

SERVICE  
MANUAL

SR8000

**marantz**

model SR8000

*Stereophonic Receiver*

## MARANTZ DESIGN AND SERVICE

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20525 Nordhoff Street  
Chatsworth, California 91311  
Phone: 1-800-423-5108  
1-213-998-9333

The following information must be supplied to eliminate delays in processing your order:

1. Complete address.
2. Complete part numbers.
3. Complete description of parts.
4. Model number for which part is required (indicate MARANTZ).
5. Account number (for account customers only).

Direct consumers will be provided with the current retail price quotation on available parts in order to advise them of the cost of the parts and shipping.

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32 Cross Street (P.O. Box 604)  
Brookvale 2100 N.S.W.  
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Marantz Japan, Inc.  
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Sagamihara Shi  
Kanagawa, Japan

#### EUROPE

Superscope Europe, S.A.  
Avenue Leopold III, 2  
7120 Perennes-Lez-Binche  
Belgium

Marantz France  
Rue Louis Armand 9  
92600 Asnieres  
Hauts-de-Seine  
France

Marantz Audio U.K. Ltd.  
London Road, 203  
Staines  
Middlesex  
England

Superscope GmbH  
Max-Planck-Strasse 22  
D-6072 Dreieich 1  
West Germany

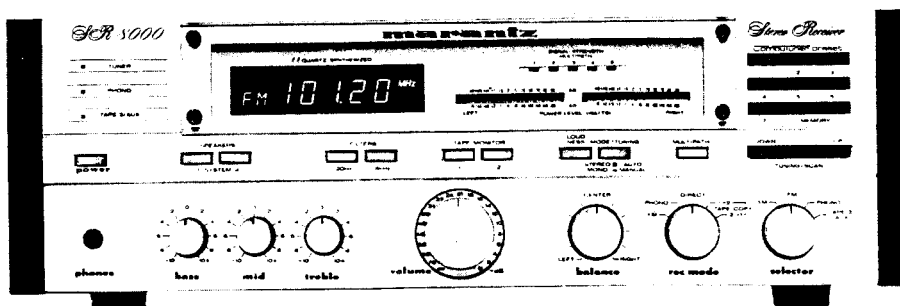
All of the above locations are fully equipped to take care of your total service needs. Because various countries have differing configuration requirements, it is necessary that you contact the service facility in your particular country. In the event that there is no service location listed for your country, please contact the nearest facility for the necessary assistance.

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We sound better.

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### MODEL SR-8000 STEREOPHONIC RECEIVER



## INTRODUCTION

This service manual was prepared for use by Authorized Warranty Stations and contains service information for Marantz Model SR-8000 Stereophonic Receiver.

Servicing information and voltage data included in this manual are intended for use by the knowledgeable and experienced technician only. All instructions should be read carefully. No attempt should be made to proceed without a good understanding of the operation of the receiver.

The parts list furnishes information by which replacement parts may be ordered from the Marantz Company. A simple description is included for parts which can usually be obtained through local suppliers.

## 1. P.W. BOARDS

1. Tuner/Phono . . . . .	mounted on P.W. Board	P100
2. Power Amp . . . . .	mounted on P.W. Board	P700
3. Power Supply . . . . .	mounted on P.W. Board	P800
4. Sub Power Supply . . . . .	mounted on P.W. Board	P860
5. Display Unit . . . . .	mounted on P.W. Board	P900
6. Noise Amp . . . . .	mounted on P.W. Board	PB00
7. Synthesizer . . . . .	mounted on P.W. Board	PC00
8. Tone Amp . . . . .	mounted on P.W. Board	PE00
9. Volume/Balance . . . . .	mounted on P.W. Board	PG00
10. Power Level LED . . . . .	mounted on P.W. Board	PK00
11. Voltage Amp . . . . .	mounted on P.W. Board	PN00
12. Tape/Filter/Loudness . . . . .	mounted on P.W. Board	PS00
13. Multipath . . . . .	mounted on P.W. Board	PS50
14. Speaker Switch . . . . .	mounted on P.W. Board	PT00
15. Rec. Mode Switch . . . . .	mounted on P.W. Board	PT50
16. Tuning Key . . . . .	mounted on P.W. Board	PU00
17. Scan Step . . . . .	mounted on P.W. Board	PU50
18. Tape 2 Terminal . . . . .	mounted on P.W. Board	PV00
19. Remote Cont. . . . .	mounted on P.W. Board	PV50
20. Phone Jack . . . . .	mounted on P.W. Board	PW00
21. Function Indicator . . . . .	mounted on P.W. Board	PY00

## 2. TEST EQUIPMENT REQUIRED FOR SERVICING

This table lists the test equipment required for servicing the Model SR-8000 Receiver.

Item	Manufacturer and Model No.	Use
AM Signal Generator		Signal source for AM alignment
Test Loop		Use with AM Signal Generator
FM Signal Generator MPX Signal Generator	Sound Technology Model 1000A	Signal source for FM alignment Stereo separation alignment and trouble shooting
Distortion Analyzer Audio Oscillator AC VTVM	Sound Technology Model 1700A	Distortion measurements Sinewave and squarewave signal source Voltage measurements (AC)
Oscilloscope	Tektronix Model T932 Philips Model 3232	Waveform analysis and trouble shooting and ASO alignment
Frequency Counter	Fluke Model 1900A	MPX Oscillator adjustment (VCO)
Circuit Tester		Trouble shooting
DC VTVM	Fluke Model 8000 "Digital" Simpson Model 313, Triplet Model 801	Voltage measurements (DC)
AC Wattmeter	Simpson Model 1379	Monitors primary power to amplifier
AC Ammeter	Commercial Grade (1-10A)	Monitors amplifier output under short circuit condition
Line Voltmeter	Simpson Model 1359	Monitors potential of primary power to amplifier
Variable Autotransformer	Superior Electronic Co., Powerstat Model 116B-10A	Adjusts level of primary power to amplifier
Shorting Plug	Use phono plug with 600-ohm across center pin and shell	Shorts amplifier input to eliminate noise pickup
Output Load (8 ohms, ± 0.5%, 100W)	Commercial Grade	Provides 8-ohm load for amplifier output termination
Output Load (4 ohms, ± 0.5%, 100W)	Commercial Grade	Provides 4-ohm load for amplifier output termination

### 3. FREQUENCY SYNTHESIZER RADIO TUNING SYSTEM

#### 3.1 Construction of Synthesizer System

This frequency synthesizer is composed of a micro-computer (MN 1400SJ), PLL LSI (MN6142), CMOS RAM (MN1203), prescaler (uPB551C), lowpass filter, crystals and fluorescent indicating tubes, as shown in Fig. 1.

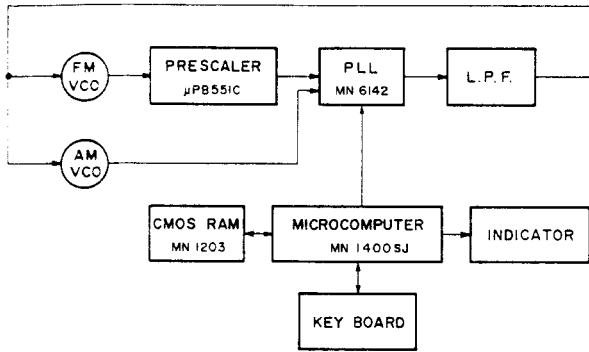


Figure 1. Block Diagram of Synthesizer

#### 3.2 Microcomputer MN1400SJ

##### [1] Terminal connections

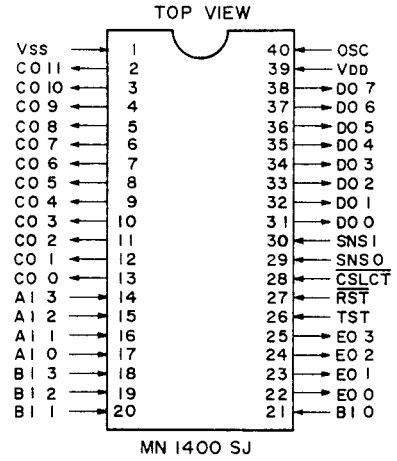


Figure 2

##### [2] Block diagram

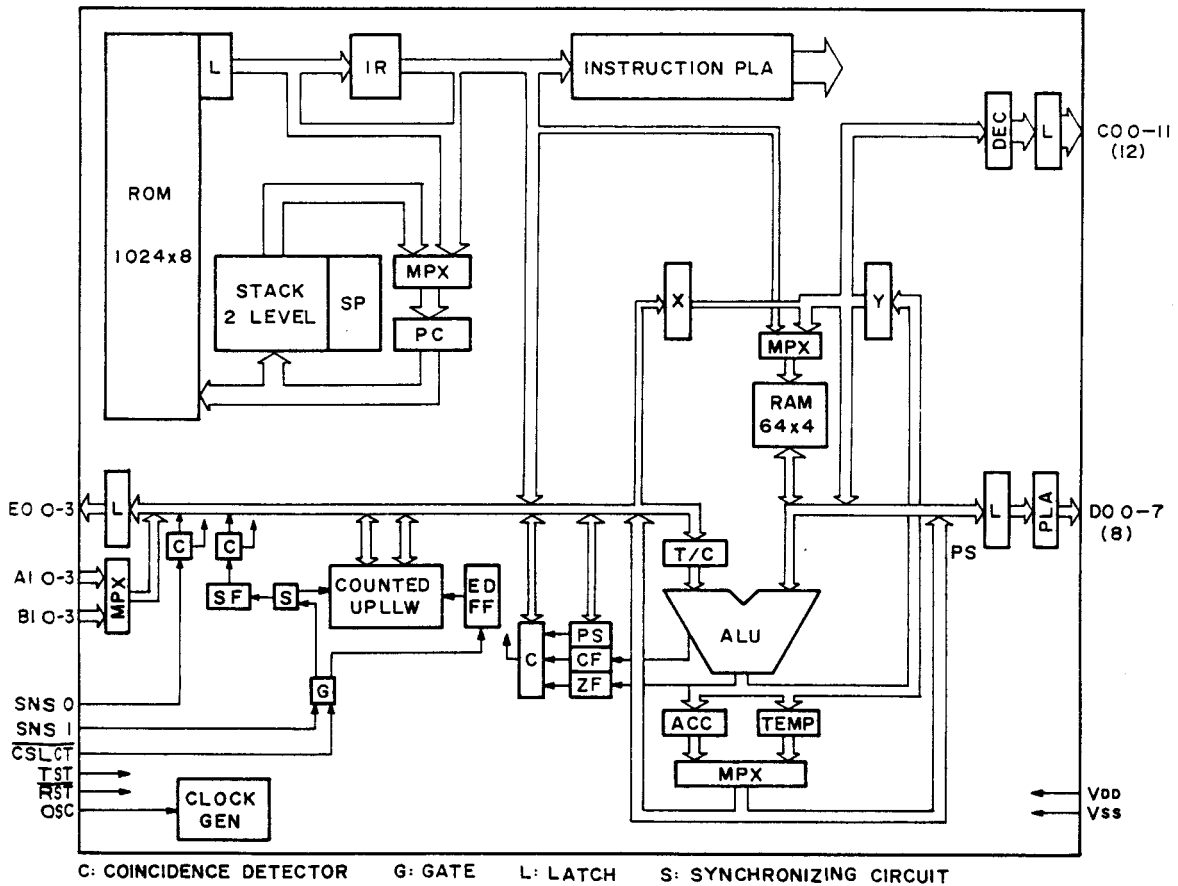


Figure 3

### [3] Specifications

Type No.	Function	Maximum Ratings (Ta = 25°C)			Electrical Characteristics (Ta = 25°C)						
		Item	Rating	Unit	Item	Condition	Min.	Typ.	Max.	Unit	
MN1400	N-Channel LOCOS E/D MOS 4-Bit · 1 Chip Microcomputers	V <sub>DD</sub>	-0.3~+10	V	I <sub>DD</sub>	V <sub>DD</sub> = 5V Without load		20	40	mA	
		V <sub>I</sub>	-0.3~+10	V							
		V <sub>O</sub>	-0.3~+10	V	P <sub>T</sub>	V <sub>DD</sub> = 5V Without load		100	200	mA	
		V <sub>OSC</sub>	-0.3~+10	V							
		I <sub>OH</sub> (PK) (C,D,E Port)	-0.5	mA	V <sub>IH1</sub>	A10~A13, B10~B13 SNS0, SNS1 V <sub>DD</sub> = 5V	2.4		V <sub>DD</sub>	V	
		I <sub>OL</sub> (PK) (C,D,E Port)	8	mA	V <sub>IL1</sub>		V <sub>SS</sub>	0.8			
		I <sub>OH</sub> (aV) (C,D,E Port)	-0.25	mA	V <sub>IH2</sub>	RST, CSLCT, RDY V <sub>DD</sub> = 5V	2.4		V <sub>DD</sub>	V	
		I <sub>OL</sub> (aV) (C,D,E Port)	4	mA	V <sub>IL2</sub>		V <sub>SS</sub>	0.8			
		P <sub>T</sub>	500	mW	I <sub>I2</sub>	V <sub>I</sub> = 0.8V	-5	-15	-30	μA	
		Topr	-30~+70	°C	V <sub>OH1</sub>	CO0~CO11, DO0~DO7, SYNC, EO0~EO3, DOPS, RA0~RA10	V <sub>DD</sub> = 5V I <sub>OH</sub> = -30μA	4			V
		Tstg	-55~+125	°C	V <sub>OH2</sub>		V <sub>DD</sub> = 5V I <sub>OH</sub> = -100μA	2.6			
		Operating Condition (Ta = 25°C)			V <sub>OL</sub>		V <sub>DD</sub> = 5V I <sub>OL</sub> = 2mA			0.5	
		Item	min.typ.max.	Unit	f <sub>OSC</sub>	V <sub>DD</sub> = 5V, R <sub>OSC</sub> = 18kΩ, C <sub>OSC</sub> = 100pF	200	300	450	kHz	
		V <sub>DD</sub>	4,5,5,6	V	C <sub>1</sub>	V <sub>DD</sub> = 5V, V <sub>I</sub> = 2V		5			pF
					C <sub>0</sub>	V <sub>DD</sub> = 5V, V <sub>I</sub> = 2V		7			

### [4] Functions of terminals

No.	Symbol	Item	No.	Symbol	Item
1	V <sub>SS</sub>	GND	40	OSC	360 kHz In
2	CO11		39	V <sub>DD</sub>	5V
3	CO10	Muting Output (H)	38	DO7	
4	CO9	Band: AM/FM Select Signal Output	37	DO6	Segment output: c
5	CO8	Load signal output to PLL latch circuit	36	DO5	Segment output: d
6	CO7	Memory chip enabling output	35	DO4	Segment output: a
7	CO6		34	DO3	Segment output f Frequency-division ratio preset output
8	CO5	Digit output: AM, FM, ME, FM Stereo	33	DO2	Segment output e Frequency-division ratio preset output
9	CO4	5th digit	32	DO1	Segment output g Frequency-division ratio preset output
10	CO3	4th digit	31	DO0	Segment output b Frequency-division ratio preset output
11	CO2	3rd digit	30	SNS1	5V
12	CO1	2nd digit	29	SNS0	
13	CO0	1st digit	28	CSLCT	GND
14	A13	Key mode switch input	27	RST	Reset
15	A12	Key mode switch input	26	TST	
16	A11	Key mode switch input	25	EO3	Key mode switch output
17	A10	Key mode switch input	24	EO2	Key mode switch output
18	B13	5V	23	EO1	Key mode switch output
19	B12		22	EO0	Memory PLL address latch select output
20	B11		21	B10	Squelch input (L)

### 3.3 PLL LSI MN6142

#### [1] Terminal connections

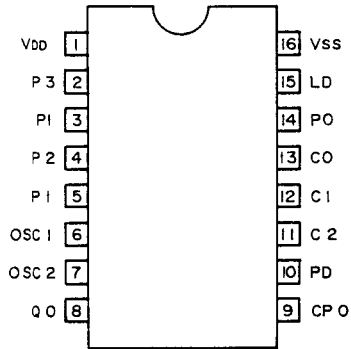


Figure 4

#### [2] Specifications

Absolute maximum ratings				
Item	Symbol	Rating	Unit	Remarks
Power supply voltage	$V_{DD}$	-0.3 - +10	V	$V_{SS} = 0V$
Power consumption	$P_T$ (MAX)	50	mW	
Input voltage	$V_{IN}$	-0.3 - $V_{DD} + 0.3$	V	$V_{SS} = 0V$
Output voltage	$V_{OUT}$	-0.3 - $V_{DD} + 0.3$	V	$V_{SS} = 0V$
Operating temperature	$T_{opr}$	-20 - +70	°C	
Storage temperature	$T_{stg}$	-55 - +100	°C	

#### [3] Block diagram

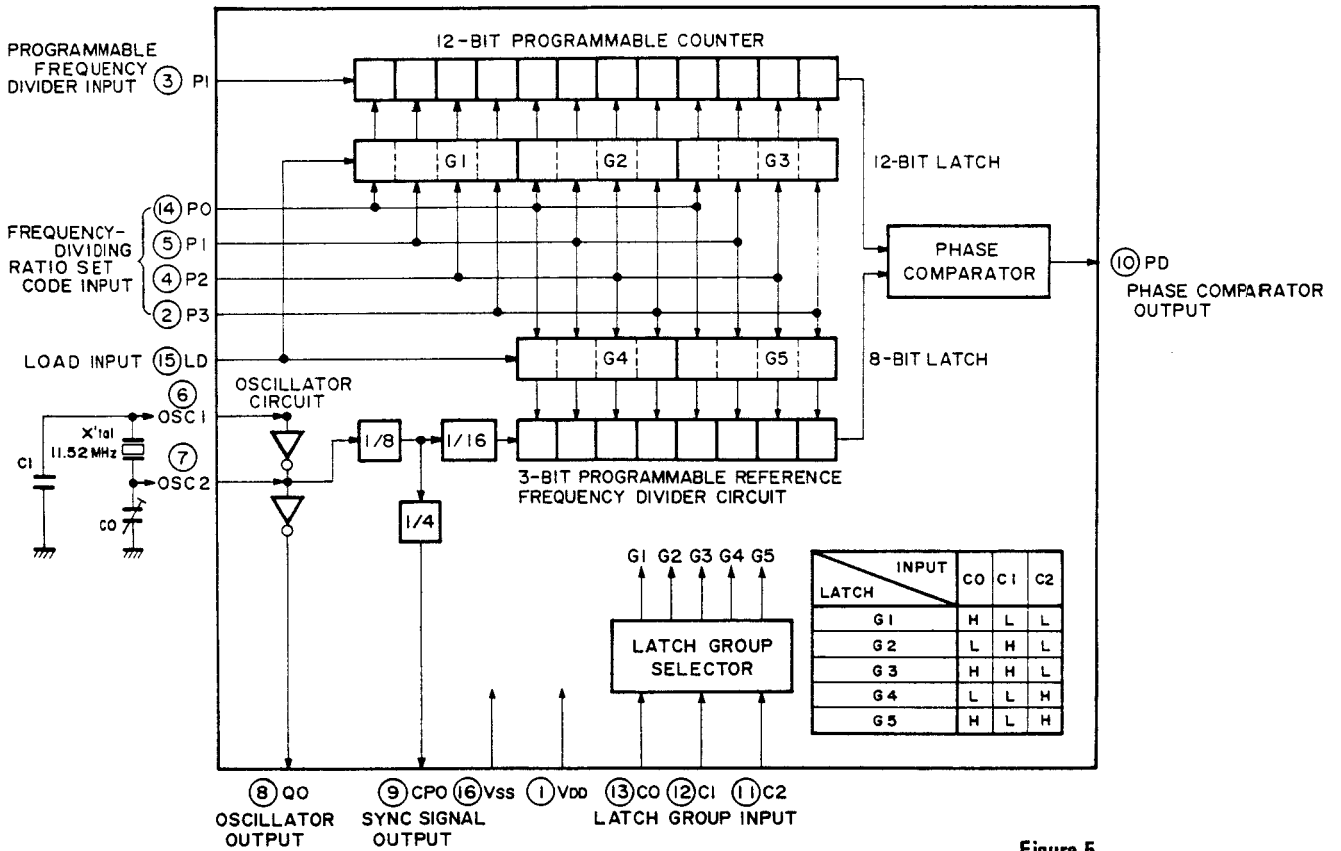


Figure 5

[4] Functions of terminals

No.	Symbol	Descriptions
1	V <sub>DD</sub>	Power supply +5V
2	P <sub>3</sub>	Frequency dividing ratio preset code input
3	P <sub>1</sub>	Programmable frequency divider input
4	P <sub>2</sub>	Frequency dividing ratio preset code input
5	P <sub>1</sub>	Frequency dividing ratio preset code input
6	OSC1	Oscillator
7	OSC2	Oscillator
8	QO	Oscillator output, 11.52 MHz
9	COP	Sync signal output, 360kHz
10	PD	Phase comparator output
11	C <sub>2</sub>	Latch group select input
12	C <sub>1</sub>	Latch group select input
13	CO	Latch group select input
14	PO	Frequency dividing ratio preset code input
15	LD	Load signal terminal for frequency dividing ratio preset coad input latch circuit
16	V <sub>SS</sub>	Ground

3.4 CMOS RAM MN1203

[1] Terminal connections

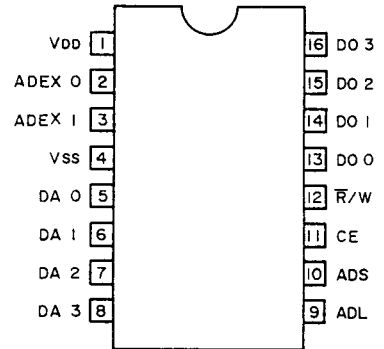


Figure 6

[2] Specifications

Absolute maximum ratings				
Item	Symbol	Rating	Unit	Remarks
Power supply voltage	V <sub>DD</sub>	-0.3 - +8.0	V	V <sub>SS</sub> = 0V
Input voltage	V <sub>IN</sub>	-0.3 - V <sub>DD</sub> + 0.3	V	V <sub>SS</sub> = 0V
Output voltage	V <sub>OUT</sub>	-0.3 - V <sub>DD</sub> + 0.3	V	V <sub>SS</sub> = 0V
Operating temperature	T <sub>opr</sub>	-20 - +70	°C	
Storage temperature	T <sub>stg</sub>	-55 - +100	°C	

[3] Block diagram

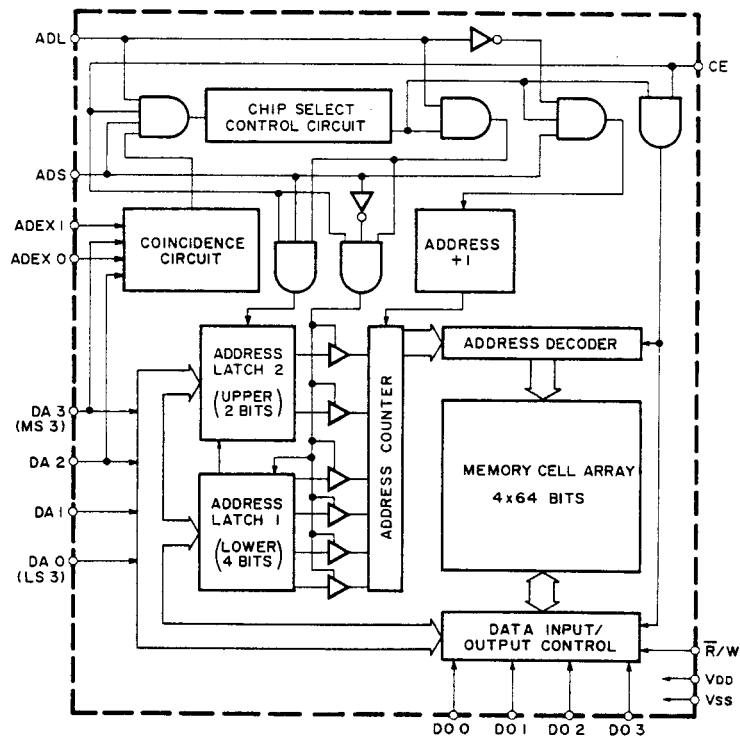


Figure 7



#### [4] Functions of terminals

No.	Symbol	Descriptions
1	VDD	Power supply, +5V
2	ADEX0	Chip select input
3	ADEX1	Chip select input
4	VSS	Ground
5	DA0	Data/address input
6	DA1	Data/address input
7	DA2	Data/address input
8	DA3	Data/address input
9	ADL	Address latch data input
10	ADS	Address latch select input
11	CE	Chip enable input
12	R/W	Writing designation input
13	DO0	Data output
14	DO1	Data output
15	DO2	Data output
16	DO3	Data output

### 3.5 Prescaler uPB551C

#### [1] Terminal connections

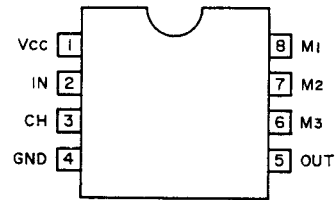


Figure 8

#### [2] Specifications

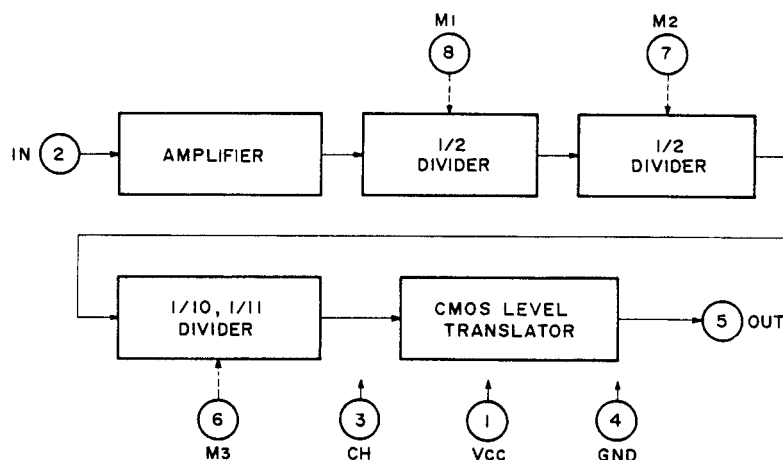
##### Absolute maximum ratings (Ta = 25°C)

Item	Symbol	Rating	Unit
Power supply voltage	V <sub>CC</sub>	-0.5 - +6.0	V
Input voltage	V <sub>i</sub>	-0.5 - V <sub>CC</sub>	V
Output current	V <sub>o</sub>	15	mA
Junction temperature	T <sub>j</sub>	+125	°C
Storage temperature	T <sub>stg</sub>	-55 - +125	°C

#### Electrical characteristics (V<sub>CC</sub> = 5V ±10%, Ta = -30 - +75°C)

Item	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Power supply current	I <sub>CC</sub>	V <sub>CC</sub> = 5.0V		38	52	mA
High level output voltage	V <sub>OH</sub>	Out terminal I <sub>o</sub> = -40μA	4.0			V
Low level output voltage	V <sub>OL</sub>	Out terminal I <sub>o</sub> = 1.0mA			1.0	V
High level input voltage	V <sub>IH</sub>	M <sub>3</sub> terminal *1	4.0			V
Low level input voltage	V <sub>IL</sub>	M <sub>3</sub> terminal *2			1.0	V
Input voltage	V <sub>in</sub>	IN terminal	140			mVr.m.s.
Response frequency	fin <sub>1</sub>	IN terminal, 1/10, 1/11 frequency-division *3	1.0		100	MHz
Response frequency	fin <sub>2</sub>	IN terminal, other than 1/10, 1/11 frequency-division *3	1.0		150	MHz

#### [3] Block diagram



V<sub>CC</sub> : "+" POWER SUPPLY  
 IN : SIGNAL INPUT  
 CH : CHECK TERMINAL  
 GND : GROUND  
 OUT : FREQUENCY-DIVISION OUTPUT  
 M3-M1 : FREQUENCY-DIVISION RATIO SETTING

Figure 9

### 3.6 Principles of operation of PLL Synthesizer Tuning System

This synthesizer system incorporates a PLL circuit and a microcomputer to electronically select radio stations by varying the capacity of a varactor diode, eliminating the need for a mechanical variable condenser.

The basic operation of the system is illustrated in Fig. 10. When a reverse voltage is applied to the varactor diode, the junction capacity of the diode is varied which in turn varies the tank tuning frequency and hence the antenna circuit, RF amplifier and local oscillator circuit are tuned to the desired radio frequency.

