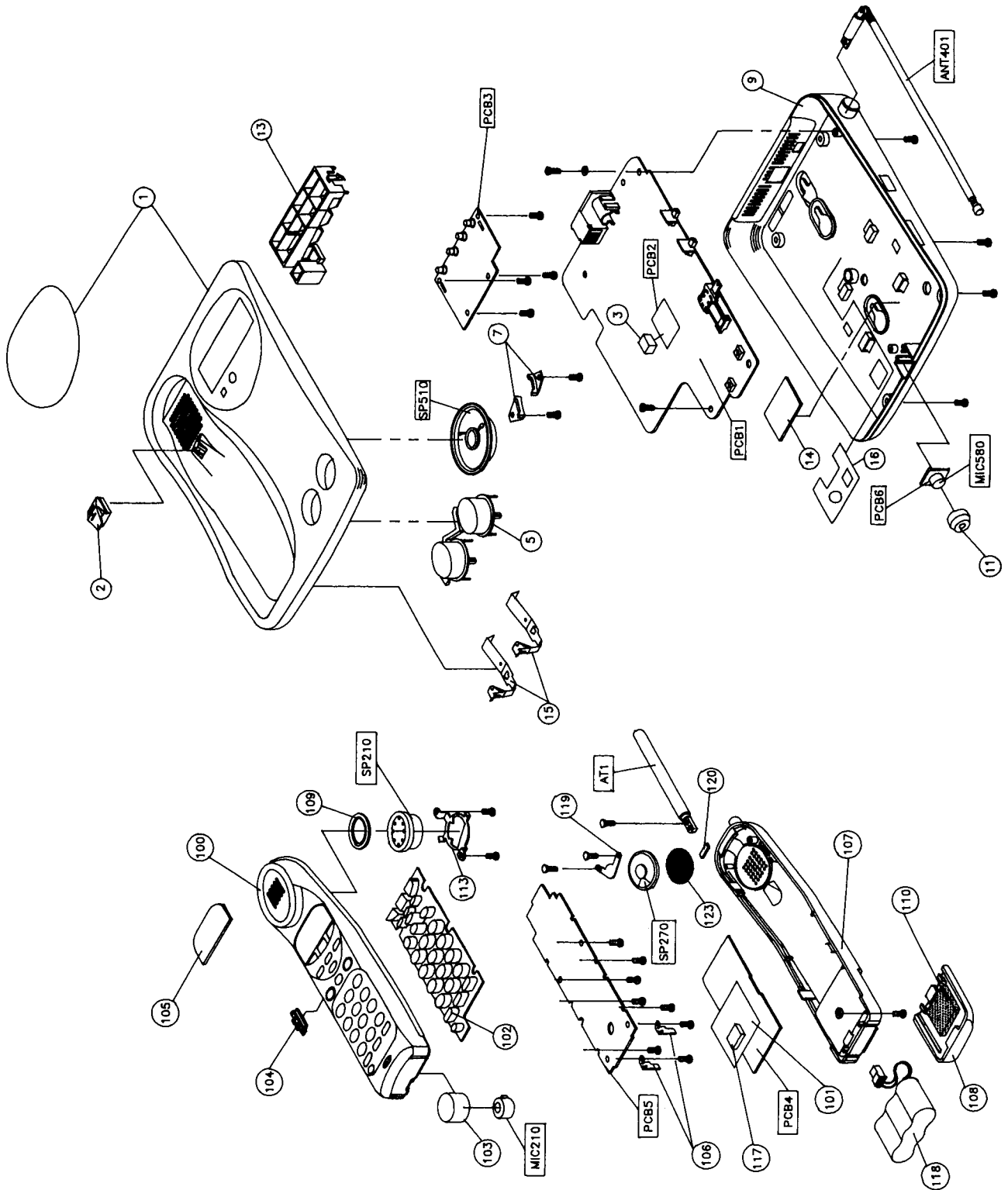


EXPLODED VIEW



PARTS LIST

PRODUCT SAFETY NOTICE

Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol Δ in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified with Δ , use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual. Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

Ref. No.	PART No.	DESCRIPTION	Q'ty
PACKING MATERIAL			
	641 004 2609	ASSY, FIXER (CLT-9650)	1
	641 004 9776	ASSY, FIXER (CLT-9650/W)	1
	641 004 5198	ASSY, MODULAR CORD (CLT-9650/W)	1
	641 005 4978	INNER CARTON	1
	641 005 1762	PAD, PLAIN	1
	641 005 4985	INSTRUCTION MANUAL	1
	641 003 0064	POLY COVER	1
	641 005 4350	PAD, PLAIN	1
	632 537 1481	PROTECTOR SHEET	1
	632 537 1504	PROTECTOR SHEET	1
	641 002 8863	NOTICE	1
	641 005 5005	LABEL, RATING	1
	641 005 4381	LABEL, RATING (CLT-9650)	1
	641 005 4992	LABEL, RATING (CLT-9650)	1
	641 005 6071	LABEL, RATING (HANDY) (CLT-9650/W)	1
	641 005 6378	LABEL, RATING (ON/OFF) (CLT-9650/W)	1
	641 005 5029	LABEL, MEMORY	1

Ref. No.	PART No.	DESCRIPTION	Q'ty
ACCESSORY			
118	632 504 3319	BATTERY PACK	1
Δ	641 004 5198	ASSY, MODULAR CORD (CLT-9650)	1
	641 005 4527	ADAPTOR, AC-DC	1

Ref. No.	PART No.	DESCRIPTION	Q'ty
HANDY CABINET			
100	641 005 4442	CABINET, TOP (CLT-9650)	1
	641 005 6132	CABINET, TOP (CLT-9650/W)	1
101	641 003 3645	SHIELD, PLATE	1
102	641 005 4428	SWITCH, KEY (CLT-9650)	1
	641 005 6170	SWITCH, KEY (CLT-9650/W)	1
104	641 005 0949	KNOB, SLIDE (CLT-9650)	1
	641 005 6125	KNOB, SLIDE (CLT-9650/W)	1
106	641 005 1045	TERMINAL, (HANDY)	2
107	641 005 1021	CABINET, REAR (CLT-9650)	1
	641 005 6149	CABINET, REAR (CLT-9650/W)	1
108	641 005 0970	LID, BATTERY (CLT-9650)	1
	641 005 6156	LID, BATTERY (CLT-9650/W)	1
109	632 565 2337	CUSHION, SPEAKER	1
110	632 513 5670	CUSHION, BATTERY	1
113	641 005 1014	BRACKET-E, SPEAKER	1
117	641 002 8801	ADHESIVE SHEET	1
119	641 005 0994	BRACKET-E, SPEAKER	1
120	641 005 1069	CUSHION, SPEAKER	1
123	641 005 1076	NET, SPEAKER	1
105	641 005 4435	WINDOW, SIGN (CLT-9650)	1
	641 005 6163	WINDOW, SIGN (CLT-9650/W)	1
	641 003 2969	LUG	1
	411 025 5107	SCR S-TPG BIN 2.6X8	1
	411 026 8008	SCR S-TPG PAN 3X8	1
	411 025 9204	SCR S-TPG PAN 2X6	6
	411 025 4506	SCR S-TPG BIN 2X8	1
	411 025 4209	SCR S-TPG BIN 2X6	2
	411 025 5008	SCR S-TPG BIN 2.6X6	2
	411 164 1701	SCR S-TPG PAN + SW 2X8	2
	641 005 4459	SPACER	1
	641 005 4466	CUSHION	1
	641 003 2532	VEIL	2

Ref. No.	PART No.	DESCRIPTION	Q'ty
BASE CABINET			
1	641 005 4930	ASSY, CABINET TOP (CLT-9650)	1
	641 005 6255	ASSY, CABINET TOP (CLT-9650/W)	1
2	641 005 1113	HANGER (CLT-9650)	1
	641 005 6224	HANGER (CLT-9650/W)	1
3	641 005 5036	CUSHION, PCB	1
5	641 005 1120	BUTTON (CLT-9650)	1
	641 005 6187	KNOB, PAGE (CLT-9650/W)	1
7	641 001 2961	BRACKET, SPEAKER	2
9	641 005 4503	ASSY, CABINET BOTTOM (CLT-9650)	1
	641 005 6095	ASSY, CABINET BOTTOM (CLT-9650/W)	1

