

FUNAI **SERVICE MANUAL**

CORDLESS TELEPHONE

SCT-3388

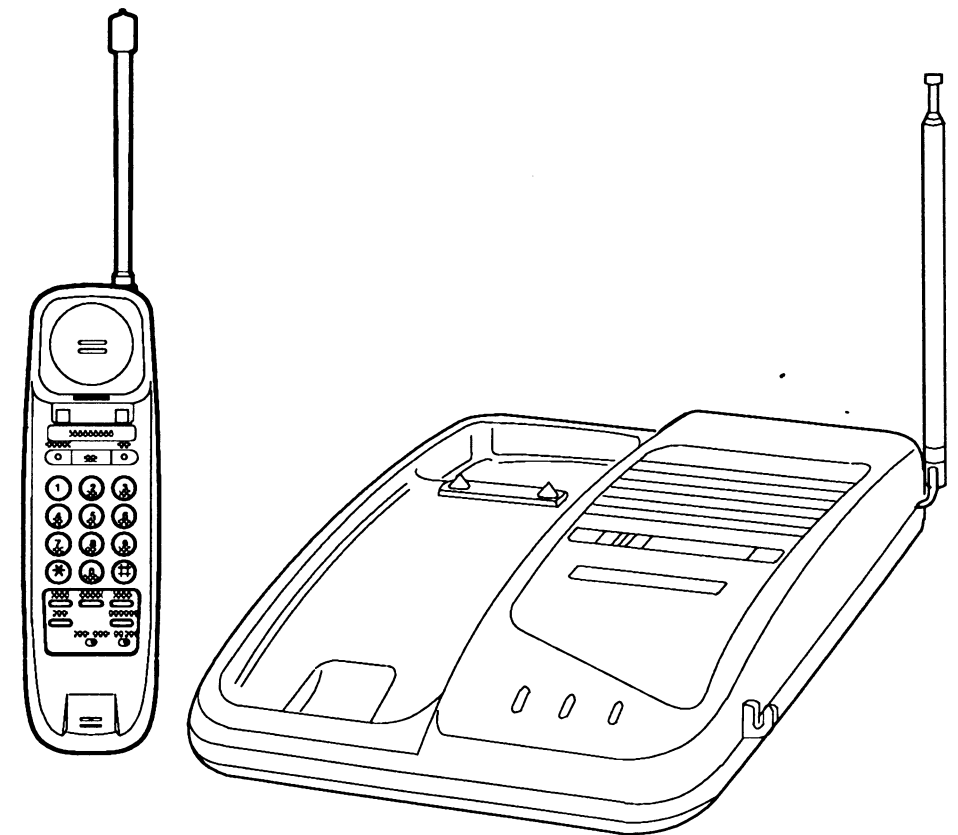


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CAUTION

Don't adjust under the environment of jamming radio wave.

Remove the helical antenna of Hand Set to adjust.

SPECIFICATIONS

A. MEASUREMENT CONDITION

1. Standard Voltage		
Portable unit:	DC3.8V±0.1V	
Base unit:	AC 230V±1.0V	
2. Temperature:	25°C±5°C	
3. Channel:	Portable	Base
CH.	(TX freq. :MHz)	(TX freq. :MHz)
1	39.9375	31.0375
3	39.9875	31.0875
4	40.0125	31.1125
5	40.0375	31.1375
7	40.0875	31.1875
8	40.1125	31.2125
9	40.1375	31.2375
10	40.1625	31.2625
11	40.1875	31.2875
12	40.2125	31.3125
4. Standard Moduration:	1KHz ±2.5KHz Dev.	
5. Measurement method:	According to Dutch PTT specification	
6. Other remark:		

B. BASE UNIT

Receiver	Unit	Nominal	Limit
1. Usable sensitivity (20dB SINAD)	dBm	-114	-112
2. Quieting sensitivity (20dB S/N)	dBm	-114	-111
3. Usable 6dB bandwidth	±KHz	6	±2
4. Audio output @600Ω Telephone line terminal	dBm	-3	±2
5. Audio distortion @300Hz	%	2.0	3
@1000Hz	%	1.0	3
@3000Hz	%	3.0	4.5
6. Audio max S/N	dB	50	45
7. Frequency response @300Hz	dB	-1.5	±3
@3000Hz	dB	-2.0	±3
8. Coding sensitivity	dBm	-115	-112
9. Coding Dev. sensitivity	KHz	1.0	±1
10. Co-channel rejection	dB	7.5	±7.5
11. ACA	dB	45	40
12. Sprious response	nW		<2
13. Frequency tolerance	Hz		±1000
14. Carrier sensitivity	dBm		<-112
15. SQ. OFF time	S	10	±1.0

C. BASE UNIT

Transmitter	Unit	Nominal	Limit
1. TX power	dBm	5	±1
2. TX Frequency tolerance	±Hz	0	±500
3. Spurious emissions	nW		< 4
4. Mod. sens for 2.5KHz Dev.	dBm	-9.0	±2.0
5. TX Audio distortion @1000Hz	%	1.5	< 3.0
6. Audio max S/N	dB	40	35
7. Frequency response @300Hz	dB	-5.0	±3
@3000Hz	dB	+0.5	±3
8. Mod. cap.	±KHz	6.0	±1
9. Coding Dev.	±KHz	3.5	±1
10. Adjacent channel power (sine wave)	dB		< 40
11. Adjacent channel power (coding)	dB		< 40

D. REMOTE UNIT

Receiver	Unit	Nominal	Limit
1. Usable sensitivity (20dB SINAD)	dBm	-120	-116
2. Quieting sensitivity (20dB S/N)	dBm	-120	-114
3. Usable 6dB bandwidth	±KHz	7	±2
4. Audio output @600Ω Telephone line terminal	mV	600	±10
5. Audio distortion @300Hz	%	1.0	3
@1000Hz	%	1.0	3
@3000Hz	%	2.5	4
6. Audio max S/N	dB	50	45
7. Frequency response @300Hz	dB	4.5	±3
@3000Hz	dB	-11	±3
8. Coding sensitivity	dBm		<-115
9. Coding Dev. sensitivity	KHz	1.0	±0.5
10. Co-channel rejection	dB	7.5	±7.5
11. ACA	dB	45	40
12. Sprious response	nW		<2
13. Frequency tolerance	Hz	0	±1000

E. REMOTE UNIT

Transmitter	Unit	Nominal	Limit
1. TX power	dBm	6	±1
2. TX Frequency tolerance	±Hz	0	±500
3. Spurious emissions	nW		< 4
4. Mod. sens for 2.5KHz Dev.	mV	10	±2.0
5. TX Audio distortion @1000Hz	%	1.0	< 3.0
6. Audio max S/N	dB	40	35
7. Frequency response @300Hz	dB	-14.5	±3
@3000Hz	dB	-3.0	±3
8. Mod. cap.	±KHz	6.0	±1
9. Coding Dev.	±KHz	2.5	±1
10. Adjacent channel power (sine wave)	dB		< 40
11. Adjacent channel power (coding)	dB		< 40

F. INTERCOM

Receiver	Unit	Nominal	Limit
1. Usable sensitivity (20dB SINAD)	dBm		< -113
2. Audio output	V	2.2	±0.3
3. Audio distortions	%		< 5
4. Audio frequency respone @300Hz	dB	10	±2.0
@3000Hz	dB	1.0	±3.0
5. Audio max S/N	dB	-13	±3.0
	dB	50	45

G. INTERCOM

Transmitter	Unit	Nominal	Limit
1. Mic sensitivity	dBm	-45	±2
2. Audio frequency respone @300Hz	dB	-8	±3
@3000Hz	dB	-6	±3
3. Audio distortion	%		< 5
4. TX Audio S/N	dB		> 35

H. SYSTEM

Telephone Line	Unit	Nominal	Limit
1. Return loss (300Hz~3400Hz)	dB		≥ 14
2. Ring Threshold	Vrms		28~36
3. Break Ratio (Pulse mode)	%	61.5	±3
4. Pulse dial speed	pps	10	±1
5. DTMF tone freq. (Low group)	%		< 1.5
6. DTMF tone level (Low group)	dBm	-11	±2
7. DTMF tone freq. (High group)	%		< 1.5
8. DTMF tone level (High group)	dBm	-9	±2
9. DTMF tone level diff. between Hi & Lo (Hi>Lo)	dB	2	±1
10. Flash (Break) time	mS	110	±20

I. SYSTEM

Power Drain	Unit	Nominal	Limit
1. Base unit (MAX)	mA	150	180
2. Remote unit			
ST-BY	mA	1.5	±0.3
Talk	mA	32	±5
3. Batt. low LED turn on	V	3.2	±0.1
4. Batt. CHG current	mA	28	±5

THEORY OF OPERATION

REMOTE UNIT

RF circuit

<Receiver>

Signal that frequency range is 31.0375~31.3125MHz is received by Antenna and send to Q1 through L1, T1, and T2. Then the signal is amplified in Q1 and controlled by T3 and sent to Q2.

Local oscillator built in T5, Q3, D1, C13 generates 20MHz and send it to Q2. This signal is mixed with Receive signal and generates 1st IF 10.695MHz. Local oscillator is controlled by IC2.

This IF is sent to Pin16 of IC1 through CF1 and mixed with Local signal oscillated by X1. Then IC1 generates 455KHz and this IF signal through CF2 and demodulated Audio signal output Pin9 of IC1.

<Transmitter>

RF Transmit signal is generated by Q7, T8, C50, C51, C52, C55, C56 and D2.

This Transmit signal 39.9375~40.2125MHz is amplified by Q8, T9 and radiated from antenna.

Audio signal from MIC is amplified by IC102 and modulated by D2. Digital code from CPU 35Pin is also. RF Transmit carrier frequency is controlled by IC2.

CPU

<Push Key Controls>

Pin1~5 and 44 is Row. Pin22, 23, 24 is COL.

These 8 ports combinate MATRIX and have NEXT Function.

DIAL Digit 1-0 #, MEMORY, FLASH, INT' COM REDIAL, TALK.

<LED Drive>

Pin 9	Low Batt	Lo ACT
Pin 8	TALK	Lo ACT

<Detector>

Pin31	RX ID1	
Pin32	RX ID2	
Pin34	Charge	Hi= Charge
Pin30	Hold	Lo= Hold
Pin25	Dial mode	Lo= Pulse
Pin33	Low Batt	Lo= Batt

<Other controls>

Pin40	TX SW	Lo ACT
Pin41	MIC SW (MIC Mute)	Hi Mute
Pin18	BEEP	
Pin43	RX SW	Lo ACT
Pin15	SP. CONT.	Lo ACT
Pin21	DTMF	
Pin35	TX ID	

PLL

RX and TX Freq. is controlled by CPU 12~15Pin.

CH	TX Freq. (MHz)	IC2 (PLL)			
		D4	D3	D2	D1
1	39.9375	0	0	0	1
3	39.9875	0	0	1	1
4	40.0125	0	1	0	0
5	40.0375	0	1	0	1
7	40.0875	0	1	1	1
8	40.1125	1	0	0	0
9	40.1375	1	0	0	1
10	40.1625	1	0	1	0
11	40.1875	1	0	1	1
12	40.2125	1	1	0	0

Audio AMP

Demodulated Audio signal is output from Pin9 of IC1 and sent to Audio Amplifire, composed of IC105 and output from speaker (=Telephone Receiver).

Transmit signal is received by MIC and amplified by IC102.

Q4 and Q101 is Transistor for Audio mute.

Voltage Detector

<Reset>

When Battery voltage decrease and be 2.5V, output of IC104 turn to "Low" and Q106 turn to "ON". Then CPU Pin29 reset. When "POWER SW" is "OFF", it is also.

<Hold>

IC104 is Voltage detector for Hold. When Battery voltage decrease and be 2.5V, output of IC104 turn to "Low" and CPU into HOLD. After that, by charging Battery voltage increase and being 2.6V and output of IC104 turn to "High" and CPU is active.

<Low Battery>

IC104 is Voltage detector for Hold. When Battery voltage decrease and be 3.2V, output of IC3 turn to "Low" and CPU makes Lo Batt LED to blink.

<Transistor Switches>

Q108	TX power supply
Q107	RX power supply. This Tr Supply power source to RX circuit by power save
Q103	Audio amp power supply
Q104	Ringer Driver

BASE UNIT

RF circuit

<Receiver>

Signal that frequency range 39.9375~40.2125MHz is received by Antenna, and sent to Q301 through L301, L302, T301 and T302. Then, the signal is amplified in Q301 and controlled by T303, and send to Q302. Local oscillator built in T305, Q303, C313, C314, C315, C317 and D301 generates 29MHz and send to Q302. Local oscillator is controlled by IC302. This signal is mixed with Receive Signal, and generates 1st IF 10.695MHz. This IF is sent to Pin16 of IC301 through CF301 and mixed with Local signal oscillated by X301. Then IC301 generates 455KHz and this IF signal through CF302 and demodulated Audio signal, output from Pin9 of IC301.

<Transmitter>

RF Transmit signal is generated by Q305, C343, C344, C345, C347, C348 and D303. This Transmit signal 31.0375~31.3125MHz is amplified by Q503, Q306 and controlled by T309, and radiated from antenna. Audio signal 31.0375~31.3125MHz is amplified by Q503, Q306, and controlled by T309, and radiated from antenna. Audio signal from Telephone line is amplified by IC310 and IC303, and modulated by D303. Digital Code from CPU IC304 is also. Modulated by D303.

Audio AMP

Demodulated Audio signal output from Pin9 of IC301 is sent to Audio Amplifire composed of Q307. This amplified Audio signal is sent to secondary coil of T312.

Telephone Line

Audio signal from Q307 into T312. The load of Q307 is secondary coil T312. Therefore, this signal is generated primary of T312. And this is sent to IC310. In Off hook mode, RL301 and Q318 are close so that Audio signal output to telephone Line through Q318 and D308~D311.

Second party's voice signal coming into telephone line is amplified by IC310 and is sent to T311. This signal is amplified in IC303.

IC305 is Ring Detector. In On hook mode, SCT-3388 receving Ring signal detected Ring signal output from IC305 and into Q231, and is sent to Pin28 of IC304 CPU.

IC306 is Branch phone detector. In Hold mode, Hooking branch phone output voltage of IC306 higher. This voltage change is sent to voltage detector.

Detector

<RX ID>

Received ID CODE signal that output from Pin9 of IC301 is shaped in IC303(8~Pin10), and turn around by Q501. So this signal is sent to Pin35, 38 of IC304.

<Branch DET>

By Hooking branch phone, C385 is discharged but Base of Q311 is closed by discharge of C384. So Q311 is closed after a while. Then, the LED of IC306 (1-Pin2) is light off, and Pin4 of IC306 is "Hi". This signal is sent to Pin29 of IC304. If Pin29 of IC304 keep Hi more than 1 second, go to on Hook.

CPU

<LED Drive>

<Detector>

Pin24	TALK	Lo ACT
Pin36	RX CARR	Hi ACT
Pin37	Ring CONT.	Lo ON
Pin26	INT SW	Lo ACT
Pin34	HOLD	Lo ACT
Pin27	CH G	Hi ACT
Pin28	BELL	
Pin29	BRANCH DET	Hi ACT

ADJUSTMENT PROCEDURE

REMOTE UNIT

How To Enter "Test Mode"

- 1. Add 3.6V DC to Battery connector.
- 2. Keep pushing "TALK" Key and turn on the "Power SW" and "Tone/Pulse SW".
- 3. Release "TALK" Key.
- 4. So, "REMOTE UNIT" enter "TEST MODE". (ST-BY MODE)

TEST MODE

- 1. When "TALK" Key is pushed, unit changes Talk Mode (Test Mode) from ST-BY Mode (Test Mode) and also Transmit "Talk code". This code is canceled when unit is pushed any other key. (state A)
- 2. At first, CH number is CH7. Push "#" key so that CH number will change (CH7→CH8, ..., CH12 →CH1, ...)
- 3. Unit is adjusted in the following state.
 - a. CH number is CH7.
 - b. Unit is in state A.

ADJUSTMENT

A. RX VCO ADJUSTMENT

- 1. Set to CH7, in the Test Mode.
- 2. Adjust T5 so that the voltage of TP2 becomes $2.45\pm0.05V$.
- 3. Confirm that VCO works correctly at Battery Voltage "3.2V".

B. TX VCO ADJUSTMENT

- 1. Set to CH7, in the Test Mode.
- 2. Adjust T7 so that the voltage of TP4 becomes $2.45\pm0.05V$.
- 3. Confirm that VCO works correctly at Battery Voltage "3.2V".

C. TX FREQUENCY ADJUSTMENT

- 1. Set to CH7, in the Test Mode.
- 2. Connect frequency counter to TP.
- 3. Adjust TC1 so that the transmission frequency becomes $40.0875MHz\pm100Hz$.

