



# Service Manual

# Nakamichi

## SR-4

## SR-4A

### Stereo Receiver



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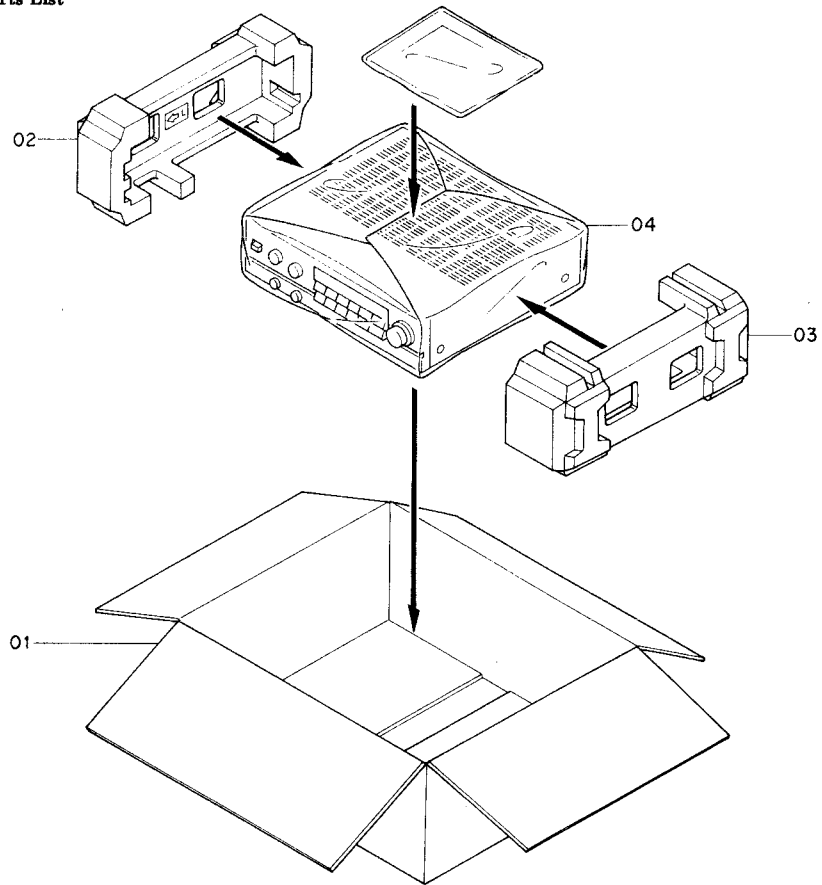
## 1. GENERAL

### 1.1. Voltage Selector

Voltage selector is installed on the rear panel for Other version of the Nakamichi SR-4.  
This voltage selector can select either 110 V, 120 V, 220 V or 240 V at customer's disposal.

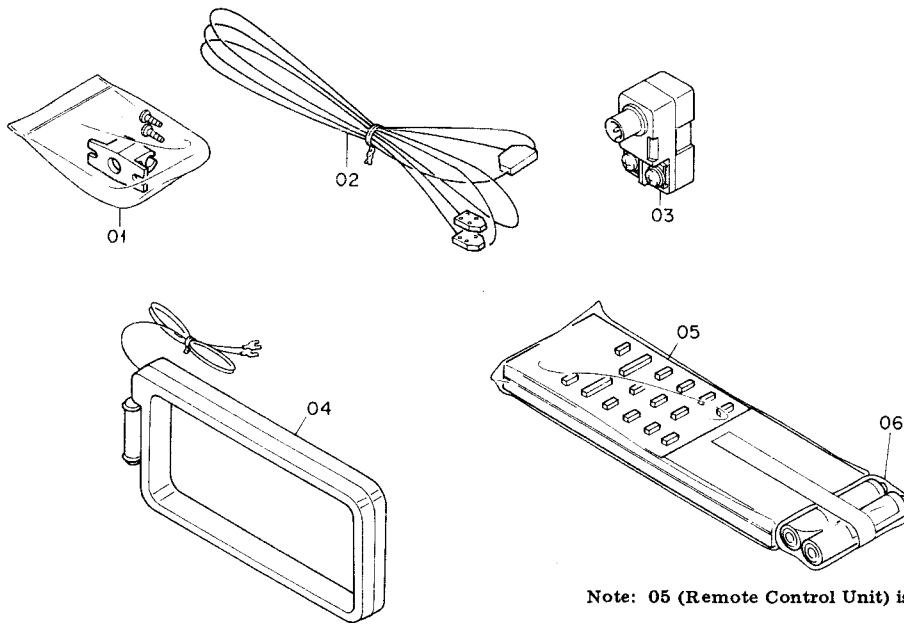
Schematic Ref. No.	Part No.	Description	Q'ty	Schematic Ref. No.	Part No.	Description	Q'ty
01	FA03581A	Package Ass'y (SR-4A)	1	03	0B90194A	Antenna Adapter F	1
	FA03582A	Package Ass'y (SR-4 (Canada))	1	04	0B90198A	AM Loop Antenna	1
	FA03584A	Package Ass'y (SR-4 (Australia))	1	05	0B90242A	Battery	1
	FA03583A	Package Ass'y (SR-4 (Other))	1	06	DA04042A	Remote Control Unit	1
02	0F04022A	Carton Box (SR-4A)	1	—	0D03092B	Poly-Bag 320x340x0.08	1
	0F04024A	Carton Box (SR-4)	1	—	0D04449A	Important Notice Card	1
03	0F04041A	Packing L	1	—	0D04651B	Owner's Manual SR-4/3/2 (English)	1
04	0F04042A	Packing R	1	—	0D04764A	Owner's Manual SR-4E/3E/2E, SR-4/3/2 (English/German/ French)	1
—	0F03670A	Poly-Sheet	1	—	0D04673B	French Text (SR-4/3/2 (Canada))	1
—	0M03457A	Voltage Seal 240V (SR-4 (Australia))	1	—	0D04674B	Owner's Manual Text (SR-4/3/2 (Australia))	1
—	0M03456A	Voltage Seal 220V (SR-4 (Other))	1	—	0D04675B	Owner's Manual Text (SR-4/3/2 (Other))	1
01	DA04037A	Accessory Ass'y (SR-4A)	1	—	DA03873A	Warranty Card Ass'y (SR-4A)	1
	DA04038A	Accessory Ass'y (SR-4 (Canada))	1	—	0F04043A	Poly-Bag 80x150	1
	DA04040A	Accessory Ass'y (SR-4 (Australia))	1	—	0D04766A	Catalogue U.S.A. (SR-4A)	1
	DA04039A	Accessory Ass'y (SR-4 (Other))	1	—			
02	0B90070A	AM Loop Antenna Holder	1				
02	0B90081A	Feeder Antenna	1				

**1.2. Package Ass'y and Parts List**



**Fig. 1.1**

**1.3. Accessory Ass'y and Parts List**



**Note: 05 (Remote Control Unit) is supplied in unit form**

**Fig. 1.2**

2. PARTS LOCATION FOR ELECTRICAL ADJUSTMENT

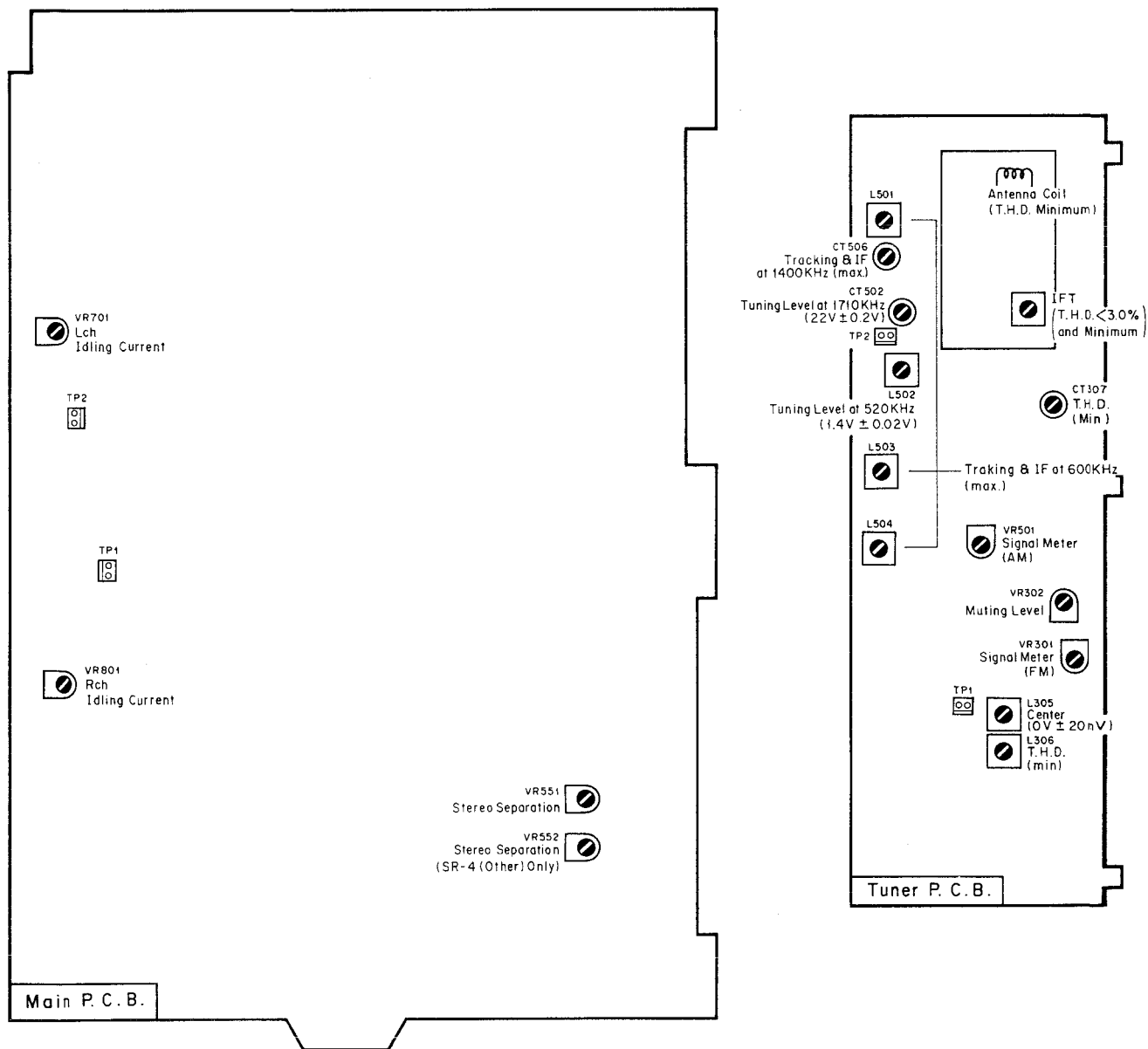


Fig. 2

### 3. ELECTRICAL ADJUSTMENTS

#### 3.1. Power Amplifier Section

STEP	ITEM	SIGNAL SOURCE	OUTPUT CONNECTION	MODE	ADJUSTMENT	REMARKS
1	Idling Current	None	DC Voltmeter between TP2-1 & 2 and TP1-1 & 2 on Main P.C.B.	Input Selector - CD or Aux Output Level - Min. Speaker Selector A/B - OFF	Main P.C.B. VR701 VR801	<ol style="list-style-type: none"> <li>1. Insert shorting plugs into the CD Player Input Jacks.</li> <li>2. Turn ON the power and allow 3 minutes before adjustment. (Top Cover must be installed before adjustment).</li> <li>3. Adjust VR701 (VR801) to obtain 23 mV <math>\pm</math> 1 mV on the DC voltmeter.</li> </ol>

#### 3.2. Tuner Section

Note: Adjustment should be made in a shielded room in principle.

##### 3.2.1. FM Tuner Section

STEP	ITEM	OUTPUT CONNECTION	MODE	ADJUSTMENT	REMARKS
1	Preliminary Step	See Fig. 3.1	Stereo Receiver Input Selector - Tuner Band Selector - FM Tape Monitor - Source  Signal Generator Freq. - 98 MHz RF Level - 65 dBf Modulation - See REMARKS		<ol style="list-style-type: none"> <li>1. Set the Stereo Receiver as indicated in the MODE.</li> <li>2. Adjustment and confirmation should be made after tuning in to the set carrier frequency of the Signal Generator.</li> </ol> <p>Note: Contents of modulation</p> <ol style="list-style-type: none"> <li>1. For U.S.A., Canada &amp; Other (Wide)               <ul style="list-style-type: none"> <li>o Stereo Audio: 1 kHz, 91% Pilot: 19 kHz, 9%</li> <li>o Mono Audio: 1 kHz, 100%</li> </ul> </li> <li>2. For Australia &amp; Other (Narrow)               <ul style="list-style-type: none"> <li>o Stereo Audio: 1 kHz, 51% Pilot: 19 kHz, 9%</li> <li>o Mono Audio: 1 kHz, 60%</li> </ul> </li> </ol>
2	Usable Sensitivity Adjustment	Distortion Meter to Tape 1 Record Output Jacks	Stereo Receiver Same as above  Signal Generator Freq. - 98 MHz RF Level - 12 dBf Modulation - Mono	Tuner P.C.B. Front-end IFT Antenna Coil (See Fig. 2)	<ol style="list-style-type: none"> <li>1. Set the Stereo Receiver to Manual mode by pressing the Tuning Mode button.</li> <li>2. Adjust the IFT to obtain minimum distortion (total harmonic distortion (THD): 3% or less).</li> <li>3. Adjust the distance between windings of antenna coil to obtain minimum distortion.</li> <li>4. Set the frequency of the Signal Generator to 90 MHz/106 MHz and check that the THD is 3% or less.</li> </ol>

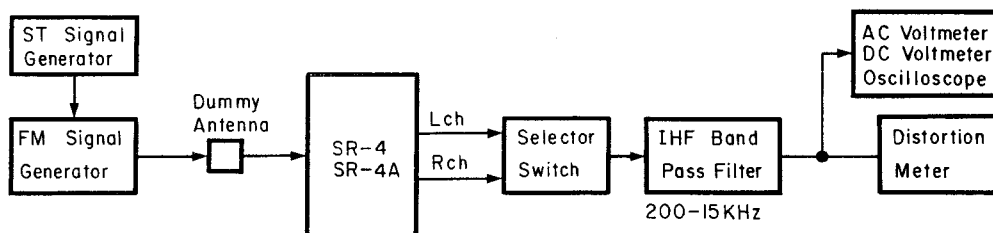


Fig. 3.1

STEP	ITEM	OUTPUT CONNECTION	MODE	ADJUSTMENT	REMARKS
3	Center Voltage and THD Adjustment	DC Voltmeter between TP1-1 & TP1-2 on Tuner P.C.B. and Distortion Meter to Tape 1 Record Jacks	Stereo Receiver Same as above  Signal Generator Freq. - 98 MHz RF Level - 65 dBf Modulation - Mono	Tuner P.C.B. L305 L306	1. Set the Stereo Receiver to Manual mode. 2. Adjust L305 so that the reading on the DC voltmeter is 0 V $\pm$ 20 mV. 3. Adjust L306 to obtain minimum distortion (THD: 0.07% or less). Repeat 2 and 3, if necessary.
4	Muting Level Adjustment	Oscilloscope to Tape 1 Record Output Jacks	Stereo Receiver Same as above  Signal Generator Freq. - 98 MHz RF Level - 29 dBf Modulation - Stereo	Tuner P.C.B. VR302	1. Set the Stereo Receiver to Auto mode. 2. Rotate VR302 fully counterclockwise. Then, return it clockwise gradually until a waveform appears on the oscilloscope. 3. Decrease the RF level of the Signal Generator until the waveform on the oscilloscope disappears. Then increase the RF level gradually until a waveform appears again. At this point, check that the RF level of the Signal Generator is 29 dBf $\pm$ 3 dB.
5	Signal Strength Meter Level Adjustment	None	Stereo Receiver Same as above  Signal Generator Freq. - 98 MHz RF Level - 56 dBf Modulation - Stereo	Tuner P.C.B. VR301	1. Set the Stereo Receiver to Auto mode. 2. Adjust VR301 so that all segments (1-5) of the signal strength meter light up. 3. Decrease the RF level of the Signal Generator to distinguish the segment 5. Next, increase the RF level gradually so that the segment 5 starts illuminating. At this point, check that the RF level of the Signal Generator is 56 dBf $\pm$ 2 dB.
6	Stereo Separation Adjustment	AC Voltmeter to Tape 1 Record Output Jacks	Stereo Receiver Same as above  Signal Generator Freq. - 98 MHz RF Level - 65 dBf Modulation - L or R only	Main P.C.B. VR551  Main P.C.B. VR552 (Other only)	For U.S.A., Canada & Australia versions: 1. Set the Stereo Receiver to Auto mode. 2. Apply modulation to only L channel. 3. Adjust VR551 to obtain minimum reading on the AC voltmeter at the R channel output jack. 4. Apply modulation to only R channel. 5. Check that the reading on the AC voltmeter at the L channel output jack is within $\pm$ 1 dB with respect to the reading in 3. If not, repeat 2 through 4.  For Other version: 1. Set the switches on the rear panel as follows: Freq. Step FM/AM - 100 kHz/10 kHz IF Band - Wide 2. Adjust VR551 by applying the same procedures as mentioned above. 3. Set the switches as follows: Freq. Step FM/AM - 50 kHz/9 kHz IF Band - Narrow 4. Apply the same procedures as mentioned above, except for VR552.

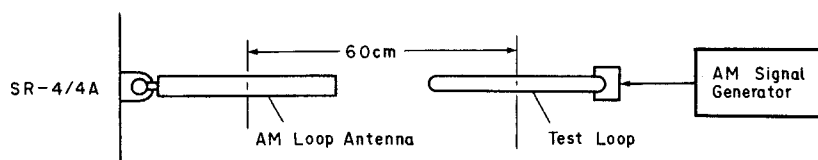


Fig. 3.2

STEP	ITEM	OUTPUT CONNECTION	MODE	ADJUSTMENT	REMARKS
7	Stereo/Mono Selection Check and THD Adjustment		Stereo Receiver Same as above  Signal Generator Freq. - 98 MHz RF Level - 65 dBf Modulation - Stereo/ Mono	Main P.C.B. CT332	1. Set the Stereo Generator to L=R mode. 2. Set the Stereo Receiver to Manual mode and check that the Stereo indicator goes out and stereo outputs disappear. 3. Set the Stereo Receiver to Auto mode and adjust CT332 to obtain minimum distortion (THD: 0.09% or less).

### 3.2.2. AM Tuner Section

STEP	ITEM	OUTPUT CONNECTION	MODE	ADJUSTMENT	REMARKS
1	Tuning Level Adjustment	DC Voltmeter between TP2-1 and TP2-2 on Tuner P.C.B.	Stereo Receiver Input Selector - Tuner Band Selector - AM Tape Monitor - Source  Signal Generator Freq. - 520 (522) kHz/ 1710 (1611) kHz	Tuner P.C.B. L502 CT502	1. Set the frequency of the Signal Generator to 520 kHz (522 kHz for Australia and Other (Narrow)) and make tuning. 2. Adjust L502 to obtain 1.4 V $\pm$ 0.02 V on the DC voltmeter. 3. Change the frequency to 1710 kHz (1611 kHz) and make tuning. 4. Adjust CT502 to obtain 22 V $\pm$ 0.2 V on the DC voltmeter. 5. If satisfactory results are not obtained, repeat 1 through 4.
2	Tracking and IF Adjustment	AC Voltmeter to Tape 1 Record Output Jacks	Stereo Generator Same as above  Signal Generator Freq. - 600 (603) kHz/ 1400 (1404) kHz RF Level - 82 dB $\mu$ /m Modulation - 400 Hz, 30%	Tuner P.C.B. L501 L503 L504 CT506	1. Set the measurement instruments as shown in Fig. 3.2. Set the distance between the AM Loop Antenna of the SR-4/SR-4A and a test loop to 60 cm. To obtain 56 dB $\mu$ /m at the AM Loop Antenna, set the RF level output of the AM Signal Generator to 82 dB $\mu$ /m as loss is 26 dB $\mu$ /m in this setting. 2. Set the frequency of the Signal Generator to 600 kHz (630 kHz for Australia and Other (Narrow)) and make tuning. 3. Adjust L501 to obtain maximum reading on the AC voltmeter. 4. Adjust L503 to obtain maximum reading on the AC voltmeter. 5. Adjust L504 to obtain maximum reading on the AC voltmeter. 6. Set the frequency to 1400 kHz (1404 kHz) and make tuning. 7. Adjust CT506 to obtain maximum reading on the AC voltmeter. 8. Repeat 2 through 7 once.
3	Signal Strength Meter Level Adjustment	None	Stereo Generator Same as above  Signal Generator Freq. - 1000 (999) kHz RF Level - 104 dB $\mu$ /m	Tuner P.C.B. VR501	1. With the same setting as in Step 2, set the RF level output of the AM Signal Generator to 104 dB $\mu$ /m in order to obtain 78 dB $\mu$ /m at the AM Loop Antenna. 2. Set the frequency of the Signal Generator to 1000 kHz (999 kHz for Australia and Other (Narrow)) and make tuning. 3. Adjust VR501 so that the segment 5 of the signal strength meter starts illuminating. Note: Before adjustment, select AM mode and wait for more than three minutes.