Ref. No.	PART No.	DESCRIPTION	Q'ty
BASE CABINET			
13	641 005 1083	HOLDER, LED	1
14	632 558 4072	SPACER	1
15	641 004 6058	TERMINAL, BASE	2
	411 026 2709	SCR S-TPG PAN 3X12	4
	411 026 8008	SCR S-TPG PAN 3X8	2
	411 025 9105	SCR S-TPG PAN 2X5	7
	411 025 9204	SCR S-TPG PAN 2X6	4
	411 026 7704	SCR S-TPG PAN 3X6	1
	411 045 3206	SCR PAN + SW 3X14	1
	632 562 6802	SPACER	1
	411 092 5901	WASHER Z 3X8X1	1
	641 005 3322	CUSHION, RUBBER	2

Ref. No.	PART No.	DESCRIPTION	Q'ty
CHASSIS ELECTRICAL			
ANT401	641 004 1282	ANTENNA, ROD	1
AT1	641 005 1335	ANTENNA, RUBBER (CLT-9650)	1
	641 005 6248	ANTENNA, RUBBER (CLT-9650/W)	1
CS510	641 005 4534	CORD, 2P-160MM	1
MIC210	641 005 4336	MICROPHONE	1
SP210	641 001 6310	SPEAKER, 150	1
SP270	641 005 5340	SPEAKER	1
SP510	632 249 6729	SPEAKER, 16 OHM	1

Ref. No.	PART No.	DESCRIPTION	Q'ty
ASSY, PCB-W, BASE MAIN			
PCB1 Δ	641 005 4541	ASSY, PCB-W, BASE MAIN	1
11	641 005 4251	HOLDER, MICROPHONE	1
16	641 005 0734	SHIELD, PLATE	1
CF401	641 005 4961	FILTER, CERAM,10.700MHZ	1
CF410	641 005 0758	CER.FILTER 455KHZ	1
CP1	632 558 8193	PLUG, 7 P	1
CP2,3	641 005 4268	PLUG, 5 P	2
CP510	632 253 9976	PLUG, 2 P	1
CP900	632 254 0002	PLUG, 5 P	1
CT601	641 005 2769	TRIMMER 30P	1
D401,601	407 000 4104	VARACTOR DI SVC251SP	2
D410,506	407 012 6509	DIODE 1SS193	2
D441,443	407 197 6103	DIODE 1N4148M	2
D441,443	407 012 4406	DIODE 1SS133	2
D501,502,503,504,505 Δ	407 173 2204	DIODE 1N4004G	5
D800	407 158 8306	DIODE 1N4002S	1
DZ501,502 Δ	407 123 0403	ZENER DIODE HZ33BP	2
DZ501,502 Δ	407 173 4406	ZENER DIODE TZP30B	2
DZ511,512	407 179 7807	ZENER DIODE UZ11BSB	2
DZ511,512	407 099 6409	ZENER DIODE MTZJ11-B	2
DZ801 Δ	407 173 9807	ZENER DIODE UZ5.6BSC	1
DZ801	407 063 8903	ZENER DIODE MTZJ5.6C	1
DZ802	407 179 7708	ZENER DIODE UZ10BSB	1
DZ802	407 099 6102	ZENER DIODE MTZJ10-B	1
IC401	409 016 0101	IC LA1185	1
IC420	409 390 8601	IC MC3361CP	1
IC430,470	409 057 2300	IC UPC324G2-T1	2
IC430,470	409 321 4900	IC BA10324AF-T1	2
IC460	409 333 5803	IC LA8630AM-TE-R	1
IC501 Δ	407 121 1204	PHOTO COUPLE PS2505-1	1
IC501 Δ	407 001 3700	PHOTO COUPLE PC 814	1
IC502 Δ	407 153 1005	PHOTO COUPLE TLP627	1
IC502 Δ	407 175 6101	PHOTO COUPLE PS2532-1	1
IC550	409 367 0508	IC MC33219AP	1
IC570	409 255 1808	IC MC34119P	1
IC610	409 346 4008	IC SM5131NS-ET	1
IC701	409 393 4907	IC LCB96XA-A65	1
IC710	410 270 1001	IC AT24C02-10PC-2.7	1
JK800 Δ	641 005 0765	JACK, MODULAR	1
L401	641 004 4115	CHOKE COIL, 2.2UH	1
L402	641 004 3392	INDUCTOR 0.82UH	1
L403	641 002 8702	INDUCTOR 1.0UH KT	1

PARTS LIST

Ref. No.	PART No.	DESCRIPTION	Q'ty
ASSY, PCB-W, BASE MAIN			
L501,502	641 002 4513	INDUCTOR 100UH K	2
L601	641 004 5181	INDUCTOR 1.8UH K	1
L802	641 002 5428	INDUCTOR 1.2UH K	1
L802	641 002 9570	INDUCTOR 27UH K	1
NL501 ▲	641 005 5357	DISCHARGE TUBE	1
NL501 ▲	641 004 5273	DISCHARGE TUBE	1 }OR
Q441,471,521,523,701	405 015 4201	TR 2SC2712-GR	5
Q441,471,521,523,701	405 015 8704	TR 2SC2812-L6-TA	5 }OR
Q441,471,521,523,701	405 134 0009	TR 2SC3928-R	5
Q451	405 088 1701	TR RN1407	1
Q451	405 000 3608	TR DTC114YK-T97	1 }OR
Q451	405 035 2201	TR UN2214	1
Q472	405 002 4603	TR 2SA1162-GR	1 }OR
Q472	405 002 6706	TR 2SA1179-M6-TA	1
Q501	405 005 1906	TR 2SA733-K	1 }OR
Q501	405 001 7001	TR 2SA1015-GR	1 }OR
Q502	405 013 1301	TR 2SC2120Y-T	1
Q522	405 012 2002	TR 2SC1815GR	1 }OR
Q522	405 020 5200	TR 2SC945K	1
Q601,602	405 064 1909	TR 2SC2714Y	2
Q603,604	405 086 9006	TR RN 2401	2
Q603,604	405 080 0405	TR TDA143EK	2 }OR
Q603,604	405 033 9904	TR UN211L	2
Q801,802	405 102 7108	TR 2SD882-P	2 }OR
Q801,802	405 142 0701	TR 2SD882-Q	2
Q801,802	405 142 0800	TR 2SD882-R	2
Q810	405 015 4201	TR 2SC2712-GR	1
Q810	405 015 8704	TR 2SC2812-L6-TA	1 }OR
Q810	405 134 0009	TR 2SC3928-R	1
SVR401,461	641 004 3354	SVR 50K OHM	2
SVR510	632 514 6409	SLIDE VOLME, 20KA	1
SVR601	641 005 1977	SVR, 200 OHM	1
SVR610	641 004 7895	SVR 200K OHM	1
SW510(HOLD), SWP710	641 002 4971	SWITCH, TACT	2
SW720(FLASH)	632 511 9755	SWITCH, SLIDE	1
SW721	632 511 9748	SWITCH, SLIDE	1
T401	641 004 3415	COIL, FERRITE, VHF	1
T402	641 004 3439	TRANS, RF	1
T404,603	641 004 3422	COIL, FERRITE, VHF	2
T405	641 002 4568	COIL, FERRITE, RF	1
T406	641 002 4582	TRANS, IF	1
T410	641 002 4544	TRANS, IF	1
T501 ▲	641 004 3385	TRANS	1
T601	641 003 3829	COIL, FERRITE, FM	1
T602	641 004 3408	TRANS, RF	1
TP401	632 251 7653	PLUG, 2P	1 }OR
TP401	641 004 4061	PLUG, 2P	1
X610	641 002 4506	RESONATOR,XTAL	1
X701	641 005 1953	RESONATOR,XTAL	1
ASSY, PCB-W, BASE SUB			
PCB2	641 005 4213	ASSY, PCB-W, BASE SUB	1
CS1	632 579 3405	SOCKET, 7P	1
CS2,3	641 005 4329	SOCKET, 5P	2
IC1,2,3	409 199 4705	IC MC14066BF-R	3
ASSY, PCB-W, BASE LED			
PCB3	641 005 4220	ASSY, PCB-W, BASE LED	1
CS900	632 256 5272	CORD, 5P-160MM	1
LED901,904	408 019 5106	LED SLP-9117E-51-T1	2
LED902	408 020 2606	LED SLP-3117E-51S-T1	1
LED903	408 020 2705	LED SLP-4117E-51-T1	1
ASSY, PCB-W, HANDY RF			
PCB4	641 005 4190	ASSY, PCB-W, HANDY RF	1
CF11	641 005 4961	FILTER, CERAM, 10.7MHZ	1
CF12	641 005 0758	CERAMIC FILTER, 455KNZ	1

