1 Circuit Operation:

TOP PREVIOUS NEXT

The signal of 46 MHz band (43.72 MHz~46.97 MHz) which is input from ANT is filtered by DUP101, and is input to Pin 42of IC101.The RX VCO which oscillates at T201 and IC101 is locked to 1st Local frequency by PLL inside IC101. (PLL is controlledby serial data output from Pin 28 , 29 and 30 of IC901.)An input signal from Pin 42 of IC101 and 1st Local frequency output from RX VCO are mixed inside IC101, pass through CF1, and 1st IF frequency of 10.695 MHz is generated.Further, 10.695 MHz and10.240 MHz that oscillated at X101, passes through MIXER inside IC101 and is filtered at CF2 and outputs 2nd IF 455 kHz.



TOP PREVIOUS NEXT

25.2 RECEIVER SIGNAL CIRCUIT

TOP PREVIOUS NEXT

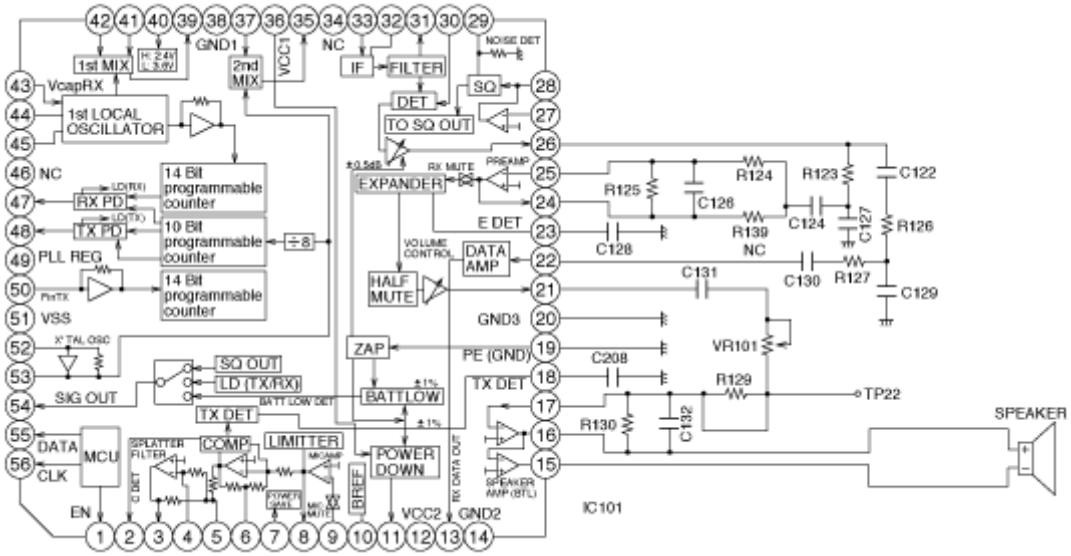
25.2.1 Circuit Operation:

TOP PREVIOUS NEXT

25.2.1 Circuit Operation:

TOP PREVIOUS NEXT

After getting the 455kHz signal, it is input to Pin 33 of IC101 and passes through IF AMP and Detector Circuit, then are output to Pin 26 . AF signal flows through R123, C124. Its level is controlled by the VOLUME CONTROL Amp of IC101.The signalis received at Pin 25 of IC101, then it passes through the following circuits: PREAMP, Expander and Amplifier: It goes out at Pin 16 and finally is sent to the SP.Inside IC101, RX-MUTE, MIC-MUTE and PLL circuits are controlled by the serial data thatthe CPU send from Pins 28 , 29and 30 .



TOP PREVIOUS NEXT

26 NORMAL CIRCUIT OPERATION (HANDSET)

TOP PREVIOUS NEXT

26.1 CPU OPERATION

26.2 RESET CIRCUIT POWER ON/OFF CIRCUIT

26.2.1 Reset circuit

TOP PREVIOUS NEXT

26.1 CPU OPERATION

TOP PREVIOUS NEXT

CPU Terminals / Operation Mode	44 TX DATA	32 POWER SAVE	31 TX POW	12 BEEP	36 TALKLED
STANDBY	L	Intermittently H or L	H	H	H
TALK	L	H	L	H	L
Base Unit → Handset Ring	——	H	H	L	FLASHING
Base Unit → Handset Paging	——	H	H	L	H
CHARGE	L	L	H	H	H
During (TALK)	——	H	L	H	L
Handset PULSE DIAL	DATA	H	L	H	L
Handset TONE DIAL	DATA	H	L	H	L
Handset OFF MODE	L	L	H	H	H

TOP PREVIOUS NEXT

26.2 RESET CIRCUIT POWER ON/OFF CIRCUIT

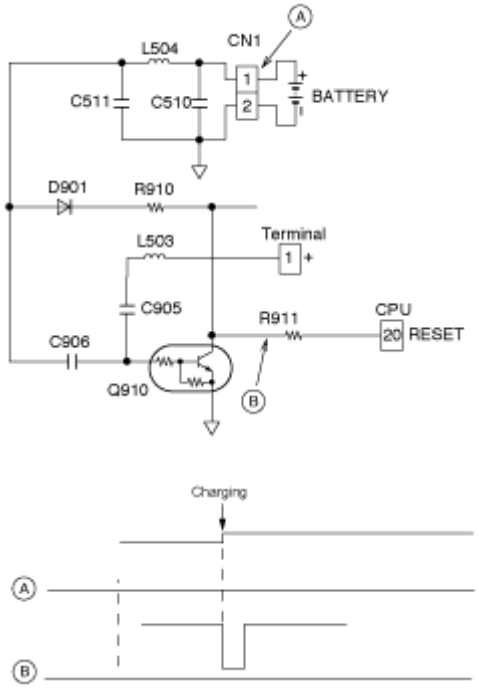
TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

26.2.1 Reset circuit

TOP PREVIOUS NEXT

When the handset is charged, the impulse is sent through C905, Q910 generates the reset signal and it is sent to Pin 20 of CPU.