#### 4. MECHANISM ASS'Y AND PARTS LIST

##### 4.1. Synthesis

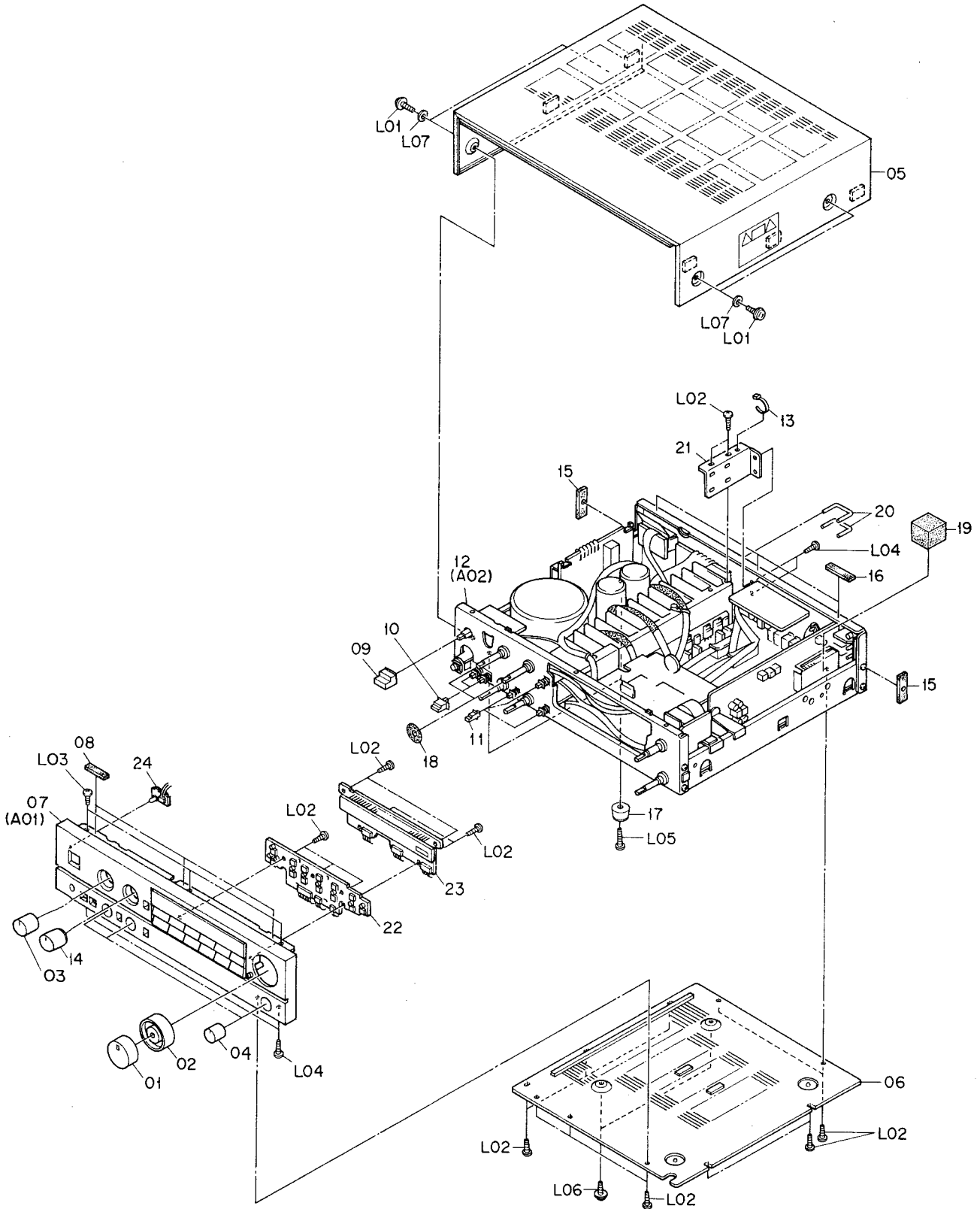


Fig. 4.1



4.2. Front Panel Ass'y (A01)

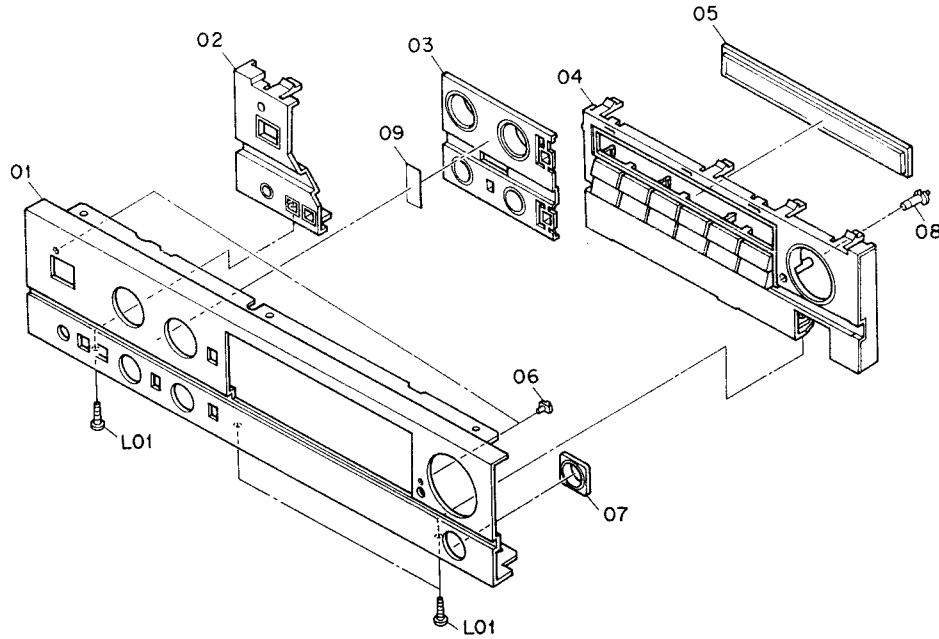


Fig. 4.2

Schematic Ref. No.	Part No.	Description	Q'ty	Schematic Ref. No.	Part No.	Description	Q'ty
		<b>Synthesis</b> Serial No.: D10601001 -		18	0J05258B	Selector Knob Himelon	2
				19	0J05365A	Front-end Cushion	1
01	HA05241A	Volume Knob Ass'y	1	20	0B90256A	U-shape Pin 14	2
02	HA05242A	Balance Knob Ass'y	1	21	0J05204B	Heat Sink Holder C	1
03	HA05105A	Selector Knob Ass'y	1	22	BA06593A	Control Switch P.C.B. Ass'y	1
04	HA05106A	Tone Control Knob Ass'y	3	23	BA06592A	Display P.C.B. Ass'y (SR-4A & SR-4 (Canada))	1
05	HA05234A	Top Cover Ass'y (SR-4A & SR-4 (Canada & Australia))	1		BA06646A	Display P.C.B. Ass'y (SR-4 (Australia & Other))	1
	HA05235A	Top Cover Ass'y (SR-4 (Other)) (Consisting of the following:)	1	24	BA06645A	Power Indicator P.C.B. Ass'y	1
	(OH04934C)	Top Cover	(1)	L01	0E03032A	BT4x8 @ Pan Washer-faced (Black Chromate)	4
	(OJ05261A)	Top Cover Cushion	(5)	L02	0E00868A	BT3x8 @ Binding (SR-4A)	21
	(OM04377B)	Caution Label	(1)		0E00868A	BT3x8 @ Binding (SR-4)	19
	(MA01001A)	F. Code Labels	(1)	L03	0E00857A	BT3x6 @ Binding	3
	(OM04811A)	Voltage Caution Sheet (SR-4 (Other))	(1)	L04	0E00921A	BT3x8 @ Binding (Black Chromate)	4
	(OM04812A)	Voltage Caution Label (SR-4 (Other))	(1)	L05	0E00888A	BT3x12 @ Binding	2
				L06	0E03157A	BT3x8 @ Binding with Washer	2
06	JA04283A	Bottom Cover Ass'y (Consisting of the following:)	1	L07	0E03410A	Washer 4.3x8x0.8	4
	(OE00888A)	BT3x12 @ Binding	(2)		0M03917A	Seal (SR-4A)	1
	(OJ05162A)	Leg T-S	(2)		0M04380A	Barrier Caution Seal CS2 (SR-4A & SR-4 (Canada))	1
	(OJ05214A)	P.C.B. Cushion	(1)		0M04896A	Fuse Caution Seal (SR-4A & SR-4 (Canada))	1
	(OJ05309A)	BS Damper 1VR	(2)		0M04897A	Serial No. Seal	1
	(OJ05324C)	Bottom Cover	(1)		MA01003A	US Labels (SR-4A)	1
	(OJ05367A)	Heat Sink Cushion	(1)				
	(OM04377B)	Caution Label	(1)	A01	HA05213A	Front Panel Ass'y (SR-4A)	1
07	HA05213A	Front Panel Ass'y (SR-4A)	1		HA05216A	Front Panel Ass'y (SR-4 (Canada))	1
	HA05216A	Front Panel Ass'y (SR-4 (Canada))	1		HA05215A	Front Panel Ass'y (SR-4 (Australia & Other))	1
	HA05215A	Front Panel Ass'y (SR-4 (Australia & Other))	1			Serial No.: D10601001 -	
08	OJ05364A	Top Cover Cushion T4	5				
09	OH04947A	Power Switch Knob	1	01	OH05042A	Front Panel (SR-4A)	1
10	OH04950B	Push Switch Knob 10L	2		OH05043A	Front Panel (SR-4)	1
11	OH04949B	Push Switch Knob 5L	3	02	OH04935C	Front Escutcheon L	1
12	JA04278A	Chassis Ass'y (SR-4A)	1	03	OH04936A	Front Escutcheon C	1
	JA04282A	Chassis Ass'y (SR-4 (Canada))	1	04	HA05224A	Front Escutcheon R Ass'y	1
	JA04280A	Chassis Ass'y (SR-4 (Australia))	1	05	OH04938A	Display Lens	1
	JA04281A	Chassis Ass'y (SR-4 (Other))	1	06	OH05039A	Power Lens	1
13	OB90019A	Insu-Lock SKB80 (SR-4A)	34	07	OH05040A	Loudness Escutcheon	2
	OB90019A	Insu-Lock SKB80 (SR-4)	37	08	OH05041A	Muting Switch Knob	1
14	HA05243A	Selector Knob Ass'y	1	L01	0E00921A	BT3x8 @ Binding (Black Chromate)	3
15	OJ05226A	Side Cushion	2				
16	OJ05363A	Top Cover Cushion T3	3				
17	OJ05162A	Leg T-S	2				

4.3. Chassis Ass'y (A02)

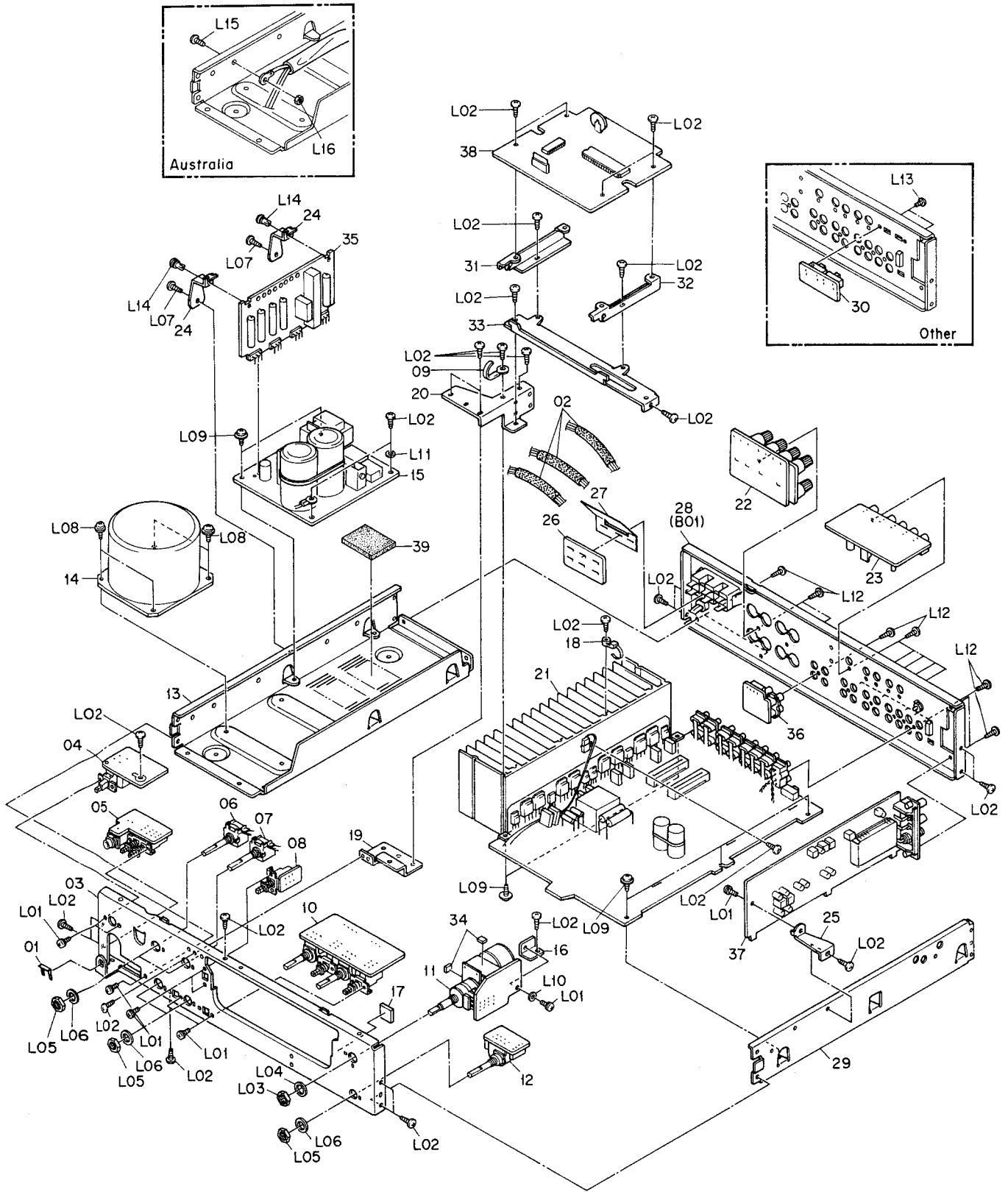


Fig. 4.3

Schematic Ref. No.	Part No.	Description	Q'ty	Schematic Ref. No.	Part No.	Description	Q'ty
A02	JA04278A	Chassis Ass'y (SR-4A)	1	L13	OE00945A	M2.6x4 ⊕ Binding (Black Chromate) (SR-4 (Other))	2
	JA04282A	Chassis Ass'y (SR-4 (Canada))	1				
	JA04280A	Chassis Ass'y (SR-4 (Australia))	1				
	JA04281A	Chassis Ass'y (SR-4 (Other)) Serial No.: D10601001 -	1				
01	OJ05092A	Snap Plate	1	L14	OJ05284A	Plastic Rivet 3x4.5	2
02	OB80126A	Glass Fiber Tube	3	L15	OE00506A	Nut Hex. M4 (SR-4 (Australia))	1
03	OJ05339A	Front Chassis	1	L16	OE00929A	M4x8 ⊕ Binding (SR-4 (Australia))	1
04	BA06605A	Power Switch P.C.B. Ass'y (SR-4A & SR-4 (Canada))	1	—	OM04898A	Amp. No. Seal	1
	BA06615A	Power Switch P.C.B. Ass'y (SR-4 (Australia))	1	—	OB80125A	Transformer Wire (SR-4 (Other))	1
	BA06807A	Power Switch P.C.B. Ass'y (SR-4 (Other))	1		OJ05373B	Diode Barrier	1
05	BA06600A	Speaker Switch P.C.B. Ass'y	1				
06	OB70101A	Rotary Switch 370mm	1				
07	OB70102A	Rotary Switch 340mm	1				
08	BA06608A	MM/MC Switch P.C.B. Ass'y	1				
09	OE03145A	Coating Clip CS-9	1				
10	BA06598A	Tone Control P.C.B. Ass'y	1				
11	BA06597A	Volume Motor P.C.B. Ass'y	1				
12	BA06604A	Loudness Volume P.C.B. Ass'y	1				
13	OJ05325B	Power Supply Chassis	1				
14	OB50087A	Power Transformer (SR-4A & SR-4 (Canada))	1				
	OB50088A	Power Transformer (SR-4 (Australia))	1				
	OB50089A	Power Transformer (SR-4 (Other))	1				
15	BA06599A	Power Supply P.C.B. Ass'y	1				
16	OJ05331A	Motor Holder	1				
17	OJ05307A	BS Damper 1R	1				
18	OB90210A	Insu-Lock T30MR-HS	1				
19	OJ05323B	Heat Sink Holder B	1				
20	OJ05334A	Heat Sink Holder A	1				
21	BA06594A	Main P.C.B. Ass'y (SR-4A & SR-4 (Canada))	1				
	BA06595A	Main P.C.B. Ass'y (SR-4 (Australia))	1				
	BA06596A	Main P.C.B. Ass'y (SR-4 (Other))	1				
22	BA06603A	Speaker Terminal P.C.B. Ass'y	1				
23	BA06602A	Video Amp. P.C.B. Ass'y	1				
24	OJ05321A	Fuse P.C.B. Holder	2				
25	OJ05322A	Tuner P.C.B. Holder	1				
26	BA06601A	AC Outlet P.C.B. Ass'y (SR-4A & SR-4 (Canada & Other))	1				
27	OJ05327B	AC Insulator (SR-4A & SR-4 (Canada & Other))	1				
28	HA05218A	Rear Panel Ass'y (SR-4A)	1				
	HA05220A	Rear Panel Ass'y (SR-4 (Canada))	1				
	HA05222A	Rear Panel Ass'y (SR-4 (Australia))	1				
	HA05221A	Rear Panel Ass'y (SR-4 (Other))	1				
29	OJ05202C	Side Chassis	1				
30	BA06611A	IF Band Selector Switch P.C.B. Ass'y (SR-4 (Other))	1				
	OJ05332A	Logic P.C.B. Holder L	1				
31	OJ05333A	Logic P.C.B. Holder R	1				
32	OJ05340B	P.C.B. Holder	1				
33	OJ05366A	Volume Damper	2				
34	BA06606A	Fuse P.C.B. Ass'y (SR-4A & SR-4 (Canada))	1				
	BA06813A	Fuse P.C.B. Ass'y (SR-4 (Australia))	1				
	BA06801A	Fuse P.C.B. Ass'y (SR-4 (Other))	1				
36	BA06607A	Pin Jack P.C.B. Ass'y	1				
37	BA06609A	Tuner P.C.B. Ass'y (SR-4A & SR-4 (Canada))	1				
	BA06620A	Tuner P.C.B. Ass'y (SR-4 (Australia))	1				
	BA06619A	Tuner P.C.B. Ass'y (SR-4 (Other))	1				
38	BA06610A	Logic P.C.B. Ass'y (SR-4A & SR-4 (Canada & Australia))	1				
	BA06621A	Logic P.C.B. Ass'y (SR-4 (Other))	1				
39	OJ05380A	P.C.B. Cushion	1				
L01	OE00612A	M3x6 ⊕ Pan (2A)	9				
L02	OE00868A	BT3x8 ⊕ Binding	25				
L03	—	Nut Hex. M9	(1)				
L04	—	Washer	(1)				
L05	—	Nut Hex. M7	(5)				
L06	—	Washer	(5)				
L07	OE00857A	BT3x6 ⊕ Binding	2				
L08	OE03032A	BT4x8 ⊕ Pan Washer-faced (Black Chromate)	4				
	OE03157A	BT3x8 ⊕ Binding with Washer	7				
L09	OE03409A	Washer 3.2x5.7x1.2 (Copper)	1				
L10	OJ05294A	Washer 3.1x8x1 (Copper)	1				
L11	OE00921A	BT3x8 ⊕ Binding (Black Chromate)	17				
L12							

4.4. Rear Panel Ass'y (B01)

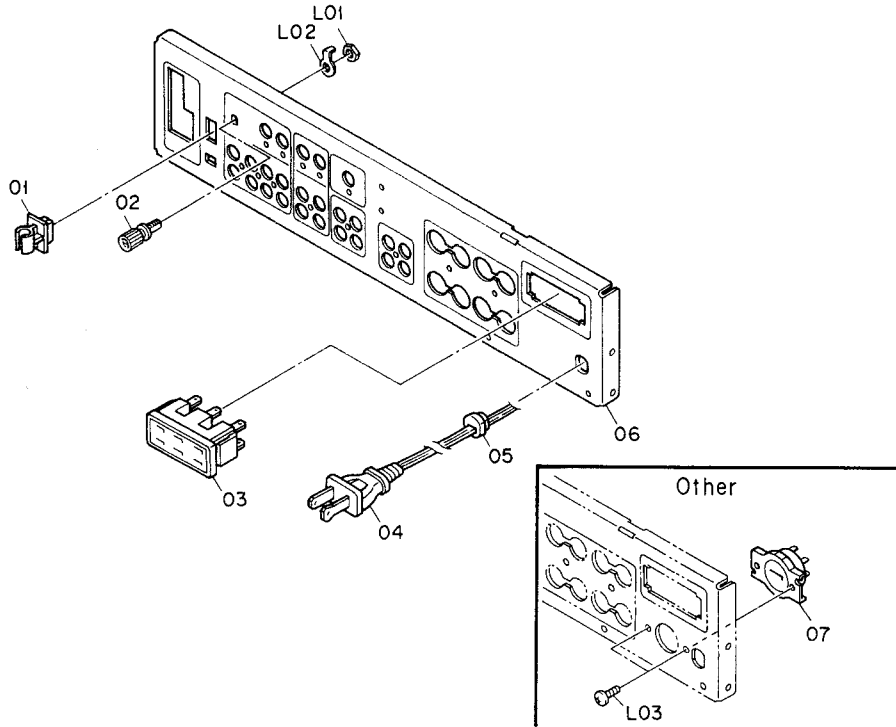


Fig. 4.4

Schematic Ref. No.	Part No.	Description	Qty
B01	HA05218A	Rear Panel Ass'y (SR-4A)	1
	HA05220A	Rear Panel Ass'y (SR-4 (Canada))	1
	HA05222A	Rear Panel Ass'y (SR-4 (Australia))	1
	HA05221A	Rear Panel Ass'y (SR-4 (Other))	1
		Serial No.: D10601001 -	
01	0B90071A	AM Loop Antenna Holder	1
02	0B81604A	Ground Terminal T-5435	1
03	0B81706A	AC Outlet 3P (SR-4A & SR-4 (Canada & Other))	1
04	0B90205A	Power Cord (SR-4A & SR-4 (Canada & Other))	1
05	0B90269A	Power Cord (SR-4 (Australia))	1
	0B08351A	Cord Bushing 4K-4 (SR-4A & SR-4 (Canada & Other))	1
	0B90273A	Cord Bushing 4K-4 (SR-4 (Australia))	1
06	0H05049A	Rear Panel (SR-4A)	1
	0H05045B	Rear Panel (SR-4 (Canada))	1
	0H05047A	Rear Panel (SR-4 (Australia))	1
	0H05046A	Rear Panel (SR-4 (Other))	1
07	0B70049A	Voltage Selector (SR-4 (Other))	1
L01	-	Nut Ground Terminal	(1)
L02	-	Earth Lug (Ground Terminal)	(1)
L03	0E00985A	M3x6 ♂ Binding (SR-4 (Other))	2

## 5. MOUNTING DIAGRAM AND PARTS LIST

Notes: 1. Mounting diagram shows a dip side view of the printed circuit board.

