

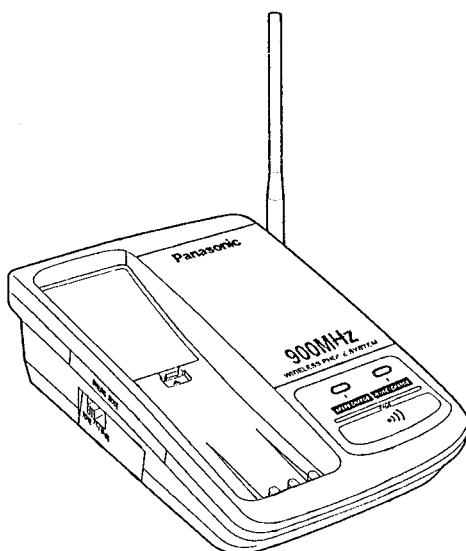
Service Manual

WIRELESS PHONE

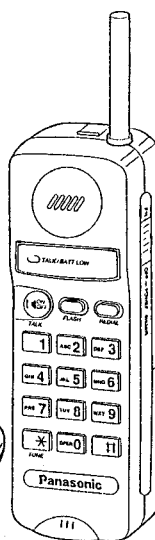
and Technical Guide

Telephone Equipment

KX-T9500
(for U.S.A.)



(Model KX-T9500H)



(Model KX-T9500R)

SPECIFICATIONS\ТЕХНИЧЕСКИЕ ХАРАКТЕРИСТИКИ

ADJUSTMENTS\РЕГУЛИРОВКИ

CPU DATA\ИНФОРМАЦИЯ О ПРОЦЕССОРЕ

FREQUENCY TABLE\ТАБЛИЦА РАБОЧИХ ЧАСТОТ

SCHEMATIC DIAGRAM\ПРИНЦИПИАЛЬНЫЕ СХЕМЫ

BLOCK DIAGRAM\БЛОК - СХЕМЫ

CABINET, MECHANICAL AND ELECTRICAL PARTS LOCATION\РАСПОЛОЖЕНИЕ МЕХАНИЧЕСКИХ И ЭЛЕКТРИЧЕСКИХ ЧАСТЕЙ

ACCESSORIES AND PACKING MATERIALS\ПРИНАДЛЕЖНОСТИ И УПАКОВОЧНЫЕ МАТЕРИАЛЫ

FIXTURES AND TOOLS\ПРИСПОСОБЛЕНИЯ И ИНСТРУМЕНТЫ

REPLACEMENT PARTS LIST\СПИСОК ЗАПАСНЫХ ЧАСТЕЙ

Panasonic

© 1994 Kyushu Matsushita Electric Co., Ltd.

All rights reserved. Unauthorized copying and distribution is a violation of law.

■ SPECIFICATIONS

	Base Unit (KX-T9500H)	Portable Unit (KX-T9500R)
Power Source:	AC Adaptor (KX-A11-5)	Rechargeable Ni-Cd battery
Receiving Frequency:	60 channels within 926.1~927.87 MHz	60 channels within 902.1~903.87 MHz
Receiving Method:	Double super heterodyne	Double super heterodyne
Transmitting Frequency:	60 channels within 902.1~903.87 MHz	60 channels within 926.1~927.87 MHz
Oscillation Method:	PLL synthesizer	PLL synthesizer
Detecting Method:	Quadrature Discriminator	Quadrature Discriminator
Tolerance of OSC Frequency:	±3.6 kHz	±3.6 kHz
Modulation Method:	F3 (frequency modulation)	F3 (frequency modulation)
ID Code:	20-bit written in ROM	20-bit written in ROM
Dial Mode:		Tone (DTMF)/Pulse
Redial:		Up to 30 digits
Save:		Up to 30 digits
Power Consumption:		20 hrs at Standby, 3 hrs at Talk
Dimension (H×W×D):	2 ¹ / ₈ "×5 ²⁷ / ₃₂ "×7 ¹⁵ / ₃₂ " (54×148×190 mm)	7 ⁷ / ₈ "×2 ⁵ / ₃₂ "×1 ¹³ / ₃₂ " (200×55×36 mm)
Weight	0.95 lbs. (430 g) with battery	0.51 lbs. (230 g) with battery

Design and specifications are subject to change without notice.

ADJUSTMENTS (KX-T9500H)

After servicing the RF unit, never make adjustments without assembling the upper RF unit cover and the lower RF unit cover with screws.

Adjustment Preparations

1. Connect the main P.C. Board to RF unit by the extension cord.
2. Connect a distortion meter (with AC voltmeter) to the telephone line output on the base unit.
3. Pressing SW1, connect the AC adaptor to the AC jack of base unit. After hearing "pi" sound, release SW1.
4. Press twice PAGE button (Test Mode on CH1 Talk).

If your unit have below symptom, adjust for each item as table of adjustment on pages 6, 7.

Symptom	Remedy
Does not link between base unit and portable handset.	Adjust the adjustment items (A), (B) and (E).
The sound quality is wrong.	Adjust the adjustment item (D).
Transmission sound for receiver is unstable.	Adjust the adjustment item (C).

Item	Adjustment Item	Procedure
(A)	RX VCO Voltage Adjustment	Place the voltmeter probe at RF unit TP5 and adjust the voltage to 1.8 V using VC203. (When TP5 voltage is within 1.8 V\pm0.5 V, no need of adjusting.)
(B)	TX VCO Voltage Adjustment	Place the voltmeter probe at TP6 and adjust the voltage to 1.8 V using VC202. (When TP6 voltage is within 1.8 V\pm0.5 V, no need of adjusting.)
(C)	TX Adjustment	Connect the signal generator (926.125 MHz, 1 kHz modulation frequency, 3 kHz modulation +60 dB μ emf output level) to the RF block section TP A and GND. Adjust VR1 so that Tel Line output (600 Ω Load) is set to -16 dBm.
(D)	Modulation	Connect a modulation meter and signal generator (926.125 MHz, 60 dB μ V, unmodulation) in TPA and GND. Connect the AF oscillator (f=1 kHz, -30 dBm) to the telephone line output. Adjust VR4 to set the modulation to +2.8 kHz.
(E)	Standard Frequency Adjustment	Adjust VC201 so that transmission frequency is set 902.125 MHz \pm 0.1 kHz. Connect frequency counter between TP A and GND.

RF Unit

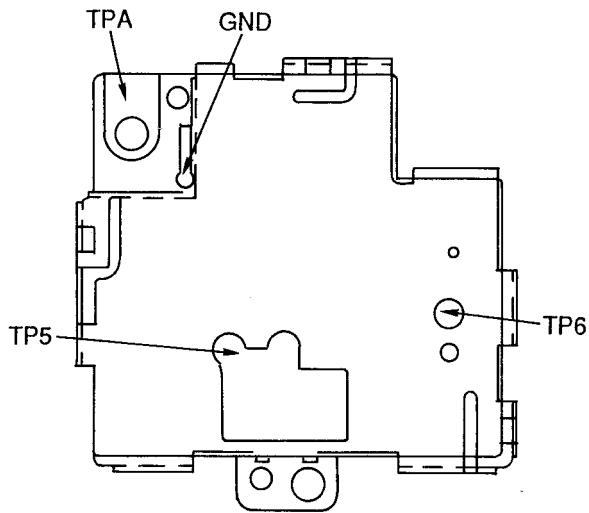


Fig. 12

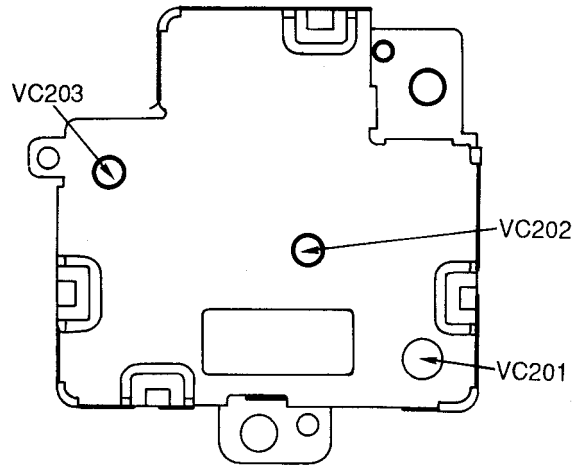


Fig. 13

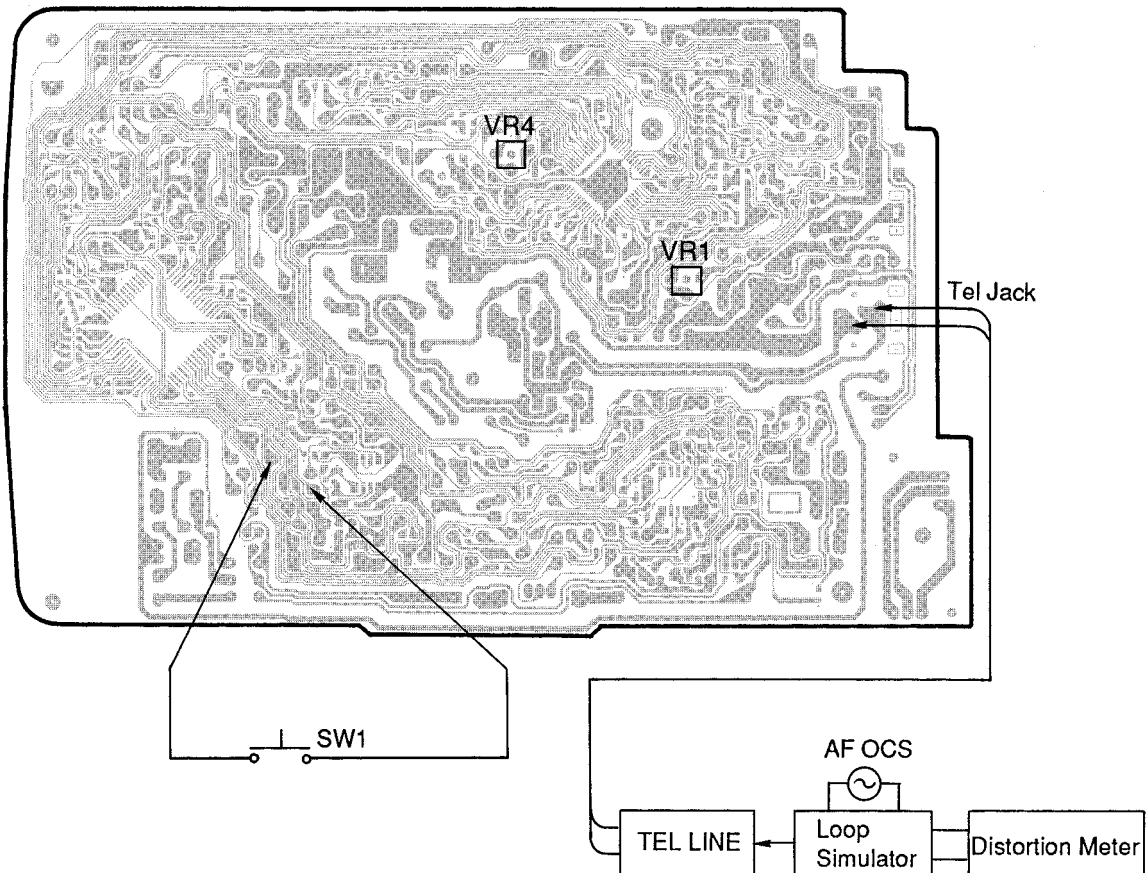
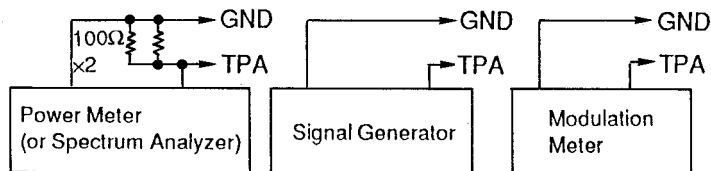


Fig. 14

ADJUSTMENTS (KX-T9500R)

After servicing the RF unit, never make adjustments without assembling the upper RF unit cover and the lower RF unit cover with screws.

Adjustment Preparations

1. Connect the main P.C. Board to RF unit by the extension cord.
2. Connect a distortion meter (with AC voltmeter) to the SPK terminals (TP3) on the portable handset.
3. Connect 3.9 V to the battery terminals.
4. After pressing **[1]**, **[9]**, **[*]** keys at the same time, turn Power SW on. After that, press Flash key (Test mode on standby).
5. Press Talk key (Test Mode on CH1 Talk).

If your unit have below symptom, adjust for each item as table of adjustment on pages 8, 9.

Symptom	Remedy
Does not link between base unit and portable handset.	Adjust the adjustment items (A), (B), (E) and (F).
Speaker level of portable handset is unstable.	Adjust the adjustment item (C).
Transmission sound for receiver is unstable.	Adjust the adjustment item (D).

Item	Adjustment Item	Procedure
(A)	RX VCO Voltage Adjustment	Place the voltmeter probe at TP5 and adjust the voltage to 1.5 V using VC203. (When TP5 voltage is within 1.5 V \pm 0.5 V, no need of adjusting.)
(B)	TX VCO Voltage Adjustment	Place the voltmeter probe at TP6 and adjust the voltage to 1.5 V using VC202. (When TP6 voltage is within 1.5 V \pm 0.5 V, no need of adjusting.)
(C)	SP Output Adjustment	Connect a signal generator (902.125 MHz, 1 kHz modulation frequency, 2 kHz modulation, +60 dB μ V emf output level) to the RF block section TP A. Adjust VR3 so that the speaker output is -30 dBm.
(D)	Modulation	Connect a modulation meter and signal generator (902.125 MHz, 60 dB μ V, unmodulation) in TPA and GND. Connect an AF oscillator (f=1 kHz, -20 dBm level) to the MIC terminals (TP4) and V _{ss} on the portable handset. Adjust VR4 to set the modulation to 5.5 kHz Devi.
(E)	Standard Frequency Adjustment	Adjust VC210 so that transmission frequency is set 902.125 MHz $^{+0}_{-1}$ kHz. Connect frequency counter between TP A and GND.
(F)	Electric Detective Adjustment	Input S.S.G. (902.125 MHz, 60 dB μ V, 3 kHz Devi) between TP A and GND. Adjust VR1 so that TP5 level is set to -15.5 dBm.

Note: When selecting optional channel, press **[2]** **[3]** keys after pressing Flash key of 4 item (ex. CH23).
Next press Talk key (Test Mode on CH23 Talk).

RF Unit

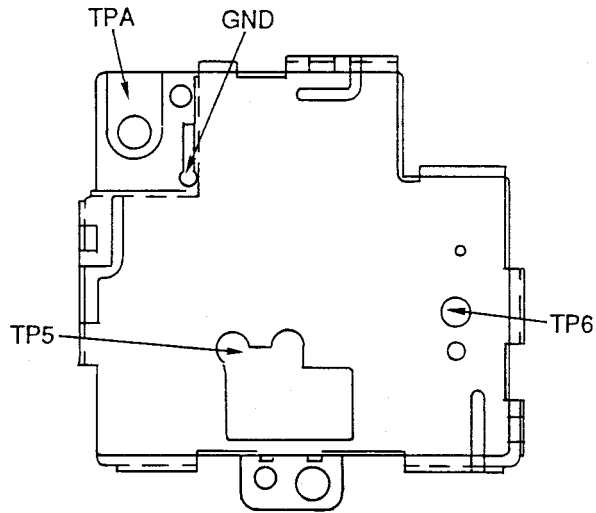


Fig. 15

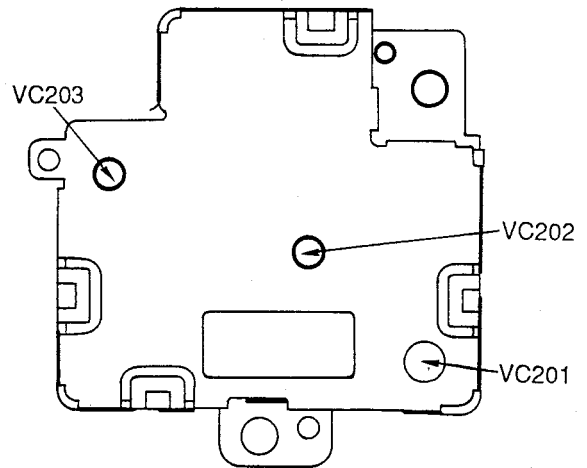


Fig. 16

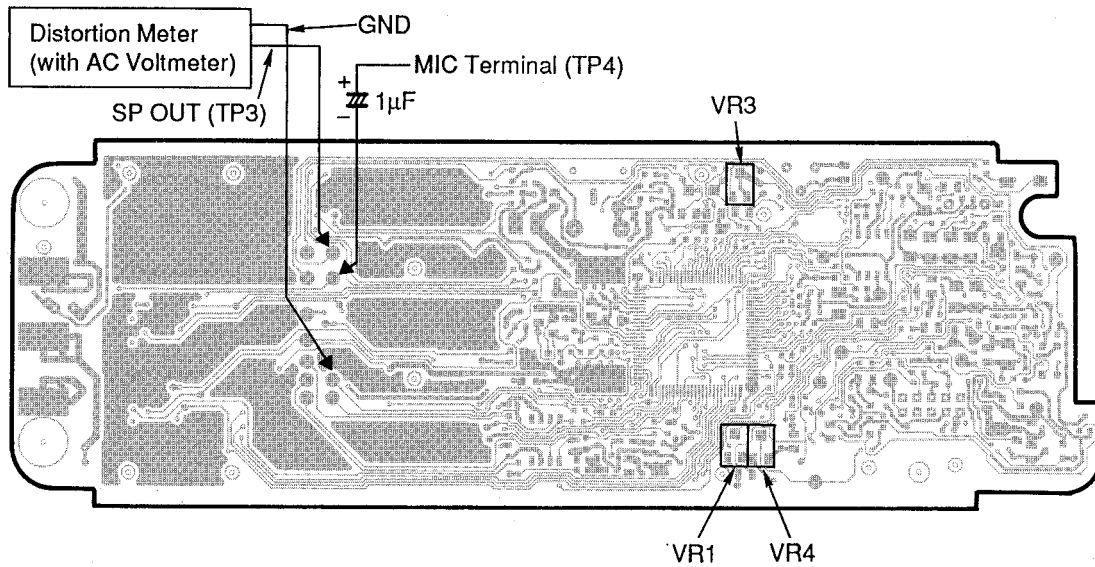
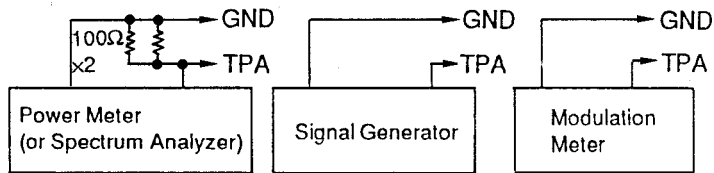


Fig. 17

CPU DATA KX-T9500H (Base Unit)