Ref. No.	PART No.	DESCRIPTION	Q'ty
ASSY, PCB-W, HANDY RF			
CP1	641 003 3942	SOCKET, 2P	1
CP2	641 004 9226	PLUG, 7P	1
CP3	641 005 4282	PLUG, 6P	1
CT31	641 005 2769	TRIMMER, 30P	1
D101	407 000 4104	VARACTOR DI SVC251SP	1
D81	407 012 6509	DIODE 1SS193	1
IC10	409 343 6708	IC MC13135DW	1
IC31	409 346 4008	IC SM5131NS-ET	1
IC40	409 057 2300	IC UPC324G2-T1	1 }OR
IC40	409 321 4900	IC BA10324AF-T1	1
L1	641 005 4275	INDUCTOR, 3.3UH	1
L101	641 002 5428	INDUCTOR, 1.2UH K	1
L102	641 003 2235	INDUCTOR, 0.47UH K	1
L103,104	641 002 8702	INDUCTOR, 1.0UH K	2
L2	641 004 3361	INDUCTOR, 0.56UH K	1
Q1	405 026 9905	TR 2SK242-4	1
Q101,102,103	405 064 1909	TR 2SC2714Y	3
Q41,81,82	405 015 4201	TR 2SC2712-GR	3 }OR
Q41,81,82	405 015 8704	TR 2SC2812-L6-TA	3
Q83	405 002 6706	TR 2SA1179-M6-TA	1 }OR
Q83	405 002 4603	TR 2SA1162-GR	1
Q83	405 005 5508	TR 2SA812-M6	1
SVR11	641 004 5525	POTENTIOMETER, 100K	1
SVR41	641 004 5211	SVR, 20K OHM	1
SVR61	641 004 3354	SVR, 50K OHM	1
SW71	641 002 4773	SWITCH,SLIDE,1P-2T	1
T1	641 003 3867	COIL,FERRITE,VHF	1
T101	641 004 3415	COIL,FERRITE,VHF	1
T102	641 003 6301	TRANS, IF	1
T2	641 003 4772	TRANS, RF	1
T3	641 003 6318	TRANS, RF	1
T41,103	641 003 3829	COIL, FERRITE, FM	2
T42	641 002 4544	TRANS, IF	1
TP1	632 251 7653	PLUG, 2P	1 }OR
TP1	641 004 4061	PLUG, 2P	1
X31	641 002 4506	RESONATOR,XTAL	1
ASSY, PCB-W, HANDY KEYBOARD			
PCB5	641 005 4206	ASSY, PCB-W, HANDY KEYBD	1
103	641 005 4299	HOLDER, MICROPHONE	1
	641 005 1007	BRACKET-E, LCD	1
	641 004 9295	SOCKET, 7P	1
	641 005 4305	SOCKET, 6P	1
D1	407 012 6202	DIODE 1SS184	1
D2	407 012 6103	DIODE 1SS181	1
D201	407 194 7103	LED CL-170R-CD	1
D202	408 031 5603	LED CL-155D/PG-D-T	1
D205,206,207,208	407 149 8407	LED CL-170FG-CD-T	4
D210	407 177 4808	ZENER DIODE UZ5.1BSB	1 }OR
D210	407 099 5204	ZENER DIODE MTZJ5.1B	1
D211	407 012 6509	DIODE 1SS193	1
IC201	409 396 6007	IC LCH96XB-E80	1
IC220	410 217 6403	IC AT 24C02N-10SC-1.8	1
IC230	409 391 7405	IC IC-PST9131NR	1
IC235	409 268 4605	IC IC-PST5731-MT	1
IC250	409 333 5803	IC LA8630AM-TE-R	1
IC270	409 332 4906	IC MC34119D-R2	1
L201,202	641 002 5947	INDUCTOR	2
	641 005 5302	SPACER, MIC	1
Q201,202,203	405 086 9006	TR RN 2401	3 }OR
Q201,202,203	405 080 0405	TR TDA143EK	3
Q201,202,203	405 133 9904	TR UN211L	3
Q204	405 088 1701	TR RN1407	1 }OR
Q204	405 000 3608	TR DTC114YK-T97	1
Q204	405 035 2201	TR UN2214	1
Q211,231,250	405 015 4201	TR 2SC2712-GR	3 }OR
Q211,231,250	405 015 8704	TR 2SC2812-L6-TA	3
Q211,231,250	405 134 0009	TR 2SC3928-R	3
Q271	405 035 5509	TR 2SA1036K-R-T146	1

PARTS LIST

Ref. No.	PART No.	DESCRIPTION	Q'ty
ASSY, PCB-W, HANDY KEYBOARD			
SW201	641 002 4773	SWITCH, SLIDE, 1P-2T	1
X201	641 005 4312	RESONATOR, XTAL, 3.84MHZ	1

Ref. No.	PART No.	DESCRIPTION	Q'ty
ASSY, PCB-W, MIC			
PCB6	641 005 4244	ASSY, PCB-W, MIC	1
MIC580	641 005 4336	MICROPHONE	1

- NOTES: 1. Part orders must contain Model Number, Part Number and Description.
 2. Order quantity of screws and resistors must be multiple of 10 pcs.
 3. Regular type resistor and capacitor are omitted. Check the schematic diagram for these values.

IC AND TRANSISTOR VOLTAGE CHART

(BASE)

IC Tr	Q441	Q451	Q471	Q472	Q501	Q502	Q521	Q522	Q523	Q601	Q602	Q603	Q604	Q701	Q801	Q802	Q810
E	0	0	0	5	0	0	3.6	3	0	2.4	0.2	5	5	0	5	9	0
C	5	5	0	0.3	0	0	9.1	8.4	4	4.8	4.8	5	5	0	12	12	5
B	0	0	0.3	5	0	0	4.1	3.8	0.6	3	0.9	0	0	0.6	5.7	9.7	0

(HANDY)

IC PIN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
IC201	0	3.5	3.5	3.5	3.5	3.5	3.5	3.5	0	0	0	0	0	2	3.5	3.5	3.5	3.9	0	
	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	
	0	2.5	2.5	0	3.9	3.9	0	0	0	0	0	0	0	0	0	0	0	0	3.9	3.9
	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	
	3.9	3.9	0	3.9	1.8	1.8	0	0	0	0	0	0	3.9	3.1	3.6	0	0	3.9	3.9	
	58	59	60	61	62	63	64													
	0	0	3.9	3.9	3.9	3.9	3.9													
IC10	3.4	2.8	2.3	3.5	3	3.5	2	0	2.6	2.6	2.6	0	0	0	0	3	1.5	3.4	3.5	
	20	21	22	23	24															
	2.3	3.5	3.5	0	0															
IC40	1.4	1.4	1.4	3.8	1.5	1.5	1.5	1.5	1.4	1.4	0	1.4	1.4	1.2						
IC31	1.8	0	3.7	3.9	3.9	3.9	0	1.7	0	2	0	1.5	0	1.7	3.6	0				
IC250	1.8	0.7	1.8	1.8	1.8	1.8	0	1.8	3.7	3.6	3.6	1.8	1.8	1.8	0.6	1.8				
IC230	0	0	0	3.6	3.6															
IC220	0	0	0	0	0	0	0	3.9												
IC235	0	0	3.9																	

