

SERVICE MANUAL

marantz

model ST500

Stereophonic Tuner

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92600 Asnieres
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England

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

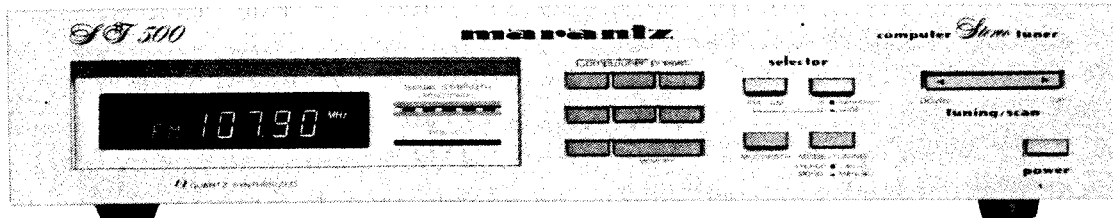
All of the above locations are fully equipped to take care of your total service needs. Because various countries have differing configuration requirements, it is necessary that you contact the service facility in your particular country. In the event that there is no service location listed for your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

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MODEL ST500 AM/FM STEREOPHONIC TUNER



1. INTRODUCTION

This service manual was prepared for use by Authorized Warranty Stations and contains service information for Marantz Model ST500 AM/FM Stereophonic Tuner.

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 operations in the tuner.

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.

2. P.W. BOARDS

As can be seen from the circuit diagram, the chassis of Model ST500 consists of the following units. Each unit mounted on a printed circuit board is described within the square enclosed by a bold dotted line on the circuit diagram.

1. Tuner & Synthesizer . . . mounted on P.W. Board P100
2. Noise Amplifier. mounted on P.W. Board PB00
3. Display Ass'y mounted on P.W. Board P900
4. DE-Emphasis Switch . . . mounted on P.W. Board PC00
5. Scan Step. mounted on P.W. Board PC50
6. Fuse mounted on P.W. Board PP00
7. Function Switch mounted on P.W. Board PS00
8. Mode Switch mounted on P.W. Board PT00
9. Preset Switch mounted on P.W. Board PU00

NOTE ON SAFETY:

THE PARTS MARKED WITH Δ 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 Oszillatorschleife (in der Abbildung mit "FTZ" gekennzeichnet) so zu korrigieren, dass er den Bestimmungen entspricht.

3. TEST EQUIPMENT REQUIRED FOR SERVICING

This table lists the test equipment required for servicing the Model ST500 Tuner.

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
Frequency Counter		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 tuner
Line Voltmeter	Simpson Model 1359	Monitors potential of primary power to tuner
Variable Autotransformer	Superior Electronic Co., Powerstat Model 116B-10A	Adjusts level of primary power to tuner

4. TUNER 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, mode/tuning switch in the Mono/Manual Position.)

1. FM Local Oscillator Alignment

Step	Signal Source Connection	Signal Frequency	Indicator Connection	Set the Digital Readout Frequency to	Adjust
1			DC voltmeter in 30V and 3V range to J505	107.90 MHz	C117 for 20.0V
2				88.10 MHz	L106 for 3.0V
3	Repeat steps 1 and 2				

2. FM RF Alignment

Step	Signal Source Connection	Signal Frequency	Indicator Connection	Set the Digital Readout Frequency	Adjust:
1	RF generator to FM antenna terminal through matching network (300 ohms, balanced) Maintain RF level below limit.	106.10 MHz	VTVM to L or R channel output (J102)	106.10 MHz	C101, C107, C110 for maximum output and minimum distortion.
2		90.10 MHz		90.10 MHz	L101, L102, L103 for maximum output and minimum distortion.
3	Repeat steps 1 and 2.				
4	RF generator to FM antenna terminals through matching network (300 ohms, balanced) Maintain RF level below limit.	98.10 MHz	VTVM to L or R channel output (J102)	98.10 MHz	L105 for maximum output and minimum distortion.
5	RF generator 1mV output to FM antenna terminals through matching network. (300 ohm, balanced)	98.10 MHz	"0" center meter or DC current meter in 100μA range between J201 and J202	98.10 MHz	L202 primary core so that the meter indicates its center or may read "0".
6	RF generator 1mV output to FM antenna terminals through matching network. (300 ohms, balanced)	98.10 MHz	Distortion meter to L or R channel output (J102)	98.10 MHz	IF Band switch "Wide". L202 secondary core for minimum distortion. IF Band switch "Narrow". L201 core for minimum distortion.
7	RF generator 1mV output to FM antenna terminals through matching network. (300 ohms, balanced)	98.10 MHz		98.10 MHz	RT01 so that signal strength Led may light 5 points.
8	RF generator to FM antenna terminals through matching network (300 ohms, balanced) with the RF signal level of that the signal strength LED may light 3 points at IF band switch "Wide".	98.10 MHz		98.10 MHz	IF Band switch "Narrow". R215 so that signal strength Led may light 3 points.



4.2 Muting Circuit Alignment

(FM stopping level of scanning. FM stereo indicator threshold level.)

Step	Signal Source Connection	Signal Frequency	Indicator Connection	Set the Digital Readout Frequency	Adjust:
1	RF generator 12.5 μ V output to FM antenna terminal through matching network (300 ohm, balanced)	98.10 MHz	VTVM to R or L channel output (J102)	98.10 MHz	R229 for 12.5 μ V threshold level (setting to Auto position of "Mode" switch)

4.3 Multiplex Alignment Procedures

(Selector switch in the "FM" position. Mode/Tuning switch in the Stereo/Auto position.)

Step	Signal Source Connection	Signal Frequency	Indicator Connection	Set the Digital Readout Frequency	Adjust:
1	RF generator to FM antenna terminals through matching network (300 ohms, balanced) with 1mV FM stereo simulator RF level and 100% modulation (Pilot 9%)	No modulation	Frequency counter to (J301)	98.10 MHz	R303 so that Frequency may precisely read 76 kHz
2		Stereo left (1,000 Hz)	VTVM to right channel output (J102)		IF Band switch "Wide" RS05. IF Band switch "Narrow" RS04. For same separation in both channels.
3		Stereo right (1,000 Hz)	VTVM to left channel output terminal (J102)		
4	Repeat steps 2 and 3.				
5	RF generator to FM antenna terminals 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 (J102)		R306 so that minimum output should be the same in both channels.

4.4 AM Alignment Procedures

(Selector switch in the "AM" position. Mode/Tuning switch in the Mono/Manual position.)

1. AM Local Oscillator Alignment (Scan step selector switch (SC51) in the "10 kHz" position.)

Step	Signal Source Connection	Signal Frequency	Indicator Connection	Set the Digital Readout Frequency	Adjust
1			DC voltmeter in 30V and 3V range to (J505)	1,610 kHz	CA10 for 23V
2				530 kHz	LA02 for 2.0V
3	Repeat steps 1 and 2.				

2. AM IF Alignment

Step	Signal Source Connection	Signal Frequency	Indicator Connection	Set the Digital Readout Frequency	Adjust:
1	Sweep generator to (RA05)	450 kHz marker	Oscilloscope to (JA05)	Quiet point on band	LA03 & LA04 for maximum and symmetric response

3. AM RF Alignment

Step	Signal Source Connection	Signal Frequency	Indicator Connection	Set the Digital Readout Frequency	Adjust:
1	Apply the signal to the AM bar antenna from the RF generator using the test loop. As per the Figure 1.	1,400 kHz	VTVM to L or R channel output (J102)	1,400 kHz	CA02 for maximum output
2		600 kHz		600 kHz	L051 for maximum output
3	Repeat steps 1 and 2 as necessary to obtain maximum sensitivity.				
4	Apply the signal to the AM bar antenna from the RF generator using the test loop. As per the Figure 1. (with 3mV/m)	1,000 kHz		1,000 kHz	RS06 so that signal strength LED may light 4 points.

4. AM Stopping Level of Scanning

(Mode/Tuning switch in the "Stereo/Auto" Position.)

Step	Signal Source Connection	Signal Frequency	Indicator Connection	Set the Digital Readout Frequency	Adjust:
1	Apply the signal to the AM bar antenna from the RF generator using the test loop. As per the Figure 1. (with 600 μ V/m)	1,000 kHz	VTVM to L or R channel output (J102)	1,000 kHz	RA18 for 600 μ V threshold level

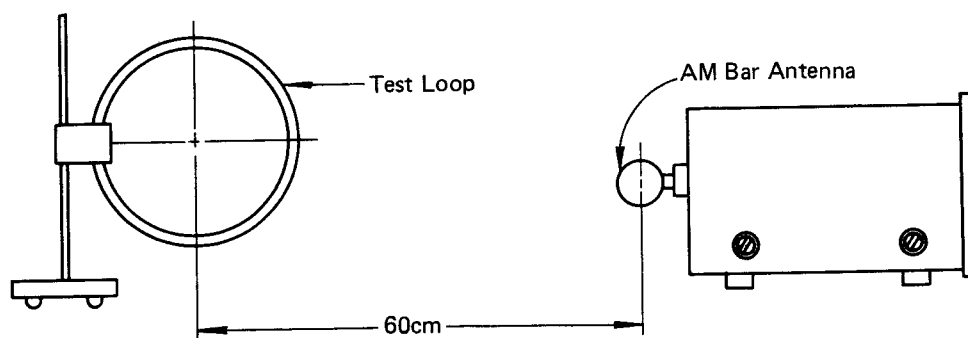


Figure 1. Application of AM Signal

5. VOLTAGE CONVERSION

• EUROPEAN MODEL ONLY

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.

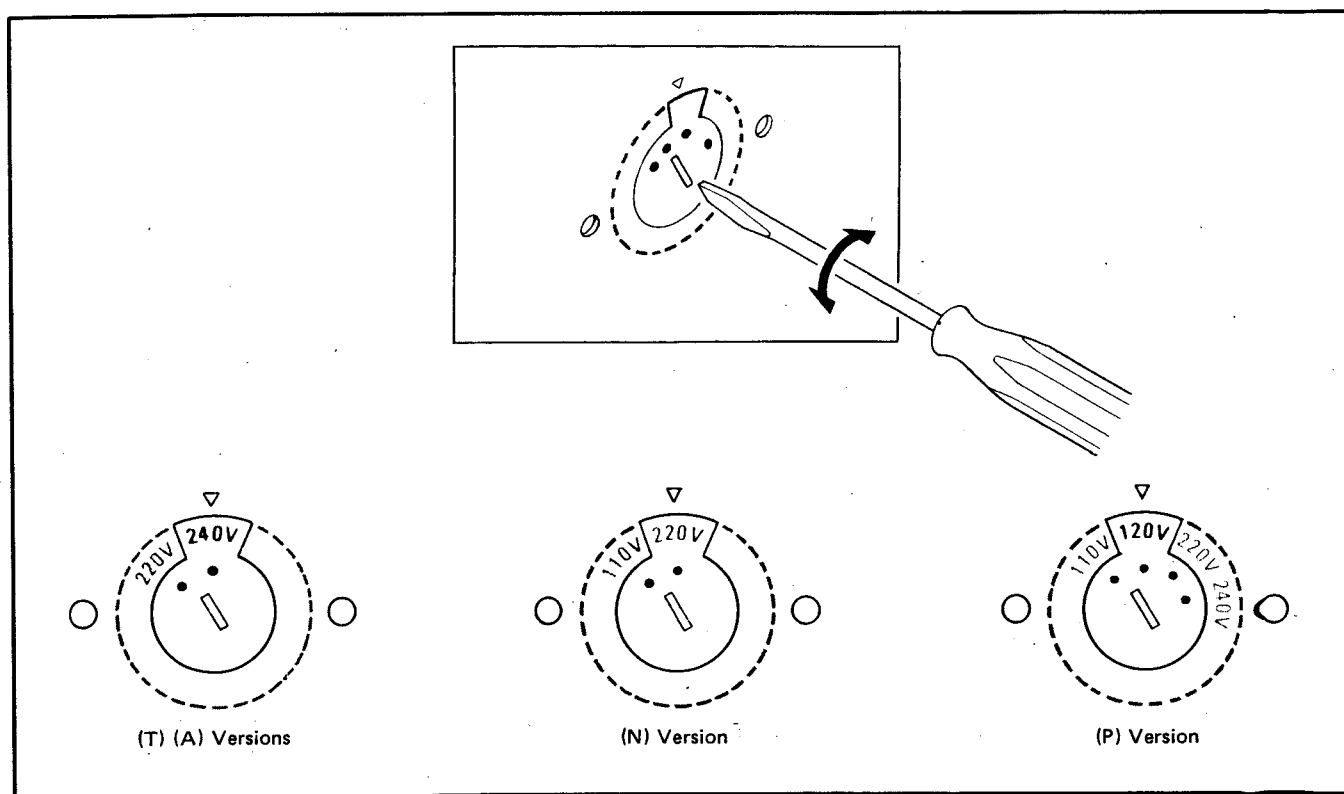


Figure 2. Voltage Conversion Chart

6. FREQUENCY SYNTHESIZER RADIO TUNING SYSTEM

[1] Construction of Synthesizer System

This frequency synthesizer is composed of a microcomputer (MN1400SJ), PLL LSI (MN6142), CMOS RAM (MN1203), prescaler (μ PB551C), low pass filter, crystals and fluorescent indicating tubes, as shown in Figure 1.

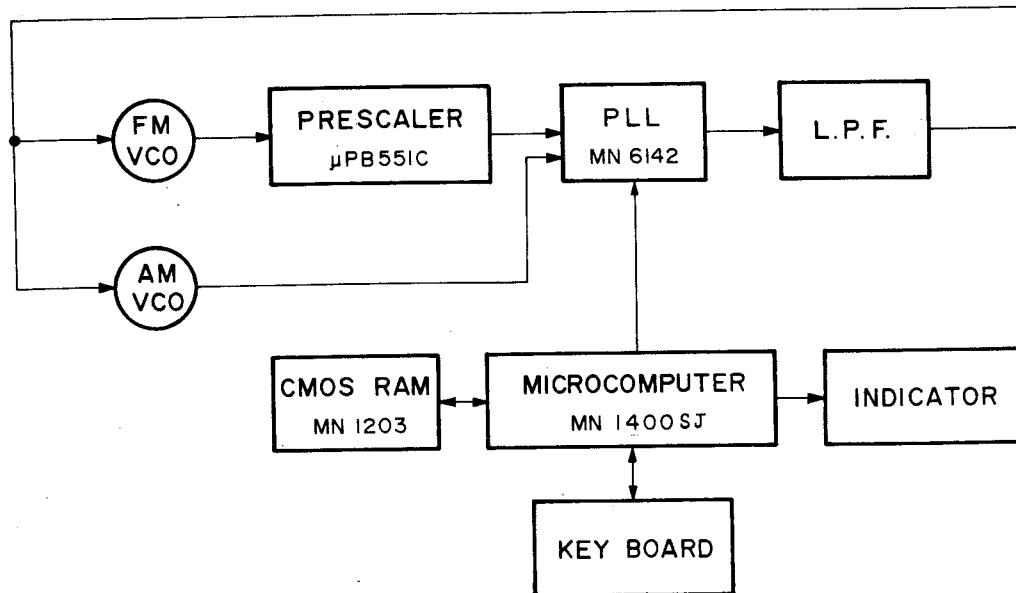


Figure 1

[2] Microcomputer MN1400SJ

[2]-1. Terminal Connections

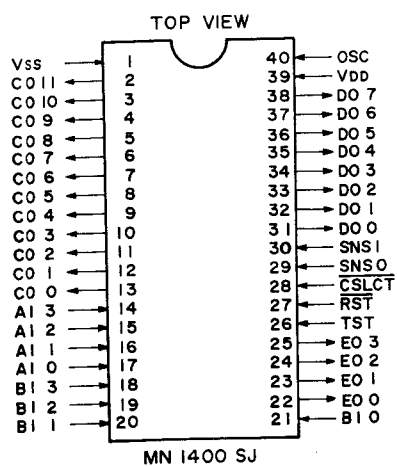


Figure 2

[2]-2. Block Diagram

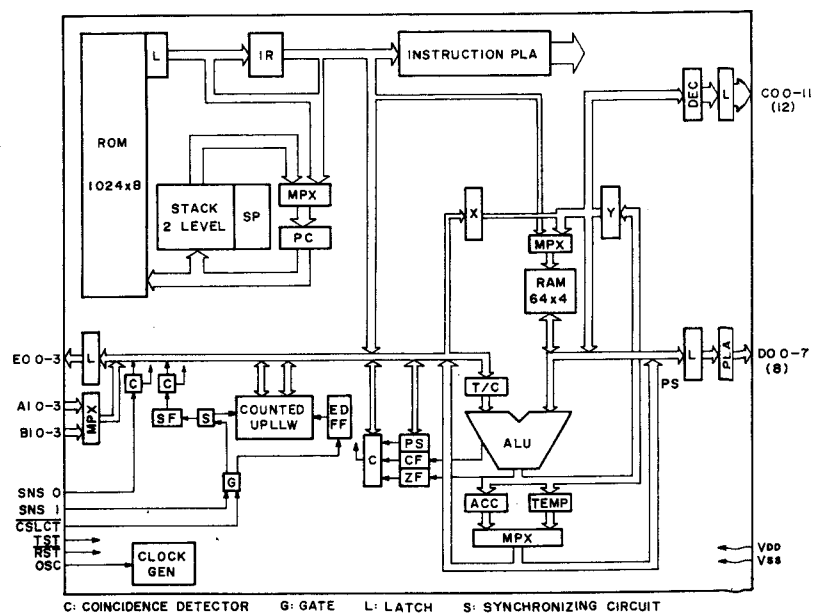


Figure 3

[2] -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 _{DD}	-0.3~+10	V	I _{DD}	V _{DD} = 5V Without load		20	40	mA		
		V ₁	-0.3~+10	V								
		V _O	-0.3~+10	V	P _T	V _{DD} = 5V Without load		100	200	mA		
		V _{OSC}	-0.3~+10	V								
		I _{OH} (PK) (C,D,E Port)	-0.5	mA	V _{IH1}	A10~A13, B10~B13 SNS0, SNS1 V _{DD} = 5V	2.4		V _{DD}	V		
		I _{OL} (PK) (C,D,E Port)	8	mA			V _{SS}		0.8			
		I _{OH} (aV) (C,D,E Port)	-0.25	mA	V _{IH2}	$\overline{\text{RST}}$, $\overline{\text{CSLCT}}$, RDY V _{DD} = 5V	2.4		V _{DD}	V		
		I _{OL} (aV) (C,D,E Port)	4	mA			V _{SS}		0.8			
		P _T	500	mW	I _{i2}	V ₁ = 0.8V	-5	-15	-30	μA		
		Topr	-30~+70	°C	V _{OH1}	C00~C011, DO0~DO7, SYNC, EO0~EO3, DOPS, RA0~RA10	V _{DD} = 5V I _{OH} = -30μA	4			V	
		Tstg	-55~+125	°C			V _{OH2}	V _{DD} = 5V I _{OH} = -100μA	2.6			
		Operating Condition (Ta = 25°C)			V _{OL}		V _{DD} = 5V I _{OL} = 2mA			0.5		
		Item	min.typ.max.	Unit								
		V _{DD}	4,5,5,6	V	f _{OSC}	V _{DD} = 5V, R _{OSC} = 18kΩ, C _{OSC} = 100pF	200	300	450	kHz		
					C ₁	V _{DD} = 5V, V _i = 2V		5		pF		
					C ₀	V _{DD} = 5V, V _i = 2V		7				

[2] -4. Functions of Terminals

No.	Symbol	Item	No.	Symbol	Item
1	V _{SS}	GND	40	OSC	360 kHz In
2	CO11		39	V _{DD}	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	$\overline{\text{CSLCT}}$	GND
14	A13	Key mode switch input	27	$\overline{\text{RST}}$	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] PLL LSI MN6142

[3]-1. Terminal Connections

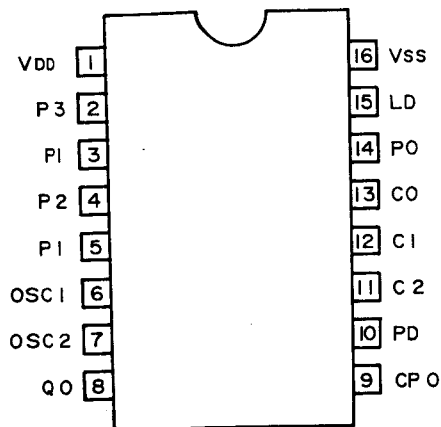


Figure 4.