D. TX POWER ADJUSTMENT

- 1. Set to CH7, in the Test Mode.
- 2. Connect RF VTVM or spectrum analyzer to TP.
- 3. Adjust T8, T9, T10 so that the RF VTVM or spectrum analyzer reading becomes maximum.
- 4. Adjust VR3 so that the RF VTVM or spectrum analyzer becomes $6\pm0.5dbm$.

E. AUDIO DEVIATION ADJUSTMENT

- 1. Set to CH7, in the Test Mode.
- 2. Connect Dev. Meter to TP.
- 3. Input 10mV(1KHz) to Microphone terminal. (see Fig.1)
- 4. Adjust VR2 so that the Deviation becomes $\pm2.5KHz\pm0.1KHz$.

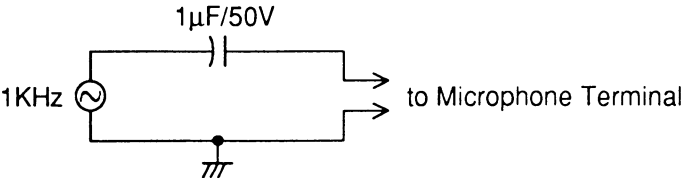


Fig. 1

F. CONFIRMATION OF MOD CAP

- 1. Set to CH7, in the Test Mode.
- 2. Connect Dev. Meter to TP.
- 3. Input 100mV (20db higher than normal input) to Microphone terminal. (see Fig.1)
- 4. Confirm Deviation reading ($\pm 8 \pm 1$ KHz).

G. CONFIRMATION OF CODING DEVIATION

- 1. Set to CH7, in the Test Mode.
- 2. Connect Dev. Meter to TP.
- 3. Confirm Deviation reading (± 4.0 KHz ± 1.0 KHz) when in the Test Mode. Coding Data is transmitted in the Test Mode.

H. DTMF DEVIATION ADJUSTMENT

- 1. Set to CH7, in the Test Mode and press "5" key.
- 2. Connect Dev. Meter to TP.
- 3. Adjust VR4 so that the Deviation becomes ± 2.2 KHz ± 0.3 KHz to DTMF.

I. RX SENS ADJUSTMENT

- 1. Set to CH7, in the Test Mode.
- 2. Input SSG signal (-54dbm) to TP1 (Deviation ± 2.5 KHz at 1KHz).
- 3. Connect VTVM to TP.
- 4. Adjust T6 so that the audio level becomes maximum.
- 5. Squeeze output power of Signal Generator Gradually and adjust T1, T2, T3, T4 so that the SINAD SENS meter reading becomes maximum.
- 6. Adjust VR1 so that the audio output level becomes 600 ± 10 mV. (with speaker)

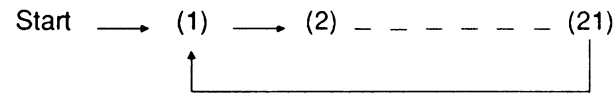
BASE UNIT

How To Enter "Test Mode"

Keep pushing Intercom SW and insert AC/DC ADAPTER to DC JACK. So, Unit enter "Test Mode".

- 1. Push "INTERCOM SW" so that the mode change as follow.

MODE	STATUS	MODE	STATUS
(1)	CH7: INT Mode	(12)	CH12: TALK Mode
(2)	CH7: TALK Mode	(13)	CH12: ST-BY Mode
(3)	CH7: ST-BY Mode	(14)	CH1: TALK Mode
(4)	CH8: TALK Mode	(15)	CH1: ST-BY Mode
(5)	CH8: ST-BY Mode	(16)	CH3: TALK Mode
(6)	CH9: TALK Mode	(17)	CH3: ST-BY Mode
(7)	CH9: ST-BY Mode	(18)	CH4: TALK Mode
(8)	CH10: TALK Mode	(19)	CH4: ST-BY Mode
(9)	CH10: ST-BY Mode	(20)	CH5: TALK Mode
(10)	CH11: TALK Mode	(21)	CH5: ST-BY Mode
(11)	CH11: ST-BY Mode		



- 2. When Ringer SW set "ON" position, TALK ACK CODE is transmitted.

ADJUSTMENT

A. RX VCO ADJUSTMENT

- 1. Set to CH7, in the Test Mode.
- 2. Adjust T305 so that the voltage of TP302 becomes 2.45 ± 0.05 V.

B. TX VCO ADJUSTMENT

- 1. Set to CH7, in the Test Mode.
- 2. Adjust T307 so that the voltage of TP304 becomes 3.0 ± 0.05 V.

C. TX FREQUENCY ADJUSTMENT

- 1. Set to CH7, in the Test Mode
- 2. Connect frequency counter to TP301.
- 3. Adjust TC301 so that the transmission frequency becomes 31.1625MHz.

D. TX POWER ADJUSTMENT

- 1. Set to CH7, in the Test Mode.
- 2. Connect RF VTVM or spectrum analyzer to TP301. Set T310 until up position.
- 3. Adjust T309 so that the RF VTVM or spectrum analyzer reading becomes maximum.
- 4. Adjust VR302 so that the RF VTVM or spectrum analyzer becomes 5 ± 0.5 dbm.

E. AUDIO DEVIATION ADJUSTMENT

- 1. Set to CH7, in the Test Mode and Connect Dev. Meter to TP301.
- 2. Input -9dbm (1KHz) to Telephone Line. (see Fig. 2)
- 3. Adjust VR304 so that the Deviation becomes ± 2.5 KHz ± 0.1 KHz.

F. CONFIRMATION OF MOD CAP

- 1. Set to CH7, in the Test Mode and Connect Dev. Meter to TP301.
- 2. Input 1KHz 11dbm(20db higher than normal input) to Telephone Line.
- 3. Confirm Deviation reading.($\pm 6 \pm 1$ KHz)

G. CONFIRMATION OF CODING DEVIATION

- 1. Set to CH7, in the Test Mode and Connect Dev. Meter to TP301.
- 2. Confirm Deviation reading ($\pm 4 \pm 1$ KHz) when in the Test Mode. Coding Data is transmitted in the Test Mode.

H. SQ ADJUSTMENT

- 1. Set to CH7, in the Test Mode.
- 2. Set SSG output at SINAD 9db.
- 3. Adjust VR301 so that the phone LED just blinks.
- 4. Change SSG output from SINAD 9db to 6db and confirm the phone LED is light.

I. RX SENS ADJUSTMENT

- 1. Set to CH6, in the Test Mode and Connect VTVM to Telephone Line.
- 2. Input SSG signal (-54dbm) to TP301. (Deviation ± 2.5 KHz at 1KHz)
- 3. Adjust T306 so that the audio output level becomes maximum. (see Fig.3)
- 4. Squeeze output power of Signal Generator Gradually and adjust T301, T302, T303, T304 so that the SINAD SENS meter reading becomes maximum.
- 5. Adjust VR303 so that the voltage becomes -3 ± 0.5 dbm to Telephone Line out.

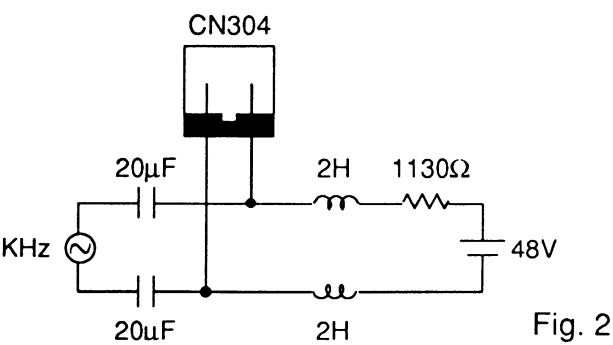


Fig. 2

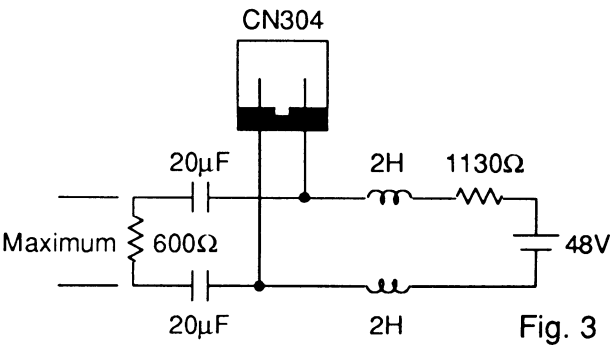
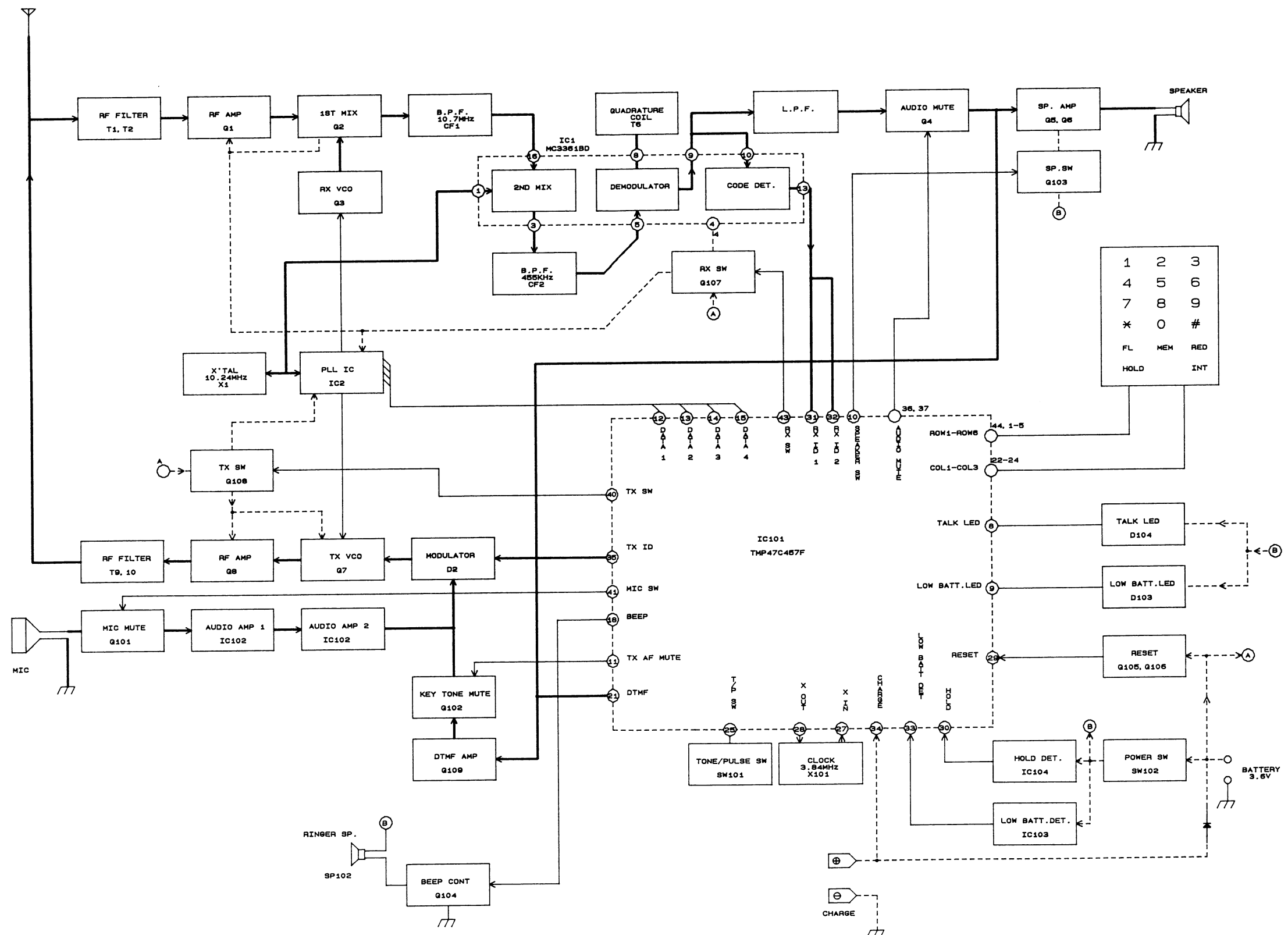