2. Diode is 1SS53, 1S1555, or 1SS176 unless otherwise specified.

3. Following transistors are interchangeable with each other.

a. 2SA733, 2SA608SP, 2SA1048, 2SA1175

b. 2SC945, 2SC536SP, 2SC2458, 2SC2785

4. Abbreviation for part name:

TR — Transistor, SiD — Silicon Diode, ZD — Zener Diode, Varicap — Variable Capacitance Diode

RK — Carbon Resistor, RM — Metal Film Resistor, RF — Fail Safe Type Resistor, RW — Wire Wound Resistor

CE — Electrolytic Capacitor, CM — Mylar Capacitor, CC — Ceramic Capacitor, CP — PP Capacitor

CMM — Metalized Mylar Capacitor, CSP — Polystyrene Capacitor, C — Mica Capacitor

### 5.1. Power Switch P.C.B. Ass'y

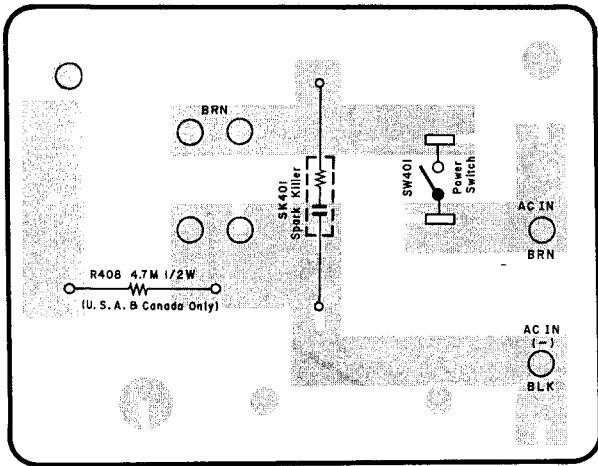


Fig. 5.1

### 5.2. AC Outlet P.C.B. Ass'y

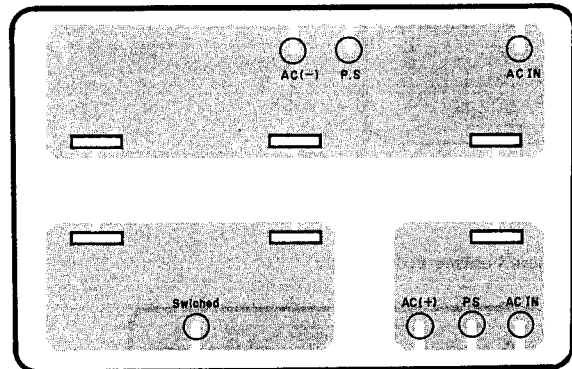


Fig. 5.2

### 5.3. Power Indicator P.C.B. Ass'y

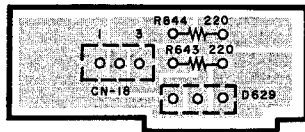


Fig. 5.3

### 5.4. Pin Jack P.C.B. Ass'y

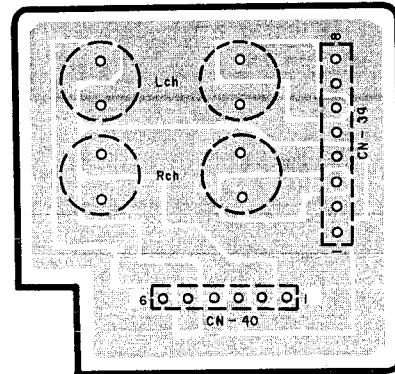


Fig. 5.4

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
R408	BA06605A	Power Switch P.C.B. Ass'y (SR-4A & SR-4 (Canada))	SW401	OB8240A	Spark Killer Q-J0187B (SR-4 (Australia & Other))	SK401	BA06645A	Power Indicator P.C.B. Ass'y
	BA06615A	Power Switch P.C.B. Ass'y (SR-4 (Australia))		OB82994A	PD Connector V430 BRN (1)		OB60449A	Power Indicator P.C.B.
	BA06807A	Power Switch P.C.B. Ass'y (SR-4 (Other))		OB82995A	PD Connector V430 BLK (1)		OB12421A	LED SRP-56DWF (GRN/LED)
	OB60443A	Power Switch P.C.B. RK 4.7M 1/2W J (SR-4A & SR-4 (Canada))		OE00037A	Earth Lug B-5 (SR-4A & SR-4 (Canada)) (1)		OB09661A	RK 220 1/6W J 3P Connector RED
SW401	OB20057A	Power Switch P.C.B. Spark Killer ECQ-JC187C (SR-4A & SR-4 (Canada))	OE00752A	Eyelet 2x3 (SR-4 (Australia)) (1)	CN39,40	BA06607A	Pin Jack P.C.B. Ass'y	
	OB71006A	Power Switch SDL1P Spark Killer	BA06601A	AC Outlet P.C.B. Ass'y (SR-4A & SR-4 (Canada & Other))		OB60435A	Pin Jack P.C.B. Dip Mate 6P WH6D-	
SK401	OB08342A	Power Switch SK401 Spark Killer	OB60448A	AC Outlet P.C.B. Eyelet 2x3 (1)		OB81013A	4P Pin Jack WH6D-1 (1)	
			OE00752A	Eyelet 2x3 (1)				

5.5. IF Band Selector P.C.B. Ass'y

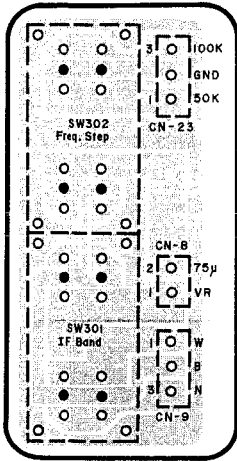


Fig. 5.5

5.6. MM/MC Switch P.C.B. Ass'y

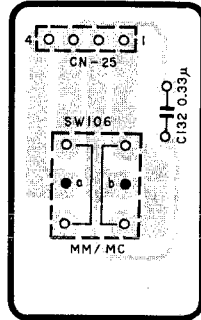


Fig. 5.6

5.7. Speaker Switch P.C.B. Ass'y

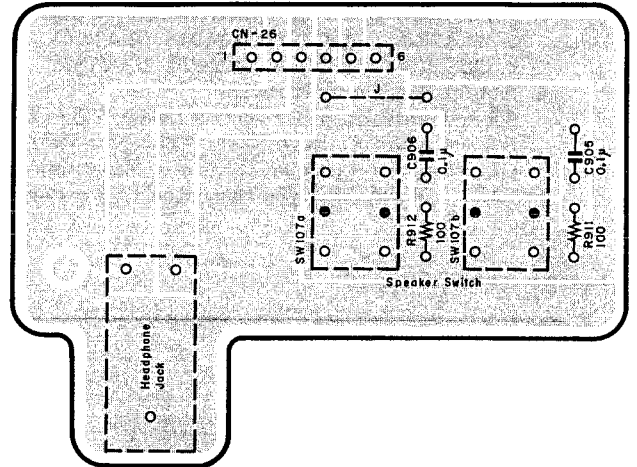


Fig. 5.7

5.8. Loudness Volume P.C.B. Ass'y

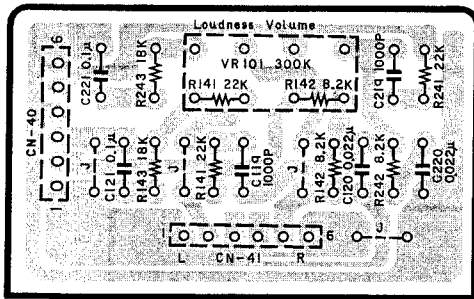


Fig. 5.8

5.9. Volume Motor P.C.B. Ass'y

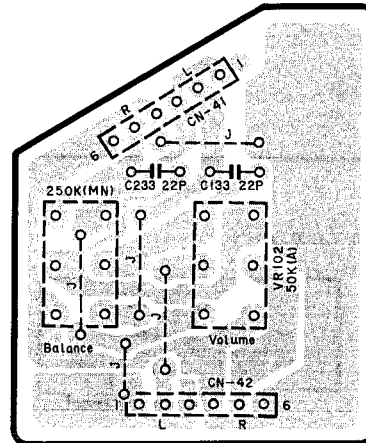


Fig. 5.9

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
SW301,302 CN8 CN9 CN23	BA06611A	IF Band Selector P.C.B. Ass'y (SR-4 (Other))	R911,912 C905,906 SW107 CN26	BA06600A	Speaker Switch P.C.B. Ass'y	CN40,41	0B81013A	Dip Mate 6P WH6D-1
	0B60445A	Band Selector P.C.B.		0B60444A	Speaker Switch P.C.B.		0B82969A	Ribbon Cable 6P 170mm (2)
	0B70099A	Slide Switch SS091		0B09653A	RK 100 1/6W J		0B82970A	Ribbon Cable 6P 550mm (2)
	0B82948A	2P Connector YEL		0B41298A	CMM 0.1µ 50V J	BA06597A	Volume Motor P.C.B. Ass'y	
	0B82949A	3P Connector RED		0B70098A	Push Switch SPUN22			0B60434B
0B82963A	3P Connector WHT	0B82966A	6P Connector WHT	VR102	Volume Motor Ass'y			
C132 SW106 CN25	BA06608A	MM/MC Switch P.C.B. Ass'y	VR101 R141,241 R142,242 R143,243 C119,219 C120,220 C121,221	BA06604A	Loudness Volume P.C.B. Ass'y	VR102 C133,233 C630 CN19 CN41,42	0B30074A	CSP 22P 50V J
	0B60436B	MM/MC Switch P.C.B.		0B60433A	Loudness Volume P.C.B.		0B41702A	CC 0.1µ 25V Z
	0B41304A	CMM 0.33µ 50V J		0B30075A	VR 300K (B)x2		0B41617A	2P Connector
	0B70105A	Push Switch SPUN12 6.5mm		0B09709A	RK 22K 1/6W J		0B82959A	Dip Mate 6P WH6D-1
	0B82965A	4P Connector WHT		0B09699A	RK 8.2K 1/6W J		0B81013A	
				0B09707A	RK 18K 1/6W J			
				0B41791A	CSP 1000P 50V J			
				0B41290A	CMM 0.022µ 50V J			
				0B41298A	CMM 0.1µ 50V J			

5.10. Speaker Terminal P.C.B. Ass'y

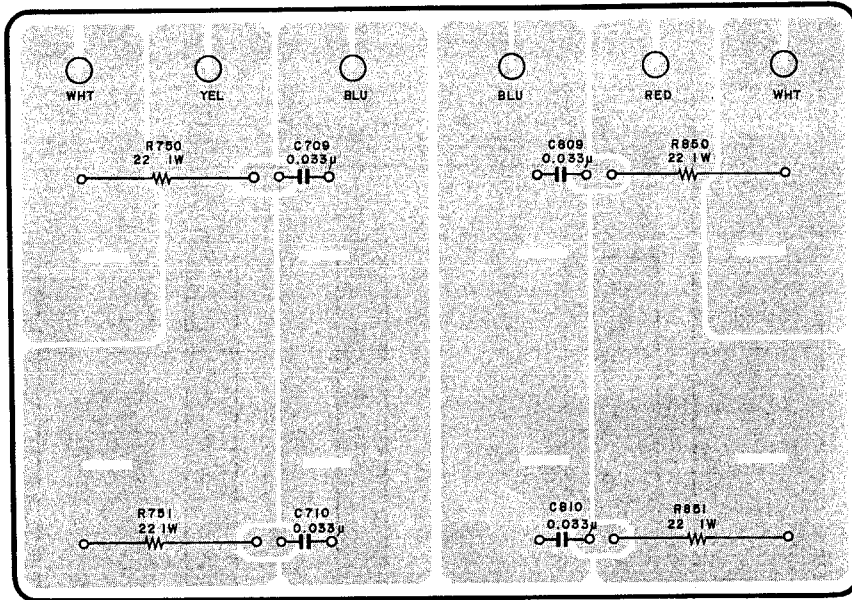


Fig. 5.10

5.11. Tone Control P.C.B. Ass'y

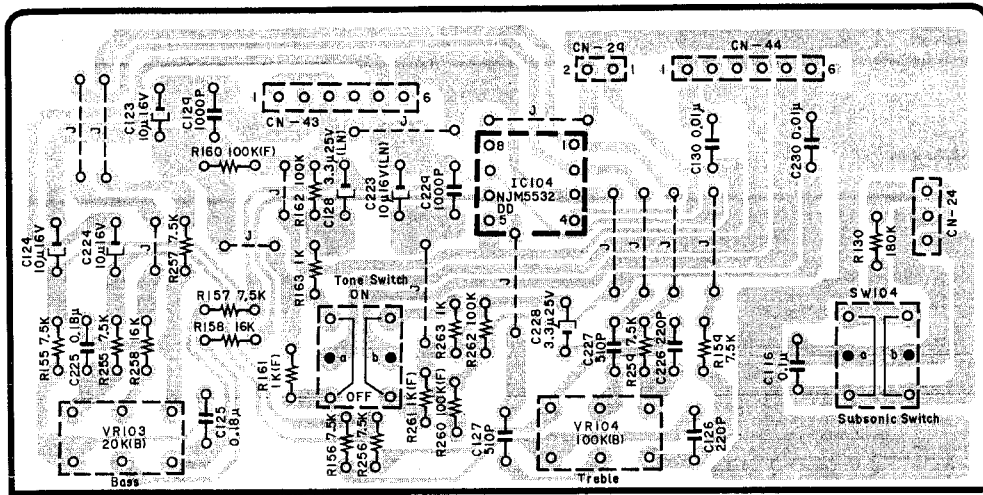


Fig. 5.11

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
R750,751 850,851 C709,710 809,810	BA06603A	Speaker Terminal P.C.B. Ass'y	IC104 VR103 VR104 R130 R155,156 157,159 255,256 257,259 R158,258 R160,260 R161,261 R162,262 R163,263 SW103,104	BA06598A	Tone Control P.C.B. Ass'y	C116	OB41298A	CMM 0.1µ 50V J
	OB60446A	Speaker Terminal P.C.B.		OB60432A	Tone Control P.C.B.	C123,124 223,224	OB09816A	CE 10µ 15V (LN)
	OB24140A	RF 22 1W		OB11204A	IC NJM5532DD	C125,225	OB41301A	CMM 0.18, 50V J
	OB41292A	CMM 0.033µ 50V J		OB30073A	VR 20K (B)x2	C126,226	OB41788A	CSP 220P 10V J
	OB81595B	Speaker Terminal 8P (1)		OB30062A	VR 100K (B)x2	C127,227	OB41789A	CSP 510P 10V J
			R130	OB09731A	RK 180K 1/6W J	C128,228	OB40460A	CE 3.3µ 10V (LN)
			R158,258	OB09698A	RK 7.5K 1/6W J	C129,229	OB41791A	CSP 1000µ 50V J
			157,159			C130,230	OB41286A	CF 0.01µ 50V J
			255,256	OB09706A	RK 16K 1/6W J	CN24	OB82964A	3P Connector RED
			257,259	OB25387A	RM 100K 1/6W F	CN29	OB83004A	2P Connector RED
			R158,258	OB25195A	RM 1.00K 1/6W F	CN43,44	OB81013A	Dip Mate 6
			R160,260	OB09725A	RK 100K 1/6W J			WH61-1
			R161,261	OB09677A	RK 1K 1/6W J			Ribbon Cable 6P
			R162,262	OB70074A	Push Switch 1Key			410mm (1)
			R163,263					Ribbon Cable 6P (1)
			SW103,104					310mm (1)

5.12. Fuse P.C.B. Ass'y

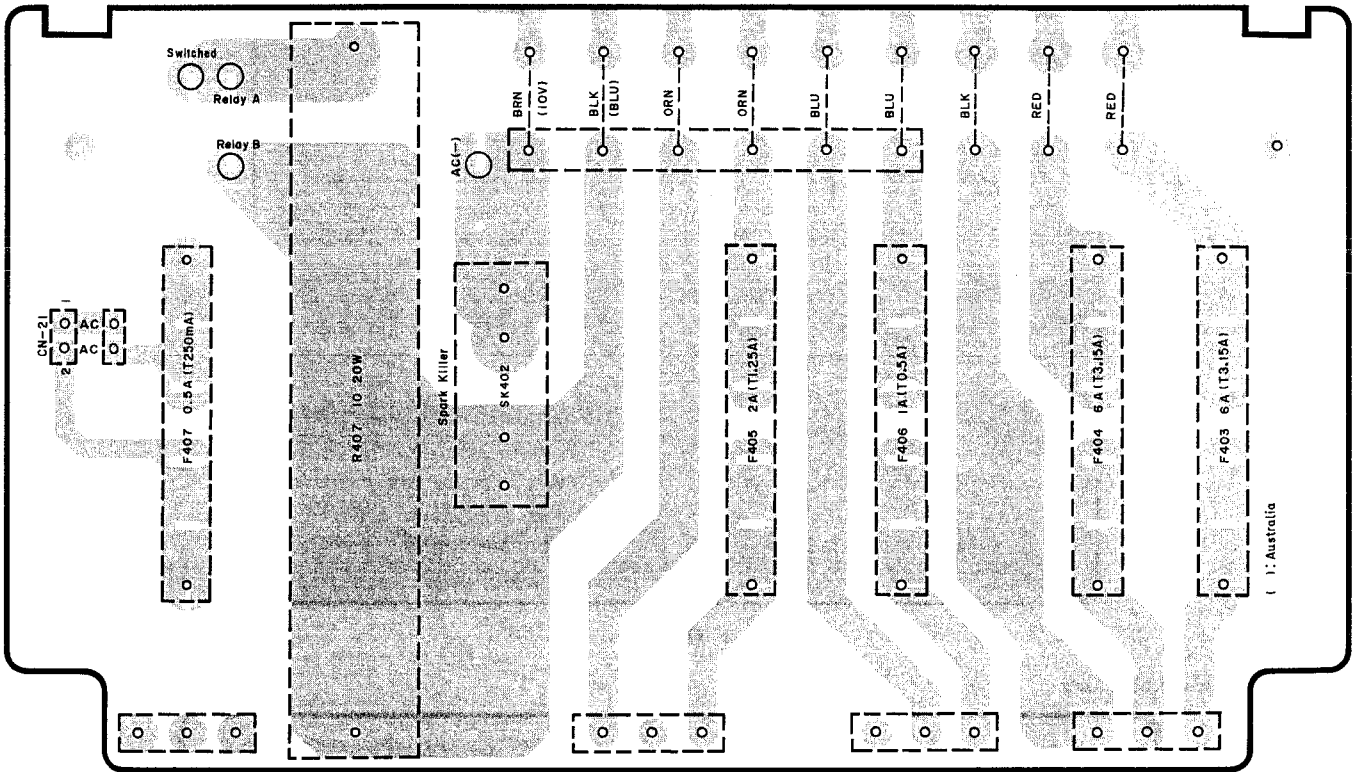


Fig. 5.12

5.13. Video Amp. P.C.B. Ass'y

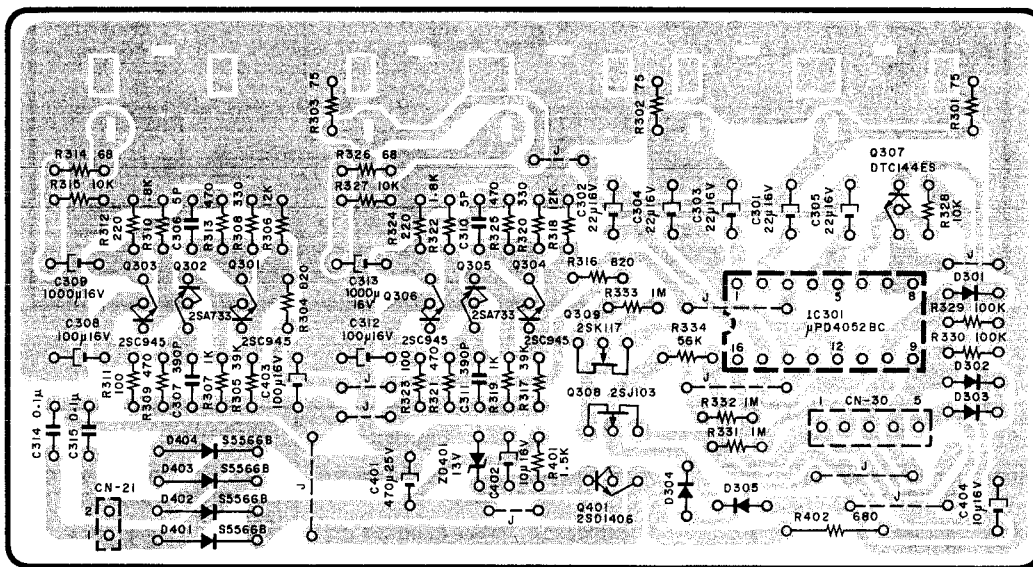


Fig. 5.13



Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
	BA06606A	Fuse P.C.B. Ass'y (SR-4A & SR-4 (Canada))		BA06602A	Video Amp. P.C.B. Ass'y
	BA06813A	Fuse P.C.B. Ass'y (SR-4 (Australia))		OB60389E	Video Amp. P.C.B.
	BA06801A	Fuse P.C.B. Ass'y (SR-4 (Other))	IC301	OB11247A	IC $\mu$ PD4052BC
			Q301,303	OB01872A	TR 2SC945L (P,Q)
			304,306		
			Q302,305	OB06013A	TR 2SA733 (P,Q)
	OB60447A	Fuse P.C.B.	Q307	OB10062A	TR DTC144ES
R407	OB24145A	RC 10 2W	Q308	OB10211A	FET 2SJ103
SK402	OB08342A	Spark Killer	Q309	OB06129A	FET 2SK117 (Y)
		ECQ-JC187C (SR-4A & SR-4 (Canada))	Q401	OB06452A	TR 2SD1406 (Y)
	OB08240A	Spark Killer	D301-305	OB06398A	SiD 1SS176 (5)
		Q-J0187B (SR-4 Australia & Other))	D401-404	OB12362A	SiD S5566B (4)
			ZD401	OB12317A	ZD 13V MTZ13B
F403,404	OB90248A	Fuse 6A (SR-4A & SR-4 (Canada & Other))	R301,302	OB09650A	RK 75 1/6W J
			303		
			R304,316	OB09675A	RK 820 1/6W J
	OB08281A	Fuse T3.15A 250V (SR-4 (Australia))	R305,317	OB09715A	RK 39K 1/6W J
F405	OB08525A	Fuse 2A (SR-4A & SR-4 (Canada & Other))	R306,318	OB09703A	RK 12K 1/6W J
			R307,319	OB09677A	RK 1K 1/6W J
			R308,320	OB09665A	RK 330 1/6W J
			R309,313	OB09669A	RK 470 1/6W J
			321,325		
	OB02240A	Fuse T1.25A 250V (SR-4 (Australia))	R310,322	OB09683A	RK 1.8K 1/6W J
F406	OB08374A	Fuse 1A (SR-4A & SR-4 (Canada & Other))	R311,323	OB09653A	RK 100 1/6W J
			R312,324	OB09661A	RK 220 1/6W J
			R314,326	OB09649A	RK 68 1/6W J
	OB08263U	Fuse T315mA 250V (SR-4 (Australia))	R315,327	OB09701A	RK 10K 1/6W J
			328		
F407	OB08698A	Fuse 0.5A (SR-4A & SR-4 (Canada & Other))	R329,330	OB09725A	RK 100K 1/6W J
			R331,332	OB09749A	RK 1M 1/6W J
			333		
	OB08252A	Fuse T250mA 250V (SR-4 (Australia))	R334	OB09719A	RK 56K 1/6W J
			R401	OB09681A	RK 1.5K 1/6W J
	OB82961A	2P Connector WHT	R402	OB05794A	RK 680 1/4W J
CN21	OB81634A	2P-T Post (1)	C301,302	OB01862A	CE 22 $\mu$ 16V
	OB81740A	6P Terminal (SR-4A & SR-4 (Canada)) (1)	303,304		
			305		
	OB81722A	4P Terminal (SR-4 (Australia & Other)) (1)	C306,310	OB09276A	CC 5P 50V
			C307,311	OB41002A	CP 390P 100V J
			C308,312	OB01400A	CE 100 $\mu$ 16V
			403		
	OB81709A	3P-T Post L Angle (4)	C309,313	OB40082A	CE 1000 $\mu$ 16V
	OB08349B	Fuse Clip (SR-4 (Australia)) (10)	C314,315	OB41298A	CMM 0.1 $\mu$ 50V J
			C401	OB40094A	CE 470 $\mu$ 25V
	OM04137A	Fuse Label T250mA (SR-4 (Australia)) (1)	C402,404	OB01412A	CE 10 $\mu$ 16V
			CN21	OB81223A	2P-T Post (WHT)
	OM04194A	Fuse Label T315mA (SR-4 (Australia)) (1)	CN30	OB81235A	5P-T Post (WHT)
				OB81592B	Pin Jack 1P (5)
	OM04391A	Fuse Label T1.25A (SR-4 (Australia)) (1)			
	OM04443A	Fuse Label T3.15Ax2 (SR-4 (Australia)) (1)			