IC4 MN150808KJAG

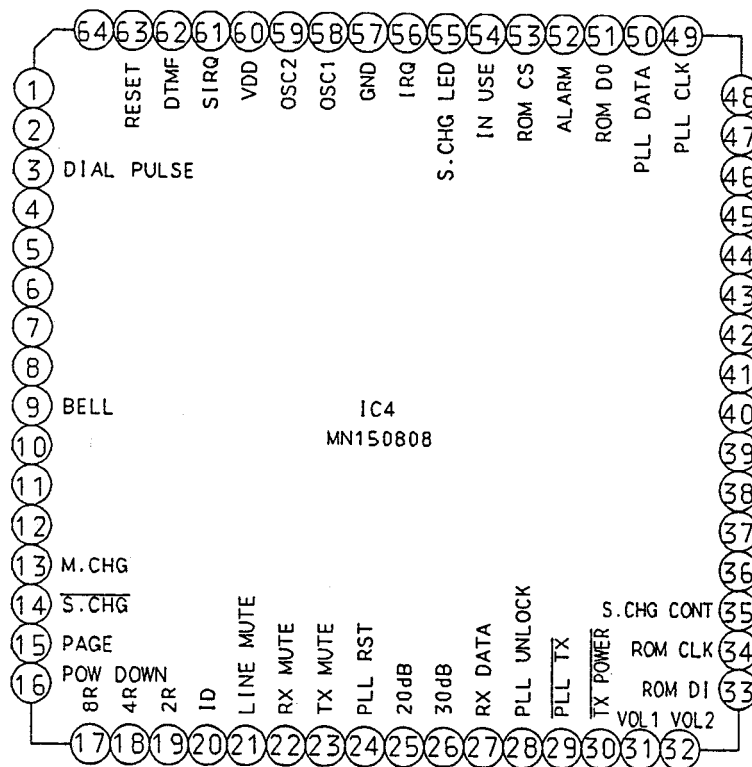


Fig. 18

Pin	Description	I/O	High	High-Z	Low	Pin	Description	I/O	High	High-Z	Low
1	(0.12 mA RLY)	O	ON			33	ROM_DIN	O			
2	HOOK RLY	O	ON			34	ROM_CLK	O			
3	DP	O	MAKE		BREAK	35					
4	NSA	O	ON			36					
5	EARTH RLY	O	ON			37	Strobe 2	O			Strobe
6	ALARM MUTE	O	ON			38	Strobe 3	O			Strobe
7	MIC MUTE	O	ON			39	Strobe 4	O			Strobe
8	SP MUTE	O	ON			40	Strobe 5	O			Strobe
9	BELL	I	BELL Reception			41	KEY DATA IN	I	Normal		Key IN
10	LINE VOL	I	Without VOL		With VOL	42	KEY DATA IN	I	Normal		Key IN
11	(DIAL TONE)	I	With TONE		Without TONE	43	KEY DATA IN	I	Normal		Key IN
12	GND				Normal	44	KEY DATA IN	I	Normal		Key IN
13	CHARGE	I			CHARGE	45	Indiv. LED	O	ON		
14	S_CHARGE	I			CHARGE	46	Indiv. LED	O	ON		
15	PAGE KEY	I			P.DOWN	47	Indiv. LED	O	ON		
16	POWER DOWN	I	Normal		P.DOWN	48	Indiv. LED	O	ON		
17	TX DATA 8R	O				49	PLL_CLK	O			
18	TX DATA 4R	O				50	PLL_DATA	O			
19	TX DATA 2R	O				51	ROM_DOUT	I			
20	TX DATA R	O				52	ALARM	O	ON		
21	LINE MUTE	O	ON		Normal	53	ROM_CS	O	Active		Normal
22	RX MUTE	O	Normal		ON	54	IN USE LED	O	ON		
23	TX MUTE	O	ON		Normal	55	Spare CHARGE LED	O	ON		
24	PLL_RST	O	Normal		ON	56	External Interrupt Input	I	Normal		
25	FLS1 (20)	I	Weak electric field		Input Sens.	57					
26	FLS2 (30)	I	Weak electric field		Input Sens.	58					
27	RX DATA	I				59	CPU Clock (3.58 MHz)	O			
28	PLL_UNLOCK	I	UNLOCK		LOCK	60	Power Source		Normal		
29	PLL_TX	O		Normal	ON	61	External Interrupt Input	I	Normal		
30	TX POWER	O		POW_OFF	POW_ON	62		O			
31	VOL. 1	O		OFF	ON	63	RESET Input	I	Normal		RESET
32	VOL. 2	O		OFF	ON	64					

■ MN150808KJAG (IC4) TERMINALS EXPLANATION

Pin No.	Pin Name	Classification	I/O	Description
60 57	V _{DD} V _{SS}	Power supply		For connection of +2.2~5.5 V to V _{DD} and 0 V to V _{SS} .
58 59	OSC1 OSC2	Clock input Clock output	I O	Oscillation terminal for connection of an oscillator. Feedback resistance is built-in.
63	RST	Reset input	I	RESET mode is on when "L" level is input for 1 machine cycle or more. The pull-up resistance and the Schmitt input circuit are built in. After the RESET mode is off, the internal RESET is released after 2 ¹³ count of OSC input clock.
64	SYNC	Synchronous signal output	O	Internal timing signal is output at every 1 machine cycle.
56	IRQ	External interrupt input	I	For interrupt at a negative edge. The Schmitt input circuit is built in. The pull-up resistance can be designated by software option.
61	SIRQ	External Interrupt Input	I	For unconditional interrupt at a negative edge. The Schmitt input circuit is built in. The pull-up resistance can be designated by software option.
49	SBT (PC0)	Serial interface clock I/O	I/O (I)	I/O terminal for transmission and reception of serial interface clock. This can be used as the normal input port. The Schmitt input circuit is built in. The pull-up resistance can be designated by software option.
50	SBO (PC1)	Serial interface data output	O (I)	Output terminal for transmission of the serial interface data (8-bit serial data). This can also be used as the normal input port. The pull-up resistance can be designated by software option.
51	SBI (PC2)	Serial interface data input	I (I)	Input terminal for reception of the serial interface data (8-bit serial data). This can also be used as the normal input port. The Schmitt input circuit is built in. The pull-up resistance can be designated by software option.
52	TC20 (PC3)	8-bit Presettable counter data output	O (I)	Output terminal of overflow signal of the built-in 8-bit presettable counter. This can also be used as the normal input port. The pull-up resistance can be designated by software option.
62	DTMF	DTMF signal output	O	Output terminal of the staircase signal in which two types of frequency signals are mixed. ON/OFF of output can be controlled by program.
45~48, 53~55	PA0~ PA3, PD0~ PD2	Large current or direct driving of LED	I/O	I/O ports of 4-bit parallel data. The output structure (Nch open drain/pushable) and the pull-up resistance can be designated by software option. The LED can be driven directly.
1~40	P00~ P93	Parallel data I/O	I/O	I/O ports of 4-bit parallel data. The output structure (Nch open drain/pushable) and the pull-up resistance can be designated by software option.
41~44	PB0~ PB3	Parallel data input	I	Input port of 4-bit parallel data. The Schmitt input circuit is built in. This can also be used as the interrupt port (negative edge) by software option. The pull-up resistance can be designated by software option.

CPU DATA KX-T9500R (Portable Unit)

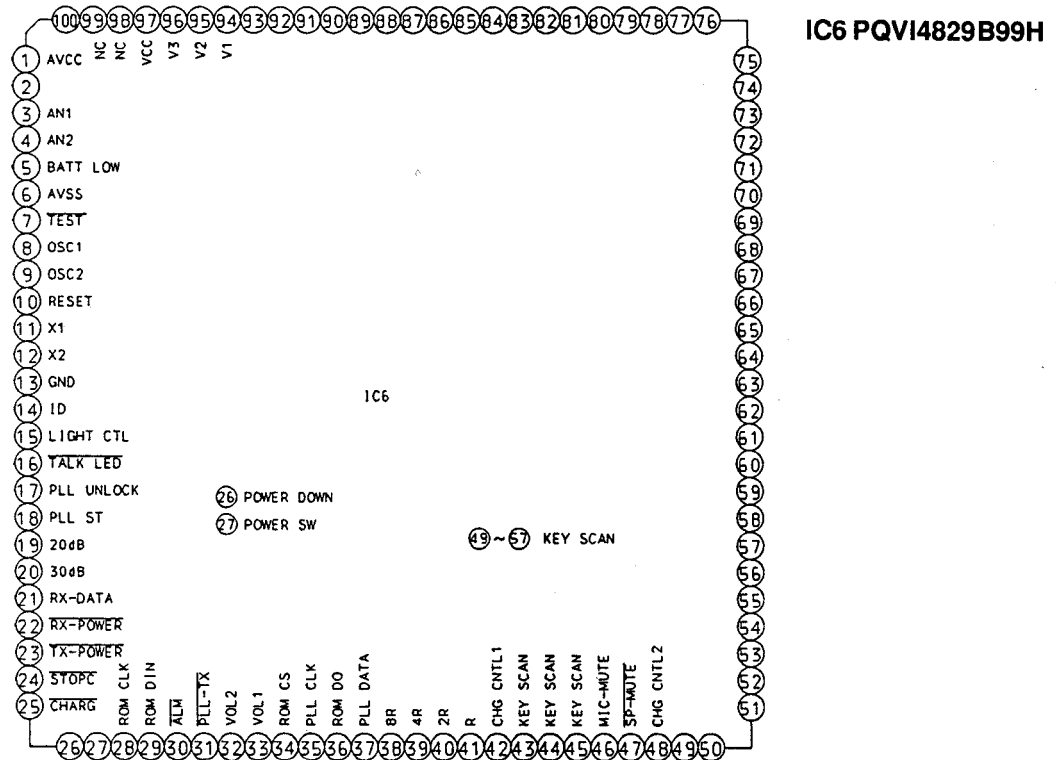


Fig. 19

[illegible]

■ CPU TERMINAL EXPLANATION IC6 PQVI4829B99H

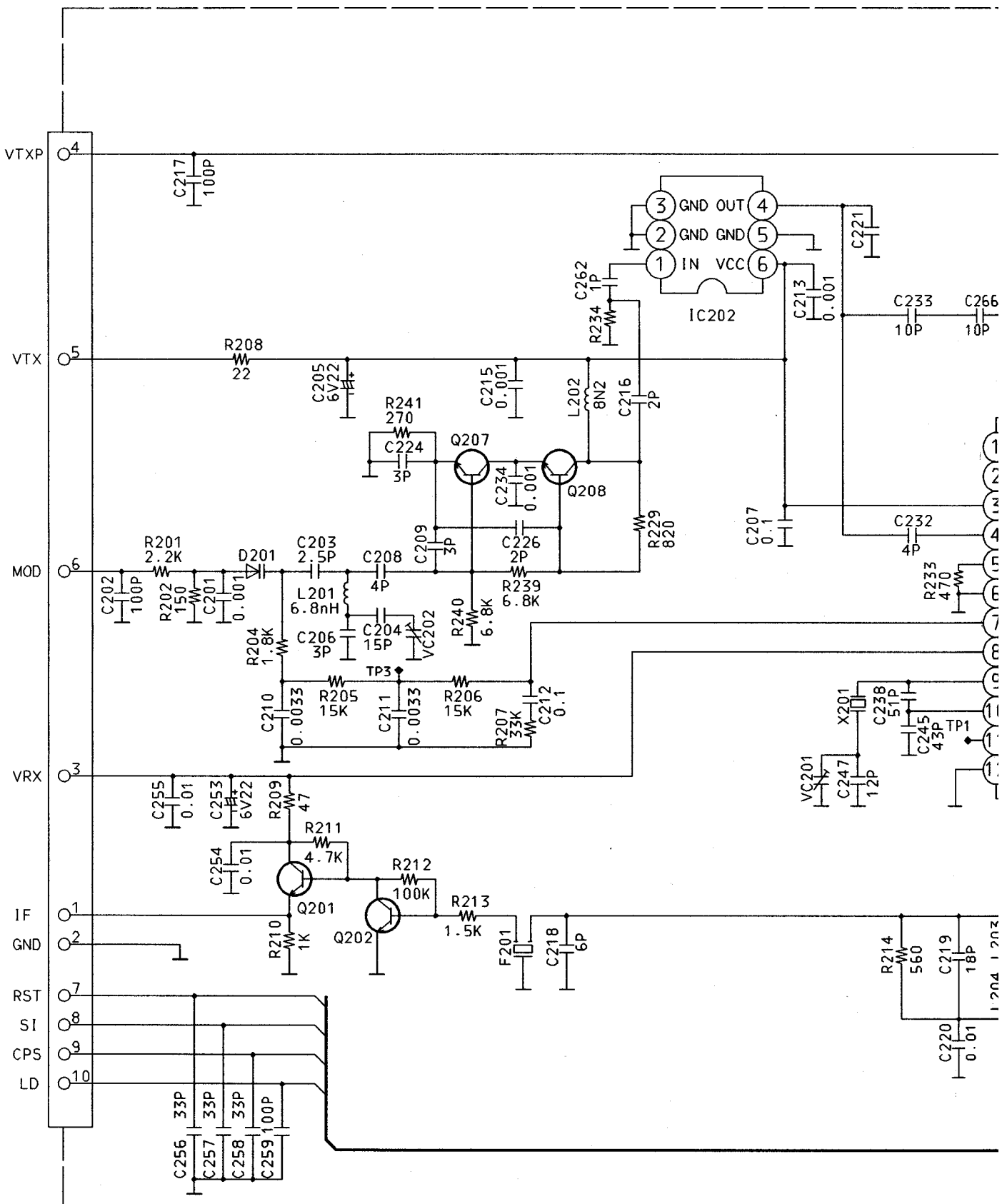
Classification	Symbol of pin	Pin No.	I/O	Description
Power source	V _{cc}	97		Apply the source voltage.
	GND	13		Ground this.
Test	TEST	7	I	Not used for a user application. Connect to V _{cc} electric potential.
Reset	RESET	10	I	Used to reset the MCU.
Oscillation	OSC ₁	8	I	I/O terminals for the system clock oscillator. Connect to the ceramic oscillator or external oscillating circuit.
	OSC ₂	9	O	
	X1	11	I	I/O terminals for the oscillator used for clock. Connect the crystal oscillator of 32.768 kHz. If not, fix the X1 terminal to V _{cc} and open the X2 terminal.
	X2	12	O	
Port	D ₀ ~D ₉	14~23	I/O	I/O terminal used for access every 1 bit. D ₀ ~D ₉ are the large current output terminals that supply each terminal for 15 mA (max.).
	D ₁₀ , D ₁₁	24, 25	I	Input terminals used for access every 1 bit.
	R ₀ ~R ₇	26~57	I/O	I/O terminals used for access every 4 bits.
Interrupt	$\overline{\text{INT}}_0$, $\overline{\text{INT}}_1$, INT ₂ ~INT ₄	25~29	I	Input terminal used for external interrupt input.
Stop clear	$\overline{\text{STOPC}}$	24	I	Input terminal used for the transition from the stop mode to the active mode.
Serial interface	SCK	35	I/O	Clock I/O terminal of the serial interface.
	SI	36	I	Received data input terminal of the serial interface.
	SO	37	O	Transmitted data output terminal of the serial interface.
Timer	TOB, TOC, TOD	30~32	O	Timer output terminal.
	EVNB, EVND	33, 34	I	Event count input terminal.
LCD	V ₁ , V ₂ , V ₃	94~96		Power source terminal for the LCD driver. The built-in power decomposition resistance is normally used in the open status. The voltage condition: V _{cc} ≥V ₁ ≥V ₂ ≥V ₃ ≥GND
	COM1~COM4	90~93	O	Common signal terminal for the LCD.
	SEG1~SEG52	38~89	O	Segment signal terminal for the LCD.
A/D converter	AV _{cc}	1		Power source terminal for the A/D converter. Make connection so that this electric potential is equal to that of V _{cc} at the position as close as possible to V _{cc} .
	AV _{ss}	6		GND terminal to AV _{cc} . Make connection so that this electric potential is equal to that of V _{cc} at the position as close as possible to V _{cc} .
	AN ₀ ~AN ₃	2~5	I	Analog input terminal of the A/D converter.

FREQUENCY TABLE (MHz)

CH	Base Unit TX Portable Unit RX	Base Unit RX Portable Unit TX	CH	Base Unit TX Portable Unit RX	Base Unit RX Portable Unit TX
1	902.100 MHz	926.100 MHz	31	903.000 MHz	927.000 MHz
2	902.130 MHz	926.130 MHz	32	903.030 MHz	927.030 MHz
3	902.160 MHz	926.160 MHz	33	903.060 MHz	927.060 MHz
4	902.190 MHz	926.190 MHz	34	903.090 MHz	927.090 MHz
5	902.220 MHz	926.220 MHz	35	903.120 MHz	927.120 MHz
6	902.250 MHz	926.250 MHz	36	903.150 MHz	927.150 MHz
7	902.280 MHz	926.280 MHz	37	903.180 MHz	927.180 MHz
8	902.310 MHz	926.310 MHz	38	903.210 MHz	927.210 MHz
9	902.340 MHz	926.340 MHz	39	903.240 MHz	927.240 MHz
10	902.370 MHz	926.370 MHz	40	903.270 MHz	927.270 MHz
11	902.400 MHz	926.400 MHz	41	903.300 MHz	927.300 MHz
12	902.430 MHz	926.430 MHz	42	903.330 MHz	927.330 MHz
13	902.460 MHz	926.460 MHz	43	903.360 MHz	927.360 MHz
14	902.490 MHz	926.490 MHz	44	903.390 MHz	927.390 MHz
15	902.520 MHz	926.520 MHz	45	903.420 MHz	927.420 MHz
16	902.550 MHz	926.550 MHz	46	903.450 MHz	927.450 MHz
17	902.580 MHz	926.580 MHz	47	903.480 MHz	927.480 MHz
18	902.610 MHz	926.610 MHz	48	903.510 MHz	927.510 MHz
19	902.640 MHz	926.640 MHz	49	903.540 MHz	927.540 MHz
20	902.670 MHz	926.670 MHz	50	903.570 MHz	927.570 MHz
21	902.700 MHz	926.700 MHz	51	903.600 MHz	927.600 MHz
22	902.730 MHz	926.730 MHz	52	903.630 MHz	927.630 MHz
23	902.760 MHz	926.760 MHz	53	903.660 MHz	927.660 MHz
24	902.790 MHz	926.790 MHz	54	903.690 MHz	927.690 MHz
25	902.820 MHz	926.820 MHz	55	903.720 MHz	927.720 MHz
26	902.850 MHz	926.850 MHz	56	903.750 MHz	927.750 MHz
27	902.880 MHz	926.880 MHz	57	903.780 MHz	927.780 MHz
28	902.910 MHz	926.910 MHz	58	903.810 MHz	927.810 MHz
29	902.940 MHz	926.940 MHz	59	903.840 MHz	927.840 MHz
30	902.970 MHz	926.970 MHz	60	903.870 MHz	927.870 MHz