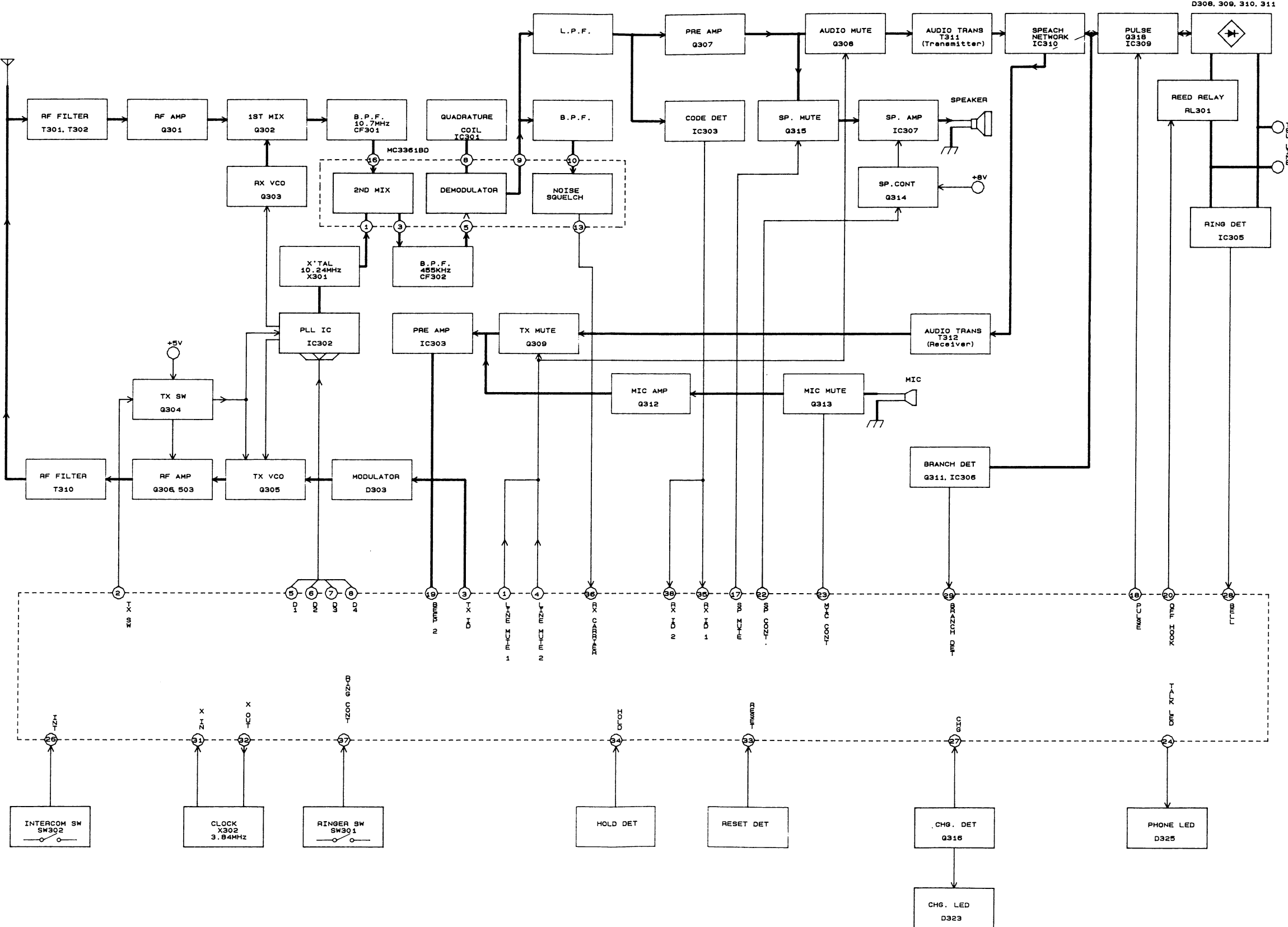
Fig. 3

BLOCK DIAGRAMS

REMOTE BLOCK DIAGRAM

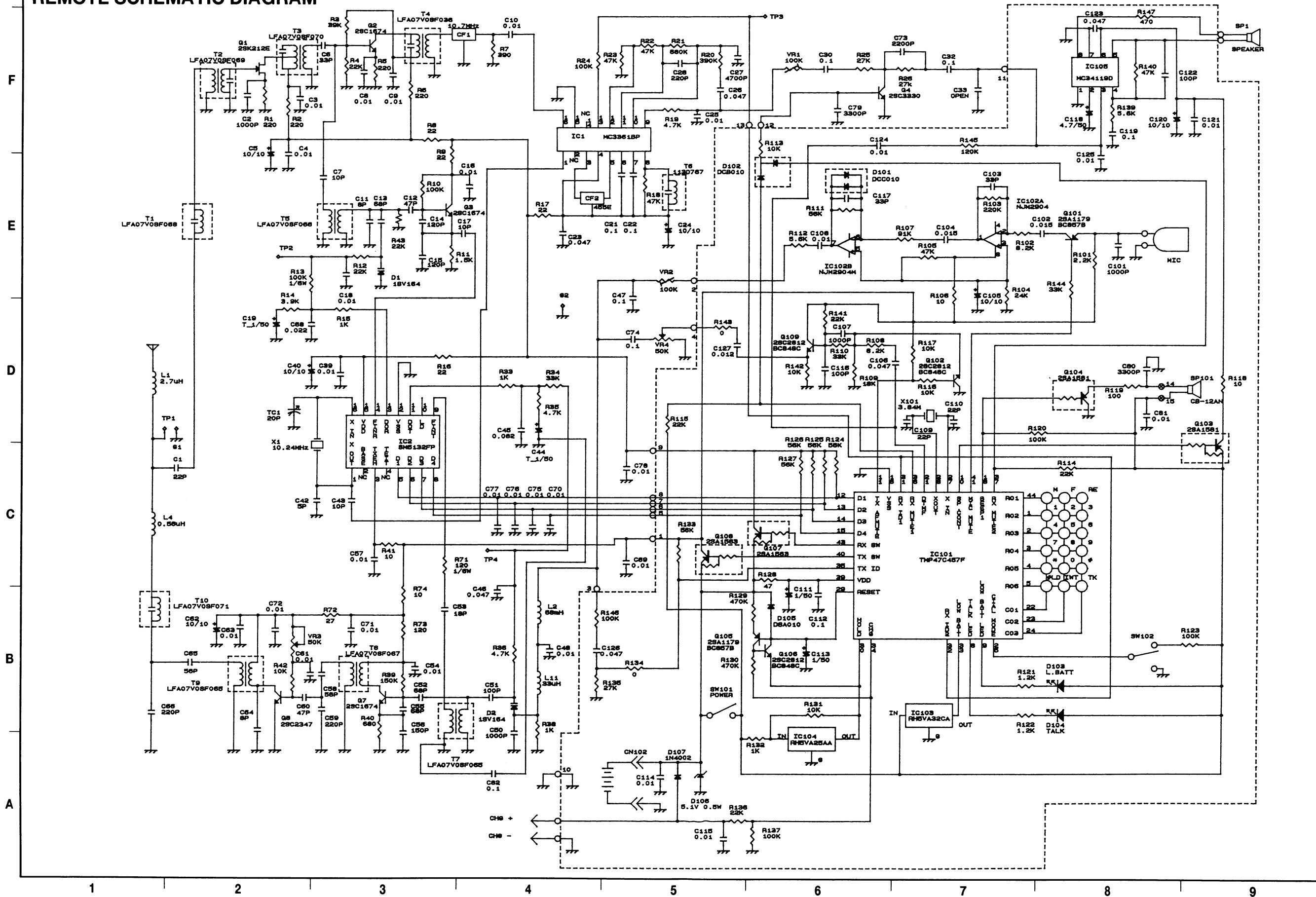


BASE BLOCK DIAGRAM



SCHEMATIC DIAGRAMS / PCB'S AND TEST POINTS

REMOTE SCHEMATIC DIAGRAM



F

E

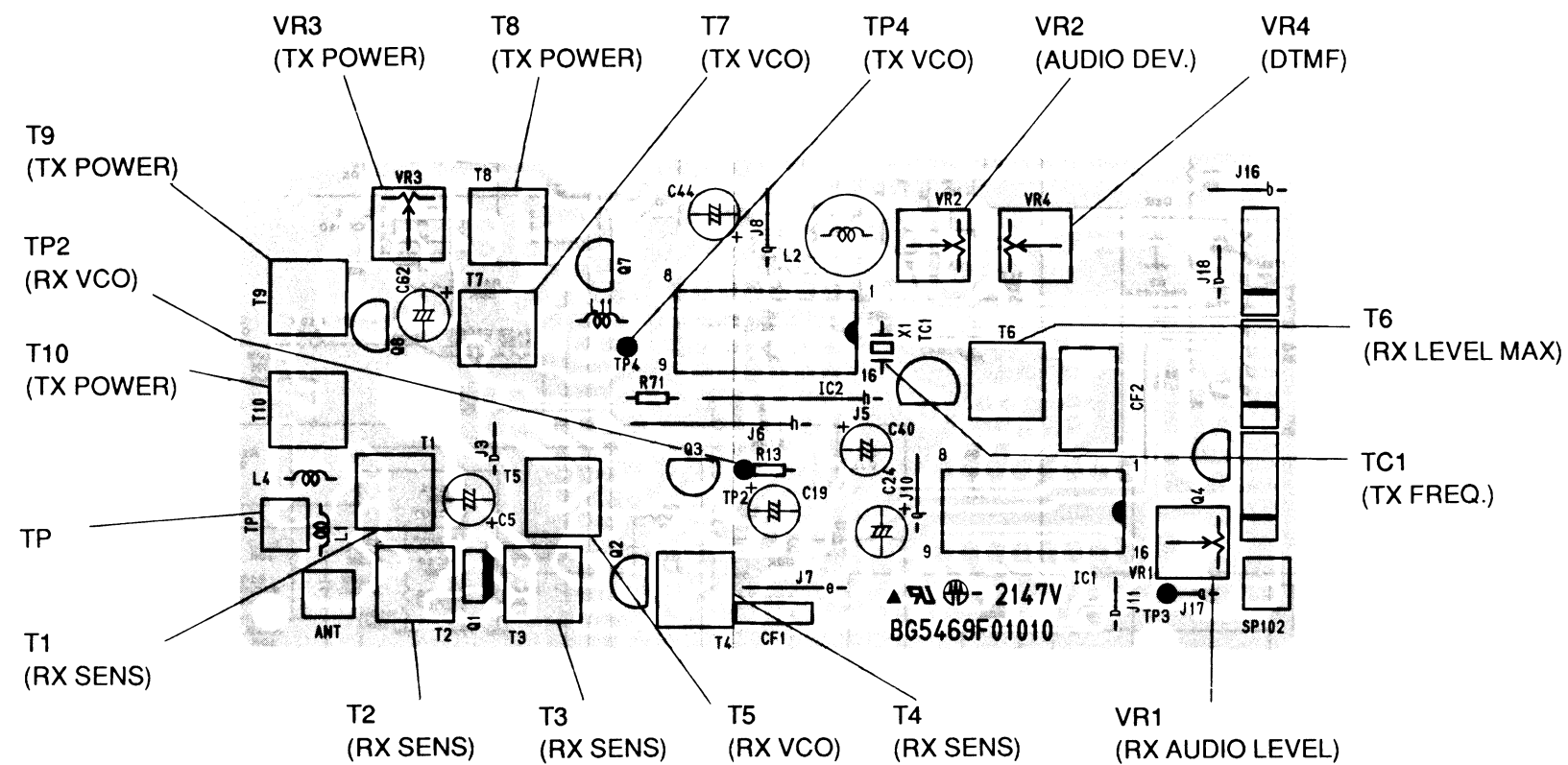
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C

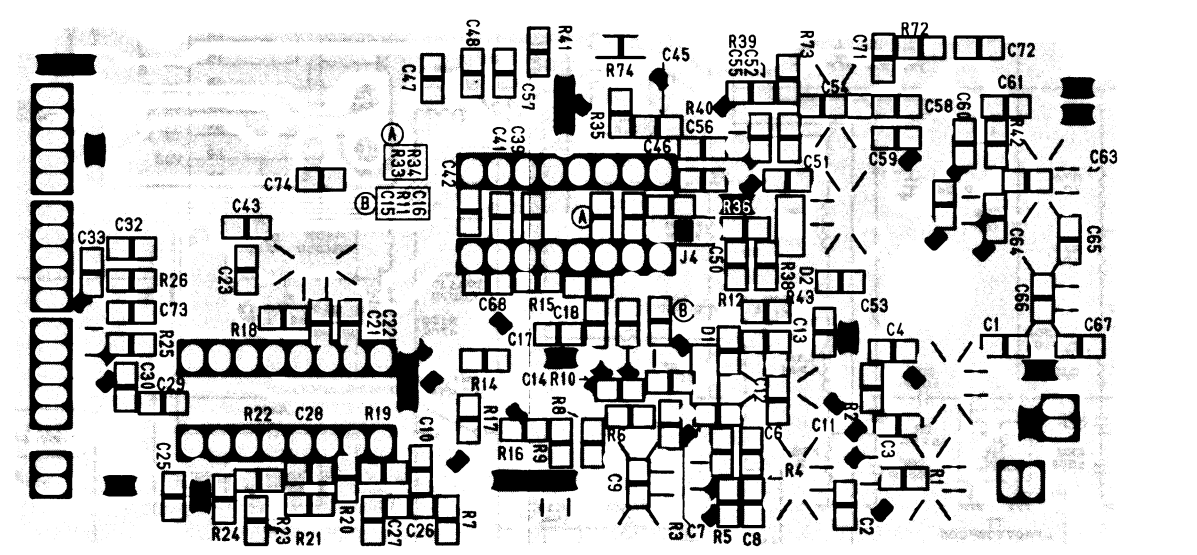
B

A

TUNER PCB (Top View)



TUNER PCB (Bottom View)



(BG5469F01010)

MAIN PCB (Top View)

CONTROL PCB (Top View)

LED PCB (Top View)

BG5469F01001

BG5469F01001-A

BG5469F01001-B

BG5469F01001-C

VR301 (CARRIER DET)

VR303 (RX AUDIO LEVEL)

VR304 (AUDIO DEV.)

TC301 (TX FREQ.)

TP302 (RX VCO)

TP304 (TX VCO)

T301 (RX SENS)

T302 (RX SENS)

T303 (RX SENS)

T304 (RX SENS)

T305 (RX VCO)

T306 (RX LEVEL MAX)

T307 (TX VCO)

T309 (TX POWER)

T310 (TX POWER)

T311

T312

IC301

IC302

IC303

IC304

IC305

IC306

IC307

IC308

IC309

IC310

IC311

IC312

IC313

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IC531

IC532

IC533

IC534

IC535

IC536

IC537

IC538

IC539

IC540

IC541

IC542

IC543

IC544

IC545

IC546

IC547

IC548

IC549

IC550

IC551

IC552

IC553

IC554

IC555

IC

BG5469F01001

D325
 D323
 D324

(BG5469F01001-C)

WX1G5469
-002

J358

J357

R423

R425

CN305A

SW301

J366

J365

J364

J363

J362

J361

J360

BG5469F01001

VR305

CN306

CN307

SP

C425

C424

(BG5469F01001-B)

F

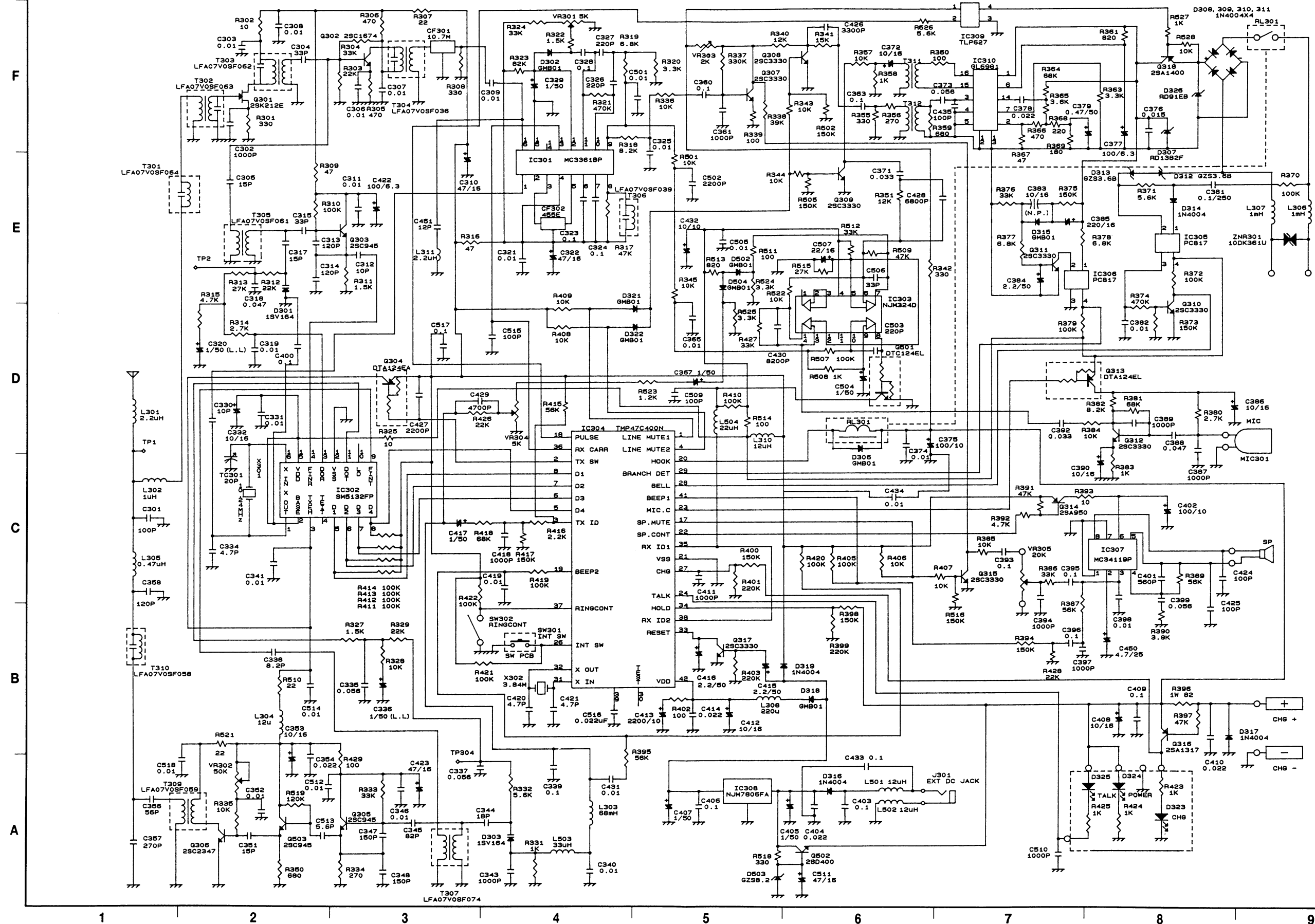
D



B

A

BASE SCHEMATIC DIAGRAM



SEMICONDUCTOR VOLTAGE CHART

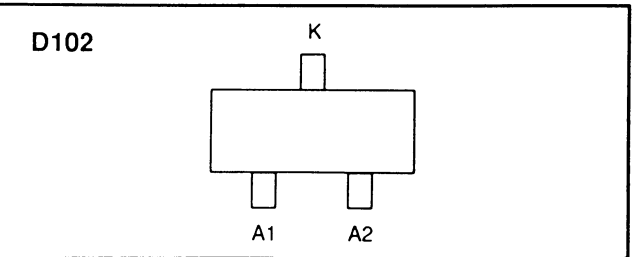
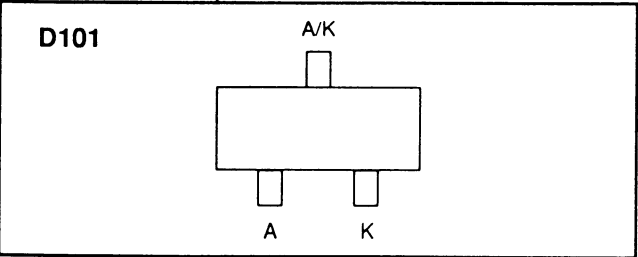
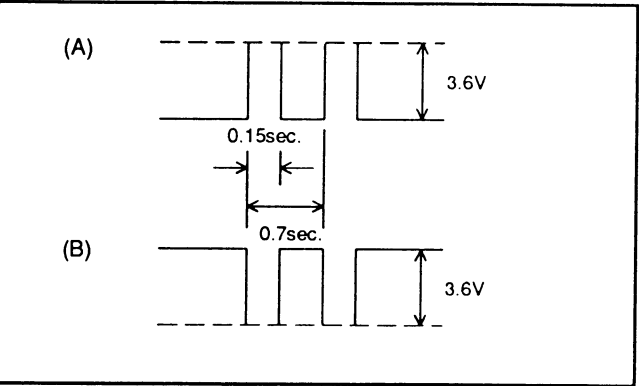
REMOTE UNIT

	Pin1 No.	ST-BY	TALK
IC1	1	ON and OFF	OSC
	2		3.3
	3		3.1
	4		3.4
	5		3.1
	6		3.1
	7		3.1
	8		3.4
	9		1.4
	10		0.8
	11		1.5
	12		0.7
	13		0
	14		0.5
	15		0
	16		—
IC2	1	ON and OFF	OSC
	2		0
	3		3.5
	4		0
	5	See Fig. 2	
	6		
	7		
	8		
	9	ON and OFF	1.7
	10		0
	11		2.5
	12		0
	13		2.7
	14		—
	15		3.4
	16		OSC