[3]-2. Specifications

Absolute maximum ratings

Item	Symbol	Rating	Unit	Remarks
Power supply voltage	V_{DD}	$-0.3 \sim +10$	V	$V_{SS}=0V$
Power consumption	$P_T(\text{MAX})$	50	mW	
Input voltage	V_{IN}	$-0.3 \sim V_{DD}+0.3$	V	$V_{SS}=0V$
Output voltage	V_{OUT}	$-0.3 \sim V_{DD}+0.3$	V	$V_{SS}=0V$
Operating temperature	V_{OPT}	$-20 \sim +70$	$^{\circ}\text{C}$	
Storage temperature	T_{stg}	$-55 \sim +100$	$^{\circ}\text{C}$	

[3]-3. Block Diagram

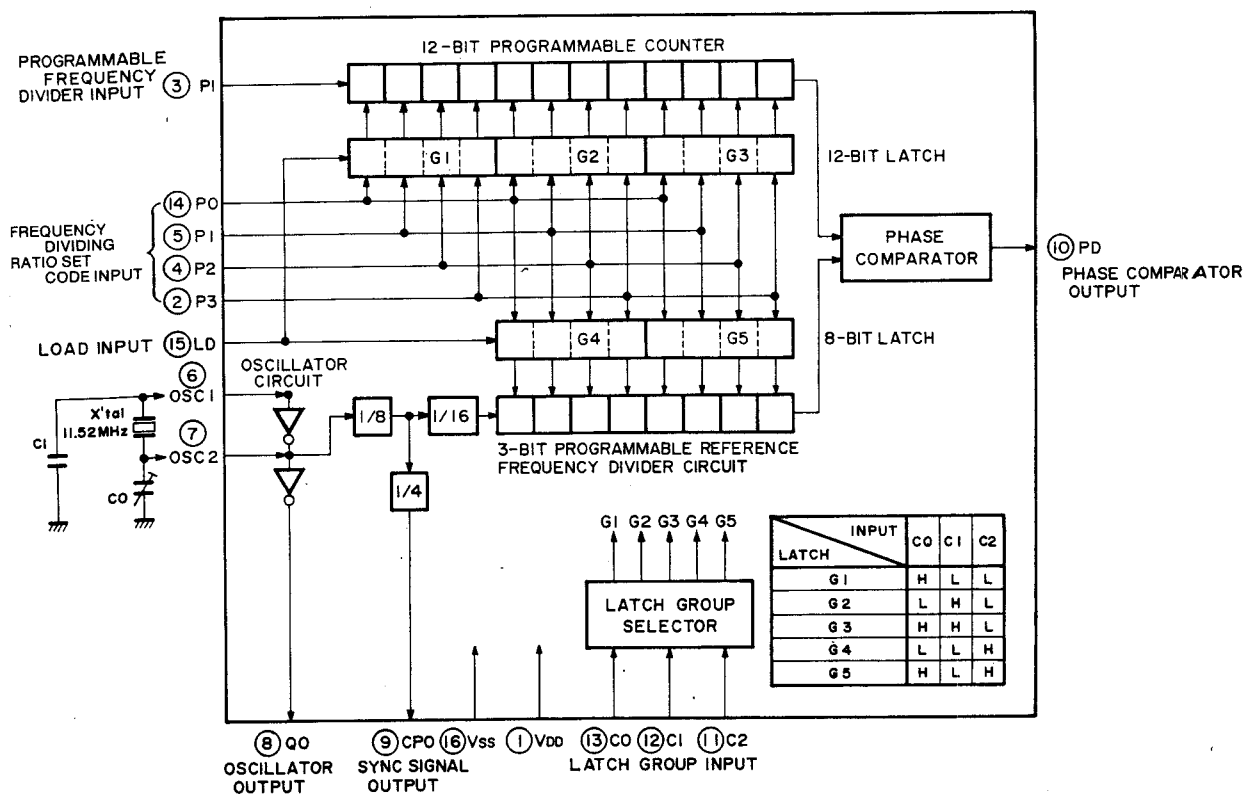


Figure 5.

[3]-4. Functions of Terminal

No.	Symbol	Descriptions
1	V _{DD}	Power supply, +5V
2	P3	Frequency dividing ratio preset code input
3	P1	Programable frequency divider input
4	P2	Frequency dividing ratio preset code input
5	P1	Frequency dividing ratio preset code input
6	OSC1	Oscillator
7	OSC2	Oscillator
8	Q0	Oscillator output, 11.52 MHz
9	CPO	Sync signal output, 360 kHz
10	PD	Phase comparator output
11	C2	Latch group select input
12	C1	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 code input latch circuit
16	V _{SS}	Ground

[4] CMOS RAM MN1203

[4]-1. Terminal Connection

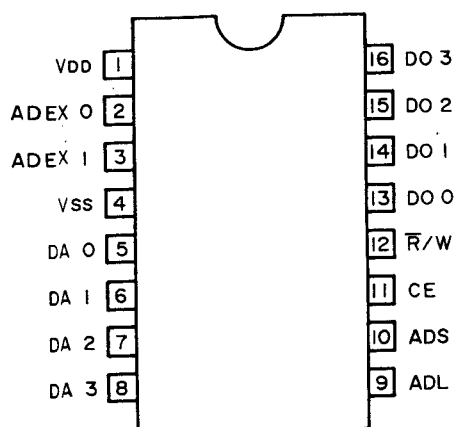


Figure 6.

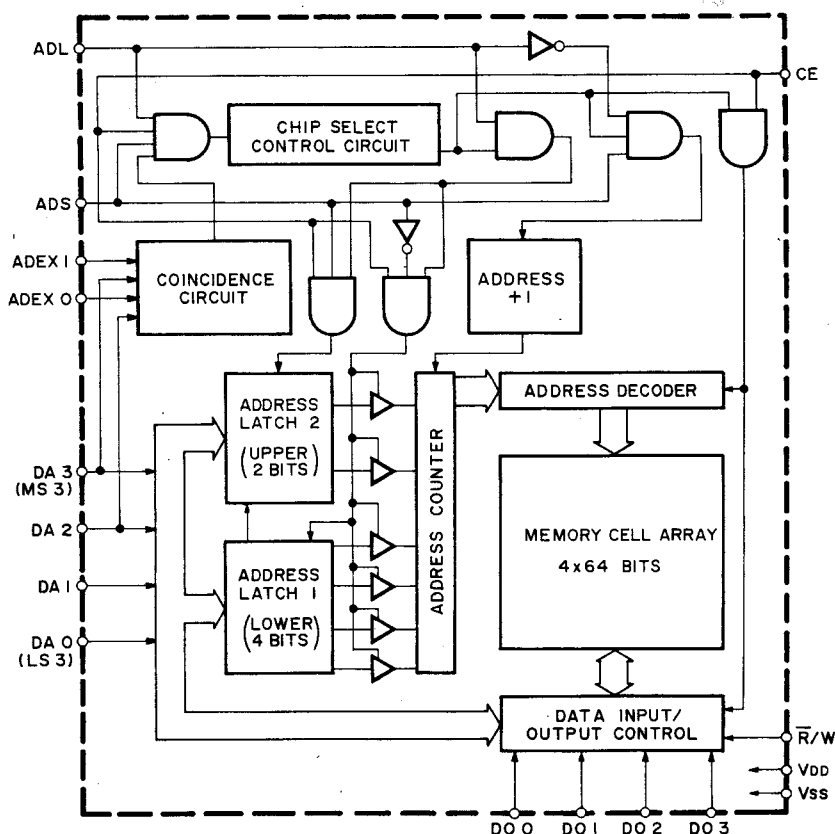
[4]-2. Specifications

Absolute maximum ratings

Item	Symbol	Rating	Unit	Remarks
Power supply voltage	V _{DD}	-0.3~+8.0	V	V _{SS} =0V
Input terminal voltage	V _{IN}	-0.3~V _{DD} +0.3	V	V _{SS} =0V
Output terminal voltage	V _{OUT}	-0.3~V _{DD} +0.3	V	V _{SS} =0V
Operating temperature	V _{OPT}	-20~+70	°C	
Storage temperature	T _{stg}	-55~+100	°C	

[4] -3. Block Diagram
3. Functional block diagram

Figure 7.



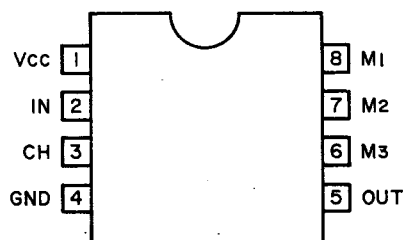
[4] -4. Functions of terminals

No.	Symbol	Descriptions
1	V _{DD}	Power supply, +5V
2	ADEX0	Chip select input
3	ADEX1	Chip select input
4	V _{SS}	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

[5] PRESCALER μ PB551C

[5] -1. Terminal Connections

Figure 8.



[5] -2. Specifications

Absolute maximum ratings ($T_a = 25^\circ\text{C}$)

Item	Symbol	Rating	Unit
Power supply voltage	V_{CC}	$-0.5 \sim +6.0$	V
Input voltage	V_I	$-0.5 \sim V_{CC}$	V
Output current	V_O	15	mA
Junction temperature	T_j	+125	$^\circ\text{C}$
Storage temperature	T_{stg}	$-55 \sim +125$	$^\circ\text{C}$

Electrical characteristics ($V_{CC} = 5V \pm 10\%$, $T_a = -30 \sim +75^\circ\text{C}$)

Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Power supply current	I_{CC}	$V_{CC} = 5.0V$		38	52	mA
High level output voltage	V_{OH}	Out terminal, $I_O = -40\mu\text{A}$	4.0			V
Low level output voltage	V_{OL}	Out terminal, $I_O = 1.0\text{mA}$			1.0	V
High level input voltage	V_{IH}	M3 terminal *1	4.0			V
Low level input voltage	V_{IL}	M3 terminal *2			1.0	V
Input voltage	V_{in}	IN terminal	140			mVr.m.s.
Response frequency	f_{in1}	IN terminal, 1/10, 1/11 frequency dividing *3	1.0		100	MHz
Response frequency	f_{in2}	IN terminal, other than 1/10, 1/11 frequency dividing *3	1.0		150	MHz

[5] -3. Block Diagram

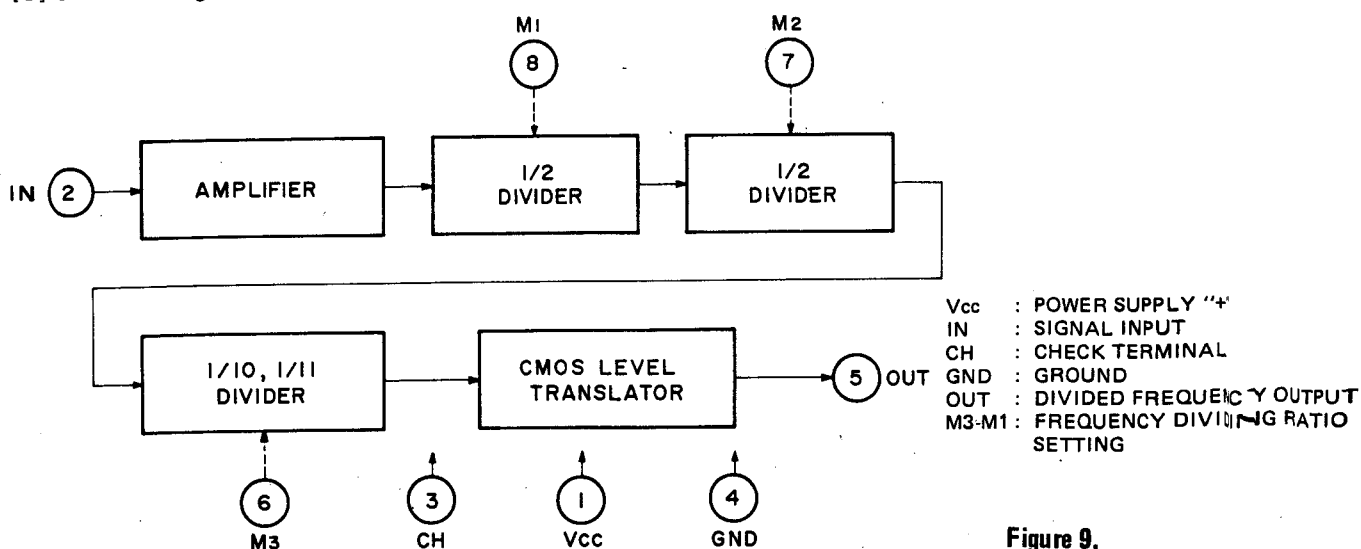


Figure 9.

[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 reserve 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 ☆ 98.8-118.6 MHz (or ☆ 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(er) 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.

$$\begin{aligned}f_L' &= f_L/20N = f_r \\f_L &= 20Nf_r\end{aligned}$$

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 $20f_r$ steps. When tuning FM in 200 kHz 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.

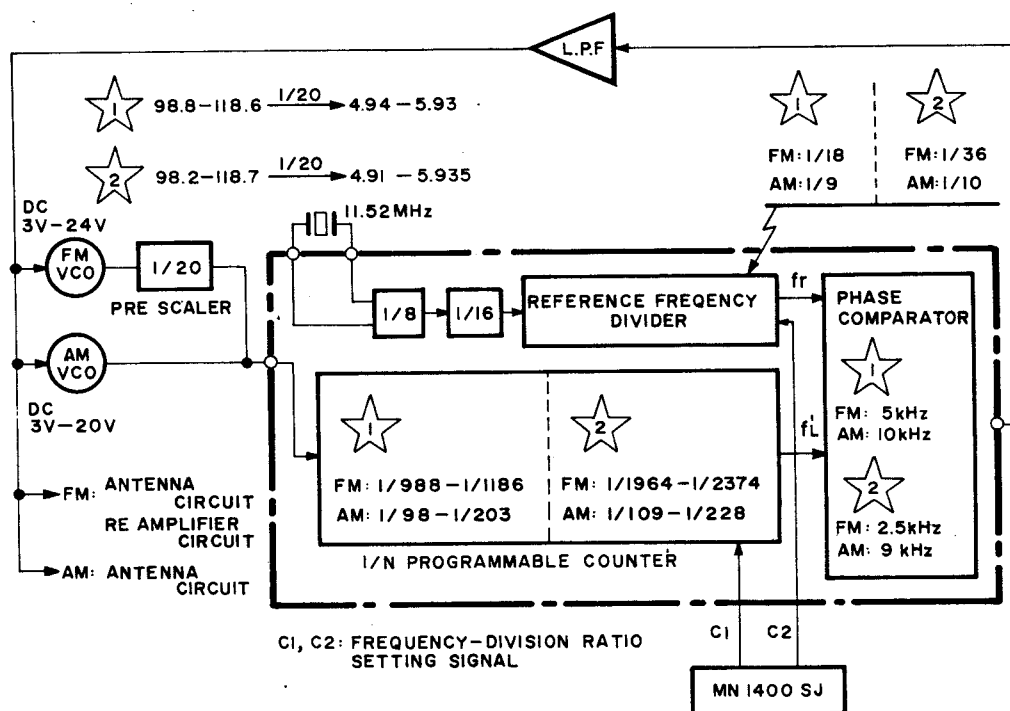
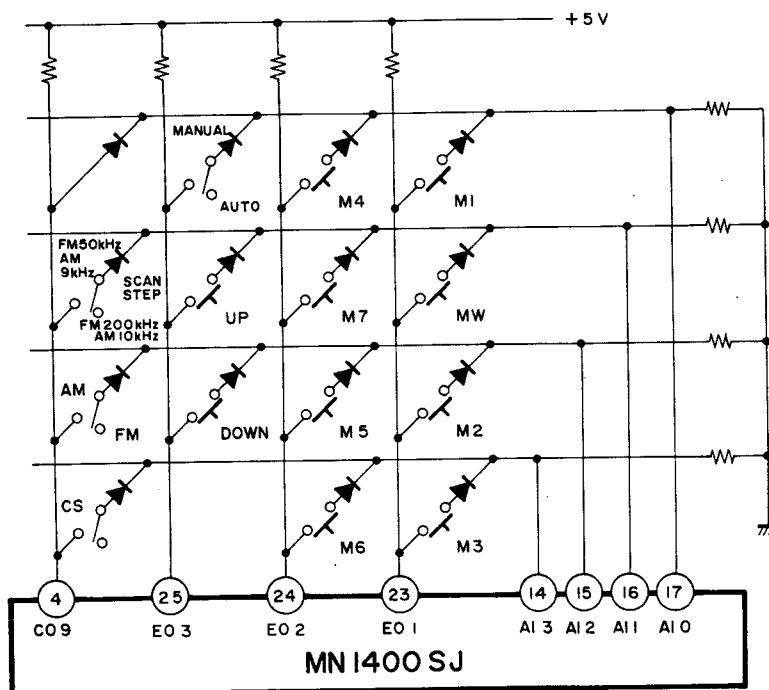


Figure 10.