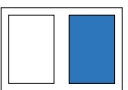
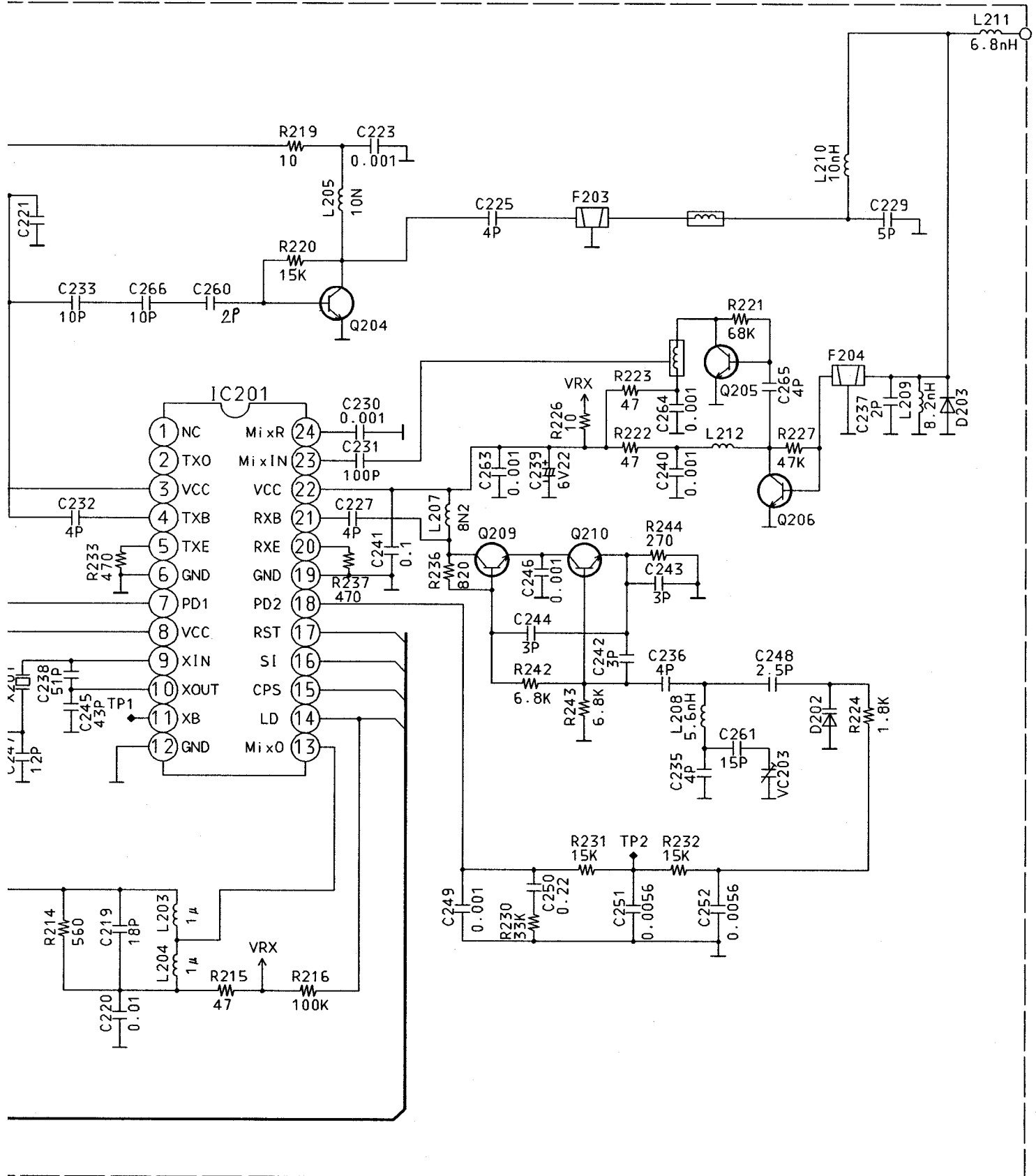
SCHEMATIC DIAGR

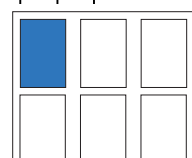
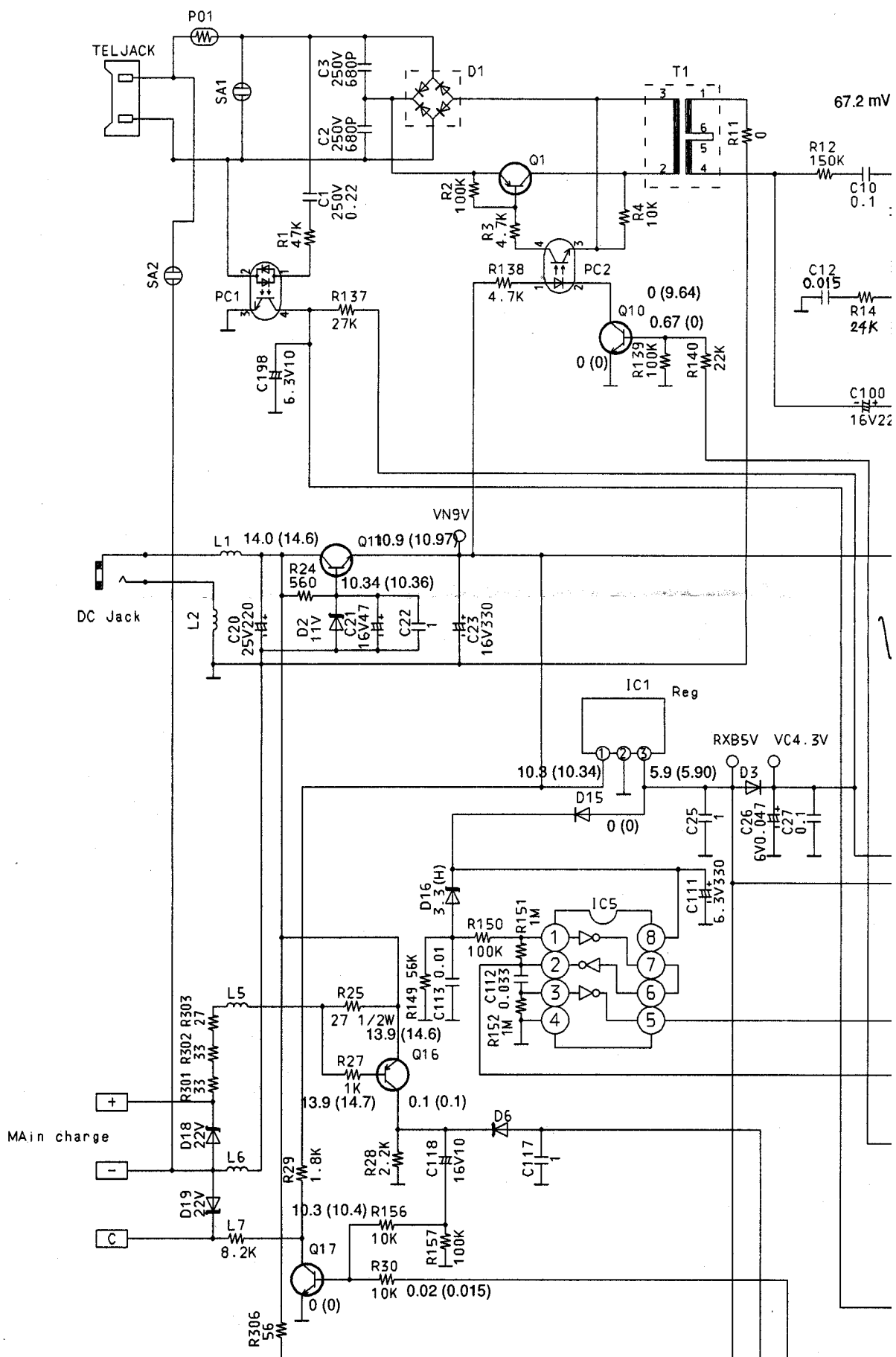
(RF UN



TIC DIAGRAM (KX-T9500H)

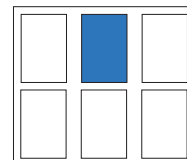
(RF UNIT)

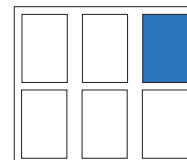


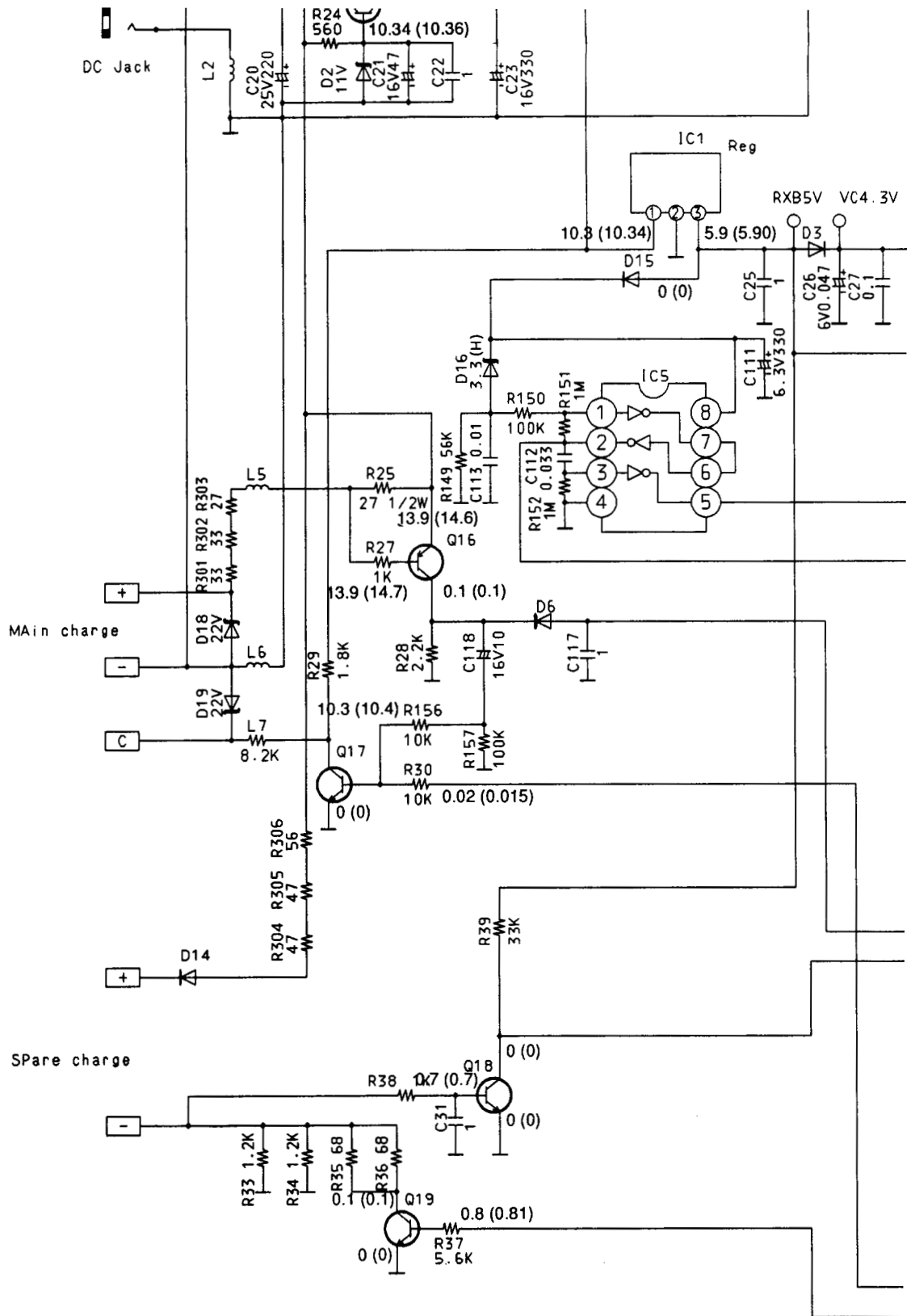


The diagram illustrates a complex electronic circuit, likely a radio receiver or amplifier, featuring two integrated circuits (IC2 and IC3) and a microcontroller (IC3).

IC2 (Left): A multi-pin IC with pins 1-8. It is connected to a network of resistors (R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, R23) and capacitors (C10, C11, C12, C13, C14, C15, C16, C17, C18, C19, C20, C21, C22, C23, C24, C25, C26, C27, C28, C29, C30, C31, C32, C33, C34, C35, C36, C37, C38, C39, C40, C41, C42, C43, C44, C45, C46, C47, C48, C49, C50, C51, C52, C53, C54, C55, C56, C57, C58, C59, C60, C61, C62, C63, C64, C65, C66, C67, C68, C69, C70, C71, C72, C73, C74, C75, C76, C77, C78, C79, C80, C81, C82, C83, C84, C85, C86, C87, C88, C89, C90, C91, C92, C93, C94, C95, C96, C97, C98, C99, C100, C101, C102, C103, C104, C105, C106, C107, C108, C109, C110, C111, C112, C113, C114, C115, C116, C117, C118, C119, C120, C121, C122, C123, C124, C125, C126, C127, C128, C129, C130, C131, C132, C133, C134, C135, C136, C137, C138, C139, C140, C141, C142, C143, C144, C145, C146, C147, C148, C149, C150, C151, C152, C153, C154, C155, C156, C157, C158, C159, C160, C161, C162, C163, C164, C165, C166, C167, C168, C169, C170, C171, C172, C173, C174, C175, C176, C177, C178, C179, C180, C181, C182, C183, C184, C185, C186, C187, C188, C189, C190, C191, C192, C193, C194, C195, C196, C197, C198, C199, C200, C201, C202, C203, C204, C205, C206, C207, C208, C209, C210, C211, C212, C213, C214, C215, C216, C217, C218, C219, C220, C221, C222, C223, C224, C225, C226, C227, C228, C229, C230, C231, C232, C233, C234, C235, C236, C237, C238, C239, C240, C241, C242, C243, C244, C245, C246, C247, C248, C249, C250, C251, C252, C253, C254, C255, C256, C257, C258, C259, C260, C261, C262, C263, C264, C265, C266, C267, C268, C269, C270, C271, C272, C273, C274, C275, C276, C277, C278, C279, C280, C281, C282, C283, C284, C285, C286, C287, C288, C289, C290, C291, C292, C293, C294, C295, C296, C297, C298, C299, C300, C301, C302, C303, C304, C305, C306, C307, C308, C309, C310, C311, C312, C313, C314, C315, C316, C317, C318, C319, C320, C321, C322, C323, C324, C325, C326, C327, C328, C329, C330, C331, C332, C333, C334, C335, C336, C337, C338, C339, C340, C341, C342, C343, C344, C345, C346, C347, C348, C349, C350, C351, C352, C353, C354, C355, C356, C357, C358, C359, C360, C361, C362, C363, C364, C365, C366, C367, C368, C369, C370, C371, C372, C373, C374, C375, C376, C377, C378, C379, C380, C381, C382, C383, C384, C385, C386, C387, C388, C389, C390, C391, C392, C393, C394, C395, C396, C397, C398, C399, C400, C401, C402, C403, C404, C405, C406, C407, C408, C409, C410, C411, C412, C413, C414, C415, C416, C417, C418, C419, C420, C421, C422, C423, C424, C425, C426, C427, C428, C429, C430, C431, C432, C433, C434, C435, C436, C437, C438, C439, C440, C441, C442, C443, C444, C445, C446, C447, C448, C449, C450, C451, C452, C453, C454, C455, C456, C457, C458, C459, C460, C461, C462, C463, C464, C465, C466, C467, C468, C469, C470, C471, C472, C473, C474, C475, C476, C477, C478, C479, C480, C481, C482, C483, C484, C485, C486, C487, C488, C489, C490, C491, C492, C493, C494, C495, C496, C497, C498, C499, C500, C501, C502, C503, C504, C505, C506, C507, C508, C509, C510, C511, C512, C513, C514, C515, C516, C517, C518, C519, C520, C521, C522, C523, C524, C525, C526, C527, C528, C529, C530, C531, C532, C533, C534, C535, C536, C537, C538, C539, C540, C541, C542, C543, C544, C545, C546, C547, C548, C549, C550, C551, C552, C553, C554, C555, C556, C557, C558, C559, C560, C561, C562, C563, C564, C565, C566, C567, C568, C569, C570, C571, C572, C573, C574, C575, C576, C577, C578, C579, C580, C581, C582, C583, C584, C585, C586, C587, C588, C589, C590, C591, C592, C593, C594, C595, C596, C597, C598, C599, C600, C601, C602, C603, C604, C605, C606, C607, C608, C609, C610, C611, C612, C613, C614, C615, C616, C617, C618, C619, C620, C621, C622, C623, C624, C625, C626, C627, C628, C629, C630, C631, C632, C633, C634, C635, C636, C637, C638, C639, C640, C641, C642, C643, C644, C645, C646, C647, C648, C649, C650, C651, C652, C653, C654, C655, C656, C657, C658, C659, C660, C661, C662, C663, C664, C665, C666, C667, C668, C669, C670, C671, C672, C673, C674, C675, C676, C677, C678, C679, C680, C681, C682, C683, C684, C685, C686, C687, C688, C689, C690, C691, C692, C693, C694, C695, C696, C697, C698, C699, C700, C701, C702, C703, C704, C705, C706, C707, C708, C709, C710, C711, C712, C713, C714, C715, C716, C717, C718, C719, C720, C721, C722, C723, C724, C725, C726, C727, C728, C729, C730, C731, C732, C733, C734, C735, C736, C737, C738, C739, C740, C741, C742, C743, C744, C745, C746, C747, C748, C749, C750, C751, C752, C753, C754, C755, C756, C757, C758, C759, C760, C761, C762, C763, C764, C765, C766, C767, C768, C769, C770, C771, C772, C773, C774, C775, C776, C777, C778, C779, C780, C781, C782, C783, C784, C785, C786, C787, C788, C789, C790, C791, C792, C793, C794, C795, C