	Pin1 No.	ST-BY	TALK
IC101	1	0	0
	2	0	0
	3	0	0
	4	0	0
	5	0	0
	6	0	0
	7	0	0
	8	2.2	0.1
	9	2.2	2.2
	10	3.1	0.1
	11	2.1	0
	12	See Fig. 2	
	13		
	14		
	15		
	16	0	0
	17	0	0
	18	3.6	3.5
	19	0	0
	20	0	0
	21	0	0.3
	22	3.5	3.5
	23	3.5	3.5
	24	3.5	3.5
	25	PULSE 0 TONE 3.6	PULSE 0 TONE 3.6
	26	0	0.5
	27	OSC 3.84MHz	0.5
	28	OSC 3.84MHz	0.5
	29	3.5	3.5
	30	3.6	3.6
	31	—	—
	32	—	—
	33	3.6	3.6
	34	0	0
	35	0	0
	36	2.2	0
	37	2.2	0
	38	0	0.3
	39	3.6	3.5
	40	3.6	0
	41	0.9	0
	42	0	0
	43	(B)	0
	44	0	0

	Pin1 No.	ST-BY	TALK
IC102	1	—	1.2
	2	—	1.3
	3	—	1.2
	4	—	0
	5	—	1.2
	6	—	1.3
	7	—	1.3
	8	—	3.5
IC103	IN	3.6	3.6
	OUT	3.6	3.6
	GND	0	0
IC104	IN	3.6	3.6
	OUT	3.6	3.6
	GND	0	0
IC105	1	—	0
	2	—	1.4
	3	—	1.4
	4	—	1.4
	5	—	1.4
	6	—	3.5
	7	—	0
	8	—	1.4
Q 1	D	ON and OFF	0
	S		3.1
	G		0.3
Q 2	E	ON and OFF	0.3
	C		3.2
	B		0.8
Q 3	E	ON and OFF	—
	C		3.5
	B		—
Q 4	E	0	0
	C	0.6	0
	B	0.6	0
Q 7	E	—	0.6
	C	—	3.3
	B	—	1.4
Q 8	E	—	0
	C	—	0.6
	B	—	3.2
Q101	E	—	2.7
	C	—	2.9
	B	—	2.3

	Pin1 No.	ST-BY	TALK
Q102	E	—	0.9
	C	—	0
	B	—	0
Q103	E	3.6	3.6
	C	0	3.6
	B	3.6	0
Q104	E	3.6	3.6
	C	0	0
	B	3.5	3.5
Q105	E	3.5	3.4
	C	0	0
	B	3.5	3.5
Q106	E	3.5	3.6
	C	3.5	3.5
	B	0	0
Q107	E	3.6	3.6
	C	(A)	3.5
	B	(B)	0
Q108	E	3.6	3.6
	C	0	3.5
	B	3.6	0
Q109	E	—	1.9
	C	—	3.5
	B	—	2.4
D 1	A	0	0
	K	OSC	OSC
D 2	A	—	—
	K	—	—
D101	A	—	1.3
	K	—	1.3
	A/K	—	1.3
D102	A1	2.2	0
	A2	2.2	0
	K	1.8	0
D103	A	3.6	3.6
	K	2.2	2.3
D104	A	3.6	3.6
	K	2.2	1.7
D105	A	3.5	3.5
	K	3.6	3.6
D106	A	3.6	0
	K	0	3.6
D107	A	0	0
	K	3.6	3.6



BASE UNIT

	Pin No.	ST-BY	TALK
IC301	1	OSC 10.24MHz	OSC 10.24MHz
	2	4.8	4.8
	3	4.8	4.7
	4	5.0	5.1
	5	4.7	4.7
	6	4.7	4.7
	7	4.7	4.7
	8	5.1	5.1
	9	—	—
	10	0.8	0.8
	11	—	—
	12	—	—
	13	4.8	0
	14	0	0.4
	15	0	0
	16	1.8	1.8
IC302	1	OSC 10.24MHz	OSC 10.24MHz
	2	5.3	5.2
	3	0	5.0
	4	0	0
	5	See Fig. 1	
	6		
	7		
	8		
	9	—	—
	10	5.2	0
	11	—	—
	12	0	0
	13	—	—
	14	—	—
	15	5.3	5.2
	16	OSC 10.24MHz	OSC 10.24MHz
IC303	1	2.3	2.2
	2	2.3	2.2
	3	2.3	2.2
	4	5.0	5.0
	5	2.3	2.2
	6	2.2	2.2
	7	2.2	2.2
	8	1.4	1.9
	9	2.4	2.5
	10	2.4	2.5
	11	0	0
	12	0	0
	13	0	0
	14	3.8	3.8

	Pin No.	ST-BY	TALK
IC304	1	3.3	0
	2	5.3	0
	3	3.9	3.9
	4	3.3	0
	5	See Fig. 1	
	6		
	7		
	8		
	9	0	0
	10	0	0
	11	0	0
	12	0	0
	13	0	0
	14	0	0
	15	0	0
	16	0	0
	17	3.0	3.0
	18	6.2	0
	19	0	0
	20	7.6	0.2
	21	0	0
	22	5.3	5.3
	23	5.3	5.3
	24	6.0	0.1
	25	0.3	0.3
	26	5.3	5.3
	27	0	0
	28	5.3	5.2
	29	5.3	0.1
	30	0	0
	31	OSC 3.84MHz	OSC 3.84MHz
	32	OSC 3.84MHz	OSC 3.84MHz
	33	5.3	5.3
	34	4.5	4.3
	35	—	—
	36	4.8	0
	37	Ring on 0 Ring off 5.3	Ring on 0 Ring off 5.3
	38	—	—
	39	0	0
	40	0	0
	41	0	0
	42	5.4	5.4
IC305	1	0	0
	2	0	0
	3	0	0
	4	5.3	5.3
IC306	1	0	1.4
	2	0	0.4
	3	0	0
	4	5.3	0.1

	Pin No.	ST-BY	TALK
IC307	1	0	0
	2	0	0
	3	0	0
	4	0	0
	5	0	0
	6	0.4	0.4
	7	0	0
	8	0	0
IC308	IN	10.5	9.7
	OUT	6.1	6.1
	GND	0	0
IC309	1	6.9	6.5
	2	5.2	5.5
	3	0	0
	4	0.2	0.7
IC310	1	0	5.2
	2	0	1.9
	3	0	1.2
	4	0	0
	5	0	0
	6	0	4.2
	7	0	0
	8	0	0
	9	0	0.5
	10	0	1.2
	11	0	1.2
	12	0	0
	13	0	0
	14	0	0
	15	0	1.7
	16	0	1.7
Q301	D	5.2	5.2
	S	0.5	0.5
	G	0	0
Q302	E	0.8	0.8
	C	4.4	4.4
	B	1.5	1.5
Q303	E	4.3	4.3
	C	5.2	5.2
	B	4.9	4.9
Q304	E	5.4	5.3
	C	0	5.0
	B	5.3	0
Q305	E	0	—
	C	0	—
	B	0	—
Q306	E	0	0
	C	0	4.2
	B	0	0.8
Q307	E	—	—
	C	—	—
	B	—	—
Q308	E	—	—
	C	—	—
	B	—	—

	Pin No.	ST-BY	TALK
Q309	E	0	0
	C	0	0
	B	0.6	0
Q310	E	0	0
	C	5.3	5.2
	B	0	0
Q311	E	0	0
	C	0	0.3
	B	0	0.6
Q312	E	0	0
	C	0	0.4
	B	0	0.6
Q313	E	5.4	5.3
	C	0	0
	B	5.3	5.3
Q314	E	5.4	5.3
	C	0.4	0.3
	B	5.3	5.3
Q315	E	0	0
	C	0	0
	B	0.7	0.7
Q316	E	7.5	7.5
	C	0	0
	B	7.5	7.5
Q318	E	0.2	5.4
	C	0	5.2
	B	0.2	4.6
Q501	E	—	—
	C	—	—
	B	—	—
Q502	E	7.5	7.5
	C	10.5	9.7
	B	8.2	8.2
Q503	E	0	2.2
	C	0	4.5
	B	0	2.8
D301	A	0	0
	K	—	—
D302	A	—	—
	K	—	—
D303	A	—	—
	K	—	—
D306	A	7.6	0.2
	K	7.5	7.5
D307	A	0	0
	K	0	5.2
D312	A	9.4	−0.4
	K	10	−0.7
D313	A	9.4	−0.4
	K	9.1	0
D314	A	9.0	0
	K	9.1	0
D315	A	0	1.1
	K	0	0.7
D316	A	11.3	10.5
	K	10.5	9.7

	Pin No.	ST-BY	TALK
D317	A	0	0
	K	7.5	7.5
D318	A	6.1	6.1
	K	5.4	5.4
D319	A	6.1	6.1
	K	5.4	5.3
D321	A	3.3	0
	K	2.7	0
D322	A	3.3	0
	K	2.7	0
D323	A	0	0
	K	0	0
D324	A	7.5	7.5
	K	5.6	5.6
D325	A	7.5	7.5
	K	6.0	5.6
D326	A	0	0
	K	0.2	5.4
D502	A	—	—
	K	—	—
D503	A	0	0
	K	8.2	8.2
D504	A	—	—
	K	—	—
D308	A	0	0
	K	0	6.1
D309	A	0	0
	K	0	−0.7
D310	A	0	−0.7
	K	0	5.4

CH Buss Line	1	3	4	5	7	8	9	10	11	12
D 1 8P	L	L	L	L	L	H	H	H	H	H
D 2 7P	L	L	H	H	H	L	L	L	L	H
D 3 6P	L	H	L	L	H	L	L	H	H	L
D 4 5P	H	H	L	H	H	L	H	L	H	L

BASE H : 5.3V, L : 0V

IC304↔IC302

Fig. 1

CH Buss Line	1	3	4	5	7	8	9	10	11	12
D 1 12P	H	H	L	H	H	L	H	L	H	L
D 2 13P	L	H	L	L	H	L	L	H	H	L
D 3 14P	L	L	H	H	H	L	L	L	L	H
D 4 15P	L	L	L	L	L	H	H	H	H	H

REMOTE H : 3.8V, L : 0V

IC101↔IC2

Fig. 2

	Pin No.	ST-BY	TALK
D311	A	0	6.1
	K	0	5.4
D317	E	0	0
	C	5.3	5.3
	B	0	0

TROUBLESHOOTING GUIDE

BASE UNIT

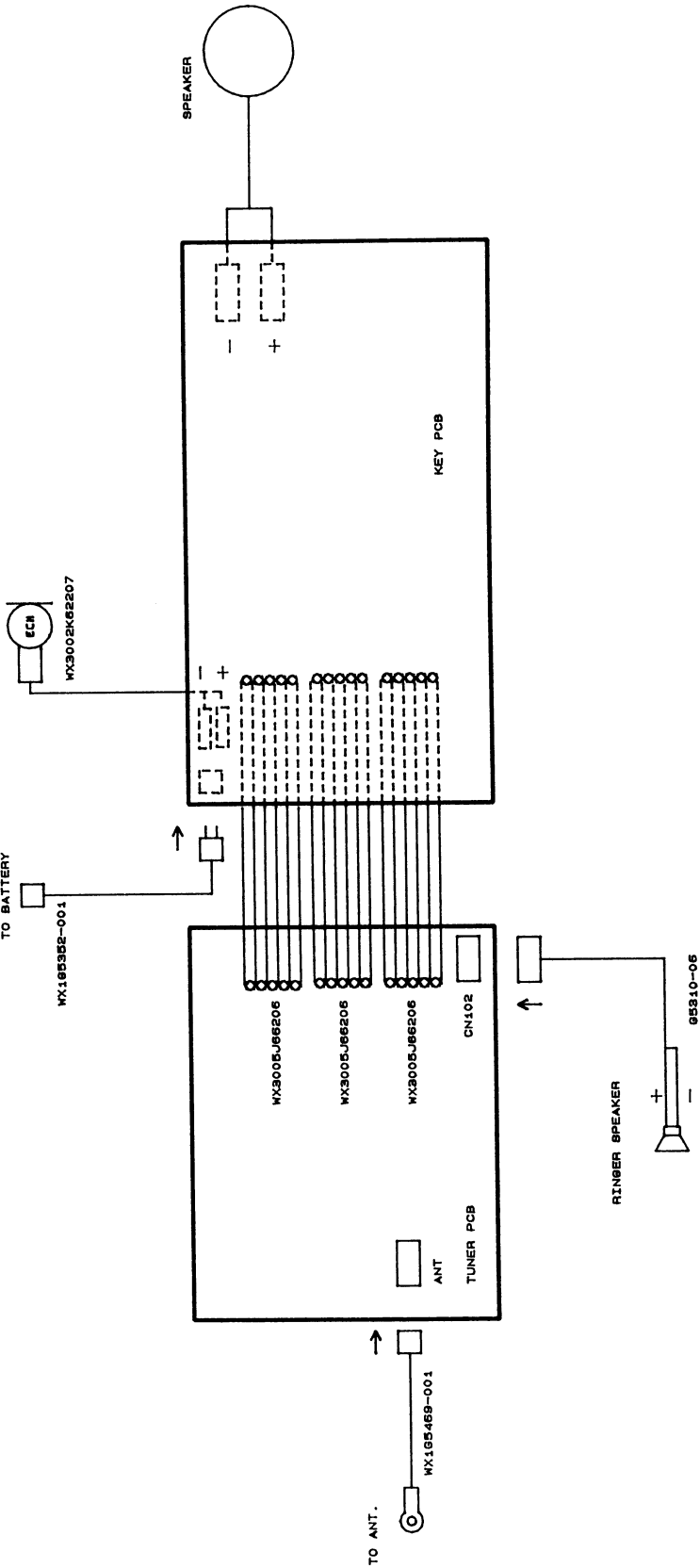
Problem	Check if	Check point
Power LED won't light	a) No power from AC adapter b) AC Adapter is good	AC/DC Adapter D316, IC308, D503, Q502, D324
No ring accepted	Phone LED won't flash	D312, D313, D314, C381, IC305, Q310, IC304(Pin28)
No ring sound in remote mode	Phone LED is flashing	IC304, D303, Q305, Q306, Q503
No charge	CHG LED won't light	Q316, WX1G5469-005
Page won't sound in remote mode	a) Neither does ring b) Ring sounds	IC304, D303, Q305, Q306, Q503 SW301, IC304
Talk won't work Can't enter standby mode		IC301, IC303, IC304, Q301, Q302, IC302, Q303, Q305, Q306, D303
Auto standby mode	ST-BY is possible	Q306, WX1G5469-005
High noise level		IC301, IC302, Q301, Q302, Q303
No party's voice		IC303, Q305, Q306, IC302, Q318, RL301, IC304
No voice to other party	Party's voice can be heard	IC301, IC304, IC310, Q301, Q302 Q303, Q307, Q308, Q318, RL301
Party's voice is distorted		IC301, IC310, Q307, Q308, IC304
High side tone level		IC301, IC310
No pulse dialing		RL301, IC304
Flash and redial functions are disabled		IC301, IC310, Q301, RL301

REMOTE UNIT

Problem	Check if	Check point
No ring accepted	a) TALK LED won't light b) TALK LED is flashing	SW101, IC1, IC101, IC2, Q1, Q2, Q3 IC101, Q104
No sound heard	a) Only noise heard b) Even noise not heard	Q1, Q2, Q3, IC1, IC2 Q1, Q2, Q3, Q4, IC1, IC2, IC105 IC101
No message transmitted to the other party		ECM, IC102, Q101, D2, Q7, Q8, SW101
Dialing impossible	a) Tone dialing only impossible b) Pulse dialing only impossible c) Both dialing impossible	Q102, Q109, IC101 IC101 IC101, D2, Q7, Q8, Q101
Key Tone is not heard	Dialing is possible	Q102, IC101
Can't enter standby mode		IC101
Auto Standby is impossible	ST-BY is possible	IC101
Low Battery LED won't light		IC101, IC103
No redial		IC101