In FM tuning, the local oscillator frequency  $f_L$  is divided by 20 by the prescaler, since it is as high as  $\star 98.8-118.6$  MHz (or  $\star 98.2-118.7$  MHz). The divided frequency is then applied to the 1/N programmable counter where it is further divided by N. The divided signal ( $f_L'$ ) is phase compared with the reference signal ( $f_r$ ), which the crystal oscillator frequency (11.52 MHz) is count down by the reference frequency divider. If there is a difference in frequency or phase between the two signals, an error output ( $e_r$ ) corresponding to the difference is produced.

The error output is a pulse signal and its DC component is

picked up by the LPF in the next stage. The DC component is fed back to the varactor diode to vary the local oscillator frequency.

When the local oscillator frequency is varied and " $f_r$ " and " $f_L$ " are equal, the phase sync loop is locked.

$$f_L' = f_L / 20N = f_r$$

$$f_L = 20Nf_r$$

By changing the value of N (an integer) fed from the microcomputer to the 1/N programmable counter, the local oscillator frequency can be varied in 20fr steps. When tuning FM in 200kHz steps, the value of  $N = 2N'$  ( $N'$ : integer) is fed from the microcomputer. Proper tracking adjustment between the tuning circuit for the antenna and RF amplifier and the local oscillator tuning circuit enables reception of the desired station.

The microcomputer programs the relationship between the receiving mode, intermediate frequency and the value of N and feeds the data of the receiving frequency via the driver to indicate the tuned frequency on the fluorescent tube indicator.

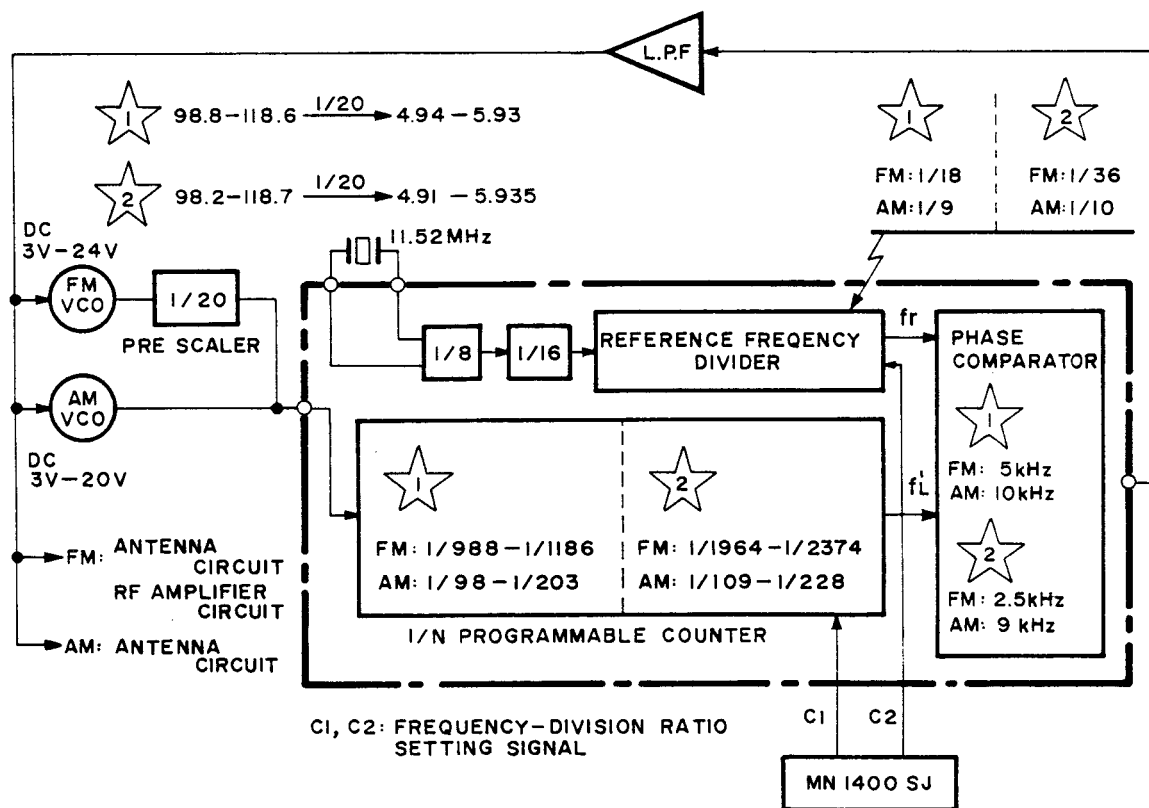
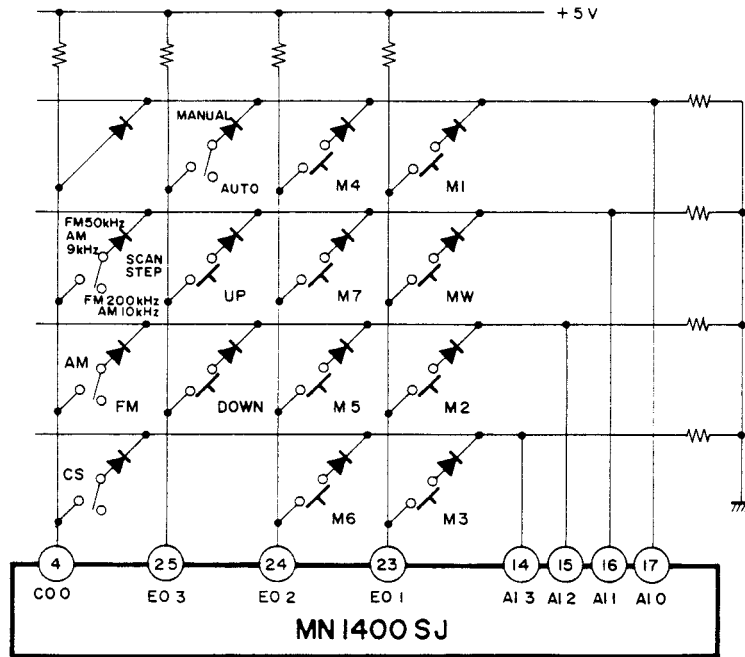


Figure 10

	SCAN STEP	Receiving frequency	Intermediate frequency	Local Oscillator frequency	Number of channels	Phase comparator reference frequency
$\star 1$	FM: 200kHz AM: 10kHz	88.1MHz - 107.9MHz 530kHz - 1,610kHz	10.7MHz 450kHz	98.8MHz - 118.6MHz 980kHz - 2,060kHz	100 109	5kHz 10kHz
$\star 2$	FM: 50kHz AM: 9kHz	87.50MHz - 108.00MHz 531kHz - 1,602kHz	10.7MHz 450kHz	98.2MHz - 118.7MHz 981kHz - 2,052kHz	411 120	2.5kHz 9kHz

**Mode Setting and Control Key Connections**



**Figure 11**

**MW:** Memory write

- \* Memory write is possible with key input.
- \* Memory write mode is retained for 5 seconds after key input is turned ON.

**M1 – M7:** Memory address

- \* Received station is stored in memory by key input in memory write mode.
- \* Station frequency scanned in memory is called in modes other than "memory write".

**UP, DOWN:** Up/Down scan

Mode switch in AUTO: Scanned at about 110 msec/ch intervals.

Mode switch in MANUAL: a) Step scan by channel.  
b) Scanned at about 90 msec/ch one second after continuous key input.

**Scan stop:** AUTO . . . Activated by Squelch signal (receive signal).

MANUAL . . . Activated by Key input OFF.

**AUTO/MANUAL:** Scan AUTO/MANUAL select switch.

- \* AUTO . . . Automatic scan with up/down key input.
- \* MANUAL . . Manual scan with up/down key input.

**AM/FM:** AM/FM select switch

- \* Selects AM and FM bands.
- \* Calls the last channel of the selected band.

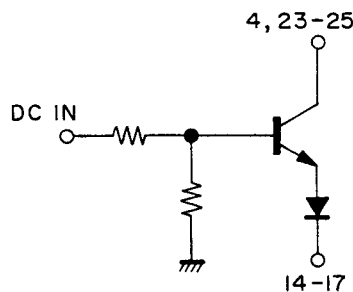
**CS:** Chip select switch

- \* Display goes off at ON position.
- \* Control key input is inhibited at the same time .

**SCAN STEP:** Channel space and frequency select switch

- \* AM 10K: 10kHz space 530kHz – 1610kHz
- \* FM 200K: 200kHz space 88.1MHz – 107.9MHz
- \* AM 9K: 9kHz space 531kHz – 1602kHz
- \* FM 50K: 50kHz space 87.50MHz – 108MHz

Switches other than SCAN STEP are transistor switches and used for remote control capability.



**Figure 12**

### Indicator

The indicator employs fluorescent tubes for dynamic lighting.

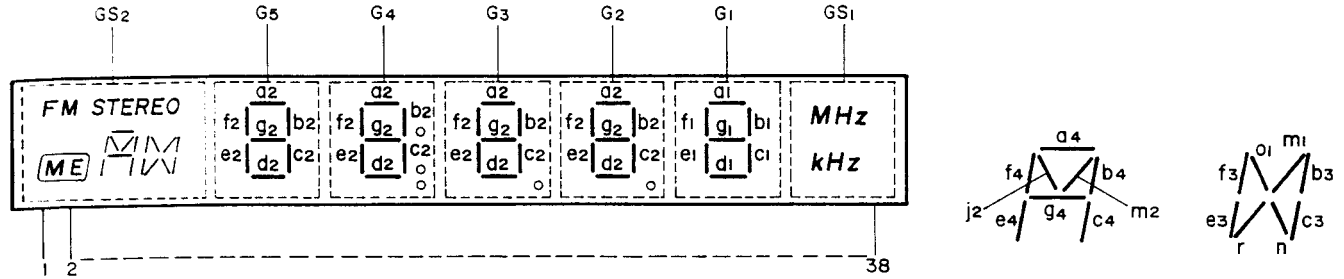


Figure 13

Pin. No.	Connection	Pin. No.	Connection	Pin. No.	Connection	Pin. No.	Connection
1	F	11	b <sub>4</sub>	21	G <sub>3</sub>	31	a <sub>2</sub>
2	FM STEREO	12	a <sub>4</sub>	22	e <sub>2</sub>	32	g <sub>1</sub>
3	ME	13	G <sub>5</sub>	23	Dp <sub>3</sub>	33	b <sub>1</sub> , e <sub>1</sub>
4	GS <sub>2</sub>	14	j <sub>1</sub> , m <sub>1</sub>	24	Dp <sub>2</sub>	34	GS <sub>1</sub>
5	j <sub>2</sub> , m <sub>2</sub>	15	n, r	25	d <sub>2</sub>	35	a <sub>1</sub> , f <sub>1</sub> , c <sub>1</sub> , d <sub>1</sub>
6	g <sub>4</sub>	16	b <sub>3</sub> , c <sub>3</sub> , e <sub>3</sub> , f <sub>3</sub>	26	G <sub>2</sub>	36	KHz
7	e <sub>4</sub>	17	G <sub>4</sub>	27	Dp <sub>1</sub>	37	MHz
8	d <sub>4</sub>	18	g <sub>2</sub>	28	C <sub>2</sub>	38	F
9	c <sub>4</sub>	19	f <sub>2</sub>	29	b <sub>2</sub>		
10	GS <sub>2</sub>	20	Co1	30	G <sub>1</sub>		

### Dynamic lighting Timing chart

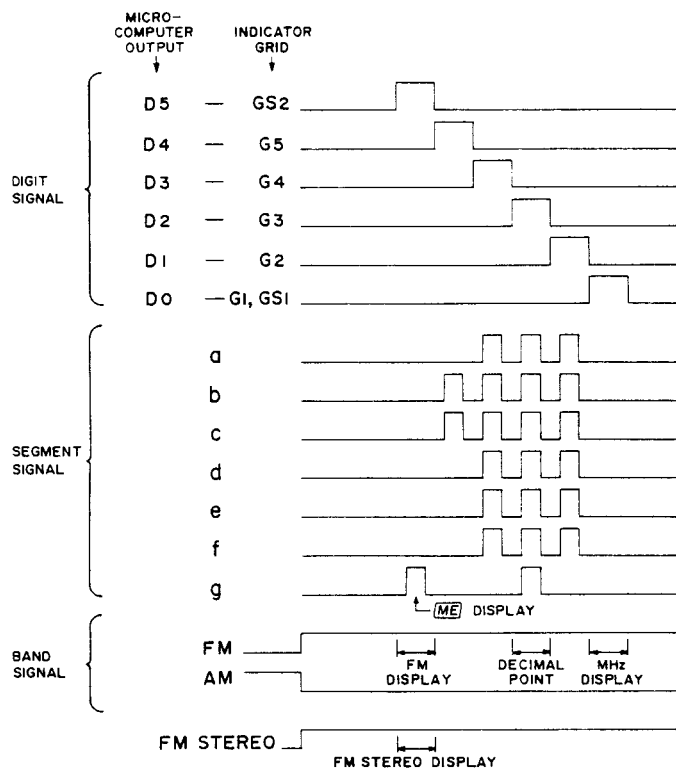


Figure 14

\*In the above timing chart, the display lights on FM STEREO, ME and FM 108.00 MHz.

\*For the indication of minimum digit (G1), the segments

a1, c1, d1 and f1 are always lighted, the letter 5 is lighted by the signal g, and the figure 0 is lighted by signals b1 & e1 fed by Q902 & Q903 when the signal g is low level.

## 4. ALIGNMENT PROCEDURES

A dummy resistor of 47 kohms must be connected across the tuner output terminals before alignment.

### 4.1 FM Alignment Procedures (Selector switch in the "FM" position, Rec. Mode Switch in the "Direct" position and mode/tuning switch in the "Mono/Manual" position)

Step	Signal Source Connection	Signal Frequency	Indicator Connection	Set the Digital Read out Frequency to:	Adjust:
<b>FM LOCAL OSCILLATOR ALIGNMENT</b> (Scan step selector switch (SU51) in the "50 KHz" position)					
1			DC Volt meter in 30V and 3V range to point (A) (J120 or JA12)	108.00 MHz	C159 for 20.0V
2				87.50 MHz	L106 for 3.0V
3	Repeat steps 1 and 2.				
<b>FM RF ALIGNMENT</b>					
1	RF generator to FM antenna terminals (B) through matching network (300 ohms balanced) (Maintain RF level below limit)	106, 10 MHz	VTVM to L or R channel output (JT51 or JV11)	106, 10 MHz	C156, C157, C158 for maximum output and minimum distortion
2		90, 10 MHz		90, 10 MHz	L101, L120, L121 for maximum output and minimum distortion
3	Repeat steps 1 and 2				
4	RF generator to FM antenna terminals (B) through matching network (300 ohms balanced) (Maintain RF level below limit)	98, 10 MHz	VIVM to L or R channel output (JT51 or JV11)	98, 10 MHz	L105 for maximum output and minimum distortion
5	No. Connection	No. Signal	"O" Center Meter or DC current meter in 100 $\mu$ A range to point (C) (J131 and J132)		L109 Core so that the meter indicator its center or may read "O"
6	RF generator 1mV output to FM antenna terminals B through matching network (300 ohms, balanced)	98, 10 MHz	Distortions meter to L or R Channel output (JT51 or JV11)	98, 10 MHz	L110 core for minimum distortion
7					RS51 so that signal Strength Led may light 5 points
<b>Muting circuit Alignment</b> (FM Stopping Level of Scanning FM Stereo indicator threshold Level)					
1	RF generator 12.5 $\mu$ V output to FM antenna terminal (B) through matching network (300 ohms balanced)	98, 10 MHz	VTVM to R or L channel output (JT51 or JV11)	98, 10 MHz	R131 for 12.5 $\mu$ V threshold Level (Setting to Auto position of mode switch)

### MULTIPLEX ALIGNMENT PROCEDURES

(Selector switch in the "FM" position. Rec Mode Switch in the "Direct" position and Mode/Tuning switch in the Stereo/Auto position)

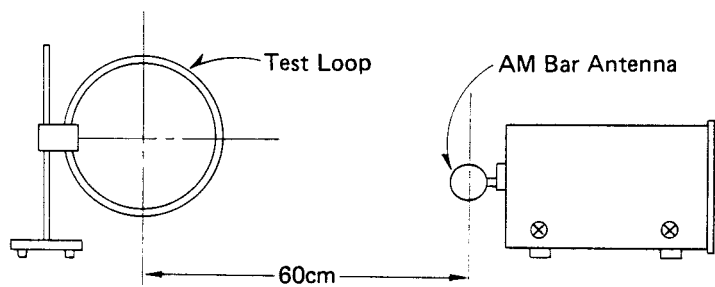
Step	Signal Source Connection	Signal Frequency	Indicator Connection	Set the Digital Read out Frequency to:	Adjust:
1	RF generator to FM antenna terminals (B) through matching network (300 ohms balanced) with 1mV FM stereo simulator RF level and 100% modulation (pilot 9%)	NO, modulation	Frequency counter to point (D) (J302)	98, 10 MHz	R302 so that Frequency counter may precisely read 76kHz
2		Stereo, left (1,000 Hz)	VTVM to right channel (JT51 or JV11)		R326 for maximum output and same separation in both channels.
3		Stereo right (1,000 Hz)	VTVM to left channel output terminal (JT51 or JV11)		
4	Repeat step 2 and 3				
5	RF generator to FM antenna terminals (B) through matching network (300 ohms, balanced). with 1mV FM stereo simulator RF level and Pilot 9% modulation	Pilot only	VTVM to right and left channel output (JT51 or JV11)	98, 10 MHz	R306 so that minimum output should be the same in both channels.

#### 4.2 AM ALIGNMENT Procedures (Selector Switch in the "AM" position. Rec. Mode Switch in the "DIRECT" position and Mode/Tuning switch in the "MONO/MANUAL" position)

Step	Signal Source Connection	Signal Frequency	Indicator Connection	Set the Digital Read out Frequency to:	Adjust:
<b>AM LOCAL OSCILLATOR ALIGNMENT</b> (Scan Step Selector switch (SU51) in the "10KHz" position)					
1	—	—	DC Volt meter in 30V and 3V range to point (A) (J120 or JA12)	1610 kHz	CA35 for 25V
2			530 kHz	LA01 for 2.0V	
3	Repeat step 1 and 2				
<b>AM IF ALIGNMENT</b>					
1	Sweep generator to point (E) (RA20)	450kHz marker	Oscilloscope to point (F) (JA03)	Quiet point on band	LA02 & LA03 for maximum and symmetric response.
<b>AM RF ALIGNMENT</b>					
1	Apply the signal to the AM bar antenna from the RF generator, using the test loop. As per the Figure 15	1400kHz	VTVM to L or R Channel output (JT51 or JV11)	1400kHz	CA49 for maximum output
2		600kHz		600kHz	LO51 for maximum output
3	Repeat step 1 and 2 as necessary to obtain maximum sensitivity.				

**AM STOPPING LEVEL OF SCANNING** (Mode/Tuning Switch in the Stereo/Auto position)

Step	Signal Source Connection	Signal Frequency	Indicator Connection	Set the Digital Read out Frequency to:	Adjust:
1	Apply the signal Level of $700\mu\text{V}$ to the AM bar antenna from the RF generator using the test loop as per the Figure 15	1,000 kHz	VTVM to L or R Channel output (JT51 or JV11)	1,000 kHz	RA34 for $700\mu\text{V}$ threshold Level



**Figure 15**

## 5. VOLTAGE CONVERSION

To convert the unit to a different power source voltage, change the position as illustrated in the drawing below.

**CAUTION: DISCONNECT POWER SUPPLY CORD FROM AC OUTLET BEFORE CONVERTING VOLTAGE. DO NOT DISASSEMBLE THE VOLTAGE SELECTOR ABSOLUTELY.**

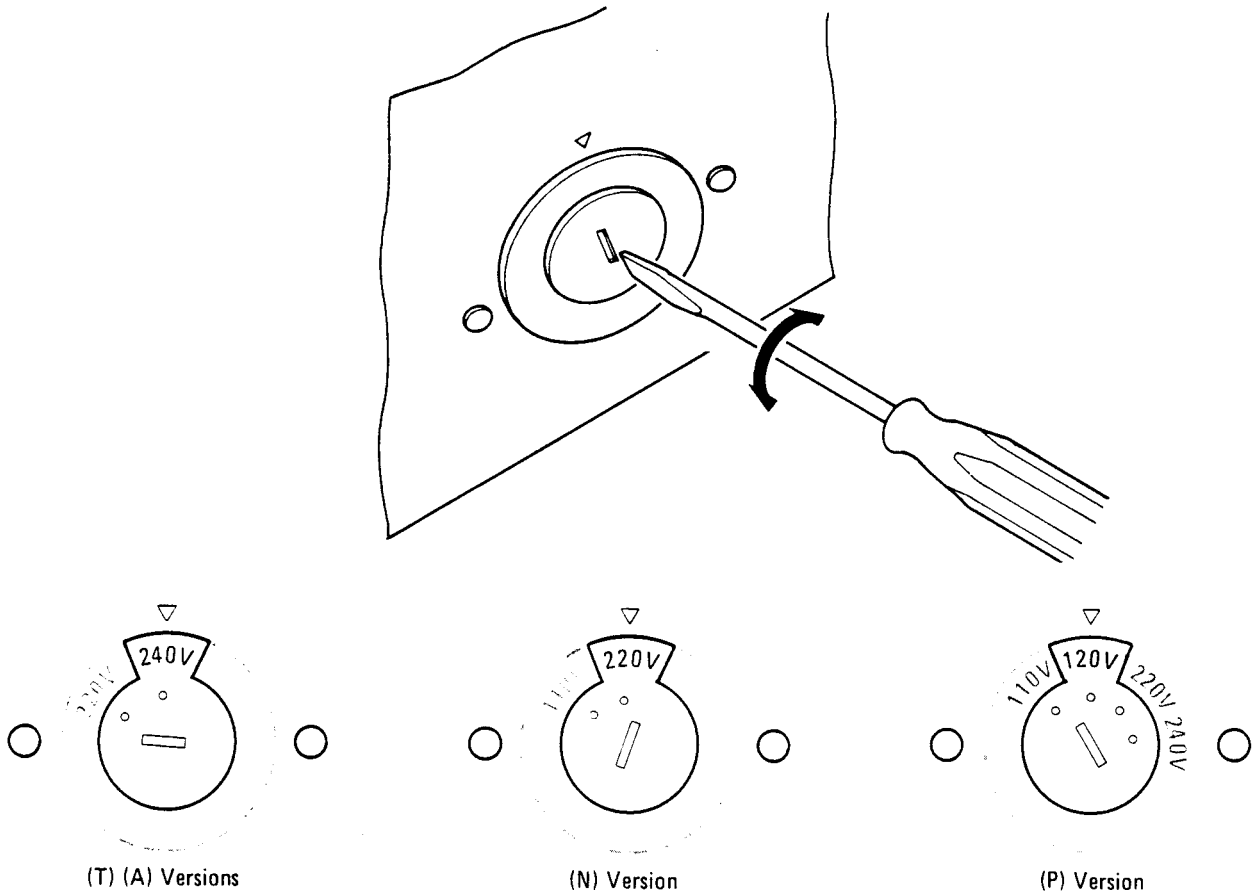


Figure 16. Voltage Conversion

**NOTE ON SAFETY:** THE PARTS MARKED WITH  ARE IMPORTANT PARTS ON THE SAFETY. PLEASE USE THE PARTS HAVING THE DESIGNATED PARTS NUMBERS WITHOUT FAIL.

### FTZ REGULATION

Instruction for the use in the range other than specified in FTZ codes.

Achtung für die Leute, die in dem Gebiet wohnen, wo die FTZ-Bestimmungen vorherrschend sind.

Sollte das Gerät auch für Frequenzen ausserhalb des in den FTZ-Bestimmungen angegebenen Bereiches empfangsbereit sein, bitten wir, den Bereich durch Nachstellen des Kernes in der Oszillatorspule (in der Abbildung mit "FTZ" gekennzeichnet) so zu korrigieren, dass er den Bestimmungen entspricht.