	Scan step	Receiving frequency	Intermediate frequency	Local oscillator frequency	Number of channels	Phase comparator reference frequency
1	FM: 200KHz AM: 10KHz	88.1MHz ~ 107.9MHz 530KHz ~ 1,610KHz	10.7MHz 450KHz	98.8MHz ~ 118.6MHz 980KHz ~ 2,060KHz	100 109	5 KHz 10KHz
2	FM: 50KHz AM: 9KHz	87.50MHz ~ 108.00MHz 531KHz ~ 1,602KHz	10.7MHz 450KHz	98.2MHz ~ 118.7MHz 981KHz ~ 2,052KHz	441 120	2.5KHz 9 KHz

Mode Setting and Control Key Connections



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 stored in memory is called in mode 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.

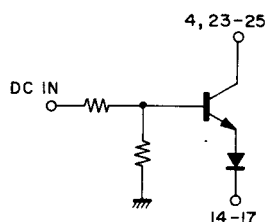
CS: Chip select switch

- * 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 - 1,610 kHz
- * FM 200K: 200kHz space 88.1MHz - 107.9MHz
- * AM 9K: 9kHz space 531kHz - 1,602kHz
- * FM 50K: 50kHz space 87.50MHz - 108MHz

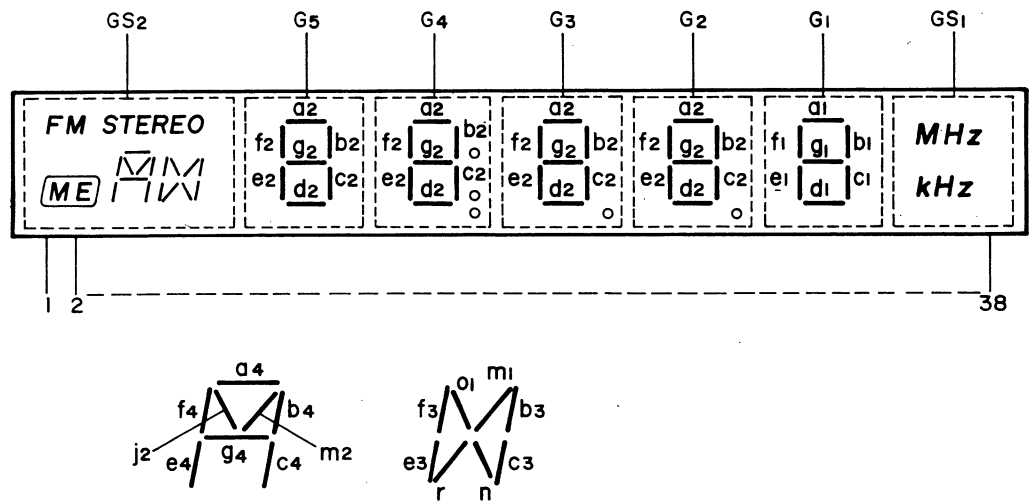
Switches other than SCAN STEP are transistor switches and used for remote control capability.



Indicator

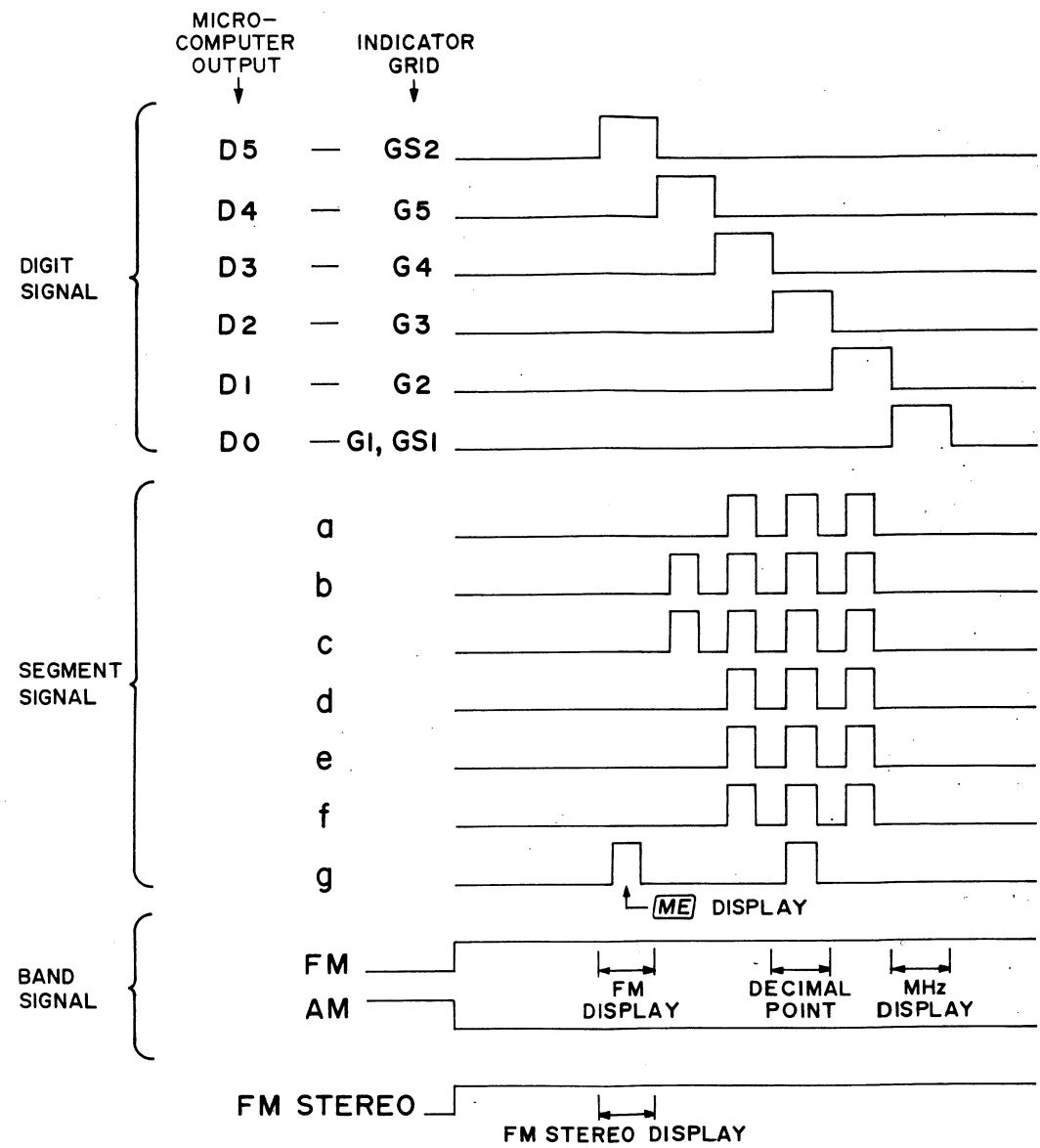
The indicator employs fluorescent tubes for dynamic lighting.

Dynamic lighting timing chart



Pin No.	Connection	Pin No.	Connection	Pin No.	Connection	Pin No.	Connection
1	F	11	b ₄	21	G ₃	31	a ₂
2	FM STEREO	12	a ₄	22	e ₂	32	g ₁
3	ME	13	G ₅	23	D _{p3}	33	b ₁ , e ₁
4	GS ₂	14	j ₁ , m ₁	24	D _{p2}	34	GS ₁
5	j ₂ , m ₂	15	h, r	25	d ₂	35	a ₁ , f ₁ , c ₁ , d ₁
6	g ₄	16	b ₃ , c ₃ , e ₃ , f ₃	26	G ₂	36	KHz
7	e ₄	17	G ₄	27	D _{p1}	37	MHz
8	d ₄	18	g ₂	28	C ₂	38	F
9	C ₄	19	f ₂	29	b ₂		
10	GS ₂	20	Col	30	G ₁		

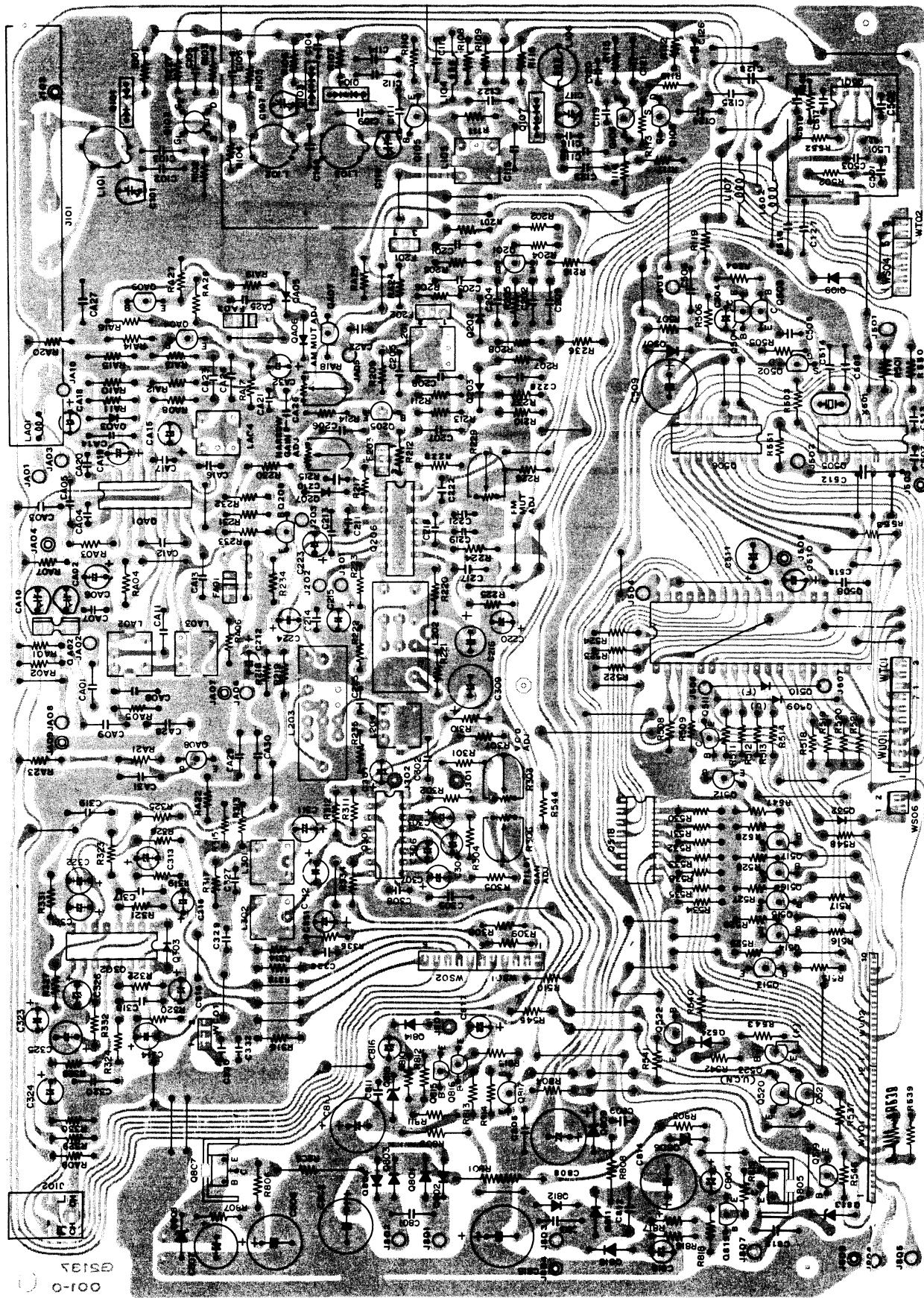
Dynamic Lighting Timing Chart



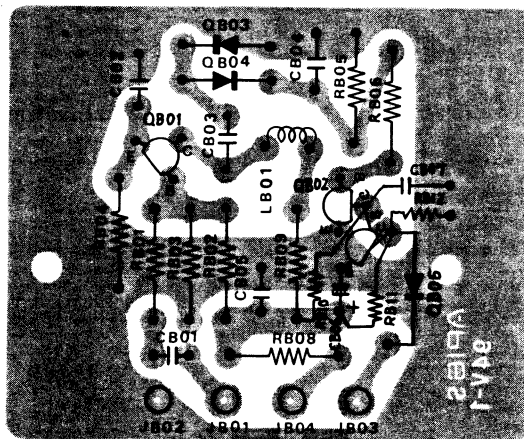
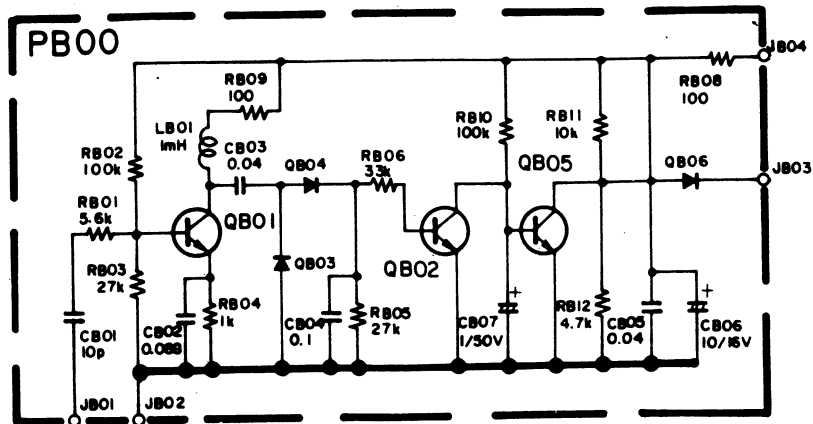
* In the above timing chart, the display lights on FM STEREO, ME and FM 108.00 MHz.
* For the indication of minimum digit (G1), the segments a1, c1, d1 and f1 are always lighted, the letter 5 is lighted by the signal g, and the figure 0 is lighted by signals b1 & e1 fed by Q902 & Q903 when the signal g is low level.

7.1 Tuner and Synthesizer Assembly (P100) Schematic Diagram and Component Locations

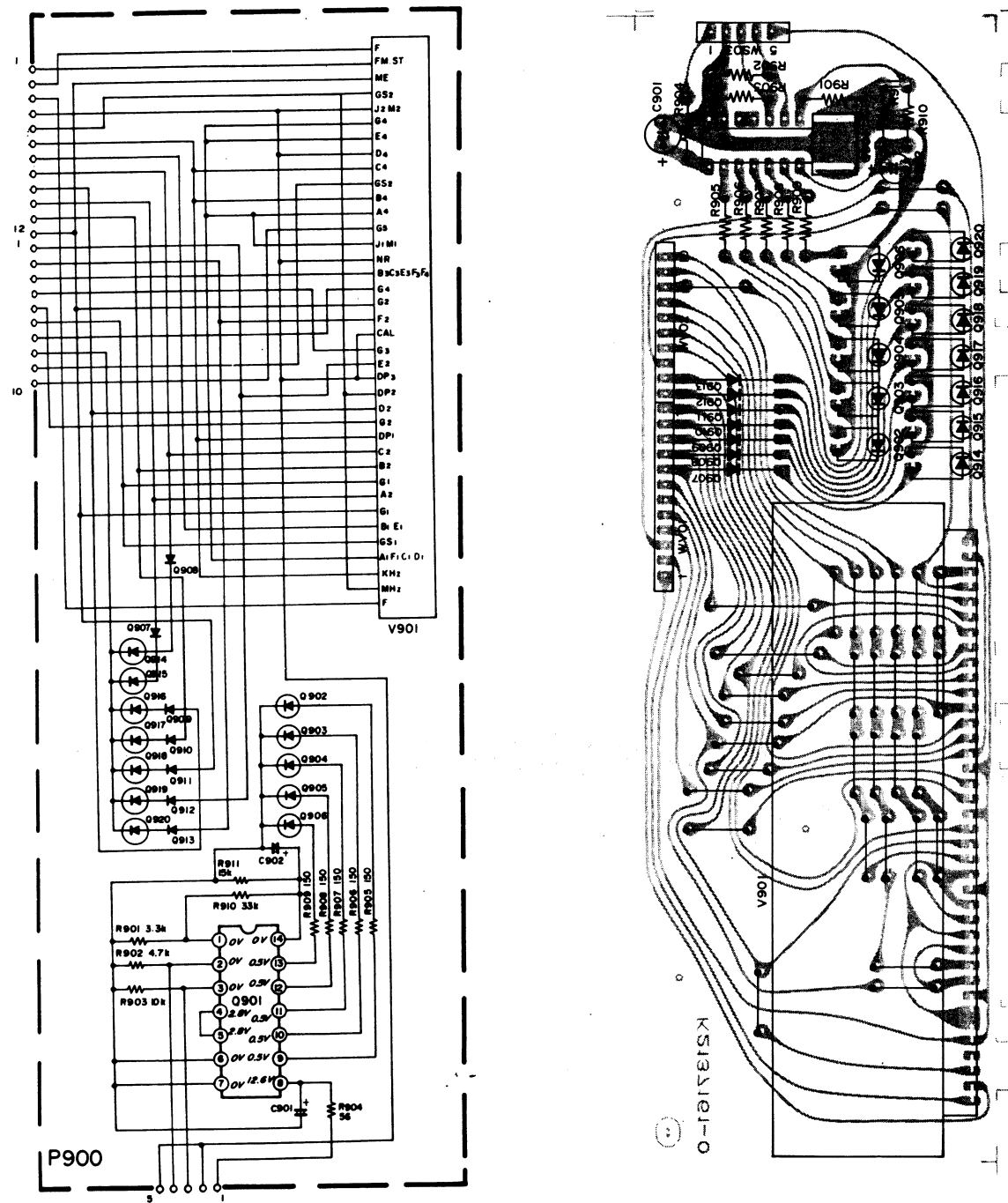




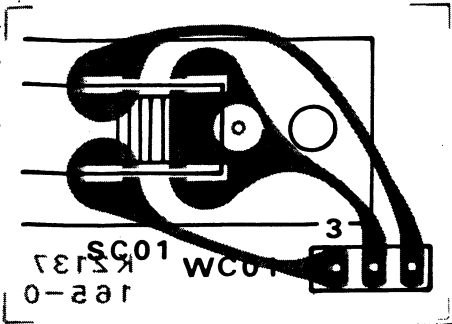
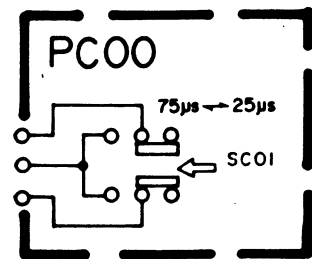
7.2 Noise Amplifier Assembly (PB00) Schematic Diagram and Component Locations