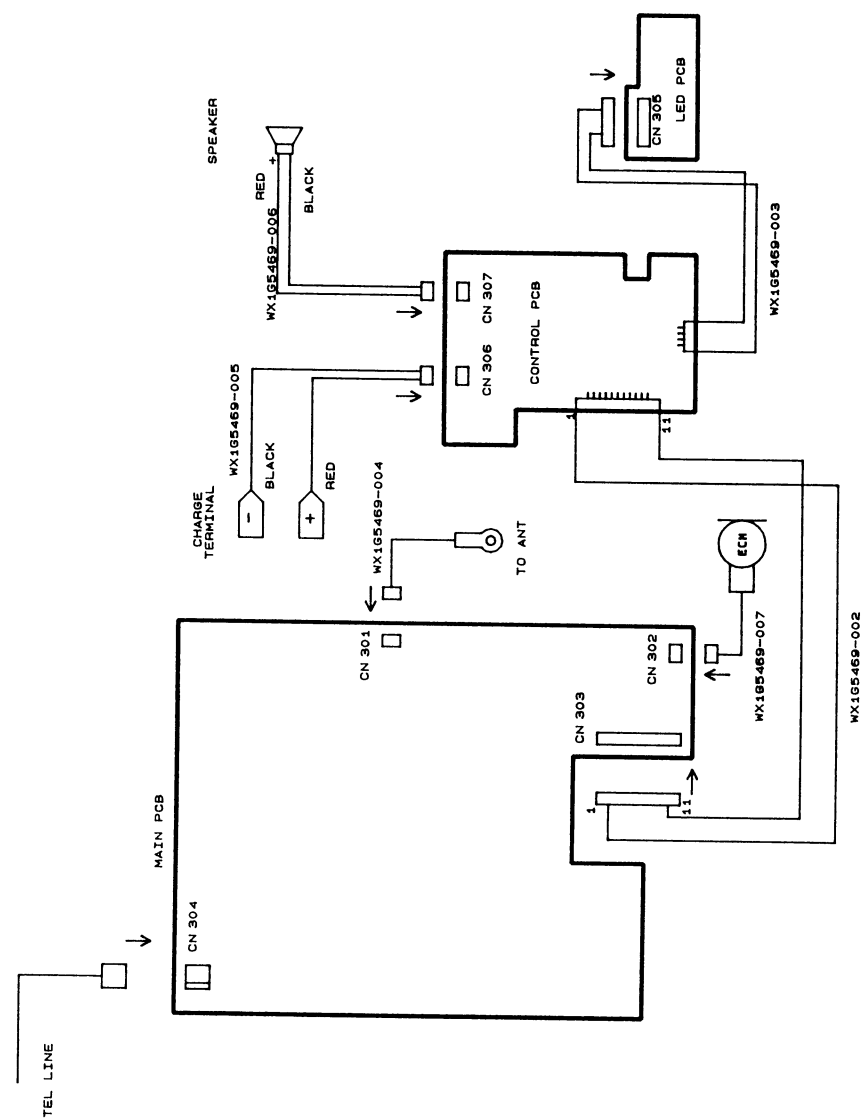
WIRING DIAGRAMS

REMOTE UNIT



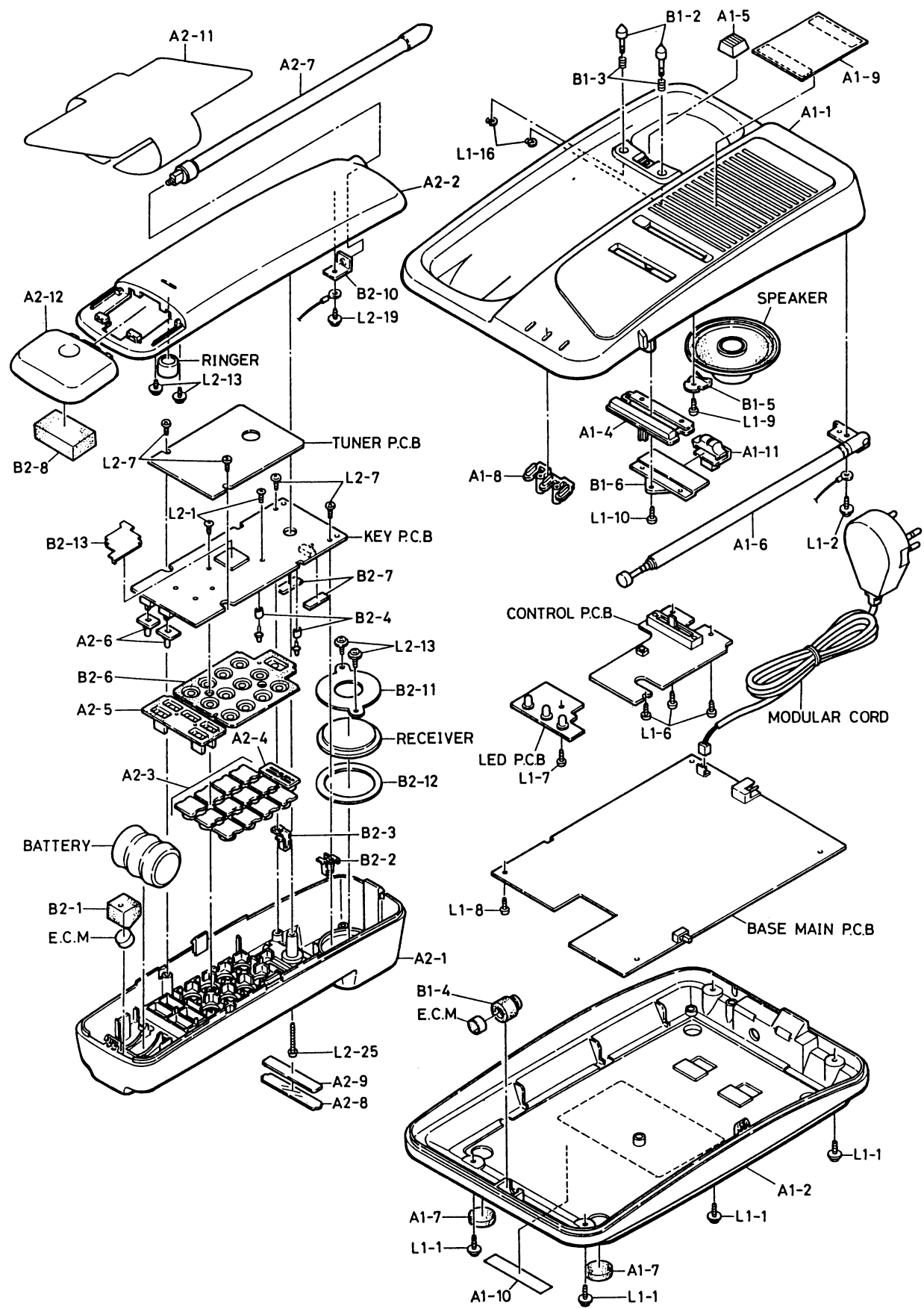
PCB TOP VIEW

BASE UNIT



PCB TOP VIEW

EXPLODED VIEW



MECHANICAL PARTS LIST

PRODUCT SAFETY NOTE: Products marked with a  have special characteristics important to safety. Before replacing any of these components, read carefully the product safety notice in this service manual. Don't degrade the safety of the product through improper servicing.

Ref. No.	Description	Part No.
A1- 1 	BASE TOP CASE	OGM300101
A1- 2 	BASE BOTTOM CASE	OGM200047
A1- 4 	INTERCOM BUTTON	OGM300096
A1- 5 	HAND SET HOOK	21WT244
A1- 6 	(B)ROD ANTENNA	27AT030
A1- 7	CASE FOOT	OGM400411
A1- 8 	LED WINDOW	OGM400410
A1- 9	POP LABEL T=0.15	OGM400434
A1- 10	PTT LABEL	OGM400720
A1- 11 	VOLUME KNOB	OGM400404
A2- 1 	HAND FRONT CASE	OGM400438
A2- 2 	HAND REAR CASE	OGM100067
A2- 3 	DIAL KEY	OGM300093
A2- 4 	TALK KNOB	21NT443
A2- 5	FUNCTION RUBBER	OGM300104
A2- 6 	SLIDE KNOB	21NT444
A2- 7	HAND ANTENNA	OGM400394
A2- 8 	NO.LABEL WINDOW	24DT030
A2- 9	NO.LABEL	24LT355
A2- 11	HAND SET TAG	OGM400642
A2- 12 	BATTERY LID	OGM300095
B1- 2	CHG TERMINAL	25B0002
B1- 3	CHG.TERMINAL SPRING	26W0322
B1- 4	MIC HOLDER	21WT033
B1- 5	SPEAKER MOUNTAING PIECE	23WT174
B1- 6 	KNOB RAIL	OGM400613
B2- 1	HAND MIC.HOLDER	21WT213
B2- 2	HAND CHG TERMINAL(L)	23WT177
B2- 3	HAND CHG TERMINAL(R)	23WT176
B2- 4 	(H)LED HOLDER	21WT184
B2- 6	KEY RUBBER	21WT208
B2- 7	INSULATION SHEET(A)	24WT164
B2- 8 	BATTERY CUSHION	OGM400402
B2- 10	ANTENNA HOLDER	OGM400403
B2- 11	SPEAKER HOLDER	OGM400733
B2- 12 	SPEAKER SPACER	OGM400734
B2- 13	SHIELD PLATE	OGM400806
L1- 1	P-TIGHT SCREW 3X10 BIND WITH + WASHER	GJMP3100
L1- 2	P-TIGHT SCREW 3X10 BIND WITH + WASHER	GJMP3100
L1- 6	P-TIGHT SCREW 3X8 BIND +	GBMP3080
L1- 7	P-TIGHT SCREW 3X8 BIND +	GBMP3080
L1- 8	P-TIGHT SCREW 3X8 BIND +	GBKP3080
L1- 9	P-TIGHT SCREW 3X8 BIND +	GBMP3080
L1- 10	P-TIGHT SCREW 3X8 BIND +	GBMP3080
L1- 16	E RING D=2	EEU0020

Ref. No.	Description	Part No.
L2- 1	P-TIGHT SCREW 2X6 FLASH+	GDMP2060
L2- 7	P-TIGHT SCREW 2.6X8 BIND+	GBMP9080
L2- 13	P-TIGHT SCREW 3X8 PAN HEAD+ WITH WASHER	GZMP3080
L2- 13	P-TIGHT SCREW 3X8 PAN HEAD+ WITH WASHER	GZMP3080
L2- 19	P-TIGHT SCREW 3X10 PAN HEAD+ WITH WASHER	GZMP3100
L2- 25	P-TIGHT SCREW 3X25 BIND +	GBMP3250
ACCESORIES		
	TAPPING SCREW M5X16 BIND HEAD	DBM1516
	INSTRUCTION BOOK	OGMN00031
	BASE HOOK HOLDER	23WT109

ELECTRICAL PARTS LIST

PRODUCT SAFETY NOTE: Products marked with a  have special characteristics important to safety. Before replacing any of these components, read carefully the product safety notice in this service manual. Don't degrade the safety of the product through improper servicing.

NOTE: Parts that not assigned part numbers (-----) are not available.

Tolerance of Capacitors and Resistors are noted with the following symbols.

C.....±0.25% F.....±1% J.....±5% M.....±20% Z.....+80/-20%
G.....±2% K.....±10% N.....±30%

BASE UNIT
MAIN PCB ASSEMBLY

Ref. No.	Description	Part No.
	MAIN PCB ASSEMBLY	0GSA00493
	Consists of the following:	
	MAIN PCB	BG5469F01001
CAPACITORS		
C 301	AXIAL CAP. B K 100pF/50V	3B42101T
C 302	AXIAL CAP. B K 0.001µF/50V	3B42102T
C 303	AXIAL CAP. Y M 0.01µF/16V	3Y4D103T
C 304	AXIAL CAP. SL J 33pF/50V	3S41330T
C 305	AXIAL CAP. CH J 15pF/50V	3C41150T
C 306	AXIAL CAP. Y M 0.01µF/16V	3Y4D103T
C 307	AXIAL CAP. Y M 0.01µF/16V	3Y4D103T
C 308	AXIAL CAP. Y M 0.01µF/16V	3Y4D103T
C 309	AXIAL CAP. Y M 0.01µF/16V	3Y4D103T
C 310	ELECTROLYTIC CAP. 47µF/16V M	126C476S
C 311	AXIAL CAP. Y M 0.01µF/16V	3Y4D103T
C 312	AXIAL CAP. CH J 10pF/50V	3C41100T
C 313	CERAMIC CAP. C H 120pF/50V	12CH121S
C 314	CERAMIC CAP. C H 120pF/50V	12CH121S
C 315	CERAMIC CAP. C H 33pF/50V	12CH330S
C 317	AXIAL CAP. CH J 15pF/50V	3C41150T
C 318	AXIAL CAP. F Z 0.047µF/50V	3F40473T
C 319	AXIAL CAP. Y M 0.01µF/16V	3Y4D103T
C 320	ELECTROLYTIC CAP. 1µF/50V (L.L)	124R105S
C 321	AXIAL CAP. Y M 0.01µF/16V	3Y4D103T
C 322	ELECTROLYTIC CAP. 47µF/16V M	126C476S
C 323	AXIAL CAP. F Z 0.1µF/50V	3F40104T
C 324	AXIAL CAP. F Z 0.1µF/50V	3F40104T
C 325	AXIAL CAP. Y M 0.01µF/16V	3Y4D103T
C 326	AXIAL CAP. B K 220pF/50V	3B42221T
C 327	AXIAL CAP. B K 220pF/50V	3B42221T
C 328	SEMICONDUCTOR CAP. SR K 0.1µF/16V	12Y6104S
C 329	ELECTROLYTIC CAP. 1µF/50V M	126F105S
C 330	AXIAL CAP. CH 10pF/50V	3C41100T
C 331	AXIAL CAP. Y M 0.01µF/16V	3Y4D103T
C 332	ELECTROLYTIC CAP. 10µF/16V M	126C106S
C 334	AXIAL CAP. CH K 4.7pF/50V	3C42479T
C 335	SEMICONDUCTOR CAP. Y M 0.056µF/16V	12Y6563S
C 336	ELECTROLYTIC CAP. 1µF/50V (L.L)	124R105S
C 337	SEMICONDUCTOR CAP. Y K 0.056µF/16V	12Y6563S
C 338	AXIAL CAP. CH K 8.2pF/50V	3C42829T
C 339	SEMICONDUCTOR CAP. SR K 0.1µF/16V	12Y6104S

Ref. No.	Description	Part No.
C 340	SEMICONDUCTOR CAP. Y K 0.01µF/25V or	12Y2103S
	SEMICONDUCTOR CAP. Y K 0.01µF/25V	12Y6103S
C 341	SEMICONDUCTOR CAP. Y K 0.01µF/25V or	12Y2103S
	SEMICONDUCTOR CAP. Y K 0.01µF/25V	12Y6103S
C 343	AXIAL CAP. B K 0.001µF/50V	3B42102T
C 344	AXIAL CAP. CH J 18pF/50V	3C41180T
C 345	CERAMIC CAP. C H 82pF/50V	12CH820S
C 346	AXIAL CAP. Y M 0.01µF/16V	3Y4D103T
C 347	CERAMIC CAP. C H 150pF/50V	12CH151S
C 348	CERAMIC CAP. C H 150pF/50V	12CH151S
C 351	AXIAL CAP. CH J 15pF/50V	3C41150T
C 352	AXIAL CAP. Y M 0.01µF/16V	3Y4D103T
C 353	ELECTROLYTIC CAP. 10µF/16V M	126C106S
C 354	AXIAL CAP. F Z 0.022µF/25V	3F45223T
C 356	AXIAL CAP. SL J 56pF/50V	3S41560T
C 357	AXIAL CAP. B K 270pF/50V or	3B41271T
	AXIAL CAP. B K 270pF/50V	3B42271T
C 358	AXIAL CAP. B K 120pF/50V	3B42121T
C 360	SEMICONDUCTOR CAP. SR K 0.1µF/16V	12Y6104S
C 361	AXIAL CAP. B K 0.001µF/50V	3B42102T
C 363	SEMICONDUCTOR CAP. SR K 0.1µF/16V	12Y6104S
C 365	SEMICONDUCTOR CAP. Y K 0.01µF/25V or	12Y2103S
	SEMICONDUCTOR CAP. Y K 0.01µF/25V	12Y6103S
C 367	ELECTROLYTIC CAP. 1µF/50V M	126F105S
C 371	SEMICONDUCTOR CAP. Y K 0.033µF/16V	12Y6333S
C 372	ELECTROLYTIC CAP. 10µF/16V M	126C106S
C 373	SEMICONDUCTOR CAP. Y K 0.056µF/16V	12Y6563S
C 374	AXIAL CAP. Y M 0.01µF/16V	3Y4D103T
C 375	ELECTROLYTIC CAP. 100µF/10V M	126B107S
C 376	SEMICONDUCTOR CAP. S R 0.022µF	12Y6223S
C 377	ELECTROLYTIC CAP. 100µF/6.3V M	126A107S
C 378	SEMICONDUCTOR CAP. 0.015µF	12Y6153S
C 379	ELECTROLYTIC CAP. 0.47µF/50V M	126F474S
C 381	METALIZED FILM CAP. 0.1µF/250V	CT2E104AE004
C 382	AXIAL CAP. Y M 0.01µF/16V	3Y4D103T
C 383	ELECTROLYTIC CAP. 10µF/16V M (N.P.)	126U106S
C 384	ELECTROLYTIC CAP. 2.2µF/50V M	126F225S
C 385	ELECTROLYTIC CAP. 220µF/16V M	126C227S
C 386	ELECTROLYTIC CAP. 10µF/16V M	126C106S
C 387	AXIAL CAP. B K 0.001µF/50V	3B42102T
C 388	SEMICONDUCTOR CAP. S R 0.047µF/16V	12Y6473S