6. DIAGRAM  
6.1 BLOCK DIAGRAM

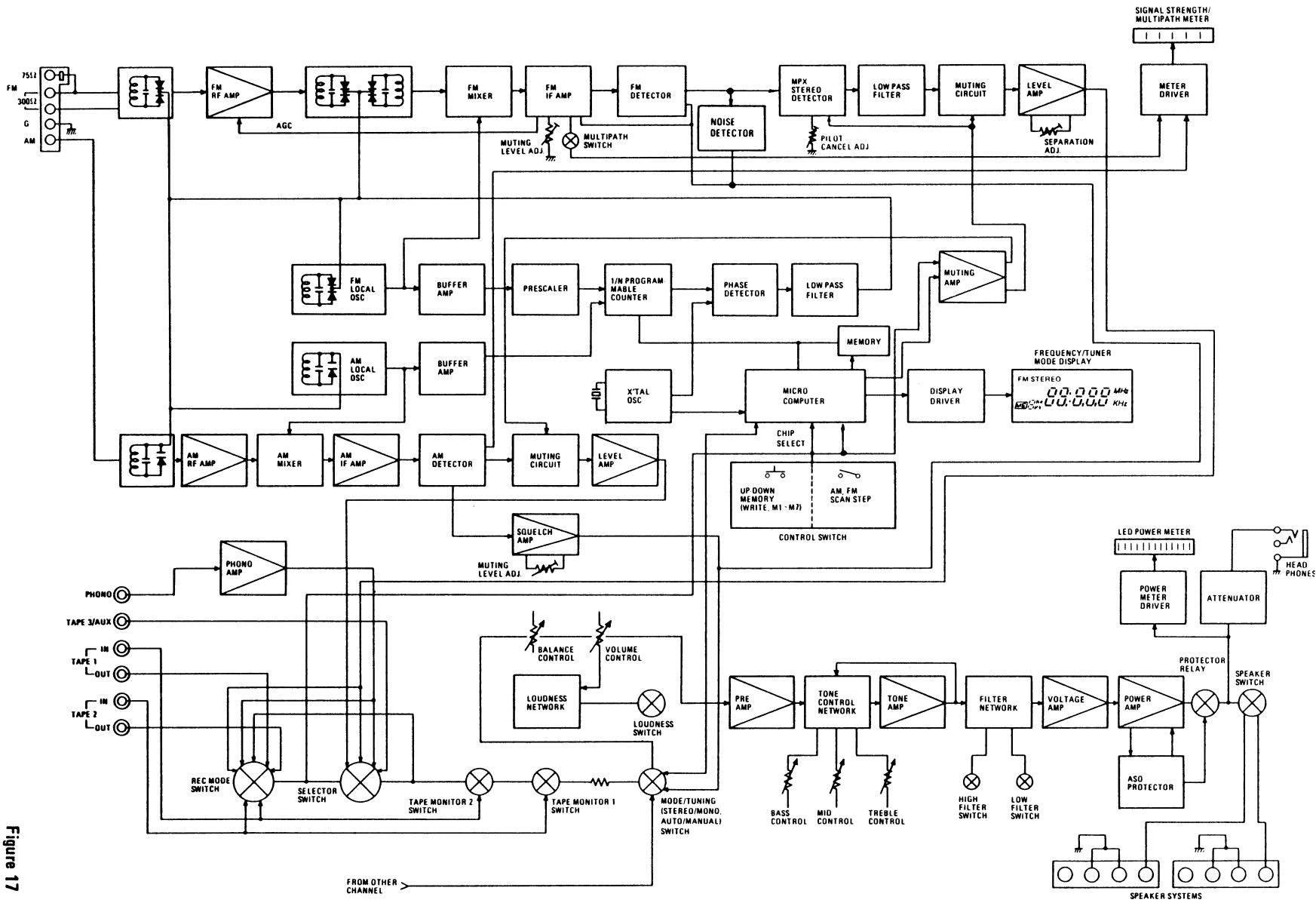
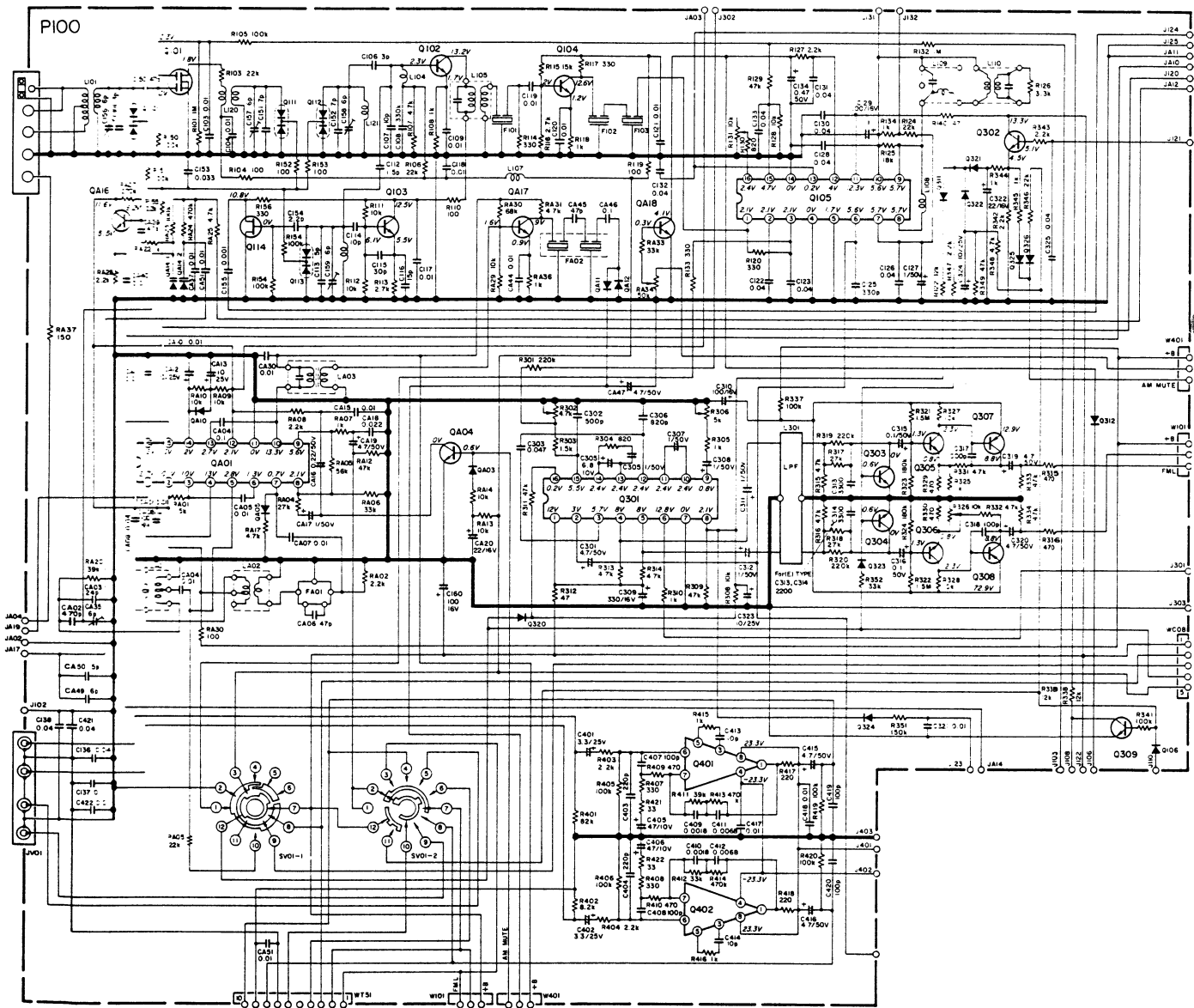
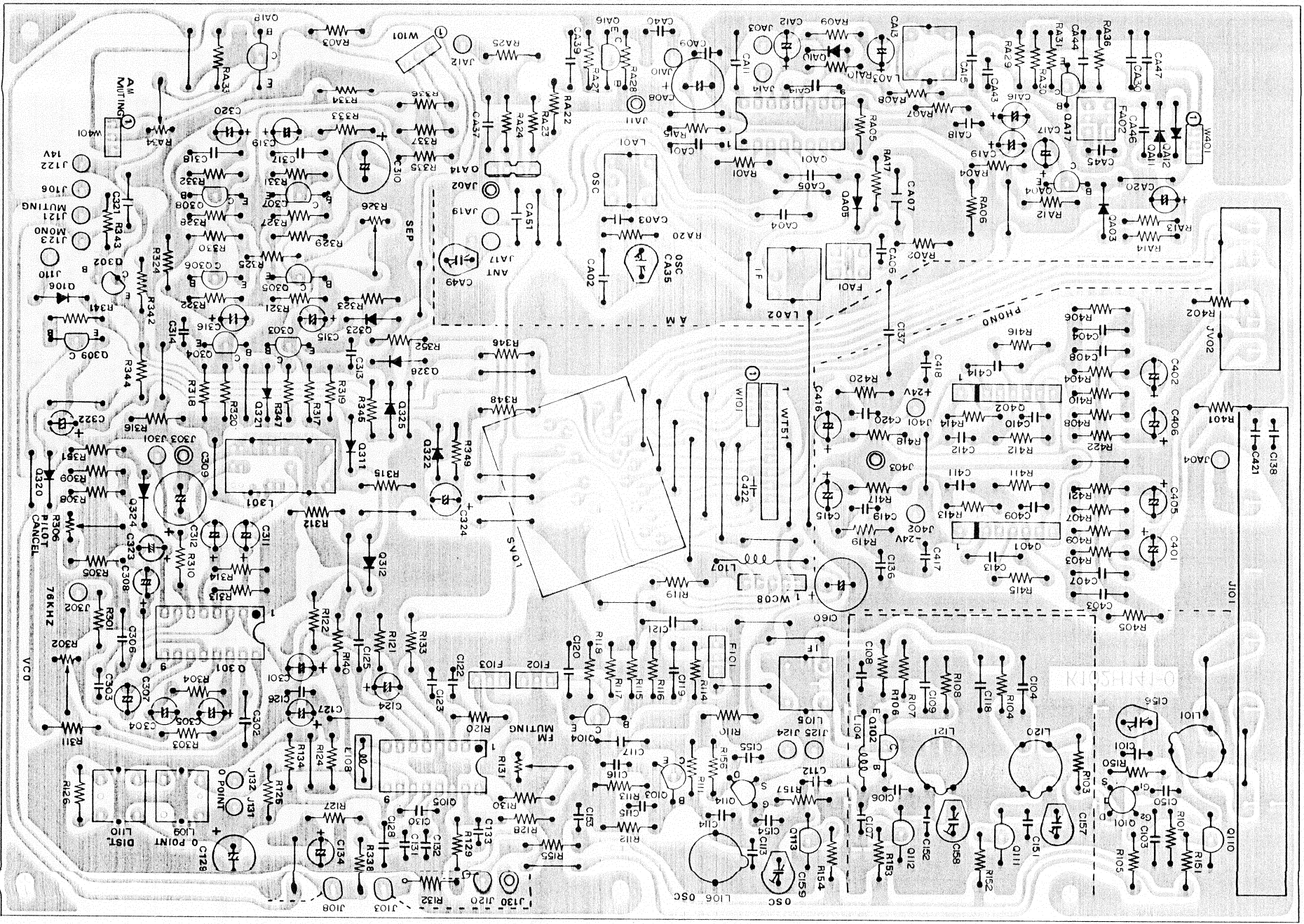


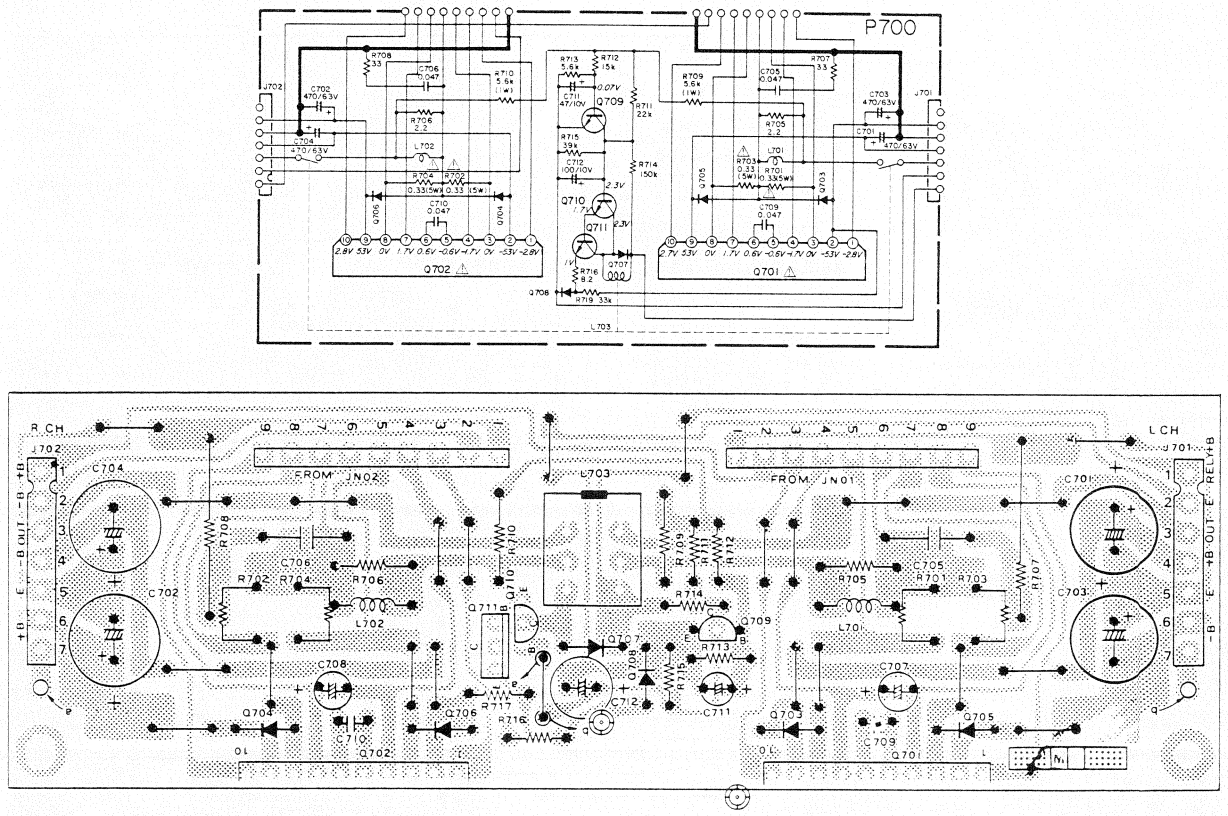
Figure 17

## 6.2 TUNER/PHONO BOARD SCHEMATIC DIAGRAM AND COMPONENT LOCATIONS - P100

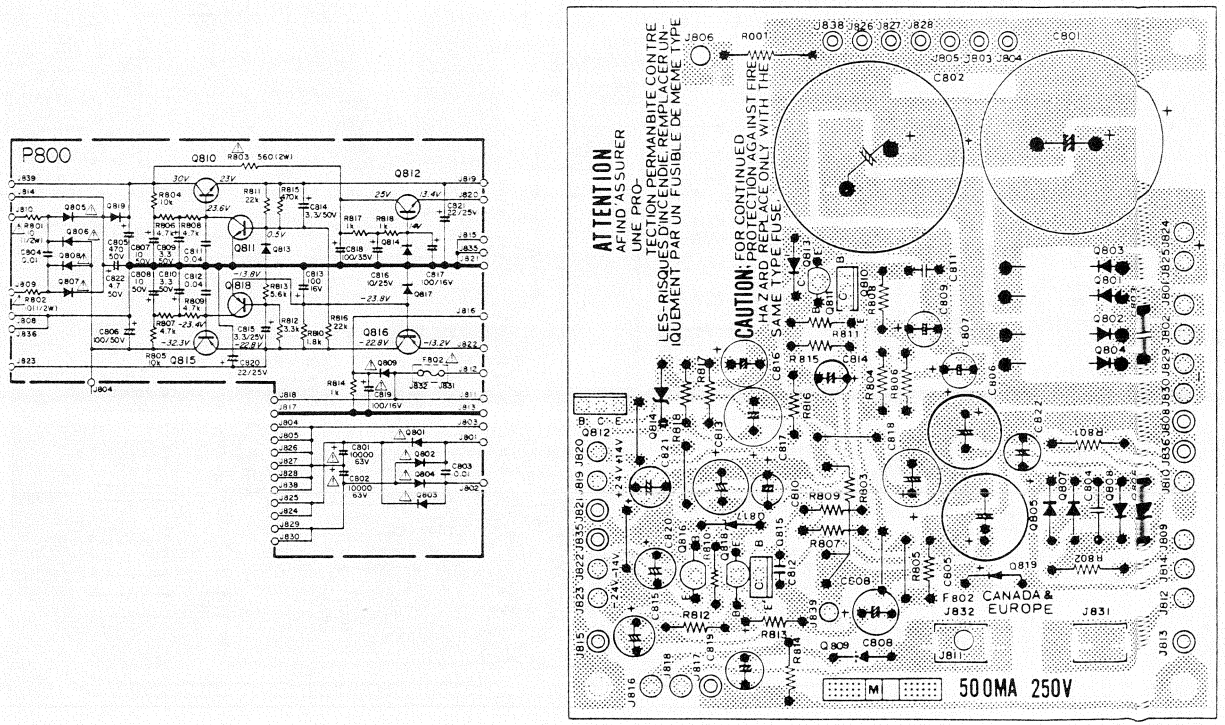




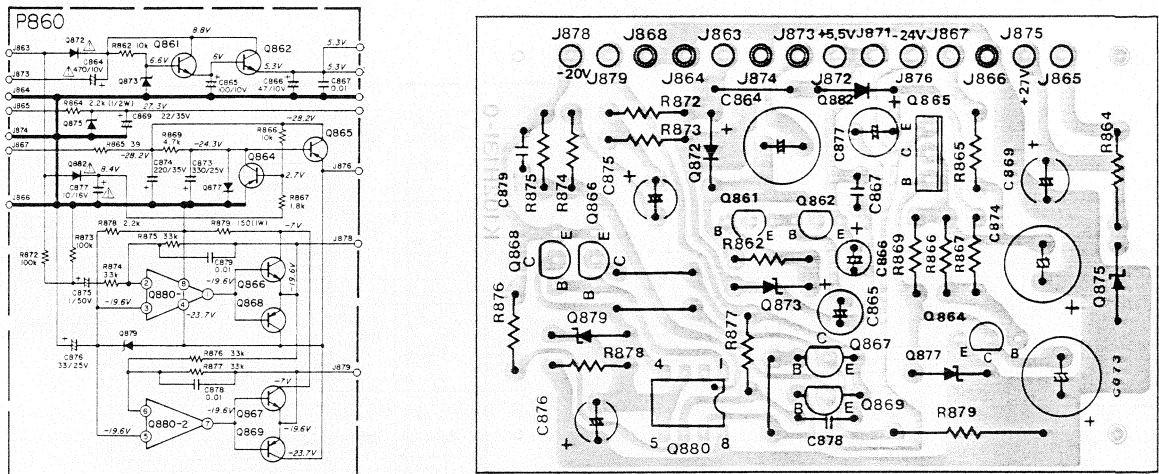
### 6.3 POWER AMP BOARD SCHEMATIC DIAGRAM AND COMPONENT LOCATIONS - P700



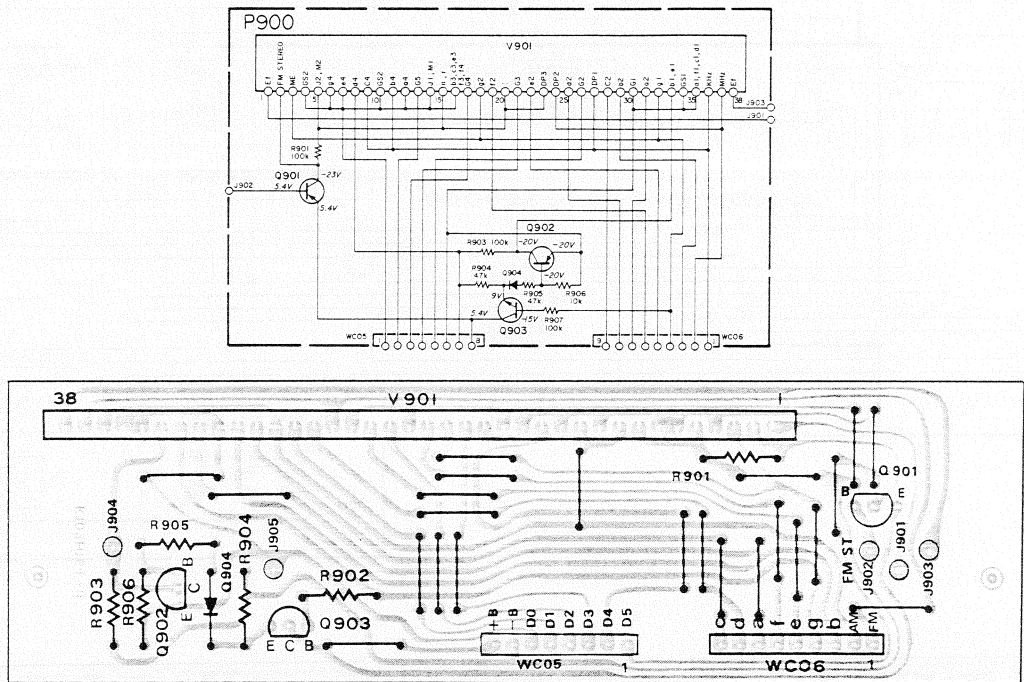
### 6.4 POWER SUPPLY BOARD SCHEMATIC DIAGRAM AND COMPONENT LOCATIONS - P800



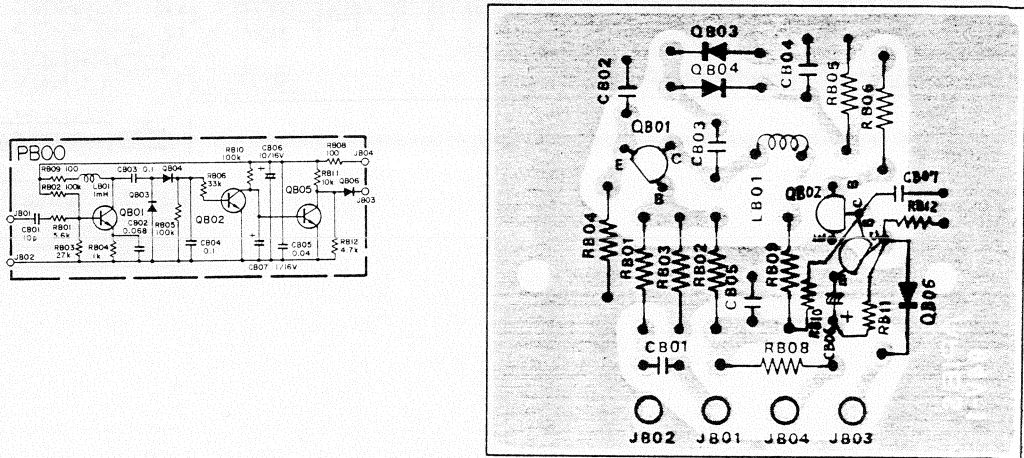
6.5 SUB POWER SUPPLY BOARD SCHEMATIC DIAGRAM AND COMPONENT LOCATIONS - P860



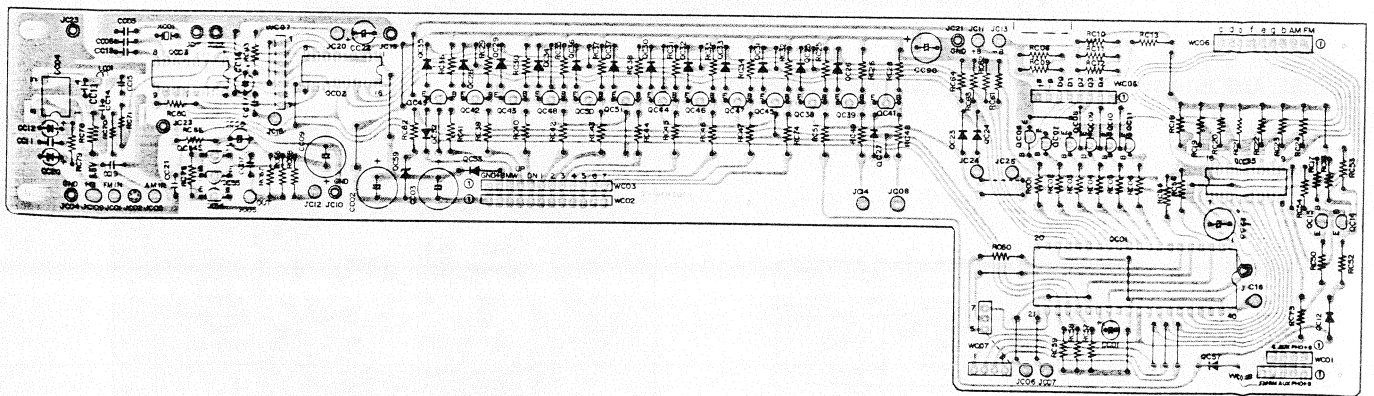
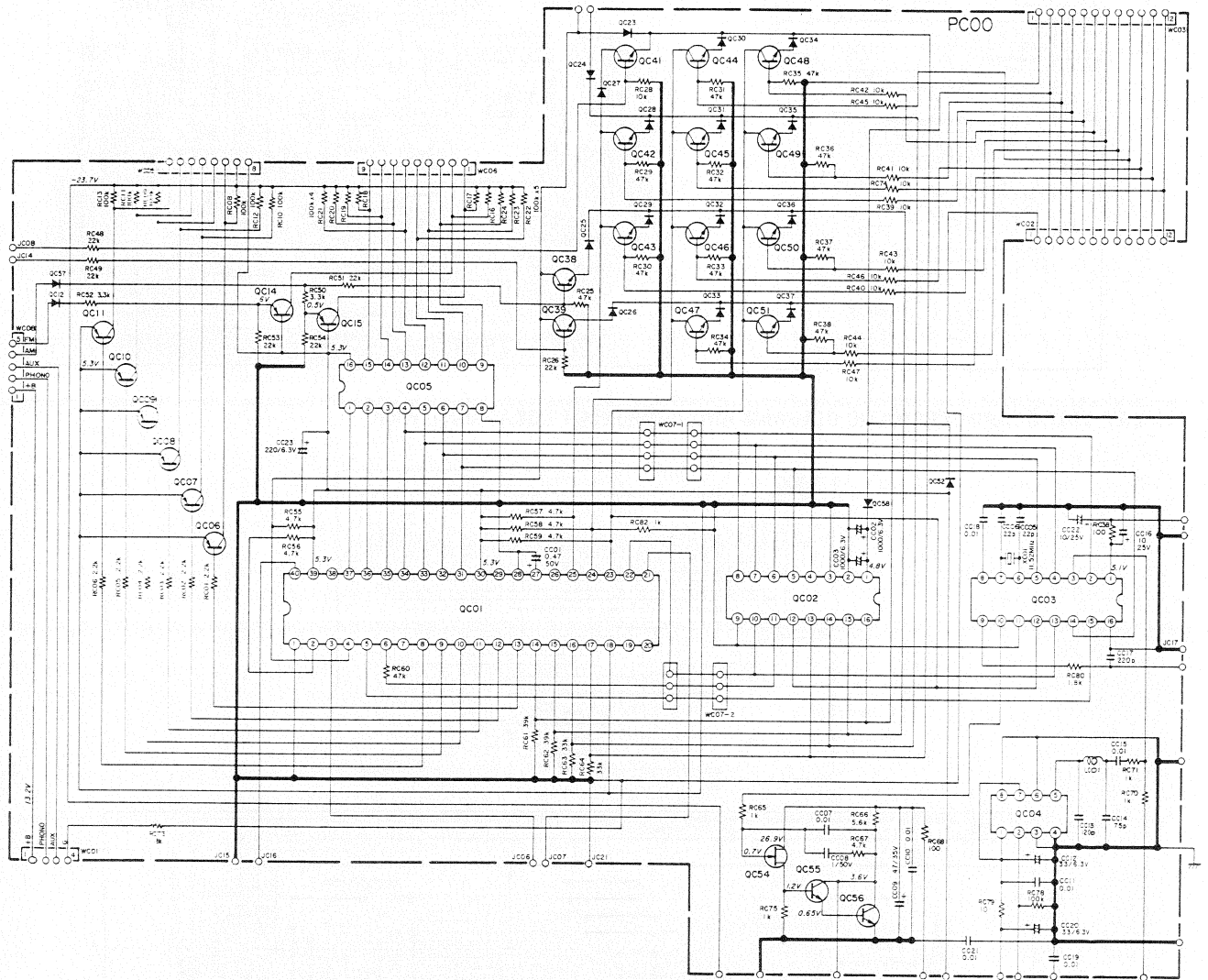
6.6 DISPLAY UNIT BOARD SCHEMATIC DIAGRAM AND COMPONENT LOCATIONS - P900



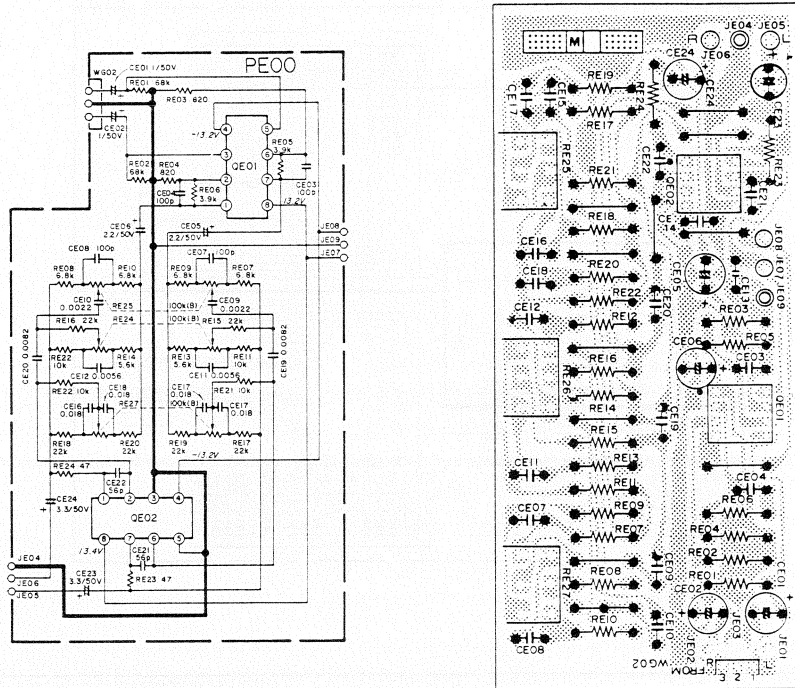
6.7 NOISE AMP BOARD SCHEMATIC DIAGRAM AND COMPONENT LOCATIONS - PB00



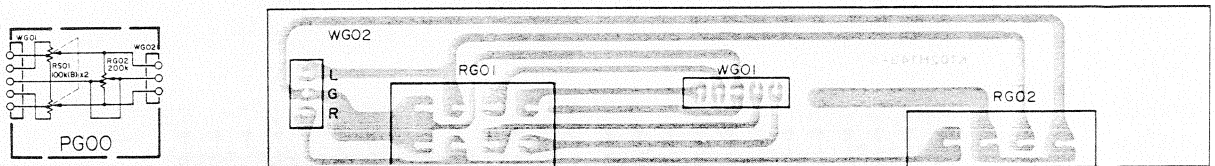
# 6.8 SYNTHESIZER BOARD SCHEMATIC DIAGRAM AND COMPONENT LOCATIONS - PC00



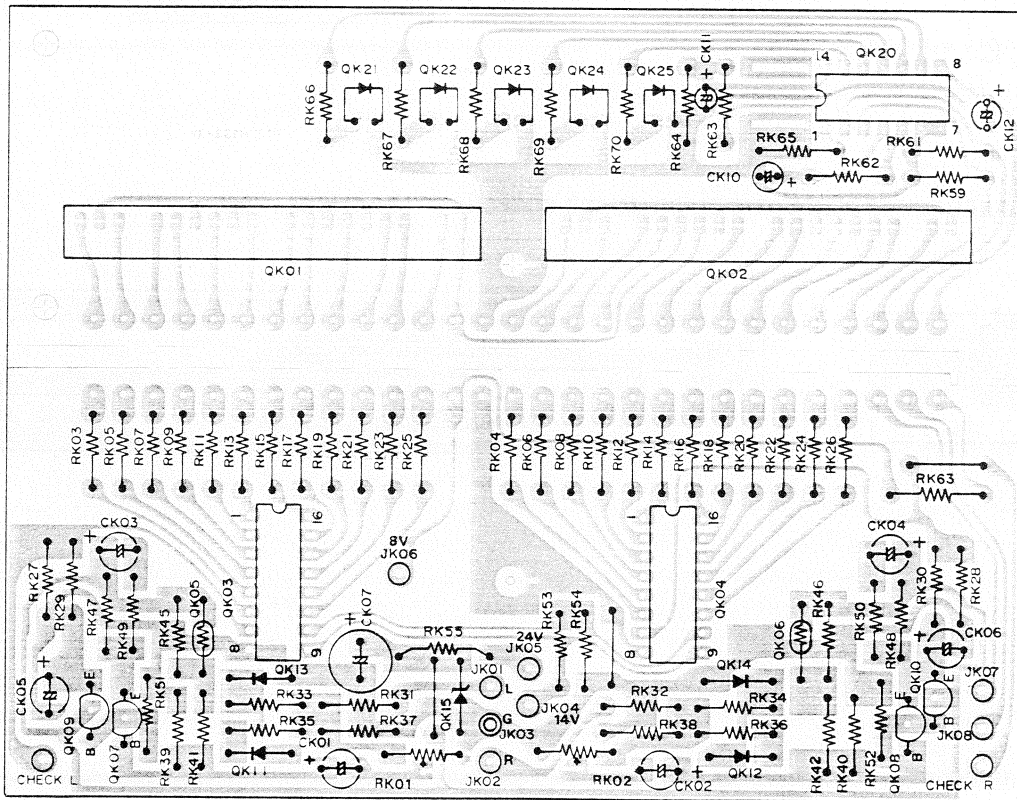
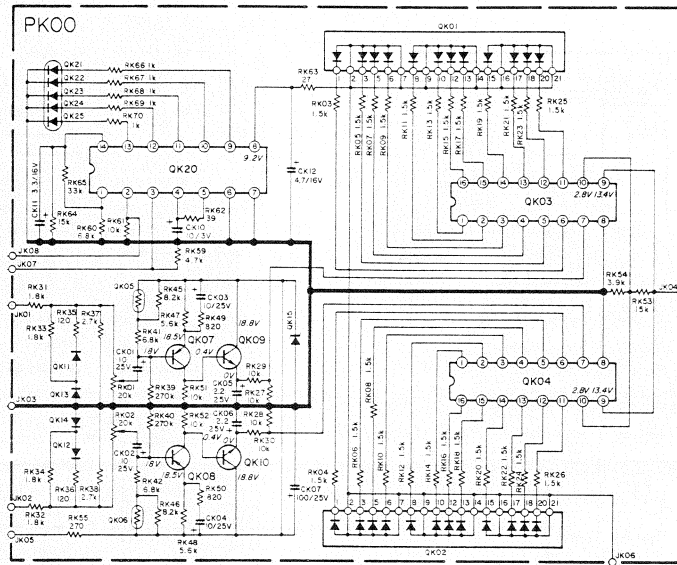
### 6.9 TONE AMP BOARD SCHEMATIC DIAGRAM AND COMPONENT LOCATIONS - PE00