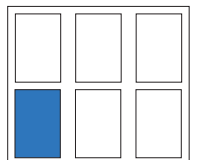


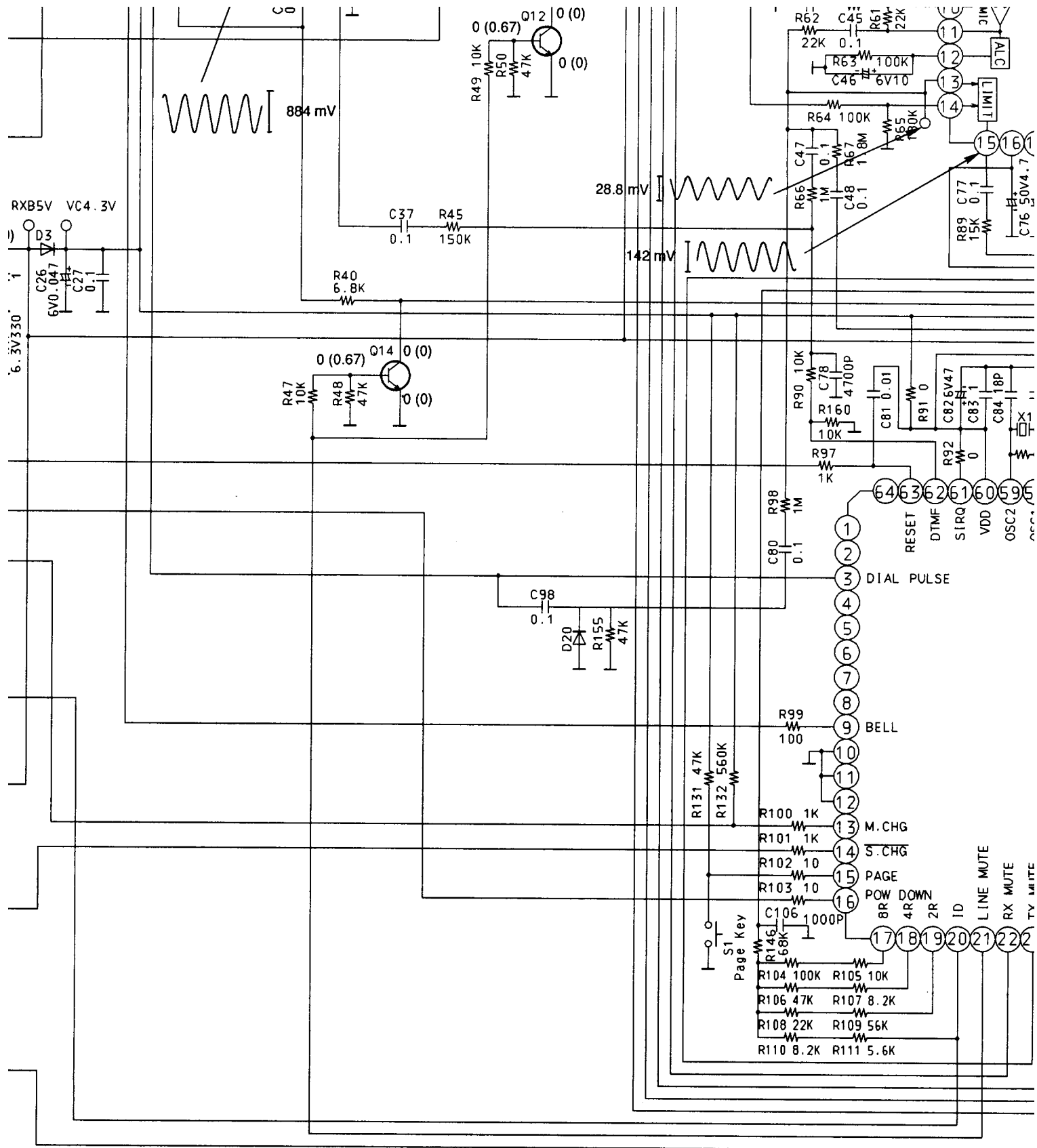


		IC3																
Pin	Mode	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15		
Talk		5.78	5.17	2.90	2.89	1.67	2.96	5.90	0	1.40	1.40	1.40	0.1	1.39	1.87	1.39		
Stand-by		5.78	0	2.90	2.89	1.67	2.96	5.90	0	1.40	1.40	1.40	0.1	1.39	1.87	1.40		

Notes: 1. S1: PAGE Switch
2. S2: DIALING MODE Selector

3. DC voltage measurements are taken with an electronic voltmeter from the negative voltage line.
Mic input: -50 dBm/1 kHz
Mode: Talk (Standby)

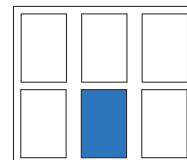


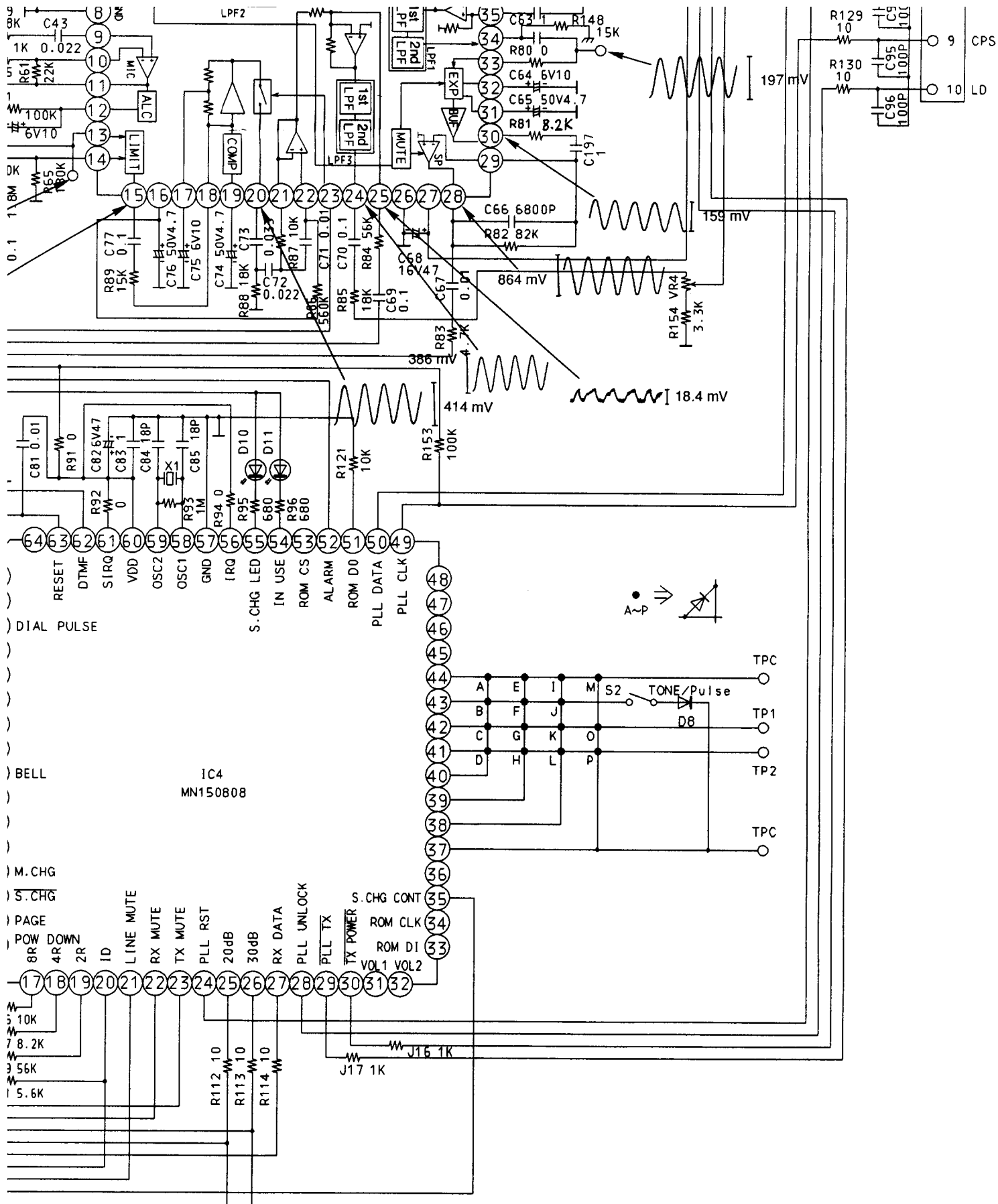


13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
1.39	1.87	1.39	1.40	1.40	1.40	0.92	1.4	1.42	1.35	0	1.38	1.40	0	5.88	2.92	2.88	1.40	0.63	1.40	1.40	1.65	1.60	1.64	0.65	5.88	5.87	4.89
1.39	1.87	1.40	1.40	1.40	1.40	0.68	0.2	1.42	1.35	5.18	1.38	1.40	0	5.88	2.97	2.95	1.39	1.70	1.40	1.40	1.65	1.60	1.64	0.60	5.87	5.88	4.91

are taken
from the

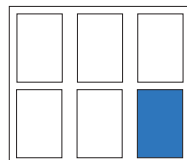
**This schematic diagram may be modified
at any time with development of new
technology.**





36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56
1.64	0.65	5.88	5.87	4.89	4.89	4.89	5.52	5.70	5.25	5.87	1.24	0.21	1.35	0.1	1.35	0.12	0.49	1.84	1.86	0.73
1.64	0.60	5.87	5.88	4.91	4.92	4.92	5.52	5.72	5.27	5.90	1.24	5.70	1.35	5.72	1.35	1.24	1.22	1.80	1.86	0.65

ay be modified
ent of new



A

B

C

D

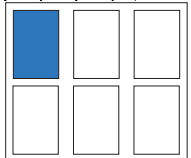
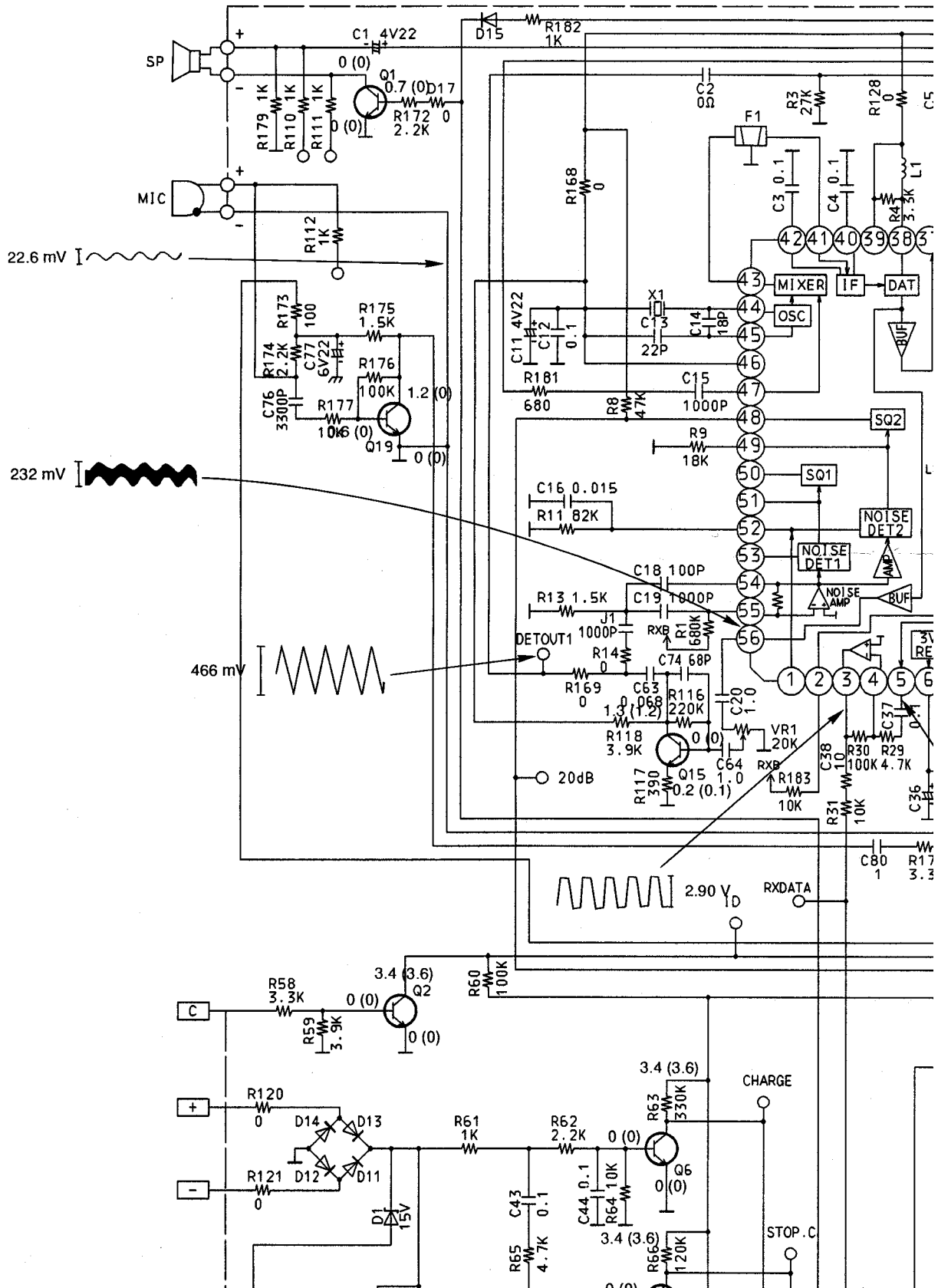
E

F

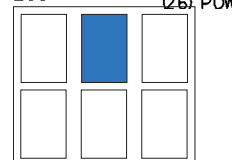
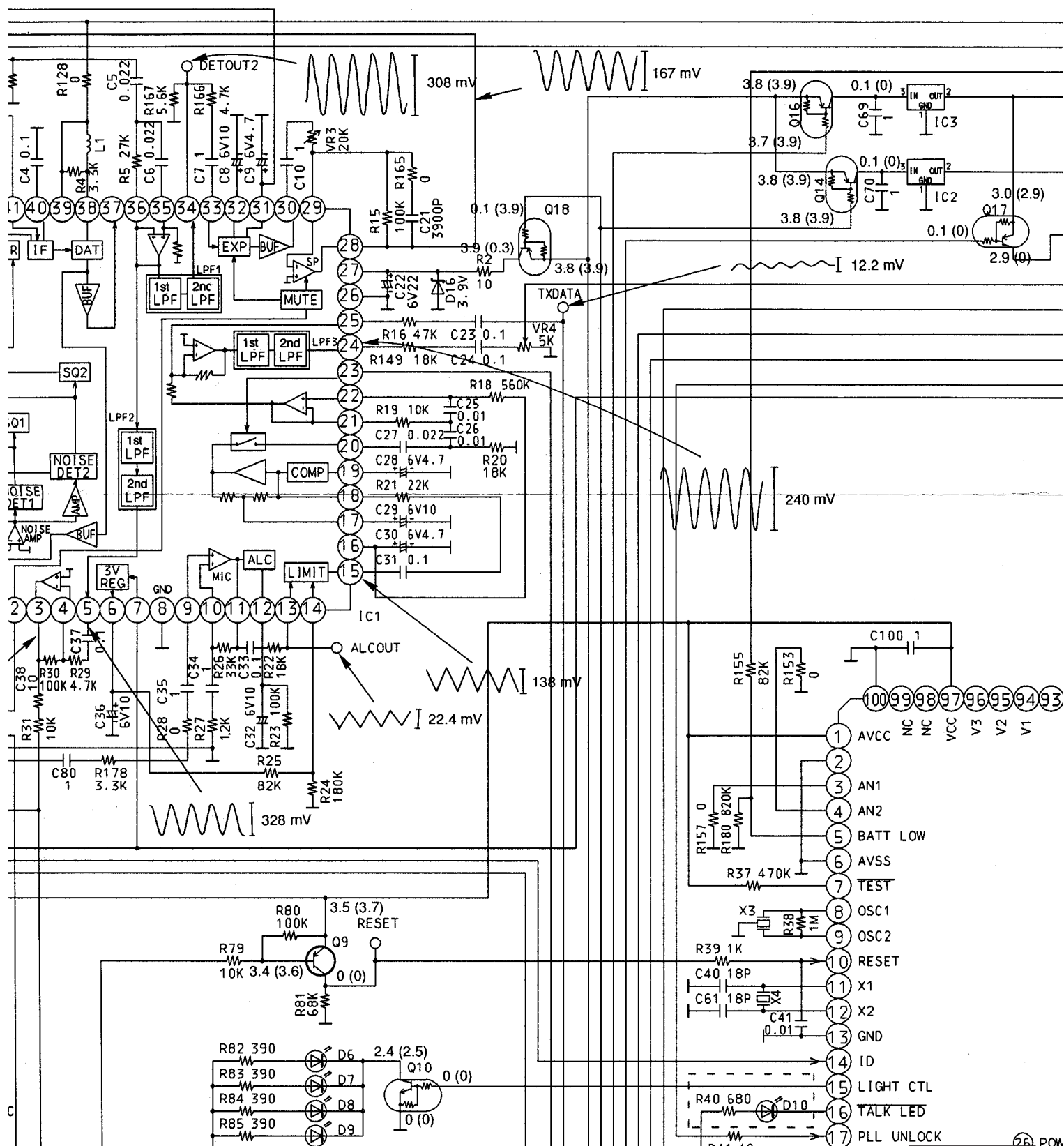
G

H

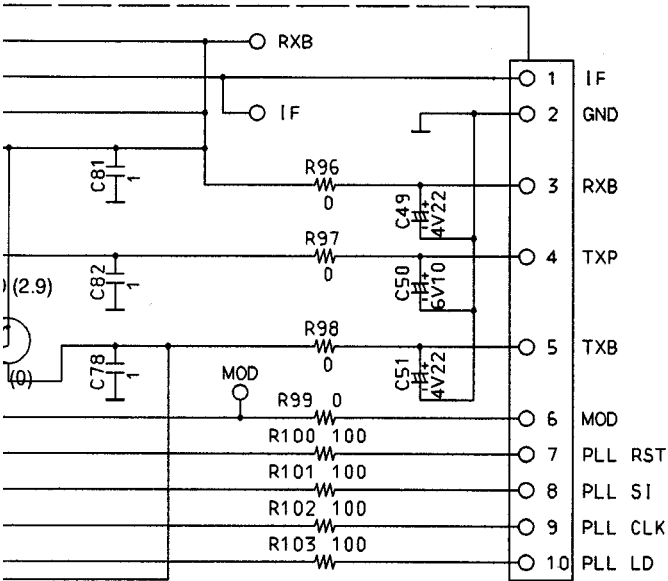
IC1																	
Pin	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Mode																	
Talk	2.9	2.6	1.4	1.4	1.6	2.8	2.9	0	1.3	1.3	1.3	0.1	1.3	1.9	1.3	1.3	1.4
Stand-by	2.9	2.9	1.4	1.4	1.5	0	0	0	0	0	0	0	0	0	0	0	0.3



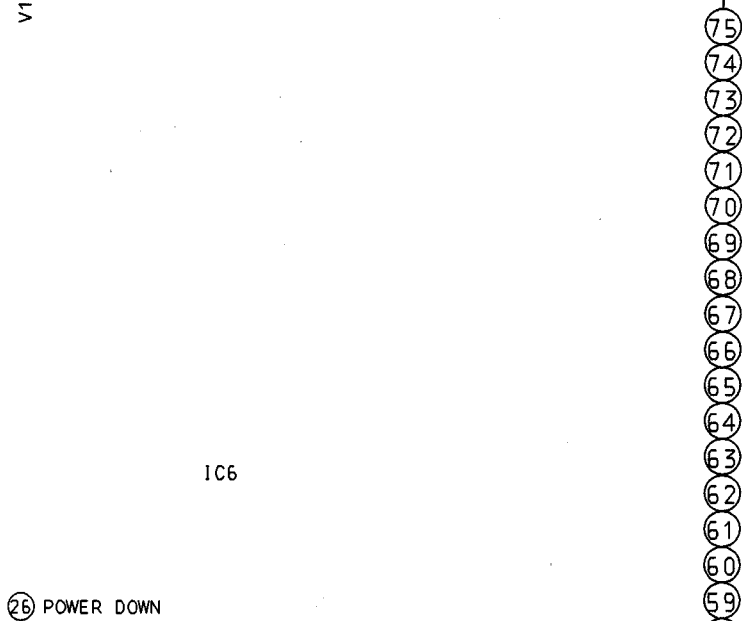
7				8				9				10				11				12				13			
15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39			
1.3	1.3	1.4	1.3	0.8	1.3	1.4	1.3	0	1.3	1.3	0	3.7	1.5	1.4	1.3	0.8	1.30	1.3	1.5	1.5	1.5	0.5	3.0	3.0			
0	0	0.3	0.3	0.3	0	0	0	3.6	0	0	0	0.4	0	0	0	0	0	0	0	0	1.54	0.5	3.0	3.0			



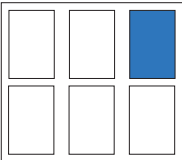
38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56
3.0	3.0	2.0	2.0	2.0	2.7	2.8	2.4	3.0	1.2	0	1.3	3.0	1.3	0	0.7	1.2	1.8	0
3.0	3.0	2.0	2.0	2.0	2.7	2.8	2.4	3.0	1.2	3.0	1.3	3.0	1.3	1.2	0.8	1.2	1.8	0



94 93 92 91 90 89 88 87 86 85 84 83 82 81 80 79 78 77 76



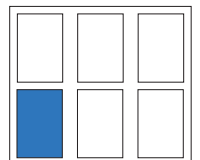
26 POWER DOWN

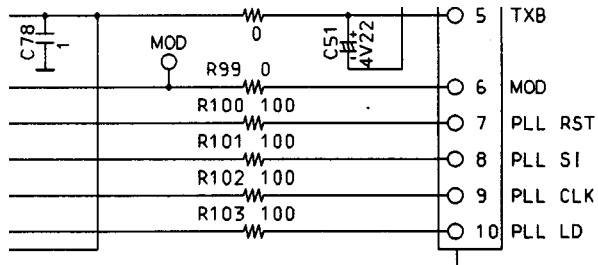


- Notes:**
1. S1: POWER/RINGER Switch
 2. DC voltage measurements are taken with an electronic voltmeter from the negative voltage line.
- Mic input: -50 dBm/1 kHz
Mode: Talk (Standby)

Important Safety Notice

The shaded area on this schematic diagram incorporates special features important for protection from fire and electrical shock hazards. When servicing, it is essential that only manufacturer's specified parts be used for critical components in the shaded areas of schematic.