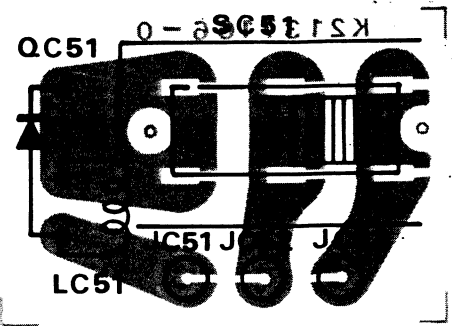
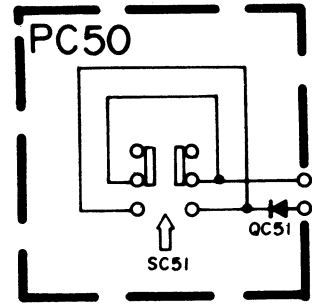
7.3 Display Assembly (P900) Schematic Diagram and Component Locations



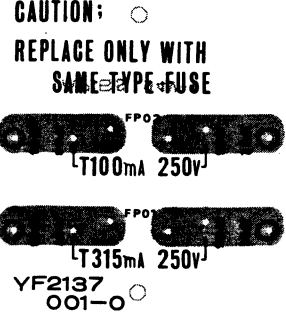
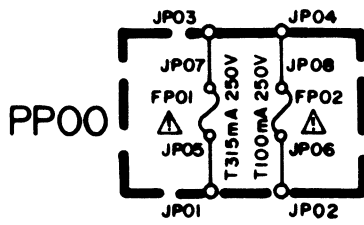
7.4 DE-Emphasis Switch Assembly (PC00) Schematic Diagram and Component Locations



7.5 Scan Step Assembly (PC50) Schematic Diagram and Component locations

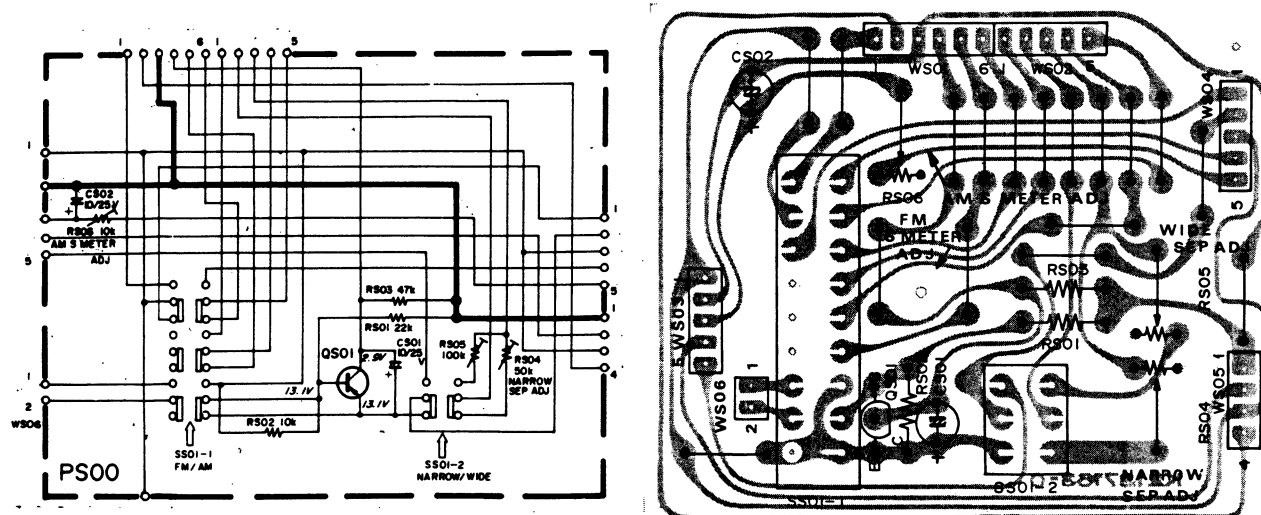


7.6 Fuse Assembly (PP00) Schematic Diagram and Component Locations

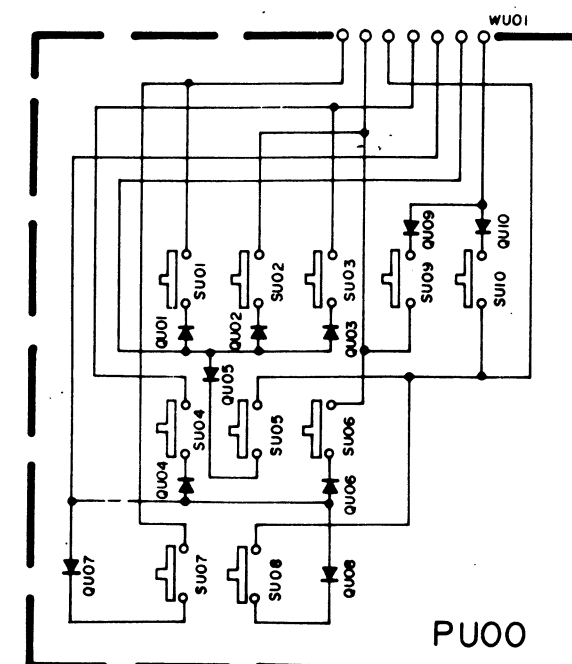


CAUTION: ○
REPLACE ONLY WITH
SAME TYPE FUSE
FPO1
T100mA 250V
FPO2
T315mA 250V
YF2137
001-0

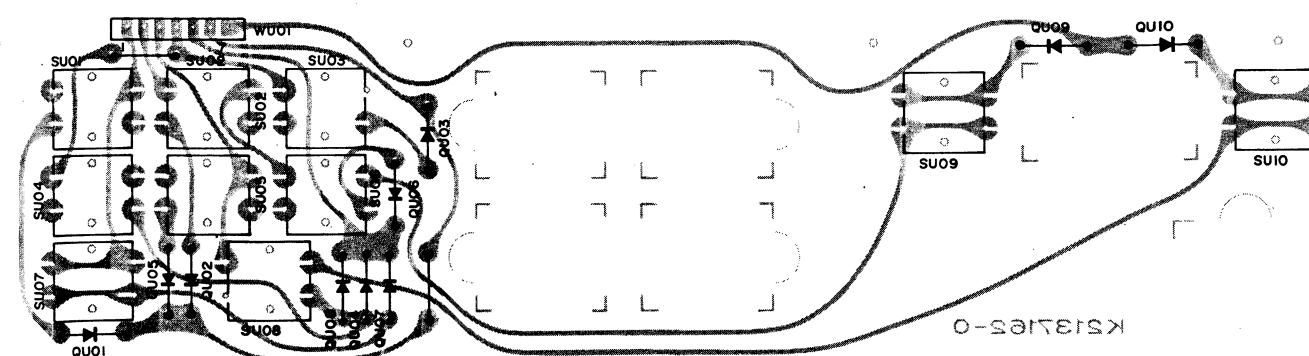
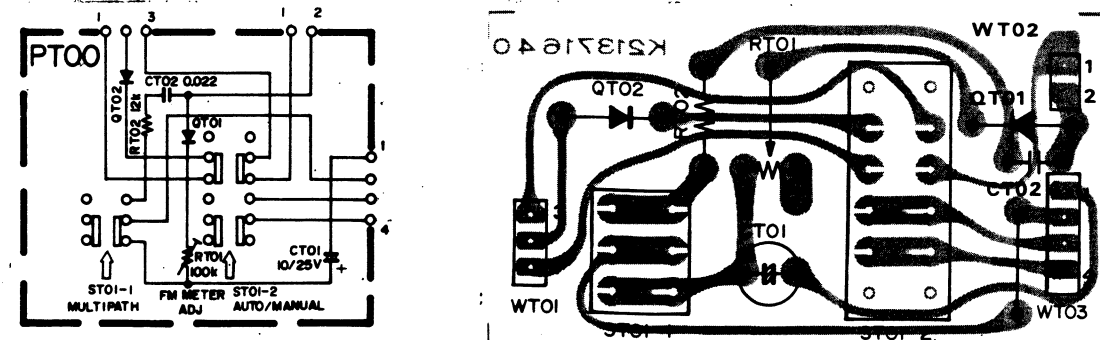
7.7 Function Switch Assembly (PS00) Schematic Diagram and Component Locations



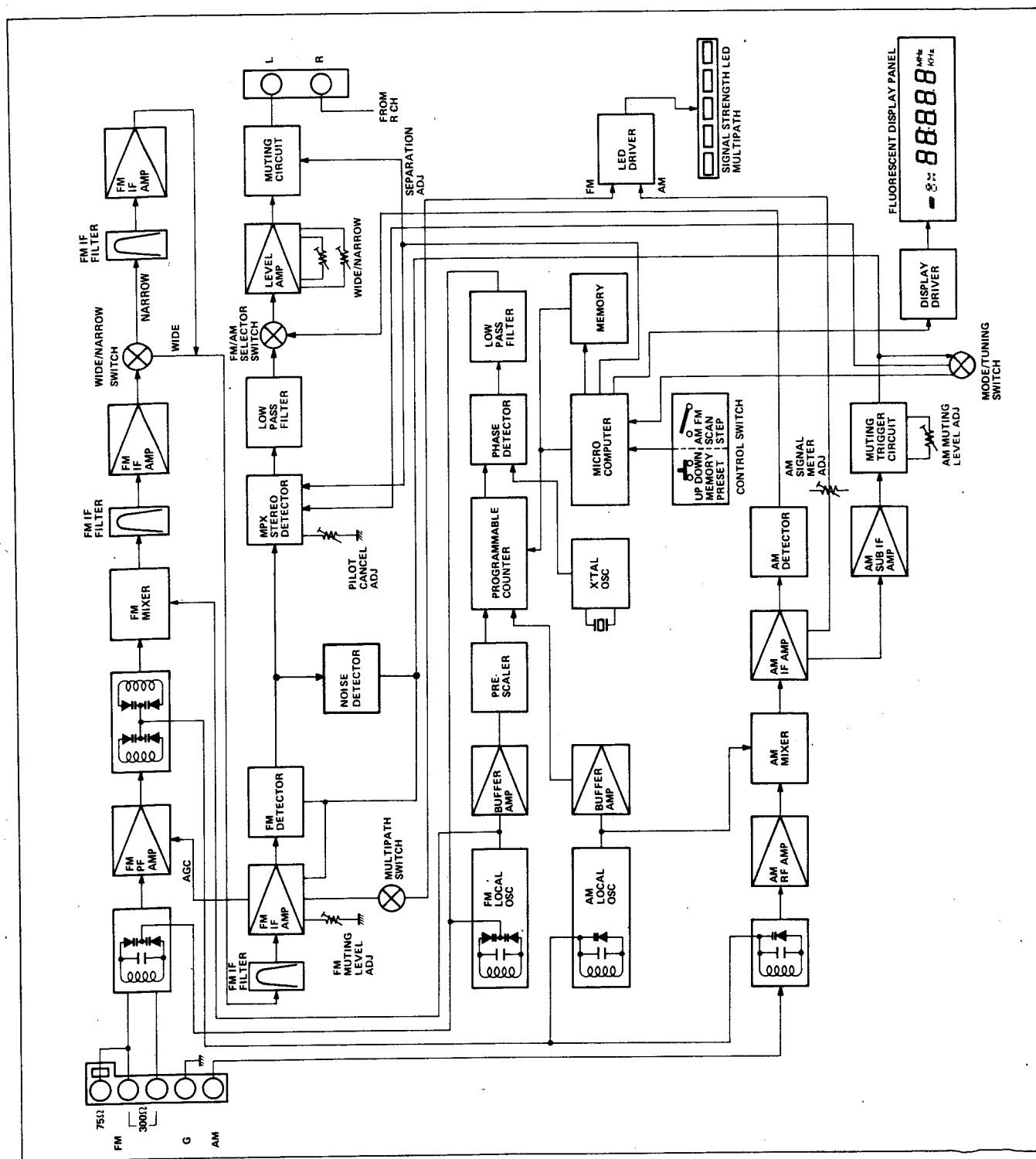
7.9 Preset Switch Assembly (PU00) Schematic Diagram and Component Locations



7.8 Mode Switch Assembly (PT00) Schematic Diagram and Component Locations

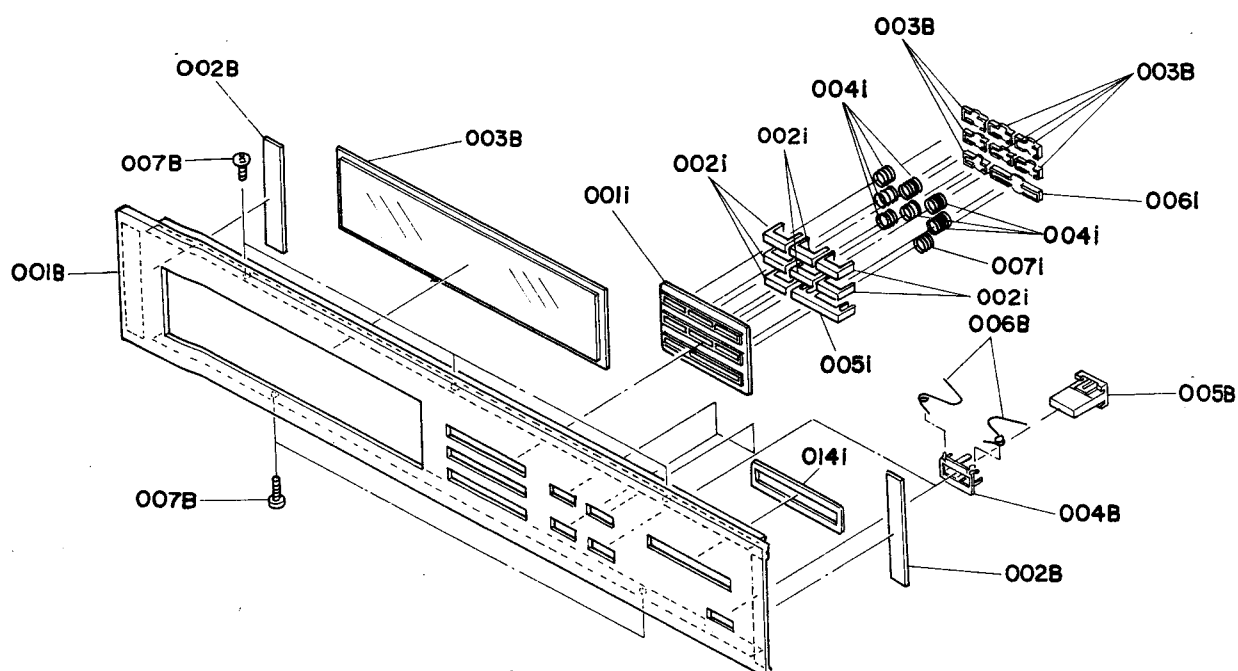


8. FUNCTIONAL BLOCK DIAGRAM



9. EXPLODED VIEW AND PARTS LIST

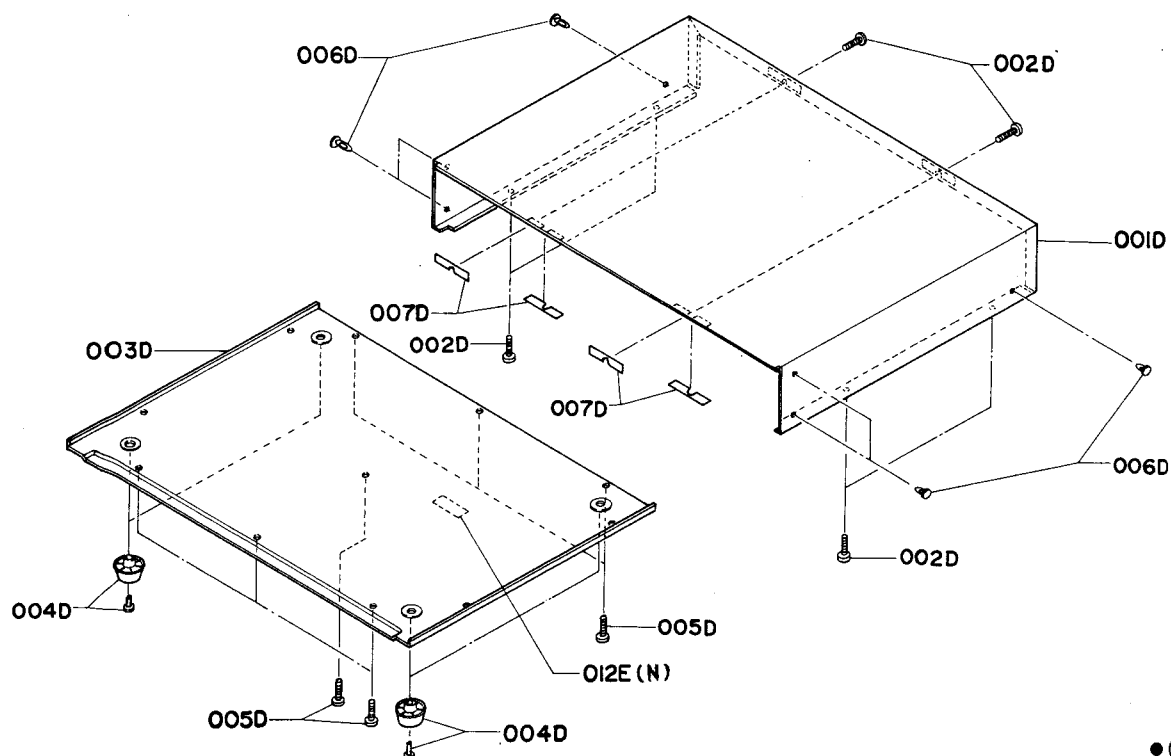
• [C01-99] Front Panel



● (U) for U.S.A.
● (C) for Canada
● (N) for Europe

REF. DESIG.	QTY			PART NO.	DESCRIPTION
	U	C	N		
A	1	1	1	2137063400	Front Panel Assembly
001B	1	1	1	2137063013	Escutcheon
002B	2	2	2	2149118010	Spacer
003B	1	1	1	2137158010	Window
004B	5	5	5	2127259012	Bushing
001i	1	1	1	2137259012	Bushing
002i	7	7	7	2137154012	Knob
003i	7	7	7	2137005012	Clamper
004i	7	7	7	2137115010	Spring
005i	1	1	1	2137154022	Knob
006i	1	1	1	2137005022	Clamper
007i	1	1	1	2137115110	Spring
014i	1	1	1	2137259020	Bushing
005B	5	5	5	2127154010	Knob
006B	10	10	10	2127115010	Spring
007B	5	5	5	51280308B0	B.H. TAP. Screw B3x 8