5.14. Control Switch P.C.B. Ass'y

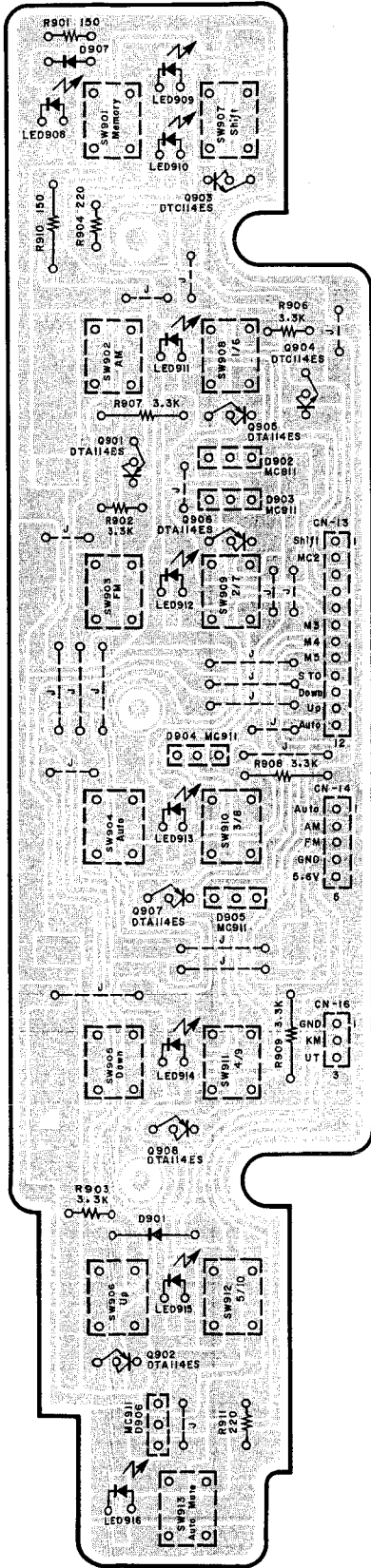


Fig. 5.14

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
	BA06593A	Control Switch P.C.B. Ass'y		BA06592A	Display P.C.B. Ass'y (SR-4A & SR-4 (Canada))
	OB60442A	Control Switch P.C.B.		OB60441A	Display P.C.B.
Q901,902	OB10058A	TR DTA114ES	IC951	OB11244A	IC LB1413N
905,906			IC952	OB11160A	IC TD6301A
907,908			IC953	OB11248A	IC ICP-N5-T104
Q903,904	OB10068A	TR DTC114ES	IC954	OB19005A	IC BX-1419
D901	OB06181A	SiD 1SS53	Q951,952	OB10068A	TR DTC114ES
D902,903	OB12391A	SiD MC911	955,956		
904,905			Q953	OB06013A	TR 2SA733 (P,Q)
906			Q954	OB10053A	TR DTA144ES
D907	OB06398A	SiD 1SS176	Q957,958	OB10060A	TR DTA143ES
LED908-916	OB12395A	LED SLR-34PC3F P-Green (9)	D950	OB12414A	Display SL7823-03
R901	OB09657A	RK 150 1/6W J	D951	OB06181A	SiD 1SS53
R902,903	OB09689A	RK 3.3K 1/6W J	R951,952	OB05641A	RK 47K 1/4W J
906			R953	OB01888A	RK 10K 1/4W J
R904,911	OB09661A	RK 220 1/6W J	R954	OB01857A	RK 1K 1/4W J
R907,908	OB01681A	RK 3.3K 1/4W J	R955,989	OB05959A	RK 75 1/4W J
909			R956	OB20415A	RK 43 1/4W J
R910	OB05795A	RK 150 1/4W J	R957,958	OB20416A	RK 110 1/4W J
SW901-913	OB70062A	Tact Switch KHH10910 (13)	R959-982	OB01933A	RK 220 1/4W J (25)
CN13	OB82953A	12P Connector	C951,952	OB40009A	CE 10μ 16V
CN14	OB82954A	5P Connector	C953	OB41787A	CC 0.022μ 25V Z
CN16	OB82956A	3P Connector	C954	OB41555A	CC 0.047μ 25V Z
	0J05209B	LED Reflector (9)	CN10	OB82950A	6P Connector RED
			CN11	OB82951A	6P Connector WHT
			CN15	OB82955A	6P Connector BLK
				0E00846A	BT3x8 @ Pan (2)
				BA06646A	Display P.C.B. Ass'y (SR-4 (Australia & Other))
			IC951	OB60441A	Display P.C.B.
			IC952	OB11244A	IC LB1413N
			IC953	OB11160A	IC TD6301A
			IC954	OB11248A	IC ICP-N5-T104
			Q951,952	OB19005A	IC BX-1419
			955,956	OB10068A	TR DTC114ES
			Q953	OB06013A	TR 2SA733 (P,Q)
			Q954	OB10053A	TR DTA144ES
			Q957,958	OB10060A	TR DTA143ES
			Q959,961	OB10068A	TR DTC114ES
			962		
			Q960	OB01872A	TR 2SC945L (P,Q)
			D950	OB12414A	Display SL7823-03
			D951	OB06181A	SiD 1SS53
			D952,953	OB06398A	SiD 1SS176
			R951,952	OB05641A	RK 47K 1/4W J
			R953	OB01888A	RK 10K 1/4W J
			R954	OB01857A	RK 1K 1/4W J
			R955,989	OB05959A	RK 75 1/4W J
			R956	OB20415A	RK 43 1/4W J
			R957,958	OB20416A	RK 110 1/4W J
			984-988		
			R959-983	OB01933A	RK 220 1/4W J (7) (26)
			990		
			R991	OB01846A	RK 4.7K 1/4W J
			R992	OB09693A	RK 4.7K 1/6W J
			C951,952	OB40009A	CE 10μ 16V
			C953	OB41787A	CC 0.022μ 25V Z
			C954	OB41555A	CC 0.047μ 25V Z
			CN10	OB82950A	6P Connector RED
			CN11	OB82951A	6P Connector WHT
			CN15	OB82955A	6P Connector BLK
				0E00846A	BT3x8 @ Pan (2)

5.15. Display P.C.B' Ass'y  
 (1) For SR-4A and SR-4 (Canada)

(2) For SR-4 (Australia & Other)

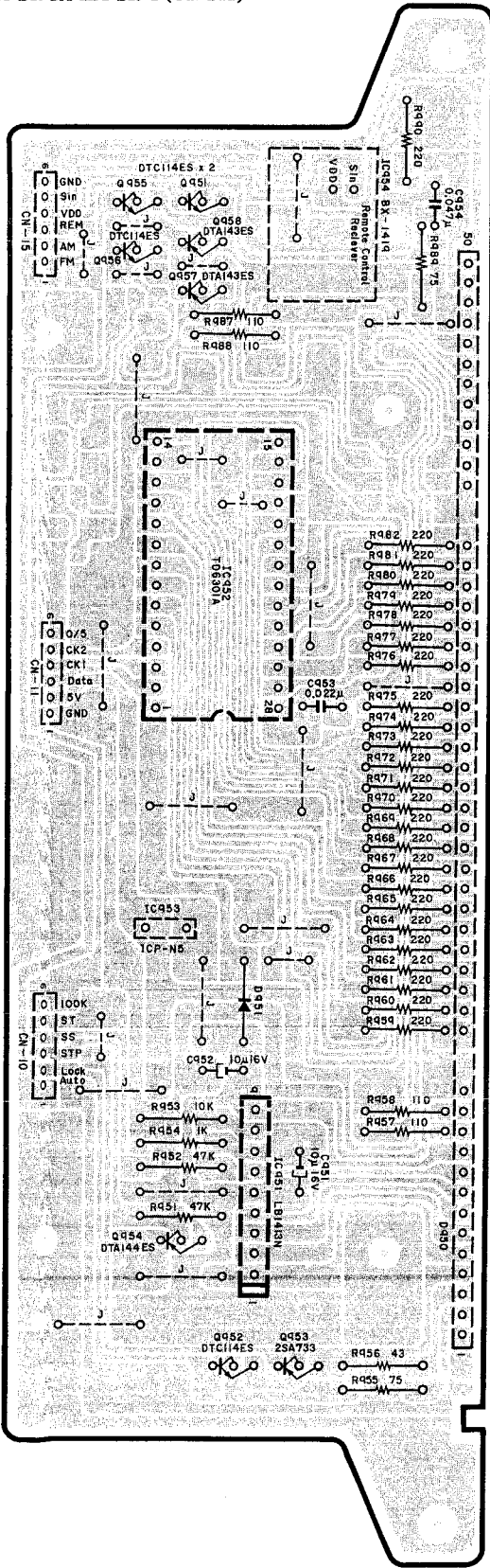


Fig. 5.15.1

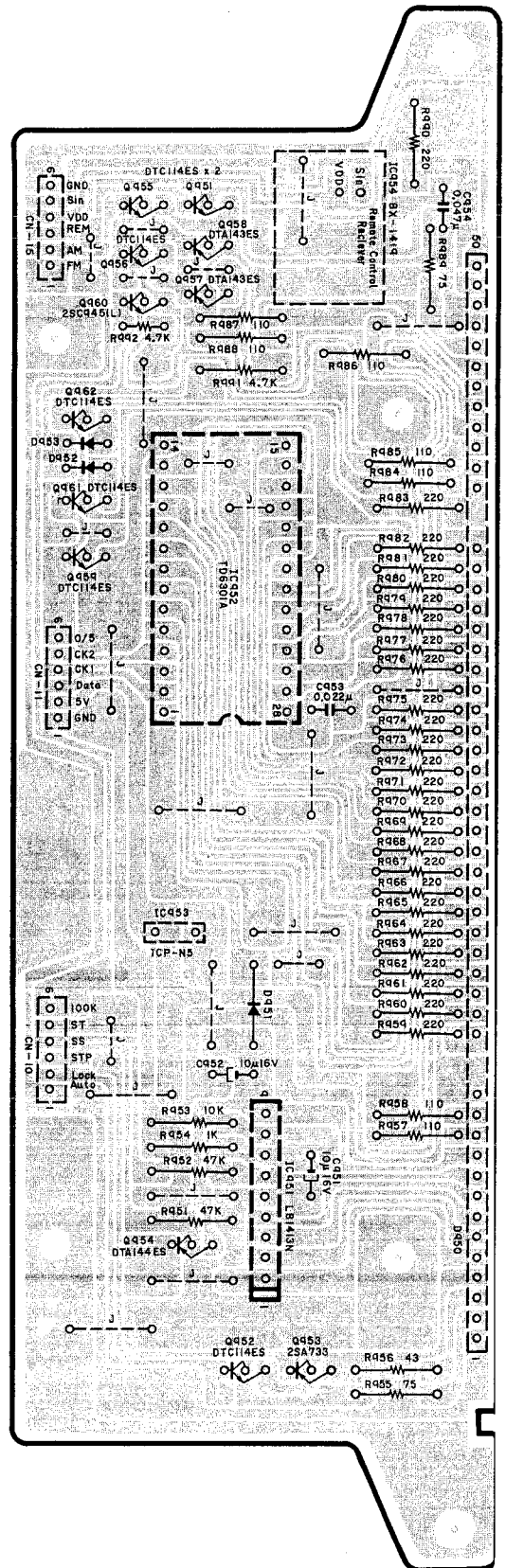


Fig. 5.15.2

5.16. Power Supply P.C.B. Ass'y

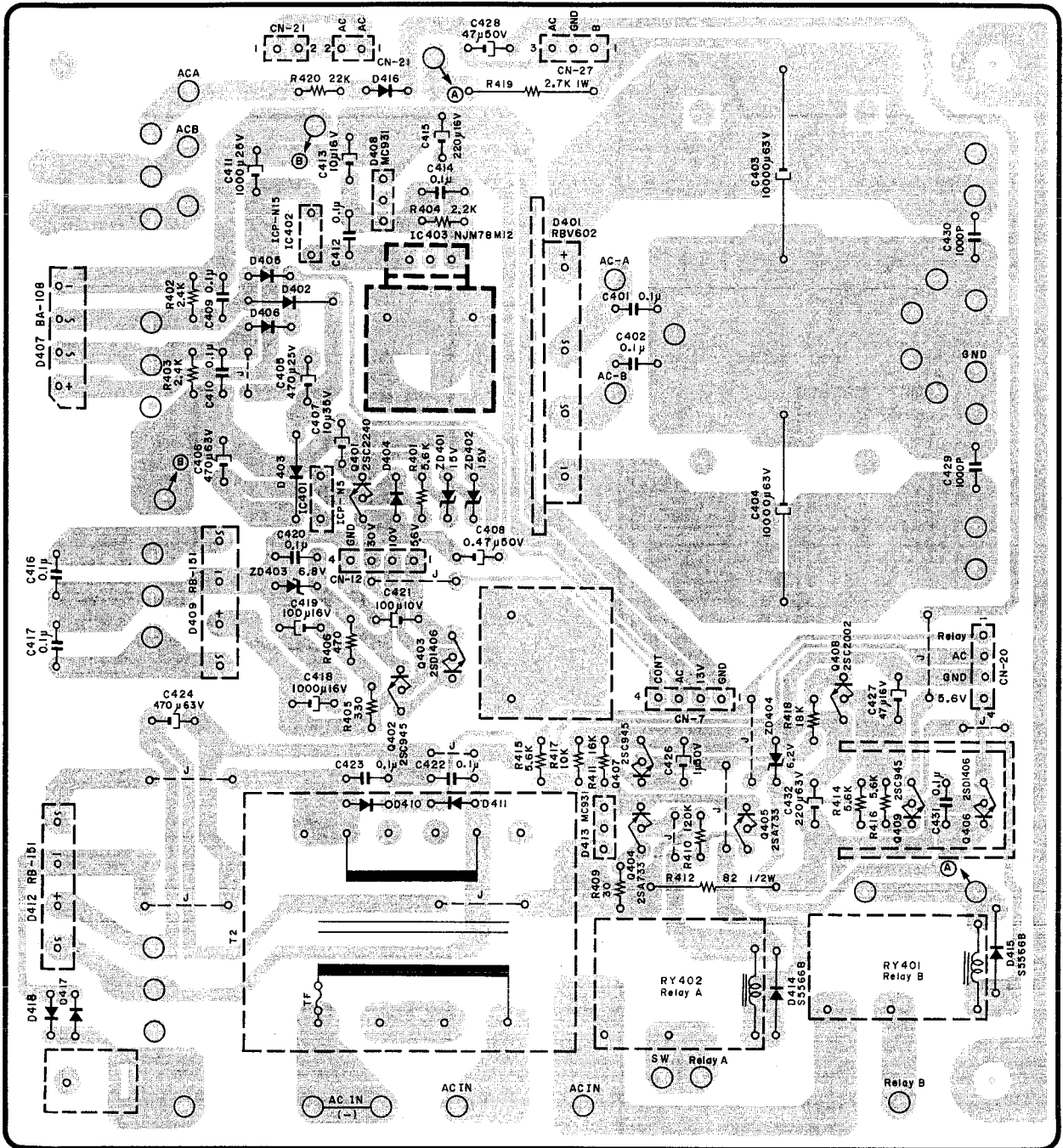


Fig. 5.16

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
	BA06599A	Power Supply P.C.B. Ass'y		0B82997A	PD Connector V150 RED (1)
	0B60440A	Power Supply P.C.B.		0B82998A	PD Connector V150 ORN (1)
IC401	0B11248A	IC ICP-N5-T104		0B82999A	PD Connector V150 YEL (2)
IC402	0B11335A	IC ICP-N15-T104		0B83003A	PD Connector V230 BLU (2)
Q401	0B10078A	TR 2SC2240 (GR)		0B80122A	Vinyl Tube (1)
Q402,407	0B01872A	TR 2SC945L (P,Q)		0B83000A	GND Cable V070 BLU (1)
409				0B90019A	Insu-Lock SKB80 (7)
Q404,405	0B06013A	TR 2SA733 (P,Q)		0B90206A	Insu-Lock SKB4M (1)
Q408	0B06322A	TR 2SC2002 (K,L)		0E03355A	Earth Lug MET31-0113 (1)
D402,403	0B12362A	SiD S5566B		0J05309A	BS Damper 1VR (1)
414,415				0J05362A	Earth Plate (1)
D404,405	0B06398A	SiD 1SS176		0B11252A	IC 78M12
406,410				0E00612A	M3x6 @Pan (2A) (1)
411,416				0J05351A	TR Heat Sink (1)
417,418				0B06452A	TR 2SD1406 (Y)
D407	0B06282A	SiD DBA10B.C.	IC403	0E00612A	M3x6 @Pan (2A) (1)
D408,413	0B12420A	SiD MC93		0J05351A	TR Heat Sink (1)
D409,412	0B06183A	SiD RB-151		0B06452A	TR 2SD1406 (Y)
ZD401,402	0B12464A	ZD 15V UTZJ15C	Q403	0E00612A	M3x6 @Pan (2A) (1)
ZD403	0B12440A	ZD 6.8V UTZJ6.8C		0J05351A	TR Heat Sink (1)
ZD404	0B12437A	ZD 6.2V UTZJ6.2C	Q406	0B06452A	TR 2SD1406 (Y)
RY401	0B90250A	Relay 24V G6C-1117P		0B08680B	Heat Sink A (1)
RY402	0B90249A	Relay 12V G6C-1117P		0E00972A	Nut Hex, M3 (1)
T2	0B50090A	Power Transformer	D401	0E03319A	M3x8 @Binding (1)
R401,414	0B09695A	RK 5.6K 1/6W J		0B12388A	SiD RBV-602
415,416				0E03030A	M3x6 @Binding (1)
R402,403	0B09686A	RK 2.4K 1/6W J		0J05335B	SiD Heat Sink (1)
R404	0B09685A	RK 2.2K 1/6W J			
R405	0B09665A	RK 330 1/6W J			
R406	0B09669A	RK 470 1/6W J			
R409	0B09640A	RK 30 1/6W J			
R410	0B09655A	RK 120 1/6W J			
R411	0B09706A	RK 16K 1/6W J			
R412	0B09253A	RF 82 1/2W J			
R417	0B09701A	RK 10K 1/6W J			
R418	0B09707A	RK 18K 1/6W J			
R419	0B24061A	RF 2.7K 1W J			
R420	0B09709A	RK 22K 1/6W J			
C401,402	0B41298A	CMM 0.1μ 50V J			
409,410					
412,414					
416,417					
420,422					
423,431					
C403,404	0B40454A	CE 10000μ 63V			
C405	0B40094A	CE 470μ 25V			
C406,424	0B40134A	CE 470μ 63V			
C407	0B40100A	CE 10μ 35V			
C408	0B40462A	CE 0.47μ 50V			
C411	0B40095A	CE 1000μ 25V			
C413,426	0B01412A	CE 10μ 16V			
C415	0B40079A	CE 220μ 16V			
C418	0B40082A	CE 1000μ 16V			
C419	0B40078A	CE 100μ 16V			
C421	0B40464A	CE 100μ 10V			
C427	0B40077A	CE 47μ 16V			
C428	0B40115A	CE 4.7μ 50V			
C429,430	0B41791A	CSP 1000P 50V J			
C432	0B40132A	CE 220μ 63V			
CN7	0B82947A	4P Connector WHT			
CN12	0B82952A	4P Connector WHT			
CN20	0B82960A	4P Connector RED			
CN27	0B82967A	3P Connector RED			
	0B82983A	PD Connector V340 RED (1)			
	0B82984A	PD Connector V340 WHT (1)			
	0B82985A	PD Connector V290 RED (1)			
	0B82986A	PD Connector V290 WHT (1)			
	0B82987A	PD Connector V330 BLU (1)			
	0B82988A	PD Connector V300 BLU (2)			
	0B82990A	PD Connector V260 YEL (1)			
	0B82991A	PD Connector V150 RED (2)			
	0B82992A	PD Connector V150 WHT (1)			
	0B82993A	PD Connector V100 BLU (1)			
	0B82996A	PD Connector V150 BLK (2)			