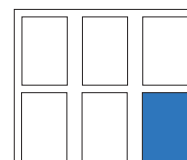
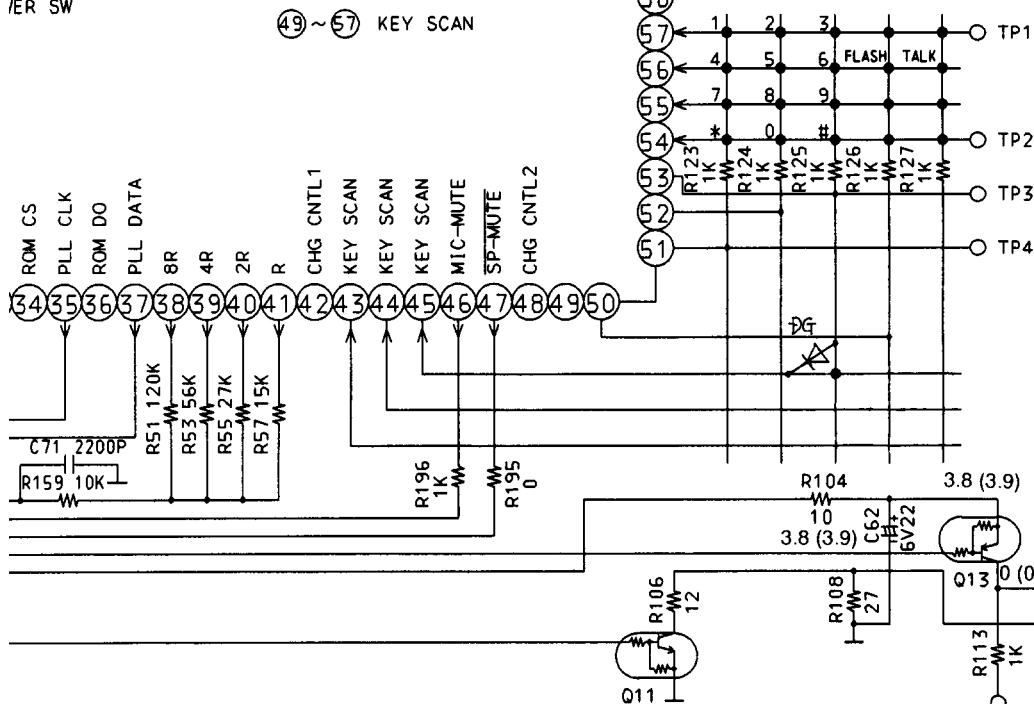




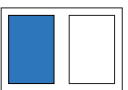
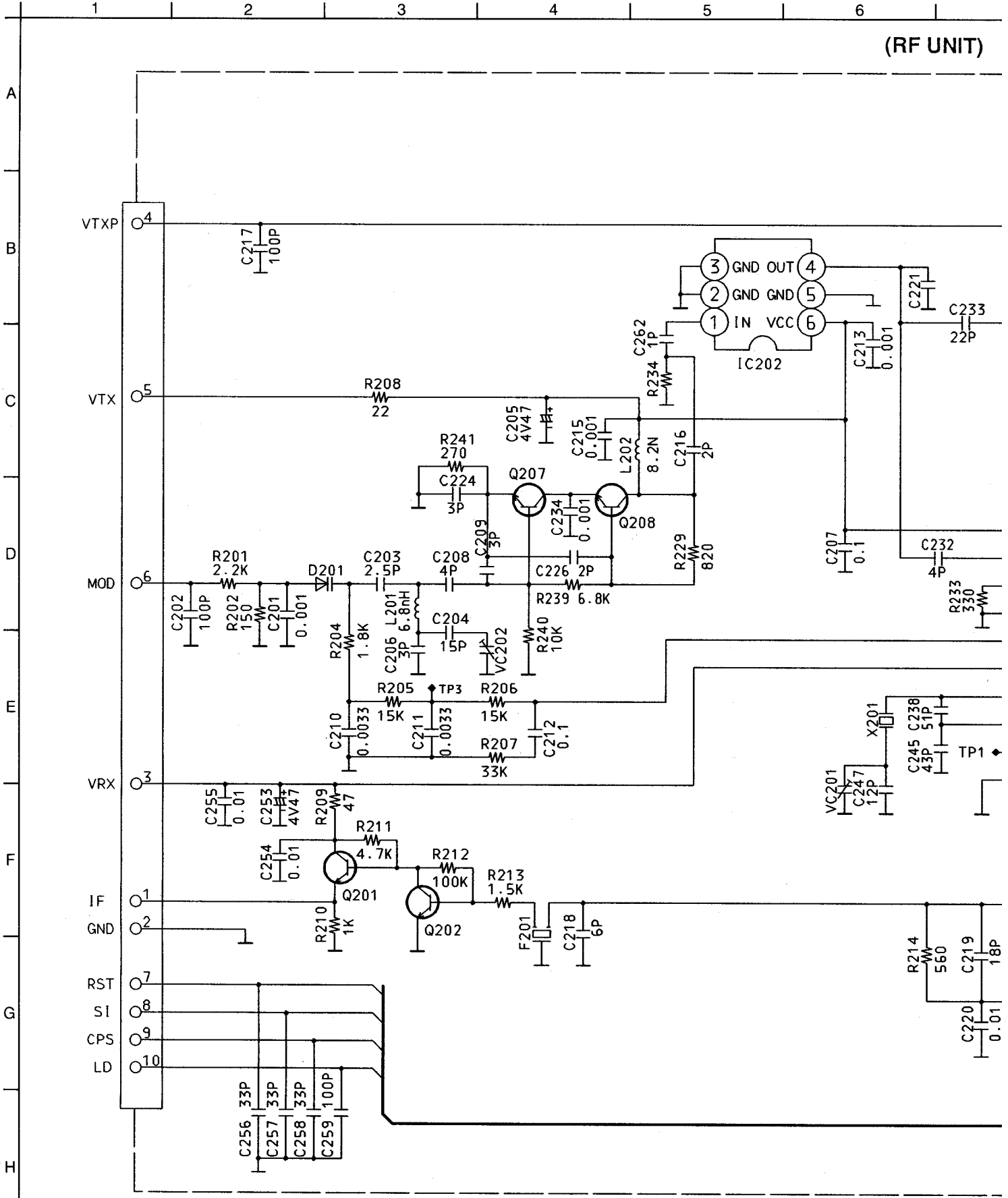
IC6

/ER DOWN
/ER SW

(49) ~ (57) KEY SCAN



SCHEMATIC DIAGRAM



GRAM (KX-T9500R)

= UNIT)

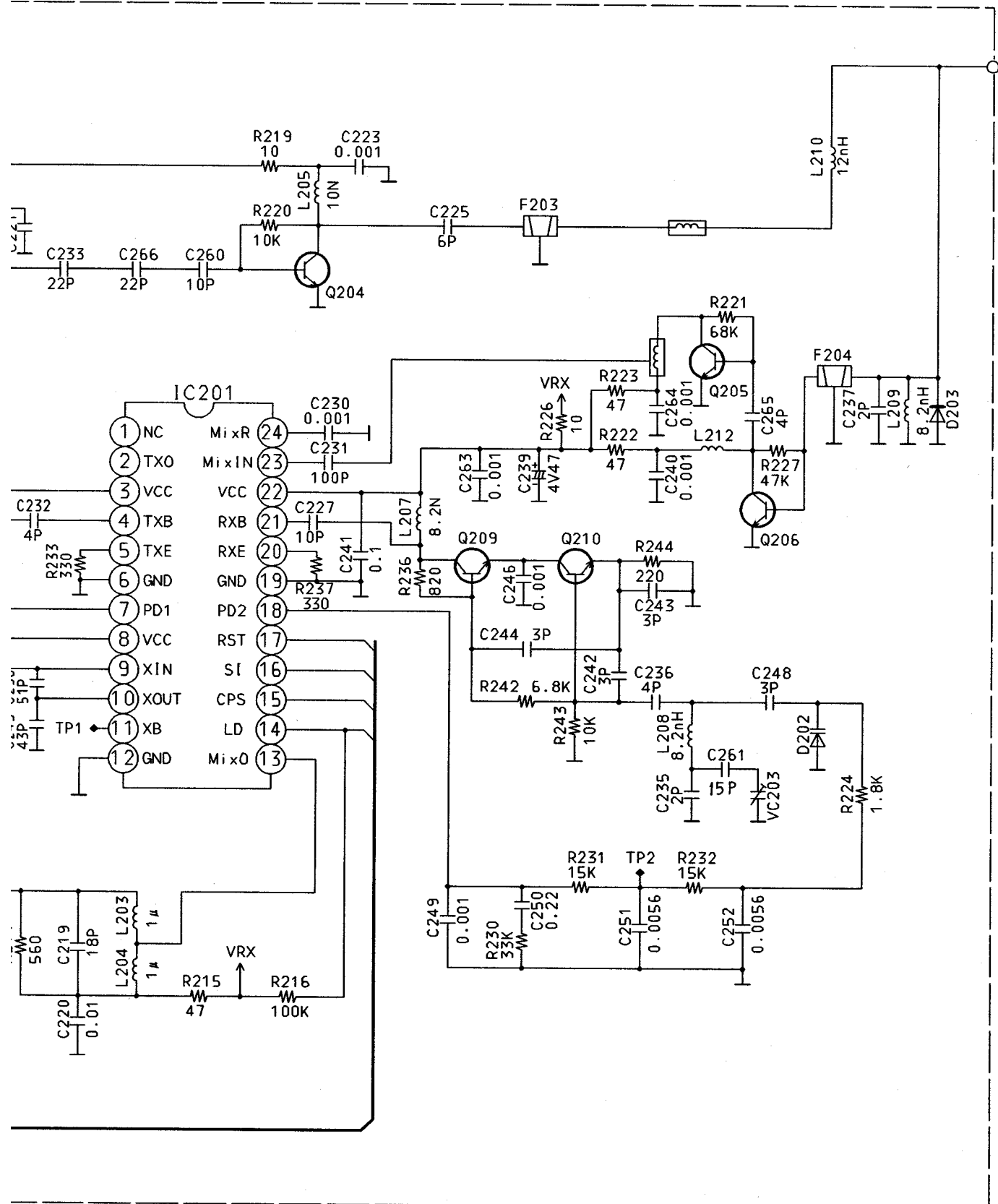


Fig. 27

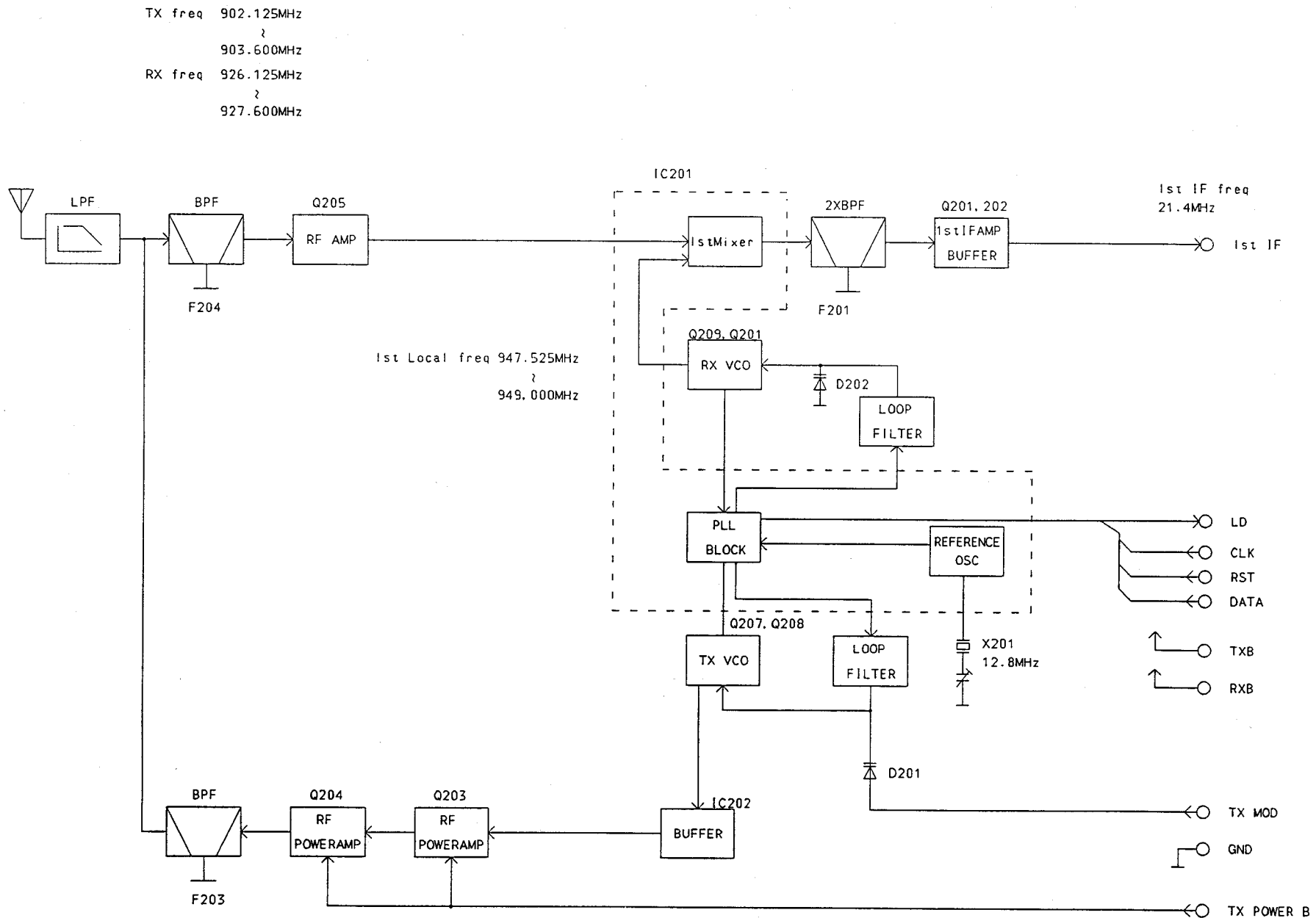


Fig. 28

BLOCK DIAGRAM (KX-T9500R) (Main P.C. Board)