IC Tr	Q41	Q81	Q82	Q83	Q101	Q102	Q103	Q201	Q202	Q203	Q204	Q211	Q231	Q250	Q271	IC Tr	Q1
E	0	0	0	3.8	1.2	0	0	3.9	3.9	3.9	0	0	0	1.9	3.0	G	0
C	0	2.1	0	0	3.7	3.8	3.8	3.9	0	3.9	2	2.5	3.9	3.3	0	S	0
B	0.6	0.6	0	3.8	1.6	0.8	0.7	0	0	0	1.2	0	0	0	3.9	D	3.2

IC PIN DESCRIPTION

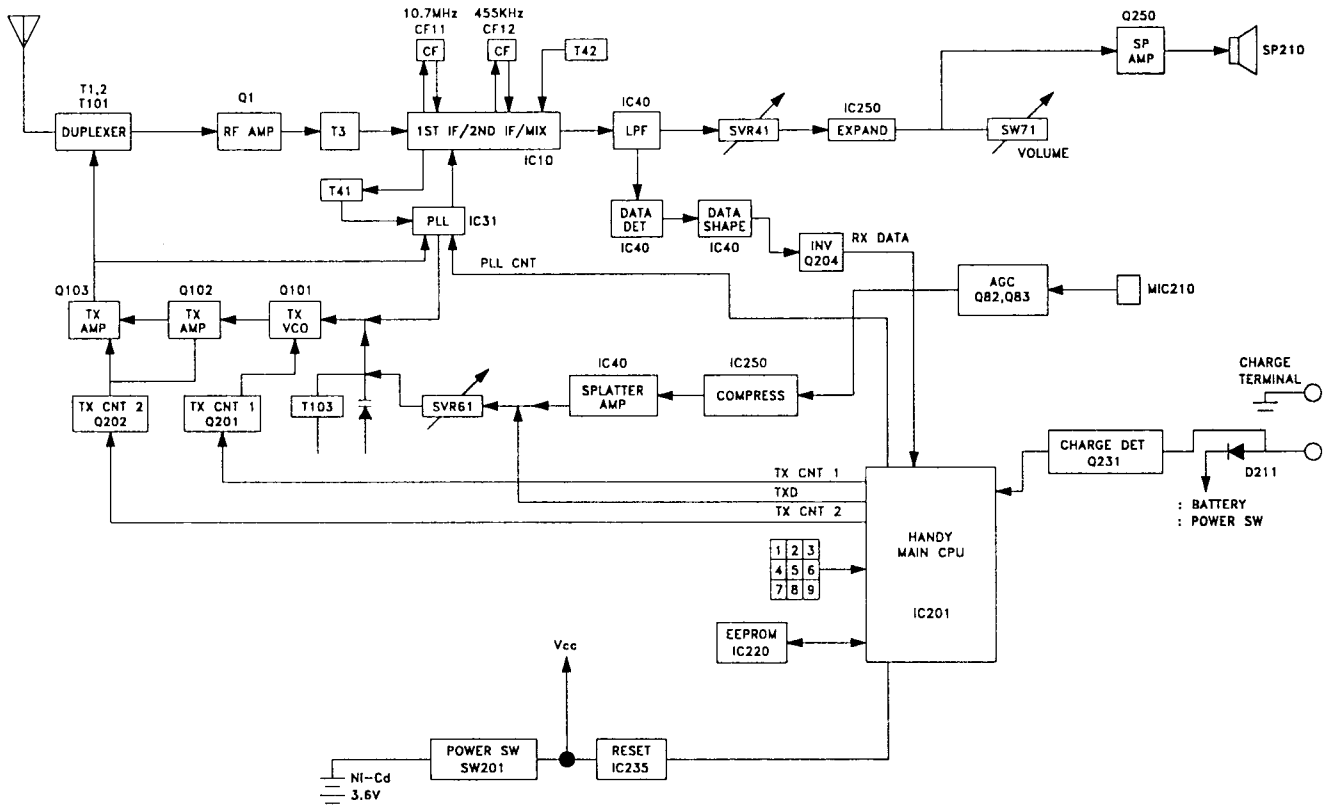
LCB96XA-A65 (IC701)

LCH96XB-E80 (IC201)

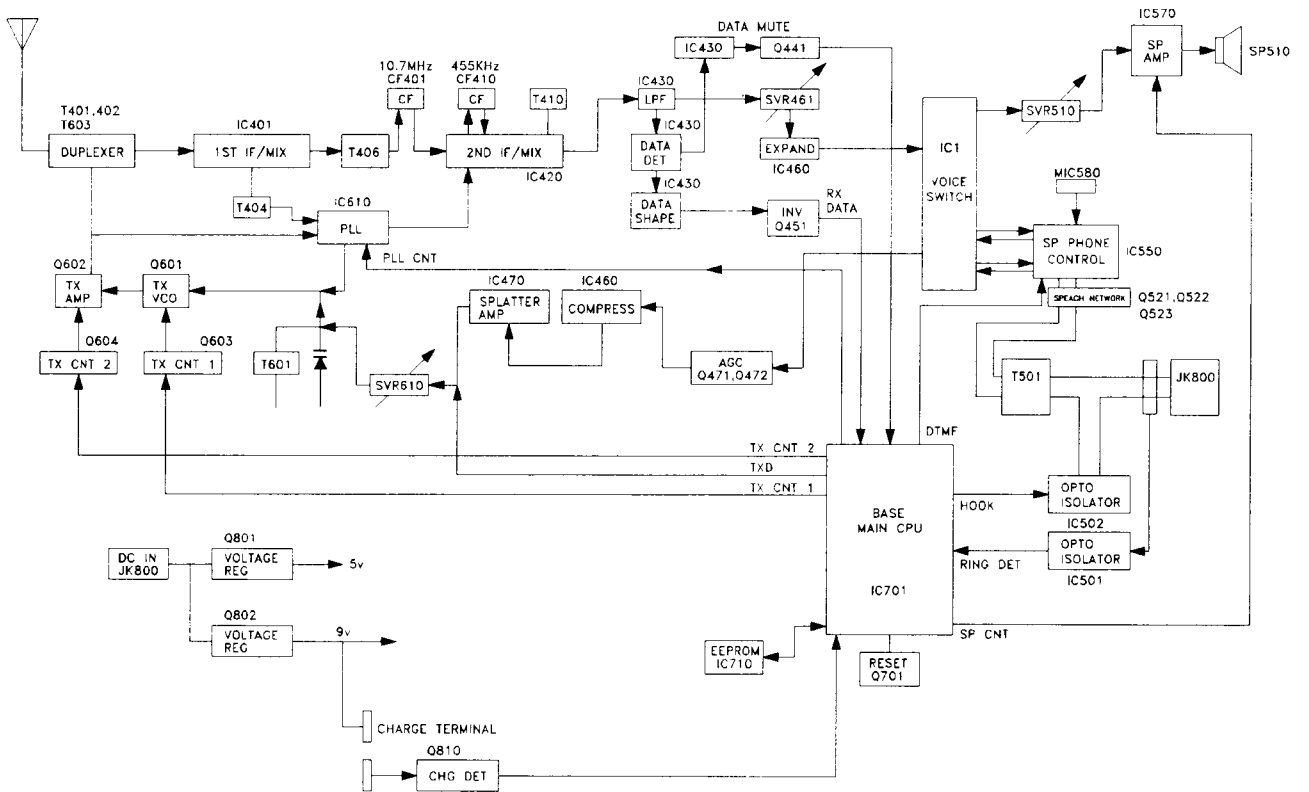
PIN	I/O	PORT NAME	NAME	EXPLANATION
1	I	RD0/COMP0	RDT	RING DETECT
2	I	RD1/COMP1	RS	OUT OF RANGE DETECT
3	I	RD2/COMP2	NC	GND
4	I	RD3/COMP3	NC	GND
5	I	RE0/VcRef	VcRef	Vcc
6	I	TEST	TEST	Vcc
7	I	OSC 1	OSC IN	X'TAL (3.58 MHZ)
8	O	OSC 2	OSC OUT	X'TAL (3.58 MHZ)
9	I	RESET	RESET	RESET
10	I	X1	X1	Vcc
11	O	X2	X2	-
12	I	GND	GND	GND
13	O	D0	TXD+	TX DATA OUT+
14	O	D1	TXD-	TX DATA OUT-
15	O	D2	CLK	CLOCK (EEPROM)
16	I/O	D3	SDA	DATA I/O (EEPROM)
17	O	D4	TEL	TEL LED CONTROL
18	O	D5	INT	INT LED CONTROL
19	O	D6	SP	SP PHONE LED CONTROL
20	O	D7	H1	HANDSET 1 LED CONTROL
21	O	D8	H2	HANDSET 2 LED CONTROL
22	O	D9	H3	HANDSET 3 LED CONTROL
23	O	D10	ALL	ALL LED CONTROL
24	O	D11	HOOK	HOOK CONTROL
25	I	D12/STOPC	NC	Vcc
26	I	D13/INT0	NC	Vcc
27	I	R00/INT1	NC	-
28	I	R01/INT2	RXD	RX DATA IN
29	I	R02/INT3	CHG	CHARGE DETECT
30	I	R03/INT4	NC	-
31	O	R10	D0	PLL CHANNEL CONTROL
32	O	R11	D1	PLL CHANNEL CONTROL
33	O	R12	D2	PLL CHANNEL CONTROL
34	O	R13	D3	PLL CHANNEL CONTROL
35	I	R20	F1	FLASH TIME CONTROL 1
36	I	R21	F2	FLASH TIME CONTROL 2
37	I	R22	70/60,50	MODEL SELECT
38	I	R23	NC	-
39	O	R31/T0B	RING OSC	RING OSC
40	O	R31/T0C	TONE	TONE OSC
41	O	R32/T0D	RS OSC	SQUELCH OSC
42	O	R33/EVNB	ANGSW-E	ANALOG SW CONTROL E
43	O	R40/EVND	ANGSW-D	ANALOG SW CONTROL D
44	O	R41/SCK1	ANGSW-C	ANALOG SW CONTROL C
45	O	R42/SI1	ANGSW-B	ANALOG SW CONTROL B
46	O	R43/S01	ANGSW-A	ANALOG SW CONTROL A
47	O	R50	TX CNT1	TX POWER CONTROL 1
48	O	R51/SCK2	TX CNT2	TX POWER CONTROL 2
49	O	R52/S12	SP POWER	SP POWER CONTROL
50	O	R53/S02	D MUTE	DIAL MUTE
51	O	R60	MUTE OUT	INT MUTE CONTROL
52	O	R61	NC	-
53	O	R62	MIC CNT	MIC CONTROL
54	O	R63	SP CNT	SP PHONE CONTROL
55	O	R70	R1	KEY SCAN
56	O	R71	R2	KEY SCAN
57	O	R72	R3	KEY SCAN
58	O	R73	R4	KEY SCAN
59	I	R80	C1	KEY SCAN
60	I	R81	C2	KEY SCAN
61	I	R82	C3	KEY SCAN
62	I	R83	C4	KEY SCAN
63	I	R90	C5	KEY SCAN
64	I	R91	C6	KEY SCAN
65	I	R92	NC	-
66	I	R93	NC	-
67	I	RA0	MUTE SW	INT MUTE SW
68	I	RA1	NC	-
69	I	RA2	SP SW	SP PHONE SW
70	I	RA3	DP/DT	PULSE/TONE CONTROL
71	I	RB0	NC	-
72	I	RB1	NC	-
73	I	RB2	NC	-
74	I	RB3	NC	-
75	I	RC0	T-J	TEST MODE
76	I	SEL	SEL	Vcc
77	O	TONE C	TONE C	DTMF COLUMN OUT
78	O	TONE R	TONE R	DTMF ROW OUT
79	I	Vcc	Vcc	POWER
80	I	VTref	VTref	DTMF REF POWER