TOP PREVIOUS NEXT

27 TROUBLESHOOTING GUIDE

TOP PREVIOUS NEXT

Symptom	Refer to page –.	Unit for repair
The base unit does not respond to a call from handset.	21, 30	Base Unit
The base unit does not transmit or the transmit frequency is off.		
The transmit frequency is off.		
The transmit power output is low, and the operating distance between base unit and handset is less than normal.		
The reception sensitivity of base unit is low with noise.		
The transmit level is large or small.		
The reception level is large or small.		
The unit does not link.		
The charge indicator does not light.	48	
The IN USE/Charge indicator does not flash.	48	
The beep is not heard from the handset.	49	
The movement of Battery Low indicator is wrong.	30	Handset
The handset does not respond to a call from base unit. The handset does not transmit or the transmit frequency is off.		
The transmit frequency is off.		
The transmit power output is low, and the operating distance between base unit and handset is less than normal.		
The reception sensitivity of handset is low with noise.		
Does not link between base unit and handset.		
The reception level is large or small.		
The transmit level is large or small.		
The beep is not heard from the handset.	51	
The TALK indicator does not flash.	51	

TOP PREVIOUS NEXT

28 TROUBLESHOOTING GUIDE (BASE UNIT)

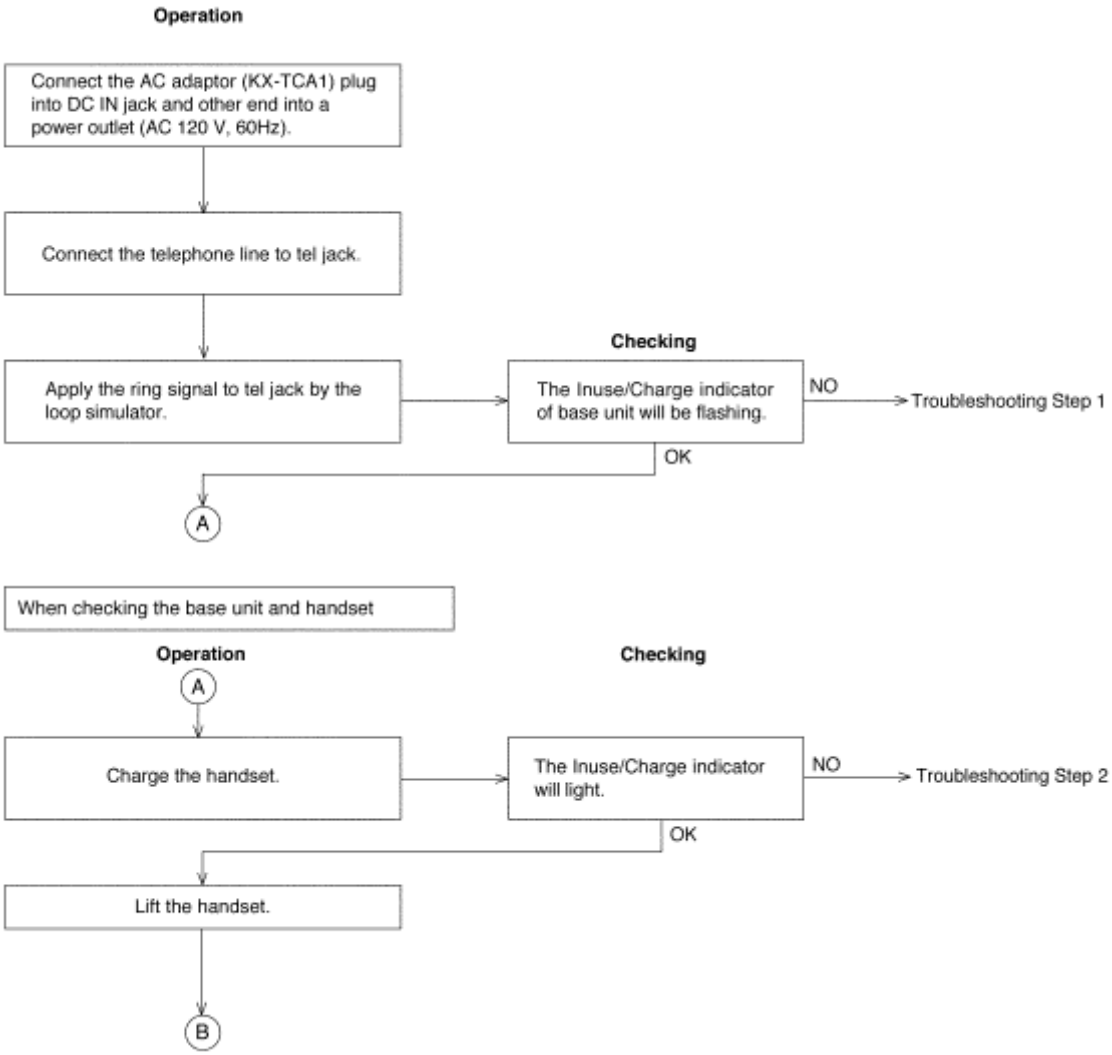
TOP PREVIOUS NEXT

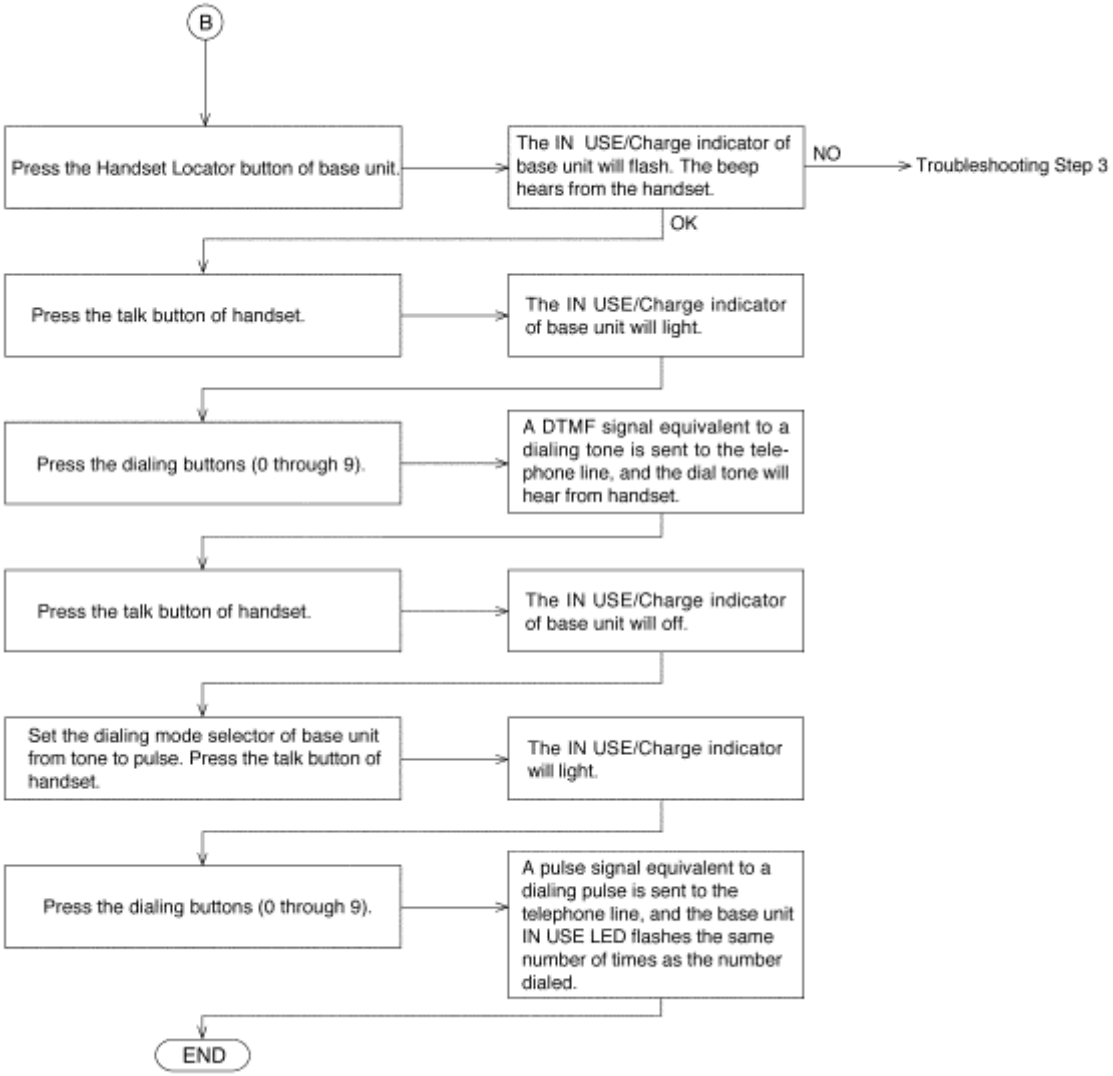
Base Unit Condition:

1. Set the dialing mode selector to "Tone".

When checking the base unit only

Check the base unit as shown by following below flow chart.





28.1 Troubleshooting Step 1:

28.2 Troubleshooting Step 2:

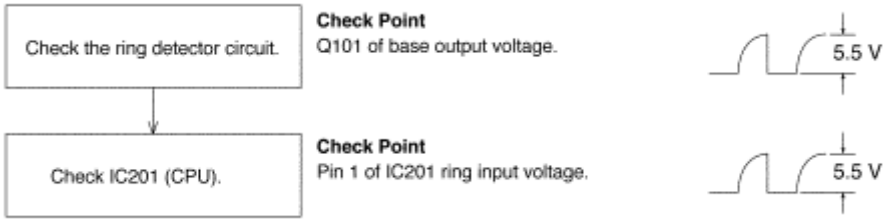
28.3 Troubleshooting Step 3:

TOP PREVIOUS NEXT

28.1 Troubleshooting Step 1:

TOP PREVIOUS NEXT

The base unit does not flash In Use/Charge indicator.

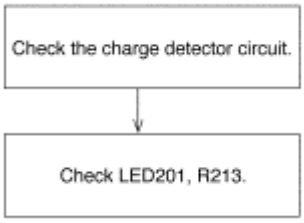


TOP PREVIOUS NEXT

28.2 Troubleshooting Step 2:

TOP PREVIOUS NEXT

The charge indicator does not light.



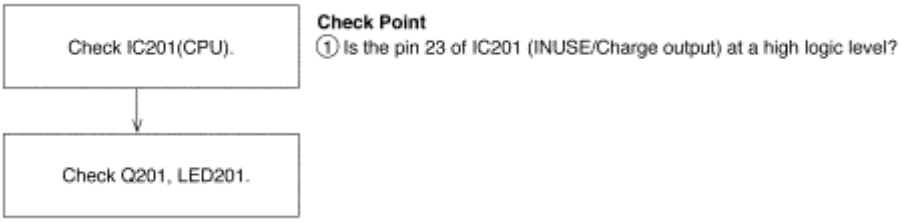
Check Point
① Is the collector of base unit is low logic level?

TOP PREVIOUS NEXT

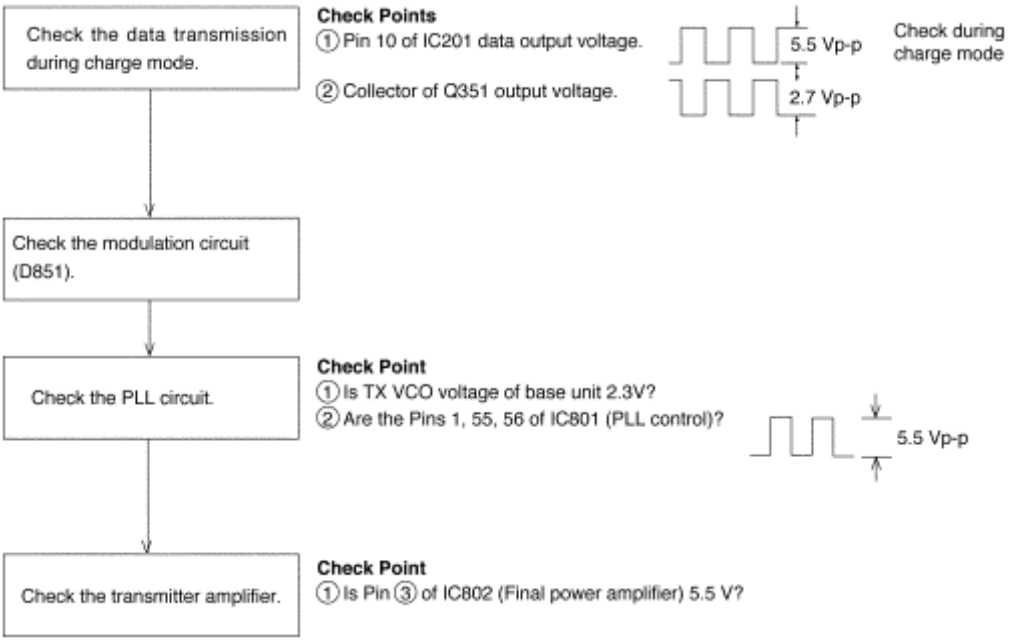
28.3 Troubleshooting Step 3:

TOP PREVIOUS NEXT

1. The INUSE/CHARGE indicator does not flash.



2. The beep is not heard from the handset.



TOP PREVIOUS NEXT

29 TROUBLESHOOTING GUIDE (HANDSET)

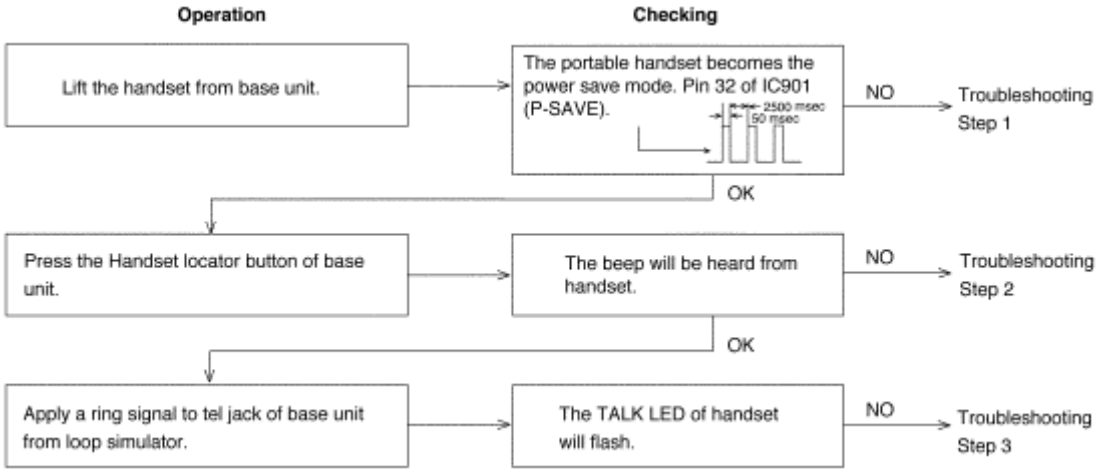
TOP PREVIOUS NEXT

Use the right base unit for this troubleshooting.Charge the battery of the handset on the base unit.

Base unit condition:

1. Connect the AC Adaptor (KX-TCA1) plug into DC IN jack and the another end into a power outlet (AC 120 V, 60Hz).
2. Connect the loop simulator (DC 48 V) to tel jack.

Check the handset as shown by following below flow chart.



TOP PREVIOUS NEXT

29.1 Troubleshooting Step 1:

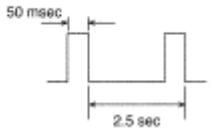
TOP PREVIOUS NEXT

The handset does not becomes the battery save mode.

Check point

(1) Pin 32 of IC901
RX power output voltage

(2)X901, C911, C912

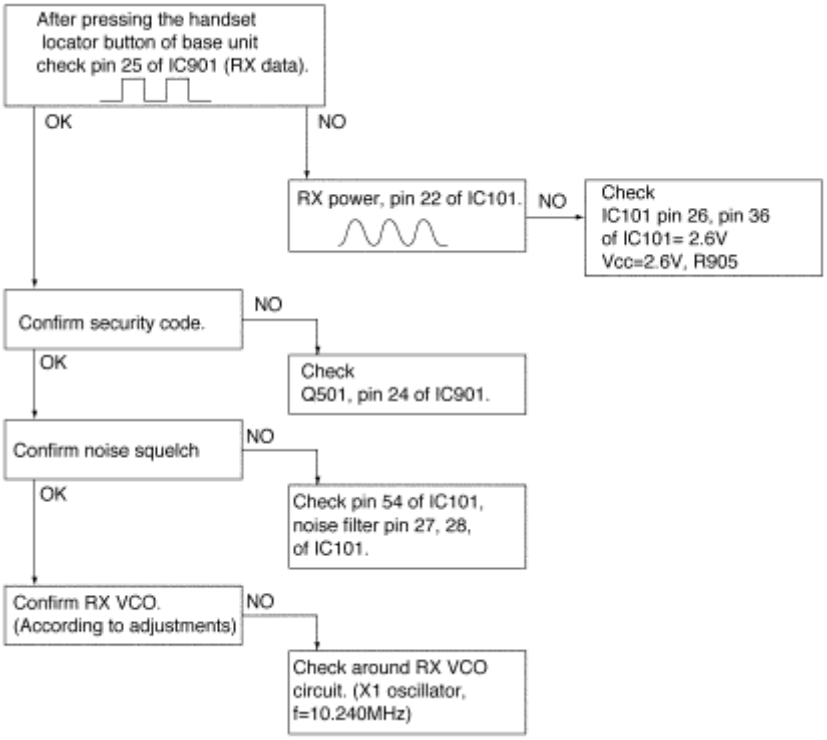


TOP PREVIOUS NEXT

29.2 Troubleshooting Step 2:

TOP PREVIOUS NEXT

The Beep is not heard on the Handset.