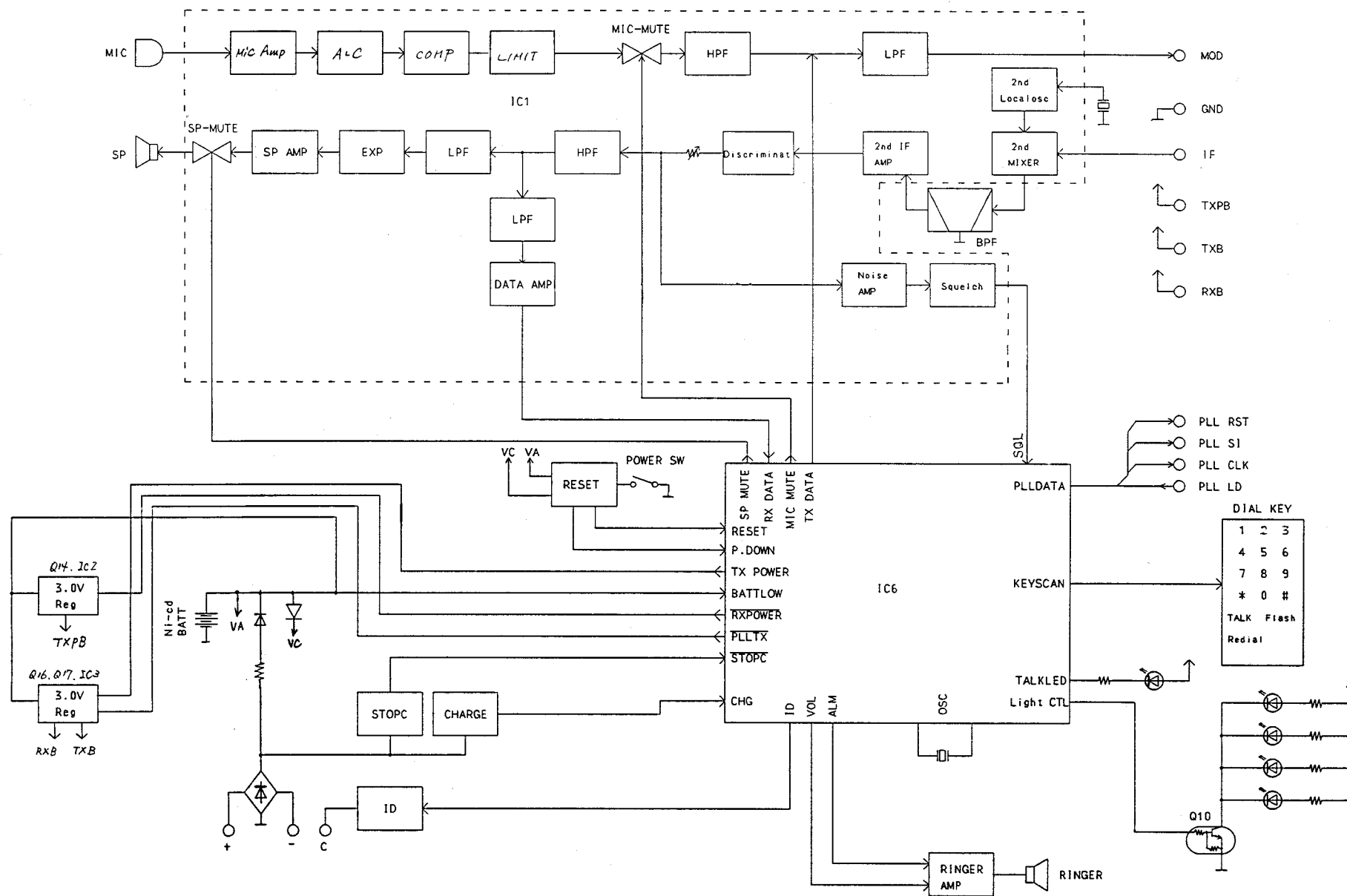


Fig. 29

Fig. 29

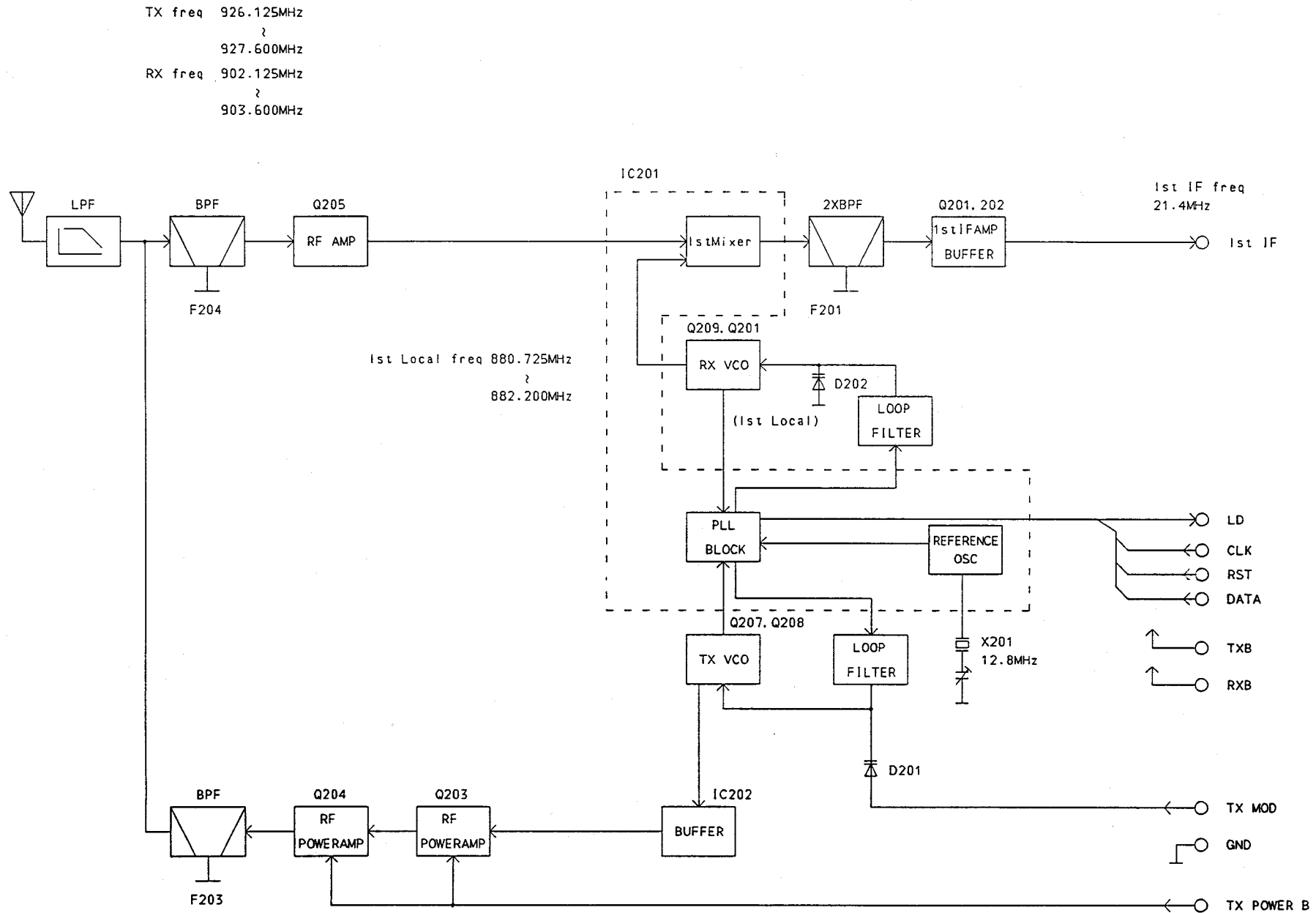


Fig. 30

CABINET AND ELECTRICAL PARTS LOCATION (KX-T9500H)

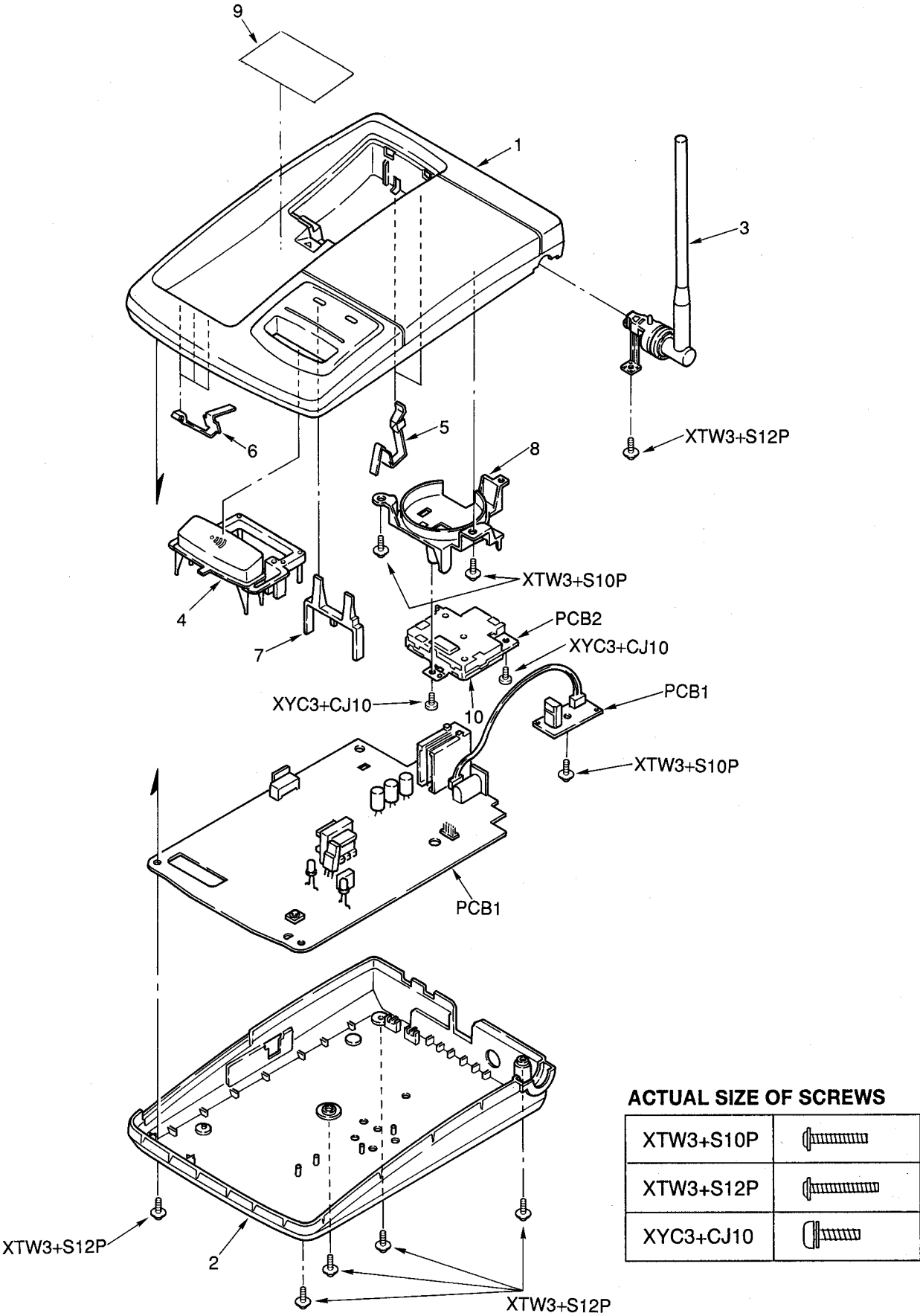


Fig. 31

CABINET AND ELECTRICAL PARTS LOCATION (KX-T9500R)

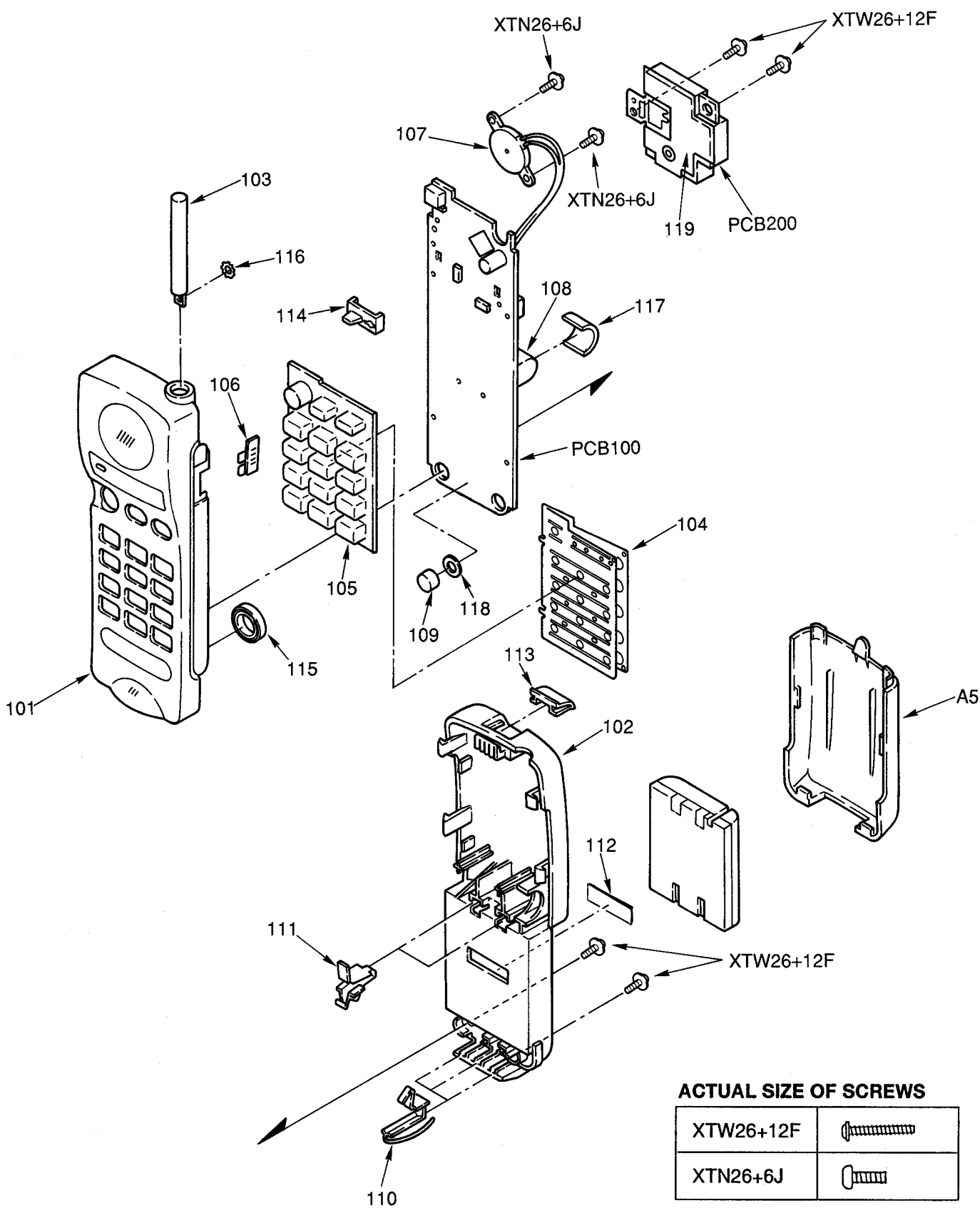
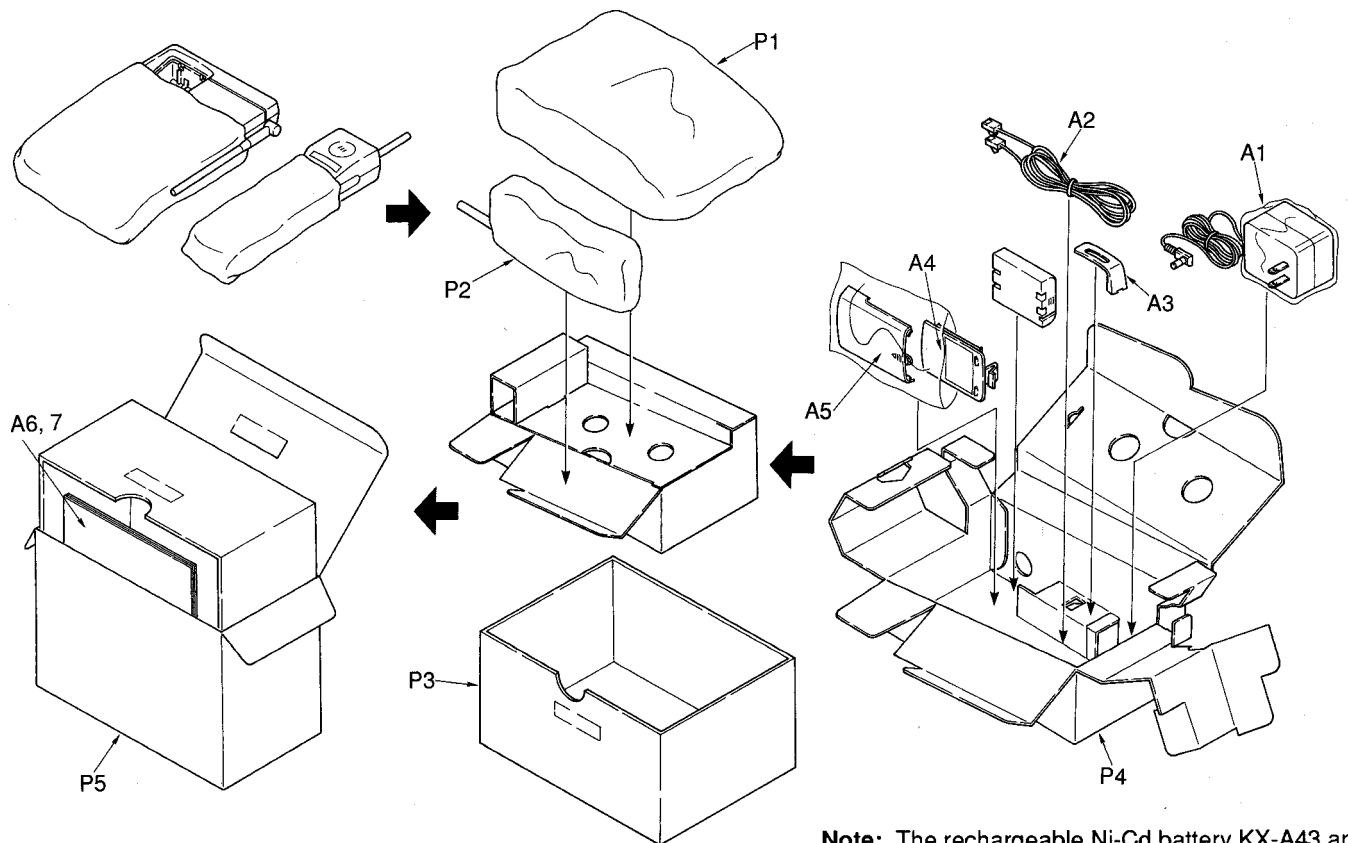


Fig. 32

ACCESSORIES AND PACKING MATERIALS



Note: The rechargeable Ni-Cd battery KX-A43 are available through sales route of Panasonic.

Fig. 33

FIXTURES AND TOOLS

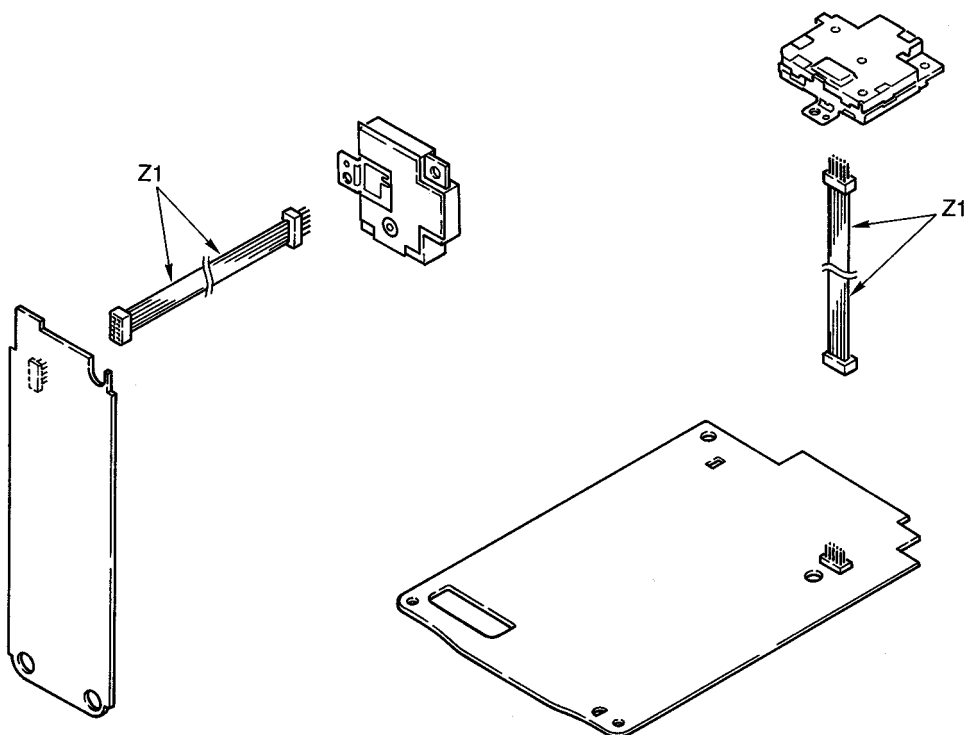


Fig. 34

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

REPLACEMENT PARTS LIST

Model KX-T9500H

1. RTL (Retention Time Limited)

Note: 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 governing part and product retention. After the end of this period, the assembly will no longer be available.