• [C02-99] Top and Bottom Cover

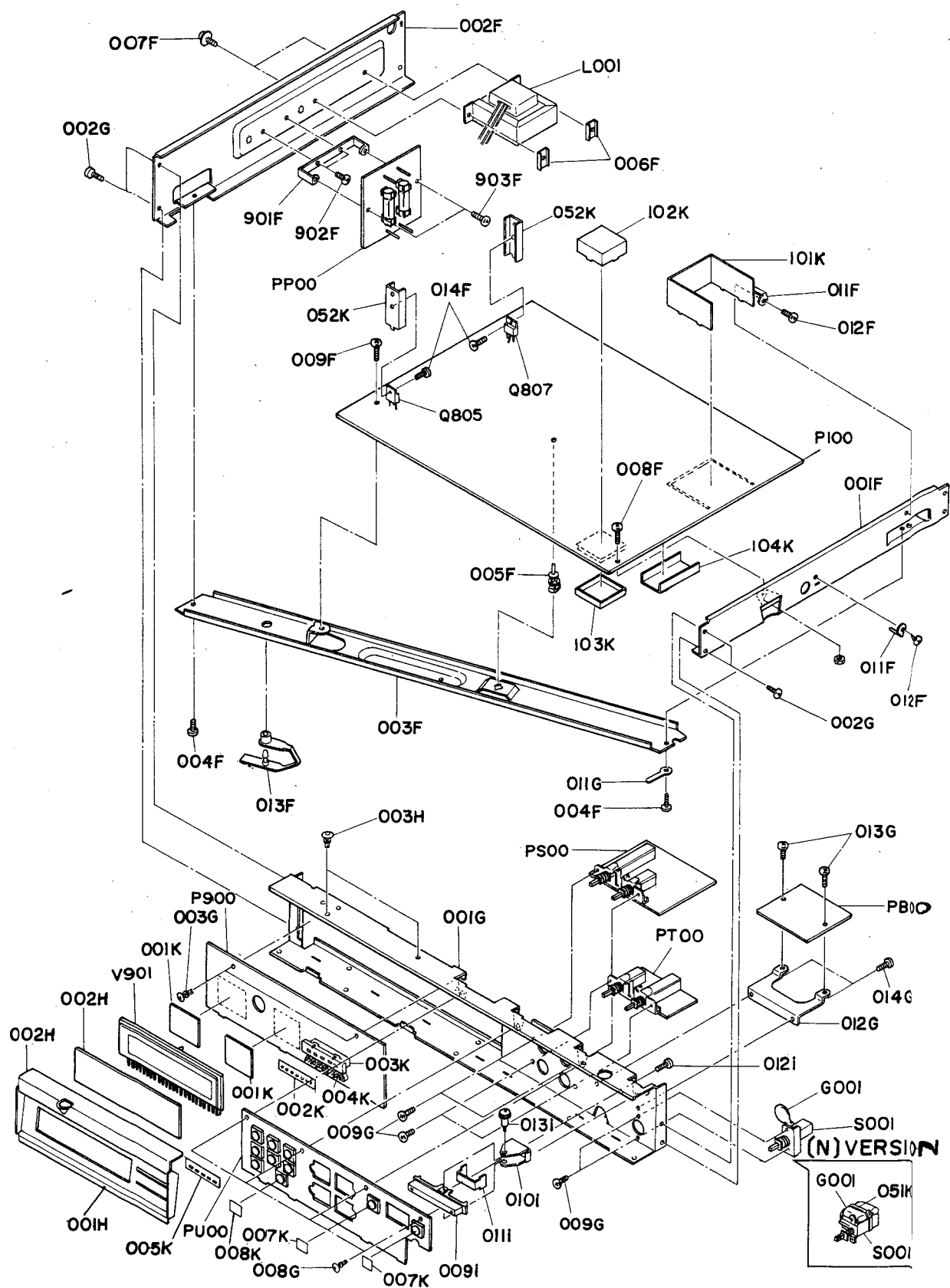


● (U) for U.S.A.
● (C) for Canada
● (N) for Europe

REF. DESIG.	QTY			PART NO.	DESCRIPTION
	U	C	N		
001D	1	1	1	2137257012	TOP COVER Lid
002D	6	6	6	51280308U0	B.H. TAP. Screw 83 x 8
006D	6	6	6	2991259010	Bushing
007D	4	4	4	2149118110	Spacer

REF. DESIG.	QTY			PART NO.	DESCRIPTION
	U	C	N		
003D	1	1	1	2137257020	BOTTOM COVER Lid
004D	4	4	4	2149057010	Leg
005D	7	7	7	51280308B0	B.H. TAP. Screw 83 x 8
012E			1	3889861010	Label

• [C03-99] Chassis and General Parts

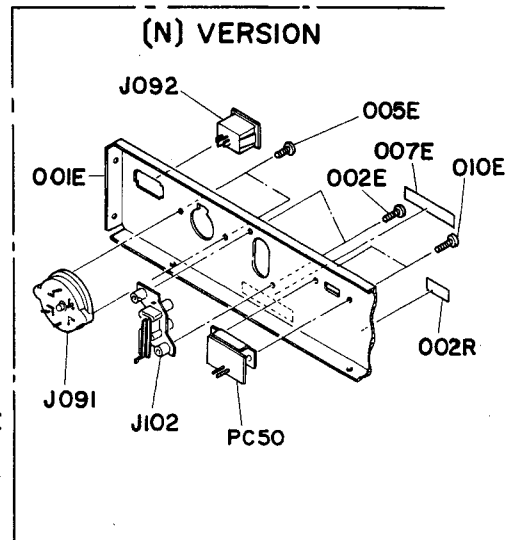
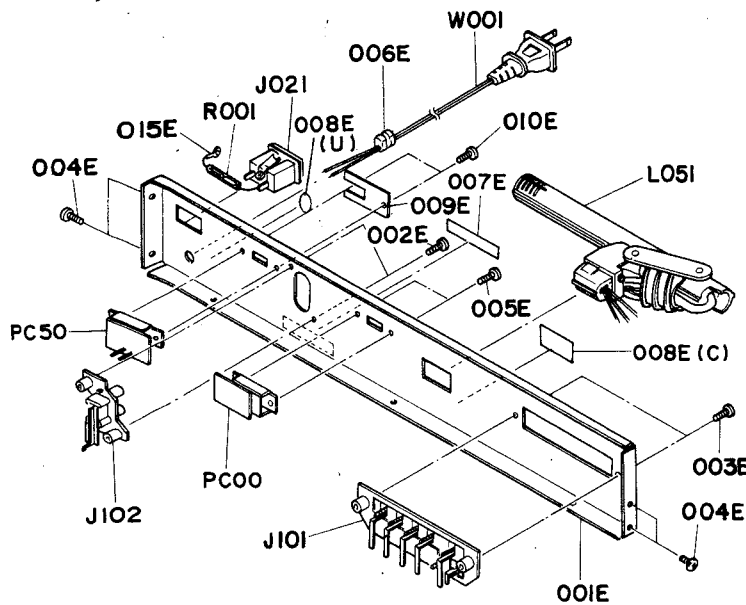


Chassis and General Parts

- (U) for U.S.A.
- (C) for Canada
- (N) for Europe

REF. DESIG.	Q.TY			PART NO.	DESCRIPTION
	U	C	N		
001F	1	1	1	2137105012	Chassis (R)
002F	1	1	1	2137105022	Chassis (L)
003F	1	1	1	2137126012	Stay
004F	2	2	2	51280308B0	B.H. TAP. Screw B3 x 8
005F	1	1	1	3896101010	Support
006F	2	2	2	2922005010	Clamper
007F	2	2	2	51490410A9	L. Washer Screw L4 x 10
008F	1	1	1	51280308B0	B.H. TAP. Screw B3 x 8
009F	1	1	1	51280308B0	B.H. TAP. Screw B3 x 8
010F	1	1	1	62030049W0	Lug
011F	2	2	2	2137123010	Contacto
012F	2	2	2	51280308B0	B.H. TAP. Screw B3 x 8
013F	1	1	1	2137005030	Clamper
014F	2	2	2	51100308A9	B.H.M. Screw B3 x 8
901F			1	2854160030	Bracket
902F			2	51280305B0	B.H. TAP. Screw B3 x 5
903F			2	51100306A9	B.H.M. Screw B3 x 6
001G	1	1	1	2137160013	Bracket
002G	4	4	4	51280308B0	B.H. TAP. Screw B3 x 8
003G	2	2	2	2276005050	Clamper
008G	4	4	4	2276005050	Clamper
009G	6	6	6	51100306A9	B.H.M. Screw B3 x 6
011G	1	1	1	1382005030	Clamper
012G	1	1	1	2137160030	Bracket
013G	2	2	2	51280308B0	B.H. TAP. Screw B3 x 8
014G	2	2	2	51280306B0	B.H. TAP. Screw B3 x 8
001H	1	1	1	2137302012	Dial
002H	1	1	1	2137158020	Window
003H	2	2	2	2276005050	Clamper
009i	1	1	1	2137154030	Knob
010i	1	1	1	2137160022	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
001K	2	2	2	2137118010	Spacer
002K	1	1	1	2137259060	Bushing
003K	1	1	1	2137259040	Bushing
004K	1	1	1	2137259050	Bushing
005K	1	1	1	2137259070	Bushing
007K	2	2	2	2491007060	Sheet
008K	1	1	1	2491007060	Sheet
051K			1	2219120010	Insulator
052K	2	2	2	2915267020	Heatsink
101K	1	1	1	2137109010	Shield
102K	1	1	1	2137109022	Shield
103K	1	1	1	2137109030	Shield
104K	1	1	1	2285109052	Shield
△ G001	1	1		DK18103530	Ceramic Cap. 0.01μF +80% -20%
△ G001			1	DF17223800	Film Cap. 0.022μF ±20%
△ L001	1	1		TS14808260	Power Transformer
△ L001			1	TS14808270	Power Transformer
△ S001	1	1		SP01010330	Push Switch
△ S001			1	SP02010330	Push Switch

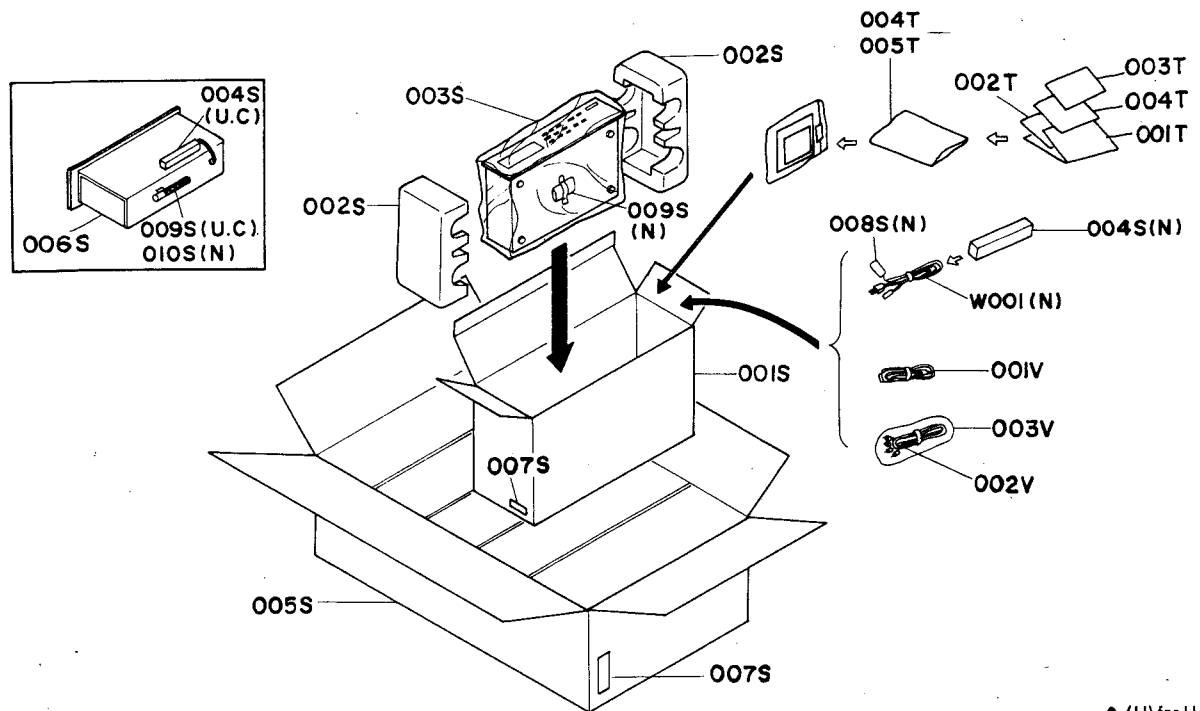
● [C04-99] Rear Panel



● (U) for U.S.A.
● (C) for Canada
● (N) for Europe

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
001E	1			2137160213	Bracket
001E		1		2137160222	Bracket
001E			1	2137160234	Bracket
002E	2	2	2	51280308U0	B.H. TAP. Screw B3 x 8
003E	2	2	2	51280308U0	B.H. TAP. Screw B3 x 8
004E	4	4	4	51280308B0	B.H. TAP. Screw B3 x 8
005E	2	2		51100306S9	B.H.M. Screw B3 x 6
005E			2	5128031040	B.H. TAP. Screw B3 x 6
006E	1	1	1	1455259030	Bushing
007E	1	1	1	2112265010	Indicator
008E	1			9511101070	Label (UL)
008E		1		2457861040	Label (CSA)
009E	1	1	1	2137114010	Stopper
010E	2	2	2	51100306S9	B.H.M. Screw B3 x 6
015E	1	1		62030049W0	Lug
J021	1	1		YJ04000560	Jack, AC Outlet
△ J091			1	BY05060010	Voltage Selector
△ J092			1	YP04000580	Plug, AC Inlet
J101	1	1	1	YT01050010	Ant. Terminal
J102	1	1	1	YT02020210	Output Terminal
L051	1	1	1	LF11200650	AM Bar Ant.
△ R001	1	1		RC10225120	Resistor 2.2kΩ 1/2W
△ W001	1	1		YC01990070	AC Power Cord
△ W001			1	ZC01805010	AC Power Cord
O02R			1	4581861010	Label

• [C05-99] Packing Materials



• (U) for U.S.A.
• (C) for Canada
• (N) for Europe

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
001S	1	1		2137801010	Packing Case
001S			1	2137801020	Packing Case
002S	2	2	2	2149809013	Cushion
003S	1	1	1	9090909040	Polyethy Sheet
004S	1	1	1	2864804010	Sleeve
005S	1/5	1/5	1/5	2137805010	Master Carton
006S	1	1	1	2918107280	Sheet
007S	3			9526019010	Label
007S		3		9526019020	Serial No. Card
007S			3	9526019060	Serial No. Card
008S		2		9510901020	Label
008S			1	9560000043	Hang Tag
009S	1	1		2819056010	Buffer
009S			1	2731821012	Silicagel
010S			1	2819056010	Buffer

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
001T	1			2137851010	Instructions
001T		1	1	2137851310	Instructions
002T	1			2137851020	Instructions
002T		1		2137851220	Instructions
002T			1	2137851320	Instructions
003T	1			2818854026	Guarantee Card
003T		1		2818854043	Guarantee Card
003T			1	2137856010	Circuit Diagram
004T	1			2225813012	Envelope
004T		1		2918813012	Envelope
005T		1		9630000180	Guarantee Card
006T		1		9650000053	S. Station Card
007T	1	1	1	9013025010	Polyethy Bag
001V	1	1	1	ZA02000070	Ext. Antenna
002V	1	1	1	ZD01500160	Connective Cord
003V	1	1	1	9011325010	Polyethy Bag