TOP PREVIOUS NEXT

29.3 Troubleshooting Step 3:

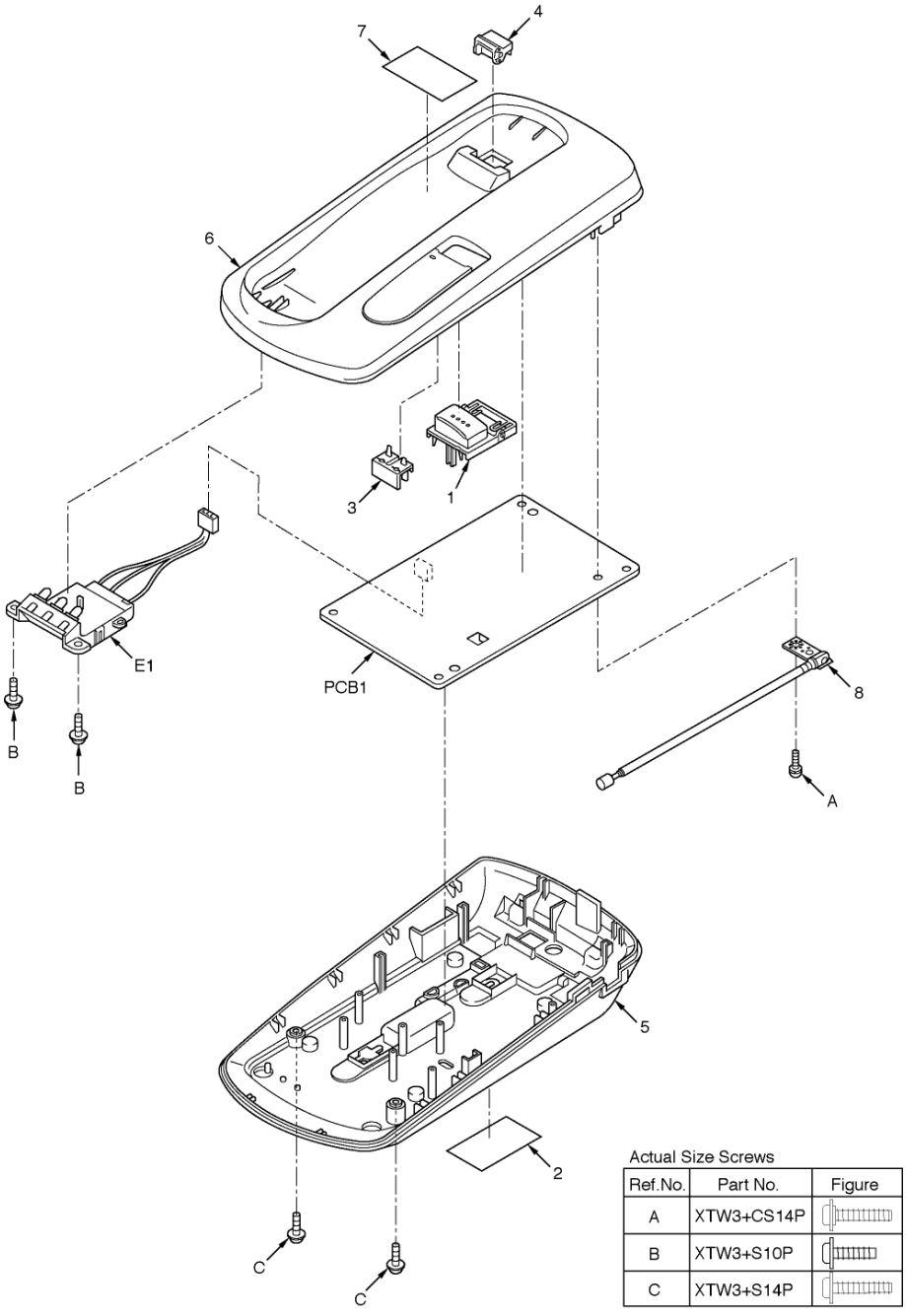
TOP PREVIOUS NEXT

The TALK indicator does not flash (Check the data reception).

Check Point

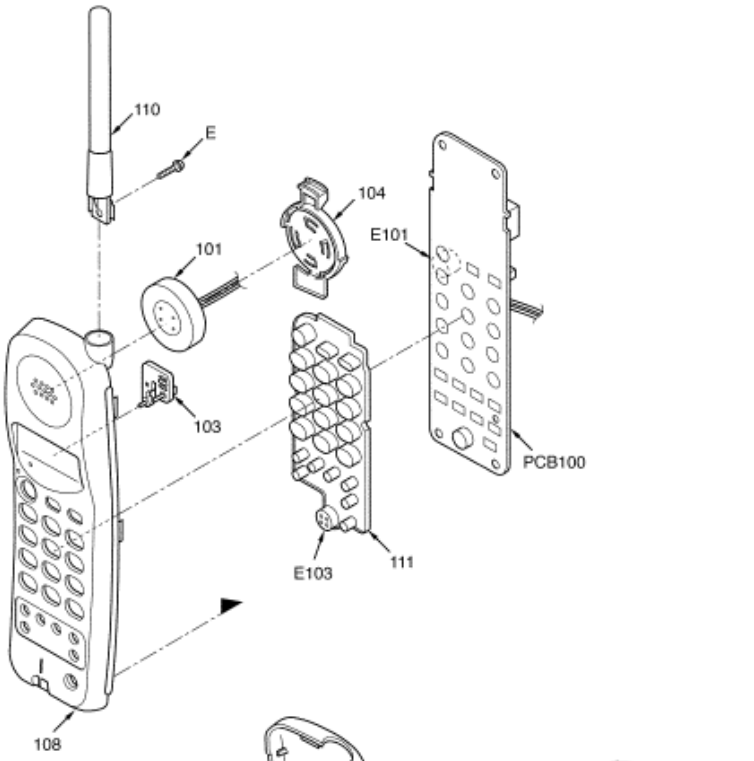
Check the signal of receiver data circuit on page 46.