2. Important safety notice

Components identified by the Δ mark special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified 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=1000 Ω , M=1000K Ω

All capacitors are in MICRO FARADS (μ F) P= μ F

*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

Ref. No.	Part No.	Part Name & Description	Pcs/Set
MAIN P.C. BOARD PARTS			
PCB1	PQWPT9500HM	P.C. BOARD ASS'Y (RTL)	1
		(ICS)	
IC1	PQVIPC78M06A	IC	1
IC2	PQVIJM4560M	IC	1
IC3	AN6159FA	IC	1
IC4	MN150808KJAG	IC	1
IC5	PQVITC7W04FL	IC	1
		(TRANSISTORS)	
Q1	2SA1625	TRANSISTOR(SI)	1
Q10	2SC4116	LED	1
Q11	2SD2137	LED	1
Q12	2SC4116	TRANSISTOR(SI)	1
Q14	2SC4116	TRANSISTOR(SI)	1
Q16	2SB1218A	TRANSISTOR(SI)	1
Q17	2SC4116	TRANSISTOR(SI)	1
Q18	2SC4116	TRANSISTOR(SI)	1
Q19	2SC4116	TRANSISTOR(SI)	1
Q20	PQVTDTB123E	TRANSISTOR(SI)	1
Q21	PQVTDTB123E	TRANSISTOR(SI)	1
Q22	2SD1819A	TRANSISTOR(SI)	1
		(DIODES)	
D1	PQVDS1ZB40F1	DIODE(SI)	1
D2	PQVDR11M2	DIODE(SI)	1
D3	1SS131	DIODE(SI)	1
D6	1SS131	DIODE(SI)	1
D8	1SS131	DIODE(SI)	1
D10	LN21RCPHV	LED	1
D11	LN31GCPHV	LED	1
D12	MA110	DIODE(SI)	1
D13	MA110	DIODE(SI)	1
D14	MA110	DIODE(SI)	1
D15	1SS131	DIODE(SI)	1
D16	MA8033	DIODE(SI)	1
D18	MA8220	DIODE(SI)	1
D19	MA8220	DIODE(SI)	1
D20	MA110	DIODE(SI)	1
		(SWITCHES)	
S1	EVQQJJ05Q	SWITCH	1
S2	PQSS2A27W	SWITCH	1
		(VARISTORS)	
SA1	PQVDDSS301L	VARISTOR	1
SA2	PQVDDSA242M	VARISTOR	1
		(VARIABLE RESISTORS)	
VR1	EVNDXAA03B54	VARIABLE RESISTOR	1
VR4	EVNDXAA03B54	VARIABLE RESISTOR	1
		(CRYSTAL OSCILLATOR)	
X1	PQVCJ3581N9Z	CRYSTAL OSCILLATOR	1
X3	PQVCJ2094N4R	CRYSTAL OSCILLATOR	1
		(JACKS)	
JJ1	PQJJ1B4Y	JACK	1
JJ2	PQJJ1TA9Z	JACK	1

Ref. No. Part No. Part Name & Description Pcs/Set

CABINET & ELECTRICAL PARTS

1	PQKM10155X2	CABINET BODY	1
2	PQYF10062X1	CABINET PLATE	1
3	PQSA10031Z	ANTENNA	3
4	PQBC10165Z1	BUTTON	1
5	PQJT10087Z	BATTERY TERMINAL	2
6	PQJT10088Z	BATTERY TERMINAL	3
7	PQHR10298Z	SPACER	1
8	PQHR10320Z	CHASSIS	1
9	PQQT11058X	INDICATION LABEL	1
10	PQHX10508Z	INSULATOR	1
	XTW3+S10P	SCREW	3
	XTW3+S12P	SCREW	5
	XYC3+CJ10	SCREW	2

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

Ref. No.	Part No.	Part Name, Description & Value	Pcs/Set	Ref. No.	Part No.	Value	Pcs/Set
CN1	PQJP10B01Z	(CONNECTORS)	1	R63	ERJ3GEYJ104	100K	1
CN3	PQJP03R13Z	CONNECTOR	1	R64	PQ4R18XJ104	100K	1
		CONNECTOR		R65	ERJ3GEYJ184	180K	1
				R66	ERJ3GEYJ105	1M	1
		(COILS AND TRANSFORMER)		R67	ERJ3GEYJ185	1.8M	1
L1	ELEV330KA	COIL	1	R69	ERJ3GEYJ152	1.5K	1
L2	ELEV330KA	COIL	1	R70	ERJ3GEYJ223	22K	1
L5	PQLQZM100K	COIL	1	R71	ERJ3GEYJ243	24K	1
L6	PQLQZM100K	COIL	1	R72	ERJ3GEYJ393	39K	1
T1	PQLT8F3A	TRANSFORMER	1	R73	ERJ3GEYJ103	10K	1
				R74	ERJ3GEYJ393	39K	1
				R75	ERJ3GEYJ103	10K	1
		(PHOTO ELECTRIC TRANSDUCERS)		R76	ERJ3GEYJ392	3.9K	1
PC1	PQVIPC814K	PHOTO ELECTRIC TRANSDUCER	1	R77	ERJ3GEYJ103	10K	1
PC2	PQVITLP627	PHOTO ELECTRIC TRANSDUCER	1	R78	ERJ3GEYJ273	27K	1
				R81	ERJ3GEYJ822	8.2K	1
		(OTHERS)		R82	ERJ3GEYJ823	82K	1
				R83	ERJ3GEYJ472	4.7K	1
PO1	PQRPAR390N	THERMISTOR	1	R84	ERJ3GEYJ563	56K	1
F1	PQVFCFUM455E	CERAMIC FILTER	1	R85	ERJ3GEYJ183	18K	1
L3	PQVFCDBM455C	CERAMIC FILTER	1	R86	ERJ3GEYJ564	560K	1
				R87	ERJ3GEYJ103	10K	1
		(RESISTORS)		R88	ERJ3GEYJ183	18K	1
R1	ERDS2TJ473	47K	1	R89	ERJ3GEYJ153	15K	1
R2	ERJ3GEYJ104	100K	1	R90	ERJ3GEYJ103	10K	1
R3	ERJ3GEYJ472	4.7K	1	R93	ERJ3GEYJ105	1M	1
R4	ERJ3GEYJ103	10K	1	R95	ERJ3GEYJ681	680	1
R11	PQ4R18XJ000	0	1	R96	ERJ3GEYJ681	680	1
R12	ERDS2TJ154	150K	1	R97	ERJ3GEYJ102	1K	1
R13	ERJ6GEYF183	18K	1	R98	ERJ3GEYJ105	1M	1
R14	ERJ3GEYJ243	24K	1	R99	ERJ3GEYJ101	100	1
R15	ERJ3GEYF332	3.3K	1	R100	ERJ3GEYJ102	1K	1
R16	ERJ3GEYJ154	150K	1	R101	ERJ3GEYJ102	1K	1
R17	ERDS1TJ331	330	1	R102	ERJ3GEYJ100	10	1
R18	ERJ3GEYJ274	270K	1	R103	ERJ3GEYJ100	10	1
R19	ERJ3GEYJ333	33K	1	R104	ERJ3GEYJ104	100K	1
R20	ERJ3GEYJ104	100K	1	R105	ERJ3GEYJ103	10K	1
R21	ERJ3GEYJ823	82K	1	R106	ERJ3GEYJ473	47K	1
R22	ERJ3GEYJ100	10	1	R107	ERJ3GEYJ822	8.2K	1
R23	ERJ3GEYJ332	3.3K	1	R108	ERJ3GEYJ223	22K	1
R24	PQ4R10XJ561	560	1	R109	ERJ3GEYJ563	56K	1
R25	ERDS1TJ270	27	1	R110	ERJ3GEYJ822	8.2K	1
R27	ERJ3GEYJ102	1K	1	R111	ERJ3GEYJ562	5.6K	1
R28	ERJ3GEYJ222	2.2K	1	R112	ERJ3GEYJ100	10	1
R29	ERJ3GEYJ182	1.8K	1	R113	ERJ3GEYJ100	10	1
R30	PQ4R10XJ103	10K	1	R114	ERJ3GEYJ100	10	1
R33	PQ4R18XJ122	1.2K	1	R121	ERJ3GEYJ103	10K	1
R34	PQ4R18XJ122	1.2K	1	R127	ERJ3GEYJ100	10	1
R35	PQ4R18XJ680	68	1	R128	ERJ3GEYJ100	10	1
R36	PQ4R18XJ680	68	1	R129	ERJ3GEYJ100	10	1
R37	ERJ3GEYJ562	5.6K	1	R130	ERJ3GEYJ100	10	1
R38	ERJ3GEYJ102	1K	1	R131	ERJ3GEYJ473	47K	1
R39	ERJ3GEYJ333	33K	1	R132	ERJ3GEYJ564	560K	1
R40	ERJ3GEYJ682	6.8K	1	R134	ERJ3GEYJ104	100K	1
R45	ERJ3GEYJ154	150K	1	R135	ERJ3GEYJ392	3.9K	1
R47	ERJ3GEYJ103	10K	1	R136	ERJ3GEYJ101	100	1
R48	ERJ3GEYJ473	47K	1	R137	ERJ3GEYJ273	27K	1
R49	ERJ3GEYJ103	10K	1	R138	ERJ3GEYJ472	4.7K	1
R50	ERJ3GEYJ473	47K	1	R139	ERJ3GEYJ104	100K	1
R52	ERJ3GEYJ682	6.8K	1	R140	ERJ3GEYJ223	22K	1
R57	ERJ3GEYJ274	270K	1	R141	PQ4R18XJ000	0	1
R58	ERJ3GEYJ272	2.7K	1	R142	ERJ3GEYJ472	4.7K	1
R59	ERJ3GEYJ682	6.8K	1	R143	ERJ3GEYJ472	4.7K	1
R60	ERJ3GEYJ102	1K	1	R146	ERJ3GEYJ683	68K	1
R61	ERJ3GEYJ223	22K	1	R147	ERJ3GEYJ223	22K	1
R62	ERJ3GEYJ223	22K	1	R148	PQ4R18XJ153	15K	1
				R149	ERJ3GEYJ563	56K	1
				R150	ERJ3GEYJ104	100K	1
				R151	ERJ3GEYJ105	1M	1
				R152	ERJ3GEYJ105	1M	1
				R153	ERJ3GEYJ104	100K	1

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

Ref. No.	Part No.	Part Name, Description & Value	Pcs/Set	Ref. No.	Part No.	Value	Pcs/Set
VC201	PQCVTZB10ZA	(TRIMMER CAPACITORS)		C201	ECUE1E102KBQ	(CAPACITORS)	
VC202	PQCVTZB06ZA	TRIMMER CAPACITOR	1	C202	ECUV1H101JCV	0.001	1
VC203	PQCVTZB06ZA	TRIMMER CAPACITOR	1	C203	ECUE1H2R5BUQ	100P	1
				C204	ECUE1H150JCQ	2.5	1
				C205	ECST0JX226ZR	15P	1
				C206	ECUE1H030CCQ	22	1
		(COILS)		C207	ECUE1H030CCQ	3P	1
L201	MQLRE6N8JF	COIL	1	C208	ECUV1H104ZFB	0.1	S 1
L202	PQLQR2M8N2KT	COIL	1	C209	ECUE1H040CCQ	4P	1
L203	PQLQR2N1R0KT	COIL	1	C210	ECUE1H030CCQ	3P	1
L204	PQLQR2N1R0KT	COIL	1	C211	ECUV1H332KBV	0.0033	1
L205	PQLQR2M10NKT	COIL	1	C212	ECUV1H332KBV	0.0033	1
L207	PQLQR2M8N2KT	COIL	1	C213	ECUV1H104ZFB	0.1	S 1
L208	MQLRE5N6JF	COIL	1	C215	ECUE1H102KBV	0.001	1
L209	PQLQR2M8N2KT	COIL	1	C216	ECUE1E102KBQ	0.001	1
L210	PQLQR2M10NKT	COIL	1	C217	ECUE1H020CCQ	2P	1
L211	PQLQR2M6N8KT	COIL	1	C218	ECUE1H101JCV	100P	1
L212	PQLQR2M10NKT	COIL	1	C219	ECUV1H060DCV	6P	1
				C220	ECUE1H180JCQ	18P	1
		(CRYSTAL OSCILLATOR)		C221	ECUE1C103KBQ	0.01	1
X201	PQVCF1280K1Z	CRYSTAL OSCILLATOR	1	C222	ECUV1H102KBV	0.001	1
				C223	ECUE1H030CCQ	3P	1
		(CERAMIC FILTERS)		C224	ECUV1H040CCV	4P	1
F201	PQVCM214M15A	CERAMIC FILTER	1	C225	ECUE1H020CCQ	2P	1
F203	EZFN903AM01	CERAMIC FILTER	1	C226	ECUE1H040CCQ	4P	1
F204	PQVSNSVA927N	CERAMIC FILTER	1	C227	ECUE1H040CCQ	4P	1
				C228	ECUV1H050CCV	5P	1
		(CONNECTOR)		C229	ECUV1H102KBV	0.001	1
CN201	PQJS10A82Z	CONNECTOR	1	C230	ECUV1H101JCV	100P	1
				C231	ECUV1H040CCV	4P	1
		(RESISTORS)		C232	ECUV1H100DCV	10P	1
R201	ERJ2GEJ222	2.2K	1	C233	ECUE1E102KBQ	0.001	1
R202	ERJ2GEJ151	150	1	C234	ECUE1H040CCQ	4P	1
R204	ERJ2GEJ182	1.8K	1	C235	ECUE1H040CCQ	4P	1
R205	ERJ3GEYJ153	15K	1	C236	ECUE1H040CCQ	4P	1
R206	ERJ3GEYJ153	15K	1	C237	ECUV1H020CCV	2P	1
R207	ERJ3GEYJ333	33K	1	C238	ECUV1H510JGV	51P	1
R208	ERJ3GEYJ220	22	1	C239	ECST0JX226ZR	22	1
R209	ERJ3GEYJ470	47	1	C240	ECUV1H102KBV	0.001	1
R210	ERJ3GEYJ102	1K	1	C241	ECUV1H104ZFB	0.1	S 1
R211	ERJ3GEYJ472	4.7K	1	C242	ECUE1H030CCQ	3P	1
R212	ERJ3GEYJ104	100K	1	C243	ECUE1H030CCQ	3P	1
R213	ERJ3GEYJ152	1.5K	1	C244	ECUE1H030CCQ	3P	1
R214	ERJ2GEJ561	560	1	C245	ECUV1H430JGV	43P	1
R215	ERJ3GEYJ470	47	1	C246	ECUE1E102KBQ	0.001	1
R216	ERJ3GEYJ104	100K	1	C247	ECUV1H120JGV	12P	1
R219	ERJ3GEYJ100	10	1	C248	ECUE1H2R5BUQ	2.5	1
R220	ERJ3GEYJ153	15K	1	C249	ECUV1H102KBV	0.001	1
R221	ERJ3GEYJ683	68K	1	C250	ECUV1C224KB	0.22	1
R222	ERJ3GEYJ470	47	1	C251	ECUV1H562KBV	0.0056	1
R223	ERJ3GEYJ470	47	1	C252	ECUV1H562KBV	0.0056	1
R224	ERJ2GEJ182	1.8K	1	C253	ECST0JX226ZR	22	1
R226	ERJ3GEYJ100	10	1	C254	ECUV1H103KBV	0.01	1
R227	ERJ3GEYJ473	47K	1	C255	ECUV1H103KBV	0.01	1
R229	ERJ2GEJ821	820	1	C256	ECUV1H330JCV	33P	1
R230	ERJ3GEYJ333	33K	1	C257	ECUV1H330JCV	33P	1
R231	ERJ3GEYJ153	15K	1	C258	ECUV1H330JCV	33P	1
R232	ERJ3GEYJ153	15K	1	C259	ECUV1H101JCV	100P	1
R233	ERJ3GEYJ471	470	1	C260	ECUV1H020CCV	2P	1
R236	ERJ2GEJ821	820	1	C261	ECUE1H150JCQ	15P	1
R237	ERJ3GEYJ471	470	1	C262	ECUV1H010CCV	1P	1
R239	ERJ2GEJ682	6.8K	1	C263	ECUE1E102KBQ	0.001	1
R240	ERJ2GEJ682	6.8K	1	C264	ECUV1H102KBV	0.001	1
R241	ERJ2GEJ271	270	1	C265	ECUV1H040CCV	4P	1
R242	ERJ2GEJ682	6.8K	1	C266	ECUV1H100DCV	10P	1
R243	ERJ2GEJ682	6.8K	1				
R244	ERJ2GEJ271	270	1				

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

REPLACEMENT PARTS LIST

Model KX-T9500R

1. RTL (Retention Time Limited)

Note: 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 governing part and product retention. After the end of this period, the assembly will no longer be available.