### 6.10 VOLUME/BALANCE BOARD SCHEMATIC DIAGRAM AND COMPONENT LOCATIONS - PG00

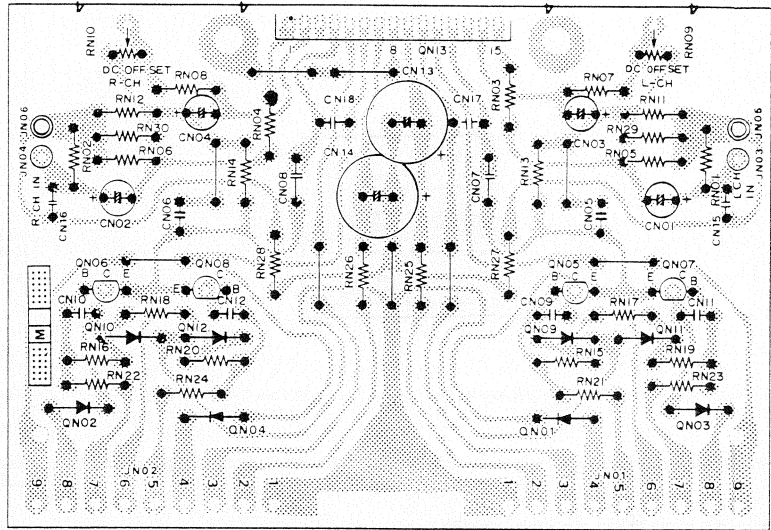
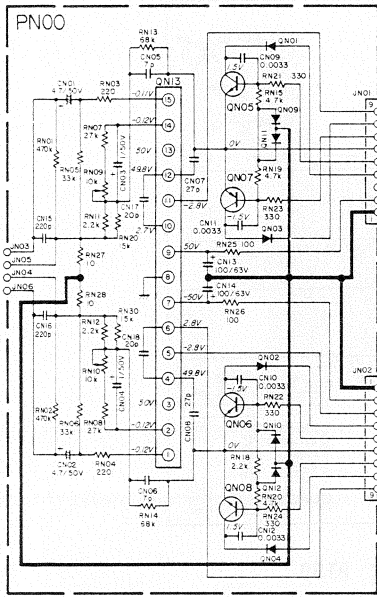


# 6.11 POWER LEVEL LED BOARD SCHEMATIC DIAGRAM AND COMPONENT LOCATIONS - PK00

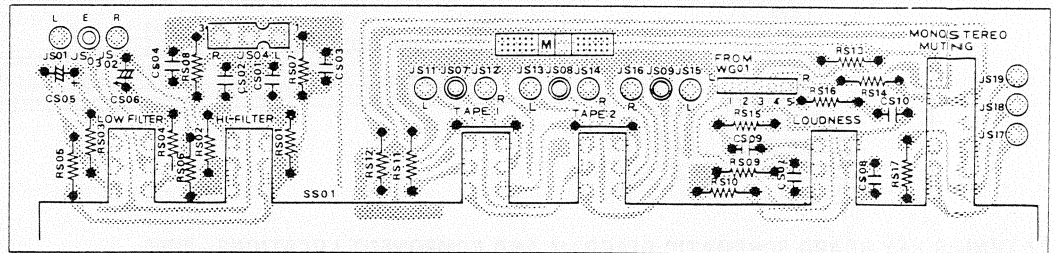
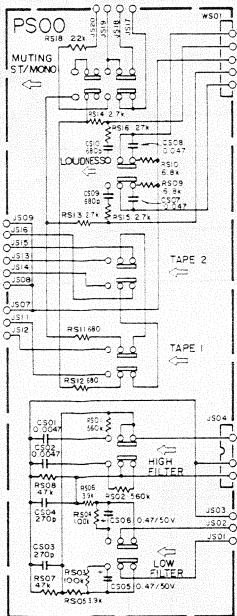




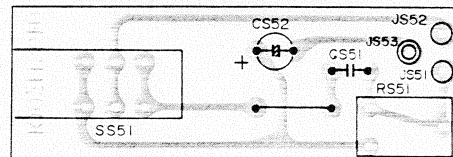
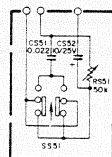
6.12 VOLTAGE AMP BOARD SCHEMATIC DIAGRAM AND COMPONENT LOCATIONS - PN00



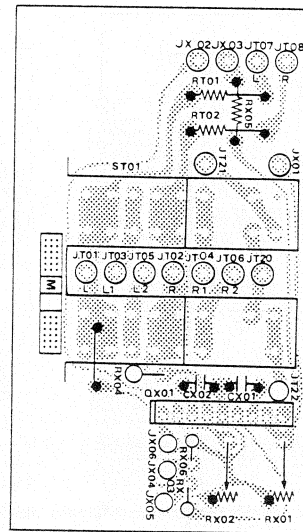
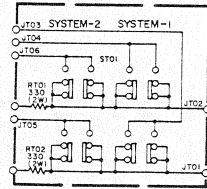
6.13 TAPE/FILTER/LOUDNESS BOARD SCHEMATIC DIAGRAM AND COMPONENT LOCATIONS - PS00



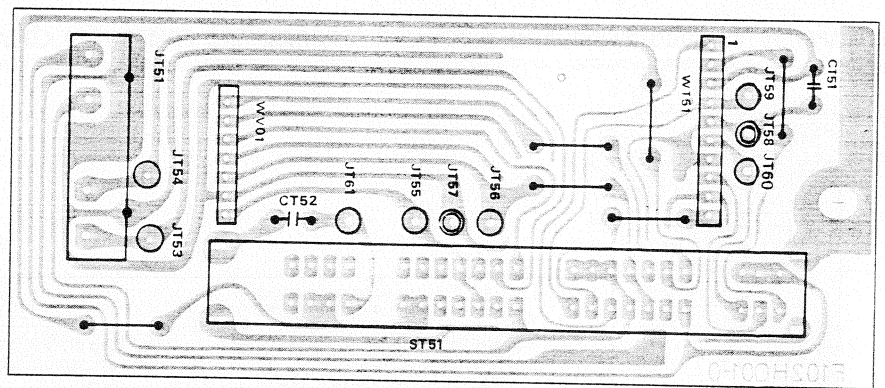
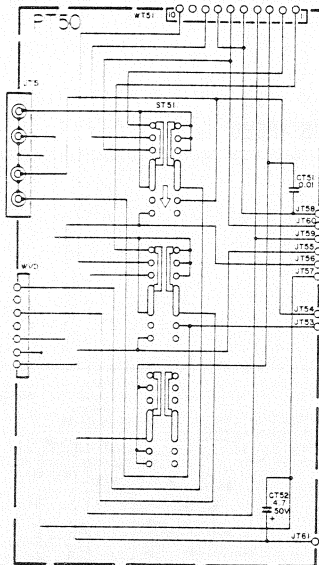
6.14 MULTIPATH BOARD SCHEMATIC DIAGRAM AND COMPONENT LOCATIONS - PS50



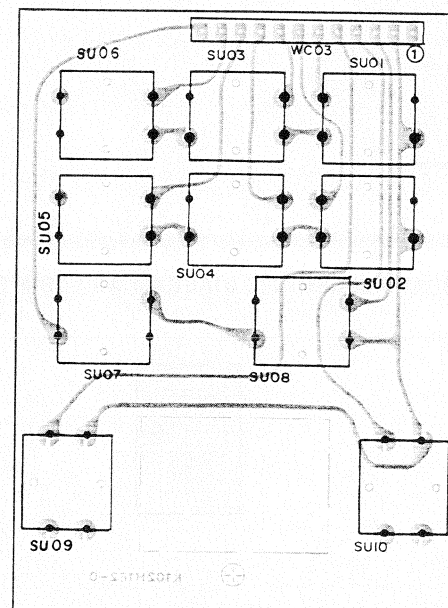
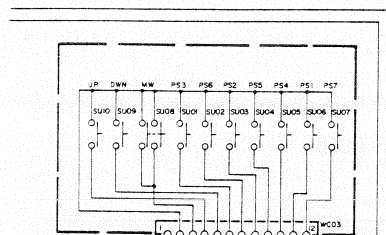
6.15 SPEAKER SWITCH BOARD SCHEMATIC DIAGRAM AND COMPONENT LOCATIONS - PT00



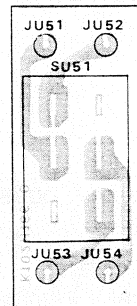
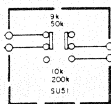
6.16 REC. MODE SWITCH BOARD SCHEMATIC DIAGRAM AND COMPONENT LOCATIONS - PT50



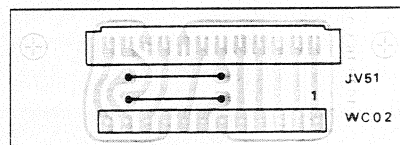
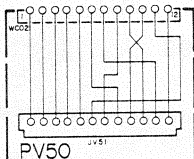
6.17 TUNING KEY BOARD SCHEMATIC DIAGRAM AND COMPONENT LOCATIONS - PU00



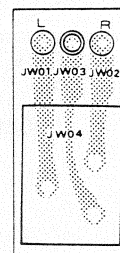
9.18 SCAN STEP BOARD SCHEMATIC DIAGRAM AND COMPONENT LOCATIONS-PT50



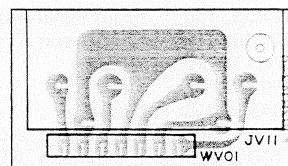
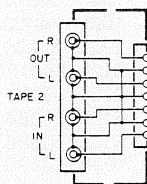
6.19 REMOTE CONT. BOARD SCHEMATIC DIAGRAM AND COMPONENT LOCATIONS - PV50



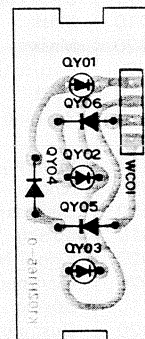
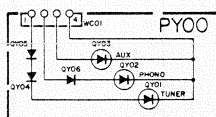
6.20 PHONE JACK BOARD SCHEMATIC DIAGRAM AND COMPONENT LOCATIONS - PW00



6.21 TAPE 2 TERMINAL BOARD SCHEMATIC DIAGRAM AND COMPONENT LOCATIONS - PV00

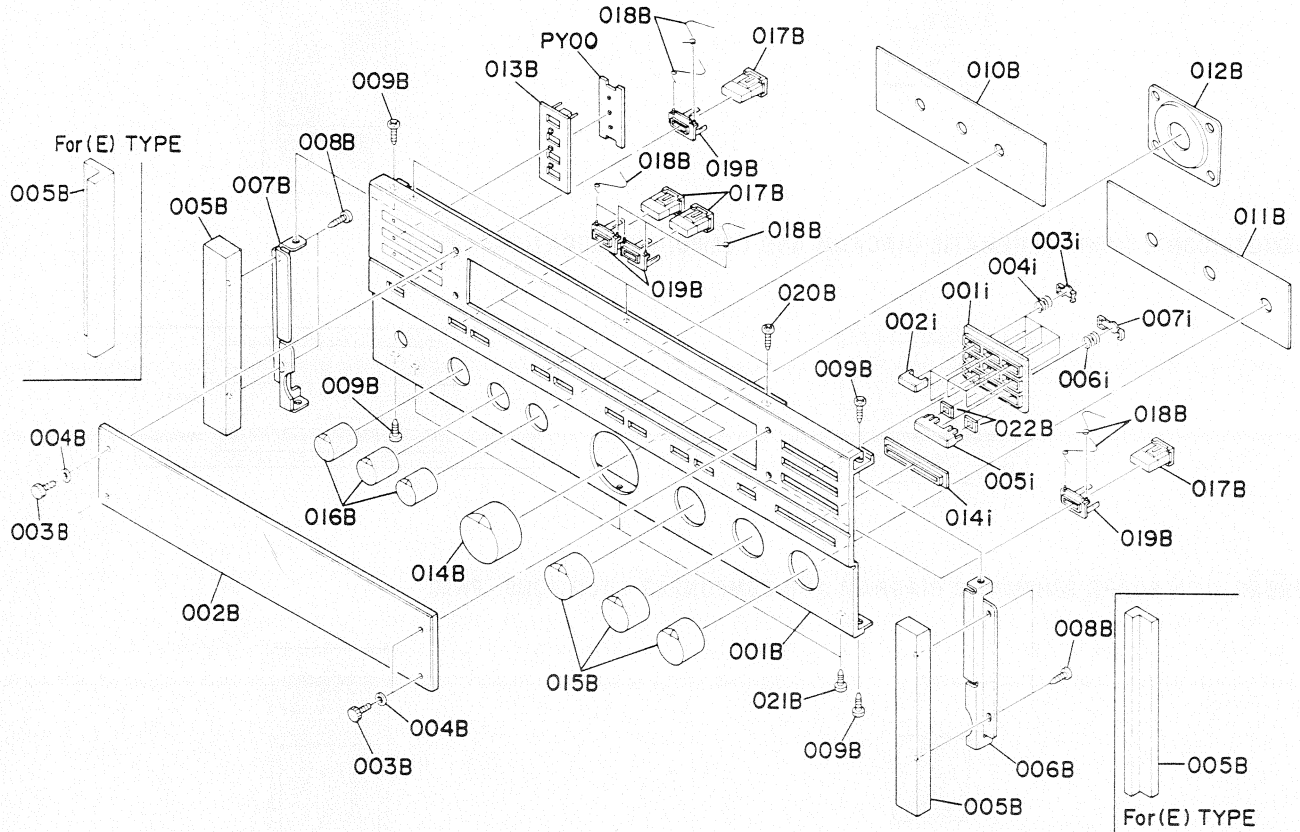


6.22 FUNCTION INDICATOR BOARD SCHEMATIC DIAGRAM AND COMPONENT LOCATIONS - PY00



# 7. EXPLODED VIEWS AND PARTS LIST

## 7.1 [C01-99] FRONT PANEL

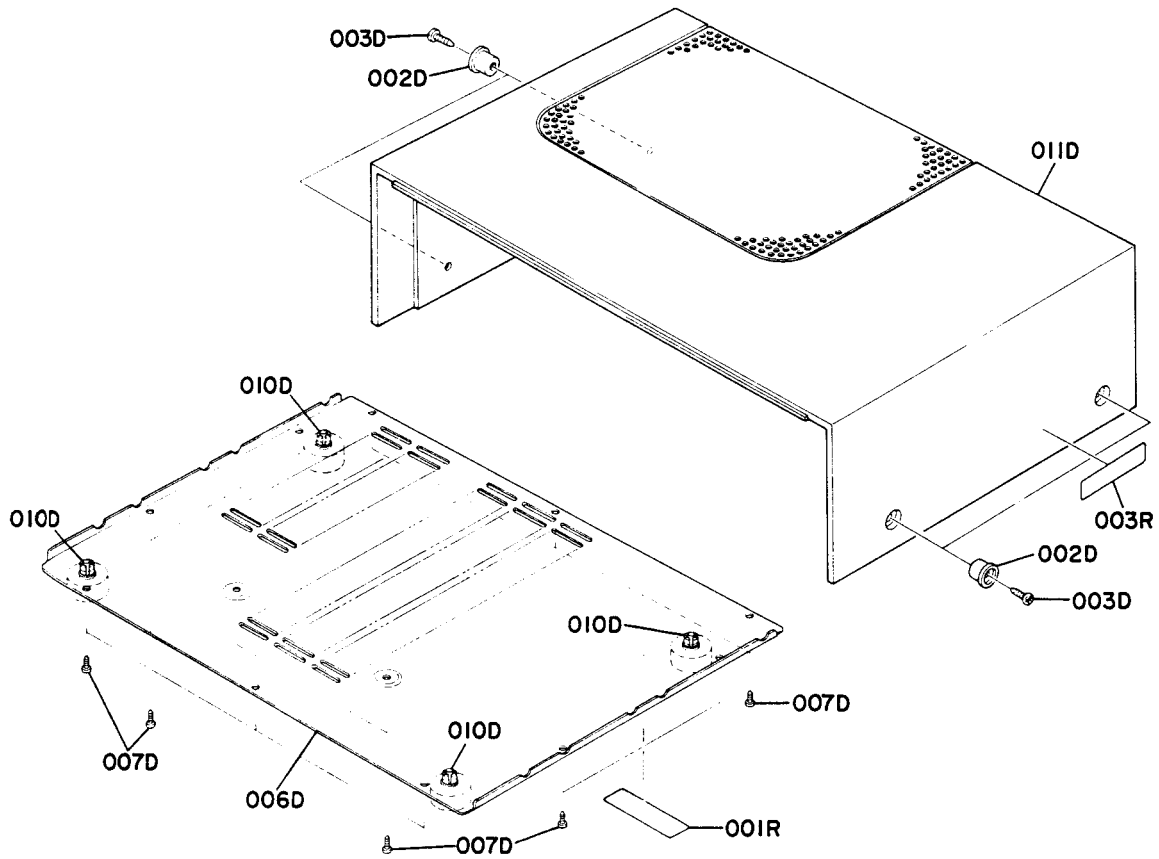


- (U): for U.S.A.
- (C): for Canada
- (E): for Europe

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	E		
A	1	1		102H063400	Front Panel Assembly
A1			1	102H063410	Front Panel Assembly
001B	1	1	1	102H063010	Escutcheon, Front Panel
002B	1	1	1	102H158010	Window
003B	4	4	4	4279112020	Shaft
004B	4	4	4	59046502G9	Washer
005B	2	2		2112063040	Escutcheon, Wood
005B			2	2112063050	Escutcheon, A.L.
006B	1	1	1	102H160020	Bracket (R)
007B	1	1	1	102H160030	Bracket (L)
008B	4	4		51400310A9	B.H. Tapped Screw B3 x 10
008B			4	51280306B0	B.H. Tapped Screw B3 x 6
009B	4	4	4	51280308B0	B.H. Tapped Screw B3 x 8
010B	1	1	1	102H303010	Mask
011B	1	1	1	102H303020	Mask
012B	1	1	1	102H063020	Escutcheon, Volume
013B	1	1	1	102H355010	Lens
019B	10	10	10	2127259010	Bushing, Push Button
001i	1	1	1	2137259010	Bushing, Preset Tuning
002i	7	7	7	2137154010	Knob
003i	7	7	7	2137005010	Clamper
004i	7	7	7	2137115010	Spring
005i	1	1	1	2137154020	Knob, Memory
006i	1	1	1	2137005020	Clamper
007i	1	1	1	2137115110	Spring
014i	1	1	1	2137259020	Bushing

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	E		
014B	1	1	1	102H154010	Knob, Volume
015B	3	3	3	102H154020	Knob, Selector
016B	3	3	3	102H154030	Knob, Tone
017B	10	10	10	2127154010	Knob, Push Button
018B	20	20	20	2127115010	Spring
020B	3	3	3	51300308B0	B.H. Tapped Screw B3 x 8
021B	3	3	3	51280308B0	B.H. Tapped Screw B3 x 8
022B	2	2	2	102H118040	Knob, Memory

7.2 [C02-99] TOP COVER

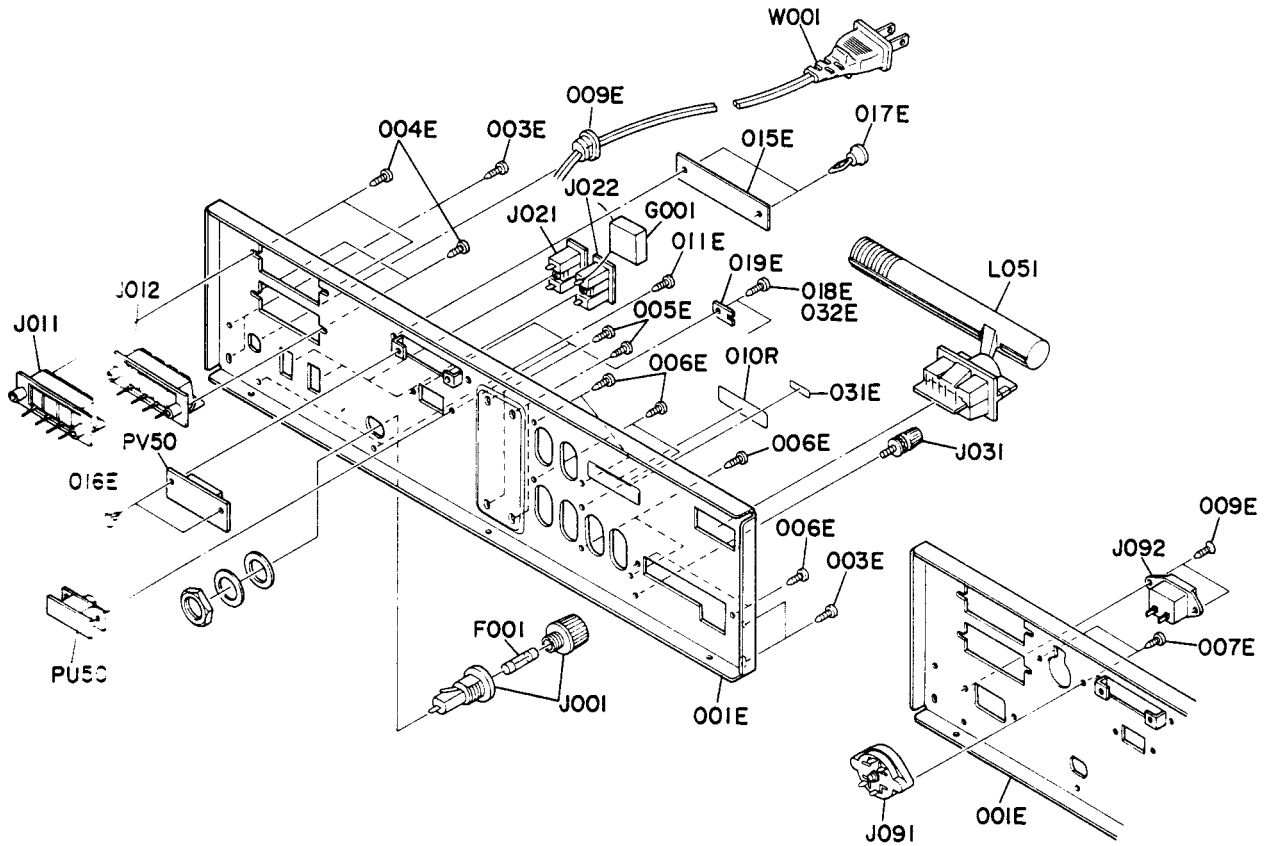


- (U): for U.S.A.
- (C): for Canada
- (E): for Europe

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	E		
002D	4	4	4	3906259010	Bushing
003D	4	4	4	51280414U0	B.H. Tapped Screw B4 x 14
006D	1	1	1	2116257110	Lid, Bottom Cover
007D	12	12	12	51280410U0	B.H. Tapped Screw B4 x 10
010D	4	4	4	2259057010	Leg
011D	1	1	1	102H064500	Case, Wood Cabinet (K)

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	E		
001R	1			2578861010	Label
001R		1		2911861110	Label
003R	1			2932861010	Label
003R		1		2911861140	Label

7.3 [C03-99] REAR PANEL

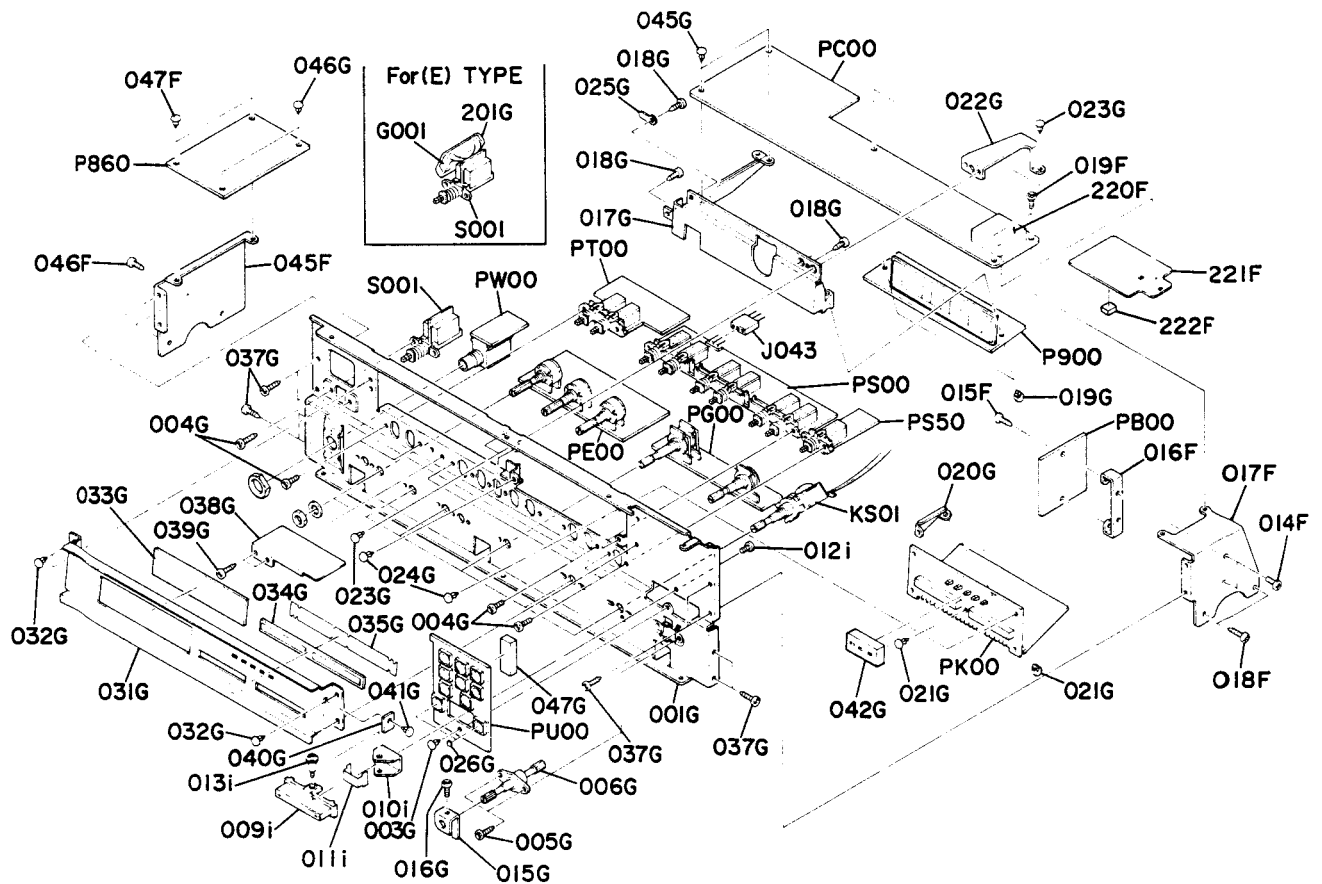


- (U): for U.S.A.
- (C): for Canada
- (E): for Europe

REF. DESIG.	QTY			PART NO.	DESCRIPTION
	U	C	E		
001E	1			102H160210	Bracket, Rear Panel
001E	1			102H160220	Bracket, Rear Panel
001E	1			102H160230	Bracket, Rear Panel
003E	4	4	4	51280308U0	B.H. Tapped Screw B3 x 8
004E	4	4	4	51280308U0	B.H. Tapped Screw B3 x 8
005E	4	4	4	51280308U0	B.H. Tapped Screw B3 x 8
006E	8	8	8	51280308U0	B.H. Tapped Screw B3 x 8
007E	2			51280308U0	B.H. Tapped Screw B3 x 8
009E	1			1455259030	Bushing
009E		2		51420308T0	O.C.H. Tapped Screw 3 x 8
011E	2	2	2	51280308U0	B.H. Tapped Screw B3 x 8
015E	1	1	1	102H053010	Cover
016E	2	2	2	2276005050	Clamper
017E	2	2	2	102H005010	Clamper
018E	2	2		51100308S9	B.H.M. Screw B3 x 8
019E	1			2137114010	Stopper
031E		1		4581861010	Label
032E		2		51100308S9	B.H.M. Screw B3 x 8
010R	1			2112265010	Indicator