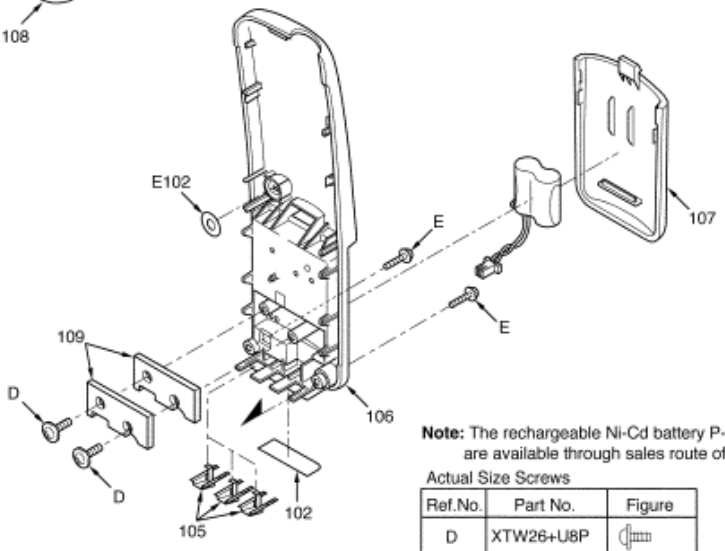
TOP PREVIOUS NEXT



Actual Size Screws

Ref.No.	Part No.	Figure
A	XTW3+CS14P	
B	XTW3+S10P	
C	XTW3+S14P	

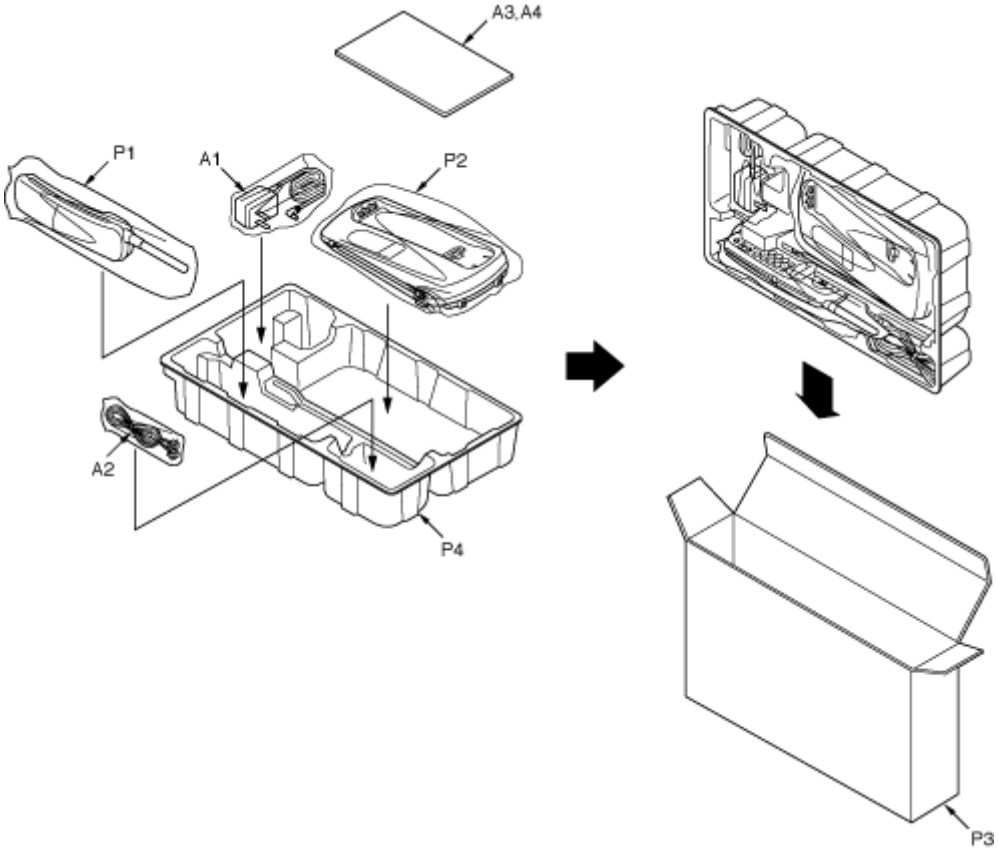




Note: The rechargeable Ni-Cd battery P-03R/F2G4 are available through sales route of Panasonic.

Actual Size Screws

Ref.No.	Part No.	Figure
D	XTW26+U8P	
E	XTW26+14P	


A3, A4
P1
A1
P2
A2
P4
P3

33 REPLACEMENT PARTS LIST

TOP PREVIOUS NEXT

This replacement parts list is U.S.A. version only.

Refer to the simplified manual (cover) for Canada or other areas.

Notes:

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

   After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time. The retention period of availability is dependent on the type of assembly, and in accordance with the laws goveringparts and product retention.

   After the end of this period, the assembly will no longer be available.

2. Important safety notice

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

3. The S mark indicates service standard parts and may differ from production parts.

4. RESISTORS& CAPACITORS

   Unless otherwise specified;

   All resistors are in ohms (Ω) K=1000Ω, M=1000kΩ

   All capacitors are in MICRO FARADS (μF)P=μμF

   *Type& Wattage of Resistor

Type

ERC:Solid	ERX:Metal Film	PQ4R:Carbon
ERD:Carbon	ERG:Metal Oxide	ERS:Fusible Resistor
PQRD:Carbon	ER0:Metal Film	ERF:Cement Resistor

Wattage

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

*Type & Voltage of Capacitor

Type

ECFD:Semi-Conductor	ECCD,ECKD,ECBT,PQCBC : Ceramic
ECQS:Styrol	ECQE,ECQV,ECQG : Polyester
PQCUV:Chip	ECEA,ECSZ : Electrolytic
ECQMS:Mica	ECQP : Polypropylene

Voltage

ECQ Type	ECQG ECQV Type	ECSZ Type	Others	
1H: 50V	05: 50V	0F:3.15V	0J :6.3V	1V :35V
2A:100V	1:100V	1A:10V	1A :10V	50,1H:50V
2E:250V	2:200V	1V:35V	1C :16V	1J :63V
2H:500V		0J:6.3V	1E,25:25V	2A :100V

TOP PREVIOUS NEXT

33.1 Base Unit

TOP PREVIOUS NEXT

33.1.1 CABINET AND ELECTRICAL PARTS

33.1.2 MAIN P.C.BOARD PARTS

TOP PREVIOUS NEXT

33.1.1 CABINET AND ELECTRICAL PARTS

TOP PREVIOUS NEXT

Ref. No.	Part No.	Part Name& Description	Remarks
		CABINET AND ELECTRICAL PARTS	
1	PQBC10268Z1	BUTTON HANDSET LOCATOR (for KX-TC1000B) S	S
1	PQBC10268Z2	BUTTON HANDSET LOCATOR (for KX-TC1001W)	S
2	PQGT13564Z	NAME PLATE (for KX-TC1000B)	
2	PQGT13566Z	NAME PLATE (for KX-TC1001W)	
3	PQHR10637Z	LED LENS	
4	PQKE10082Z1	HANGER (for KX-TC1000B)	S
4	PQKE10082Z2	HANGER (for KX-TC1001W)	S
5	PQKF10273R1	LOWER CABINET (for KX-TC1000B)	S
5	PQKF10273R2	LOWER CABINET (for KX-TC1001W)	S
6	PQKM10362Y1	UPPER CABINET (for KX-TC1000B)	
6	PQKM10362Y2	UPPER CABINET (for KX-TC1001W)	
7	PQQT11773Z	CHARGE LABEL	
8	PQSA10082Z	ANTENNA	