PIN	I/O	PORT NAME	NAME	EXPLANATION
1	O	R03	D3	PLL CHANNEL CONTROL
2	I	R10	NC	Vcc
3	I	R11	NC	Vcc
4	I	R12	NC	Vcc
5	I	R13	NC	Vcc
6	O	R20	USE2	IN USE/INT LED CONTROL
7	O	R21	NC	-
8	O	R22	NC	-
9	O	R23	LRED	-
10	I	RA0	NC	GND
11	I	RA1/Vdisp	NC	GND
12	I	R30	NC	GND
13	I	R31	NC	GND
14	I	INT0/R32	RXD	RX DATA IN
15	I	INT1/R33	PWR IN	POWER IN
16	O	R50	RVC	RX VOICE CONTROL
17	O	R51	TVC	TX VOICE CONTROL
18	O	R52	SPACNT	→ SPAMP CONTROL
19	O	R53	NC	GND
20	O	R60	USE3	IN USE LED CONTROL
21	O	R61	H/F	H.F. LED CONTROL
22	O	R62	BAT	BATTERY LOW LED CONTROL
23	O	R63	DLT	DIAL LIGHT CONTROL
24	I	Vcc	Vcc	POWER
25	O	R40/SCK	NC	-
26	I	R41/SI	NC	-
27	O	R42/S0	RING OSC	RING OSC
28	O	R43	TONE	TONE OSC
29	O	R70	NC	-
30	O	R71	C7	KEY SCAN
31	O	R72	C6	KEY SCAN
32	O	R73	C5	KEY SCAN
33	O	R80	C4	KEY SCAN
34	O	R81	C3	KEY SCAN
35	O	R82	C2	KEY SCAN
36	O	R83	C1	KEY SCAN
37	I	R90	R4	KEY SCAN
38	I	R91	R3	KEY SCAN
39	I	R92	R2	KEY SCAN
40	I	R93	R1	KEY SCAN
41	I	RESET	RESET	RESET
42	I	TEST	TEST	Vcc
43	I	OSC1	OSC IN	X'TAL (3.84MHZ)
44	O	OSC2	OSC OUT	X'TAL (3.84MHZ)
45	O	GND	GND	GND
46	O	D0	TX CNT1	TX POWER CONTROL 1
47	O	D1	RX CNT	RX POWER CONTROL
48	O	D2	TX CNT2	TX POWER CONTROL 2
49	I/O	D3	SDA	DATA I/O (EEPROM)
50	O	D4	CLK	CLOCK (EEPROM)
51	O	D5	TXD+	TX DATA OUT+
52	O	D6	TXD-	TX DATA OUT-
53	I	D7	BAT.L	BATTERY LOW DETECT
54	I	D8	RS	OUT OF RANGE DETECT
55	O	D9	NC	-
56	O	D10	NC	-
57	I	D11	ON SET	CHARGE DETECT
58	I	D12	NC	-
59	O	D13	NC	-
60	I	D14	NC	Vcc
61	I	D15	T-J	TEST MODE
62	O	R00	D0	PLL CHANNEL CONTROL
63	O	R01	D1	PLL CHANNEL CONTROL
64	O	R02	D2	PLL CHANNEL CONTROL

BLOCK DIAGRAM (HAND UNIT)



BLOCK DIAGRAM (BASE UNIT)



CIRCUIT DESCRIPTION

Please note that communication distance may vary depending upon the conditions of operation and may decrease if using the unit in a steel-reinforced concrete structure.

This cordless telephone is composed of two units, the base unit and the handunit.

As shown in Fig.1, there are 10 channels. At any given time, communication between the base unit and hand unit uses one pair (channel) of these frequencies.