Ref. No.	Description	Part No.
C 389	AXIAL CAP. B K 0.001μF/50V	3B42102T
C 390	ELECTROLYTIC CAP. 10μF/16V M	126C106S
C 392	SEMICONDUCTOR CAP. Y K 0.033μF/16V	12Y6333S
C 393	SEMICONDUCTOR CAP. SR K 0.1μF/16V or SEMICONDUCTOR CAP. SR K 0.1μF/16V	12Y6104S 12X2104S
C 394	AXIAL CAP. B K 0.001μF/50V	3B42102T
C 395	SEMICONDUCTOR CAP. SR K 0.1μF/16V or SEMICONDUCTOR CAP. SR K 0.1μF/16V	12Y6104S 12X2104S
C 396	SEMICONDUCTOR CAP. SR K 0.1μF/16V or SEMICONDUCTOR CAP. SR K 0.1μF/16V	12Y6104S 12X2104S
C 397	AXIAL CAP. B K 0.001μF/50V	3B42102T
C 398	SEMICONDUCTOR CAP. Y K 0.01μF/25V or SEMICONDUCTOR CAP. Y K 0.01μF/25V	12Y2103S 12Y6103S
C 399	SEMICONDUCTOR CAP. Y K 0.056μF/16V	12Y6563S
C 400	AXIAL CAP. F Z 0.1μF/50V	3F40104T
C 401	AXIAL CAP. B K 560pF/50V	3B42561T
C 402	ELECTROLYTIC CAP. 100μF/10V M	126B107S
C 403	AXIAL CAP. F Z 0.1μF/50V	3F40104T
C 404	AXIAL CAP. F Z 0.022μF/25V	3F45223T
C 405	ELECTROLYTIC CAP. 1μF/50V M	126F105S
C 406	AXIAL CAP. F Z 0.1μF/50V	3F40104T
C 407	ELECTROLYTIC CAP. 1μF/50V M	126F105S
C 408	ELECTROLYTIC CAP. 10μF/16V M	126C106S
C 409	AXIAL CAP. F Z 0.1μF/50V	3F40104T
C 410	AXIAL CAP. F Z 0.022μF/25V	3F45223T
C 411	AXIAL CAP. B K 0.001μF/50V	3B42102T
C 412	ELECTROLYTIC CAP. 10μF/16V M	126C106S
C 413	ELE CAP. 2200μF/10V	126B228S
C 414	AXIAL CAP. F Z 0.022μF/25V	3F45223T
C 415	ELECTROLYTIC CAP. 2.2μF/50V M	126F225S
C 416	ELECTROLYTIC CAP. 2.2μF/50V M	126F225S
C 417	ELECTROLYTIC CAP. 1μF/50V M	126F105S
C 418	AXIAL CAP. B K 0.001μF/50V	3B42102T
C 419	AXIAL CAP. Y M 0.01μF/16V	3Y4D103T
C 420	AXIAL CAP. CH K 15pF/50V	3C41150T
C 421	AXIAL CAP. CH K 18pF/50V	3C41180T
C 422	ELECTROLYTIC CAP. 100μF/6.3V M	126A107S
C 423	ELECTROLYTIC CAP. 47μF/16V M	126C476S
C 424	AXIAL CAP. B K 100pF/50V	3B42101T
C 425	AXIAL CAP. B K 100pF/50V	3B42101T
C 426	AXIAL CAP. X M 0.0033μF/16V	3X4C332T
C 427	AXIAL CAP. X M 0.0022μF/16V	3X4C222T
C 428	AXIAL CAP. X M 0.0068μF/16V or AXIAL CAP. X M 0.0068μF/16V	3X4D682T 3X4C682T
C 429	AXIAL CAP. X M 0.0047μF/16V	3X4C472T
C 430	SEMICONDUCTOR CAP. SR K 0.0082μF/16V or SEMICONDUCTOR CAP. SR K 0.0082μF/25V	12Y6822S 12Y2822S
C 431	SEMICONDUCTOR CAP. S R 0.01μF/25V or SEMICONDUCTOR CAP. S R 0.01μF/16V	12Y2103S 12Y6103S
C 432	ELECTROLYTIC CAP. 10μF/10V M	526S106S
C 433	SEMICONDUCTOR CAP. 0.1μF/25V or SEMICONDUCTOR CAP. 0.1μF/16V	12X2104S 12Y6104S
C 434	SEMICONDUCTOR CAP. Y K 0.01μF/25V or SEMICONDUCTOR CAP. Y K 0.01μF/16V	12Y2103S 12Y6103S
C 435	AXIAL CAP. B K 100pF/50V	3B42101T
C 450	ELECTROLYTIC CAP. 4.7μF/25V M	126D475S
C 451	AXIAL CAP. C H 12pF	3C41120T
C 452	AXIAL CAP. Y M 0.01μF/16V	3Y4D103T

Ref. No.	Description	Part No.
C 501	SEMICONDUCTOR CAP. Y K 0.01μF/25V or SEMICONDUCTOR CAP. Y K 0.01μF/25V	12Y2103S 12Y6103S
C 502	AXIAL CAP. X M 0.0022μF/16V	3X4C222T
C 503	AXIAL CAP. B K 220pF/50V	3B42221T
C 504	ELECTROLYTIC CAP. 1μF/50V M	126F105S
C 505	AXIAL CAP. Y M 0.01μF/16V	3Y4D103T
C 506	AXIAL CAP. SL J 33pF/50V	3S41330T
C 507	ELECTROLYTIC CAP. 22μF/16V M	126C226S
C 509	AXIAL CAP. B K 100pF/50V	3B42101T
C 510	AXIAL CAP. B K 0.001μF/50V	3B42102T
C 511	ELECTROLYTIC CAP. 47μF/16V M	126C476S
C 512	AXIAL CAP. Y M 0.01μF/16V	3Y4D103T
C 513	AXIAL CAP. CH K 5.6pF/50V	3C42569T
C 514	AXIAL CAP. Y M 0.01μF/16V	3Y4D103T
C 515	AXIAL CAP. B K 100pF/50V	3B42101T
C 516	AXIAL CAP. F Z 0.022μF/25V	3F45223T
C 517	AXIAL CAP. F Z 0.1μF/50V	3F40104T
C 518	AXIAL CAP. Y M 0.01μF/16V	3Y4D103T
DIODES		
D 301	DIODE 1SV164-T8	A1SV164T8***
D 302	DIODE GMB01-BT	GMB01BT
D 303	DIODE 1SV164-T8	A1SV164T8***
D 306	DIODE GMB01-BT	GMB01BT
D 307	DIODE RD13F-B	RD13F
D 308	RECTIFIER DIODE 1N4004	NDSZRL1N4004
D 309	RECTIFIER DIODE 1N4004	NDSZRL1N4004
D 310	RECTIFIER DIODE 1N4004	NDSZRL1N4004
D 311	RECTIFIER DIODE 1N4004	NDSZRL1N4004
D 312	ZENER DIODE MTZ3.6B-T77 or ZENER DIODE GZS3.6X-BT or ZENER DIODE RD3.6E-T1(B)	MTZ3.6BT77 QDTX00GZS3R6 QDTB00RD3R6E
D 313	ZENER DIODE MTZ3.6B-T77 or ZENER DIODE GZS3.6X-BT or ZENER DIODE RD3.6E-T1(B)	MTZ3.6BT77 QDTX00GZS3R6 QDTB00RD3R6E
D 314	RECTIFIER DIODE 1N4004	NDSZRL1N4004
D 315	DIODE GMB01-BT	GMB01BT
D 316	RECTIFIER DIODE 1N4004	NDSZRL1N4004
D 317	RECTIFIER DIODE 1N4004	NDSZRL1N4004
D 318	DIODE GMB01-BT	GMB01BT
D 319	RECTIFIER DIODE 1N4004	NDSZRL1N4004
D 321	DIODE GMB01-BT	GMB01BT
D 322	DIODE GMB01-BT	GMB01BT
D 323	LED LLR-343SG	NPPZLLR343SG
D 324	LED LLR-343SG	NPPZLLR343SG
D 325	LED LLR-343SG	NPPZLLR343SG
D 326	ZENER DIODE RD91BE	QDTB000RD91E
D 502	DIODE GMB01-BT	GMB01BT
D 503	ZENNER DIODE GZS8.2Y-BT or ZENER DIODE RD8.2ES-B2 or ZENER DIODE RD8.2ES-B3	QDTY00GZS8R2 QDQ20RD8R2ES QDQ30RD8R2ES
D 504	DIODE GMB01-BT	GMB01BT
ICS		
IC 301	IC MC3361BP	14L0087
IC 302	IC SM5132FP	QSMDA0SNK005
IC 303	IC NJM324D or IC LM324N	QSBLA0SJ039 14L0055
IC 304	IC TMP47C400N	QSMQA0STS038
IC 305	PHOTO COUPLER PC817(B)	QPPB000PC817
IC 306	PHOTO COUPLER PC817(B)	QPPB000PC817
IC 307	IC MC34119P	14L0290

Ref. No.	Description	Part No.
IC 308	IC NJM7806FA	14L0248
IC 309	PHOTO COUPLER TLP627-1 or IC PS2532-1	QPEZ0TLP6271 QSBFA0SNE001
IC 310 ▲	IC GL6981	NSBLA0SGS001
COILS		
L 301	AXIAL INDUCTOR 2.2μH	2165229T
L 302	AXIAL INDUCTOR 1μH	2165109T
L 303	POT TYPE INDUCTOR 68mH or POT TYPE INDUCTOR 68mH	LLBZ00ZSF001 LLBZ00ZMM001
L 304	AXIAL INDUCTOR 12μH	2165120T
L 305	AXIAL INDUCTOR 0.47μH	216547AT
L 306 ▲	INDUCTOR 1mH J	117M444
L 307 ▲	INDUCTOR 1mH J	117M444
L 308	AXIAL INDUCTOR 220μH-K-AXT	2165221T
L 309	AXIAL INDUCTOR 22μH-K-AXT	2165220T
L 310	AXIAL INDUCTOR 12μH	2165120T
L 311	AXIAL INDUCTOR 2.2μH	2165229T
L 501	AXIAL INDUCTOR 12μH	2152120T
L 502	AXIAL INDUCTOR 12μH	2152120T
L 503	AXIAL INDUCTOR 33μH-K-AXT	2165330T
L 504	AXIAL INDUCTOR 22μH-K-AXT	2165220T
T 301	CASING COIL	LFA07V0SF064
T 302	CASING COIL	LFA07V0SF063
T 303	CASING COIL	LFA07V0SF062
T 304	CASING COIL	LFA07V0SF036
T 305	CASING COIL	LFA07V0SF061
T 306	CASING COIL	LFA07V0SF039
T 307	CASING COIL	LFA07V0SF074
T 309	CASING COIL	LFA07V0SF059
T 310	CASING COIL	LFA07V0SF058
TRANSISTORS		
Q 301	TRANSISTOR 2SK212E-SPA-AC	QFSE002SK212
Q 302	TRANSISTOR	2SC1674L
Q 303	TRANSISTOR 2SC945	QQQ4002SC945
Q 304	TRANSISTOR DTA124EL or TRANSISTOR 2SA1342-TB or TRANSISTOR 2SA1342	QQSZDTA124EL QQ1Z02SA1342 QQ2Z02SA1342
Q 305	TRANSISTOR 2SC945	QQQ4002SC945
Q 306	TRANSISTOR 2SC2347	QQSZ02SC2347
Q 307	TRANSISTOR 2SC3330S-SPA-AC or TRANSISTOR 2SC3330T-SPA-AC	QQSS02SC3330 QOST02SC3330
Q 308	TRANSISTOR 2SC3330S-SPA-AC or TRANSISTOR 2SC3330T-SPA-AC	QQSS02SC3330 QOST02SC3330
Q 309	TRANSISTOR 2SC3330S-SPA-AC or TRANSISTOR 2SC3330T-SPA-AC	QQSS02SC3330 QOST02SC3330
Q 310	TRANSISTOR 2SC3330S-SPA-AC or TRANSISTOR 2SC3330T-SPA-AC	QQSS02SC3330 QOST02SC3330
Q 311	TRANSISTOR 2SC3330S-SPA-AC or TRANSISTOR 2SC3330T-SPA-AC	QQSS02SC3330 QOST02SC3330
Q 312	TRANSISTOR 2SC3330S-SPA-AC or TRANSISTOR 2SC3330T-SPA-AC	QQSS02SC3330 QOST02SC3330
Q 313	TRANSISTOR DTA124EL or TRANSISTOR 2SA1342-TB or TRANSISTOR 2SA1342	QQSZDTA124EL QQ1Z02SA1342 QQ2Z02SA1342
Q 314	TRANSISTOR 2SA950(O) or TRANSISTOR 2SB698(F)	Q2SA950OTPE2 QOSF002SB698
Q 315	TRANSISTOR 2SC3330S-SPA-AC or TRANSISTOR 2SC3330T-SPA-AC	QQSS02SC3330 QOST02SC3330
Q 316	TRANSISTOR 2SA1317R-SPA-AC	QOSR02SA1317
Q 317	TRANSISTOR 2SC3330S-SPA-AC or	QQSS02SC3330

Ref. No.	Description	Part No.
Q 318	TRANSISTOR 2SC3330T-SPA-AC	QOST02SC3330
Q 501	TRANSISTOR 2SA1400(K)	QQQK02SA1400
Q 502	TRANSISTOR 2SC3400	QRPZ02SC3400
Q 503	TRANSISTOR 2SD400(F) or TRANSISTOR 2SC2120Y or TRANSISTOR 2SC2120Y	2SD400F QQPY02SC2120 QQTY02SC2120
Q 503	TRANSISTOR 2SC945	QQQ4002SC945
RESISTORS		
R 301	CARBON RES. 1/6W J 330 Ω	132A331T
R 302	CARBON RES. 1/6W J 10 Ω	132A100T
R 303	CARBON RES. 1/6W J 22K Ω	132A223T
R 304	CARBON RES. 1/6W J 33K Ω	132A333T
R 305	CARBON RES. 1/6W J 470 Ω	132A471T
R 306	CARBON RES. 1/6W J 470 Ω	132A471T
R 307	CARBON RES. 1/6W J 22 Ω	132A220T
R 308	CARBON RES. 1/6W J 330 Ω	132A331T
R 309	CARBON RES. 1/6W J 47 Ω	132A470T
R 310	CARBON RES. 1/6W J 100K Ω	132A104T
R 311	CARBON RES. 1/6W J 1.5K Ω	132A152T
R 312	CARBON RES. 1/6W J 22K Ω	132A223T
R 313	CARBON RES. 1/6W J 27K Ω	132A273T
R 314	CARBON RES. 1/6W J 2.7K Ω	132A272T
R 315	CARBON RES. 1/6W J 4.7K Ω	132A472T
R 316	CARBON RES. 1/6W J 47 Ω	132A470T
R 317	CARBON RES. 1/6W J 47K Ω	132A473T
R 318	CARBON RES. 1/6W J 8.2K Ω	132A822T
R 319	CARBON RES. 1/6W J 6.8K Ω	132A682T
R 320	CARBON RES. 1/6W J 3.3K Ω	132A332T
R 321	CARBON RES. 1/6W J 470K Ω	132A474T
R 322	CARBON RES. 1/6W J 1.5K Ω	132A152T
R 323	CARBON RES. 1/6W J 82K Ω	132A823T
R 324	CARBON RES. 1/6W J 33K Ω	132A333T
R 325	CARBON RES. 1/6W J 10 Ω	132A100T
R 327	CARBON RES. 1/6W J 1.5K Ω	132A152T
R 328	CARBON RES. 1/6W J 10K Ω	132A103T
R 329	CARBON RES. 1/6W J 22K Ω	132A223T
R 331	CARBON RES. 1/6W J 1K Ω	132A102T
R 332	CARBON RES. 1/6W J 5.6K Ω	132A562T
R 333	CARBON RES. 1/6W J 47K Ω	132A473T
R 334	CARBON RES. 1/6W J 270 Ω	132A271T
R 335	CARBON RES. 1/6W J 10K Ω	132A103T
R 336	CARBON RES. 1/6W J 10K Ω	132A103T
R 337	CARBON RES. 1/6W J 330K Ω	132A334T
R 338	CARBON RES. 1/6W J 39K Ω	132A393T
R 339	CARBON RES. 1/6W J 100 Ω	132A101T
R 340	CARBON RES. 1/6W J 12K Ω	132A123T
R 341	CARBON RES. 1/6W J 15K Ω	132A153T
R 342	CARBON RES. 1/6W J 330 Ω	132A331T
R 343	CARBON RES. 1/6W J 10K Ω	132A103T
R 344	CARBON RES. 1/6W J 10K Ω	132A103T
R 345	CARBON RES. 1/6W J 10K Ω	132A103T
R 350	CARBON RES. 1/6W J 680 Ω	132A681T
R 351	CARBON RES. 1/6W J 12K Ω	132A123T
R 355	CARBON RES. 1/6W J 330 Ω	132A331T
R 356	CARBON RES. 1/6W J 270 Ω	132A271T
R 357	CARBON RES. 1/6W J 10K Ω	132A103T
R 358	CARBON RES. 1/6W J 1K Ω	132A102T
R 359	CARBON RES. 1/6W J 680 Ω	132A681T
R 360	CARBON RES. 1/6W J 100 Ω	132A101T
R 361	CARBON RES. 1/6W J 820 Ω	132A821T