REF. DESIG.	QTY			PART NO.	DESCRIPTION
	U	C	E		
△F001	1			FS10500040	Fuse 5A 250V
△F001		1		FS1050006-0	Fuse 5A 250V
△F001			1	FS10250800	Fuse 2.5AT 250V
△G001	1			BF10400030	Spark Killer
△G001		1		BF10400050	Spark Killer
△J001	1			YJ08000310	Jack, Fuse Holder
△J001		1		YJ08000300	Jack, Fuse Holder
△J001			1	YJ08000290	Jack, Fuse Holder
J011	1	1	1	YT03040170	Terminal, Speaker
J012	1	1	1	YT03040170	Terminal, Speaker
△J021	1	1		YJ04000560	Jack, AC Outlet
△J022	1	1		YJ04000560	Jack, AC Outlet
J031	1	1	1	YL03010250	Terminal, GND
△J091			1	BY05080010	Voltage Selector
△J092			1	YP04000590	Plug, AC Inlet
L051	1	1	1	LF11200640	Antenna Coil
△W001	1	1		YC02000150	A.C. Power Cord

7.4 [P01-99] FRONT CHASSIS AND GENERAL PARTS

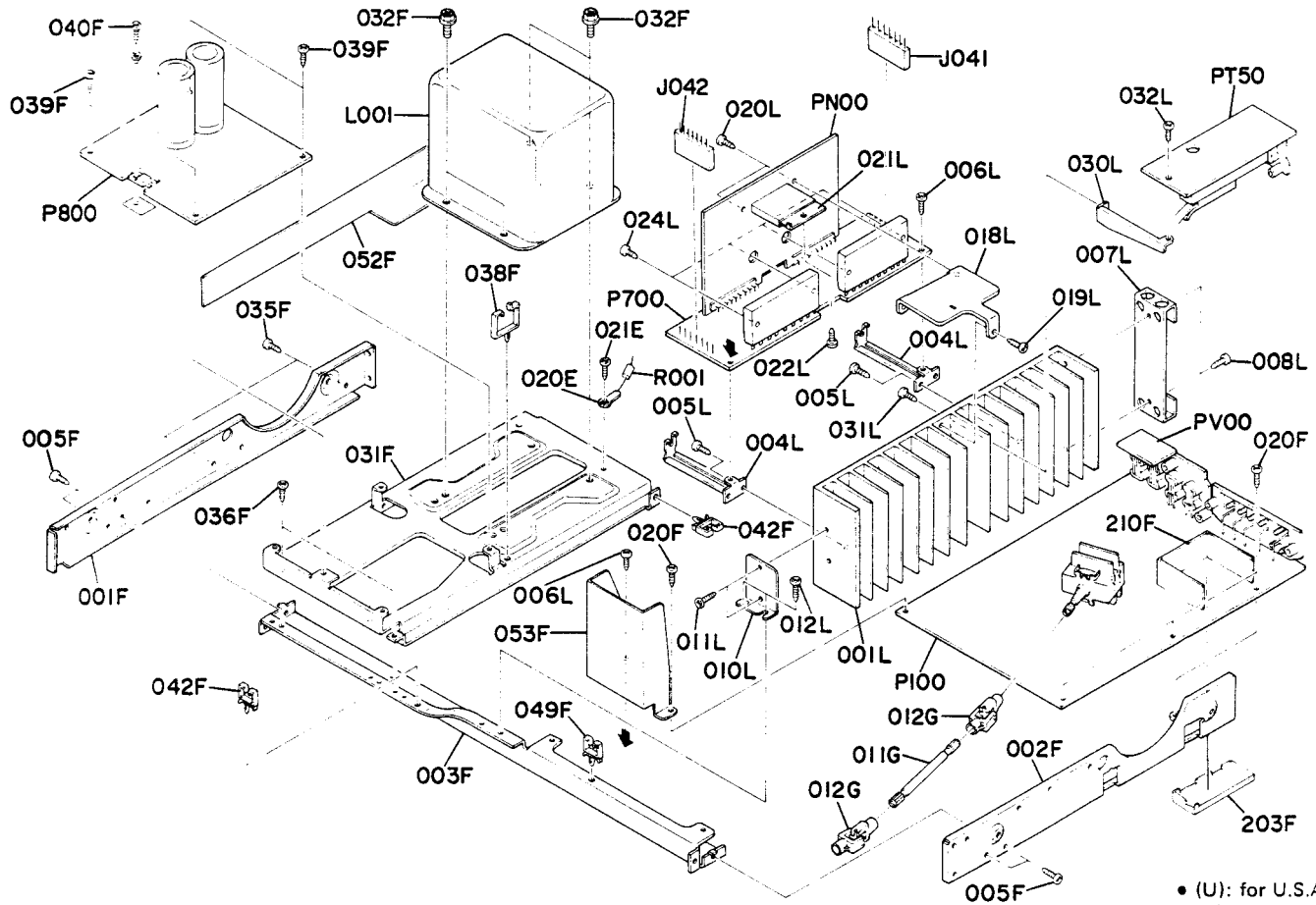


•(U): for U.S.A.  
 •(C): for Canada  
 •(E): for Europe

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	E		
014F	2	2	2	51100306A9	B.H.M. Screw B3 x 6
015F	2	2	2	51100306A9	B.H.M. Screw B3 x 6
016F	1	1	1	3889160110	Bracket
017F	1	1	1	102H160050	Bracket
018F	2	2	2	51280308B0	B.H. Tapped Screw B3 x 8
019F	2	2	2	51100308A9	B.H.M. Screw B3 x 8
045F	1	1	1	102H160150	Bracket
046F	2	2	2	51280308B0	B.H. Tapped Screw B3 x 8
047F	2	2	2	2276005050	Clamper
220F	1	1	1	2137109030	Shield
221F	1	1	1	102H109060	Shield
222F	1	1	1	102H118010	Spacer
001G	1	1	1	102H160010	Bracket, Front Chassis
003G	1	1	1	2276005050	Clamper
004G	8	8	8	51100308A9	B.H.M. Screw B3 x 8
005G	2	2	2	51280308B0	B.H. Tapped Screw B3 x 8
006G	1	1	1	102H112500	Shaft
015G	1	1	1	102H114010	Stopper
016G	1	1	1	51064019A9	P.H.M. Screw
017G	1	1	1	102H160060	Bracket
018G	3	3	3	2276005050	Clamper
019G	2	2	2	2276005050	Clamper
020G	1	1	1	102H160080	Bracket
021G	2	2	2	2276005050	Clamper
022G	1	1	1	102H160090	Bracket
023G	3	3	3	2276005050	Clamper
024G	4	4	4	2276005050	Clamper

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	E		
025G	1	1	1	62030049W0	Lug
026G	2	2	2	3653120110	Insulator
031G	1	1	1	102H274010	Reflector
032G	4	4	4	2912259020	Clamper
033G	1	1	1	2137158020	Window
034G	1	1	1	2116355010	Lens
035G	1	1	1	2116303010	Mask
037G	8	8	8	51280308B0	B.H. Tapped Screw B3 x 8
038G	1	1	1	102H109090	Shield
039G	2	2	2	51280308B0	B.H. Tapped Screw B3 x 8
040G	1	1	1	102H303030	Mask
041G	1	1	1	2912259020	Bushing
042G	1	1	1	102H303040	Mask
045G	2	2	2	2276005050	Clamper
046G	2	2	2	2276005050	Clamper
047G	1	1	1	102H118030	Spacer
201G			1	2219120010	Insulator
009i	1	1	1	2137154030	Knob, Tuning
010i	1	1	1	2137160020	Bracket
011i	1	1	1	2137115020	Spring
012i	1	1	1	51100306A9	B.H.M. Screw B3 x 6
013i	1	1	1	4367112180	Shaft
△S001	1	1		SP01010240	Push Switch, Power
△S001			1	SP02010330	Push Switch, Power
△G001			1	DF17223800	Film Cap. 0.02µF ±20%
J043	1	1	1	YJ06001040	Jack, (3P)
KS01	1	1	1	SR06050200	Rotary Switch (K Mode)

### 7.5 [P02-99] CHASSIS AND OTHER PARTS



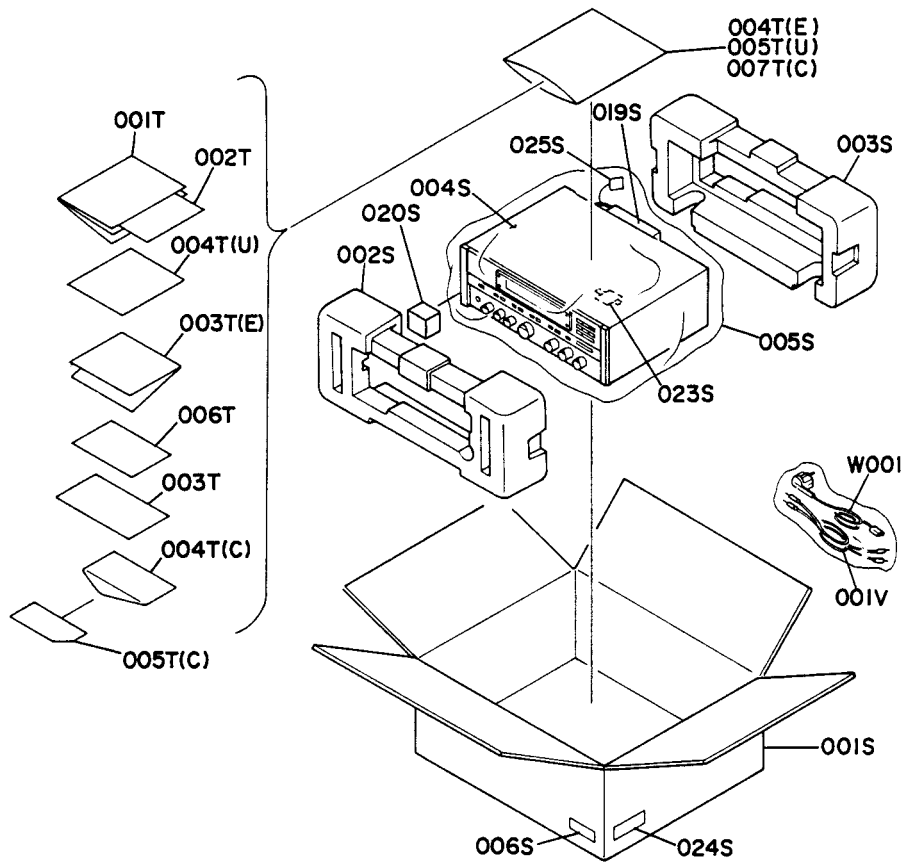
• (U): for U.S.A.  
 • (C): for Canada  
 • (E): for Europe

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	E		
020E	1	1		62030039W0	Lug
021E	1	1		51280306B0	B.H. Tapped Screw B3 x 6
001F	1	1	1	2116126010	Stay (L)
002F	1	1	1	2116126020	Stay (R)
003F	1	1	1	2116126030	Stay, Center
005F	4	4	4	51280308B0	B.H. Tapped Screw B3 x 8
020F	4	4	4	51280308B0	B.H. Tapped Screw B3 x 8
031F	1	1	1	2116004010	Table, Transformer
032F	4	4	4	52040410A0	H. Head Bolt, S.F H4 x 10
035F	3	3	3	51280308B0	B.H. Tapped Screw B3 x 8
036F	3	3	3	51280308B0	B.H. Tapped Screw B3 x 8
038F	1	1	1	2886005020	Clamper
039F	4	4	4	51260308B0	Screw 3 x 8
040F	1	1	1	51100308A9	B.H.M. Screw B3 x 8
042F	2	2	2	2886005020	Clamper
049F	1	1	1	2886005020	Clamper
052F	1	1	1	102H118020	Spacer
053F	1	1	1	102H109080	Shield
203F	1	1	1	2112109010	Shield
210F	1	1	1	2137109010	Shield
011G	1	1	1	102H112020	Shaft
012G	2	2	2	2258125510	Joint, (K)

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	E		
001L	1	1	1	102H267010	Heatsink
004L	2	2	2	2116160040	Bracket
005L	2	2	2	51280308B0	B.H. Tapped Screw B3 x 8
006L	2	2	2	51260308B0	Screw 3 x 8
007L	1	1	1	2116160070	Bracket
008L	2	2	2	51280308B0	B.H. Tapped Screw B3 x 8
010L	1	1	1	2276160040	Bracket
011L	2	2	2	51280308B0	B.H. Tapped Screw B3 x 8
012L	2	2	2	51280308B0	B.H. Tapped Screw B3 x 8
018L	1	1	1	2116267020	Heatsink
019L	1	1	1	51280310B0	B.H. Tapped Screw B3 x 10
020L	2	2	2	51260308B0	Screw 3 x 8
021L	1	1	1	2116115010	Spring
022L	1	1	1	51280308B0	B.H. Tapped Screw B3 x 8
024L	4	4	4	51780316B0	Screw 3 x 16
030L	1	1	1	102H160110	Bracket
031L	1	1	1	51280310B0	B.H. Tapped Screw B3 x 10
032L	1	1	1	51280308B0	B.H. Tapped Screw B3 x 8
Δ L001	1			TS18505010	Power Transformer
Δ L001		1		TS18505020	Power Transformer
Δ L001			1	TS19611010	Power Transformer
R001	1	1		RC10225120	Resistor 2.2MΩ ±10% ½W
J041	1	1	1	YJ06001260	Jack, (7P)
J042	1	1	1	YJ06001260	Jack, (7P)



7.6 [H01-99] PACKING MATERIALS



• (U): for U.S.A.  
 • (C): for Canada  
 • (E): for Europe

REF. DESIG.	QTY			PART NO.	DESCRIPTION
	U	C	E		
001T	1			102H851010	Instructions
001T	1	1		102H851310	Instructions
002T	1			102H851020	Instructions
002T	1			102H851220	Instructions
002T	1			102H851320	Instructions
003T	1			2818854020	Guarantee Card
003T	1			2818854030	Guarantee Card
003T			1	102H856010	Circuit Diagram
004T	1			2225813010	Envelope
004T	1			2918813010	Envelope
004T			1	9013025010	Polyethy Bag
005T	1			9013025010	Polyethy Bag
005T	1			9630000180	Guarantee Card
006T	1			9650000050	S. Station Card
007T	1			9013025010	Polyethy Bag

REF. DESIG.	QTY			PART NO.	DESCRIPTION
	U	C	E		
001S	1	1		102H801010	Packing Case
001S			1	102H801020	Packing Case
002S	1	1	1	2112809010	Cushion
003S	1	1	1	2112809020	Cushion
004S	1	1	1	2918107260	Sheet
005S	1	1	1	9090909040	Polyethy Sheet
006S	3			9526019010	Serial No. Card
006S			3	9526019020	Serial No. Card
006S			3	9526019060	Serial No. Card
019S	1	1	1	2864804010	Sleeve
020S	1	1	1	102H809010	Cushion
023S			1	2731821010	Silicagel
024S			2	9510901020	Label
025S			1	9560000040	Hang Tag
W001			1	ZC01805020	A.C. Power Cord
001V	1	1	1	ZA02000070	EXT. Antenna

7.7 ELECTRICAL PARTS

- (U): for U.S.A.
- (C): for Canada
- (E): for Europe

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	E		
P100	1	1	1	YK102H1410	<b>P100-TUNER/PHONO AMP. CIRCUIT BOARD</b>
	1	1		ZZ102H1410	P.W. Board, Tuner/Phono Amp.
			1	ZZ102H8410	P.W. Board Assembly
<b>P100-CAPACITORS</b>					
CA01	1	1	1	DA17103010	Ceramic 0.01μF ±20%
CA02	1	1	1	DF65471090	Film 470pF ±5%
CA03	1	1	1	DD15150360	Ceramic 15pF ±5%
CA04	1	1	1	DA17103010	Ceramic 0.01μF ±20%
CA05	1	1	1	DA17103010	Ceramic 0.01μF ±20%
CA06	1	1	1	DD15470370	Ceramic 47pF ±5%
CA07	1	1	1	DA17103010	Ceramic 0.01μF ±20%
CA08	1	1	1	EA10701630	Elect 100μF 16V
CA09	1	1	1	DK18403320	Ceramic 0.04μF +80% -20%
CA10	1	1	1	DK17103300	Ceramic 0.01μF ±20%
CA11	1	1	1	DA17103010	Ceramic 0.01μF ±20%
CA12	1	1	1	EA10602530	Elect 10μF 25V
CA13	1	1	1	EA10602530	Elect 10μF 25V
CA14	1	1	1	DA17103010	Ceramic 0.01μF ±20%
CA15	1	1	1	DA17103010	Ceramic 0.01μF ±20%
CA16	1	1	1	EA22405030	Elect 0.22μF 50V
CA17	1	1	1	EA10505030	Elect 1μF 50V
CA18	1	1	1	DK18223310	Ceramic 0.022μF +80% -20%
CA19	1	1	1	EA47405030	Elect 0.47μF 50V
CA20	1	1	1	EA22601630	Elect 22μF 16V
CA30	1	1	1	DA17103010	Ceramic 0.01μF ±20%
CA35	1	1	1	CT12000090	Trimming 20pF
CA37	1	1	1	DA17103010	Ceramic 0.01μF ±20%
CA39	1	1	1	DA15470010	Ceramic 47pF ±5%
CA40	1	1	1	DK17103300	Ceramic 0.01μF ±20%
CA43	1	1	1	DD15470370	Ceramic 47pF ±5%
CA44	1	1	1	DA17103010	Ceramic 0.01μF ±20%
CA45	1	1	1	DD15470370	Ceramic 47pF ±5%
CA46	1	1	1	DA17103010	Ceramic 0.01μF ±20%
CA47	1	1	1	EA10505030	Elect 1μF 50V
CA49	1	1	1	CT10600090	Trimming 5pF
CA50	1	1	1	DD10050320	Ceramic 5pF ±0.25pF
CA51	1	1	1	DA17103010	Ceramic 0.01μF ±20%
C101	1	1	1	DD10030300	Ceramic 3pF ±0.25pF
C103	1	1	1	DA17103010	Ceramic 0.01μF ±20%
C104	1	1	1	DA17103010	Ceramic 0.01μF ±20%
C106	1	1	1	DD10030370	Ceramic 3pF ±0.25pF
C107	1	1	1	DD11100370	Ceramic 10pF ±0.5pF
C108	1	1	1	DK16331300	Ceramic 330pF ±10%
C109	1	1	1	DA17103010	Ceramic 0.01μF ±20%
C112	1	1	1	DD10015370	Ceramic 1.5pF ±0.25pF
C113	1	1	1	DD10030300	Ceramic 3pF ±0.25pF
C114	1	1	1	DD11100300	Ceramic 10pF ±0.5pF
C115	1	1	1	DD15300300	Ceramic 30pF ±5%
C116	1	1	1	DD15150300	Ceramic 15pF ±5%
C117	1	1	1	DA17103010	Ceramic 0.01μF ±20%
C118	1	1	1	DA17103010	Ceramic 0.01μF ±20%
C119	1	1	1	DA17103010	Ceramic 0.01μF ±20%
C120	1	1	1	DA17103010	Ceramic 0.01μF ±20%
C121	1	1	1	DA17103010	Ceramic 0.01μF ±20%
C122	1	1	1	DK18403320	Ceramic 0.04μF +80% -20%
C123	1	1	1	DK18403320	Ceramic 0.04μF +80% -20%
C125	1	1	1	DA16331010	Ceramic 330pF ±10%
C126	1	1	1	DK18403320	Ceramic 0.04μF +80% -20%
C127	1	1	1	EA47405090	Elect 0.47μF 50V
C128	1	1	1	DK18403320	Ceramic 0.04μF +80% -20%
C129	1	1	1	EA10701630	Elect 100μF 16V

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	E		
C130	1	1	1	DK18403320	Ceramic 0.04μF +80% -20%
C131	1	1	1	DK18403320	Ceramic 0.04μF +80% -20%
C132	1	1	1	DK18403320	Ceramic 0.04μF +80% -20%
C133	1	1	1	DK18403320	Ceramic 0.04μF +80% -20%
C134	1	1	1	EA47405030	Elect 0.47μF 50V
C136	1	1	1	DK18403320	Ceramic 0.04μF +80% -20%
C137	1	1	1	DK18104010	Ceramic 0.1μF +80% -20%
C138	1	1	1	DK18403320	Ceramic 0.04μF +80% -20%
C150	1	1	1	DD15470370	Ceramic 47pF ±5%
C151	1	1	1	DD10070300	Ceramic 7pF ±0.25pF
C152	1	1	1	DD10070300	Ceramic 7pF ±0.25pF
C153	1	1	1	DF17333300	Film 0.033μF ±20%
C154	1	1	1	DD10020300	Ceramic 2pF ±0.25pF
C155	1	1	1	DK16102300	Ceramic 1000pF ±10%
C156	1	1	1	CT10600090	Trimming 5pF
C157	1	1	1	CT10600090	Trimming 5pF
C158	1	1	1	CT10600090	Trimming 5pF
C159	1	1	1	CT10600090	Trimming 5pF
C160	1	1	1	EA10701630	Elect 100μF 16V
C301	1	1	1	EA47505030	Elect 4.7μF 50V
C302	1	1	1	DF65501010	Film 500pF ±5%
C303	1	1	1	DF15473300	Film 0.047μF ±5%
C304	1	1	1	EQ10505010	Elect 1μF 50V
C305	1	1	1	EV68501060	Elect 6.8μF 10V
C306	1	1	1	DF65821010	Film 820pF ±5%
C307	1	1	1	EQ10505010	Elect 1μF 50V
C308	1	1	1	EA10505030	Elect 1μF 50V
C309	1	1	1	EA33701630	Elect 330μF 16V
C310	1	1	1	EA10701630	Elect 100μF 16V
C311	1	1	1	EA10505030	Elect 1μF 50V
C312	1	1	1	EA10505030	Elect 1μF 50V
C313	1	1	1	DF15222300	Film 2200μF ±5%
C313	1	1	1	DF15332300	Film 3300μF ±5%
C314	1	1	1	DF15222300	Film 2200μF ±5%
C314	1	1	1	DF15332300	Film 3300μF ±5%
C315	1	1	1	EA10405030	Elect 0.1μF 50V
C316	1	1	1	EA10405030	Elect 0.1μF 50V
C317	1	1	1	DA15101010	Ceramic 100pF ±5%
C318	1	1	1	DA15101010	Ceramic 100pF ±5%
C319	1	1	1	EA47505030	Elect 4.7μF 50V
C320	1	1	1	EA47505030	Elect 4.7μF 50V
C321	1	1	1	DF17104300	Film 0.1μF ±20%
C322	1	1	1	EA22601630	Elect 22μF 16V
C323	1	1	1	EA47503530	Elect 4.7μF 35V
C324	1	1	1	EA10602530	Elect 10μF 25V
C325	1	1	1	DK18403320	Ceramic 0.04μF +80% -20%
C401	1	1	1	EE33502540	Elect 3.3μF 25V
C402	1	1	1	EE33502540	Elect 3.3μF 25V
C403	1	1	1	DA16221010	Ceramic 220pF ±10%
C404	1	1	1	DA16221010	Ceramic 220pF ±10%
C405	1	1	1	EA47601030	Elect 47μF 10V
C406	1	1	1	EA47601030	Elect 47μF 10V
C407	1	1	1	DA15101010	Ceramic 100pF ±5%
C408	1	1	1	DA15101010	Ceramic 100pF ±5%
C409	1	1	1	DF15182300	Film 1800pF ±5%
C410	1	1	1	DF15182300	Film 1800pF ±5%
C411	1	1	1	DF15682300	Film 6800pF ±5%
C412	1	1	1	DF15682300	Film 6800pF ±5%
C413	1	1	1	DA15100010	Ceramic 10pF ±5%
C414	1	1	1	DA15100010	Ceramic 10pF ±5%
C415	1	1	1	EA47505030	Elect 4.7μF 50V
C416	1	1	1	EA47505030	Elect 4.7μF 50V
C417	1	1	1	DK17103300	Ceramic 0.01μF ±20%
C418	1	1	1	DK17103300	Ceramic 0.01μF ±20%
C419	1	1	1	DK16101300	Ceramic 100pF ±10%
C420	1	1	1	DK16101300	Ceramic 100pF ±10%
C421	1	1	1	DK18403320	Ceramic 0.04μF +80% -20%
C422	1	1	1	DK17103300	Ceramic 0.01μF ±20%

- (U): for U.S.A.
- (C): for Canada
- (E): for Europe

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	E		
<b>P100-RESISTORS</b> (All Resistors are $\pm 5\%$ and $\frac{1}{4}W$ )					
RA01	1	1	1	GD05152140	1.5K $\Omega$
RA02	1	1	1	GD05222140	2.2K $\Omega$
RA03	1	1	1	GG05101140	100 $\Omega$
RA04	1	1	1	GD05273140	27K $\Omega$
RA04	1	1	1	GD05223140	22K $\Omega$
RA05	1	1	1	GD05563140	56K $\Omega$
RA06	1	1	1	GD05333140	33K $\Omega$
RA07	1	1	1	GD05102140	1K $\Omega$
RA08	1	1	1	GD05222140	2.2K $\Omega$
RA09	1	1	1	GD05103140	10K $\Omega$
RA10	1	1	1	GD05103140	10K $\Omega$
RA12	1	1	1	GD05223140	22K $\Omega$
RA13	1	1	1	GD05103140	10K $\Omega$
RA14	1	1	1	GD05103140	10K $\Omega$
RA15	1	1	1	GD05223140	22K $\Omega$
RA17	1	1	1	GD05473140	47K $\Omega$
RA20	1	1	1	GD05393140	39K $\Omega$
RA22	1	1	1	GD05102140	1K $\Omega$
RA23	1	1	1	GD05104140	100K $\Omega$
RA24	1	1	1	GD05474140	470K $\Omega$
RA25	1	1	1	GD05472140	4.7K $\Omega$
RA27	1	1	1	GD05274140	270K $\Omega$
RA28	1	1	1	GD05222140	2.2K $\Omega$
RA29	1	1	1	GD05103140	10K $\Omega$
RA30	1	1	1	GD05683140	68K $\Omega$
RA31	1	1	1	GD05472140	4.7K $\Omega$
RA33	1	1	1	GD05332140	3.3K $\Omega$
RA34	1	1	1	RA05030090	50K $\Omega$ (B) Trimming
RA36	1	1	1	GD05102140	1K $\Omega$
RA37	1	1	1	GD05151140	150 $\Omega$
R101	1	1	1	GD05105140	1M $\Omega$
R103	1	1	1	GD05220140	22 $\Omega$
R104	1	1	1	GG05101140	100 $\Omega$
R105	1	1	1	GD05104140	100K $\Omega$
R106	1	1	1	GD05223140	22K $\Omega$
R107	1	1	1	GD05472140	4.7K $\Omega$
R108	1	1	1	GD05332140	3.3K $\Omega$
R110	1	1	1	GG05101140	100 $\Omega$
R111	1	1	1	GD05103140	10K $\Omega$
R112	1	1	1	GD05103140	10K $\Omega$
R113	1	1	1	GD05272140	2.7K $\Omega$
R114	1	1	1	GD05331140	330 $\Omega$
R115	1	1	1	GD05153140	15K $\Omega$
R116	1	1	1	GD05272140	2.7K $\Omega$
R117	1	1	1	GD05331140	330 $\Omega$
R118	1	1	1	GD05102140	1K $\Omega$
R119	1	1	1	GG05101140	100 $\Omega$
R120	1	1	1	GD05331140	330 $\Omega$
R121	1	1	1	75061001P0	Jumper
R122	1	1	1	GD05123140	12K $\Omega$
R124	1	1	1	GD05223140	22K $\Omega$
R125	1	1	1	GD05183140	18K $\Omega$
R126	1	1	1	GD05332140	3.3K $\Omega$
R127	1	1	1	GD05222140	2.2K $\Omega$
R128	1	1	1	GD05103140	10K $\Omega$
R129	1	1	1	GD05473140	47K $\Omega$
R130	1	1	1	GD05821140	820 $\Omega$
R131	1	1	1	RA01030260	10K $\Omega$ (B) Trim. Muting Level
R132	1	1	1	GD05105140	1M $\Omega$
R133	1	1	1	GD05331140	330 $\Omega$