CH	BASE UNIT TX(HAND UNIT RX)	HAND UNIT TX(BASE UNIT RX)
1	30.075MHz	39.775MHz
2	30.125MHz	39.825MHz
3	30.175MHz	39.875MHz
4	30.225MHz	39.925MHz
5	30.275MHz	39.975MHz
6	30.100MHz	39.800MHz
7	30.150MHz	39.850MHz
8	30.200MHz	39.900MHz
9	30.250MHz	39.950MHz
10	30.300MHz	40.000MHz

Fig. 1

OUTLINE OF OPERATION

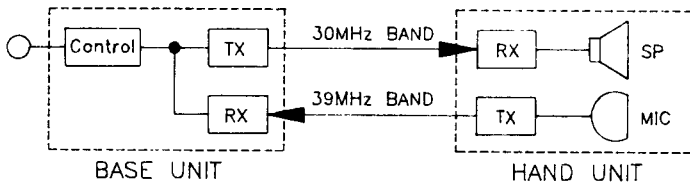


Fig. 2

1. HAND UNIT

1-1 RECEPTION MODE (TEL/INTERCOM MODE)

As shown in Fig. 3, for the voice-receive circuitry of the Hand unit, signals pass through

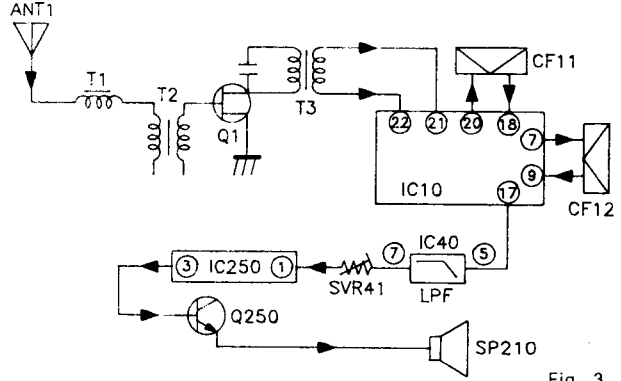
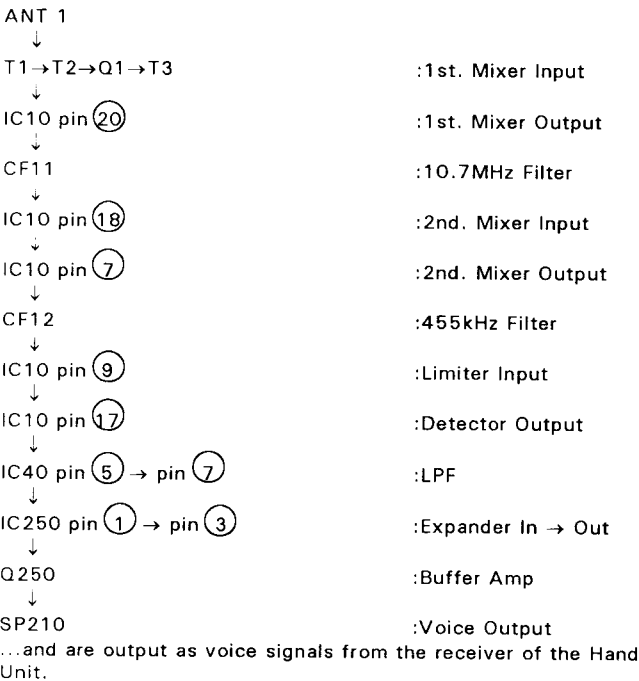


Fig. 3

1-2 RECEPTION MODE (SPEAKER PHONE MODE)

When speaker phone button on the Hand unit is depressed, voice signals pass through the receive circuitry as shown in Fig. 4

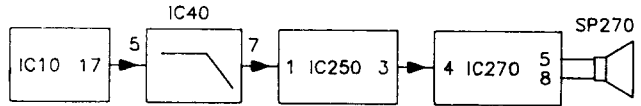
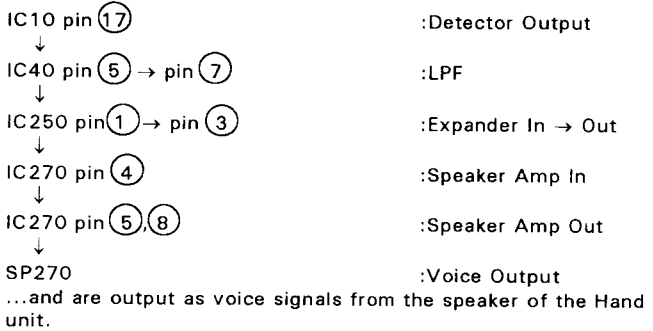


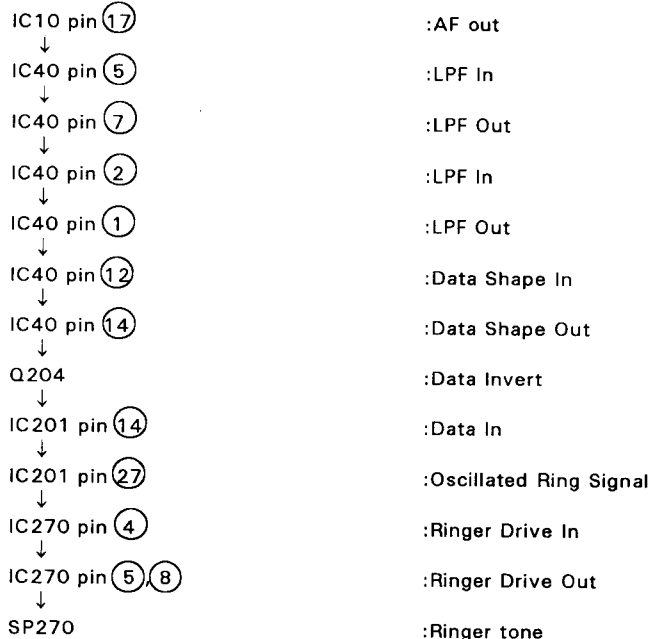
Fig. 4

1-3 RINGER & PAGE OUTPUT (Reception of call signals from Base unit)

When call signals are transmitted from the Base unit while the Hand unit's Power switch is at the "ON" position, the Hand unit's ringer rings.

The call detection circuitry of the Hand unit is activated and the ringer rings only if the set Security Code of both the Base unit and the Hand unit are the same.

When in Fig. 5 call signals are transmitted from the Base unit, signals pass through



CIRCUIT DESCRIPTION

VOICE OUTPUT (from Hand unit to intercom speaker)
 Voice signals demodulated as described in Fig. 9 pass through:

- IC402 pin ⑨ :Voice output
- ↓
- IC430 pin ③ → ① :LPF In → Out
- ↓
- IC460 pin ① → ③ :Expander In → Out
- ↓
- IC3 pin ⑨ → pin ⑧ :Switch-On (INT mode)
- ↓
- IC570 pin ④ → pin ⑤, ⑧ :Speaker Amp.
- ↓
- SP510 :Voice output

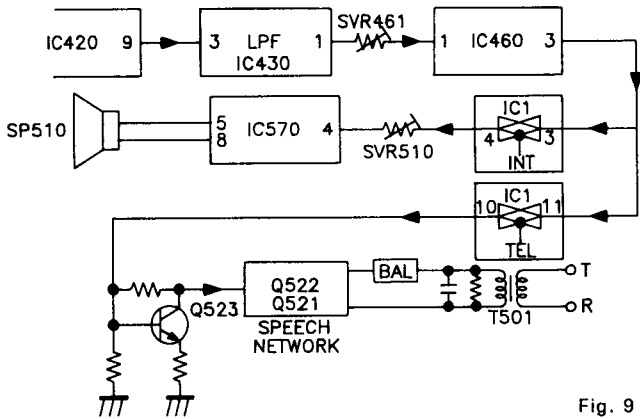


Fig. 9

2-5 RINGING

When the ringing signal from the TEL line is input as shown in Fig.10-1 and 10-2,

- Ringling signal input to JK800
- ↓
- IC501 pin ④ :Ringer detect ON.(H→L)
- ↓
- IC701 pin ① :Ringer detect in
- ↓
- IC701 pin ③⑨ :Ringer signal out
- ↓
- IC701 pin ⑬, ⑭ :Digital signal output to Hand unit