Ref. No.	Description	Part No.
R 363	CARBON RES. 1/6W J 3.3K Ω	132A332T
R 364	CARBON RES. 1/6W J 68K Ω	132A683T
R 365	CARBON RES. 1/6W J 3.6K Ω	132A362T
R 366	CARBON RES. 1/6W J 470 Ω	132A471T
R 367	CARBON RES. 1/6W J 47 Ω	132A470T
R 368	CARBON RES. 1/6W J 220 Ω	132A221T
R 369	CARBON RES. 1/6W J 180 Ω	132A181T
R 370	CARBON RES. 1/6W J 100K Ω	132A104T
R 371	CARBON RES. 1/6W J 5.6K Ω	132A562T
R 372	CARBON RES. 1/6W J 100K Ω	132A104T
R 373	CARBON RES. 1/6W J 150K Ω	132A154T
R 374	CARBON RES. 1/6W J 470K Ω	132A474T
R 375	CARBON RES. 1/6W J 150K Ω	132A154T
R 376	CARBON RES. 1/6W J 33K Ω	132A333T
R 377	CARBON RES. 1/6W J 6.8K Ω	132A682T
R 378	CARBON RES. 1/6W J 6.8K Ω	132A682T
R 379	CARBON RES. 1/6W J 100K Ω	132A104T
R 380	CARBON RES. 1/6W J 2.7K Ω	132A272T
R 381	CARBON RES. 1/6W J 68K Ω	132A683T
R 382	CARBON RES. 1/6W J 8.2K Ω	132A822T
R 383	CARBON RES. 1/6W J 1K Ω	132A102T
R 384	CARBON RES. 1/6W J 10K Ω	132A103T
R 385	CARBON RES. 1/6W J 10K Ω	132A103T
R 386	CARBON RES. 1/6W J 33K Ω	132A333T
R 387	CARBON RES. 1/6W J 56K Ω	132A563T
R 389	CARBON RES. 1/6W J 56K Ω	132A563T
R 390	CARBON RES. 1/6W J 3.9K Ω	132A392T
R 391	CARBON RES. 1/6W J 47K Ω	132A473T
R 392	CARBON RES. 1/6W J 4.7K Ω	132A472T
R 393	CARBON RES. 1/6W J 10 Ω	132A100T
R 394	CARBON RES. 1/6W J 150K Ω	132A154T
R 395	CARBON RES. 1/6W J 56K Ω	132A563T
R 396	METAL OXIDE RES. 1W 82 Ω	134A820
R 397	CARBON RES. 1/6W J 47K Ω	132A473T
R 398	CARBON RES. 1/6W J 150K Ω	132A154T
R 399	CARBON RES. 1/6W J 220K Ω	132A224T
R 400	CARBON RES. 1/6W J 150K Ω	132A154T
R 401	CARBON RES. 1/6W J 220K Ω	132A224T
R 402	CARBON RES. 1/6W J 100 Ω	132A101T
R 403	CARBON RES. 1/6W J 220K Ω	132A224T
R 405	CARBON RES. 1/6W J 100K Ω	132A104T
R 406	CARBON RES. 1/6W J 10K Ω	132A103T
R 407	CARBON RES. 1/6W J 10K Ω	132A103T
R 408	CARBON RES. 1/6W J 10K Ω	132A103T
R 409	CARBON RES. 1/6W J 10K Ω	132A103T
R 410	CARBON RES. 1/6W J 100K Ω	132A104T
R 411	CARBON RES. 1/6W J 100K Ω	132A104T
R 412	CARBON RES. 1/6W J 100K Ω	132A104T
R 413	CARBON RES. 1/6W J 100K Ω	132A104T
R 414	CARBON RES. 1/6W J 100K Ω	132A104T
R 415	CARBON RES. 1/6W J 56K Ω	132A563T
R 416	CARBON RES. 1/6W J 2.2K Ω	132A222T
R 417	CARBON RES. 1/6W J 150K Ω	132A154T
R 418	CARBON RES. 1/6W J 68K Ω	132A683T
R 419	CARBON RES. 1/6W J 100K Ω	132A104T
R 420	CARBON RES. 1/6W J 100K Ω	132A104T
R 421	CARBON RES. 1/6W J 100K Ω	132A104T
R 422	CARBON RES. 1/6W J 100K Ω	132A104T
R 423	CARBON RES. 1/6W J 1K Ω	132A102T
R 424	CARBON RES. 1/6W J 1K Ω	132A102T

Ref. No.	Description	Part No.
R 425	CARBON RES. 1/6W J 1K Ω	132A102T
R 426	CARBON RES. 1/6W J 22K Ω	132A223T
R 427	CARBON RES. 1/6W J 33K Ω	132A333T
R 428	CARBON RES. 1/6W J 22K Ω	132A223T
R 501	CARBON RES. 1/6W J 10K Ω	132A103T
R 502	CARBON RES. 1/6W J 150K Ω	132A154T
R 505	CARBON RES. 1/6W J 150K Ω	132A154T
R 507	CARBON RES. 1/6W J 100K Ω	132A104T
R 508	CARBON RES. 1/6W J 1K Ω	132A102T
R 509	CARBON RES. 1/6W J 47K Ω	132A473T
R 510	CARBON RES. 1/6W J 22 Ω	132A220T
R 511	CARBON RES. 1/6W J 100 Ω	132A101T
R 512	CARBON RES. 1/6W J 33K Ω	132A333T
R 513	CARBON RES. 1/6W J 820 Ω	132A821T
R 514	CARBON RES. 1/6W J 100 Ω	132A101T
R 515	CARBON RES. 1/6W J 27K Ω	132A273T
R 516	CARBON RES. 1/6W J 150K Ω	132A154T
R 518	CARBON RES. 1/6W J 330 Ω	132A331T
R 519	CARBON RES. 1/6W J 120K Ω	132A124T
R 521	CARBON RES. 1/6W J 22 Ω	132A220T
R 522	CARBON RES. 1/6W J 10K Ω	132A103T
R 523	CARBON RES. 1/6W J 1.2K Ω	132A122T
R 524	CARBON RES. 1/6W J 3.3K Ω	132A332T
R 525	CARBON RES. 1/6W J 3.3K Ω	132A332T
R 526	CARBON RES. 1/6W J 5.6K Ω	132A562T
R 527	CARBON RES. 1/6W J 1K Ω	132A102T
R 528	CARBON RES. 1/6W J 10K Ω	132A103T
SWITCHES		
SW 301	TACT SWITCH EVO-PBC04M	5622171
SW 302	SLIDE SWITCH SSH-12-4404 or SLIDE SWITCH SLHA12MP-04	SSS0102DK001 1621745
VARIABLE RESISTORS		
VR 301	SEMI FIXED RES. 5KΩ	138J935
VR 302	SEMIFIXED RES. 50K Ω	138J939
VR 303	SEMIFIXED RES. 2KΩ	138J933
VR 304	SEMI FIXED RES. 5KΩ	138J935
VR 305	SLIDE VOLUME 20KΩ or SLIDE VOLUME 20KΩ	VSCB203AT001 5390795
CRYSTAL OSCILLATORS		
X 301	CRYSTAL OSCILLATOR 10.240MHz	FXC106LDS001
X 302	CRYSTAL OSCILLATOR 3.84MHz	FXD385LCT001
MISCELLANEOUS		
△	MODULAR CORD	WTZ0202AS001
	WIRE ASSEMBLY (MAIN<-->CONT)	WX1G5469-002
	WIRE ASSEMBLY (CONT<-->LED)	WX1G5469-003
CF 301	CERAMIC FILTER 10.7MHz	1810307
CF 302	CERAMIC FILTER 455KHz	1810480
J 301	DC JACK DJ27-2 or DC JACK DJ-0704-020	JXDLDD0DK002 1710086
RL 301 △	REED RELAY RL0108N-700	MRLDC08DK002
T 311 △	AUDIO TRANS	LTA14ZPPJ002
T 312 △	AUDIO TRANS	LTA14ZPPJ002
TC 301	TRIMMER CAP. 20pF	1280193
ZNR301 △	SURGE ABSORBER ERZ-C10DK361U	C10DK361U
MIC	MIC KUC 1723-03-0017	DMEEEX**HD001
SP 601	SPEAKER EM5031PA or SPEAKER 50R 32 Ω	DSD3205AW001 1520603
	BASE POST ILS-2P (CHG)	1740764
	BASE POST ILS-2P (SP)	1740764

Ref. No.	Description	Part No.
	BASE POST ILS-2P (MIC)	1740764
	BASE POST ILS-2P (ANT)	1740764
	BASE POST ILS-4P (LED PCB)	1740766
	BASE POST ILS-11P (MAIN PCB)	1740773
	BASE POST ILG-2P (TEL LINE)	1740454
ACCESSORIES		
ADP601	AC/DC ADAPTOR 230V DC9V 150mA FERRITE CORE SFC-8	UADPDCABZ002 XL06045KX001

REMOTE UNIT

KEY PCB ASSEMBLY

Ref. No.	Description	Part No.
	KEY PCB ASSEMBLY	0GSA00497
	Consists of the following:	
	KEY PCB	BG5469F02001
CAPACITORS		
C 101	CHIP CERAMIC CAP. B K 0.001μF/25V	12B2102C
C 102	CHIP CERAMIC CAP. F Z 0.015μF	12F2153C
C 103	CHIP CERAMIC CAP. CH J 33pF/50V	12CH330C
C 104	CHIP CERAMIC CAP. F Z 0.015μF	12F2153C
C 105	ELECTROLYTIC CAP. 10μF/10V	526S106V
C 106	CHIP CERAMIC CAP. B K 0.047μF/25V	12B2473C
C 107	CHIP CERAMIC CAP. B K 0.001μF/25V	12B2102C
C 108	CHIP CERAMIC CAP. B K 0.01μF/25V	12B2103C
C 109	CHIP CERAMIC CAP. CH J 22pF/50V	12CH220C
C 110	CHIP CERAMIC CAP. CH J 22pF/50V	12CH220C
C 111	ELECTROLYTIC CAP. 1μF/50V	526W105V
C 112	CHIP CERAMIC CAP. F Z 0.1μF/25V	12F2104C
C 113	ELECTROLYTIC CAP. 1μF/50V	526W105V
C 114	CHIP CERAMIC CAP. B K 0.01μF/25V	12B2103C
C 115	CHIP CERAMIC CAP. B K 0.01μF/25V	12B2103C
C 116	CHIP CERAMIC CAP. CH J 100pF/50V	12CH101C
C 117	CHIP CERAMIC CAP. CH J 33pF/50V	12CH330C
C 118	ELECTROLYTIC CAP. 4.7μF/50V	526W475V
C 119	CHIP CERAMIC CAP. F Z 0.1μF/25V	72F2104C
C 120	ELECTROLYTIC CAP. 10μF/10V	526S106V
C 121	CHIP CERAMIC CAP. B K 0.01μF/25V	12B2103C
C 122	CHIP CERAMIC CAP. CH J 100pF/50V	12CH101C
C 123	CHIP CERAMIC CAP. F Z 0.047μF/25V	12F2473C
C 124	CHIP CERAMIC CAP. B K 0.01μF/25V	12B2103C
C 125	CHIP CERAMIC CAP. B K 0.01μF/25V	12B2103C
C 126	CHIP CERAMIC CAP. F Z 0.047μF/25V	12F2473C
C 127	CHIP CERAMIC CAP. B K 0.047μF/25V	12B2473C
DIODES		
D 101	CHIP DIODE DCC010-TB	QD1Z00DCC010
D 102	DIODE DCB010	QD1Z00DCB010
D 103	LED LLP-202R	NPTZ0LLP202R
D 104	LED LLP-202R	NPTZ0LLP202R
D 105	DIODE DSA010	QD1Z00DSA010
D 106	ZENER DIODE MTZ5.1B-T77 or ZENER DIODE GZS5.1Y-BT or ZENER DIODE RD5.1E-T1-B	MTZ5.1BT77 QDTY00GZS5R1 QDTB00RD5R1E
D 107	DIODE RL1N4002	ARL1N4002S00
ICS		
IC 101	IC TMP47C457F	QSMQA0RTS037
IC 102	IC NJM2904M	14L0446
IC 103	IC RH5VA32CA-T1	QSBLA0TRC002
IC 104	IC RH5VA25AA-T1	QSBLA0TRC001

Ref. No.	Description	Part No.
IC 105	IC MC34119DR2	NSBLA0TMT007
TRANSISTORS		
Q 101	CHIP TRANSISTOR 2SA1179 M4 or CHIP TRANSISTOR 2SA1179 M5 or CHIP TRANSISTOR BC857 B	QSA11794CPTB QSA11795CPTB QBC857BGEG**
Q 102	TRANSISTOR 2SC2812 L4 or TRANSISTOR 2SC2812 L5 or TRANSISTOR BC848CGEG	QQ2402SC2812 QQ2502SC2812 NQ8C000BC848
Q 103	TRANSISTOR 2SA1581	QQ1Z02SA1581
Q 104	TRANSISTOR 2SA1581	QQ1Z02SA1581
Q 105	CHIP TRANSISTOR 2SA1179 M4 or CHIP TRANSISTOR 2SA1179 M5 or CHIP TRANSISTOR BC857 B	QSA11794CPTB QSA11795CPTB QBC857BGEG**
Q 106	TRANSISTOR 2SC2812 L4 or TRANSISTOR 2SC2812 L5 or TRANSISTOR BC848CGEG	QQ2402SC2812 QQ2502SC2812 NQ8C000BC848
Q 107	TRANSISTOR 2SA1563	QQ1Z02SA1563
Q 108	TRANSISTOR 2SA1563	QQ1Z02SA1563
Q 109	TRANSISTOR 2SC2812 L4 or TRANSISTOR 2SC2812 L5 or TRANSISTOR BC848CGEG	QQ2402SC2812 QQ2502SC2812 NQ8C000BC848
RESISTORS		
R 101	CHIP RES. 1/10W J 2.2K Ω	134F222C
R 102	CHIP RES. 1/10W J 8.2K Ω	134F822C
R 103	CHIP RES. 1/10W J 220K Ω	134F224C
R 104	CHIP RES. 1/10W J 24K Ω	134F243C
R 105	CHIP RES. 1/10W J 47K Ω	134F473C
R 106	CHIP RES. 1/10W J 10 Ω	134F100C
R 107	CHIP RES. 1/10W J 91K Ω	134F913C
R 108	CHIP RES. 1/10W J 8.2K Ω	134F822C
R 109	CHIP RES. 1/10W J 18K Ω	134F183C
R 110	CHIP RES. 1/10W J 33K Ω	134F333C
R 111	CHIP RES. 1/10W J 56K Ω	134F563C
R 112	CHIP RES. 1/10W J 5.6K Ω	134F562C
R 113	CHIP RES. 1/10W J 10K Ω	134F103C
R 114	CHIP RES. 1/10W J 22K Ω	134F223C
R 115	CHIP RES. 1/10W J 22K Ω	134F223C
R 116	CHIP RES. 1/10W J 10K Ω	134F103C
R 117	CHIP RES. 1/10W J 10K Ω	134F103C
R 118	CHIP RES. 1/10W J 10 Ω	134F100C
R 119	CHIP RES. 1/10W J 100 Ω	134F101C
R 120	CHIP RES. 1/10W J 100K Ω	134F104C
R 121	CHIP RES. 1/10W J 1.2K Ω	134F122C
R 122	CHIP RES. 1/10W J 1.2K Ω	134F122C
R 123	CHIP RES. 1/10W J 100K Ω	134F104C
R 124	CHIP RES. 1/10W J 56K Ω	134F563C
R 125	CHIP RES. 1/10W J 56K Ω	134F563C
R 126	CHIP RES. 1/10W J 56K Ω	134F563C
R 127	CHIP RES. 1/10W J 56K Ω	134F563C
R 128	CHIP RES. 1/10W J 47 Ω	134F470C
R 129	CHIP RES. 1/10W J 470K Ω	134F474C
R 130	CHIP RES. 1/10W J 470K Ω	134F474C
R 131	CHIP RES. 1/10W J 10K Ω	134F103C
R 132	CHIP RES. 1/10W J 1K Ω	134F102C
R 133	CHIP RES. 1/10W J 56K Ω	134F563C
R 134	CHIP RES. 1/10W J 0 Ω	134F000C
R 135	CHIP RES. 1/10W J 27K Ω	134F273C
R 136	CHIP RES. 1/10W J 22K Ω	134F223C
R 137	CHIP RES. 1/10W J 100K Ω	134F104C
R 139	CHIP RES. 1/10W J 5.6K Ω	134F562C