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	E		
R134	1	1	1	GD05102140	1K $\Omega$
R140	1	1	1	GG05470140	47 $\Omega$
R150	1	1	1	GD05104140	100K $\Omega$
R151	1	1	1	GD05104140	100K $\Omega$
R152	1	1	1	GD05104140	100K $\Omega$
R153	1	1	1	GD05104140	100K $\Omega$
R154	1	1	1	GD05104140	100K $\Omega$
R155	1	1	1	GD05223140	22K $\Omega$
R156	1	1	1	GD05331140	330 $\Omega$
R157	1	1	1	GD05104140	100K $\Omega$
R301	1	1	1	GD05224140	220K $\Omega$
R302	1	1	1	RA04720080	4.7K $\Omega$ (B) Trim. V.C.O. Adj.
R303	1	1	1	GD05153140	15K $\Omega$
R304	1	1	1	GD05821140	820 $\Omega$
R305	1	1	1	GD05102140	1K $\Omega$
R306	1	1	1	RA05020160	5K $\Omega$ (B) Trim. Pilot Cancel
R308	1	1	1	GD05103140	10K $\Omega$
R309	1	1	1	GD05473140	47K $\Omega$
R310	1	1	1	GD05102140	1K $\Omega$
R311	1	1	1	GD05473140	47K $\Omega$
R312	1	1	1	GG05470140	47 $\Omega$
R313	1	1	1	GD05472140	4.7K $\Omega$
R314	1	1	1	GD05472140	4.7K $\Omega$
R315	1	1	1	GD05472140	4.7K $\Omega$
R316	1	1	1	GD05472140	4.7K $\Omega$
R317	1	1	1	GD05273140	27K $\Omega$
R318	1	1	1	GD05273140	27K $\Omega$
R319	1	1	1	GD05224140	220K $\Omega$
R320	1	1	1	GD05224140	220K $\Omega$
R321	1	1	1	GD05155140	1.5M $\Omega$
R322	1	1	1	GD05155140	1.5M $\Omega$
R323	1	1	1	GD05184140	180K $\Omega$
R323	1	1	1	GD05154140	150K $\Omega$
R324	1	1	1	GD05184140	180K $\Omega$
R324	1	1	1	GD05154140	150K $\Omega$
R325	1	1	1	GD05102140	1K $\Omega$
R326	1	1	1	RA01030260	10K $\Omega$ (B) Trim. Separation Adj.
R327	1	1	1	GD05103140	10K $\Omega$
R328	1	1	1	GD05103140	10K $\Omega$
R329	1	1	1	GD05471140	470 $\Omega$
R330	1	1	1	GD05471140	470 $\Omega$
R331	1	1	1	GD05472140	4.7K $\Omega$
R331	1	1	1	GD05682140	6.8K $\Omega$
R332	1	1	1	GD05472140	4.7K $\Omega$
R332	1	1	1	GD05682140	6.8K $\Omega$
R333	1	1	1	GD05473140	47K $\Omega$
R334	1	1	1	GD05473140	47K $\Omega$
R335	1	1	1	GD05471140	470 $\Omega$
R336	1	1	1	GD05471140	470 $\Omega$
R337	1	1	1	GD05101140	100 $\Omega$
R338	1	1	1	GD05123140	12K $\Omega$
R341	1	1	1	GD05104140	100K $\Omega$
R342	1	1	1	GD05222140	2.2K $\Omega$
R343	1	1	1	GD05222140	2.2K $\Omega$
R344	1	1	1	GD05102140	1K $\Omega$
R345	1	1	1	GD05102140	1K $\Omega$
R346	1	1	1	GD05223140	22K $\Omega$
R347	1	1	1	GD05222140	2.2K $\Omega$
R348	1	1	1	GD05472140	4.7K $\Omega$
R349	1	1	1	GD05473140	47K $\Omega$
R351	1	1	1	GD05154140	150K $\Omega$
R352	1	1	1	GD05333140	33K $\Omega$
R401	1	1	1	GD05823140	82K $\Omega$
R402	1	1	1	GD05823140	82K $\Omega$
R403	1	1	1	GD05222140	2.2K $\Omega$

- (U): for U.S.A.
- (C): for Canada
- (E): for Europe

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	E		
R404	1	1	1	GD05222140	2.2K $\Omega$
R405	1	1	1	GD05104140	100K $\Omega$
R406	1	1	1	GD05104140	100K $\Omega$
R407	1	1	1	GD05331140	330 $\Omega$
R408	1	1	1	GD05331140	330 $\Omega$
R409	1	1	1	GD05471140	470 $\Omega$
R410	1	1	1	GD05471140	470 $\Omega$
R411	1	1	1	GD05393140	39K $\Omega$
R412	1	1	1	GD05393140	39K $\Omega$
R413	1	1	1	GD05474140	470K $\Omega$
R414	1	1	1	GD05474140	470K $\Omega$
R415	1	1	1	GD05102140	1K $\Omega$
R416	1	1	1	GD05102140	1K $\Omega$
R417	1	1	1	GD05221140	220 $\Omega$
R418	1	1	1	GD05221140	220 $\Omega$
R419	1	1	1	GD05104140	100K $\Omega$
R420	1	1	1	GD05104140	100K $\Omega$
R421	1	1	1	GD05330140	33 $\Omega$
R422	1	1	1	GD05330140	33 $\Omega$
<b>P100-SEMICONDUCTORS</b>					
QA01	1	1	1	HC10025060	IC $\mu$ PC1178C
QA03	1	1	1	HD20011050	Diode 1S1555
QA04	1	1	1	HT309452C0	Transistor 2SC945(K or P)
QA05	1	1	1	HD20011050	Diode 1S1555
QA10	1	1	1	HV00006120	Varistor MV-203
QA11	1	1	1	HD10001050	Diode 1N60
QA12	1	1	1	HD10001050	Diode 1N60
QA14	1	1	1	HD40002420	Varicap KV-1226
QA16	1	1	1	HT310471C0	Transistor 2SC1047(C)
QA17	1	1	1	HT310471C0	Transistor 2SC1047(C)
QA18	1	1	1	HT309452C0	Transistor 2SC945(K or P)
Q101	1	1	1	HF400451B0	I.F.T. 3SK45(B)
Q102	1	1	1	HT310471C0	Transistor 2SC1047(C)
Q103	1	1	1	HT308291C0	Transistor 2SC829(C)
Q104	1	1	1	HT310471C0	Transistor 2SC1047(C)
Q105	1	1	1	HC10033010	IC HA11225
Q106	1	1	1	HD20011050	Diode 1S1555
Q110	1	1	1	HD40004010	Varicap 1SV55
Q111	1	1	1	HD40004010	Varicap 1SV55
Q112	1	1	1	HD40004010	Varicap 1SV55
Q113	1	1	1	HD40004010	Varicap 1SV55
Q114	1	1	1	HF200191A0	F.E.T. 2SK19(Y)
Q301	1	1	1	HC10001420	IC KB4437
Q302	1	1	1	HT309452C0	Transistor 2SC945(K or P)
Q303	1	1	1	HT309452C0	Transistor 2SC945(K or P)
Q304	1	1	1	HT309452C0	Transistor 2SC945(K or P)
Q305	1	1	1	HT326342B0	Transistor 2SC2634(S or T)
Q306	1	1	1	HT326342B0	Transistor 2SC2634(S or T)
Q307	1	1	1	HT111272B0	Transistor 2SA1127(S or T)
Q308	1	1	1	HT111272B0	Transistor 2SA1127(S or T)
Q309	1	1	1	HT309452B0	Transistor 2SC945(P or Q)
Q311	1	1	1	HD20011050	Diode 1S1555
Q312	1	1	1	HD20011050	Diode 1S1555
Q320	1	1	1	HD20011050	Diode 1S1555
Q321	1	1	1	HD20011050	Diode 1S1555
Q322	1	1	1	HD20011050	Diode 1S1555
Q323	1	1	1	HD20011050	Diode 1S1555
Q324	1	1	1	HD20011050	Diode 1S1555
Q325	1	1	1	HD20011050	Diode 1S1555
Q326	1	1	1	HD20011050	Diode 1S1555
Q401	1	1	1	HC10034010	IC HA1457W
Q402	1	1	1	HC10034010	IC HA1457W

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	E		
<b>P100-MISCELLANEOUS</b>					
FA01	1	1	1	FG450302B0	Ceramic Filter, AM SFZ450B-3
FA02	1	1	1	FG450302A0	Ceramic Filter, AM SFZ450A-3
F101	1	1	1	FF11070530	Ceramic Filter, SFE10.7MD-1
F102	1	1	1	FF11070530	Ceramic Filter, SFE10.7MD-1
F102	1	1	1	FF11070570	Ceramic Filter, SFE10.7MS3G
F103	1	1	1	FF11070530	Ceramic Filter, SFE10.7MD-1
F103	1	1	1	FF11070570	Ceramic Filter, SFE10.7MS3G
JV01	1	1	1	YT02040260	Terminal, Input
J101	1	1	1	YT01050010	Terminal, Antenna
LA01	1	1	1	LO10010480	OSC Coil, AM
LA02	1	1	1	LI10010730	I.F.T. Coil, AM
LA03	1	1	1	LI10010740	I.F.T. Coil, AM
L101	1	1	1	LA12026190	Ant. Coil, FM
L104	1	1	1	LC17510010	Choke Coil, 0.75 $\mu$ H
L105	1	1	1	LI10016010	I.F.T. Coil, FM
L106	1	1	1	LO12046030	OSC Coil, FM
L107	1	1	1	LC13320050	Choke Coil, 3.3 $\mu$ H
L109	1	1	1	LI14030010	I.F.T. Coil, FM Det
L120	1	1	1	LA12026200	Ant. Coil, FM RF
L121	1	1	1	LA12026210	Ant. Coil, FM RF
L301	1	1	1	LS20010020	M.P.X. Coil, 38kHz
SV01	1	1	1	SR06040170	Rotary Switch, Selector
<b>P700-POWER AMP. CIRCUIT BOARD</b>					
P700	1	1	1	YK21161810	P.W. Board, Power Amp.
P700	1	1	1	ZZ21161810	P.W. Board Assembly
<b>P700-CAPACITORS</b>					
C701	1	1	1	EA47706310	Elect 470 $\mu$ F 63V
C702	1	1	1	EA47706310	Elect 470 $\mu$ F 63V
C703	1	1	1	EA47706310	Elect 470 $\mu$ F 63V
C704	1	1	1	EA47706310	Elect 470 $\mu$ F 63V
C705	1	1	1	DF17473520	Film 0.047 $\mu$ F $\pm$ 20%
C706	1	1	1	DF17473520	Film 0.047 $\mu$ F $\pm$ 20%
C709	1	1	1	DF16473300	Film 0.047 $\mu$ F $\pm$ 20%
C710	1	1	1	DF16473300	Film 0.047 $\mu$ F $\pm$ 20%
C711	1	1	1	EA47601030	Elect 47 $\mu$ F 10V
C712	1	1	1	EA10701630	Elect 100 $\mu$ F 16V
C713	1	1	1	DD16470500	Ceramic 47pF $\pm$ 10%
C714	1	1	1	DD16470500	Ceramic 47pF $\pm$ 10%
C715	1	1	1	DD16470500	Ceramic 47pF $\pm$ 10%
C716	1	1	1	DD16470500	Ceramic 47pF $\pm$ 10%
<b>P700-RESISTORS</b>					
$\Delta$ R701	1	1	1	GO10332050	0.33 $\Omega$ 5W
$\Delta$ R702	1	1	1	GO10332050	0.33 $\Omega$ 5W
$\Delta$ R703	1	1	1	GO10332050	0.33 $\Omega$ 5W
$\Delta$ R704	1	1	1	GO10332050	0.33 $\Omega$ 5W
R705	1	1	1	RC10022120	2.2 $\Omega$ 1/2W
R706	1	1	1	RC10022120	2.2 $\Omega$ 1/2W
R707	1	1	1	GA05330030	33 $\Omega$ $\pm$ 5% 3W
R708	1	1	1	GA05330030	33 $\Omega$ $\pm$ 5% 3W
R709	1	1	1	GA05562010	5.6K $\Omega$ $\pm$ 5% 1W
R710	1	1	1	GA05562010	5.6K $\Omega$ $\pm$ 5% 1W

- (U): for U.S.A.
- (C): for Canada
- (E): for Europe

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	E		
R711	1	1	1	GD05223140	22K $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
R712	1	1	1	GD05153140	15K $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
R713	1	1	1	GD05562140	5.6K $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
R714	1	1	1	GD05154140	150K $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
R715	1	1	1	GD05393140	39K $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
R716	1	1	1	GG05100140	10 $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
R717	1	1	1	GD05333140	33K $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
<b>P700-SEMICONDUCTORS</b>					
$\pm$ Q701	1	1	1	HC10033030	IC STK-0080 Mark2
$\pm$ Q702	1	1	1	HC10033030	IC STK-0080 Mark2
Q703	1	1	1	HD20005010	Diode W06B
Q704	1	1	1	HD20005010	Diode W06B
Q705	1	1	1	HD20005010	Diode W06B
Q706	1	1	1	HD20005010	Diode W06B
Q707	1	1	1	HD20003210	Diode 1S2471
Q708	1	1	1	HD20011050	Diode 1S1555
Q709	1	1	1	HT314001E0	Transistor 2SC1400(E)
Q710	1	1	1	HT314001E0	Transistor 2SC1400(E)
Q711	1	1	1	HT405712B0	Transistor 2SD571(L or K)
<b>P700-MISCELLANEOUS</b>					
J701	1	1	1	YP06001060	Plug, (9P)
J702	1	1	1	YP06001060	Plug, (9P)
JN01	1	1	1	YP06000600	Plug (9P)
JN02	1	1	1	YP06000600	Plug (9P)
L701	1	1	1	LL23915120	Coil
L702	1	1	1	LL23915120	Coil
$\pm$ L703	1	1	1	LY20240140	Relay, 3A MU2U 24V
<b>P800-POWER SUPPLY CIRCUIT BOARD</b>					
P800	1	1	1	YK21161880	P.W. Board, Power Supply
	1			ZZ21163880	P.W. Board Assembly
		1		ZZ21162880	P.W. Board Assembly
			1	ZZ21168880	P.W. Board Assembly
<b>P800-CAPACITORS</b>					
$\pm$ C801	1	1	1	EB10906310	Elect 10000 $\mu$ F 56V
$\pm$ C802	1	1	1	EB10906310	Elect 10000 $\mu$ F 56V
C803	1	1	1	DK18103510	Ceramic 0.01 $\mu$ F
C804	1	1	1	DK18103510	Ceramic 0.01 $\mu$ F
$\pm$ C805	1	1	1	EA47705090	Elect 470 $\mu$ F 50V
C806	1	1	1	EA10705090	Elect 100 $\mu$ F 50V
C807	1	1	1	EA10605030	Elect 10 $\mu$ F 50V
C808	1	1	1	EA10605030	Elect 10 $\mu$ F 50V
C809	1	1	1	EA33505030	Elect 3.3 $\mu$ F 50V
C810	1	1	1	EA33505030	Elect 3.3 $\mu$ F 50V
C811	1	1	1	DK18403320	Ceramic 0.04 $\mu$ F
C812	1	1	1	DK18403320	Ceramic 0.04 $\mu$ F
C813	1	1	1	EA10701630	Elect 100 $\mu$ F 16V
C814	1	1	1	EA33505030	Elect 3.3 $\mu$ F 50V
C815	1	1	1	EA33505030	Elect 3.3 $\mu$ F 50V
C816	1	1	1	EA10602530	Elect 10 $\mu$ F 25V
C817	1	1	1	EA10701630	Elect 100 $\mu$ F 16V
C818	1	1	1	EA10703590	Elect 100 $\mu$ F 35V
$\pm$ C819	1	1	1	EA10701630	Elect 100 $\mu$ F 16V
C820	1	1	1	EA22602530	Elect 22 $\mu$ F 25V
C821	1	1	1	EA22602530	Elect 22 $\mu$ F 25V
$\pm$ C822	1	1	1	EA22605030	Elect 22 $\mu$ F 50V

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	E		
<b>P800-RESISTORS</b> (All Resistors are $\pm$ 5% and $\frac{1}{4}$ W)					
$\pm$ R801	1		1	RF05100120	10 $\Omega$ $\frac{1}{4}$ W, Fusible
$\pm$ R802	1		1	RF05100120	10 $\Omega$ $\frac{1}{4}$ W, Fusible
$\pm$ R803	1	1	1	GA05560020	56 $\Omega$ 2W
R804	1	1	1	GD05103140	10K $\Omega$
R805	1	1	1	GD05103140	10K $\Omega$
R806	1	1	1	GD05472140	4.7K $\Omega$
R807	1	1	1	GD05472140	4.7K $\Omega$
R808	1	1	1	GD05472140	4.7K $\Omega$
R809	1	1	1	GD05472140	4.7K $\Omega$
R810	1	1	1	GD05182140	1.8K $\Omega$
R811	1	1	1	GD05223140	22K $\Omega$
R812	1	1	1	GD05332140	3.3K $\Omega$
R813	1	1	1	GD05562140	5.6K $\Omega$
R814	1	1	1	GD05102140	1K $\Omega$
R815	1	1	1	GD05474140	470K $\Omega$
R816	1	1	1	GD05223140	22K $\Omega$
R817	1	1	1	GD05102140	1K $\Omega$
R818	1	1	1	GD05102140	1K $\Omega$
<b>P800-SEMICONDUCTORS</b>					
$\pm$ Q801	1	1	1	HD20011290	Diode S3VB-20
$\pm$ Q802	1	1	1	HD20011290	Diode S3VB-20
$\pm$ Q803	1	1	1	HD20011290	Diode S3VB-20
$\pm$ Q804	1	1	1	HD20011290	Diode S3VB-20
$\pm$ Q805	1		1	HD20005010	Diode W06B
$\pm$ Q805	1		1	HD20022100	Diode 10E1
$\pm$ Q806	1	1	1	HD20005010	Diode W06B
$\pm$ Q806	1		1	HD20022100	Diode 10E1
$\pm$ Q807	1		1	HD20005010	Diode W06B
$\pm$ Q807	1		1	HD20022100	Diode 10E1
$\pm$ Q808	1		1	HD20005010	Diode W06B
$\pm$ Q808	1		1	HD20022100	Diode 10E1
$\pm$ Q809	1	1	1	HD20005010	Diode W06B
Q810	1	1	1	HT405712B0	Transistor 2SD571(L or K)
Q811	1	1	1	HT326342A0	Transistor 2SC2634(R or S)
Q812	1	1	1	HT403131E0	Transistor 2SD313(E)
Q813	1	1	1	HD20011050	Diode 1S1555
Q814	1	1	1	HD30027090	Zener WZ-140
Q815	1	1	1	HT206052B0	Transistor 2SB605(L or K)
Q816	1	1	1	HT107332A0	Transistor 2SA733(P or Q)
Q817	1	1	1	HD30027090	Zener WZ-140
Q818	1	1	1	HT111272A0	Transistor 2SA1127(R or S)
$\pm$ Q819	1		1	HD20005010	Diode W06B
$\pm$ Q819	1		1	HD20022100	Diode 10E1
<b>P800-MISCELLANEOUS</b>					
$\pm$ F802	1		1	FS10050080	Fuse 0.5A 250V
$\pm$ F802	1		1	FS10050800	Fuse 0.5A 250V
J831		1		YJ08000170	Jack, Fuse Holder
J831		1	1	YJ08000270	Jack, Fuse Holder
J832		1		YJ08000170	Jack, Fuse Holder
J832		1	1	YJ08000270	Jack, Fuse Holder

- (U): for U.S.A.
- (C): for Canada
- (E): for Europe

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	E		
P860	1	1	1	YK102H1310	<b>P860-SUB POWER SUPPLY CIRCUIT BOARD</b> P.W. Board, Sub Power Supply
	1	1	1	ZZ102H1310	P.W. Board Assembly
<b>P860-CAPACITORS</b>					
C864	1	1	1	EA47701030	Elect 470 $\mu$ F 10V
C865	1	1	1	EA10701030	Elect 100 $\mu$ F 10V
C866	1	1	1	EA47601030	Elect 47 $\mu$ F 10V
C867	1	1	1	DK18103320	Ceramic 0.01 $\mu$ F +80% -20%
C869	1	1	1	EA22603530	Elect 22 $\mu$ F 35V
C873	1	1	1	EA33702530	Elect 330 $\mu$ F 25V
C874	1	1	1	EA22703530	Elect 220 $\mu$ F 35V
C875	1	1	1	EA10505030	Elect 1 $\mu$ F 50V
C876	1	1	1	EA33602530	Elect 33 $\mu$ F 25V
C877	1	1	1	EA10601630	Elect 10 $\mu$ F 16V
C878	1	1	1	DK17103300	Ceramic 0.01 $\mu$ F $\pm$ 20%
C879	1	1	1	DK17103300	Ceramic 0.01 $\mu$ F $\pm$ 20%
<b>P860-RESISTORS</b> (All Resistors are $\pm$ 5% and $\frac{1}{4}$ W)					
R862	1	1	1	GD05103140	10K $\Omega$
R864	1	1	1	GG05222120	2.2K $\Omega$ $\frac{1}{4}$ W
R865	1	1	1	GG05390140	39 $\Omega$
R866	1	1	1	GD05103140	10K $\Omega$
R867	1	1	1	GD05182140	1.8K $\Omega$
R869	1	1	1	GD05472140	4.7K $\Omega$
R872	1	1	1	GD05104140	100K $\Omega$
R873	1	1	1	GD05104140	100K $\Omega$
R874	1	1	1	GD05333140	33K $\Omega$
R875	1	1	1	GD05333140	33K $\Omega$
R876	1	1	1	GD05333140	33K $\Omega$
R877	1	1	1	GD05333140	33K $\Omega$
R878	1	1	1	GD05222140	2.2K $\Omega$
R879	1	1	1	GA05151010	150 $\Omega$ 1W
<b>P860-SEMICONDUCTORS</b>					
Q861	1	1	1	HT309452A0	Transistor 2SC945(Q or R)
Q862	1	1	1	HT404002B0	Transistor 2SD400(E or F)
Q864	1	1	1	HT107332A0	Transistor 2SA733(P or Q)
Q865	1	1	1	HT205492A0	Transistor 2SB549(P or Q)
Q866	1	1	1	HT404002B0	Transistor 2SD400(E or F)
Q867	1	1	1	HT404002B0	Transistor 2SD400(E or F)
Q868	1	1	1	HT107202B0	Transistor 2SA720(Q or R)
Q869	1	1	1	HT107202B0	Transistor 2SA720(Q or R)
Q872	1	1	1	HD20005010	Diode W06B
Q873	1	1	1	HD30036090	Zener WZ065
Q875	1	1	1	HD30068090	Zener WZ270
Q877	1	1	1	HD30039090	Zener WZ240
Q879	1	1	1	HD30067090	Zener WZ040
Q880	1	1	1	HC10019020	IC AN6552
Q882	1	1	1	HD20005010	Diode W06B
<b>P900-DISPLAY UNIT CIRCUIT BOARD</b>					
P900	1	1	1	YK102H1640	P.W. Board, Display Unit
	1	1	1	ZZ102H1640	P.W. Board Assembly
<b>P900-RESISTORS</b> (All Resistors are $\pm$ 5% and $\frac{1}{4}$ W)					
R901	1	1	1	GD05104140	100K $\Omega$
R902	1	1	1	GD05104140	100K $\Omega$
R903	1	1	1	GD05104140	100K $\Omega$
R904	1	1	1	GD05822140	8.2K $\Omega$
R905	1	1	1	GD05473140	47K $\Omega$
R906	1	1	1	GD05103140	10K $\Omega$

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	E		
Q901	1	1	1	HT107332A0	<b>P900-SEMICONDUCTORS</b> Transistor 2SA733(P or Q)
Q902	1	1	1	HT107332A0	Transistor 2SA733(P or Q)
Q903	1	1	1	HT309452B0	Transistor 2SC945(P or Q)
Q904	1	1	1	HD20011050	Diode 1S1555
V901	1	1	1	HQ30701410	Display Unit 8-MT-01
<b>PB00-NOISE AMP. CIRCUIT BOARD</b>					
PB00	1	1	1	YA22180610	P.W. Board, Noise Amp
	1	1	1	ZZ21370610	P.W. Board Assembly
<b>PB00-CAPACITORS</b>					
CB01	1	1	1	DD11100370	Ceramic 10pF $\pm$ 0.5pF
CB02	1	1	1	DF16683300	Film 0.068 $\mu$ F $\pm$ 10%
CB03	1	1	1	DF17403300	Film 0.1 $\mu$ F $\pm$ 20%
CB04	1	1	1	DK18104020	Ceramic 0.1 $\mu$ F
CB05	1	1	1	DK18403320	Ceramic 0.04 $\mu$ F
CB06	1	1	1	EA10601690	Elect 10 $\mu$ F 16V
CB07	1	1	1	EA10501690	Elect 1 $\mu$ F 16V
<b>PB00-RESISTORS</b> (All Resistors are $\pm$ 5% and $\frac{1}{4}$ W)					
RB01	1	1	1	GD05562140	5.6K $\Omega$
RB02	1	1	1	GD05104140	100K $\Omega$
RB03	1	1	1	GD05273140	27K $\Omega$
RB04	1	1	1	GD05102140	1K $\Omega$
RB05	1	1	1	GD05104140	100K $\Omega$
RB06	1	1	1	GD05333140	33K $\Omega$
RB08	1	1	1	GG05101140	100 $\Omega$
RB09	1	1	1	GD05101140	100 $\Omega$
RB10	1	1	1	GD05104140	100K $\Omega$
RB11	1	1	1	GD05103140	10K $\Omega$
RB12	1	1	1	GD05472140	4.7K $\Omega$
<b>PB00-SEMICONDUCTORS</b>					
QB01	1	1	1	HT309452B0	Transistor 2SC945(P or Q)
QB02	1	1	1	HT309452B0	Transistor 2SC945(P or Q)
QB03	1	1	1	HD10001050	Diode 1N60
QB04	1	1	1	HD10001050	Diode 1N60
QB05	1	1	1	HT309452B0	Transistor 2SC945(P or Q)
QB06	1	1	1	HD20011050	Diode 1S1555
<b>PB00-COIL</b>					
LB01	1	1	1	LC21050010	Choke Coil 1mH
<b>PC00-PLL SYNTHESIZER CIRCUIT BOARD</b>					
PC00	1	1	1	YK102H1610	P.W. Board, PLL Synthesizer
	1	1	1	ZZ102H1610	P.W. Board Assembly
<b>PC00-CAPACITORS</b>					
CC01	1	1	1	EA47405030	Elect 0.47 $\mu$ F 50V
CC02	1	1	1	EA10800630	Elect 1000 $\mu$ F 6.3V
CC03	1	1	1	EA10800630	Elect 1000 $\mu$ F 6.3V
CC05	1	1	1	DD15220300	Ceramic 22pF $\pm$ 5%
CC06	1	1	1	DD15220300	Ceramic 22pF $\pm$ 5%
CC07	1	1	1	DF17683300	Film 0.068 $\mu$ F $\pm$ 20%
CC08	1	1	1	EQ22505010	Elect 2.2 $\mu$ F 50V
CC09	1	1	1	EA47603530	Elect 47 $\mu$ F 35V
CC11	1	1	1	DK18103310	Ceramic 0.01 $\mu$ F +80% -20%
CC12	1	1	1	EV33600660	Elect 33 $\mu$ F 6.3V