11. ELECTRICAL PARTS LIST

● (U) for U.S.A.
● (C) for Canada
● (N) for Europe

REF. DESIG.	QTY			PART NO.	DESCRIPTION
	U	C	N		
P100	1	1		YG21370010	P100-TUNER & SYNTHESIZER CIRCUIT BOARD
			1	WG21370010	P.W. Board, Tuner & Synthesizer
	1	1		ZZ21370010	P.W. Board, Tuner & Synthesizer
			1	ZZ21370010	P.W. Board Assembly
			1	ZZ21378010	P.W. Board Assembly
					P100-CAPACITORS
C101	1	1	1	CT11100010	Trimming 8pF
C102	1	1	1	DA16033010	Ceramic 3.3pF ±10%
C103	1	1	1	DA15101010	Ceramic 100pF ±5%
C104	1	1	1	DA17103010	Ceramic 0.01μF ±20%
C105	1	1	1	DA17103010	Ceramic 0.01μF ±20%
C106	1	1	1	DA17103010	Ceramic 0.01μF ±20%
C107	1	1	1	CT11100010	Trimming 8pF
C108	1	1	1	DA16056010	Ceramic 5.6pF ±10%
C109	1	1	1	DA16056010	Ceramic 5.6pF ±10%
C110	1	1	1	CT11100010	Trimming 8pF
C111	1	1	1	DA16056010	Ceramic 5.6pF ±10%
C112	1	1	1	DA15100010	Ceramic 10pF ±5%
C113	1	1	1	DA16331010	Ceramic 330pF ±10%
C114	1	1	1	DA17103010	Ceramic 0.01μF ±20%
C115	1	1	1	DA17103010	Ceramic 0.01μF ±20%
C116	1	1	1	DD15150330	Ceramic 15pF ±5%
C117	1	1	1	CT11100010	Trimming 8pF
C118	1	1	1	DA15100040	Ceramic 10pF ±5%
C119	1	1	1	DD15300360	Ceramic 30pF ±5%
C120	1	1	1	DD15150360	Ceramic 15pF ±5%
C121	1	1	1	DA17103010	Ceramic 0.01μF ±20%
C122	1	1	1	DA17010010	Ceramic 1pF ±20%
C123	1	1	1	DA16022010	Ceramic 2.2pF ±10%
C124	1	1	1	DA15101010	Ceramic 100pF ±5%
C125	1	1	1	DA17103010	Ceramic 0.01μF ±20%
C126	1	1	1	DF15333300	Ceramic 0.033μF ±5%
C127	1	1	1	DK17103300	Ceramic 0.01μF ±20%
C128	1	1	1	DA17103010	Ceramic 0.01μF ±20%
C201	1	1	1	DA17103010	Ceramic 0.01μF ±20%
C202	1	1	1	DA17103010	Ceramic 0.01μF ±20%
C203	1	1	1	DA17103010	Ceramic 0.01μF ±20%
C204	1	1	1	DA17103010	Ceramic 0.01μF ±20%
C205	1	1	1	DA17103010	Ceramic 0.01μF ±20%
C206	1	1	1	DA17103010	Ceramic 0.01μF ±20%
C207	1	1	1	DA17103010	Ceramic 0.01μF ±20%
C208	1	1	1	DA17103010	Ceramic 0.01μF ±20%
C209	1	1	1	DA17103010	Ceramic 0.01μF ±20%
C210	1	1	1	DK18403320	Ceramic 0.04μF +80% -20%
C211	1	1	1	DK18403320	Ceramic 0.04μF +80% -20%
C212	1	1	1	EA10505030	Elect 1μF 50V
C213	1	1	1	DA16331010	Ceramic 330pF ±10%
C214	1	1	1	DK18403320	Ceramic 0.04μF +80% -20%
C215	1	1	1	EA10505030	Elect 1μF 50V
C216	1	1	1	EA10701630	Elect 100μF 16V
C217	1	1	1	DK18403320	Ceramic 0.04μF +80% -20%
C218	1	1	1	DK18403320	Ceramic 0.04μF +80% -20%
C219	1	1	1	DK18403320	Ceramic 0.04μF +80% -20%
C220	1	1	1	EA10505030	Elect 1μF 50V
C221	1	1	1	DK18403320	Ceramic 0.04μF +80% -20%
C222	1	1	1	DK18403320	Ceramic 0.04μF +80% -20%
C223	1	1	1	EA10602530	Elect 10μF 25V
C224	1	1	1	EA10601690	Elect 10μF 16V
C225	1	1	1	DF65182010	Film 1800pF ±5%
C226	1	1	1	DA17103010	Ceramic 0.01μF ±20%
C301	1	1	1	EA10601690	Elect 10μF 16V
C302	1	1	1	DF65501010	Film 500pF ±5%
C303	1	1	1	EV68501060	Elect 6.8μF 10V
C304	1	1	1	EQ10505010	Elect 1μF 50V
C305	1	1	1	DF65821010	Film 820pF ±5%
C306	1	1	1	EQ10505010	Elect 1μF 50V
C307	1	1	1	EA10505030	Elect 1μF 50V
C308	1	1	1	DF15473300	Film 0.047μF ±5%
C309	1	1	1	EA10701630	Elect 100μF 16V
C310	1	1	1	EA47601630	Elect 47μF 16V
C311	1	1	1	EA10505030	Elect 1μF 50V
C312	1	1	1	EA10505030	Elect 1μF 50V
C313	1	1	1	EA10405030	Elect 0.1μF 50V
C314	1	1	1	EA10405030	Elect 0.1μF 50V
C315	1	1	1	EA10601630	Elect 10μF 16V
C316	1	1	1	EA10601630	Elect 10μF 16V
C317	1	1	1	DA15101010	Ceramic 100pF ±5%
C318	1	1	1	DA15101010	Ceramic 100pF ±5%
C319	1	1	1	DA16181010	Ceramic 180pF ±10%
C320	1	1	1	DA16181010	Ceramic 180pF ±10%
C321	1	1	1	EA47601630	Elect 47μF 16V
C322	1	1	1	EA47601630	Elect 47μF 16V
C323	1	1	1	EA47505030	Elect 4.7μF 50V
C324	1	1	1	EA47505030	Elect 4.7μF 50V
C325	1	1	1	EA22701630	Elect 220μF 16V
C326	1	1	1	EA33601630	Elect 33μF 16V
C327	1	1	1	DF15102300	Film 1000pF ±5%
C327	1	1	1	DF55202090	Film 2000pF ±5%
C328	1	1	1	DF15102300	Film 1000pF ±5%
C328	1	1	1	DF55202090	Film 2000pF ±5%
C329	1	1	1	DF55202090	Film 2000pF ±5%
C330	1	1	1	DF55202090	Film 2000pF ±5%
C331	1	1	1	EA10505030	Elect 1μF 50V
C501	1	1	1	DK18103310	Ceramic 0.01μF +80% -20%
C502	1	1	1	DD15121370	Ceramic 120pF ±5%
C503	1	1	1	DD15750300	Ceramic 75pF ±5%
C504	1	1	1	EQ22505020	Elect 2.2μF 50V
C505	1	1	1	DF15683300	Film 0.068μF ±5%
C506	1	1	1	DA17103010	Ceramic 0.01μF ±20%
C507	1	1	1	DD15220370	Ceramic 22pF ±5%
C508	1	1	1	DA15220010	Ceramic 15pF ±5%
C509	1	1	1	EA22800630	Elect 2200μF 6.3V
C510	1	1	1	EA47405030	Elect 0.47μF 50V
C511	1	1	1	EA22700630	Elect 220μF 6.3V
C512	1	1	1	DK16221300	Ceramic 220pF 50V
C513	1	1	1	DK18103300	Ceramic 0.01μF +80% -20%
C514	1	1	1	DA17103010	Ceramic 0.01μF ±20%
C515	1	1	1	DK18103300	Ceramic 0.01μF +80% -20%
C516	1	1	1	DK18103300	Ceramic 0.01μF +80% -20%
C517	1	1	1	DK18103300	Ceramic 0.01μF +80% -20%
C518	1	1	1	DA17103010	Ceramic 0.01μF ±20%
C801	1	1	1	DK18103510	Ceramic 0.01μF +80% -20%
C802	1	1	1	EA47703530	Elect 470μF 35V
C804	1	1	1	EA47601030	Elect 47μF 10V
C805	1	1	1	DA17103010	Ceramic 0.01μF ±20%
C806	1	1	1	EA22702590	Elect 220μF 10V

- (U) for U.S.A.
- (C) for Canada
- (N) for Europe

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION		
	U	C	N				
C807	1	1	1	EA22701690	Elect	220 μ F	16V
C808	1	1	1	EA47703530	Elect	470 μ F	35V
C809	1	1	1	DK18403320	Ceramic	0.04 μ F	+80% -20%
C810	1	1	1	EA47703530	Elect	470 μ F	35V
C811	1	1	1	DK18403320	Ceramic	0.04 μ F	+80% -20%
C812	1	1	1	DK18103510	Ceramic	0.01 μ F	+80% -20%
C813	1	1	1	DK18103510	Ceramic	0.01 μ F	+80% -20%
C814	1	1	1	EA47705090	Elect	470 μ F	50V
C815	1	1	1	EA47705090	Elect	470 μ F	50V
C816	1	1	1	EQ22505020	Elect	470 μ F	50V
C817	1	1	1	EA47601030	Elect	47 μ F	10V
C818	1	1	1	EQ22505020	Elect	2.2 μ F	50V
C819	1	1	1	DA17103010	Ceramic	0.01 μ F	$\pm$ 20%
CA01	1	1	1	DA17103010	Ceramic	0.01 μ F	$\pm$ 20%
CA02	1	1	1	CT12000090	Trimming	16pF	
CA03	1	1	1	DA17103010	Ceramic	0.01 μ F	$\pm$ 20%
CA04	1	1	1	DK16102300	Ceramic	1000pF	$\pm$ 10%
CA05	1	1	1	DA17103010	Ceramic	0.01 μ F	$\pm$ 20%
CA06	1	1	1	EA10701630	Elect	100 μ F	16V
CA07	1	1	1	DK18403320	Ceramic	0.04 μ F	+80% -20%
CA08	1	1	1	DA15220010	Ceramic	22pF	$\pm$ 5%
CA09	1	1	1	DF65501010	Film	500pF	$\pm$ 5%
CA10	1	1	1	CT11100010	Trimming	8pF	
CA11	1	1	1	DA17103010	Ceramic	0.01 μ F	$\pm$ 20%
CA12	1	1	1	DA17103010	Ceramic	0.01 μ F	$\pm$ 20%
CA13	1	1	1	DA17103010	Ceramic	0.01 μ F	$\pm$ 20%
CA14	1	1	1	DA17102010	Ceramic	1000pF	$\pm$ 20%
CA15	1	1	1	EA10701630	Elect	100 μ F	16V
CA16	1	1	1	DK18403320	Ceramic	0.04 μ F	+80% -20%
CA17	1	1	1	DK18103310	Ceramic	0.01 μ F	+80% -20%
CA18	1	1	1	EA47505030	Elect	4.7 μ F	50V
CA19	1	1	1	EA10602530	Elect	10 μ F	25V
CA20	1	1	1	DK18403320	Ceramic	0.04 μ F	+80% -20%
CA21	1	1	1	DK18223310	Ceramic	0.022 μ F	+80% -20%
CA22	1	1	1	DF15683300	Film	0.068 μ F	$\pm$ 5%
CA23	1	1	1	DA17103010	Ceramic	0.01 μ F	$\pm$ 20%
CA24	1	1	1	DA17103010	Ceramic	0.01 μ F	$\pm$ 20%
CA25	1	1	1	DA17103010	Ceramic	0.01 μ F	$\pm$ 20%
CA26	1	1	1	DA17103010	Ceramic	0.01 μ F	$\pm$ 20%
CA27	1	1	1	DA17103010	Ceramic	0.01 μ F	$\pm$ 20%
CA28	1	1	1	DA17102010	Ceramic	1000pF	$\pm$ 20%
CA29	1	1	1	DA17103010	Ceramic	0.01 μ F	$\pm$ 20%
CA30	1	1	1	DA16221010	Ceramic	220pF	$\pm$ 10%
CA31	1	1	1	DA17103010	Ceramic	0.01 μ F	$\pm$ 20%
CA32	1	1	1	EA10505030	Elect	1 μ F	50V
P100-RESISTORS (All Resistors are $\pm$ 5% & 1/4W)							
R101	1	1	1	GD05104140		100k Ω	
R102	1	1	1	GD05104140		100k Ω	
R103	1	1	1	GD05105140		1M Ω	
R104	1	1	1	GD05101140		100 Ω	
R105	1	1	1	GD05221140		220 Ω	
R106	1	1	1	GD05104140		100k Ω	
R107	1	1	1	GD05104140		100k Ω	
R108	1	1	1	GD05472140		4.7k Ω	
R109	1	1	1	GD05223140		22k Ω	
R110	1	1	1	GD05102140		1k Ω	
R111	1	1	1	GD05273140		27k Ω	
R112	1	1	1	GD05221140		220k Ω	
R113	1	1	1	GD05103140		27k Ω	
R114	1	1	1	GD05103140		27k Ω	
R115	1	1	1	GD05272140		2.7k Ω	
R116	1	1	1	GD05104140		100k Ω	
R117	1	1	1	GD05104140		100k Ω	
R118	1	1	1	GD05331140		330 Ω	
R119	1	1	1	GD05223140		22k Ω	
R201	1	1	1	GD05331140		330 Ω	
R202	1	1	1	GD05153140		15k Ω	
R203	1	1	1	GD05272140		2.7k Ω	
R204	1	1	1	GD05331140		330 Ω	
R205	1	1	1	GD05102140		1k Ω	
R206	1	1	1	GD05332140		3.3k Ω	
R207	1	1	1	GD05332140		3.3k Ω	
R208	1	1	1	GD05332140		3.3k Ω	
R209	1	1	1	GD05331140		330 Ω	
R210	1	1	1	GD05332140		3.3k Ω	
R211	1	1	1	GD05153140		15k Ω	
R212	1	1	1	GD05272140		2.7k Ω	
R213	1	1	1	GD05331140		330 Ω	
R214	1	1	1	GD05102140		1k Ω	
R215	1	1	1	RA01020110	Trimming	1k Ω	
R216	1	1	1	GD05221140		220 Ω	
R217	1	1	1	GD05331140		330 Ω	
R218	1	1	1	GD05473140		47k Ω	
R219	1	1	1	GD05123140		12k Ω	
R220	1	1	1	GD05153140		15k Ω	
R221	1	1	1	GD05332140		3.3k Ω	
R222	1	1	1	GD05273140		27k Ω	
R223	1	1	1	GD05471140		470 Ω	
R224	1	1	1	GG05470140		47 Ω	
R225	1	1	1	GD05222140		2.2k Ω	
R226	1	1	1	GD05103140		10k Ω	
R227	1	1	1	GD05104140		100k Ω	
R228	1	1	1	GD05821140		820 Ω	
R229	1	1	1	RA01030260		10k Ω	
R230	1	1	1	GD05334140		330k Ω	
R231	1	1	1	GD05184140		180k Ω	
R232			1	GD05104140		100k Ω	
R233			1	GD05272140		2.7k Ω	
R234			1	GD05122140		1.2k Ω	
R235			1	GD05272140		2.7k Ω	
R236	1	1	1	GD05103140		10k Ω	
R237	1	1	1	GD05221140		220 Ω	
R301	1	1	1	GD05224140		220k Ω	
R302	1	1	1	GD05153140		15k Ω	
R303	1	1	1	RA04720080	Trimming	4.7k Ω	
R304	1	1	1	GD05821140		820 Ω	
R305	1	1	1	GD05102140		1k Ω	
R306	1	1	1	RA05020160	Trimming	5k Ω	
R307	1	1	1	GD05473140		47k Ω	
R308	1	1	1	GD05154140		150k Ω	
R309	1	1	1	GD05154140		150k Ω	
R310	1	1	1	GG05470140		47 Ω	
R311	1	1	1	GD05472140		4.7k Ω	
R312	1	1	1	GD05472140		4.7k Ω	
R313	1	1	1	GD05472140		4.7k Ω	
R314	1	1	1	GD05472140		4.7k Ω	

- (U) for U.S.A.
- (C) for Canada
- (N) for Europe

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
R315	1	1	1	GD05104140	100kΩ
R316	1	1	1	GD05104140	100kΩ
R317	1	1	1	GD05223140	22kΩ
R318	1	1	1	GD05223140	22kΩ
R319	1	1	1	GD05273140	27kΩ
R320	1	1	1	GD05273140	27kΩ
R321	1	1	1	GD05333140	33kΩ
R322	1	1	1	GD05333140	33kΩ
R323	1	1	1	GD05681140	680Ω
R324	1	1	1	GD05681140	680Ω
R325	1	1	1	GD05392140	3.9kΩ
R326	1	1	1	GD05392140	3.9kΩ
R327	1	1	1	GD05471140	470Ω
R328	1	1	1	GD05471140	470Ω
R329	1	1	1	GD05473140	47kΩ
R330	1	1	1	GD05473140	47kΩ
R331	1	1	1	GD05103140	10kΩ
R332	1	1	1	GD05471140	470Ω
R334	1	1	1	GD05103140	10kΩ
R335	1	1	1	GD05473140	47kΩ
R501	1	1	1	GD05102140	1kΩ
R502	1	1	1	GD05102140	1kΩ
R503	1	1	1	GD05221140	220Ω
R504	1	1	1	GD05821140	820Ω
R505	1	1	1	GD05222140	2.2kΩ
R506	1	1	1	GD05562140	5.6kΩ
R507	1	1	1	GD05101140	100Ω
R508	1	1	1	GD05472140	4.7kΩ
R509	1	1	1	GD05472140	44.7kΩ
R510	1	1	1	GD05103140	10kΩ
R511	1	1	1	GD05222140	2.2kΩ
R512	1	1	1	GD05222140	2.2kΩ
R513	1	1	1	GD05222140	2.2kΩ
R514	1	1	1	GD05222140	2.2kΩ
R515	1	1	1	GD05222140	2.2kΩ
R516	1	1	1	GD05222140	2.2kΩ
R517	1	1	1	GD05222140	2.2kΩ
R518	1	1	1	GD05393140	39kΩ
R519	1	1	1	GD05393140	39kΩ
R520	1	1	1	GD05393140	39kΩ
R521	1	1	1	GD05393140	39kΩ
R522	1	1	1	GD05472140	4.7kΩ
R523	1	1	1	GD05472140	4.7kΩ
R524	1	1	1	GD05472140	4.7kΩ
R525	1	1	1	GD05104140	100kΩ
R526	1	1	1	GD05104140	100kΩ
R527	1	1	1	GD05104140	100kΩ
R528	1	1	1	GD05104140	100kΩ
R529	1	1	1	GD05104140	100kΩ
R530	1	1	1	GD05104140	100kΩ
R531	1	1	1	GD05104140	100kΩ
R532	1	1	1	GD05104140	100kΩ
R533	1	1	1	GD05104140	100kΩ
R534	1	1	1	GD05104140	100kΩ
R535	1	1	1	GD05104140	100kΩ
R536	1	1	1	GD05104140	100kΩ
R537	1	1	1	GD05104140	100kΩ
R538	1	1	1	GD05104140	100kΩ
R539	1	1	1	GD05104140	100kΩ
R540	1	1	1	GD05104140	100kΩ