5.17. Logic P.C.B. Ass'y

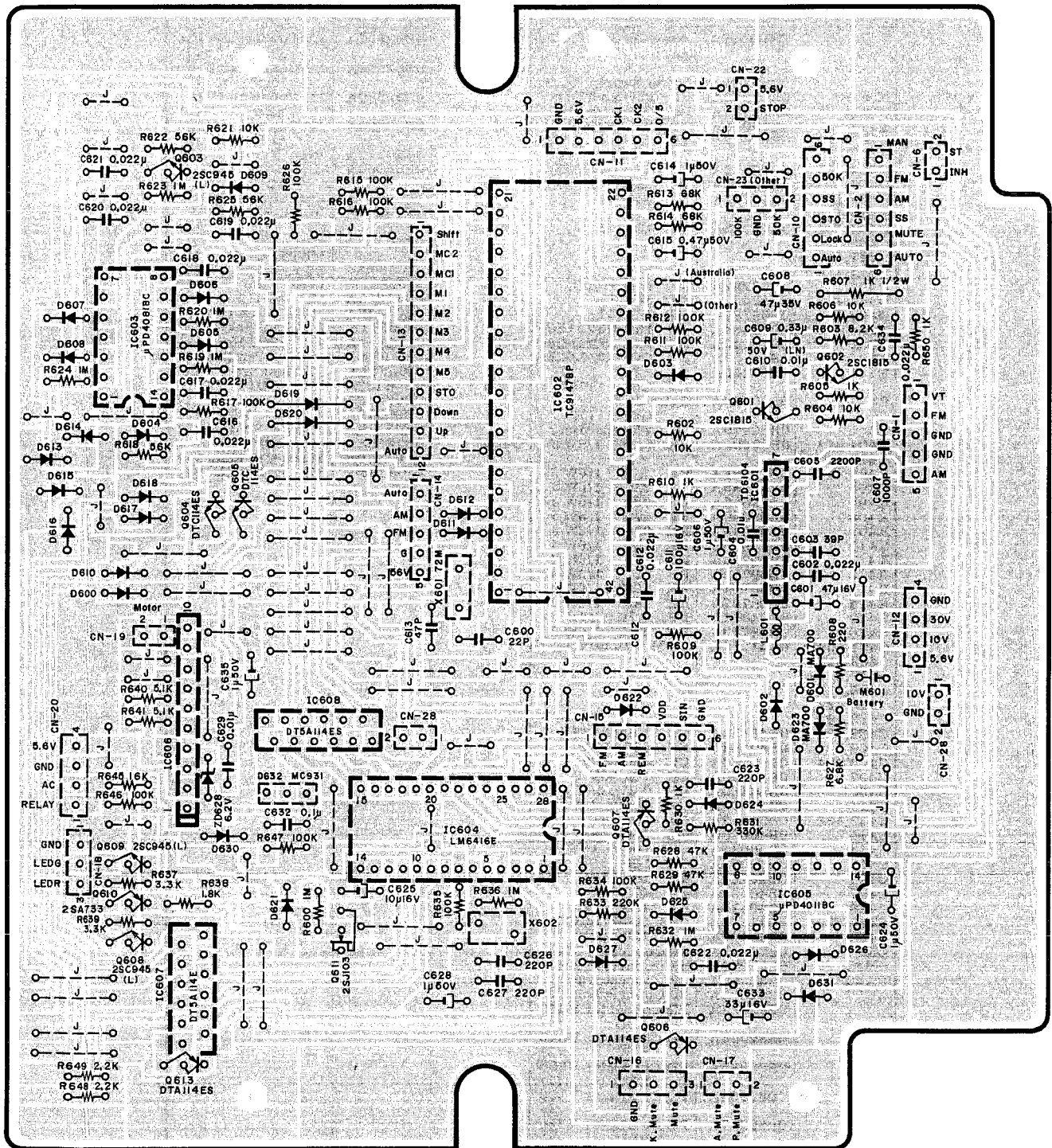


Fig. 5.17

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
	BA06610A	Logic P.C.B. Ass'y (SR-4A & SR-4 (Canada & Australia))	C622	OB41290A	CMM 0.022 $\mu$ 50V J
	BA06621A	Logic P.C.B. Ass'y (SR-4 (Other))	C623	OB41278A	CMM 2200P 50V J
			C625	OB01412A	CE 10 $\mu$ 16V
			C626,627	OB41734A	CC 220P 50V J
			C633	OB40076A	CE 33 $\mu$ 16V
	OB60439A	Logic P.C.B.	CN1	OB81238A	5P-T Post YEL
IC601	OB11159A	IC TD6104	CN2	OB81242A	6P-T Post YEL
IC602	OB11161A	IC TC9147BP	CN6	OB81226A	2P-T Post YEL
IC603	OB06219A	IC $\mu$ PD4081BC	CN10	OB81241A	6P-T Post RED
IC604	OB11279A	IC LM6416E	CN11	OB81239A	6P-T Post WHT
IC605	OB06178A	IC $\mu$ PD4011BC	CN12	OB81231A	4P-T Post WHT
IC606	OB11250A	IC LB1645N	CN13	OB81263A	12P-T Post WHT
IC607,608	OB11334A	IC DT5A114E	CN14	OB81235A	5P-T Post WHT
Q601,602	OB10088A	TR 2SC1815L (GR)	CN15	OB81240A	6P-T Post BLK
Q603,608	OB01872A	TR 2SC945L (P,Q)	CN16	OB81230A	3P-T Post YEL
609			CN17	OB81223A	2P-T Post WHT
Q604,605	OB10068A	TR DTC114ES	CN18	OB81229A	3P-T Post RED
Q606,607	OB10058A	TR DTA114ES	CN19	OB81225A	2P-T Post RED
613			CN20	OB81233A	4P-T Post RED
Q610	OB06013A	TR 2SA733 (P,Q)	CN22	OB81224A	2P-T Post BLK
Q611	OB10211A	FET 2SJ103 (GR,BL)	CN23	OB81227A	3P-T Post WHT (SR-4 (Other))
	OB06398A	SiD 1SS176 (26)	CN28	OB82979A	2P Connector
D600					
602-618					
621,622					
624,625					
626,627					
630,631					
D601,623	OB12363A	SiD MA700			
D619,620	OB06181A	SiD 1SS53			
D632	OB12420A	SiD MC931			
ZD628	OB12437A	ZD 6.2V UTZJ6.2C			
L601	OB51239A	Micro Coil LAL02T220K			
X601	OB92006A	Crystal 7.2MHz FYX-TE725S17			
X602	OB02307A	Resonator 800kHz KBR800H			
M601	OB40241A	Lithium Battery 3V CR2330-1GV5			
R600,619	OB09749A	RK 1M 1/6W J			
620,623					
624,632					
636					
R602,604	OB09701A	RK 10K 1/6W J			
606,621					
R603	OB09699A	RK 8.2K 1/6W J			
R605,610	OB09677A	RK 1K 1/6W J			
630,650					
R607	OB24114A	RK 1K 1/2W J			
R608	OB09661A	RK 220 1/6W J			
R609,611	OB09725A	RK 100K 1/6W J			
612,615					
616,617					
626,634					
635,646					
647					
R613,614	OB09721A	RK 68K 1/6W J			
R618,622	OB09719A	RK 56K 1/6W J			
625					
R627	OB09697A	RK 6.8K 1/6W J			
R628,629	OB09717A	RK 47K 1/6W J			
R631	OB09737A	RK 330K 1/6W J			
R633	OB09733A	RK 220K 1/6W J			
R637,639	OB09689A	RK 3.3K 1/6W J			
R638	OB09683A	RK 1.8K 1/6W J			
R640,641	OB09694A	RK 5.1K 1/6W J			
R645	OB09706A	RK 16K 1/6W J			
R648,649	OB09685A	RK 2.2K 1/6W J			
C600	OB41708A	CC 22P 50V J			
C601	OB01403A	CE 47 $\mu$ 16V			
C602,612	OB41787A	CC 0.022 $\mu$ 25V Z (9)			
616-621					
634					
C603	OB41187A	CC 39P 50V J			
C604,629	OB41553A	CC 0.01 $\mu$ 25V Z			
C605	OB09586A	CC 2200P 50V K			
C606,614	OB01405A	CE 1 $\mu$ 50V			
624,628					
635					
C607	OB09288A	CC 1000P 50V K			
C608	OB40103A	CE 47 $\mu$ 35V			
C609	OB09327A	CE 0.33 $\mu$ 50V (LN)			
C610,632	OB41298A	CMM 0.1 $\mu$ 50V J			
C611	OB01400A	CE 100 $\mu$ 16V			
C613	OB41709A	CC 47P 50V J			
C615	OB40111A	CE 0.47 $\mu$ 50V			





5.18. Tuner P.C.B. Ass'y  
 (1) For SR-4A and SR-4 (Canada)

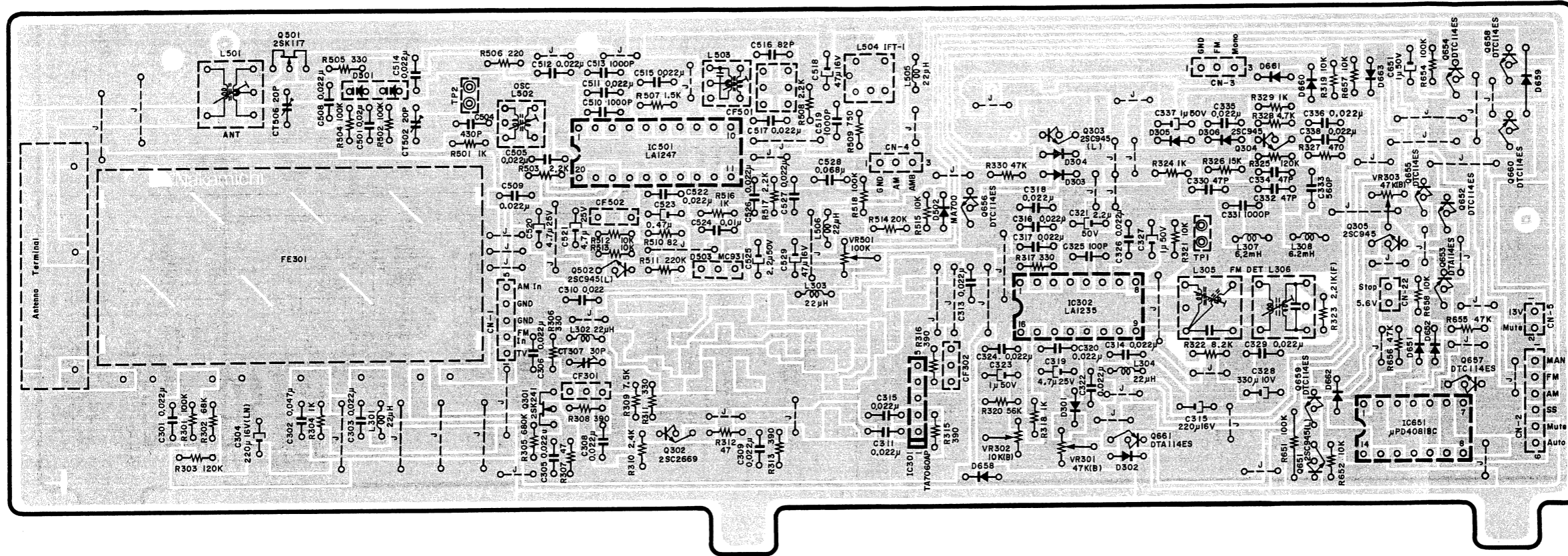


Fig. 5.18.1

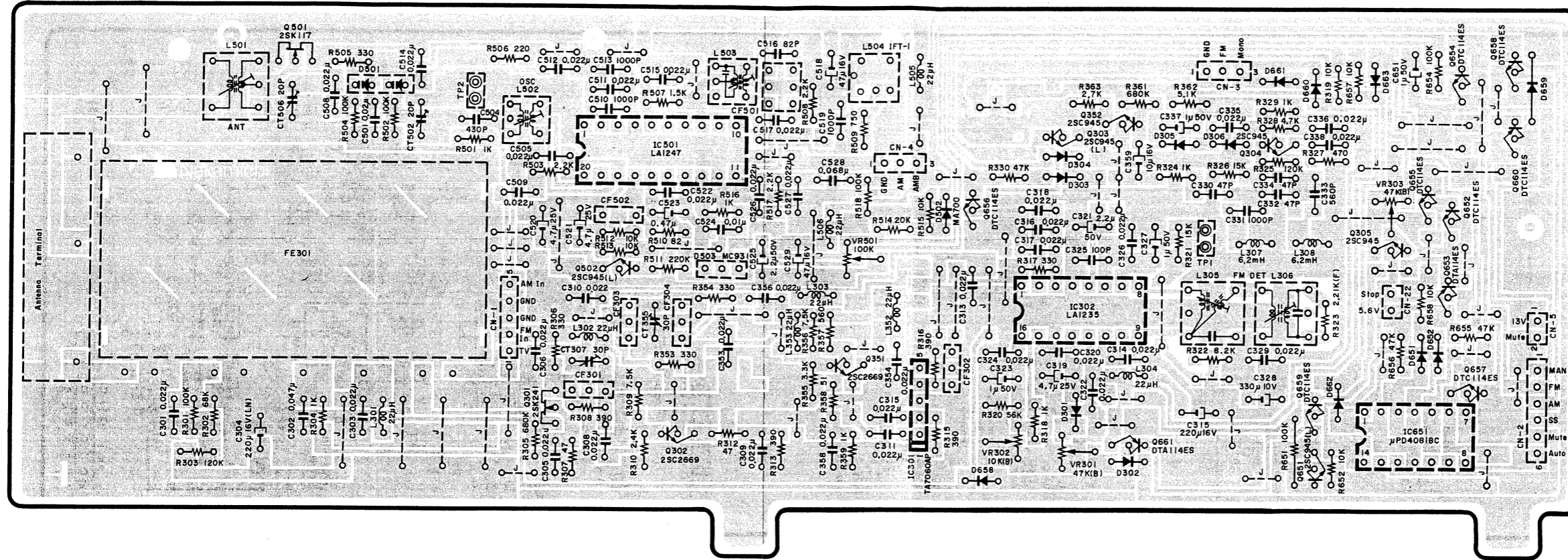


Fig. 5.18.2

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
	BA06620A	Tuner P.C.B. Ass'y (SR-4 (Australia))	R319	OB09701A	RK 10K 1/6W J	C325	OB41071A	CC 100P 50V J	R514	OB09708A	RK 20K 1/6W J	D659	OB06181A	SiD 1SS53
			R320	OB09719A	RK 56K 1/6W J	C328	OB40066A	CE 330µ 10V	CF501	OB41701A	Ceramic Filter SFZ450G3L	R651,654	OB01889A	RK 100K 1/4W J
	- FM -		R321,326	OB09705A	RK 15K 1/6W J	C330,332	OB09280A	CC 47P 50V J	CF502	OB92003A	Resonator 450 kHz BFU450C4N	R652,657	OB09701A	RK 10K 1/6W J
IC301	OB11156A	IC TA7060AP	R322	OB09699A	RK 8.2K 1/6W J	C331	OB41007A	CC 1000P 25V M	CT502,506	OB42005A	C Trimmer 20P	R653	OB09707A	RK 18K 1/6W J
IC302	OB11157A	IC LA1235	R323	OB25228A	RM 2.21K 1/6W F	C333	OB09379A	CC 560P 50V K	C501,505	OB41787A	CC 0.022µ 25V Z	R655,656	OB09717A	RK 47K 1/6W J
Q301	OB10127A	FET 2SK241 (GR)	R328	OB09693A	RK 4.7K 1/6W J	C359	OB09816A	CE 10µ 16V (LN)	508,509			R658	OB01405A	CE 1µ 50V
Q302,351	OB10174A	TR 2SC2669 (O,Y)	R330	OB09717A	RK 47K 1/6W J		OB81596A	Antenna Terminal F (1)	511,512					
Q303,304	OB01872A	TR 2SC945L (P,Q)	R355	OB09689A	RK 3.3K 1/6W J				514,515					
D301,302	OB06398A	SiD 1SS176	R357	OB09671A	RK 560 1/6W J				517,522					
303,304			R358	OB09646A	RK 51 1/6W J				526					
305,306			R362	OB09694A	RK 5.1K 1/6W J				C504	OB41401A	CP 430P 50V J	CN1	OB60438A	Tuner P.C.B.
VR301,303	OB32084A	Semi VR 47K (B)	R363	OB09687A	RK 2.7K 1/6W J	IC501	OB11243A	IC LA1247	C501,513	OB41007A	CC 1000P 25V M	CN2	OB82941A	5P Connector YEL
VR302	OB32080A	Semi VR 10K (B)	CF301,302	OB41700A	Ceramic Filter SFE10.7MX2H-A	Q501	OB06129A	FET 2SK117 (Y)	519			CN3	OB82942A	6P Connector YEL
L301,302	OB51239A	Micro Coil 22µH	CT307,355	OB41614A	Ceramic Filter SFE10.7MS3GH15A	D501	OB12386A	TR 2SC945L (P,Q)	C516	OB41711A	CC 82P 50V K	CN4	OB81227A	3P-T Post WHT
303,304			C301,303	OB41787A	C Trimmer 30P	D502	OB12363A	Vari-Cap. KV1226Y	C518,529	OB01403A	CE 47µ 16V	CN5	OB81230A	3P-T Post YEL
352,353			C303,306		CC 0.022µ 25V Z	D503	OB12420A	SID MC931	C520,521	OB01402A	CE 4.7µ 25V	CN9	OB82945A	2P Connector WHT
L305	OB51240A	FM Det. Coil A	L501			L501	OB51236A	Antenna Coil	C523	OB40111A	CE 0.47µ 50V	CN22	OB81238A	5P-T Post YEL
L306	OB51241A	FM Det. Coil B	L502			L502	OB51235A	Osc. Coil	C524	OB41553A	CC 0.01µ 25V Z	TP1,2	OB82962A	2P Connector BLK
L307,308	OB51243A	Choke Coil	L503			L503	OB51234A	AM IFT2	C525	OB09372A	CE 2.2µ 50V		OB81634A	2P-T Post
FE301	OB91016A	Front-end	L504			L504	OB51233A	AM IFT1	C527	OB09586A	CC 2200P 50V K		0J05326B	Earth Plate (1)
R301	OB09725A	RK 100K 1/6W J	L505,506			VR501	OB32086A	Micro Coil LAL02TA220K	C528	OB41296A	CMM 0.068µ 50V J			
R302	OB09721A	RK 68K 1/6W J				R501,516	OB09677A	Semi VR 100K (B)						
R303,325	OB09727A	RK 120K 1/6W J				R502,504	OB09725A	RK 1K 1/6W J						
R304,318	OB09677A	RK 1K 1/6W J				518	OB09775A	RK 100K 1/6W J						
324,329						R503,508	OB09685A	RK 2.2K 1/6W J						
359						517								
R305,361	OB09745A	RK 680K 1/6W J				R505	OB09665A	RK 330 1/6W J						
R306,317	OB09665A	RK 330 1/6W J				R506	OB09661A	RK 220 1/6W J						
353,354						R507	OB09681A	RK 1.5K 1/6W J						
R307,312	OB09645A	RK 47 1/6W J				R509	OB09674A	RK 750 1/6W J						
R308,313	OB09667A	RK 390 1/6W J				R510	OB09651A	RK 82 1/6W J						
315,316						R511	OB09733A	RK 220K 1/6W J						
R309,356	OB09698A	RK 7.5K 1/6W J				R512,513	OB09701A	RK 10K 1/6W J						
R310	OB09686A	RK 2.4K 1/6W J				515								

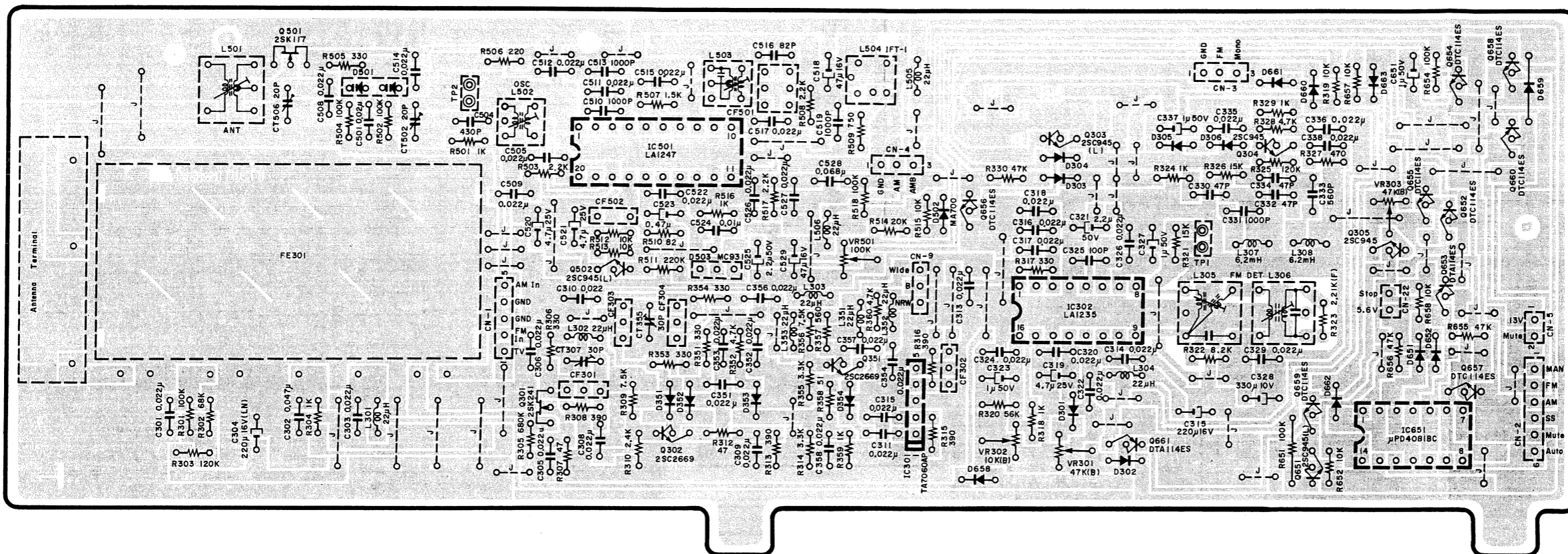


Fig. 5.18.3

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description		
	BA06619A	Tuner P.C.B. Ass'y (SR-4 (Other))	R308,313	OB09667A	RK 390 1/6W J	C313,314	OB41290A	CMM 0.022 $\mu$ 50V J	R506	OB09661A	RK 220 1/6W J	Q653,660	OB10058A	TR DTA114ES		
		— FM —	R315,316	OB09698A	RK 7.5K 1/6W J	C315	OB40079A	CE 220 $\mu$ 16V	R507	OB09681A	RK 1.5K 1/6W J	661	OB10068A	TR DTC114ES		
			R309,356	OB09686A	RK 2.4K 1/6W J	C319	OB01402A	CE 4.7 $\mu$ 25V	R509	OB09674A	RK 750 1/6W J	Q654,655				
			R310	OB09689A	RK 3.3K 1/6W J	C321	OB09372A	CE 2.2 $\mu$ 50V	R510	OB09651A	RK 82 1/6W J	656,657				
			R314,355	OB09701A	RK 10K 1/6W J	C323,327	OB01405A	CE 1 $\mu$ 50V	R511	OB09733A	RK 220K 1/6W J	658,659				
IC301	OB11156A	IC TA7060AP	R319	OB09719A	RK 56K 1/6W J	337		R512,513	OB09701A	RK 10K 1/6W J	D651,652	OB06398A	SID 1SS176			
IC302	OB11157A	IC LA1235	R320	OB09705A	RK 15K 1/6W J	C325	OB41071A	CC 100P 50V J	515		658,660					
Q301	OB10127A	FET 2SK241 (GR)	R322	OB09699A	RK 8.2K 1/6W J	C328	OB40066A	CE 330 $\mu$ 10V	R514	OB09708A	RK 20K 1/6W J	661,662				
Q302,351	OB10174A	TR 2SC2669 (O,Y)	R323	OB09669A	RM 2.21K 1/6W F	C330,332	OB09280A	CC 47P 50V J	CF501	OB41701A	Ceramic Filter SFZ450G3L	663				
Q303,304	OB01872A	TR 2SC945L (P,Q)	R327	OB09669A	RK 470 1/6W J	334					D659	OB06181A	SID 1SS53			
			R328,352	OB09693A	RK 4.7K 1/6W J	C331	OB41007A	CC 1000P 25V M	CF502	OB92003A	Resonator 450 kHz BFU450C4N	R651,654	OB01889A	RK 100K 1/4W J		
D301,302	OB06398A	SID 1SS176	R330	OB09717A	RK 47K 1/6W J	C333	OB09379A	CC 560P 50V K		OB42005A	C Trimmer 20P	R652,657	OB09701A	RK 10K 1/6W J		
303,304			R357	OB09671A	RK 560 1/6W J	CN9	OB81229A	3P-T Post RED	CT502,506	OB41787A	CC 0.022 $\mu$ 25V Z	658				
305,306			R358	OB09646A	RK 51 1/6W J		OB81596A	Antenna Terminal F (1)	C501,505			R653	OB09707A	RK 18K 1/6W J		
351,352			CF301,302	OB41700A	Ceramic Filter SFE10,7MX2H-A				508,509			R655,656	OB09717A	RK 47K 1/6W J		
353,354									511,512			C651	OB01405A	CE 1 $\mu$ 50V		
VR301,303	OB32084A	Semi VR 47K (B)							514,515						— Miscellaneous —	
VR302	OB32080A	Semi VR 10K (B)	CF303,304	OB41746A	Ceramic Filter SFE10,7MS3GH15A	IC501	OB11243A	IC LA1247	517,522							
L301,302	OB51239A	Micro Coil 22 $\mu$ H				Q501	OB06129A	FET 2SK117 (Y)	526							
L303			CT307,355	OB41614A	C Trimmer 30P	Q502	OB01872A	TR 2SC945L (P,Q)	C504	OB41401A	CP 430P 50V J	CN1	OB60438A	Tuner P.C.B.		
L306			C301,303	OB41787A	CC 0.022 $\mu$ 25V Z	D501	OB12386A	Vari-Cap. KV1226Y	C510,513	OB41007A	CC 1000P 25V M	CN2	OB82941A	5P Connector YEL		
L307,308	OB51240A	FM Det. Coil A				D502	OB12363A	SID MA700	C516	OB41711A	CC 82P 50V K	CN3	OB82942A	6P Connector YEL		
FE301	OB51241A	FM Det. Coil B				D503	OB12420A	SID MC931	C518,529	OB01403A	CE 47 $\mu$ 16V	CN4	OB81227A	3P-T Post WHT		
R301	OB91016A	Choke Coil				L501	OB51236A	Antenna Coil	C520,521	OB01402A	CE 4.7 $\mu$ 25V	CN5	OB81230A	3P-T Post YEL		
R302	OB09725A	Front-end				L502	OB51235A	Osc. Coil	C523	OB40111A	CE 0.47 $\mu$ 50V	CN9	OB82945A	2P Connector WHT		
R303,325	OB09721A	RK 100K 1/6W J				L503	OB51234A	AM IFT1	C524	OB41553A	CC 0.01 $\mu$ 25V Z	CN22	OB81238A	5P-T Post YEL		
R304,318	OB09721A	RK 68K 1/6W J				L504	OB51233A	AM IFT2	C525	OB09372A	CE 2.2 $\mu$ 50V		OB82962A	2P Connector BLK		
324,329	OB09727A	RK 120K 1/6W J				L505,506	OB51239A	Micro Coil LAL02TA220K	C527	OB09586A	CC 2200P 50V K	TP1,2	OB81634A	2P-T Post		
359	OB09677A	RK 1K 1/6W J							C528	OB41296A	CMM 0.068 $\mu$ 50V J		OB81634A	2P-T Post		
R305													OJ05326B	Earth Plate (1)		
R306,317	OB09745A	RK 680K 1/6W J				VR501	OB32086A	Semi VR 100K (B)								
351,353	OB09665A	RK 330 1/6W J				R501,516	OB09677A	RK 1K 1/6W J				IC651	OB06219A	IC $\mu$ PD4081BC		
354						R502,504	OB09725A	RK 100K 1/6W J				Q651	OB01872A	TR 2SC945L (P,Q)		
R307,312	OB09645A	RK 47 1/6W J				518					Q652	OB10062A	TR DTC144ES			
						R503,508	OB09685A	RK 2.2K 1/6W J								
						517										
						R505	OB09665A	RK 330 1/6W J								