Ref. No.	Description	Part No.
R 140	CHIP RES. 1/10W J 47K Ω	134F473C
R 141	CHIP RES. 1/10W J 22K Ω	134F223C
R 142	CHIP RES. 1/10W J 10K Ω	134F103C
R 143	CHIP RES. 1/10W J 0 Ω	134F000C
R 144	CHIP RES. 1/10W J 33K Ω	134F333C
R 145	CHIP RES. 1/10W J 120K Ω	134F124C
R 146	CHIP RES. 1/10W J 100K Ω	134F104C
R 147	CHIP RES. 1/10W J 470 Ω	134F471C
J 101	CHIP RES. 1/8W J 0 Ω	134H000C
J 102	CHIP RES. 1/10W J 0 Ω	134F000C
J 103	CHIP RES. 1/10W J 0 Ω	134F000C
J 104	CHIP RES. 1/8W J 0 Ω	134H000C
J 105	CHIP RES. 1/8W J 0 Ω	134H000C
J 106	CHIP RES. 1/8W J 0 Ω	134H000C
J 107	CHIP RES. 1/8W J 0 Ω	134H000C
J 108	CHIP RES. 1/8W J 0 Ω	134H000C
J 109	CHIP RES. 1/8W J 0 Ω	134H000C
J 110	CHIP RES. 1/8W J 0 Ω	134H000C
J 111	CHIP RES. 1/8W J 0 Ω	134H000C
J 112	CHIP RES. 1/8W J 0 Ω	134H000C
J 113	CHIP RES. 1/8W J 0 Ω	134H000C
J 114	CHIP RES. 1/8W J 0 Ω	134H000C
J 115	CHIP RES. 1/8W J 0 Ω	134H000C
J 116	CHIP RES. 1/8W J 0 Ω	134H000C
J 117	CHIP RES. 1/10W J 0 Ω	134F000C
J 118	CHIP RES. 1/8W J 0 Ω	134H000C
J 119	CHIP RES. 1/8W J 0 Ω	134H000C
J 120	CHIP RES. 1/8W J 0 Ω	134H000C
J 121	CHIP RES. 1/8W J 0 Ω	134H000C
J 122	CHIP RES. 1/8W J 0 Ω	134H000C
J 123	CHIP RES. 1/8W J 0 Ω	134H000C
J 124	CHIP RES. 1/8W J 0 Ω	134H000C
J 125	CHIP RES. 1/8W J 0 Ω	134H000C
J 126	CHIP RES. 1/8W J 0 Ω	134H000C
J 127	CHIP RES. 1/8W J 0 Ω	134H000C
J 128	CHIP RES. 1/8W J 0 Ω	134H000C
J 129	CHIP RES. 1/8W J 0 Ω	134H000C
J 130	CHIP RES. 1/10W J 0 Ω	134F000C
J 131	CHIP RES. 1/8W J 0 Ω	134H000C
J 132	CHIP RES. 1/8W J 0 Ω	134H000C
J 133	CHIP RES. 1/10W J 0 Ω	134F000C
J 134	CHIP RES. 1/8W J 0 Ω	134H000C
J 135	CHIP RES. 1/8W J 0 Ω	134H000C
J 136	CHIP RES. 1/8W J 0 Ω	134H000C
J 137	CHIP RES. 1/10W J 0 Ω	134F000C
J 138	CHIP RES. 1/8W J 0 Ω	134H000C
J 139	CHIP RES. 1/8W J 0 Ω	134H000C
J 140	CHIP RES. 1/8W J 0 Ω	134H000C
J 141	CHIP RES. 1/8W J 0 Ω	134H000C
J 142	CHIP RES. 1/10W J 0 Ω	134F000C
J 143	CHIP RES. 1/8W J 0 Ω	134H000C
J 144	CHIP RES. 1/8W J 0 Ω	134H000C
J 145	CHIP RES. 1/8W J 0 Ω	134H000C
J 146	CHIP RES. 1/8W J 0 Ω	134H000C
J 147	CHIP RES. 1/8W J 0 Ω	134H000C
J 148	CHIP RES. 1/8W J 0 Ω	134H000C
J 149	CHIP RES. 1/10W J 0 Ω	134F000C
J 150	CHIP RES. 1/8W J 0 Ω	134H000C
J 151	CHIP RES. 1/8W J 0 Ω	134H000C

Ref. No.	Description	Part No.
SWITCHES		
SW 101	SLIDE SWITCH SSV-12-4502 or SLIDE SWITCH SLVA-12MP02	SSS0102DK002 1621772
SW 102	SLIDE SWITCH SSV-12-4502 or SLIDE SWITCH SLVA-12MP02	SSS0102DK002 1621772
MISCELLANEOUS		
	WIRE ASSEMBLY	WX1G5352-001
X 101	CRYSTAL OSCILLATOR 3.84MHz	FXD385LCT001

TUNER PCB ASSEMBLY

Ref. No.	Description	Part No.
	TUNER PCB ASSEMBLY Consists of the following:	0GSA00496
	TUNER PCB	BG5469F01010
CAPACITORS		
C 1	CHIP CERAMIC CAP. CH J 22pF/50V	12CH220C
C 2	CHIP CERAMIC CAP. B K 0.001 μ F/25V	12B2102C
C 3	CHIP CERAMIC CAP. B K 0.01 μ F/25V	12B2103C
C 4	CHIP CERAMIC CAP. B K 0.01 μ F/25V	12B2103C
C 5	ELECTROLYTIC CAP. 10 μ F/10V	526S106S
C 6	CHIP CERAMIC CAP. CH J 33pF/50V	12CH330C
C 7	CHIP CERAMIC CAP. CH D 10pF/50V	12CH100C
C 8	CHIP CERAMIC CAP. B K 0.01 μ F/25V	12B2103C
C 9	CHIP CERAMIC CAP. B K 0.01 μ F/25V	12B2103C
C 10	CHIP CERAMIC CAP. B K 0.01 μ F/25V	12B2103C
C 11	CHIP CERAMIC CAP. CH J 8pF/50V	12CH809C
C 12	CHIP CERAMIC CAP. CH J 47pF/50V	12CH470C
C 13	CHIP CERAMIC CAP. CH J 68pF/50V	12CH680C
C 14	CHIP CERAMIC CAP. SL J 120pF/50V	1270121C
C 15	CHIP CERAMIC CAP. SL J 120pF/50V	1270121C
C 16	CHIP CERAMIC CAP. B K 0.01 μ F/25V	12B2103C
C 17	CHIP CERAMIC CAP. CH D 10pF/50V	12CH100C
C 18	CHIP CERAMIC CAP. B K 0.01 μ F/25V	12B2103C
C 19	ELECTROLYTIC CAP. 1 μ F/50V	124N105S
C 21	CHIP CERAMIC CAP. F Z 0.1 μ F/25V	12F2104C
C 22	CHIP CERAMIC CAP. F Z 0.1 μ F/25V	12F2104C
C 23	CHIP CERAMIC CAP. B K 0.047 μ F/25V	12B2473C
C 24	ELECTROLYTIC CAP. 10 μ F/10V	526S106S
C 25	CHIP CERAMIC CAP. B K 0.01 μ F/25V	12B2103C
C 26	CHIP CERAMIC CAP. B K 0.047 μ F/25V	12B2473C
C 27	CHIP CERAMIC CAP. B K 0.0047 μ F/25V	12B2472C
C 28	CHIP CERAMIC CAP. SL J 220pF/50V	1270221C
C 30	CHIP CERAMIC CAP. F Z 0.1 μ F/25V	12F2104C
C 32	CHIP CERAMIC CAP. F Z 0.1 μ F/25V	12F2104C
C 39	CHIP CERAMIC CAP. B K 0.01 μ F/25V	12B2103C
C 40	ELECTROLYTIC CAP. 10 μ F/10V	526S106S
C 42	CHIP CERAMIC CAP. CH D 5pF/50V	12CH509C
C 43	CHIP CERAMIC CAP. CH D 10pF/50V	12CH100C
C 44	ELECTROLYTIC CAP. 1 μ F/50V	124N105S
C 45	CHIP CERAMIC CAP. B K 0.082 μ F/25V	12B2823C
C 46	CHIP CERAMIC CAP. B K 0.047 μ F/25V	12B2473C
C 47	CHIP CERAMIC CAP. F Z 0.1 μ F/25V	12F2104C
C 48	CHIP CERAMIC CAP. B K 0.01 μ F/25V	12B2103C
C 50	CHIP CERAMIC CAP. B K 0.001 μ F/25V	12B2102C
C 51	CHIP CERAMIC CAP. SL J 100pF/50V	1270101C
C 52	CHIP CERAMIC CAP. CH J 68pF/50V	12CH680C
C 53	CHIP CERAMIC CAP. CH J 18pF/50V	12CH180C
C 54	CHIP CERAMIC CAP. B K 0.01 μ F/25V	12B2103C
C 55	CHIP CERAMIC CAP. CH J 68pF/50V	12CH680C

Ref. No.	Description	Part No.
C 56	CHIP CERAMIC CAP. SL J 150pF/50V	1270151C
C 57	CHIP CERAMIC CAP. B K 0.01 μ F/25V	12B2103C
C 58	CHIP CERAMIC CAP. CH 56pF/50V	12CH560C
C 59	CHIP CERAMIC CAP. SL J 220pF/50V	1270221C
C 60	CHIP CERAMIC CAP. CH J 47pF/50V	12CH470C
C 61	CHIP CERAMIC CAP. B K 0.01 μ F/25V	12B2103C
C 62	ELECTROLYTIC CAP. 10 μ F/10V	526S106S
C 63	CHIP CERAMIC CAP. B K 0.01 μ F/25V	12B2103C
C 64	CHIP CERAMIC CAP. CH J 8pF/50V	12CH809C
C 65	CHIP CERAMIC CAP. CH 56pF/50V	12CH560C
C 66	CHIP CERAMIC CAP. SL J 220pF/50V	1270221C
C 68	CHIP CERAMIC CAP. B K 0.022 μ F/25V	12B2223C
C 69	CHIP CERAMIC CAP. 0.01 μ F	12B2103C
C 70	CHIP CERAMIC CAP. 0.01 μ F	12B2103C
C 71	CHIP CERAMIC CAP. B K 0.01 μ F/25V	12B2103C
C 72	CHIP CERAMIC CAP. B K 0.01 μ F/25V	12B2103C
C 73	CHIP CERAMIC CAP. B K 0.0022 μ F/25V	12B2222C
C 74	CHIP CERAMIC CAP. F Z 0.1 μ F/25V	12F2104C
C 75	CHIP CERAMIC CAP. 0.01 μ F	12B2103C
C 76	CHIP CERAMIC CAP. 0.01 μ F	12B2103C
C 77	CHIP CERAMIC CAP. 0.01 μ F	12B2103C
C 78	CHIP CERAMIC CAP. 0.01 μ F	12B2103C
C 79	CHIP CERAMIC CAP. 3300pF	12B2332C
C 80	CHIP CERAMIC CAP. 3300pF	12B2332C
C 81	CHIP CERAMIC CAP. 0.01 μ F	12B2103C
C 82	SEMICONDUCTOR CAP. S R 0.1 μ F	12Y6104U
CONNECTORS		
ANT	BASE POST ILS-2P	1740764
RINGER	BASE POST ILS-2P	1740764
TP 1	BASE POST ILS-2P	1740764
DIODES		
D 1	DIODE 1SV164-T8	A1SV164T8***
D 2	DIODE 1SV164-T8	A1SV164T8***
ICS		
IC 1	IC MC3361BP	14L0087
IC 2	IC SM5132FP	QSMDA0SNK005
COILS		
L 1	AXIAL INDUCTOR 2.7 μ H	2165279T
L 2	POT TYPE INDUCTOR 68mH or POT TYPE INDUCTOR 68mH	LLBZ00ZSF001 LLBZ00ZMM001
L 4	AXIAL INDUCTOR 0.56 μ H	216556AT
L 11	AXIAL INDUCTOR 33 μ H	2165330T
T 1	CASING COIL	LFA07V0SF078
T 2	CASING COIL	LFA07V0SF079
T 3	CASING COIL	LFA07V0SF077
T 4	CASING COIL	LFA07V0SF036
T 5	CASING COIL	LFA07V0SF076
T 6	CASING COIL	113D767
T 7	CASING COIL	LFA07V0SF065
T 8	CASING COIL	LFA07V0SF067
T 9	CASING COIL	LFA07V0SF065
T 10	CASING COIL	LFA07V0SF075
TRANSISTORS		
Q 1	TRANSISTOR 2SK212E-SPA-AC	QFSE002SK212
Q 2	TRANSISTOR 2SC1674L-T	QOSL02SC1674
Q 3	TRANSISTOR 2SC1674L-T	QOSL02SC1674
Q 4	TRANSISTOR 2SC3330S-SPA-AC or TRANSISTOR 2SC3330T-SPA-AC	QOSS02SC3330 QOST02SC3330
Q 7	TRANSISTOR 2SC1674L-T	QOSL02SC1674

Ref. No.	Description	Part No.
Q 8	TRANSISTOR 2SC2347	QOSZ02SC2347
RESISTORS		
R 1	CHIP RES. 1/10W J 220 Ω	134F221C
R 2	CHIP RES. 1/10W J 220 Ω	134F221C
R 3	CHIP RES. 1/10W J 39K Ω	134F393C
R 4	CHIP RES. 1/10W J 22K Ω	134F223C
R 5	CHIP RES. 1/10W J 220 Ω	134F221C
R 6	CHIP RES. 1/10W J 220 Ω	134F221C
R 7	CHIP RES. 1/10W J 390 Ω	134F391C
R 8	CHIP RES. 1/10W J 22 Ω	134F220C
R 9	CHIP RES. 1/10W J 22 Ω	134F220C
R 10	CHIP RES. 1/10W J 100K Ω	134F104C
R 11	CHIP RES. 1/10W J 1.5K Ω	134F152C
R 12	CHIP RES. 1/10W J 22K Ω	134F223C
R 13	CARBON RES. 1/6W J 100K Ω	132A104T
R 14	CHIP RES. 1/10W J 3.9K Ω	134F392C
R 15	CHIP RES. 1/10W J 1K Ω	134F102C
R 16	CHIP RES. 1/10W J 22 Ω	134F220C
R 17	CHIP RES. 1/10W J 22 Ω	134F220C
R 18	CHIP RES. 1/10W J 47K Ω	134F473C
R 19	CHIP RES. 1/10W J 4.7K Ω	134F472C
R 20	CHIP RES. 1/10W J 390K Ω	134F394C
R 21	CHIP RES. 1/10W J 680K Ω	134F684C
R 22	CHIP RES. 1/10W J 47K Ω	134F473C
R 23	CHIP RES. 1/10W J 47K Ω	134F473C
R 24	CHIP RES. 1/10W J 100K Ω	134F104C
R 25	CHIP RES. 1/10W J 27K Ω	134F273C
R 26	CHIP RES. 1/10W J 27K Ω	134F273C
R 33	CHIP RES. 1/10W J 1K Ω	134F102C
R 34	CHIP RES. 1/10W J 33K Ω	134F333C
R 35	CHIP RES. 1/10W J 4.7K Ω	134F472C
R 36	CHIP RES. 1/10W J 4.7K Ω	134F472C
R 38	CHIP RES. 1/10W J 1K Ω	134F102C
R 39	CHIP RES. 1/10W J 150K Ω	134F154C
R 40	CHIP RES. 1/10W J 680 Ω	134F681C
R 41	CHIP RES. 1/10W J 10 Ω	134F100C
R 42	CHIP RES. 1/10W J 10K Ω	134F103C
R 43	CHIP RES. 1/10W J 22K Ω	134F223C
R 71	CARBON RES. 1/6W J 120 Ω	132A121T
R 72	CHIP RES. 1/10W J 27 Ω	134F270C
R 73	CHIP RES. 1/10W J 120 Ω	134F121C
R 74	CHIP RES. 1/10W J 10 Ω	134F100C
VARIABLE RESISTORS		
VR 1	SEMI FIXED RES. 100K Ω	138J940
VR 2	SEMI FIXED RES. 100K Ω	138J940
VR 3	SEMIFIXED RES. 50K Ω	138J939
VR 4	SEMIFIXED RES. 50K Ω	138J939
MISCELLANEOUS		
CF 1	CERAMIC FILTER 10.7MHz	1810307
CF 2	CERAMIC FILTER 455KHz	1810480
TC 1	TRIMMER CAP. 20pF	1280193
X 1	CRYSTAL OSCILLATOR 10.240MHz	FXC106LDS001