TOP PREVIOUS NEXT

33.1.2 MAIN P.C.BOARD PARTS

TOP PREVIOUS NEXT

Ref. No.	Part No.	Part Name& Description	Remarks
		MAIN P.C.BOARD PARTS	
PCB1	PQWPTC1000BH	P.C.BOARD ASS´Y (RTL)	
		ICS	
IC201	MN150832BA1	IC	
IC351	AN78M08NSPE1	IC	
IC801	AN6266FA	IC	
IC802	PQVITK14619M	IC	
		TRANSISTORS	
Q101	2SD1819A	TRANSISTOR(SI)	
Q102	2SA1625	TRANSISTOR(SI)	
Q103	PQVT2N6517CA	TRANSISTOR(SI)	
Q105	2SC2120	TRANSISTOR(SI)	
Q110	2SD1819A	TRANSISTOR(SI)	
Q201	2SD1819A	TRANSISTOR(SI)	
Q202	2SD1819A	TRANSISTOR(SI)	
Q351	2SD1994A	TRANSISTOR(SI)	
Q352	2SD1991A	TRANSISTOR(SI)	
Q353	2SD1991A	TRANSISTOR(SI)	
Q354	UN5113	TRANSISTOR(SI)	
		DIODES	
D101	PQVDS1ZB40F1	DIODE(SI)	S
D102	MA4180	DIODE(SI)	
D103	MA153	DIODE(SI)	
D352	MA4300	DIODE(SI)	
D353	MA4300	DIODE(SI)	
D354	MA4300	DIODE(SI)	
D501	MA4300	DIODE(SI)	
D801	MA111	DIODE(SI)	
D804	MA111	DIODE(SI)	
D805	MA111	DIODE(SI)	
D806	MA111	DIODE(SI)	

D807	MA111	DIODE(SI)	
D851	PQVDHVC375	DIODE(SI)	
LED201	PQVDSML310MT	LED	S
		CERAMIC FILTERS	
CF801	PQVFSFE107MJ	CERAMIC FILTER	S
CF802	PQVFCFH455F1	CERAMIC FILTER	
		COILS	
L101	PQLQXF3R3K	COIL	
L102	PQLQXF3R3K	COIL	
L201	PQLQZM1R2K	COIL	
L202	PQLQZM1R2K	COIL	
L351	PQLQXF1R2K	COIL	
L353	PQLQZM330K	COIL	
L354	PQLQZM330K	COIL	
L355	PQLQZM330K	COIL	
L801	PQLO4B002	COIL	
L802	PQLQZK1R0K	COIL	
L851	PQLO4B001	COIL	
		CRYSTAL OSCILLATORS	
X201	PQVCK1024LC5	CRYSTAL OSCILLATOR	
X202	PQVCK3573N9Z	CRYSTAL OSCILLATOR	
		DUPLEXES	
DUP801	PQVFHUSRX	DUPLEX	
DUP802	PQVFHUSTX	DUPLEX	
		VARIABLE RESISTORS	
VR851	EVN5ESX50B15	VARIABLE RESISTOR	
VR852	EVN5ESX50B52	VARIABLE RESISTOR	
		VARISTORS	
SA1	PQVDDSS301L	VARISTOR	
SA2	PQVDDSS301L	VARISTOR	
		OTHERS	
CN101	PQJJ2H003Z	JACK, DC TEL	

CN352	PQJP03B70Z	CONNECTOR	
E1	PQJT10151Y	BATTERY TERMINAL	⚠
PO1	PQRPAR390N	THERMISTOR	S
S201	EVQPC005K	SWITCH, HANDSET LOCATOR	
		RESISTORS	
R101	PQ4R10XJ155	1.5M	S
R102	PQ4R10XJ155	1.5M	S
R103	PQ4R10XJ563	56K	S
R104	PQ4R10XJ473	47K	S
R105	ERDS2TJ104	100K	
R106	ERDS2TJ472	4.7K	
R107	PQ4R10XJ104	100K	S
R108	PQ4R10XJ472	4.7K	S
R115	PQ4R10XJ222	2.2K	S
R116	PQ4R10XJ393	39K	S
R117	ERDS1TJ330	33	S
R118	PQ4R10XJ152	1.5K	S
R119	PQ4R10XJ332	3.3K	S
R120	ERDS2TJ470	47	
R132	ERJ3GEYJ222	2.2K	
R134	PQ4R10XJ472	4.7K	S
R135	ERJ3GEYJ224	220K	
R136	ERJ3GEYJ561	560	
R137	ERJ3GEYJ123	12K	
R209	ERJ3GEYJ472	4.7K	
R210	ERJ3GEYJ472	4.7K	
R213	ERJ3GEYJ821	820	
R214	ERJ3GEYJ103	10K	
R217	ERJ3GEYJ104	100K	
R218	ERJ3GEYJ104	100K	
R221	PQ4R10XJ104	100K	S
R222	ERJ3GEYJ104	100K	
R223	ERJ3GEYJ104	100K	
R229	ERJ3GEYJ104	100K	
R231	ERJ3GEYJ153	15K	
R232	ERJ3GEYJ333	33K	
R233	ERJ3GEYJ103	10K	
R234	ERJ3GEY0R00	0	
R235	ERJ3GEYJ104	100K	
R238	ERJ3GEYJ104	100K	

R239	ERJ3GEYJ103	10K	
R240	ERJ3GEYJ104	100K	
R351	ERJ3GEYJ103	10K	
R352	ERDS2TJ102	1K	
R353	ERDS2TJ101	100	
R354	ERDS2TJ121	120	
R358	PQ4R10XJ471	470	S
R359	ERDS2TJ103	10K	
R360	ERDS2TJ103	10K	
R361	PQ4R10XJ681	680	S
R801	ERJ3GEYJ560	56	
R802	ERJ3GEYJ331	330	
R803	ERJ3GEYJ223	22K	
R804	ERJ3GEYJ394	390K	
R805	ERJ3GEYJ392	3.9K	
R806	ERJ3GEYJ103	10K	
R807	ERJ3GEYJ103	10K	
R808	ERJ3GEYJ333	33K	
R809	ERJ3GEYJ153	15K	
R810	ERJ3GEY0R00	0	
R811	ERJ3GEYJ562	5.6K	
R813	ERJ3GEYJ103	10K	
R814	ERJ3GEYJ223	22K	
R815	ERJ3GEYJ473	47K	
R817	ERJ3GEYJ103	10K	
R818	ERJ3GEYJ104	100K	
R819	ERJ3GEYJ123	12K	
R820	ERJ3GEYJ682	6.8K	
R821	ERJ3GEYJ103	10K	
R822	ERJ3GEYJ222	2.2K	
R823	ERJ3GEY0R00	0	
R824	ERJ3GEYJ103	10K	
R825	ERJ3GEY0R00	0	
R851	ERJ3GEYJ103	10K	
R852	ERJ3GEYJ223	22K	
R853	ERJ3GEYJ393	39K	
R854	ERJ3GEYJ105	1M	
R855	ERJ3GEYJ104	100K	
R856	ERJ3GEYJ223	22K	
R857	ERJ3GEYJ104	100K	