- (U): for U.S.A.
- (C): for Canada
- (E): for Europe

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	E		
CC13	1	1	1	DD15121360	Ceramic 120pF ±5%
CC14	1	1	1	DD15750360	Ceramic 75pF ±5%
CC15	1	1	1	DK18103310	Ceramic 0.01μF +80% -20%
CC16	1	1	1	EA10602530	Elect 10μF 25V
CC17	1	1	1	DK16221300	Ceramic 220pF ±10%
CC18	1	1	1	DK16221300	Ceramic 220pF ±10%
CC19	1	1	1	DK18103310	Ceramic 0.01μF +80% -20%
CC20	1	1	1	EV33600660	Elect 33μF 6.3V
CC21	1	1	1	DK17103300	Ceramic 0.01μF ±20%
CC22	1	1	1	EA10602530	Elect 10μF 25V
CC23	1	1	1	EA22700630	Elect 220μF 6.3V
CC24	1	1	1	EA22700630	Elect 220μF 6.3V
<b>PC00-RESISTORS</b> (All Resistors are ±5% and ¼W)					
RC01	1	1	1	GD05222140	2.2KΩ
RC02	1	1	1	GD05222140	2.2KΩ
RC03	1	1	1	GD05222140	2.2KΩ
RC04	1	1	1	GD05222140	2.2KΩ
RC05	1	1	1	GD05222140	2.2KΩ
RC06	1	1	1	GD05222140	2.2KΩ
RC08	1	1	1	GD05104140	100KΩ
RC09	1	1	1	GD05104140	100KΩ
RC10	1	1	1	GD05104140	100KΩ
RC11	1	1	1	GD05104140	100KΩ
RC12	1	1	1	GD05104140	100KΩ
RC13	1	1	1	GD05104140	100KΩ
RC16	1	1	1	GD05104140	100KΩ
RC17	1	1	1	GD05104140	100KΩ
RC18	1	1	1	GD05104140	100KΩ
RC19	1	1	1	GD05104140	100KΩ
RC20	1	1	1	GD05104140	100KΩ
RC21	1	1	1	GD05104140	100KΩ
RC22	1	1	1	GD05104140	100KΩ
RC23	1	1	1	GD05104140	100KΩ
RC24	1	1	1	GD05104140	100KΩ
RC25	1	1	1	GD05473140	47KΩ
RC26	1	1	1	GD05223140	22KΩ
RC28	1	1	1	GD05223140	22KΩ
RC29	1	1	1	GD05473140	47KΩ
RC30	1	1	1	GD05473140	47KΩ
RC31	1	1	1	GD05473140	47KΩ
RC32	1	1	1	GD05473140	47KΩ
RC33	1	1	1	GD05473140	47KΩ
RC34	1	1	1	GD05473140	47KΩ
RC35	1	1	1	GD05473140	47KΩ
RC36	1	1	1	GD05473140	47KΩ
RC37	1	1	1	GD05473140	47KΩ
RC38	1	1	1	GD05473140	47KΩ
RC39	1	1	1	GD05103140	10KΩ
RC40	1	1	1	GD05103140	10KΩ
RC41	1	1	1	GD05103140	10KΩ
RC42	1	1	1	GD05103140	10KΩ
RC43	1	1	1	GD05103140	10KΩ
RC44	1	1	1	GD05103140	10KΩ
RC45	1	1	1	GD05103140	10KΩ
RC46	1	1	1	GD05103140	10KΩ
RC47	1	1	1	GD05103140	10KΩ
RC48	1	1	1	GD05223140	22KΩ
RC49	1	1	1	GD05223140	22KΩ
RC50	1	1	1	GD05332140	3.3KΩ
RC51	1	1	1	GD05223140	22KΩ
RC52	1	1	1	GD05332140	3.3KΩ
RC53	1	1	1	GD05223140	22KΩ
RC54	1	1	1	GD05223140	22KΩ

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	E		
RC55	1	1	1	GD05472140	4.7KΩ
RC56	1	1	1	GD05472140	4.7KΩ
RC57	1	1	1	GD05472140	4.7KΩ
RC58	1	1	1	GD05472140	4.7KΩ
RC59	1	1	1	GD05472140	4.7KΩ
RC60	1	1	1	GD05473140	47KΩ
RC61	1	1	1	GD05393140	39KΩ
RC62	1	1	1	GD05393140	39KΩ
RC63	1	1	1	GD05393140	39KΩ
RC64	1	1	1	GD05393140	39KΩ
RC65	1	1	1	GD05221140	220Ω
RC66	1	1	1	GD05562140	5.6KΩ
RC67	1	1	1	GD05222140	2.2KΩ
RC68	1	1	1	GD05101140	100Ω
RC70	1	1	1	GD05102140	1KΩ
RC71	1	1	1	GD05102140	1KΩ
RC73	1	1	1	GD05122140	1.2KΩ
RC74	1	1	1	GD05103140	10KΩ
RC75	1	1	1	GD05102140	1KΩ
RC78	1	1	1	GD05104140	100KΩ
RC79	1	1	1	GG05100140	10Ω
RC80	1	1	1	GD05182140	1.8KΩ
RC82	1	1	1	GD05102140	1KΩ
RC83	1	1	1	GD05101140	100Ω
<b>PC00-SEMICONDUCTORS</b>					
QC01	1	1	1	HC10016020	IC MN1400SJ
QC02	1	1	1	HC10018020	IC MN1203
QC03	1	1	1	HC10017020	IC MN6142
QC04	1	1	1	HC10032060	IC μPB551C
QC05	1	1	1	HC10048050	IC TC5066BP
QC06	1	1	1	HT107332B0	Transistor 2SA73(Q or R)
QC07	1	1	1	HT107332B0	Transistor 2SA73(Q or R)
QC08	1	1	1	HT107332B0	Transistor 2SA73(Q or R)
QC09	1	1	1	HT107332B0	Transistor 2SA73(Q or R)
QC10	1	1	1	HT107332B0	Transistor 2SA73(Q or R)
QC11	1	1	1	HT107332B0	Transistor 2SA73(Q or R)
QC12	1	1	1	HD20011050	Diode 1S155
QC14	1	1	1	HT107332B0	Transistor 2SA73(Q or R)
QC15	1	1	1	HT107332B0	Transistor 2SA73(Q or R)
QC23	1	1	1	HD20011050	Diode 1S155
QC24	1	1	1	HD20011050	Diode 1S155
QC25	1	1	1	HD20011050	Diode 1S155
QC26	1	1	1	HD20011050	Diode 1S155
QC27	1	1	1	HD20011050	Diode 1S155
QC28	1	1	1	HD20011050	Diode 1S155
QC29	1	1	1	HD20011050	Diode 1S155
QC30	1	1	1	HD20011050	Diode 1S155
QC31	1	1	1	HD20011050	Diode 1S155
QC32	1	1	1	HD20011050	Diode 1S155
QC33	1	1	1	HD20011050	Diode 1S155
QC34	1	1	1	HD20011050	Diode 1S155
QC35	1	1	1	HD20011050	Diode 1S155
QC36	1	1	1	HD20011050	Diode 1S155
QC37	1	1	1	HD20011050	Diode 1S155
QC38	1	1	1	HT309452A0	Transistor 2SC94(Q or R)
QC39	1	1	1	HT309452A0	Transistor 2SC94(Q or R)
QC41	1	1	1	HT107332B0	Transistor 2SA73(Q or R)
QC42	1	1	1	HT309452A0	Transistor 2SC94(Q or R)
QC43	1	1	1	HT309452A0	Transistor 2SC94(Q or R)
QC44	1	1	1	HT309452A0	Transistor 2SC94(Q or R)
QC45	1	1	1	HT309452A0	Transistor 2SC94(Q or R)
QC46	1	1	1	HT309452A0	Transistor 2SC94(Q or R)
QC47	1	1	1	HT309452A0	Transistor 2SC94(Q or R)
QC48	1	1	1	HT309452A0	Transistor 2SC94(Q or R)
QC49	1	1	1	HT309452A0	Transistor 2SC94(Q or R)

- (U): for U.S.A.
- (C): for Canada
- (E): for Europe

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	E		
QC50	1	1	1	HT309452A0	Transistor 2SC945(Q or R)
QC51	1	1	1	HT309452A0	Transistor 2SC945(Q or R)
QC52	1	1	1	HD20011050	Diode 1S1555
QC53	1	1	1	HD20011050	Diode 1S1555
QC54	1	1	1	HF200301C0	F.E.T. 2SK30(Y)
QC55	1	1	1	HT309452A0	Transistor 2SC945(Q or R)
QC56	1	1	1	HT309452A0	Transistor 2SC945(Q or R)
QC57	1	1	1	HD20011050	Diode 1S1555
<b>PC00-MISCELLANEOUS</b>					
LC01	1	1	1	LC11030020	Choke Coil 10 $\mu$ H
XC01	1	1	1	XA108001L0	Crystal 11.52MHz
<b>PE00-TONE AMP. CIRCUIT BOARD</b>					
PE00	1	1	1	YK21161850	P.W. Board, Tone Amp.
	1	1	1	ZZ21161850	P.W. Board Assembly
<b>PE00-CAPACITORS</b>					
CE01	1	1	1	EE10505040	Elect 1 $\mu$ F 50V
CE02	1	1	1	EE10505040	Elect 1 $\mu$ F 50V
CE03	1	1	1	DK16101300	Ceramic 100pF $\pm$ 10%
CE04	1	1	1	DK16101300	Ceramic 100pF $\pm$ 10%
CE05	1	1	1	EE22505040	Elect 2.2 $\mu$ F 50V
CE06	1	1	1	EE22505040	Elect 2.2 $\mu$ F 50V
CE07	1	1	1	DK16101300	Ceramic 100pF $\pm$ 10%
CE08	1	1	1	DK16101300	Ceramic 100pF $\pm$ 10%
CE09	1	1	1	DF16222300	Film 2200pF $\pm$ 10%
CE10	1	1	1	DF16222300	Film 2200pF $\pm$ 10%
CE11	1	1	1	DF16562300	Film 5600pF $\pm$ 10%
CE12	1	1	1	DF16562300	Film 5600pF $\pm$ 10%
CE15	1	1	1	DF16183300	Film 0.018 $\mu$ F $\pm$ 10%
CE16	1	1	1	DF16183300	Film 0.018 $\mu$ F $\pm$ 10%
CE17	1	1	1	DF16183300	Film 0.018 $\mu$ F $\pm$ 10%
CE18	1	1	1	DF16183300	Film 0.018 $\mu$ F $\pm$ 10%
CE19	1	1	1	DF16822300	Film 8200pF $\pm$ 10%
CE20	1	1	1	DF16822300	Film 8200pF $\pm$ 10%
CE21	1	1	1	DD15560370	Ceramic 56pF $\pm$ 5%
CE22	1	1	1	DD15560370	Ceramic 56pF $\pm$ 5%
CE23	1	1	1	EA33505030	Elect 3.3 $\mu$ F 50V
CE24	1	1	1	EA33505030	Elect 3.3 $\mu$ F 50V
<b>PE00-RESISTORS (All Resistors are <math>\pm</math>5% and <math>\frac{1}{4}</math>W)</b>					
RE01	1	1	1	GD05683140	68K $\Omega$
RE02	1	1	1	GD05683140	68K $\Omega$
RE03	1	1	1	GD05821140	820 $\Omega$
RE04	1	1	1	GD05821140	820 $\Omega$
RE05	1	1	1	GD05392140	3.9K $\Omega$
RE06	1	1	1	GD05392140	3.9K $\Omega$
RE07	1	1	1	GD05682140	6.8K $\Omega$
RE08	1	1	1	GD05682140	6.8K $\Omega$
RE09	1	1	1	GD05682140	6.8K $\Omega$
RE10	1	1	1	GD05682140	6.8K $\Omega$
RE11	1	1	1	GD05562140	5.6K $\Omega$
RE12	1	1	1	GD05562140	5.6K $\Omega$
RE13	1	1	1	GD05562140	5.6K $\Omega$
RE14	1	1	1	GD05562140	5.6K $\Omega$
RE15	1	1	1	GD05223140	22K $\Omega$
RE16	1	1	1	GD05223140	22K $\Omega$
RE17	1	1	1	GD05223140	22K $\Omega$
RE18	1	1	1	GD05223140	22K $\Omega$
RE19	1	1	1	GD05223140	22K $\Omega$
RE20	1	1	1	GD05223140	22K $\Omega$

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	E		
RE21	1	1	1	GD05103140	10K $\Omega$
RE22	1	1	1	GD05103140	10K $\Omega$
RE23	1	1	1	GD05470140	47 $\Omega$
RE24	1	1	1	GD05470140	47 $\Omega$
RE25	1	1	1	RM01040150	100K $\Omega$ (B) Variable, Treble
RE26	1	1	1	RM01040150	100K $\Omega$ (B) Variable, Mid
RE27	1	1	1	RM01040150	100K $\Omega$ (B) Variable, Bass
<b>PE00-IC</b>					
QE01	1	1	1	HC10003090	IC NJM4558D
QE02	1	1	1	HC10003090	IC NJM4558D
<b>PG00-VOLUME/BALANCE CIRCUIT BOARD</b>					
PG00	1	1	1	YK102H1430	P.W. Board, Volume/Balance
	1	1	1	ZZ102H1430	P.W. Board Assembly
<b>PG00-RESISTORS</b>					
RG01	1	1	1	RM01040320	100K $\Omega$ (B) x 2 Variable, Voi.
RG02	1	1	1	RK02040080	200K $\Omega$ (W) Variable, Balance
<b>PK00-POWER LEVEL LED CIRCUIT BOARD</b>					
PK00	1	1	1	YK102H1320	P.W. Board, Power Level LED
	1	1	1	ZZ102H1320	P.W. Board Assembly
<b>PK00-CAPACITORS</b>					
CK01	1	1	1	EA10602530	Elect 10 $\mu$ F 25V
CK02	1	1	1	EA10602530	Elect 10 $\mu$ F 25V
CK03	1	1	1	EA10602530	Elect 10 $\mu$ F 25V
CK04	1	1	1	EA10602530	Elect 10 $\mu$ F 25V
CK05	1	1	1	EA22505030	Elect 2.2 $\mu$ F 50V
CK06	1	1	1	EA22505030	Elect 2.2 $\mu$ F 50V
CK07	1	1	1	EA10702530	Elect 100 $\mu$ F 25V
<b>PK00-RESISTORS (All Resistors are <math>\pm</math>5% and <math>\frac{1}{4}</math>W)</b>					
RK01	1	1	1	RA02030010	20K $\Omega$ Trimming
RK02	1	1	1	RA02030010	20K $\Omega$ Trimming
RK03	1	1	1	GD05152140	1.5K $\Omega$
RK04	1	1	1	GD05152140	1.5K $\Omega$
RK05	1	1	1	GD05152140	1.5K $\Omega$
RK06	1	1	1	GD05152140	1.5K $\Omega$
RK07	1	1	1	GD05152140	1.5K $\Omega$
RK08	1	1	1	GD05152140	1.5K $\Omega$
RK09	1	1	1	GD05152140	1.5K $\Omega$
RK10	1	1	1	GD05152140	1.5K $\Omega$
RK11	1	1	1	GD05152140	1.5K $\Omega$
RK12	1	1	1	GD05152140	1.5K $\Omega$
RK13	1	1	1	GD05152140	1.5K $\Omega$
RK14	1	1	1	GD05152140	1.5K $\Omega$
RK15	1	1	1	GD05152140	1.5K $\Omega$
RK16	1	1	1	GD05152140	1.5K $\Omega$
RK17	1	1	1	GD05152140	1.5K $\Omega$
RK18	1	1	1	GD05152140	1.5K $\Omega$
RK19	1	1	1	GD05152140	1.5K $\Omega$
RK20	1	1	1	GD05152140	1.5K $\Omega$
RK21	1	1	1	GD05152140	1.5K $\Omega$
RK22	1	1	1	GD05152140	1.5K $\Omega$
RK23	1	1	1	GD05152140	1.5K $\Omega$
RK24	1	1	1	GD05152140	1.5K $\Omega$
RK25	1	1	1	GD05152140	1.5K $\Omega$
RK26	1	1	1	GD05152140	1.5K $\Omega$
RK27	1	1	1	GD05103140	10K $\Omega$
RK28	1	1	1	GD05103140	10K $\Omega$
RK29	1	1	1	GD05103140	10K $\Omega$
RK30	1	1	1	GD05103140	10K $\Omega$



- (U): for U.S.A.
- (C): for Canada
- (E): for Europe

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	E		
RK31	1	1	1	GD05123140	12K $\Omega$
RK32	1	1	1	GD05123140	12K $\Omega$
RK33	1	1	1	GD05182140	1.8K $\Omega$
RK34	1	1	1	GD05182140	1.8K $\Omega$
RK35	1	1	1	GD05121140	120 $\Omega$
RK36	1	1	1	GD05121140	120 $\Omega$
RK37	1	1	1	GD05272140	2.7K $\Omega$
RK38	1	1	1	GD05272140	2.7K $\Omega$
RK39	1	1	1	GD05274140	270K $\Omega$
RK40	1	1	1	GD05274140	270K $\Omega$
RK41	1	1	1	GD05682140	6.8K $\Omega$
RK42	1	1	1	GD05682140	6.8K $\Omega$
RK45	1	1	1	GD05822140	8.2K $\Omega$
RK46	1	1	1	GD05822140	8.2K $\Omega$
RK47	1	1	1	GD05562140	5.6K $\Omega$
RK48	1	1	1	GD05562140	5.6K $\Omega$
RK49	1	1	1	GD05821140	820 $\Omega$
RK50	1	1	1	GD05821140	820 $\Omega$
RK51	1	1	1	GD05103140	10K $\Omega$
RK52	1	1	1	GD05103140	10K $\Omega$
RK53	1	1	1	GD05153140	15K $\Omega$
RK54	1	1	1	GD05392140	3.9K $\Omega$
RK55	1	1	1	GG05271140	270 $\Omega$
<b>PK00-SEMICONDUCTORS</b>					
QK03	1	1	1	HC10002320	IC IR2418A
QK04	1	1	1	HC10002320	IC IR2418A
QK05	1	1	1	HH00008030	Thermistor SDT-1000
QK06	1	1	1	HH00008030	Thermistor SDT-1000
QK07	1	1	1	HT111271S0	Transistor 2SA1127(S)
QK08	1	1	1	HT111271S0	Transistor 2SA1127(S)
QK09	1	1	1	HT326341S0	Transistor 2SC2634(S)
QK10	1	1	1	HT326341S0	Transistor 2SC2634(S)
QK11	1	1	1	HD20011050	Diode 1S1555
QK12	1	1	1	HD20011050	Diode 1S1555
QK13	1	1	1	HD20011050	Diode 1S1555
QK14	1	1	1	HD20011050	Diode 1S1555
QK15	1	1	1	HD30059090	Zener XZ-185, 18.5V
<b>PK00-CAPACITORS</b>					
CK10	1	1	1	EV10600360	Elect 10 $\mu$ F 3V
CK11	1	1	1	EV47501660	Elect 4.7 $\mu$ F 16V
CK12	1	1	1	EV47501660	Elect 4.7 $\mu$ F 16V
<b>PK00-RESISTORS</b> (All Resistors are $\pm 5\%$ and $\frac{1}{4}W$ )					
RK59	1	1	1	GD05472140	4.7K $\Omega$
RK60	1	1	1	GD05682140	6.8K $\Omega$
RK61	1	1	1	GD05103140	10K $\Omega$
RK62	1	1	1	GD05390140	39 $\Omega$
RK63	1	1	1	GG05270140	27 $\Omega$
RK64	1	1	1	GD05153140	15K $\Omega$
RK65	1	1	1	GD05333140	33K $\Omega$
RK66	1	1	1	GD05102140	1K $\Omega$
RK67	1	1	1	GD05102140	1K $\Omega$
RK68	1	1	1	GD05102140	1K $\Omega$
RK69	1	1	1	GD05102140	1K $\Omega$
RK70	1	1	1	GD05102140	1K $\Omega$

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	E		
<b>PK00-SEMICONDUCTORS</b>					
QK01	1	1	1	HI11202320	L.E.D. GL-112R4
QK02	1	1	1	HI11202320	L.E.D. GL-112R4
QK20	1	1	1	HC10040030	IC LB1416
QK21	1	1	1	HI10008030	L.E.D. SLP141B
QK22	1	1	1	HI10008030	L.E.D. SLP141B
QK23	1	1	1	HI10008030	L.E.D. SLP141B
QK24	1	1	1	HI10008030	L.E.D. SLP141B
QK25	1	1	1	HI10008030	L.E.D. SLP141B
<b>PN00-VOLTAGE AMP. CIRCUIT BOARD</b>					
PN00	1	1	1	YK21161820	P.W. Board, Voltage Amp.
	1	1	1	ZZ21161820	P.W. Board Assembly
<b>PN00-CAPACITORS</b>					
CN01	1	1	1	EA47505030	Elect 4.7 $\mu$ F 50V
CN02	1	1	1	EA47505030	Elect 4.7 $\mu$ F 50V
CN03	1	1	1	EA10505030	Elect 1 $\mu$ F 50V
CN04	1	1	1	EA10505030	Elect 1 $\mu$ F 50V
CN05	1	1	1	DD10020300	Ceramic 2pF $\pm 0.25\mu$ F
CN06	1	1	1	DD10020300	Ceramic 2pF $\pm 0.25\mu$ F
CN07	1	1	1	DD15270510	Ceramic 27pF $\pm 5\%$
CN08	1	1	1	DD15270510	Ceramic 27pF $\pm 5\%$
CN09	1	1	1	DF16332350	Film 3300pF $\pm 10\%$
CN10	1	1	1	DF16332350	Film 3300pF $\pm 10\%$
CN11	1	1	1	DF16332350	Film 3300pF $\pm 10\%$
CN12	1	1	1	DF16332350	Film 3300pF $\pm 10\%$
CN13	1	1	1	EA10706310	Elect 100 $\mu$ F 63V
CN14	1	1	1	EA10706310	Elect 100 $\mu$ F 63V
CN15	1	1	1	DK16221300	Ceramic 220pF $\pm 10\%$
CN16	1	1	1	DK16221300	Ceramic 220pF $\pm 10\%$
CN17	1	1	1	DD15200310	Ceramic 20pF $\pm 5\%$
CN18	1	1	1	DD15200310	Ceramic 20pF $\pm 5\%$
<b>PN00-RESISTORS</b> (All Resistors are $\pm 5\%$ and $\frac{1}{4}W$ )					
RN01	1	1	1	GD05474140	470K $\Omega$
RN02	1	1	1	GD05474140	470K $\Omega$
RN03	1	1	1	GD05221140	220 $\Omega$
RN04	1	1	1	GD05221140	220 $\Omega$
RN05	1	1	1	GD05333140	33K $\Omega$
RN06	1	1	1	GD05333140	33K $\Omega$
RN07	1	1	1	GD05273140	27K $\Omega$
RN08	1	1	1	GD05333140	33K $\Omega$
RN09	1	1	1	RA01030460	10K $\Omega$ Trimming
RN10	1	1	1	RA01030460	10K $\Omega$ Trimming
RN11	1	1	1	GD05222140	2.2K $\Omega$
RN12	1	1	1	GD05222140	2.2K $\Omega$
RN13	1	1	1	GD05683140	68K $\Omega$
RN14	1	1	1	GD05683140	68K $\Omega$
RN15	1	1	1	GG05472140	4.7K $\Omega$
RN16	1	1	1	GG05472140	4.7K $\Omega$
RN17	1	1	1	GD05223140	22K $\Omega$
RN18	1	1	1	GD05223140	22K $\Omega$
RN19	1	1	1	GG05472140	4.7K $\Omega$
RN20	1	1	1	GG05472140	4.7K $\Omega$
RN21	1	1	1	GD05331140	330 $\Omega$
RN22	1	1	1	GD05331140	330 $\Omega$
RN23	1	1	1	GD05331140	330 $\Omega$
RN24	1	1	1	GD05331140	330 $\Omega$
RN25	1	1	1	GG05101140	100 $\Omega$

- (U): for U.S.A.
- (C): for Canada
- (E): for Europe

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	E		
RN26	1	1	1	GG05101140	100Ω
RN27	1	1	1	GG05100140	10Ω
RN28	1	1	1	GG05100140	10Ω
RN29	1	1	1	GD05153140	15KΩ
RN30	1	1	1	GD05153140	15KΩ
<b>PN00-SEMICONDUCTORS</b>					
QN01	1	1	1	HD20011050	Diode 1S1555
QN02	1	1	1	HD20011050	Diode 1S1555
QN03	1	1	1	HD20011050	Diode 1S1555
QN04	1	1	1	HD20011050	Diode 1S1555
QN05	1	1	1	HT309451Q0	Transistor 2SC945(Q)
QN06	1	1	1	HT309451Q0	Transistor 2SC945(Q)
QN07	1	1	1	HT107331Q0	Transistor 2SA733(Q)
QN08	1	1	1	HT107331Q0	Transistor 2SA733(Q)
QN09	1	1	1	HD20011050	Diode 1S1555
QN10	1	1	1	HD20011050	Diode 1S1555
QN11	1	1	1	HD20011050	Diode 1S1555
QN12	1	1	1	HD20011050	Diode 1S1555
QN13	1	1	1	HC10032030	IC STK-3082
<b>PS00-TAPE/FILTER/LOUDNESS CIRCUIT BOARD</b>					
PS00	1	1	1	YK21161860	P.W. Board, Tape/Filter/Loudness
	1	1	1	ZZ21161820	P.W. Board Assembly
<b>PS00-CAPACITORS</b>					
CS01	1	1	1	DF15472300	Film 4700pF ±5%
CS02	1	1	1	DF15472300	Film 4700pF ±5%
CS03	1	1	1	DK16271300	Ceramic 270pF ±10%
CS04	1	1	1	DK16271300	Ceramic 270pF ±10%
CS05	1	1	1	EA47405030	Elect 0.47μF 50V
CS06	1	1	1	EA47405030	Elect 0.47μF 50V
CS07	1	1	1	DF16473300	Film 0.047μF ±10%
CS08	1	1	1	DF16473300	Film 0.047μF ±10%
CS09	1	1	1	DK16681300	Ceramic 680pF ±10%
CS10	1	1	1	DK16681300	Ceramic 680pF ±10%
<b>PS00-RESISTORS</b> (All Resistors are ±5% and ¼W)					
RS01	1	1	1	GD05564140	560KΩ
RS02	1	1	1	GD05564140	560KΩ
RS03	1	1	1	GD05104140	100KΩ
RS04	1	1	1	GD05104140	100KΩ
RS05	1	1	1	GD05392140	3.9KΩ
RS06	1	1	1	GD05392140	3.9KΩ
RS07	1	1	1	GD05473140	47KΩ
RS08	1	1	1	GD05473140	47KΩ
RS09	1	1	1	GD05682140	6.8KΩ
RS10	1	1	1	GD05682140	6.8KΩ
RS11	1	1	1	GD05681140	680Ω
RS12	1	1	1	GD05681140	680Ω
RS13	1	1	1	GD05272140	2.7KΩ
RS14	1	1	1	GD05272140	2.7KΩ
RS15	1	1	1	GD05273140	27KΩ
RS16	1	1	1	GD05273140	27KΩ
RS18	1	1	1	GD05222140	2.2KΩ
<b>PS00-MISCELLANEOUS</b>					
JSO4	1	1	1	YP06000570	Plug (3P)
SSO1	1	1	1	SP04060120	Push Switch