5.19. Main P.C.B. Ass'y  
 (1) For SR-4A and SR-4 (Canada & Australia)

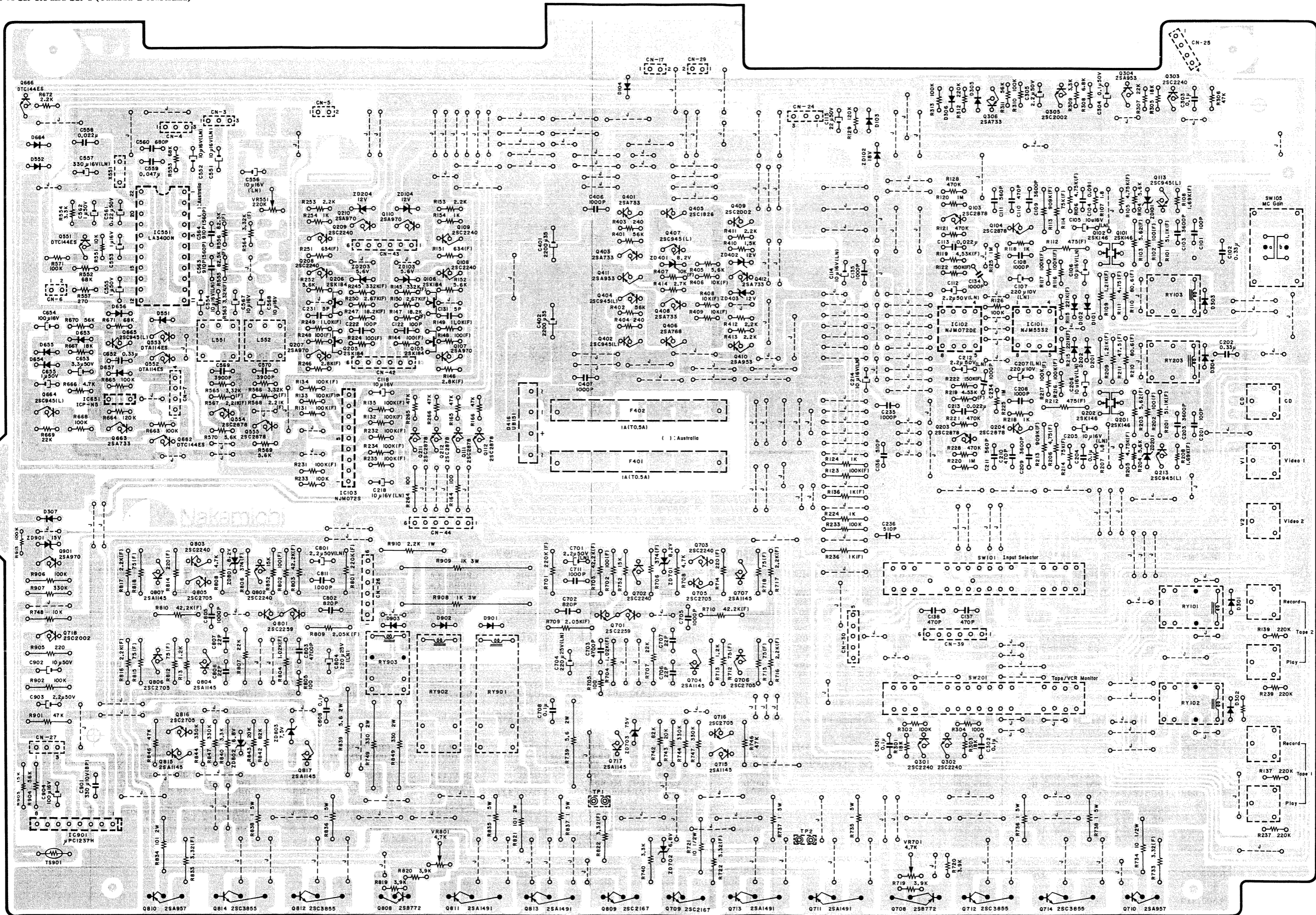


Fig. 5.19.1



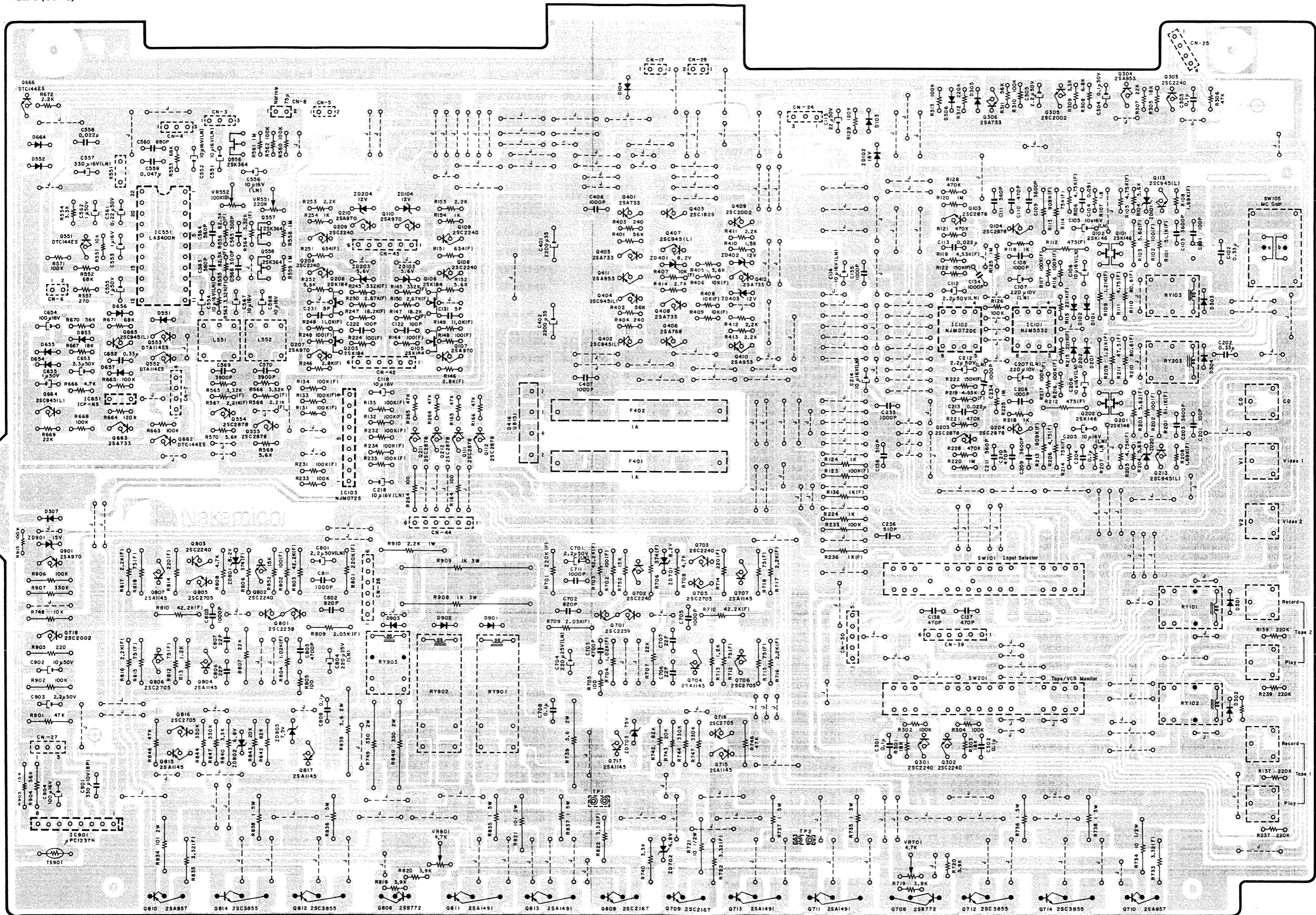


Fig. 5.19.2



6. SCHEMATIC DIAGRAMS

6.1. IC Block Diagrams

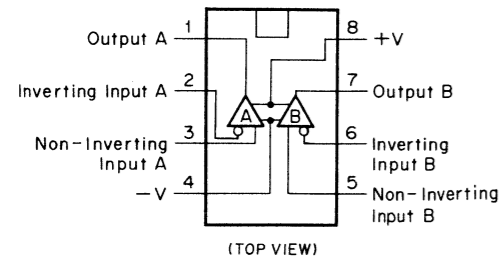


Fig. 6.1.1 Operational Amp. IC NJM072DE, NJM5532DD

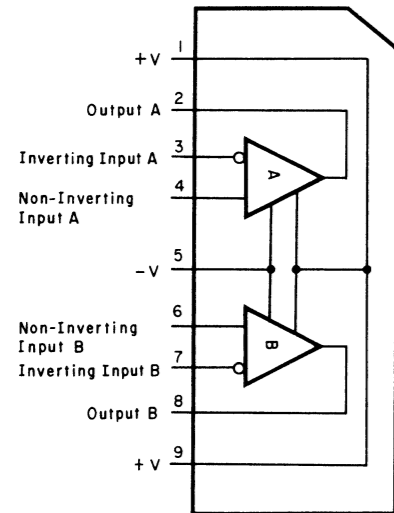


Fig. 6.1.2 Operational Amp. IC NJM072S

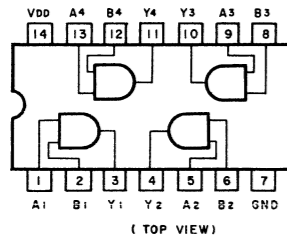


Fig. 6.1.3 AND Gate C-MOS IC  $\mu$ PD4081BC

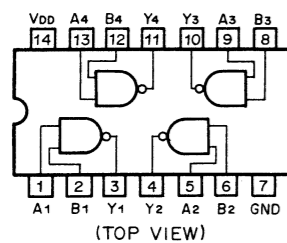


Fig. 6.1.4 NAND Gate C-MOS IC  $\mu$ PD4011BC

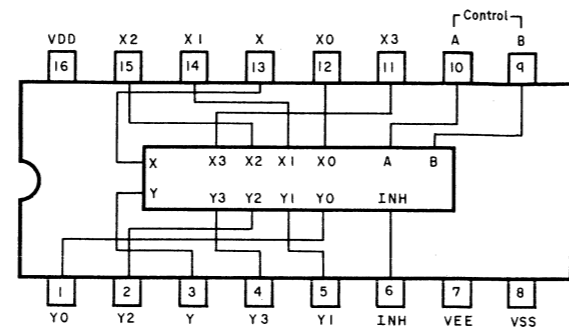


Fig. 6.1.5 Analog Multiplexers/Demultiplexers IC  $\mu$ PD4052BC

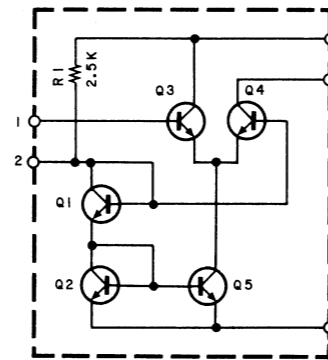


Fig. 6.1.6 FM IF Amp. IC TA7060AP

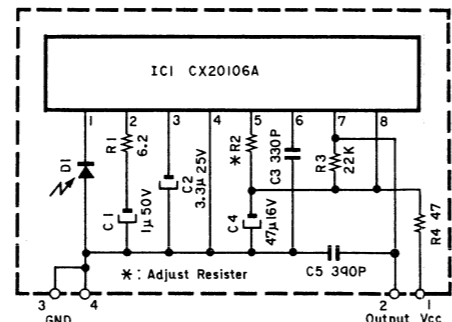


Fig. 6.1.7 Remote Control Receiver IC BX-1419

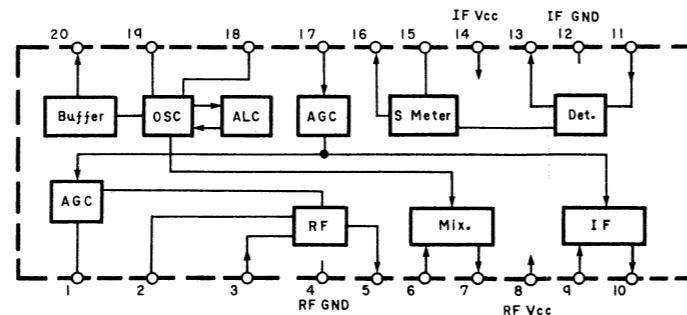


Fig. 6.1.8 AM Tuner IC LA1247

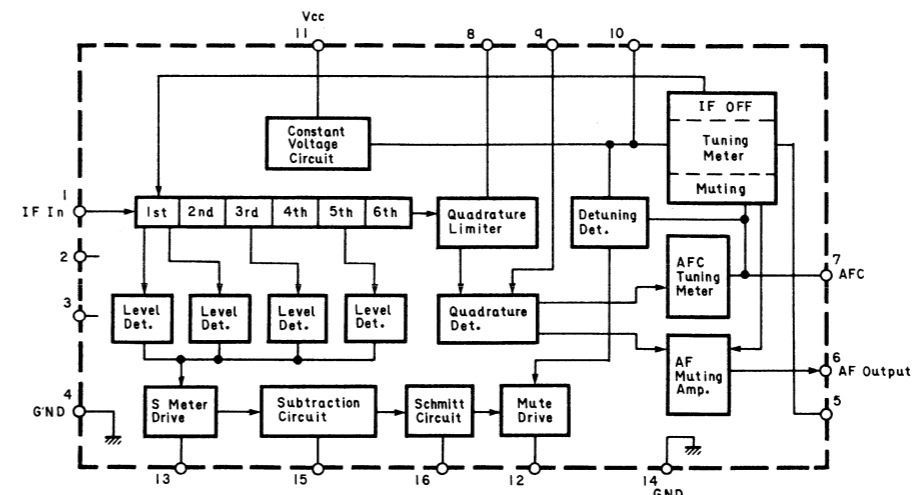


Fig. 6.1.9 FM IF System IC LA1235

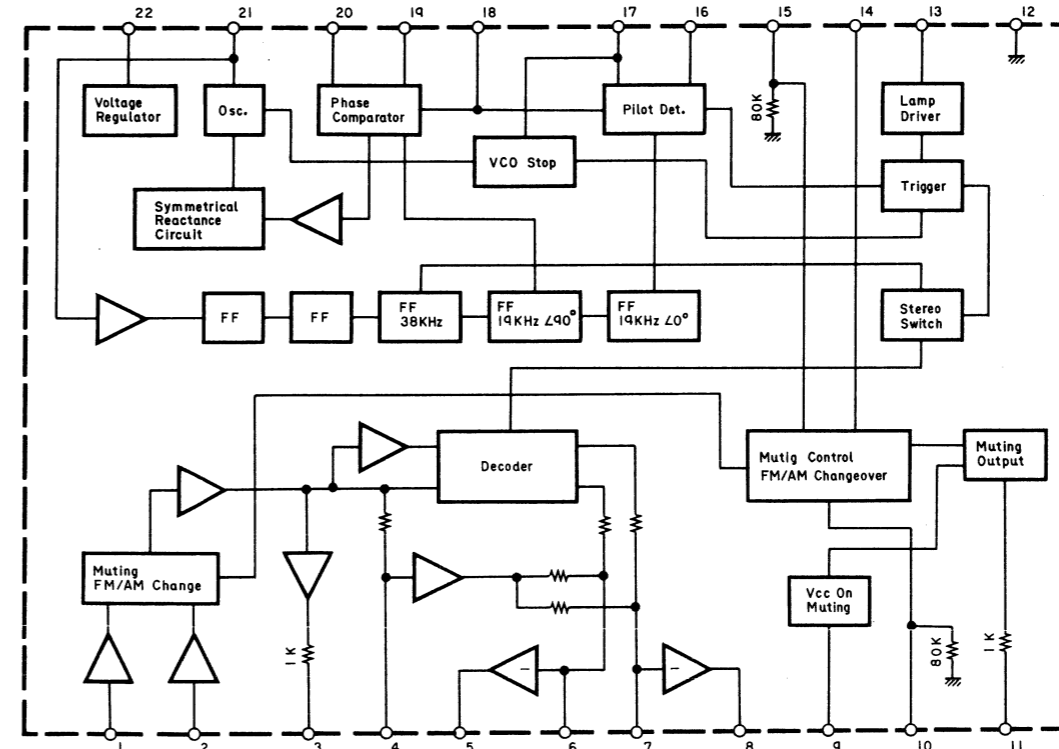


Fig. 6.1.10 FM Stereo Demodulator IC LA3400N

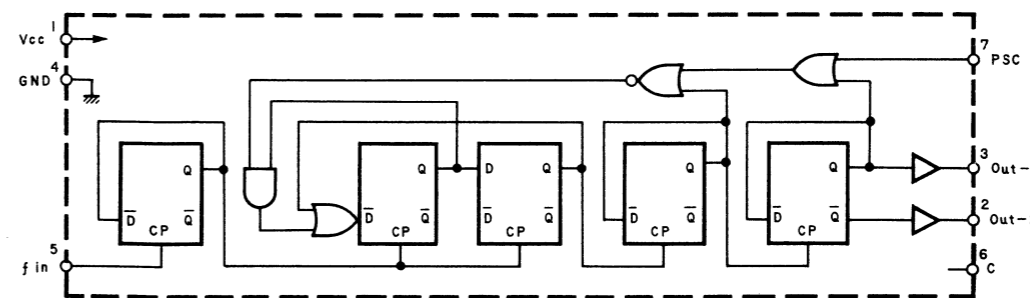


Fig. 6.1.11 ECL Prescaler (FM) IC TD6104



3.16. Tuner P.C.B. Ass'y

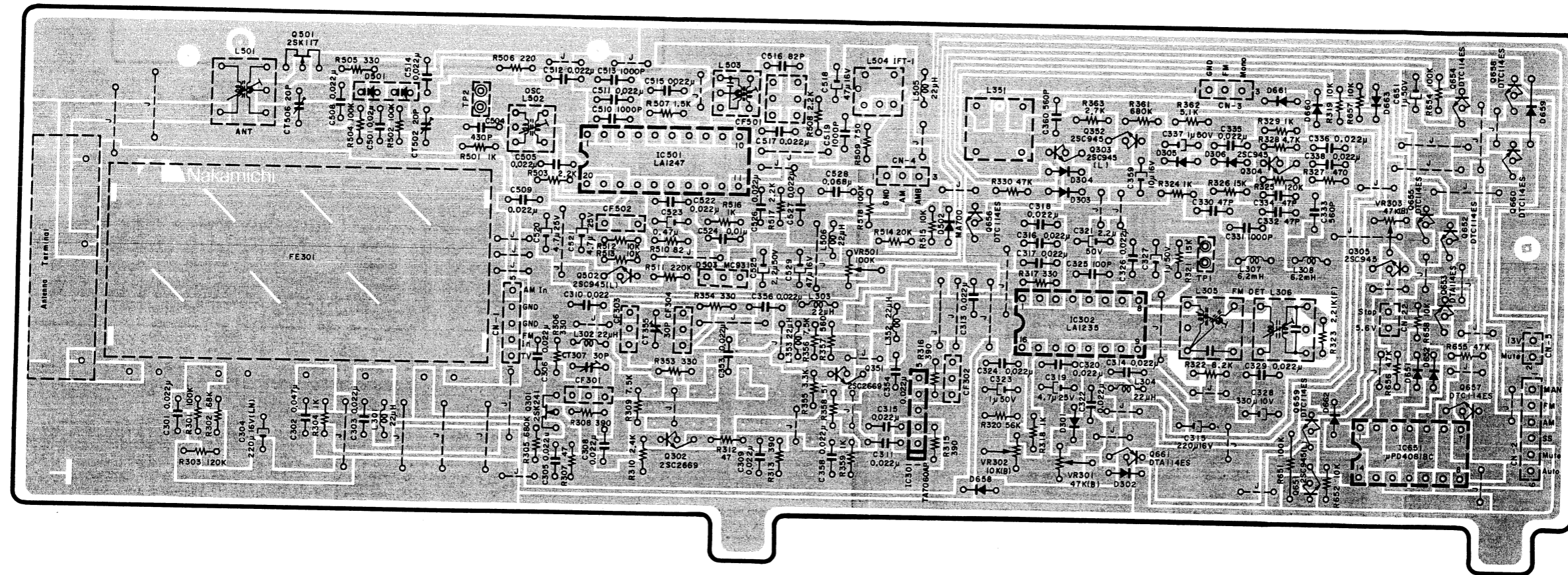


Fig. 3.16

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
	<b>BA06846A</b>	<b>Tuner P.C.B. Ass'y</b>									
	-- FM --										
IC301	OB11156A	IC TA7060AP	R327	OB09669A	RK 470 1/6W J	IC501	OB11243A	IC LA1247	C516	OB41711A	CC 82P 50V K
IC302	OB11157A	IC LA1235	R328	OB09693A	RK 4.7K 1/6W J	Q501	OB06129A	FET 2SK117 (Y)	C518,529	OB01403A	CE 47μ 16V
Q301	OB10127A	FET 2SK241 (GR)	R330	OB09717A	RK 47K 1/6W J	Q502	OB01872A	TR 2SC945L (P,Q)	C520,521	OB01402A	CE 4.7μ 25V
Q302,351	OB10174A	TR 2SC2669 (O,Y)	R355	OB09689A	RK 3.3K 1/6W J	D501	OB12386A	Vari-Cap. KV1226Y	C523	OB40111A	CE 0.47μ 50V
Q303,304	OB01872A	TR 2SC945L (P,Q)	R357	OB09671A	RK 560 1/6W J	D502	OB12363A	SID MA700	C524	OB41553A	CC 0.01μ 25V Z
305,352			R362	OB09694A	RK 51K 1/6W J	D503	OB12420A	SID MC931	C525	OB09372A	CC 2.2μ 50V
D301,302			R363	OB09687A	RK 2.7K 1/6W J	L501	OB51236A	Antenna Coil	C527	OB09586A	CC 2200P 50V K
303,304			CF301,302	OB41818A	Ceramic Filter	L502	OB51235A	Osc. Coil	C528	OB41296A	CCM 0.068μ 50V J
305,306						L503	OB51234A	AM IFT2			
VR301,303	OB32084A	Semi VR 47K (B)				L504	OB51233A	AM IFT1	IC651	OB06219A	IC μPD4081BC
VR302	OB32080A	Semi VR 10K (B)	CT307,355	OB41746A	Ceramic Filter	VR501	OB32086A	Micro Coil	Q651	OB01872A	TR 2SC945L (P,Q)
L301,302	OB51239A	Micro Coil 22μH	C301,303	OB41614A	SFE10.7MS3GH15A	R501,516	OB09677A	LAL02TA220K	Q652	OB10062A	TR DTC144ES
303,304			305,306	OB41787A	C Trimmer 30P	R502,504	OB09725A	Semi VR 100K (B)	Q654,655	OB10058A	TR DTA114ES
352,353			308,309			518		RK 1K 1/6W J	661		
L305	OB51240A	FM Det. Coil A	310,311			R503,508	OB09685A	RK 100K 1/6W J	Q654,655	OB10068A	TR DTC114ES
L306	OB51241A	FM Det. Coil B	312,316			517		RK 2.2K 1/6W J	656,657		
L307,308	OB51243A	Choke Coil	317,318			R505	OB09665A	RK 330 1/6W J	658,659	OB06398A	SID 1SS176
L351	OB51238A	Anti-birdy Filter	324,326			R506	OB09661A	RK 220 1/6W J	661,662		
FE301	OB91017A	Front-end	329,335			R507	OB09681A	RK 1.5K 1/6W J	663		
			336,338			R509	OB09674A	RK 750 1/6W J	D659	OB06181A	SID 1SS53
			353,354			R510	OB09651A	RK 82 1/6W J	R651,654	OB01889A	RK 100K 1/4W J
			356,358			R511	OB09733A	RK 220K 1/6W J	R652,657	OB09701A	RK 10K 1/6W J
R301	OB09725A	RK 100K 1/6W J	620,622			R512,513	OB09701A	RK 10K 1/6W J	658		
R302	OB09721A	RK 68K 1/6W J	C302	OB41294A	CMM 0.047μ 50V J	R514	OB09708A	RK 20K 1/6W J	R653	OB09707A	RK 18K 1/6W J
R303,325	OB09727A	RK 120K 1/6W J	C304	OB40420A	CE 220μ 16V (LN)	CF501	OB41701A	Ceramic Filter	R655,656	OB09717A	RK 47K 1/6W J
R304,318	OB09677A	RK 1K 1/6W J	C313,314	OB41290A	CM 0.022μ 50V J	CF502	OB92003A	SFZ450G3L	C651	OB01405A	CE 1μ 50V
324,329			C315	OB40079A	CE 220μ 16V			Resonator 450 kHz			
359			C319	OB01402A	CE 4.7μ 25V			BFU450C4N			
R305,361	OB09745A	RK 680K 1/6W J	C321	OB09372A	CE 2.2μ 50V	CT502,506	OB42005A	C Trimmer 20P	CN1	OB60438A	Tuner P.C.B.
R306,317	OB09665A	RK 330 1/6W J	C323,327	OB01405A	CE 1μ 50V	C501,505	OB41787A	CC 0.022μ 25V Z	CN2	OB83078A	5P Connector
353,354			337			508,509			CN3	OB82942A	6P Connector YEL
R307,312	OB09645A	RK 47 1/6W J	C325	OB41071A	CC 100P 50V J	511,512			CN4	OB81227A	3P-T Post WHT
R308,313	OB09667A	RK 390 1/6W J	C328	OB40066A	CC 330μ 10V	514,515			CN5	OB81230A	3P-T Post YEL
315,316			C330,332	OB09280A	CC 47P 50V J	517,522			CN22	OB82945A	2P Connector WHT
R309,356	OB09698A	RK 7.5K 1/6W J	334			526				OB82962A	2P Connector BLK
R310	OB09686A	RK 2.4K 1/6W J	C331	OB41007A	CC 1000P 25V M	C504	OB41401A	CP 430P 50V J	TP1,2	OB81634A	2P-T Post
R319	OB09701A	RK 10K 1/6W J	C333	OB09379A	CC 560P 50V K	C510,513	OB41007A	CC 1000P 25V M		0J05326B	Earth Plate (1)
R320	OB09719A	RK 56K 1/6W J	C359	OB09816A	CE 10μ 16V (LN)	519					
R321,326	OB09705A	RK 15K 1/6W J	C360	OB41404A	CP 560P 50V J						
R322	OB09699A	RK 8.2K 1/6W J		OB90078A	Antenna Terminal						
R323	OB25228A	RM 2.21K 1/6W F			(1)						