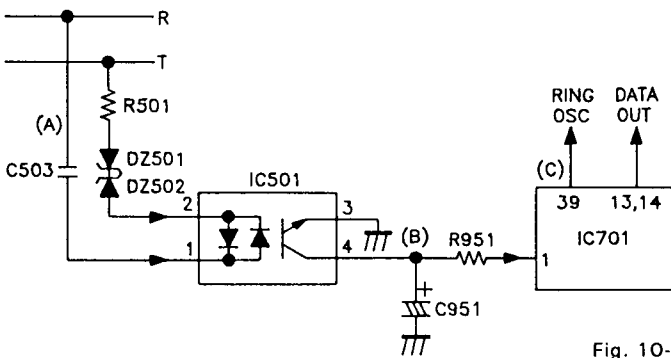


Fig. 10-1

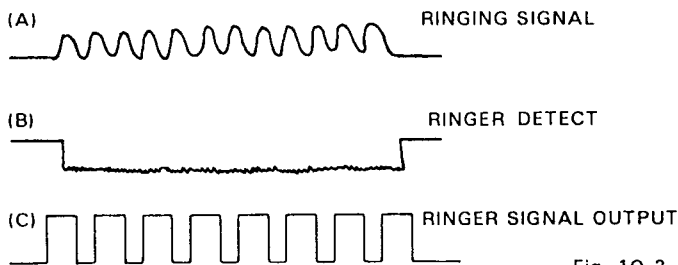


Fig. 10-2

2-6 PULSE/DTMF DIALING

- Key in from Hand unit :IC701 pin ②⑧ DATA IN
- ↓
- Dial signal output
- ↓
- PULSE : IC701 pin ②④ → IC502 → TEL LINE
- OR
- TONE : IC701 pin ⑦⑦, ⑦⑧ → Q523 → Q522, Q521 → T501 → TEL LINE

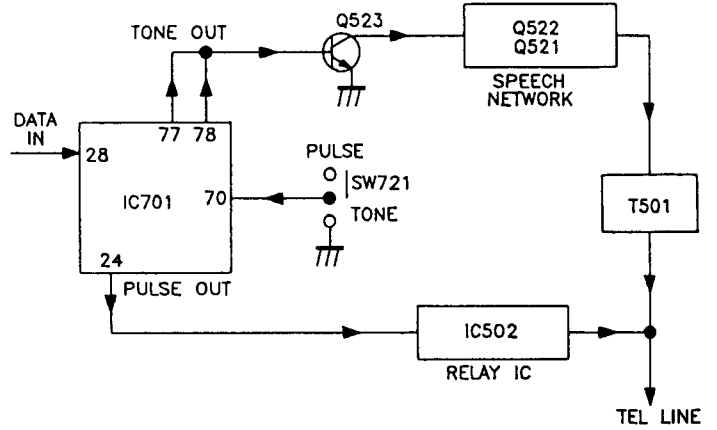
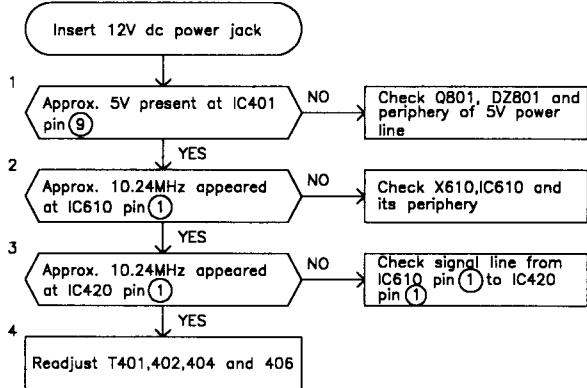


Fig. 11

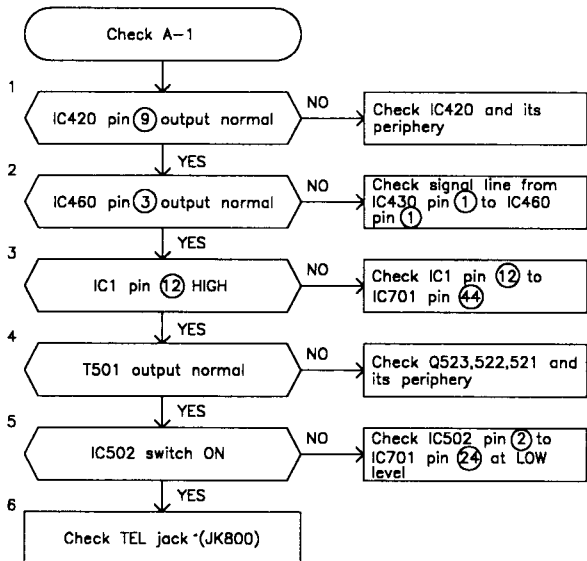
TROUBLESHOOTING

1. BASE MAIN

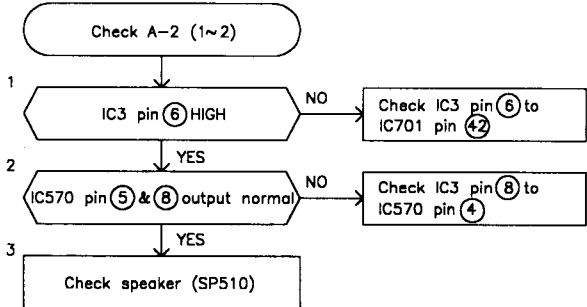
A-1 Cannot receive (Audio signal does not appear at IC420 pin 9)



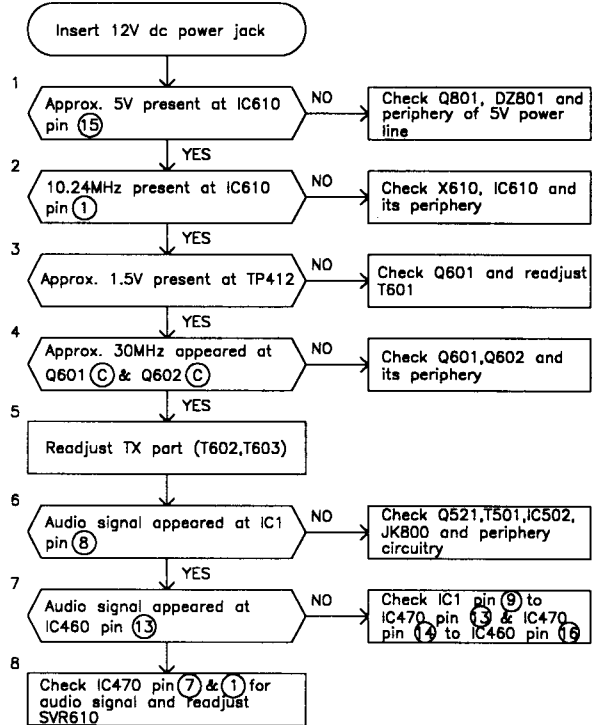
A-2 Cannot receive with TELEPHONE



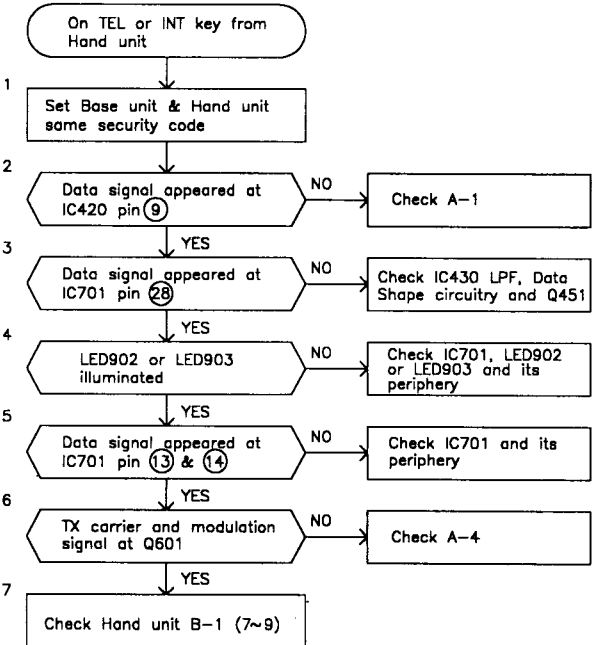
A-3 Cannot receive with INTERCOM



A-4 Cannot transmit (TX carrier or modulation signal does not appear at TP401)