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	E		
PS50	1	1	1	YK102H1440	<b>PS50-MULTIPATH CIRCUIT BOARD</b> P.W. Board, Multipath
	1	1	1	ZZ102H1440	P.W. Board Assembly
<b>PS50-CAPACITORS</b>					
CS51	1	1	1	DK18223320	Ceramic 0.022μF
CS52	1	1	1	EA10602530	Elect 10μF 25V
<b>PS50-RESISTOR</b>					
RS51	1	1	1	RA01040110	100KΩ(B) Trimming
<b>PS50-SWITCH</b>					
SS51	1	1	1	SP02010550	Push Switch, Multipath
<b>PT00-SPEAKER SWITCH CIRCUIT BOARD</b>					
PT00	1	1	1	YK21161830	P.W. Board, Speaker Switch
	1	1	1	ZZ102H1830	P.W. Board Assembly
<b>PT00-RESISTORS</b>					
RT01	1	1	1	GA05331020	330Ω ±5% 2W
RT02	1	1	1	GA05331020	330Ω ±5% 2W
<b>PT00-SWITCH</b>					
ST01	1	1	1	SP04020270	Push Switch, Speaker
<b>PT50-REC. MODE SWITCH CIRCUIT BOARD</b>					
PT50	1	1	1	YF102H0010	P.W. Board, Rec. Mode Switch
	1	1	1	ZZ102H0010	P.W. Board Assembly
<b>PT50-CAPACITORS</b>					
CT51	1	1	1	DK18103300	Ceramic 0.01μF +80% -20%
CT52	1	1	1	EA47505030	Elect 4.7μF 50V
<b>PT50-MISCELLANEOUS</b>					
JT51	1	1	1	YT02040260	Terminal, Tape 1 IN/OUT
ST51	1	1	1	SS06060010	Slide Switch
S011	1	1	1	SR00050030	Rotary Switch
<b>PU00-TUNING KEY BOARD CIRCUIT BOARD</b>					
PU00	1	1	1	YK102H1620	P.W. Board, Tuning Key Board
	1	1	1	ZZ102H1620	P.W. Board Assembly
<b>PU00-SWITCHES</b>					
SU01	1	1	1	SP01010350	Push Switch, #3
SU02	1	1	1	SP01010350	Push Switch, #6
SU03	1	1	1	SP01010350	Push Switch, #2
SU04	1	1	1	SP01010350	Push Switch, #5
SU05	1	1	1	SP01010350	Push Switch, #4
SU06	1	1	1	SP01010350	Push Switch, #1
SU07	1	1	1	SP01010350	Push Switch, #7
SU08	1	1	1	SP01010350	Push Switch, Memory Write
SU09	1	1	1	SP01010350	Push Switch, Down
SU10	1	1	1	SP01010350	Push Switch, Up
<b>PU50-SCAN STEP CIRCUIT BOARD</b>					
PU50	1	1	1	YK102H1660	P.W. Board, Scan Step
	1	1	1	ZZ102H1660	P.W. Board Assembly
SU51	1	1	1	SS02020380	Slide Switch, Scan Step

- (U): for U.S.A.
- (C): for Canada
- (E): for Europe

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	E		
PV00	1	1	1	YK102H1420	<b>PV00-TAPE 2 TERMINAL CIRCUIT BOARD</b> P.W. Board, Tape 2 Terminal
	1	1	1	ZZ102H1420	P.W. Board Assembly
JV11	1	1	1	YT02040260	Terminal, Tape 2 IN/Out
PV50	1	1	1	YK102H1630	<b>PV50-REMOTE CONT. CONNECTOR CIRCUIT BOARD</b> P.W. Board, Remote Cont. Connector
	1	1	1	ZZ102H1630	P.W. Board Assembly
JV51	1	1	1	YP06002230	Plug (12P)
PW00	1	1	1	YK21161840	<b>PW00-PHONE JACK CIRCUIT BOARD</b> P.W. Board, Phone Jack
	1	1	1	ZZ21161840	P.W. Board Assembly
JW04	1	1	1	YJ01001340	Jack, Phone Jack

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	E		
PY00	1	1	1	YK102H1650	<b>PY00-FUNCTION INDICATOR CIRCUIT BOARD</b> P.W. Board, Function Indicator
	1	1	1	ZZ102H1650	P.W. Board Assembly
QY01	1	1	1	HI10004060	L.E.D. SR106C, Tuner
QY02	1	1	1	HI10004060	L.E.D. SR106C, Phone
QY03	1	1	1	HI10004060	L.E.D. SR106C, Aux
QY04	1	1	1	HD20011050	Diode 1S1555
QY05	1	1	1	HD20011050	Diode 1S1555
QY06	1	1	1	HD20011050	Diode 1S1555

(W01-99)	Assembly and Wiring
(T01-99)	Adjustment
(X01-00)	Correction

## 8. TECHNICAL SPECIFICATIONS

[FOR U.S.A. & CANADA]

### AMPLIFIER SECTION:

RATED POWER OUTPUT, MINIMUM CONTINUOUS AVERAGE POWER	
PER CHANNEL, BOTH CHANNELS DRIVEN	88 W
POWER BAND	20 Hz to 20 kHz
TOTAL HARMONIC DISTORTION	0.05%
LOAD IMPEDANCE	4 OHMS
RATED POWER OUTPUT, MINIMUM CONTINUOUS AVERAGE POWER	
PER CHANNEL, BOTH CHANNELS DRIVEN	70 W
POWER BAND	20 Hz to 20 kHz
TOTAL HARMONIC DISTORTION	0.025%
LOAD IMPEDANCE	8 OHMS

### I.M. Distortion

(I.H.F. method, 60 Hz and 7 kHz mixed 4:1 at rated power output)

at 8 ohm load impedance	0.025%
at 4 ohm load impedance	0.05%
Damping Factor (at 20 Hz)	50

### PREAMPLIFIER SECTION:

#### Phono

Input Overload at 1 kHz	225 mV
Equivalent Input Noise ("A" Weighted)	0.2 $\mu$ V
Dynamic Range	
(Dynamic Range is the ratio of input overload to equivalent input noise)	127 dB
Input Sensitivity	2.7 mV
Input Impedance	47 k ohms
Input Capacitance	100 pF
Frequency Response, RIAA 20 Hz to 20 kHz	$\pm$ 0.2 dB
Signal-to-Noise Ratio ("A" Weighted)	
(at rated output and 10 mV input)	90 dB
High Level (Aux and Tape)	
Input Sensitivity	160 mV
Input Impedance	20 k ohms
Frequency Response	
(includes power amp)	10 Hz to 70 kHz $\pm$ 1.0 dB
Signal-to-Noise Ratio ("A" Weighted)	
(ref. to rated output and 775 mV input)	98 dB
Output Levels	
Tape Out (ref. 10 mV at Phono inputs)	580 mV
Output Impedance	
Tape Out	220 ohms

### FM TUNER SECTION:

#### Sensitivity

IHF Usable	9.8 dBf (1.7 $\mu$ V)
IHF 50 dB Quieting (Mono)	13.2 dBf (2.5 $\mu$ V)
(Stereo)	36.1 dBf (35 $\mu$ V)

#### Quieting Slope (Mono)

RF Input for 30 dB Quieting	7.2 dBf (1.3 $\mu$ V)
Quieting at:	
20 dBf ( 5.5 $\mu$ V)	55 dB
25 dBf ( 10 $\mu$ V)	60 dB
40 dBf ( 55 $\mu$ V)	74 dB
65 dBf (1000 $\mu$ V)	80 dB

**Quieting Slope (Stereo)**

**Quieting at:**

30 dBf ( 17 $\mu$ V) . . . . .	42 dB
40 dBf ( 55 $\mu$ V) . . . . .	54 dB
50 dBf ( 173 $\mu$ V) . . . . .	64 dB
65 dBf (1000 $\mu$ V) . . . . .	72 dB

**Distortion (Mono) at 65 dBf (1000  $\mu$ V)**

100 Hz . . . . .	0.2%
1000 Hz . . . . .	0.15%
6000 Hz . . . . .	0.2%

**Distortion (Stereo) at 65 dBf (1000  $\mu$ V)**

100 Hz . . . . .	0.25%
1000 Hz . . . . .	0.2%
6000 Hz . . . . .	0.3%

**Frequency Response**

**30 Hz to 15 kHz**

Mono and Stereo . . . . .	+0.5 dB, -1.0 dB
---------------------------	------------------

**Capture Ratio at 65 dBf (1000  $\mu$ V)**

. . . . .	1.0 dB
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**Alternate Channel Selectivity**

. . . . .	65 dB
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**Spurious Response Rejection**

. . . . .	90 dB
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**Image Response Rejection**

. . . . .	55 dB
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**I.F. Rejection (Balanced)**

. . . . .	90 dB
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**A.M. Suppression**

. . . . .	55 dB
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**Stereo Separation at 1 kHz**

. . . . .	45 dB
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**Subcarrier Rejection**

. . . . .	65 dB
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**AM TUNER SECTION:**

**IHF Usable Sensitivity**

. . . . .	20 $\mu$ V
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**Signal-to-Noise Ratio**

. . . . .	50 dB
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**Alternate Channel Selectivity**

. . . . .	45 dB
-----------	-------

**Image Rejection**

. . . . .	45 dB
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**Spurious Response Rejection**

. . . . .	55 dB
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**I.F. Rejection**

. . . . .	40 dB
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**GENERAL:**

**Power Requirements**

. . . . .	120 VAC, 60 Hz
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**Power Consumption at rated output, both channels operating**

. . . . .	300 W
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**Standing Power (Volume Control at zero)**

. . . . .	32 W
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**Dimensions:**

Panel Width . . . . .	466 mm (18-3/8")
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Panel Height . . . . .	140 mm ( 5-1/2")
------------------------	------------------

Depth . . . . .	353 mm (13-7/8")
-----------------	------------------

**Weight:**

Unit alone . . . . .	10.5 kg (23.1 lbs)
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Packed for Shipment . . . . .	12.5 kg (27.5 lbs)
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[FOR EUROPE]

**AUDIO SECTION**

POWER OUTPUT, DIN, 4 OHM, PER CHANNEL .....	129 W
POWER OUTPUT, FTC AMERICAN STANDARDS, 4 OHM, PER CHANNEL .....	88 W
TOTAL HARMONIC DISTORTION AT RATED POWER OUTPUT .....	0.06%
<b>I.M. DISTORTION AT RATED POWER OUTPUT</b>	
(250 Hz AND 8 kHz MIXED, AMPLITUDE RATIO 4:1) .....	0.06%
POWER OUTPUT, DIN, 8 OHM, PER CHANNEL .....	91 W
POWER OUTPUT, FTC AMERICAN STANDARDS, 8 OHM, PER CHANNEL .....	70 W
TOTAL HARMONIC DISTORTION AT RATED POWER OUTPUT .....	0.03%
<b>I.M. DISTORTION AT RATED POWER OUTPUT</b>	
(250 Hz AND 8 kHz MIXED, AMPLITUDE RATIO 4:1) .....	0.03%
POWER BANDWIDTH .....	10 Hz ~ 40 kHz
	(40 Hz) (1 kHz) (12.5 kHz)
<b>DAMPING FACTOR 8 OHM</b> .....	65 65 60
<b>Frequency Response</b>	
Phone (RIAA) .....	±0.5 dB
Aux (±1 dB) .....	10 Hz ~ 40 kHz
<b>Signal-to-Noise Ratio</b>	
Phono .....	72 dB
Aux .....	80 dB
<b>Input Terminals</b>	
Phono: Input Impedance .....	47 k ohms
Input Capacitance .....	100 pF
Input Sensitivity .....	2.7 mV
Overload Margin .....	40 dB
Aux: Input Impedance .....	20 k ohms
Input Sensitivity .....	160 mV
Phono Equivalent Input Noise .....	1.2 µV
Phono Dynamic Range (Ratio of input overload to equivalent input noise) .....	107 dB
<b>Channel Balance (0 to -40 dB/40 Hz ~ 16 kHz)</b>	
Phono .....	2.0 dB
Aux .....	1.5 dB
<b>Interchannel Crosstalk</b>	
Phono 1 kHz .....	35 dB
Aux 1 kHz .....	50 dB
Tape 1 kHz .....	50 dB
<b>Intersource Crosstalk (Worst Point)</b>	
1 kHz .....	50 dB
<b>Output Voltage, 1 kHz</b>	
Tape out .....	450 mV
<b>Output Impedance, 1 kHz</b>	
Tape Out .....	500 ohms
Headphone Jack Load Impedance .....	8 ohms

**FM TUNER SECTION**

Frequency Range .....	87.5 ~ 108 MHz
<b>Usable Sensitivity 40 kHz Deviation, 98 MHz (75 ohms)</b>	
Mono, S/N 26 dB .....	0.8 µV
Stereo, S/N 46 dB .....	21 mV
Alternate Channel Selectivity, 98 MHz ±300 kHz .....	70 dB
Image Response Rejection, 98 MHz .....	60 dB
IF Rejection, 98 MHz .....	100 dB
Spurious Response Rejection, 98 MHz .....	98 dB
AM Suppression, 98 MHz .....	60 dB

<b>Signal-to-Noise Ratio, 98 MHz</b>	
Unweighted: Mono	72 dB
Stereo	65 dB
Weighted: Mono	62 dB
Stereo	55 dB
<b>Pilot Signal &amp; Subcarrier Rejection</b>	
19 kHz	65 dB
38 kHz	70 dB
<b>Total Harmonic Distortion, 98 MHz</b>	
Mono	0.08%
Stereo	0.15%
<b>Frequency Response</b>	
30 Hz ~ 15 kHz	+0.3 dB, -1.0 dB
<b>Separation</b>	
Stereo	48 dB
Channel Balance	0.5 dB
Output Voltage, 1 kHz	600 mV
Output Impedance, 1 kHz	1 k ohms
Acceptable Load Impedance, 1 kHz	47 k ohms
<b>Antenna Terminals</b>	
Balanced	300 ohms
Unbalanced	75 ohms

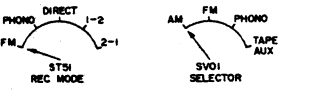
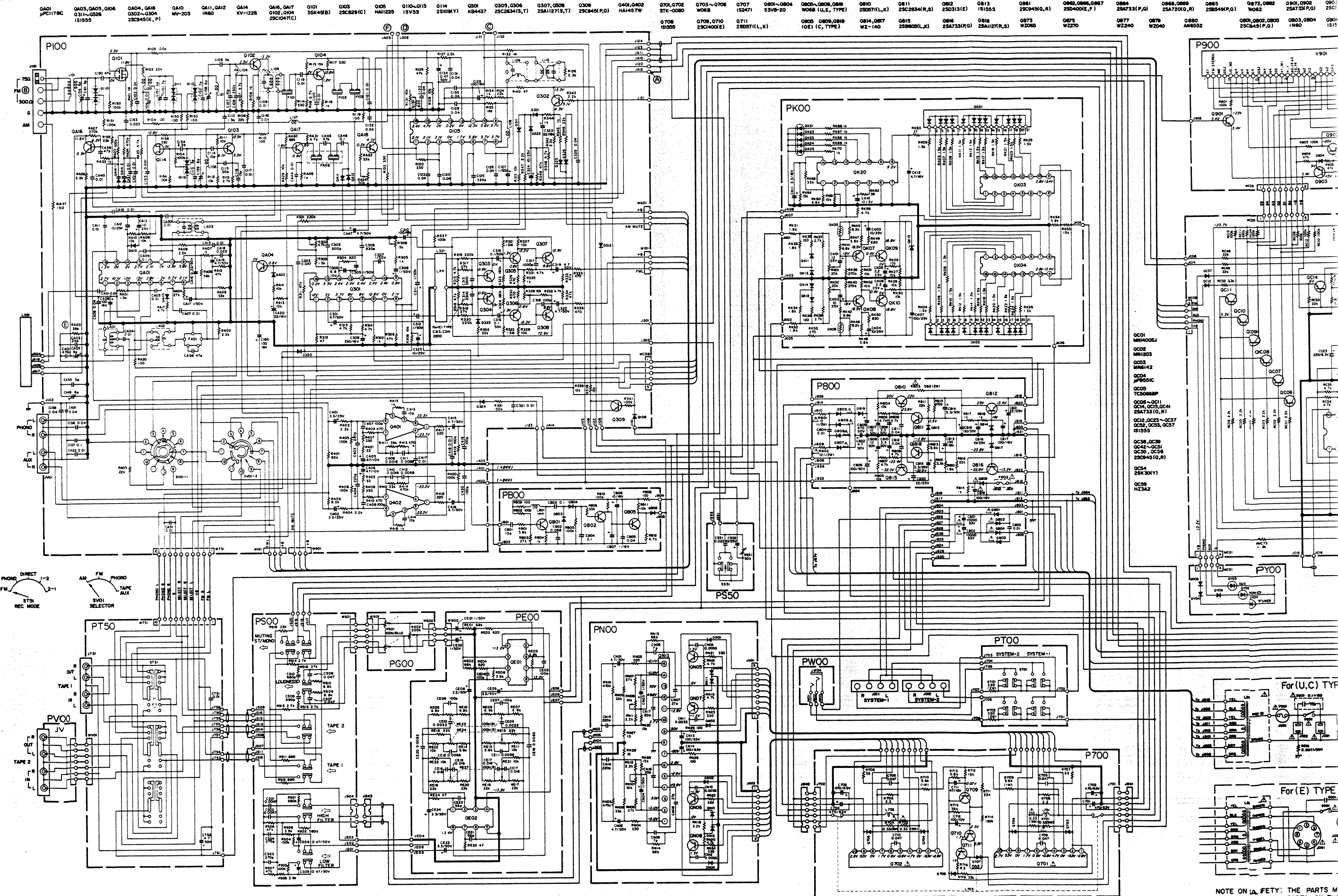
## AM TUNER SECTION

Frequency Range	515 ~ 1650 kHz
Usable Sensitivity (26 dB S/N 30% Mod., 1 MHz)	15 $\mu$ V
Selectivity, 1 MHz $\pm$ 9 kHz	46 dB
Image Rejection, 1 MHz	50 dB
IF Rejection, 1 MHz	45 dB
Spurious Response Rejection, 1 MHz	60 dB
Signal-to-Noise Ratio, 1 MHz	55 dB
Frequency Response, 1 MHz $\pm$ 3 dB	35 Hz ~ 1.8 kHz
Total Harmonic Distortion, 1 MHz	0.5%

## GENERAL

Power Requirements	220 V AC, 50 Hz
	(N version is featuring an external voltage selector for use on 110/120/240 V.
	Other versions can be converted by a qualified technician to operate on 110/120/240 V.)
Power Consumption at Rated Output, Both Channels Operating	300 W
Idling Power	32 W
<b>Semiconductor Complement</b>	
Integrated Circuits	12
Transistors	29
Diodes	39
Field Effect Transistors	1
<b>Dimensions</b>	
Panel Width	18-3/8" (466 mm)
Panel Height	5-1/2" (140 mm)
Depth	13-7/8" (353 mm)
<b>Weight</b>	
Unit alone	23.1 lbs (10.5 kg)
Packed for shipment	27.5 lbs (12.5 kg)

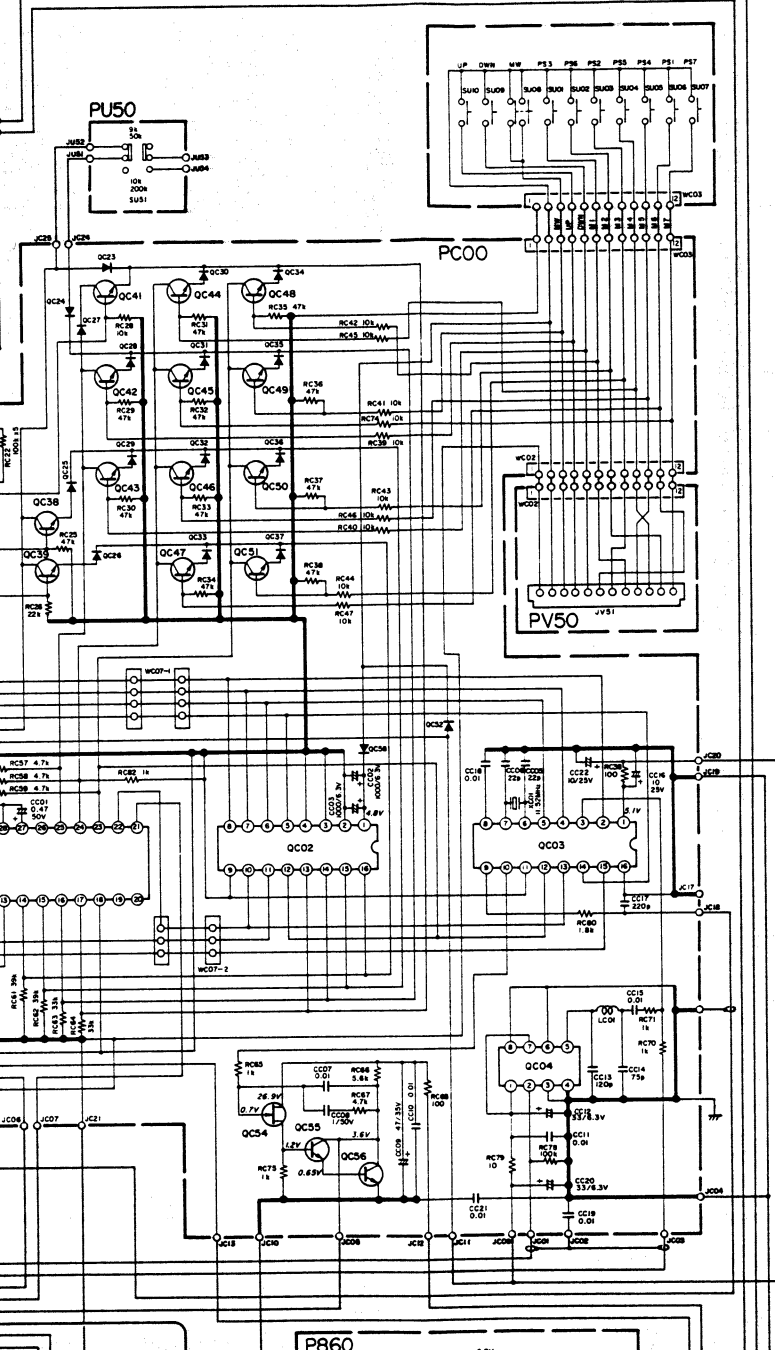
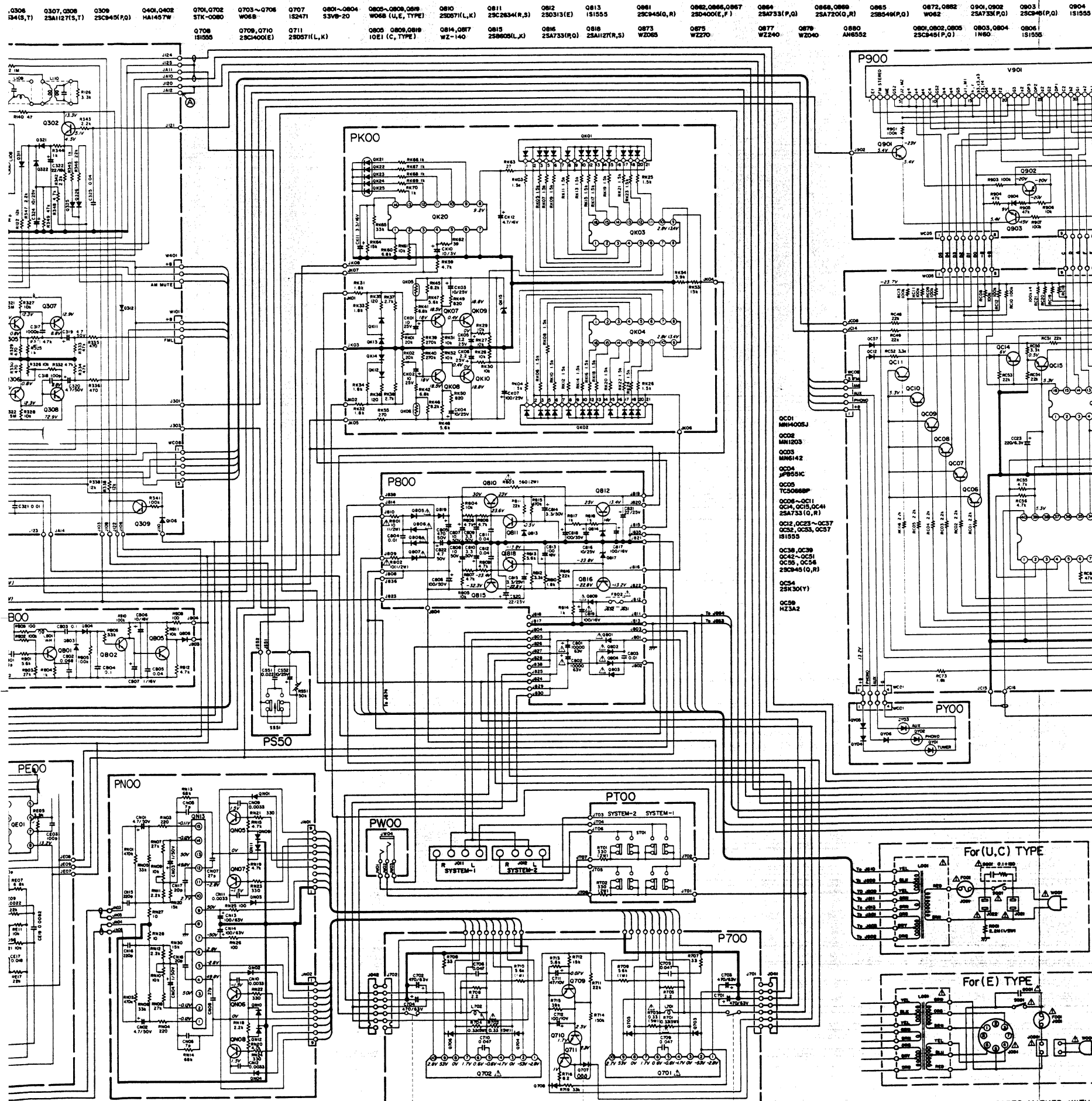
# SCHEMATIC DIAGRAM



- Q001 6X4
- Q002 6X4
- Q003 6X4
- Q004 6X4
- Q005 6X4
- Q006 6X4
- Q007 6X4
- Q008 6X4
- Q009 6X4
- Q010 6X4
- Q011 6X4
- Q012 6X4
- Q013 6X4
- Q014 6X4
- Q015 6X4
- Q016 6X4
- Q017 6X4
- Q018 6X4
- Q019 6X4
- Q020 6X4
- Q021 6X4
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- Q099 6X4
- Q100 6X4

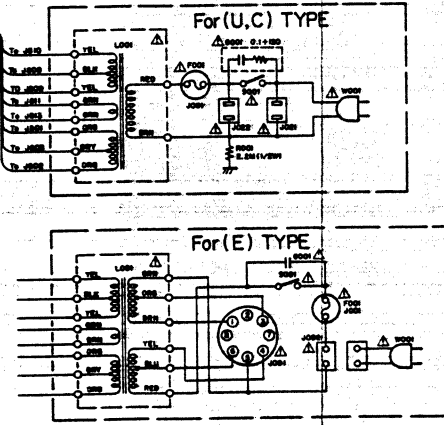
NOTE ON SAFETY: THE PARTS MARKED WITH THIS SYMBOL ARE THE PARTS ON THE HAVING THE C





- BOTTOM VIEW**
- Q1: DRAIN O101
- Q2: SOURCE
- Q3: GATE 1
- Q4: GATE 2
- OC34
- Q1: SOURCE
- Q2: GATE
- Q3: DRAIN
- Q102-Q104, Q302-Q308, Q709, Q710, Q816, Q818, Q861, Q862, Q864, Q811, Q866-Q869, Q901-Q903, Q404, Q418-Q419, Q408-Q411, Q414, Q415, Q438, Q439, Q441-Q443, Q435, Q436, Q437, Q444-Q446, Q447-Q449, Q450-Q452
- SIDE VIEW**
- Q1: EMITTER O810, Q815, Q865, Q711
- Q2: COLLECTOR
- Q3: BASE
- Q1: BASE O814
- Q2: COLLECTOR (FLANGE)
- Q3: EMITTER
- BOTTOM VIEW**
- Q1: DRAIN Q114
- Q2: SOURCE
- Q3: GATE
- SIDE VIEW**
- ON13
- Q701, Q701
- TOP VIEW**
- Q105, Q301, Q401, OC02, OC03, OC05, QK03, QK04
- SIDE VIEW**
- Q401, Q402
- TOP VIEW**
- QK20
- Q880-Q, QE01, QE02, OC04
- OC01

- OC01 MM4005J
- OC02 MM1203
- OC03 MM6142
- OC04 JF8551C
- OC05 TC5088BP
- OC06-QC11, OC04, OC15, OC41, 25A733(G,R)
- OC12, OC23-QC37, OC32, OC33, OC31, IS1555
- OC38, OC39, OC42-QC31, OC35, OC56, 25C445(G,R)
- OC54 25A30(Y)
- OC59 HZ3A2



NOTE ON SAFETY: THE PARTS MARKED WITH Δ ARE IMPORTANT PARTS ON THE SAFETY. PLEASE USE THE PARTS HAVING THE DESIGNATED PARTS NUMBER WITHOUT FAIL.

- QE01, QE02 ONM40590
- QK01, QK02 GL-1128R4
- QK03, QK04 25C13(G)
- QK05, QK06 25A127(S)
- QK07, QK08 25A127(S)
- QK09, QK10 25C264(E)
- QK11-QK14 QV8-QV04, IS1555
- QK15 XZ-185
- QK20 L814B
- QK21-QK25 SLP141B
- QK01, QK02 25C13(G)
- QK03, QK04 25A127(S)
- QK05, QK06 25A127(S)
- QK07, QK08 25A127(S)
- QK09, QK10 25C264(E)
- QK11-QK14 QV8-QV04, IS1555
- QK15 XZ-185
- QK20 L814B
- QK21-QK25 SLP141B