3.17. Main P.C.B. Ass'y

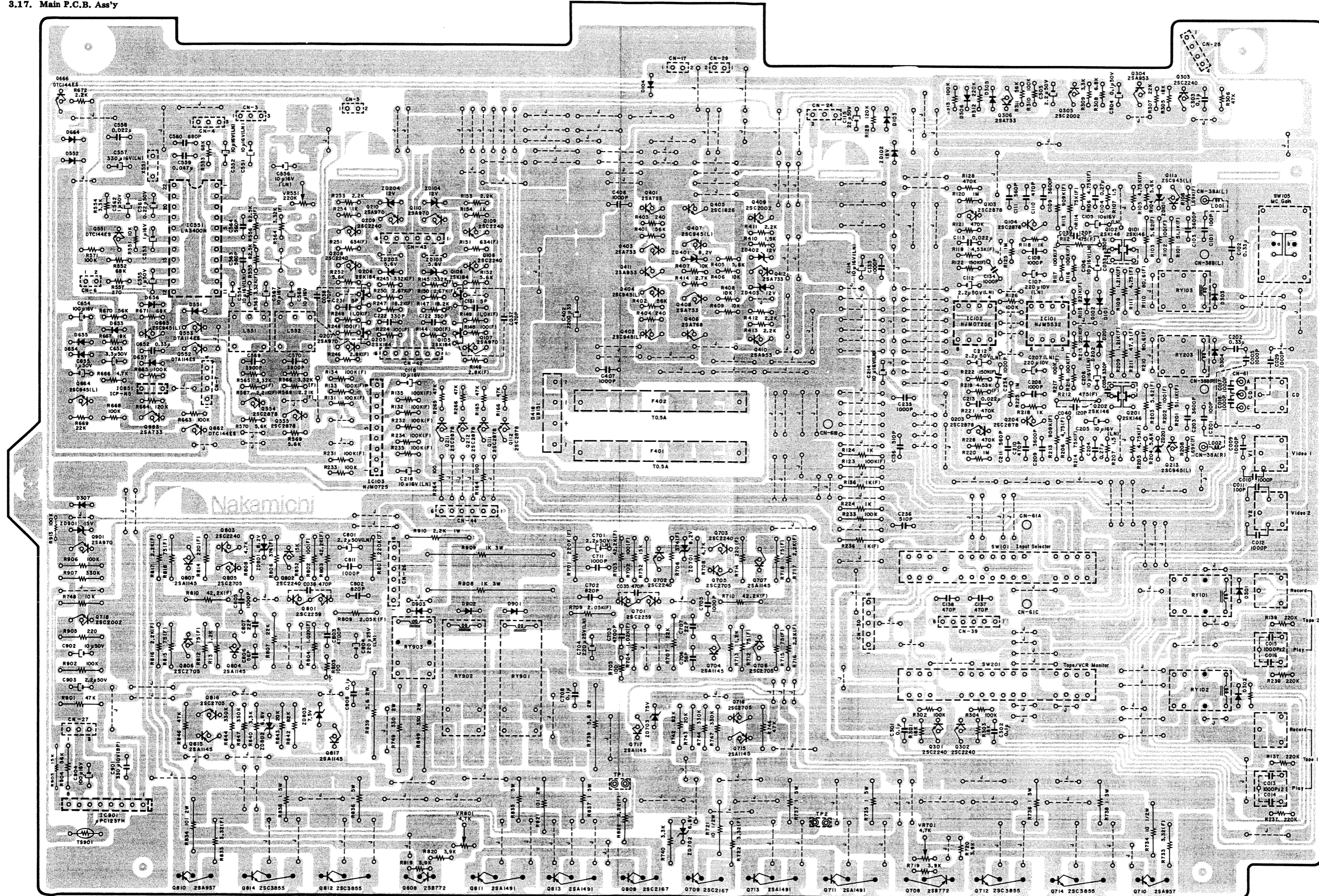


Fig. 3.17

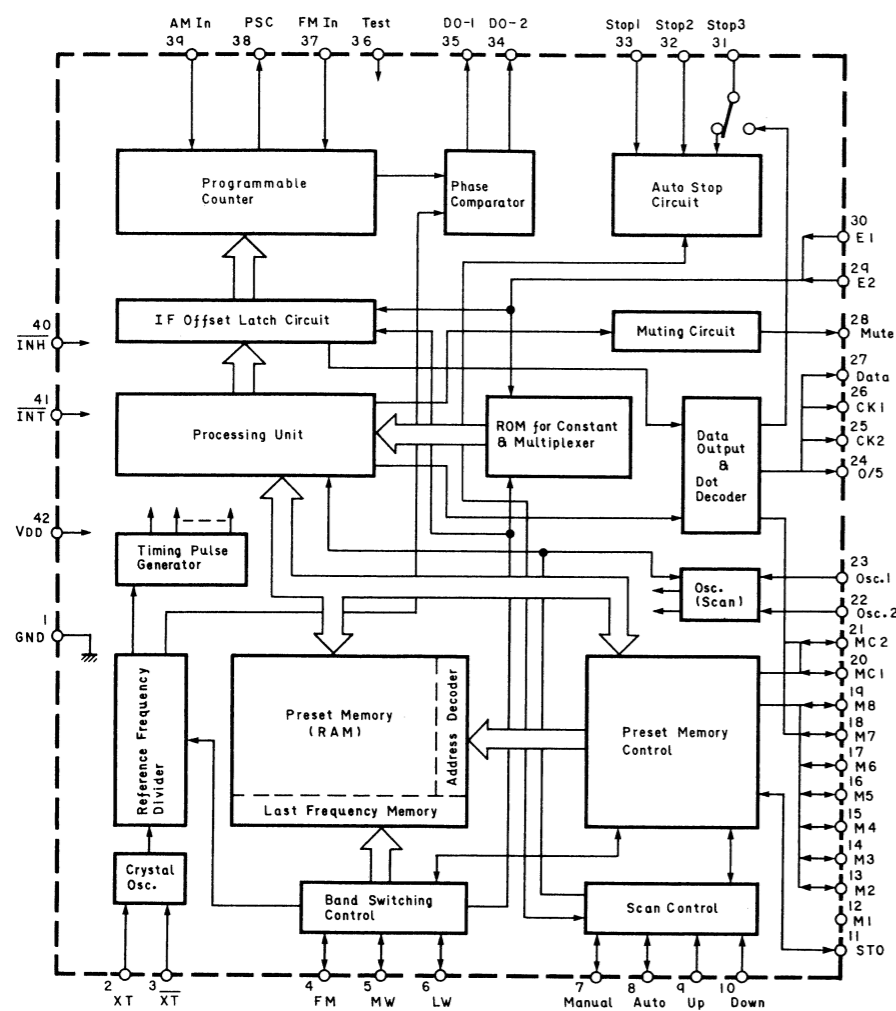


Fig. 6.1.12 FM/MW/LW 3-Band Digital Tuning (Static Method) IC TC9147BP

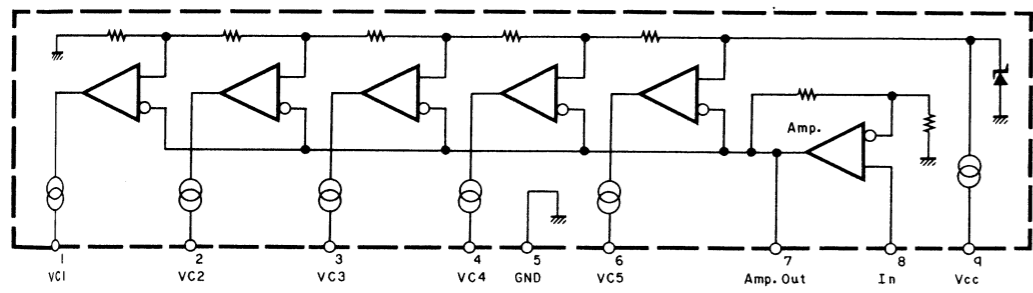


Fig. 6.1.13 Signal Meter Driver IC LB1413N

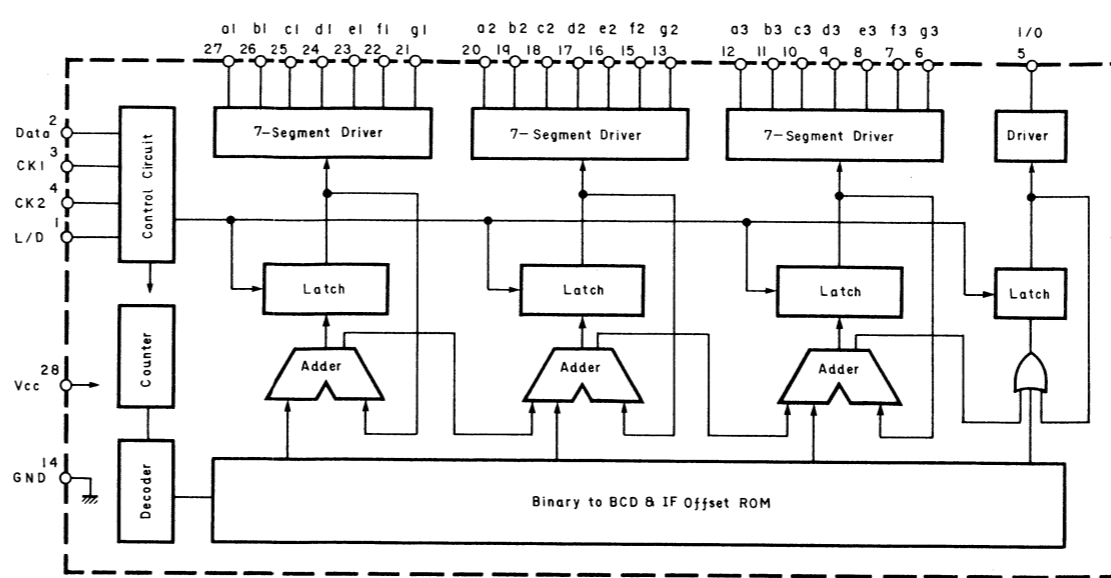


Fig. 6.1.14 Indicator Driver IC TD6301A

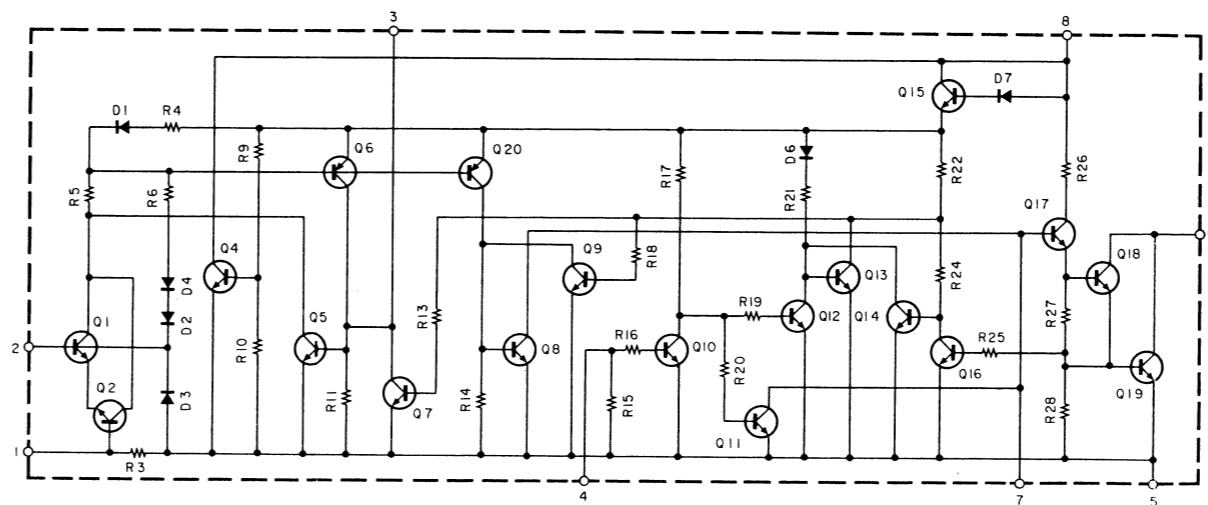
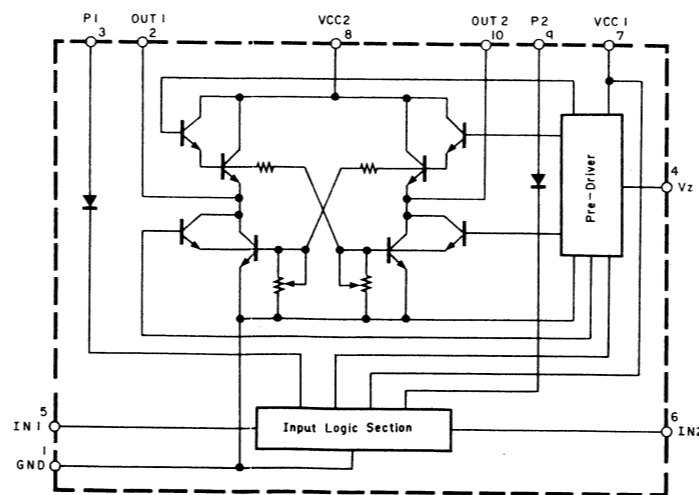


Fig. 6.1.15 Motor Control IC LB1645N



INPUT	OUTPUT	OPERATION	
IN1	OUT1	OUT2	
0	0	0	Braking
1	0	1	Forward (Reverse)
0	1	0	Reverse (Forward)
1	1	0	Braking

Fig. 6.1.16 Power Amp./Speaker Protector IC μPC1237H

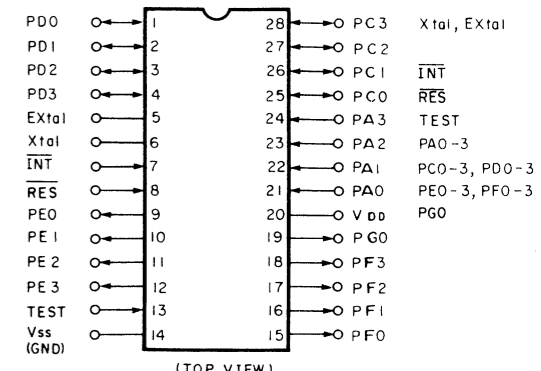
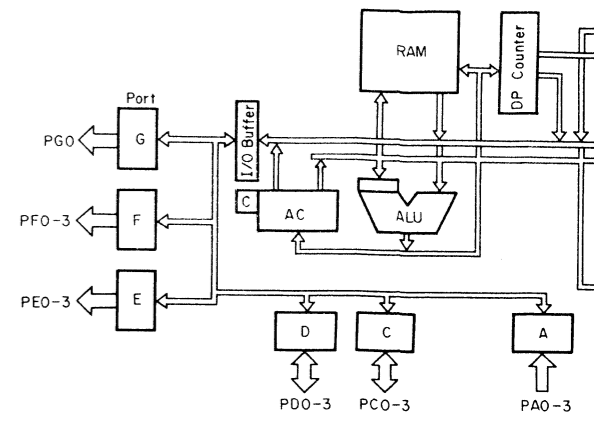
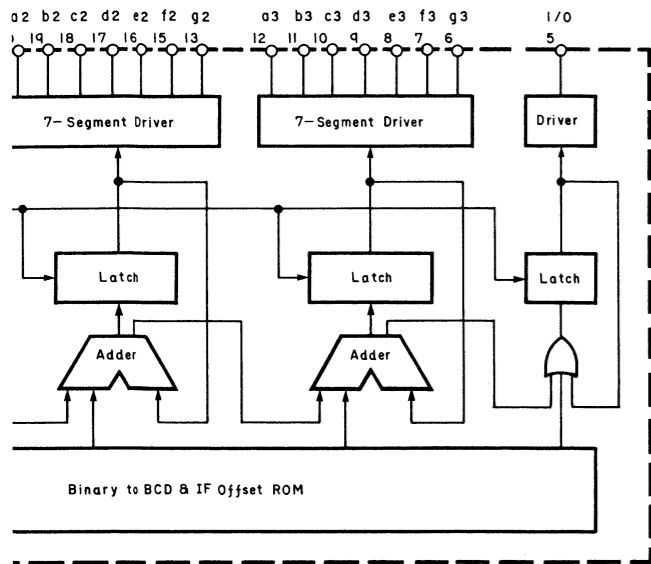


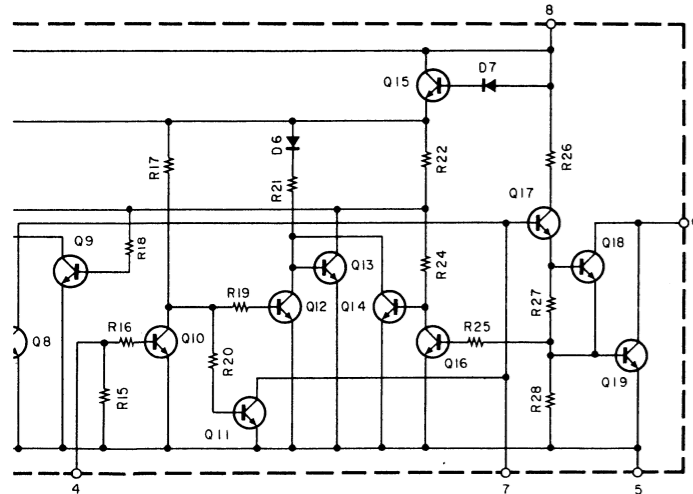
Fig. 6.1.17 Microprocessor LB6416E

Function of Micro-processor LB6416E

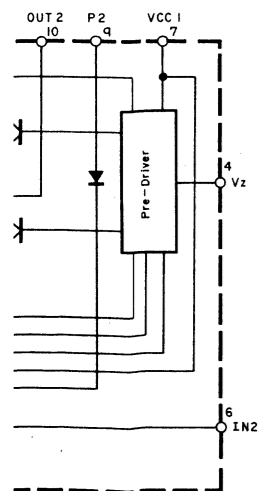
Pin No.	Signal Name	In/Out	Description
1	Power-ON	Out	Power-ON becomes lower ON/OFF control. Lower ON/OFF control causes the Remote Control Unit to be changed, which is active "L".
2	Seek-up	Out	Becomes "L" upon the Up button on the (Active "L").
3	Seek-down	Out	Becomes "L" upon the Down button on the (Active "L").
4	M1	Out	Becomes "L" upon the number button 1-6 on the unit. Refer to Shift (pin No. 12).
5	EX	-	Resonator (800 kHz).
6	X	-	Not used. Connected to GND.
7	INT	In	Interrupt signal.