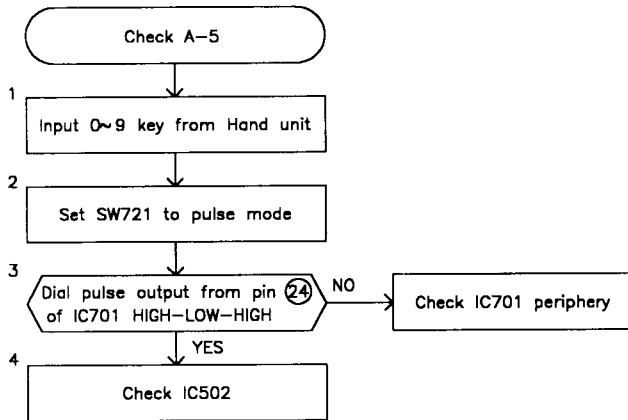


A-5 Cannot communicate with wireless telephone

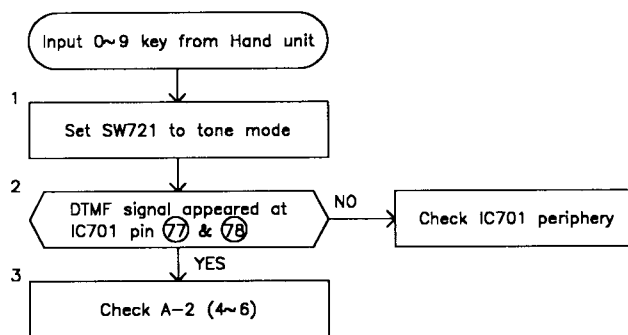


TROUBLESHOOTING

B-1 Pulse dialing cannot be made from Hand unit

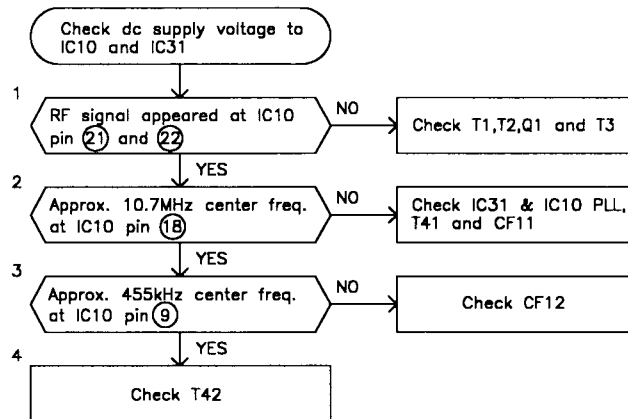


B-2 DTMF dialing cannot be made from Hand unit

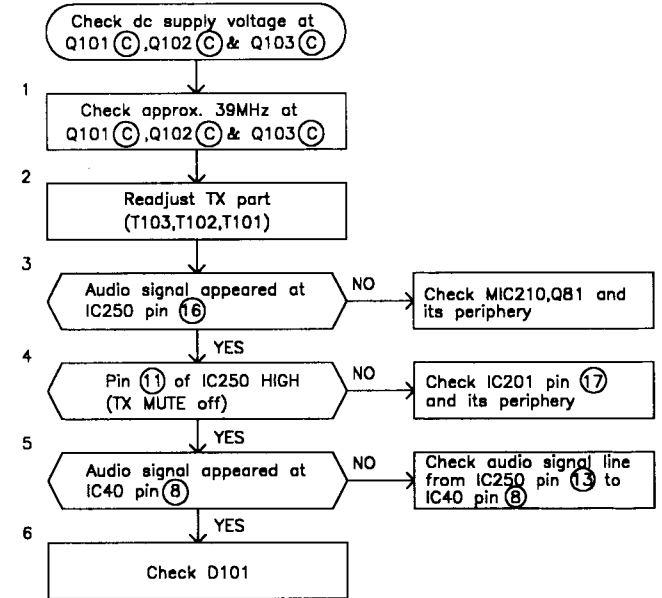


2. HAND UNIT

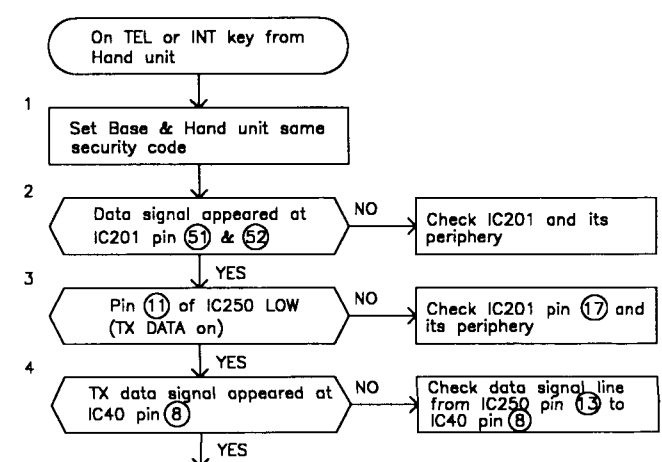
A-1 Cannot receive (Audio signal doesn't appear at IC10 pin 17)



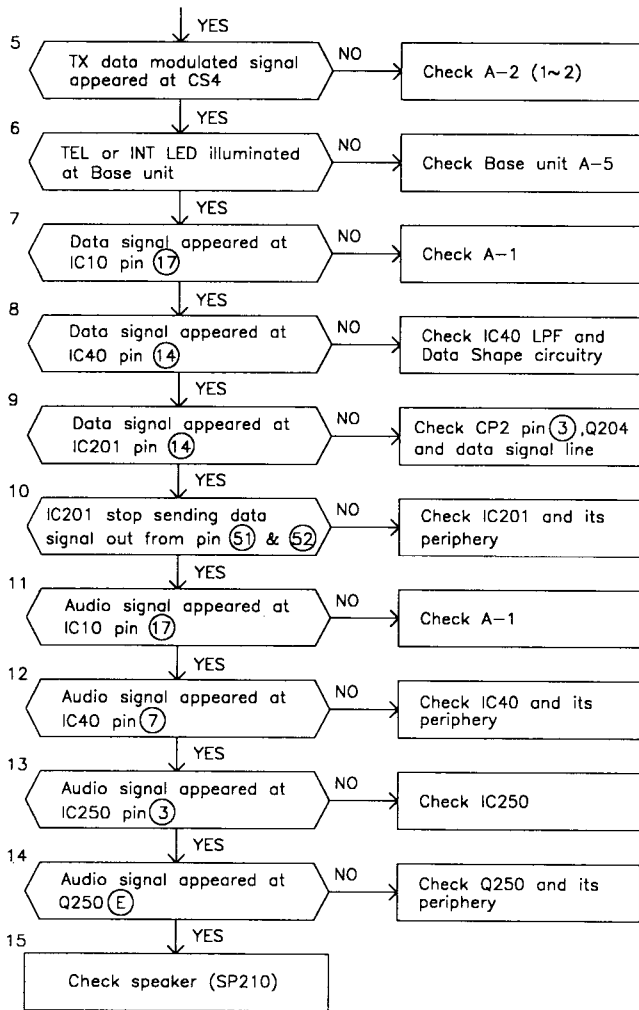
A-2 Cannot transmit (TX carrier or modulation signal does not appear at CS4) (Check same as Base unit A-4)



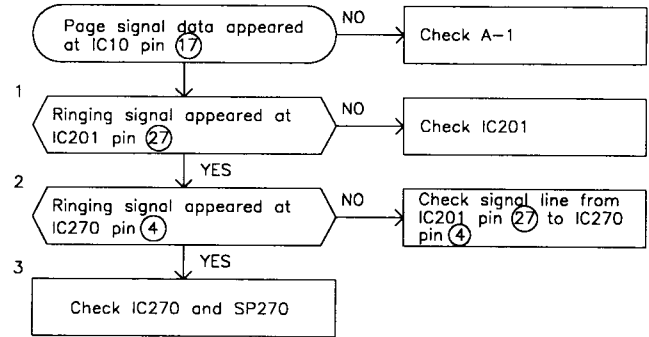
B-1 Cannot communicate with wireless telephone



TROUBLESHOOTING



B-2 Cannot page (From Base unit to Hand unit)



SANYO

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Osaka, Japan.