R858	ERJ3GEYJ102	1K	
R859	ERJ3GEYJ220	22	
R860	ERJ3GEYJ220	22	
R862	ERJ3GEYJ470	47	
R865	ERJ3GEYJ151	150	
R866	ERJ3GEYJ394	390K	
J802	ERJ3GEY0R00	0	
		CAPACITORS	
C101	PQCUV1H183KB	0.018	
C102	PQCUV1H183KB	0.018	
C103	PQCUV1H102J	0.001	S
C104	ECKD2H681KB	680P	S
C105	ECKD2H681KB	680P	S
C107	PQCUV1H103ZF	0.01	
C112	ECEA1EKA100	10	
C113	PQCUV1H101JC	100P	
C114	PQCUV1H103KB	0.01	
C115	ECEA1CKS100	10	S
C116	PQCUV1C683KB	0.068	
C121	ECUV1H103KBV	0.01	
C122	ECUV1C104KBV	0.1	
C123	ECUV1C104KBV	0.1	
C124	ECUV1H101JCV	100P	
C128	ECKD2H681KB	680P	S
C202	ECUV1H220JCV	22P	
C203	ECUV1H220JCV	22P	
C204	ECEA0JU102	1000	
C209	ECUV1C104ZFV	0.1	
C211	ECUV1C104ZFV	0.1	
C212	ECUV1H103KBV	0.01	
C213	ECUV1H472KBV	0.0047	
C215	ERJ3GEY0R00	0 (RESISTOR)	
C219	ECUV1H102KBV	0.001	
C220	ECUV1H103KBV	0.01	
C221	ECUV1C104ZFV	0.1	
C352	PQCUV1E104MD	0.1	S
C357	ECUV1C104ZFV	0.1	
C362	ECEA1EKA100	10	
C801	ECKERS102MB	0.001	⚠
C802	ECUV1C104ZFV	0.1	

C804	ECUV1H103KBV	0.01	
C805	ECUV1H103KBV	0.01	
C806	ECUV1C104KBV	0.1	
C807	ECUV1C104KBV	0.1	
C808	ECEA1CKS100	10	S
C809	ECUV1C104ZFV	0.1	
C810	ECUV1H680JCV	68P	
C811	ECUV1C104KBV	0.1	
C812	ECUV1H121JCV	120P	
C813	ECUV1H121JCV	120P	
C814	ECUV1C104KBV	0.1	
C815	ECUV1C104KBV	0.1	
C816	ECUV1H472KBV	0.0047	
C818	ECUV1H152KBV	0.0015	
C819	ECUV1C104KBV	0.1	
C820	ECUV1C683KBV	0.068	
C821	ECUV1C473KBV	0.047	
C822	ECUV1C104KBV	0.1	
C823	ECUV1C104KBV	0.1	
C824	ECUV1H391JCV	390P	S
C825	ECUV1H681JCV	680P	S
C826	ECUV1C104ZFV	0.1	
C827	ECEA1EK470	47	S
C828	ECUV1H223KBV	0.022	S
C829	ECUV1C104ZFV	0.1	
C830	ECUV1H101JCV	100P	
C831	ECUV1C104KBV	0.1	
C832	ECUV1H152KBV	0.0015	
C833	ECUV1H151JCV	150P	
C834	ECUV1C104KBV	0.1	
C835	ECUV1H390GCV	39P	
C836	ECUV1H270GCV	27P	
C837	ECUV1H103KBV	0.01	
C838	ECEA1CKS100	10	S
C839	ECEA1HKS4R7	4.7	S
C840	ECEA1HKSR22	0.22	S
C841	ECUV1H180JCV	18P	
C842	ECUV1H103KBV	0.01	
C843	ECUV1H103KBV	0.01	
C852	ECUV1C104ZFV	0.1	

C853	ECUV1C104ZFV	0.1	
C854	ECUV1H103KBV	0.01	
C855	ECUV1H821KBV	820P	
C856	ECUV1C104ZFV	0.1	
C857	ECUV1H470JCV	47P	
C858	ECUV1H681JCV	680P	
C859	ECUV1H270JRV	27P	
C860	ECUV1H103KBV	0.01	S
C861	ECUV1H103KBV	0.01	
C862	ECUV1H103KBV	0.01	S
C863	ECUV1C104KBV	0.1	
C864	ECUV1C104KBV	0.1	
C865	ECUV1H103KBV	0.01	
C866	ECEA1CKS220	22	
C867	ECUV1H100DCV	10P	
C868	PQCUV1H220JC	22P	
C870	ECUV1H102KBV	0.001	
C891	ECUV1H220JCV	22P	

TOP PREVIOUS NEXT

33.3 ACCESSORIES AND PACKING MATERIALS

TOP PREVIOUS

Ref. No.	Part No.	Part Name& Description	Remarks
		ACCESSORIES AND PACKING MATERIALS	
A1	KX-TCA1	AC ADAPTOR	⚠
A2	PQJA10075Z	TEL CORD	
A3	PQQW12108Z	LEAFLET	
A4	PQQX12148Y	INSTRUCTION BOOK	
P1	XZB10X35A02	PROTECTION COVER (for Handset)	
P2	XZB20X35A01	PROTECTION COVER (for Base Unit)	
P3	PQPK12747Z	GIFT BOX (for KX-TC1000B)	
P3	PQPK12757Z	GIFT BOX (for KX-TC1001W)	
P4	PQPN10664Z	CUSHION	

TOP PREVIOUS