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
R541	1	1	1	GD05822140	8.2kΩ
R542	1	1	1	GD05473140	47kΩ
R543	1	1	1	GD05103140	10kΩ
R544	1	1	1	GD05103140	10kΩ
R545	1	1	1	GD05103140	10kΩ
R546	1	1	1	GD05104140	100kΩ
R547	1	1	1	GD05152140	1.5kΩ
R548	1	1	1	GD05152140	1.5kΩ
R549	1	1	1	GD05104140	100kΩ
R550	1	1	1	GD05101140	100Ω
R551	1	1	1	GD05182140	1.8kΩ
R552	1	1	1	GD05100140	10Ω
R553	1	1	1	GD05473140	47kΩ
△ R801	1	1	1	GA05151020	150Ω 2W
R803	1	1	1	GG05222140	2.2kΩ
R804	1	1	1	GG05100140	10Ω
△ R805	1	1	1	GA05270020	27Ω 2W
R806	1	1	1	GG05471140	470Ω
R807	1	1	1	GD05471140	470Ω
△ R808	1	1	1	GA05561010	560Ω 1W
△ R809	1	1	1	GA05271010	270Ω 1W
R810	1	1	1	GD05103140	10kΩ
R811	1	1	1	GD05473140	47kΩ
R812	1	1	1	GD05103140	10kΩ
R813	1	1	1	GD05824140	820kΩ
R814	1	1	1	GD05103140	10kΩ
R815	1	1	1	GD05473140	47kΩ
R816	1	1	1	GD05273140	27kΩ
R817	1	1	1	GD05473140	47kΩ
R818	1	1	1	GD05473140	47kΩ
R819	1	1	1	GD05680140	68Ω
RA01	1	1	1	GD05474140	470kΩ
RA02	1	1	1	GD05474140	470kΩ
RA03	1	1	1	GD05221140	220Ω
RA04	1	1	1	GD05152140	1.5kΩ
RA05	1	1	1	GD05393140	39kΩ
RA06	1	1	1	GD05222140	2.2kΩ
RA07	1	1	1	GD05221140	220Ω
RA08	1	1	1	GD05331140	330Ω
RA09	1	1	1	GD05221140	220Ω
RA10	1	1	1	GD05103140	10kΩ
RA11	1	1	1	GD05103140	10kΩ
RA12	1	1	1	GD05102140	1kΩ
RA13	1	1	1	GD05102140	1kΩ
RA14	1	1	1	GD05683140	68kΩ
RA15	1	1	1	GD05103140	10kΩ
RA16	1	1	1	GD05472140	4.7kΩ
RA17	1	1	1	GD05102140	1kΩ
RA18	1	1	1	RA01040110	100kΩ
RA19	1	1	1	GD05103140	10kΩ
RA20	1	1	1	GD05221140	220Ω
RA21	1	1	1	GD05104140	100kΩ
RA22	1	1	1	GD05222140	2.2kΩ
RA23	1	1	1	GD05221140	220Ω
RA24	1	1	1	GD05473140	47kΩ
RA24	1	1	1	GD05333140	33kΩ
RA25	1	1	1	GD05103140	10kΩ
RA26	1	1	1	GD05102140	1kΩ
RA27	1	1	1	GD05472140	4.7kΩ

- (U) for U.S.A.
- (C) for Canada
- (N) for Europe

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
P100-SEMICONDUCTORS					
Q101	1	1	1	HD40004010	Varicap 1SV55
Q102	1	1	1	HF400451B0	F.E.T. 3SK45(B)
Q103	1	1	1	HD40004010	Varicap 1SV55
Q104	1	1	1	HD40004010	Varicap 1SV55
Q105	1	1	1	HT310471C0	Transistor 2SC1047(C)
Q106	1	1	1	HT308291C0	Transistor 2SC829(C)
Q107	1	1	1	HD40004010	Varicap 1SV55
Q108	1	1	1	HF200191A0	F.E.T. 2SK19(Y)
Q109	1	1	1	HD20011050	Diode 1S1555
Q201	1	1	1	HT310471C0	Transistor 2SC1047(C)
Q202	1	1	1	HT310471C0	Transistor 2SC1047(C)
Q203	1	1	1	HD20011050	Diode 1S1555
Q204	1	1	1	HD20011050	Diode 1S1555
Q205	1	1	1	HT310471C0	Transistor 2SC1047(C)
Q206	1	1	1	HC10033010	IC HA11225
Q207	1	1	1	HD20011050	Diode 1S1555
Q208	1	1	1	HT309452B0	Transistor 2SC945(P or Q)
Q301	1	1	1	HC10001420	IC KB4437
Q302	1	1	1	HC10002420	IC KB4438
Q303	1	1	1	HD20011050	Diode 1S1555
Q501	1	1	1	HC10032060	IC μ PB551(c)
Q502	1	1	1	HF200300B0	F.E.T. 2SK30A(Y1)
Q503	1	1	1	HT309452B0	Transistor 2SC945(P or Q)
Q504	1	1	1	HT309452B0	Transistor 2SC945(P or Q)
Q505	1	1	1	HC10017020	IC MN6142
Q506	1	1	1	HC10018020	IC MN1203
Q507	1	1	1	HD20015030	Diode DS135(D)
Q508	1	1	1	HC10016020	IC MN1400SJ
Q509	1	1	1	HD20011050	Diode 1S1555
Q510	1	1	1	HD20011050	Diode 1S1555
Q511	1	1	1	HT107332A0	Transistor 2SA733(P or Q)
Q512	1	1	1	HT107332A0	Transistor 2SA733(P or Q)
Q513	1	1	1	HT107332A0	Transistor 2SA733(P or Q)
Q514	1	1	1	HT107332A0	Transistor 2SA733(P or Q)
Q515	1	1	1	HT107332A0	Transistor 2SA733(P or Q)
Q516	1	1	1	HT106332A0	Transistor 2SA733(P or Q)
Q517	1	1	1	HT107332A0	Transistor 2SA733(P or Q)
Q518	1	1	1	HC10048050	IC TC5066(BP)
Q519	1	1	1	HT107332A0	Transistor 2SA733(P or Q)
Q520	1	1	1	HT107332A0	Transistor 2SA733(P or Q)
Q521	1	1	1	HT107332A0	Transistor 2SA733(P or Q)
Q522	1	1	1	HT309452B0	Transistor 2SC945(P or Q)
Q523	1	1	1	HT107332A0	Transistor 2SA733(P or Q)
Q524	1	1	1	HD20011050	Diode 1S1555
Q525	1	1	1	HD20011050	Diode 1S1555
Q526	1	1	1	HD20011050	Diode 1S1555
Q527	1	1	1	HD20011050	Diode 1S1555
Q528	1	1	1	HD20011050	Diode 1S1555
Q529	1	1	1	HD20011050	Diode 1S1555
Q530	1	1	1	HD20011050	Diode 1S1555
Q531	1	1	1	HD20011050	Diode 1S1555
Q532	1	1	1	HD20011050	Diode 1S1555
△ Q801	1	1	1	HD20015030	Diode DS135(D)
△ Q802	1	1	1	HD20015030	Diode DS135(D)
△ Q803	1	1	1	HD20015030	Diode DS135(D)
△ Q804	1	1	1	HD20015030	Diode DS135(D)
△ Q805	1	1	1	HT403131E0	Transistor 2SD313(E)
Q806	1	1	1	HD30036090	Zener WZ065
△ Q807	1	1	1	HT403131E0	Transistor 2SD313(E)
Q808	1	1	1	HD30027090	Zener WZ-140

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
Q809	1	1	1	HD30068090	Zener WZ270
Q810	1	1	1	HD30066090	Zener BZ-300
△ Q811	1	1	1	HD20015030	Diode DS135(D)
△ Q812	1	1	1	HD20015030	Diode DS135(D)
Q813	1	1	1	HD30031090	Zener WZ081
Q814	1	1	1	HD20011050	Diode 1S1555
Q815	1	1	1	HT107332A0	Transistor 2SA733(P or Q)
Q816	1	1	1	HT107332A0	Transistor 2SA733(P or Q)
Q817	1	1	1	HT309452B0	Transistor 2SC945(P or Q)
Q818	1	1	1	HD20011050	Diode 1S1555
Q819	1	1	1	HT309452B0	Transistor 2SC945(P or Q)
QA01	1	1	1	HC10019010	IC HA1197
QA02	1	1	1	HD40002420	Varicap KV1226
QA03	1	1	1	HD20011050	Diode 1S1555
QA04	1	1	1	HT308291C0	Transistor 2SC829(C)
QA05	1	1	1	HD10003020	Diode 20A90
QA06	1	1	1	HD10003020	Diode 20A90
QA07	1	1	1	HT309452B0	Transistor 2SC945(P or Q)
QA08	1	1	1	HT308291C0	Transistor 2SC829(C)
QA09	1	1	1	HT308291C0	Transistor 2SC829(C)
P100-FILTERS					
F201	1	1	1	FF11070530	Ceramic Filter SFE10.7MD1
F202	1	1	1	FF11070570	Ceramic Filter SFE10.7MS3G
F203	1	1	1	FF11070530	Ceramic Filter SFE10.7MD1
F203	1	1	1	FF11070570	Ceramic Filter SFE10.7MS3G
FA01	1	1	1	FF10045230	Ceramic Filter CFM-450BL
FA02	1	1	1	FF10045240	Ceramic Filter CFM-450Z
L101	1	1	1	LA12026190	Ant Coil FM
L102	1	1	1	LA12026200	Ant Coil FM
L103	1	1	1	LA12026210	An5 Coil FM
L104	1	1	1	LC17510010	Choke Coil 0.75 μ H
L105	1	1	1	LI10016010	I.F.T. FM
L106	1	1	1	LO12046030	OSC Coil FM
L107	1	1	1	LC13320050	Choke Coil 3.3 μ H
L201	1	1	1	LI10016010	I.F.T. FM
L202	1	1	1	LI14030010	I.F.T. FM
L203	1	1	1	LS35040010	M.P.X. Coil
L204	1	1	1	LS10290190	M.P.X. Coil
L301	1	1	1	LS10015070	M.P.X. Coil 38kHz LPF
L302	1	1	1	LS10015070	M.P.X. Coil 38kHz LPF
L501	1	1	1	LC11030020	Choke Coil 10 μ H
L502	1	1	1	LC13320050	Choke Coil 3.3 μ H
LA01	1	1	1	LC11540020	Choke Coil 150 μ H
LA02	1	1	1	LO10010480	OSC Coil AM
LA03	1	1	1	LI10010720	I.F.T. AM
LA04	1	1	1	LI10015060	I.F.T. AM
P100-MISCELLANEOUS					
X501	1	1	1	XA10800IL2	Cristal 11.5MHz
WC01	1	1	1	YU04090010	Jumper Lead 4P-9MM

- (U) for U.S.A.
- (C) for Canada
- (N) for Europe

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
P900	1	1		YK21371610	P900-DISPLAY ASSEMBLY CIRCUIT BOARD
			1	WG21371610	P.W. Board, Display Assembly
	1	1	1	ZZ21371610	P.W. Board, Display Assembly P.W. Board Assembly
C901	1	1	1	EV22601660	P900-CAPACITORS
C902	1	1	1	EV33501660	Elect 22 μ F 16V Elect 3.3 μ F 16V
R901	1	1	1	GD05332140	P900-RESISTORS (All Resistors are $\pm 5\%$ & 1/4W)
R902	1	1	1	GD05472140	3.3k Ω
R903	1	1	1	GD05103140	4.7k Ω
R904	1	1	1	GG05560140	10k Ω
R905	1	1	1	GD05151140	56 Ω
R906	1	1	1	GD05151140	150 Ω
R907	1	1	1	GD05151140	150 Ω
R908	1	1	1	GD05151140	150 Ω
R909	1	1	1	GD05151140	150 Ω
R910	1	1	1	GD05333140	33k Ω
R911	1	1	1	GD05153140	15k Ω
Q901	1	1	1	HC10040030	P900-SEMICONDUCTORS
Q902	1	1	1	HI10008030	IC LB1416
Q903	1	1	1	HI10008030	L.E.D. SLP-141B
Q904	1	1	1	HI10008030	L.E.D. SLP-141B
Q905	1	1	1	HI10008030	L.E.D. SLP-141B
Q906	1	1	1	HI10008030	L.E.D. SLP-141B
Q907	1	1	1	HD20011050	Diode 1S1555
Q908	1	1	1	HD20011050	Diode 1S1555
Q909	1	1	1	HD20011050	Diode 1S1555
Q910	1	1	1	HD20011050	Diode 1S1555
Q911	1	1	1	HD20011050	Diode 1S1555
Q912	1	1	1	HD20011050	Diode 1S1555
Q913	1	1	1	HD20011050	Diode 1S1555
Q914	1	1	1	HI10010030	L.E.D. SLP-144B
Q915	1	1	1	HI10010030	L.E.D. SLP-144B
Q916	1	1	1	HI10010030	L.E.D. SLP-144B
Q917	1	1	1	HI10010030	L.E.D. SLP-144B
Q918	1	1	1	HI10010030	L.E.D. SLP-144B
Q919	1	1	1	HI10010030	L.E.D. SLP-144B
Q920	1	1	1	HI10010030	L.E.D. SLP-144B
V901	1	1	1	HQ30701410	Display Unit 8-MT-01
WV01	1	1	1	YU12110010	Jumper Lead 12P-110MM
WV01	1	1	1	YU10110010	Jumper Lead 10P-110MM

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
PB00	1	1	1	YA22180610	PB00-NOISE AMP. CIRCUIT BOARD
	1	1	1	ZZ21370610	P.W. Board, Noise AMP. P.W. Board Assembly
CB01	1	1	1	DD11100370	PB00-CAPACITORS
CB02	1	1	1	DF16683300	Ceramic 10pF ± 0.5 pF
CB03	1	1	1	DF17403300	Film 0.068 μ F $\pm 10\%$
CB04	1	1	1	DK18104020	Film 0.04 μ F $\pm 20\%$
CB05	1	1	1	DK18403320	Ceramic 0.1 μ F +80% -20%
CB06	1	1	1	EA10601690	Ceramic 0.04 μ F +80% -20%
CB07	1	1	1	EA10505090	Elect 10 μ F 16V Elect 1 μ F 50V
RB01	1	1	1	GD05562140	PB00-RESISTORS (All Resistors are $\pm 5\%$ & 1/4W)
RB02	1	1	1	GD05104140	5.6k Ω
RB03	1	1	1	GD05273140	100k Ω
RB04	1	1	1	GD05102140	27k Ω
RB05	1	1	1	GD05273140	1k Ω
RB06	1	1	1	GD05333140	27k Ω
RB08	1	1	1	GD05101140	33k Ω
RB09	1	1	1	GD05101140	100 Ω
RB10	1	1	1	GD05101140	100 Ω
RB11	1	1	1	GD05103140	100k Ω
RB12	1	1	1	GD05472140	10k Ω
QB01	1	1	1	HT309452B0	PB00-SEMICONDUCTORS
QB02	1	1	1	HT309452B0	Transistor 2SC945(P or N)
QB03	1	1	1	HD10001050	Transistor 2SC945(P or N)
QB04	1	1	1	HD10001050	Diode 1N60
QB05	1	1	1	HT309452B0	Diode 1N60
QB06	1	1	1	HD20011050	Transistor 2SC945(P or N)
					Diode 1S1555
LB01	1	1	1	LC21050010	PB00-COIL
					Choke Coil 1mH
PC00	1	1		YK21371650	PC00-DE-EMPHASIS SWITCH BOARD
				ZZ21371650	P.W. Board, De-Emphasis Switch P.W. Board Assembly
SC01	1	1		SS02020380	Slide Switch
PC50	1	1	1	YK21371660	PC50-SCAN STEP CIRCUIT BOARD
				WK21371660	P.W. Board, Scan Step
				ZZ21371660	P.W. Board, Scan Step P.W. Board Assembly
QC51	1	1	1	HD20011050	Diode 1S1555
SC51	1	1	1	SS02020380	Scan Step Switch