2. Important safety notice

Components identified by the Δ mark special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified 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=1000 Ω , M=1000K Ω

All capacitors are in MICRO FARADS (μ F) P= μ F

*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

Ref. No.	Part No.	Part Name & Description	Pcs/Set
----------	----------	-------------------------	---------

CABINET & ELECTRICAL PARTS

101	PQKM10159X2	CABINET BODY	1
102	PQKF10119Z2	CABINET PLATE	1
103	PQSA808X	ANTENNA	1
104	PQSX10018Z	KEYBOARD SWITCH	1
105	PQSX10019Z	KEYBOARD SWITCH	1
106	PQBD10032Z1	KNOB	1
107	PQAX3P18Z	SPEAKER	1
108	PQEFBQM111G1	BUZZER	S 1
109	PQJM122Z	MICROPHONE	1
110	PQJT10085Z	BATTERY TERMINAL	3
111	PQJT10086Z	BATTERY TERMINAL	2
112	PQHX10085Z	ID COVER	1
113	PQKE10038Z2	HANGER	1
114	PQHR10305Z	SPACER	1
115	PQHG10286Z	SPACER	1
116	XWC26BFN	WASHER	1
117	PQHG10326Z	SPACER	1
118	PQHX10503Z	SPACER	1
119	PQHX10508Z	INSULATOR	1
	XTN26+6J	SCREW	2
	XTW26+12F	SCREW	4
			1

Ref. No.	Part No.	Part Name & Description	Pcs/Set
MAIN P.C. BOARD PARTS			
PCB100	PQWPT9500RM	P.C. BOARD ASS'Y (RTL)	1
		(ICS)	
IC1	AN6159FA	IC	1
IC2	PQVIXC3002MR	IC	1
IC3	PQVIA8184SLT	IC	1
IC4	PQVISC78184D	IC	1
IC6	PQVI4829B99H	IC	1
		(TRANSISTORS)	
Q1	2SD1328	TRANSISTOR(SI)	1
Q2	2SC4116	TRANSISTOR(SI)	1
Q6	2SC4116	TRANSISTOR(SI)	1
Q7	2SC4116	TRANSISTOR(SI)	1
Q9	2SB1218A	TRANSISTOR(SI)	1
Q10	PQVTDTC143E	TRANSISTOR(SI)	1
Q11	PQVTDTC143E	TRANSISTOR(SI)	1
Q13	PQVTDTA143EU	TRANSISTOR(SI)	1
Q14	PQVDTDB123E	TRANSISTOR(SI)	1
Q15	2SC4116	TRANSISTOR(SI)	1
Q16	PQVDTDB123E	TRANSISTOR(SI)	1
Q17	PQVDTDB123E	TRANSISTOR(SI)	1
Q18	PQVTDTA143EU	TRANSISTOR(SI)	1
Q19	2SC4116	TRANSISTOR(SI)	1
		(DIODES)	
D1	MA8150	DIODE(SI)	1
D3	MA110	DIODE(SI)	1
D5	PQVDRB751H4	DIODE(SI)	1
D6	LN1371G	LED	1
D7	LN1371G	LED	1
D8	LN1371G	LED	1
D9	LN1371G	LED	1
D10	LN1261C	LED	1
D11	MA110	DIODE(SI)	1
D12	MA110	DIODE(SI)	1
D13	MA110	DIODE(SI)	1
D14	MA110	DIODE(SI)	1
D15	MA110	DIODE(SI)	1
D16	MA8039	DIODE(SI)	1
DG	MA110	DIODE(SI)	1
		(VARIABLE RESISTORS)	
VR1	EVM1YSX50B24	VARIABLE RESISTOR	1
VR3	EVM1YSX50B54	VARIABLE RESISTOR	1
VR4	EVM1SSX50B53	VARIABLE RESISTOR	1
		(CRYSTAL OSCILLATORS)	
X1	PQVCE2094N4R	CRYSTAL OSCILLATOR	1
X3	PQVBTCS4.00M	CRYSTAL OSCILLATOR	1
X4	PQVCE3276N97	CRYSTAL OSCILLATOR	1
		(CERAMIC FILTERS)	
L1	PQVFCDBC455M	CERAMIC FILTER	1
F1	PQVFSFPC455E	CERAMIC FILTER	1
		(SWITCH)	
S1	ESD11H120	SLIDE SWITCH	1
		(CONNECTOR)	
CN1	PQJP10B01Z	CONNECTOR	1

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


Ref. No.	Part No.	Value	Pcs/Set	Ref. No.	Part No.	Value	Pcs/Set
		(RESISTORS)					
R1	ERJ3GEYJ684	680K	1	R108	ERJ3GEYJ270	27	1
R2	ERJ3GEYJ100	10	1	R110	ERJ3GEYJ102	1K	1
R3	ERJ3GEYJ273	27K	1	R111	ERJ3GEYJ102	1K	1
R4	ERJ3GEYJ332	3.3K	1	R112	ERJ3GEYJ102	1K	1
R5	ERJ3GEYJ273	27K	1	R113	ERJ3GEYJ102	1K	1
R8	ERJ3GEYJ473	47K	1	R116	ERJ3GEYJ224	220K	1
R9	ERJ3GEYJ183	18K	1	R117	ERJ3GEYJ391	390	1
R11	ERJ3GEYJ823	82K	1	R118	ERJ3GEYJ392	3.9K	1
R13	ERJ3GEYJ152	1.5K	1	R120	PQ4R18XJ000	0	1
R14	ERJ3GEYJ000	0	1	R121	PQ4R18XJ000	0	1
R15	ERJ3GEYJ104	100K	1	R123	ERJ3GEYJ102	1K	1
R16	ERJ3GEYJ473	47K	1	R124	ERJ3GEYJ102	1K	1
R18	ERJ3GEYJ564	560K	1	R125	ERJ3GEYJ102	1K	1
R19	ERJ3GEYJ103	10K	1	R126	ERJ3GEYJ102	1K	1
R20	ERJ3GEYJ183	18K	1	R127	ERJ3GEYJ102	1K	1
R21	ERJ3GEYJ223	22K	1	R128	ERJ3GEYJ000	0	1
R22	ERJ3GEYJ183	18K	1	R149	ERJ3GEYJ183	18K	1
R23	ERJ3GEYJ104	100K	1	R153	ERJ3GEYJ000	0	1
R24	ERJ3GEYJ184	180K	1	R155	ERJ3GEYJ823	82K	1
R25	ERJ3GEYJ823	82K	1	R157	ERJ3GEYJ000	0	1
R26	ERJ3GEYJ333	33K	1	R158	ERJ3GEYJ000	0	1
R27	ERJ3GEYJ122	1.2K	1	R159	ERJ3GEYJ103	10K	1
R28	ERJ3GEYJ000	0	1	R164	ERJ3GEYJ154	150K	1
R29	ERJ3GEYJ472	4.7K	1	R165	ERJ3GEYJ000	0	1
R30	ERJ3GEYJ104	100K	1	R166	ERJ3GEYJ472	4.7K	1
R31	ERJ3GEYJ103	10K	1	R167	ERJ3GEYJ562	5.6K	1
R37	ERJ3GEYJ474	470K	1	R168	ERJ3GEYJ000	0	1
R38	ERJ3GEYJ105	1M	1	R169	ERJ3GEYJ000	0	1
R39	ERJ3GEYJ102	1K	1	R172	ERJ3GEYJ222	2.2K	1
R40	ERJ3GEYJ681	680	1	R173	ERJ3GEYJ101	100	1
R41	ERJ3GEYJ100	10	1	R174	ERJ3GEYJ222	2.2K	1
R42	ERJ3GEYJ100	10	1	R175	ERJ3GEYJ152	1.5K	1
R45	ERJ3GEYJ100	10	1	R176	ERJ3GEYJ104	100K	1
R46	ERJ3GEYJ102	1K	1	R177	ERJ3GEYJ103	10K	1
R47	ERJ3GEYJ102	1K	1	R178	ERJ3GEYJ332	3.3K	1
R48	ERJ3GEYJ102	1K	1	R179	ERJ3GEYJ102	1K	1
R49	ERJ3GEYJ102	1K	1	R180	ERJ3GEYJ824	820K	1
R51	ERJ2GEJ124	120K	1	R181	ERJ3GEYJ681	680	1
R53	ERJ2GEJ563	56K	1	R182	ERJ3GEYJ102	1K	1
R55	ERJ3GEYJ273	27K	1	R183	ERJ3GEYJ103	10K	1
R57	ERJ2GEJ153	15K	1	R195	ERJ3GEYJ000	0	1
R58	ERJ3GEYJ332	3.3K	1	R196	ERJ3GEYJ102	1K	1
R59	ERJ3GEYJ392	3.9K	1				
R60	ERJ3GEYJ104	100K	1	J1	ECUV1H102KBV	0.001	1
R61	ERJ3GEYJ102	1K	1	J16	ERJ3GEYJ102	1K	1
R62	ERJ3GEYJ222	2.2K	1	J17	ERJ3GEYJ102	1K	1
R63	ERJ3GEYJ334	330K	1	D17	PQ4R10XJ000	0	1
R64	ERJ3GEYJ103	10K	1				
R65	ERJ3GEYJ472	4.7K	1			(CAPACITORS)	
R66	ERJ3GEYJ124	120K	1	C1	ECST0GY226	22	1
R67	ERJ3GEYJ474	470K	1	C2	ERJ3GEYJ000	0	1
R71	PQ4R10XJ100	10	1	C3	PQCUV1E104MD	0.1	1
R72	PQ4R10XJ100	10	1	C4	PQCUV1E104MD	0.1	1
R79	ERJ3GEYJ103	10K	1	C5	ECUV1H223KBV	0.022	S 1
R80	ERJ3GEYJ104	100K	1	C6	ECUV1H223KBV	0.022	S 1
R81	ERJ3GEYJ683	68K	1	C7	PQCUV1H105JC	1	S 1
R82	ERJ3GEYJ391	390	1	C8	ECST0JX106	10	S 1
R83	ERJ3GEYJ391	390	1	C9	ECST0JY475	4.7	1
R84	ERJ3GEYJ391	390	1	C10	PQCUV1H105JC	1	S 1
R85	ERJ3GEYJ391	390	1	C11	ECST0GY226	22	1
R96	ERJ3GEYJ000	0	1	C12	PQCUV1E104MD	0.1	S 1
R97	ERJ3GEYJ000	0	1	C13	ECUV1H220JCV	22P	1
R98	ERJ3GEYJ000	0	1	C14	ECUV1H180JCV	18P	1
R99	ERJ3GEYJ000	0	1	C15	ECUV1H102KBV	0.001	1
R100	ERJ3GEYJ101	100	1	C16	ECUV1H153KBV	0.015	S 1
R101	ERJ3GEYJ101	100	1	C18	ECUV1H101JCV	100P	1
R102	ERJ3GEYJ101	100	1	C19	ECUV1H102KBV	0.001	1
R103	ERJ3GEYJ101	100	1	C20	PQCUV1H105JC	1	S 1
R104	ERJ3GEYJ100	10	1	C21	ECUV1H392KBV	0.0039	1
R106	ERJ3GEYJ120	12	1	C22	ECST0JX226	22	1
				C23	PQCUV1E104MD	0.1	1

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

Ref. No.	Part No.	Part Name, Description & Value	Pcs/Set	Ref. No.	Part No.	Part Name, Description & Value	Pcs/Set
C24	PQCUV1E104MD	0.1	1	L204	PQLQR2N1R0KT	COIL	1
C25	ECUV1H103KBV	0.01	S 1	L205	PQLQR2M10NKT	COIL	1
C26	PQCUV1H103KB	0.01	S 1	L207	PQLQR2M8N2KT	COIL	1
C27	PQCUV1H223KB	0.022	S 1	L208	MQLRE8N2JF	COIL	1
C28	ECST0JY475	4.7	1	L209	PQLQR2M8N2KT	COIL	1
C29	ECST0JX106	10	S 1	L210	PQLQR2M12NK	COIL	1
C30	ECST0JY475	4.7	1	L212	PQLQR2M10NKT	COIL	1
C31	PQCUV1E104MD	0.1	1				
C32	ECST0JX106	10	S 1				
C33	PQCUV1E104MD	0.1	1			(DIODES)	
C34	PQCUV1H105JC	1	S 1	D201	PQVD1SV276	DIODE(SI)	1
C35	PQCUV1H105JC	1	S 1	D202	PQVD1SV276	DIODE(SI)	1
C36	ECST0JX106	10	S 1	D203	MA110	DIODE(SI)	1
C37	PQCUV1E104MD	0.1	1				
C38	PQ4R10XJ100	10	1			(CERAMIC FILTERS)	
C40	ECUV1H180JCV	18P	1	F201	PQVCM214M15A	CERAMIC FILTER	1
C41	PQCUV1H103KB	0.01	S 1	F203	EZFN927AM01	CERAMIC FILTER	1
C43	PQCUV1E104MD	0.1	S 1	F204	PQVSNSVA903N	CERAMIC FILTER	1
C44	ECUV1H104ZFB	0.1	S 1				
C45	ECUV1H103KBV	0.01	S 1				
C47	ECEA1AKS221	220	S 1			(TRIMMER CAPACITORS)	
C49	ECST0GY226	22	1	VC201	PQCVTZB10ZA	TRIMMER CAPACITOR	1
C50	ECST0JX106	10	S 1	VC202	PQCVTZB06ZA	TRIMMER CAPACITOR	1
C51	ECST0GY226	22	1	VC203	PQCVTZB06ZA	TRIMMER CAPACITOR	1
C61	ECUV1H180JCV	18P	1				
C62	ECST0JX226	22	1				
C63	PQCUV1C683MD	0.068	1				
C64	PQCUV1H105JC	1	S 1			(OTHERS)	
C65	PQCUV1H473MD	0.047	1	X201	PQVCF1280N1Z	CRYSTAL OSCILLATOR	1
C69	PQCUV1H105JC	1	S 1	CN201	PQJS10A82Z	CONNECTOR	1
C70	PQCUV1H105JC	1	S 1				
C71	ECUV1H222KBV	0.0022	1				
C74	ECUV1H680JCV	68P	1				
C76	ECUV1H332KBV	0.0033	1				
C77	ECST0JX226	22	1			(RESISTORS)	
C78	PQCUV1H105JC	1	S 1	R201	ERJ2GEJ222	2.2K	1
C80	PQCUV1H105JC	1	S 1	R202	ERJ2GEJ151	150	1
C81	PQCUV1H105JC	1	S 1	R204	ERJ2GEJ182	1.8K	1
C82	PQCUV1H105JC	1	S 1	R205	ERJ3GEYJ153	15K	1
C100	PQCUV1H105JC	1	S 1	R206	ERJ3GEYJ153	15K	1
				R207	ERJ3GEYJ333	33K	1
				R208	ERJ3GEYJ220	22	1
				R209	ERJ3GEYJ470	47	1
				R210	ERJ3GEYJ102	1K	1
				R211	ERJ3GEYJ472	4.7K	1
				R212	ERJ3GEYJ104	100K	1
				R213	ERJ3GEYJ152	1.5K	1
				R214	ERJ2GEJ561	560	1
				R215	ERJ3GEYJ470	47	1
				R216	ERJ3GEYJ104	100K	1
				R219	ERJ3GEYJ100	10	1
				R220	ERJ3GEYJ103	10K	1
				R221	ERJ3GEYJ683	68K	1
				R222	ERJ3GEYJ470	47	1
				R223	ERJ3GEYJ470	47	1
				R224	ERJ2GEJ182	1.8K	1
				R226	ERJ3GEYJ100	10	1
				R227	ERJ3GEYJ473	47K	1
				R229	ERJ2GEJ821	820	1
				R230	ERJ3GEYJ333	33K	1
				R231	ERJ3GEYJ153	15K	1
				R232	ERJ3GEYJ153	15K	1
				R233	ERJ3GEYJ331	330	1
				R236	ERJ2GEJ821	820	1
				R237	ERJ3GEYJ331	330	1
				R239	ERJ2GEJ682	6.8K	1
				R240	ERJ2GEJ103	10K	1
				R241	ERJ2GEJ271	270	1
				R242	ERJ2GEJ682	6.8K	1
				R243	ERJ2GEJ103	10K	1
				R244	ERJ2GEJ221	220	1
RF UNIT PARTS							
PCB200	PQLP10104M	P.C. BOARD ASS'Y (RTL)					
		(IC)					
IC201	PQVIM64084GP	IC	1				
IC202	PQVIPC2746TE	IC	1				
		(TRANSISTORS)					
Q201	2SC4099NT106	TRANSISTOR(SI)	1				
Q202	2SC4099NT106	TRANSISTOR(SI)	1				
Q204	2SC3356R24	TRANSISTOR(SI)	1				
Q205	2SC4571R77	TRANSISTOR(SI)	S 1				
Q206	2SC4226R24	TRANSISTOR(SI)	1				
Q207	2SC5007	TRANSISTOR(SI)	1				
Q208	2AC5086	TRANSISTOR(SI)	1				
Q209	2AC5086	TRANSISTOR(SI)	1				
Q210	2SC5007	TRANSISTOR(SI)	1				
		(COILS)					
L201	MQLRE6N8JF	COIL	1				
L202	PQLQR2M8N2KT	COIL	1				
L203	PQLQR2N1R0KT	COIL	1				

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

Ref. No.	Part No.	Value	Pcs/Set
		(CAPACITORS)	
C201	ECUE1E102KBQ	0.001	1
C202	ECUV1H101JCV	100P	1
C203	ECUE1H2R5BUQ	2.5	1
C204	ECUE1H150JCQ	15P	1
C205	ECST0GX476	47	1
C206	ECUE1H030CCQ	3P	1
C207	ECUV1H104ZFY	0.1	S 1
C208	ECUE1H040CCQ	4P	1
C209	ECUE1H030CCQ	3P	1
C210	ECUV1H332KBV	0.0033	1
C211	ECUV1H332KBV	0.0033	1
C212	ECUV1H104ZFY	0.1	S 1
C213	ECUV1H102KBV	0.001	1
C215	ECUE1E102KBQ	0.001	1
C216	ECUE1H020CCQ	2P	1
C217	ECUV1H101JCV	100P	1
C218	ECUV1H060DCV	6P	1
C219	ECUE1H180JCQ	18P	1
C220	ECUE1C103KBQ	0.01	1
C223	ECUV1H102KBV	0.001	1
C224	ECUE1H030CCQ	3P	1
C225	ECUV1H060DCV	6P	1
C226	ECUE1H020CCQ	2P	1
C227	ECUE1H100DCQ	10P	1
C230	ECUV1H102KBV	0.001	1
C231	ECUV1H101JCV	100P	1
C232	ECUV1H040CCV	4P	1
C233	ECUV1H220JCV	22P	1
C234	ECUE1E102KBQ	0.001	1
C235	ECUE1H020CCQ	2P	1
C236	ECUE1H040CCQ	4P	1
C237	ECUV1H020CCV	2P	1
C238	ECUV1H510JGV	51P	1
C239	ECST0GX476	47	1
C240	ECUV1H102KBV	0.001	1
C241	ECUV1H104ZFY	0.1	S 1
C242	ECUE1H030CCQ	3P	1
C243	ECUE1H030CCQ	3P	1
C244	ECUE1H030CCQ	3P	1
C245	ECUV1H430JGV	43P	1
C246	ECUE1E102KBQ	0.001	1
C247	ECUV1H120JGV	12P	1
C248	ECUE1H030BUQ	3P	1
C249	ECUV1H102KBV	0.001	1
C250	ECUV1C224KB	0.22	1
C251	ECUV1H562KBV	0.0056	1
C252	ECUV1H562KBV	0.0056	1
C253	ECST0GX476	47	1
C254	ECUV1H103KBV	0.01	1
C255	ECUV1H103KBV	0.01	1
C256	ECUV1H330JCV	33P	1
C257	ECUV1H330JCV	33P	1
C258	ECUV1H330JCV	33P	1
C259	ECUV1H101JCV	100P	1
C260	ECUV1H100DCV	10P	1
C261	ECUE1H150JCQ	15P	1
C262	ECUV1H010CCV	1P	1
C263	ECUE1E102KBQ	0.001	1
C264	ECUV1H102KBV	0.001	1
C265	ECUV1H040CCV	4P	1
C266	ECUV1H220JCV	22P	1

Ref. No.	Part No.	Part Name & Description	Pcs/Set
ACCESSORIES			
A1	KX-A11-5	AC ADAPTOR 	1
A2	PQJA59V	TEL CORD	1
A3	PQKC10003Z2	BELT CLIP	1
A4	PQKK10045Z2	BATTERY COVER	1
		(for BASE UNIT)	
A5	PQKK10046Z2	BATTERY COVER	1
		(for PORTABLE HANDSET)	
A6	PQQW11112Z	QUICK REFERENCE GUIDE	1
A7	PQQX11200Z	INSTRUCTION BOOK	1
PACKING MATERIALS			
P1	XZB18X25A02	PROTECTION COVER	1
		(for BASE UNIT)	
P2	XZB10X25A02	PROTECTION COVER	1
		(for PORTABLE HANDSET)	
P3	PQPN10362Z	PAD	1
P4	PQPN10363Z	ACCESSORY BOX	1
P5	PQPK11166Z	GIFT BOX	1
FIXTURES AND TOOLS			
Z1	PQZZ10K13Z	EXTENSION CORD, 10P	2
Note: • PQZZ10K13Z is necessity for servicing.			