- (U) for U.S.A.
- (C) for Canada
- (N) for Europe

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
PP00			1	YF21370010	PP00-FUSE CIRCUIT BOARD
			1	ZZ21377010	P.W. Board, Fuse P.W. Board Assembly
△ FP01			1	FS10031800	Fuse
△ FP02			1	FS10010800	Fuse
JPO5 ~ JPO8			5	YJ08000200	Jack, Fuse Holder
PS00	1	1		YK21371630	PS00-FUNCTION SWITCH
			1	WK21371630	CIRCUIT BOARD P.W. Board, Function Switch
	1	1	1	ZZ21371630	P.W. Board, Function Switch P.W. Board Assembly
CS01	1	1	1	EA10602530	P500-CAPACITORS
CS02	1	1	1	EA10602530	Elect 10μF 25V Elect 10μF 25V
RS01	1	1	1	GD05223140	PS00-RESISTORS
RS02	1	1	1	GD05103140	(All Resistors are ±5% & 1/4W)
RS03	1	1	1	GD05473140	22kΩ
RS04	1	1	1	RA05030090	10kΩ
RS05	1	1	1	RA01040110	47kΩ
RS06	1	1	1	RA01030260	Trimming 50kΩ Trimming 100kΩ Trimming 10kΩ
QS01	1	1	1	HT107332A0	PS00-SEMICONDUCTORS
					Transistor 2SA733(P or Q)
SS01	1	1	1	SP06020120	PS00-SWITCH
					AM, FM, Wide Switch
WS01	1	1	1	YU06180210	PS00-JUMPER LEADS
WS02	1	1	1	YU05210210	6P-180MM
WS03	1	1	1	YU05080010	5P-210MM
WS04	1	1	1	YU05060010	5P-80MM
WS05	1	1	1	YU04090010	5P-60MM
WS06	1	1	1	YU02110010	4P-90MM 2P-110MM
PT00	1	1		YK21371640	PT00-MODE SWITCH
			1	WK21371640	CIRCUIT BOARD
	1	1	1	ZZ21371640	P.W. Board, Mode Switch P.W. Board, Mode Switch P.W. Board Assembly
CT01	1	1	1	EA10602530	PT00-CAPACITORS
CT02	1	1	1	DK18223310	Elect 10μF 25V Ceramic 0.022μF +80% -20%
RT01	1	1	1	RA01040110	PT00-RESISTORS
RT02	1	1	1	GD05123140	(All Resistors are ±5% & 1/4W)
					Trimming 100kΩ Resistor 12kΩ
QT01	1	1	1	HD20011050	PT00-SEMICONDUCTORS
QT02	1	1	1	HD20011050	Diode 1S1555 Diode 1S1555
ST01	1	1	1	SP04020280	PT00-MISCELLANEOUS
					Mode Switch
WT01	1	1	1	YU03115010	Jumper Lead
WT02	1	1	1	YU02070010	Jumper Lead
PU00	1	1		YK21371620	PU00-PRESET SWITCH
			1	WK21371620	CIRCUIT BOARD
	1	1	1	ZZ21371620	P.W. Board, Preset Switch P.W. Board, Preset Switch P.W. Board Assembly
QU01 ~ QU10	10	10	10	HD20011050	PU00-SEMICONDUCTORS
					Diode 1S1555
SU01 ~ SU10	10	10	10	SP01010350	PU00-MISCELLANEOUS
					Preset Switch
WU01	1	1	1	YU07130010	Jumper Lead
W01-99 T01-99 X01-00	Assembly and Wiring Adjustment Correction				

12. TECHNICAL SPECIFICATIONS

[FOR U.S.A. & CANADIAN MODEL ONLY]

FM TUNER SECTION:

Sensitivity		
IHF Usable.	9.8 dBf (1.7 μ V)	
IHF 50 dB Quieting (Mono)	13.2 dBf (2.5 μ V)	
(Stereo).	36.1 dBf (35 μ V)	
Quieting Slope (Mono)		
RF Input for 30 dB Quieting	7.2 dBf (1.3 μ V)	
Quieting at:		
20 dBf (5.5 μ V)		55 dB
25 dBf (10 μ V)		60 dB
40 dBf (55 μ V)		74 dB
65 dBf (1000 μ V)		80 dB
Quieting Slope (Stereo)		
Quieting at:		
30 dBf (17 μ V)		42 dB
40 dBf (55 μ V)		54 dB
50 dBf (173 μ V)		64 dB
65 dBf (1000 μ V)		72 dB
Distortion (Mono) at 65 dBf (1000 μ V)	WIDE	NARROW
100 Hz	0.15%	0.25%
1000 Hz	0.1%	0.15%
6000 Hz	0.15%	0.3%
Distortion (Stereo) at 65 dBf (1000 μ V)		
100 Hz	0.25%	0.35%
1000 Hz	0.2%	0.3%
6000 Hz	0.25%	0.5%
Stereo Separation		
100 Hz.	43 dB	40 dB
1000 Hz.	48 dB	45 dB
10000 Hz.	38 dB	35 dB
Capture Ratio at 65 dBf (1000 μ V).	0.9 dB	1.5 dB
Frequency Response		
30 Hz to 15 kHz		
Mono and Stereo.	+0.5 dB, -1.0 dB	
Alternate Channel Selectivity.		65 dB
Spurious Response Rejection.		90 dB
Image Response Rejection.		55 dB
I.F. Rejection (Balanced)		90 dB
A.M. Suppression		55 dB
Subcarrier Rejection		65 dB

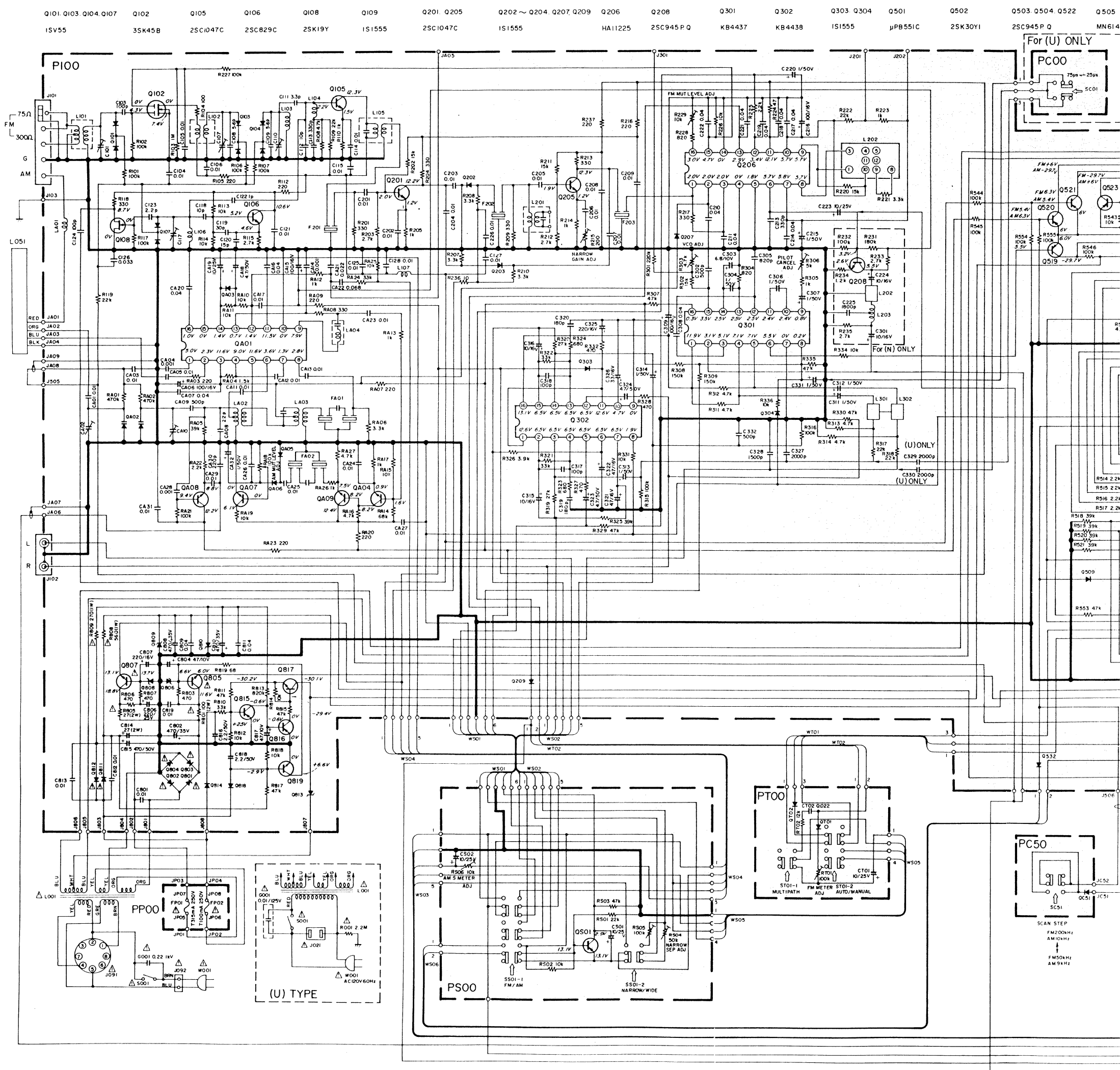
AM TUNER SECTION:

IHF Usable Sensitivity	20 μ V
Signal-to-Noise Ratio	50 dB
Alternate Channel Selectivity.	45 dB
Image Rejection	45 dB
Spurious Response Rejection.	55 dB
I.F. Rejection	40 dB

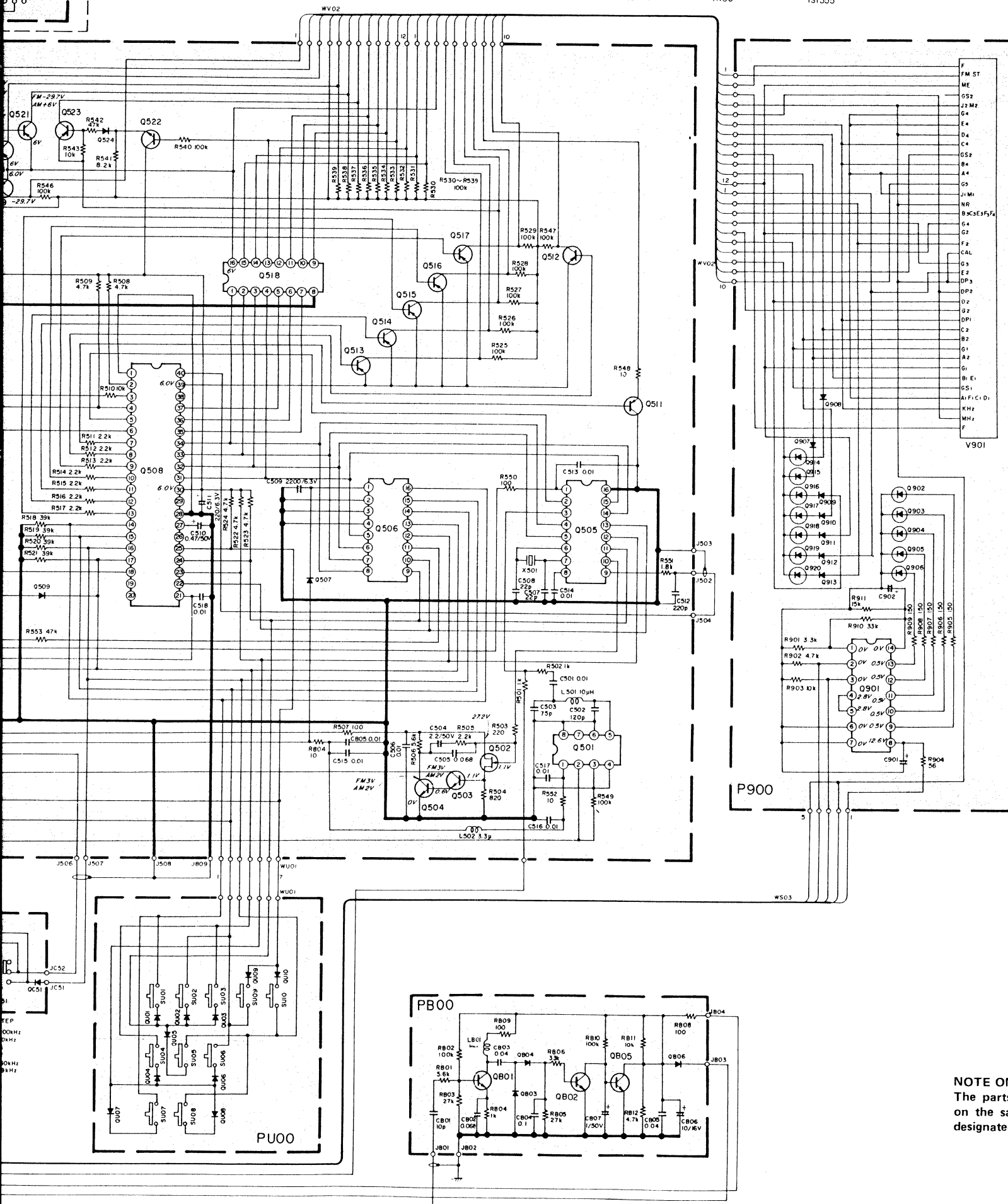
GENERAL:

Power Requirements	120 VAC, 60 Hz
Power Consumption at rated output, both channels operating	10 W
Dimensions:	
Panel Width	416 mm (16-3/8 inches)
Panel Height.	73 mm (2-7/8 inches)
Depth	300 mm (11-3/4 inches)
Weight:	
Unit alone	4 kg (8.8 lbs)

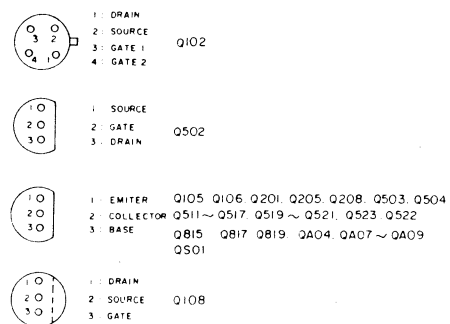
12. SCHEMATIC DIAGRAM



Q522	Q505	Q506	Q507	Q508	Q509, Q510, Q524, Q532	Q511 ~ Q517, Q519 ~ Q521, Q523	Q518	Q801 ~ Q804, Q811, Q812	Q805, Q807	Q806	Q808	Q809	Q810	Q813
MN6142	MN1203	DS1350	MN1400SJ	IS1555	2SA733P Q	2SA733P Q	TC5066BP	DS1350	2SD313E	WZ-065	WZ-140	WZ-270	BZ300	WZ-081
Q814, Q818	Q815, Q816	Q817, Q819	Q901	Q902 ~ Q905	Q907 ~ Q913	Q914 ~ Q920	HA1197	QA01	QA02	QA03	QA04, QA08, QA09	QA05, QA06	QA07	
IS1555	2SA733P Q	2SC945P Q	LB1416	SLP-141B	IS1555	SLP-144B	KV1226	IS1555	2SC829C			20A90	2SC945P Q	
IS1555	2SA733P Q	IS1555	IS1555	IS1555	IS1555	8-MT-01	2SC945P Q	IN60	IS1555					



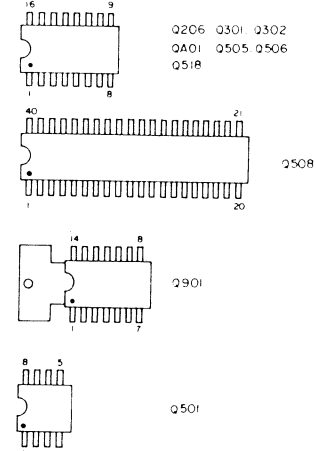
BOTTOM VIEW



SIDE VIEW



TOP VIEW



NOTE ON SAFETY:
The parts marked with  are important parts on the safety. Please use the parts having the designated parts numbers without fail.

[FOR EUROPEAN MODEL ONLY]

FM TUNER SECTION:

Frequency Range	87.5 ~ 108 MHz
Usable Sensitivity 40 kHz Deviation, 98 MHz (75 ohms)	0.9 μ V
Mono S/N 26 dB	23 μ V
Stereo S/N 46 dB	
	WIDE NARROW
Alternate Channel Selectivity 98 MHz, $\pm$ 300 kHz	45 dB 70 dB
Total Harmonic Distortion at 98 MHz,	
Mono	0.1% 0.15%
Stereo	0.2% 0.3%
Separation	
Stereo	48 dB 45 dB
Image Response Rejection, 98 MHz	75 dB
IF Rejection, 98 MHz	95 dB
Spurious Response Rejection, 98 MHz	98 dB
AM Suppression, 98 MHz	55 dB
Signal-to-Noise Ratio at 98 MHz	
Un-weighted Mono	65 dB
Stereo	65 dB
Weighted Mono	70 dB
Stereo	65 dB
Pilot Signal & Subcarrier Rejection	
19 kHz	65 dB
38 kHz	68 dB
Frequency Response	
30 Hz ~ 15 kHz	+0.2dB, -1.5 dB
Channel Balance	0.2 dB
Output Voltage, 1 kHz	700 mV
Output Impedance, 1 kHz	1 k ohms
Acceptable Load Impedance, 1 kHz	47 k ohms
Antenna Terminals	
Balanced	300 ohms
Unbalanced	75 ohms

MW TUNER SECTION:

Frequency Range	531 ~ 1,602 kHz
Usable Sensitivity 26 dB S/N 30% Mod., 1 MHz	25 μ V
Selectivity 1MHz, $\pm$ 9 kHz	30 dB
Image Rejection, 1 MHz	50 dB
IF Rejection, 1 MHz	46 dB
Spurious Response Rejection, 1 MHz	60 dB
Signal-to-Noise Ratio, 1 MHz	55 dB
Frequency Response 1 MHz, $\pm$ 3 dB	40 Hz ~ 2.2 kHz
Total Harmonic Distortion, 1 MHz	0.5%

GENERAL:

Power Requirements	220V ~ , 50 Hz
	(N version is featuring an external voltage selector for use on 110 V.
	Other versions can be converted by a qualified technician to operate on 240 V.)
Power Consumption	10 W
Semiconductor Complement	
Integrated Circuits	10
Transistors	33
Diodes	70
Field Effect Transistors	3
Dimensions:	
Panel Width	416 mm (16-3/8 inches)
Panel Height	73 mm (2-7/8 inches)
Depth	300 mm (11-13/16 inches)
Weight:	
Unit Alone	4 kg (8.8 lbs)
Packed for Shipment	5.5 kg (12.1 lbs)