Motor Driver IC TD6301A



Motor Control IC LB1645N



p./Speaker Protector IC μPC1237H

INPUT	IN1	IN2	OUTPUT	OUT1	OUT2	OPERATION
0	0	0	0	0	0	Braking
1	0	1	0	1	0	Forward (Reverse)
0	1	0	1	0	1	Reverse (Forward)
1	1	0	0	0	0	Braking

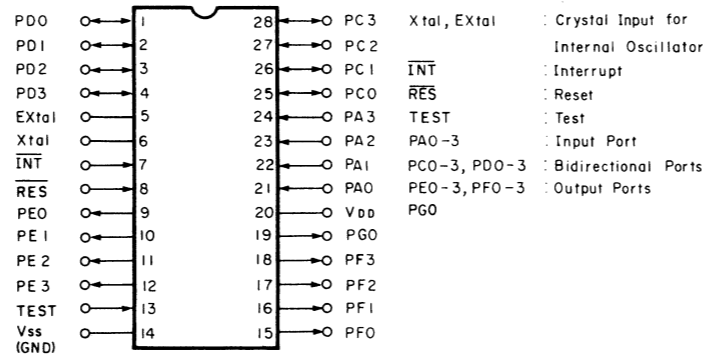
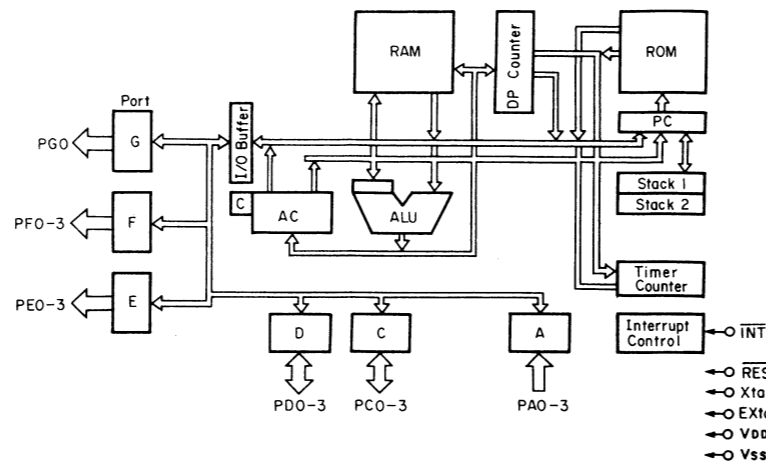
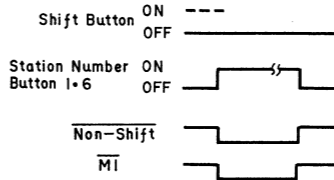
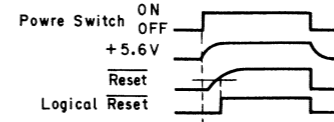


Fig. 6 1.17 Microprocessor LB6416E

Function of Micro-processor LB6416E

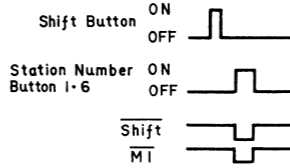
Pin No.	Signal Name	In/Out	Description
1	Power-ON	Out	Power-ON becomes "L" when Reset becomes "H" (reset is released), after the Power switch is turned ON. Power-ON = "L" signal causes relays RY401 and RY402 on the Power Supply P.C.B. Ass'y to turn ON, as a result power is supplied to respective circuits. Power ON/OFF control is possible through the Remote Control Unit. Pressing of the Power ON/OFF button on the Remote Control Unit causes the state of Power-ON to be changed, which enables turning ON and OFF of the power to the circuits. (Active "L")
2	Seek-up	Out	Becomes "L" upon push of the Seek Up/Down button on the Remote Control Unit. (Active "L")
3	Seek-down	Out	Becomes "L" upon push of the Seek Up/Down button on the Remote Control Unit. (Active "L")
4	M1	Out	Becomes "L" upon push of the Station Number button 1-6 on the Remote Control Unit. Refer to Shift (pin No. 11) and Non-shift (pin No. 12). (Active "L")
5	EX	-	Resonator (800 kHz) is connected.
6	X	-	
7	INT	In	Not used. Connected to +5 V.

Pin No.	Signal Name	In/Out	Description
8	Reset	In	When the Power switch is turned ON or OFF, Reset becomes "L" and this IC is reset. (Active "L")
9	AM	Out	Becomes "L" upon push of the AM/FM button on the Remote Control Unit. (Active "L")
10	FM	Out	Becomes "L" upon push of the AM/FM button on the Remote Control Unit. (Active "L")
11	Shift	Out	When the Station Number button 1-6, 2-7, 3-8, 4-9, or 5-10 on the Remote Control Unit is pressed without pushing the Shift button on the Remote Control Unit, Non-shift and M1, M2, M3, M4, or M5 become "L" simultaneously and station 1, 2, 3, 4, or 5 (not 6, 7, 8, 9, or 10) is selected.
12	Non-shift	Out	When the Station Number button 1-6, 2-7, 3-8, 4-9, or 5-10 on the Remote Control Unit is pressed without pushing the Shift button on the Remote Control Unit, Non-shift and M1, M2, M3, M4, or M5 become "L" simultaneously and station 1, 2, 3, 4, or 5 (not 6, 7, 8, 9, or 10) is selected.



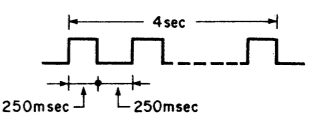
(Station Number 1 select timing chart)

When one of the Station Number buttons is pressed within 2 seconds after the Shift button is pressed, Shift and one of M1 through M5 become "L" simultaneously and one of stations 6 through 10 is selected.



(Station Number 6 select timing chart)

13	TEST	In	Not used.
14	Vss	In	Connected to GND.
15	M2	Out	M2, M3, M4 and M5 become "L" when Station Number buttons 2-7, 3-8, 4-9 and 5-10 on the Remote Control Unit are pressed. Refer to Shift (pin 11) and Non-shift (pin 12). (Active "L")
16	M3	Out	M2, M3, M4 and M5 become "L" when Station Number buttons 2-7, 3-8, 4-9 and 5-10 on the Remote Control Unit are pressed. Refer to Shift (pin 11) and Non-shift (pin 12). (Active "L")
17	M4	Out	M2, M3, M4 and M5 become "L" when Station Number buttons 2-7, 3-8, 4-9 and 5-10 on the Remote Control Unit are pressed. Refer to Shift (pin 11) and Non-shift (pin 12). (Active "L")
18	M5	Out	M2, M3, M4 and M5 become "L" when Station Number buttons 2-7, 3-8, 4-9 and 5-10 on the Remote Control Unit are pressed. Refer to Shift (pin 11) and Non-shift (pin 12). (Active "L")
19	Remote	Out	Becomes L while receiving a signal from the Remote Control Unit. When Remote is "L", the indicator on the Remote Control Sensor lights up. (Active "L")
20	VDD	In	Supplied with +5 V.
21	Sin	In	Receives the output signal from IC954 (Remote Control Receiver) on the Display P.C.B. Ass'y. (Active "L")

Pin No.	Signal Name	In/Out	Description
22	P.Mute	In	Power Mute signal generated at power ON and OFF. (Active "H")
23	K.Mute	In	Becomes "L" upon push of the Audio Mute switch. (Active "L") At the falling edge of K.Mute, a 3-msec width pulse is output from M.PLS (pin 25) to the Audio Mute flip-flop consisting of IC605. The pulse input inverts state of the flip-flop. When the Audio Mute flip-flop is set, audio muting is enabled and Audio Mute indicator lights up.
24	S.Mute	In	If the Volume Up button on the Remote Control Unit is pressed (Vol-up (pin 27) = "L") while S.Mute is at "H", i.e. while the Audio Mute flip-flop consisting of IC605 is being set and audio mute is enabled, a 3-msec width pulse is output from M.PLS (pin 25) to reset the Audio Mute flip-flop and to disable audio mute.
25	M.PLS	Out	Outputs a 3-msec width pulse which inverts state of the Audio Mute flip-flop consisting of IC605. Pulse is output in the following cases. (Active "L") 1. When the Audio Mute switch is pressed. (Refer to K.Mute (pin 23).) 2. When the Volume Up button on the Remote Control Unit is pressed while audio muting is being enabled. (Refer to S.Mute (pin 24).)
26	P.IND	Out	Outputs pulse train for 4 seconds in the following cases. The green Power indicator flashes. (Active "H") 1. When reset is released (Reset = "H") after the Power switch is turned ON. 2. When power is turned ON by pressing of the Power ON/OFF button on the Remote Control Unit. 
27	Vol-up	Out	Becomes "L" while the Volume Up/Down button on the Remote Control Unit is being pressed. (Active "L")
28	Vol-down	Out	Becomes "L" while the Volume Up/Down button on the Remote Control Unit is being pressed. (Active "L")

6.2. Schematic Diagrams  
6.2.1. Amplifier Section

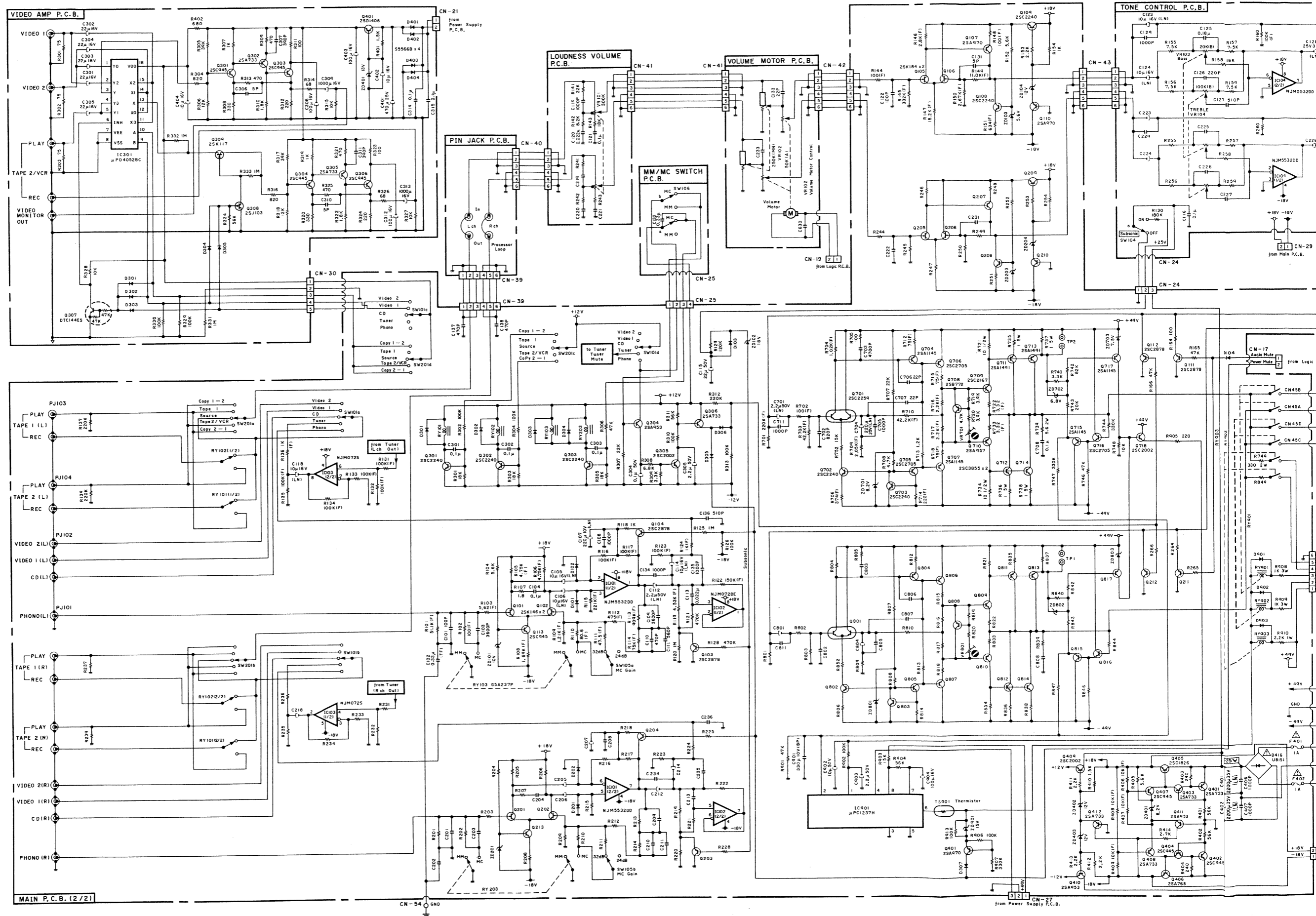
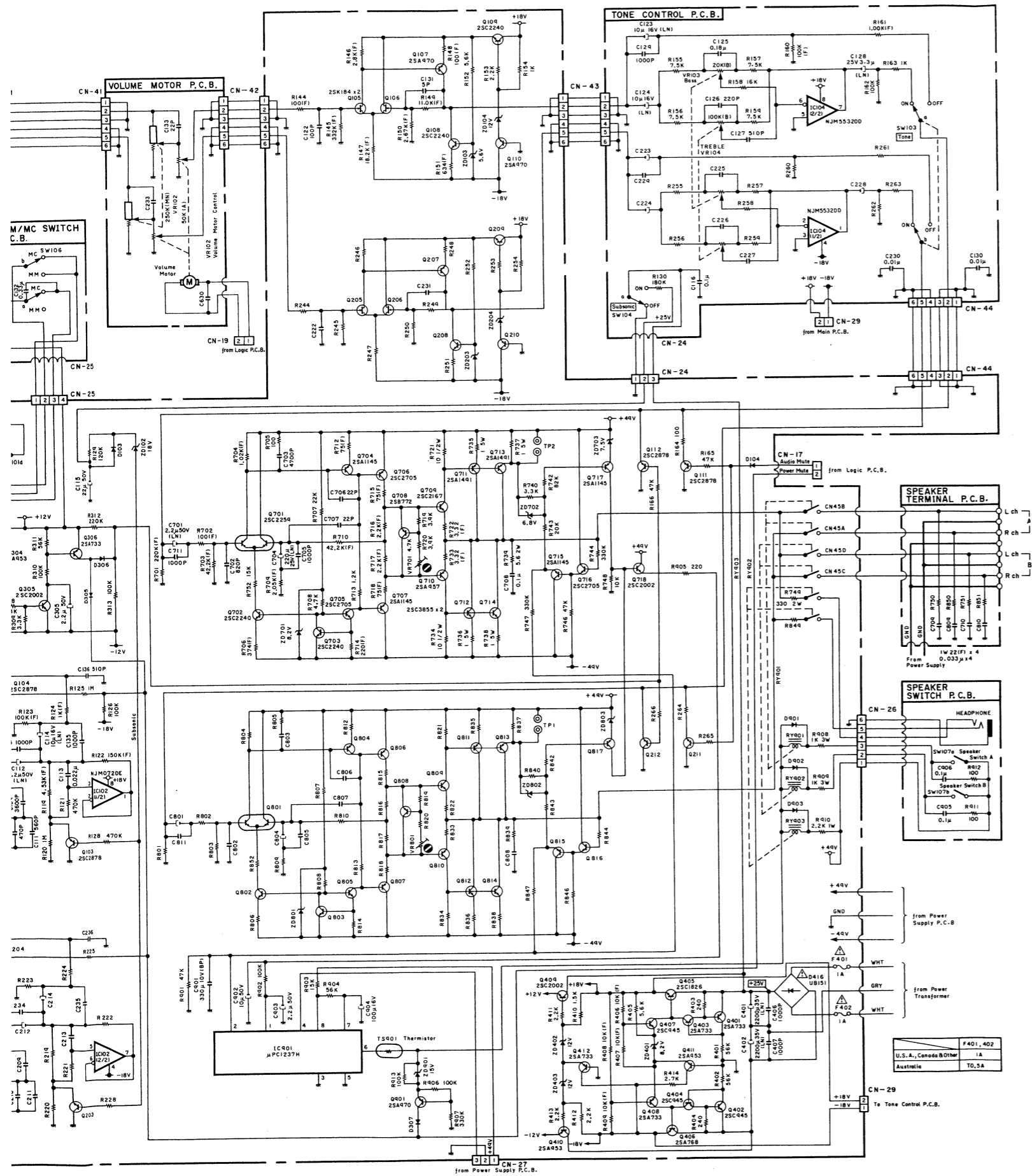


Fig. 6.2.1



- Notes: 1. Diode is 1SS53, 1S1555, or 1SS176 unless otherwise specified.  
 2. 2SA733, 2SA608SP, 2SA1048 and 2SA1175 are interchangeable with each other.  
 3. 2SC945, 2SC536SP, 2SC2458 and 2SC2785 are interchangeable with each other.

6.2.2. Tuner and Power Supply Section

(1) For SR-4A and SR-4 (Canada)

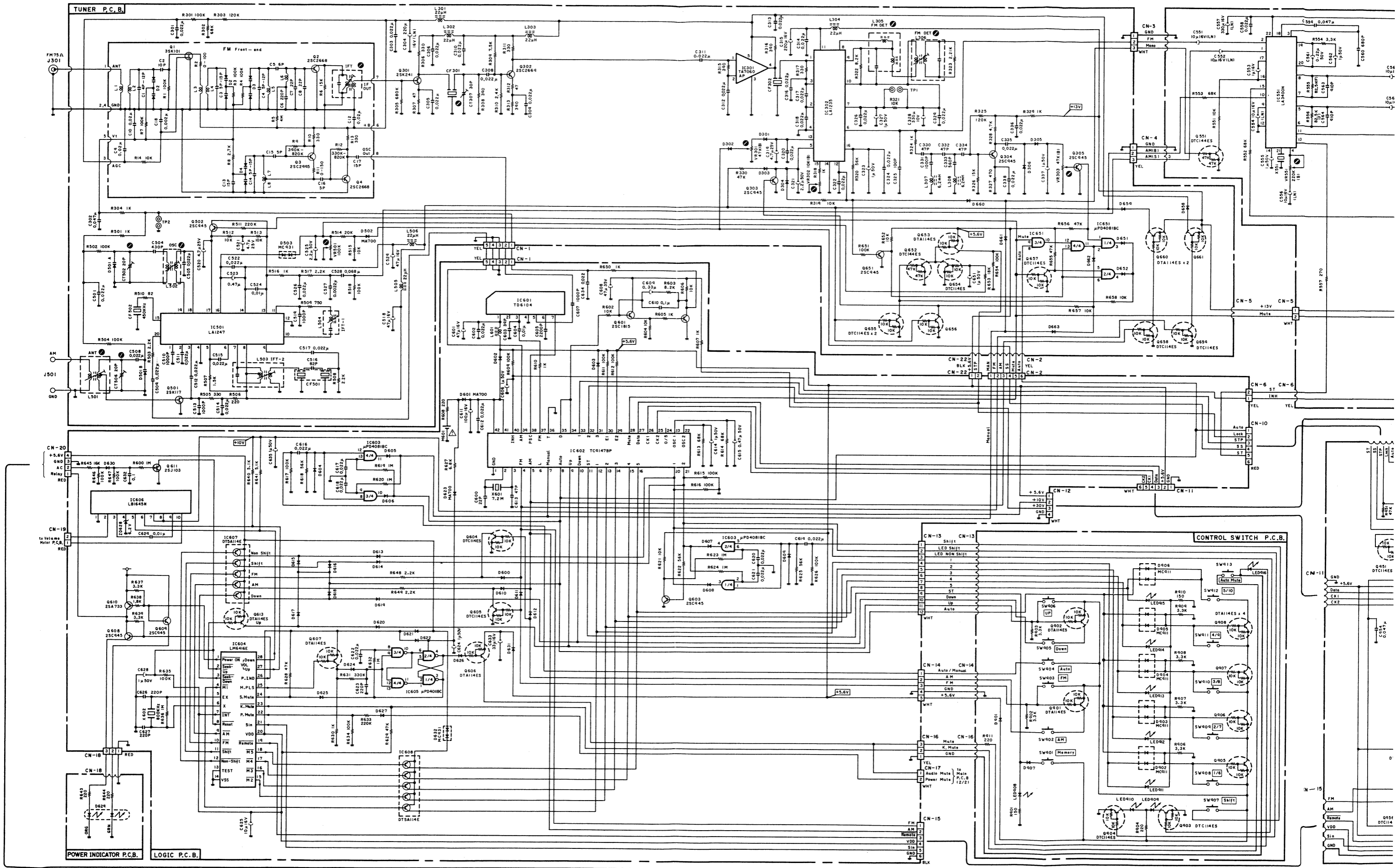


Fig. 6.2.2.1 For SR-4A and SR-4 (Canada)

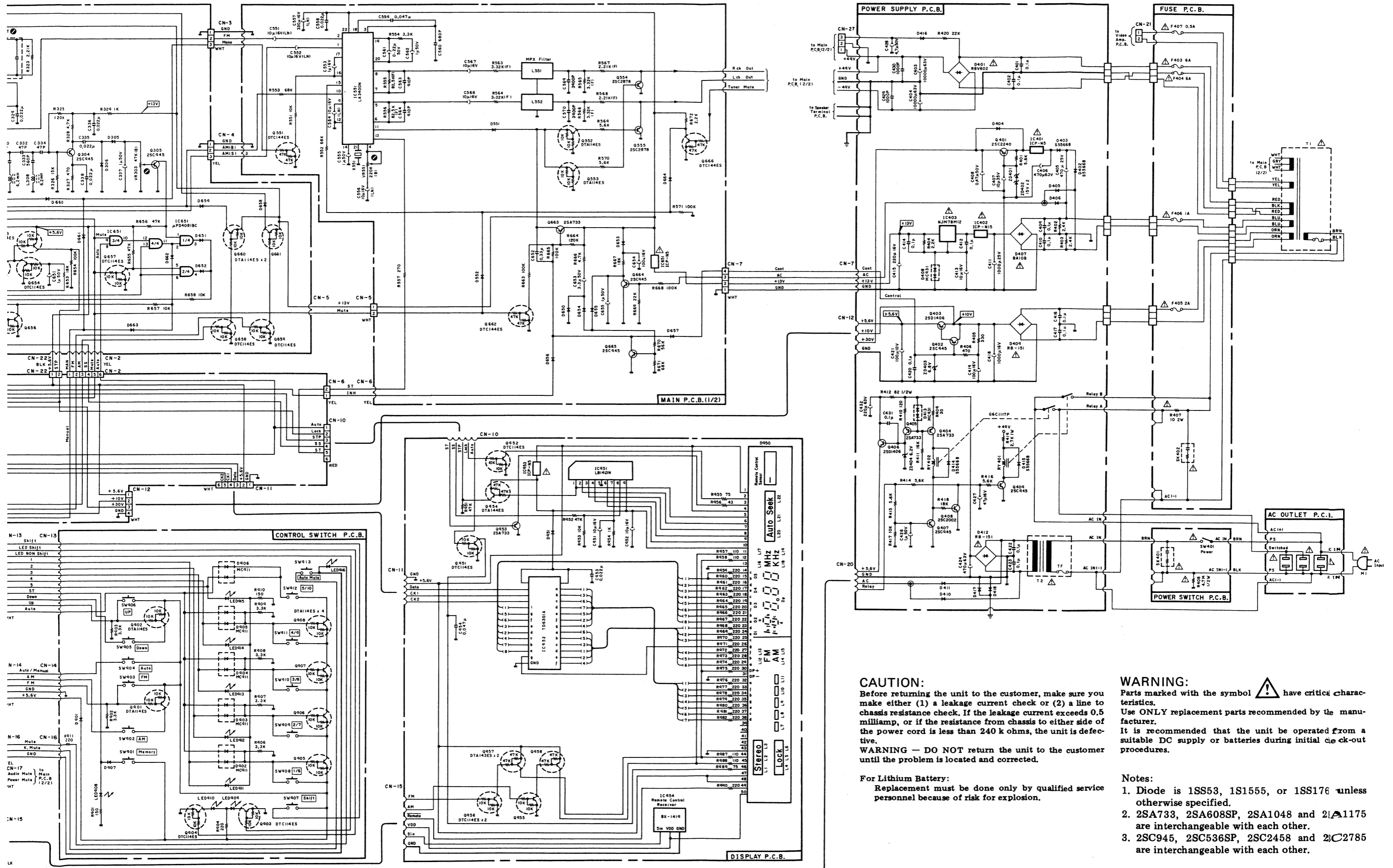


Fig. 6.2.2.1 For SR-4A and SR-4 (Canada)


**CAUTION:**

Before returning the unit to the customer, make sure you make either (1) a leakage current check or (2) a line to chassis resistance check. If the leakage current exceeds 0.5 milliamp, or if the resistance from chassis to either side of the power cord is less than 240 k ohms, the unit is defective. **WARNING — DO NOT** return the unit to the customer until the problem is located and corrected.

**For Lithium Battery:**

Replacement must be done only by qualified service personnel because of risk for explosion.

**WARNING:**

Parts marked with the symbol  have critical characteristics. Use **ONLY** replacement parts recommended by the manufacturer. It is recommended that the unit be operated from a suitable DC supply or batteries during initial check-out procedures.

**Notes:**

1. Diode is 1SS53, 1S1555, or 1SS176 unless otherwise specified.
2. 2SA733, 2SA608SP, 2SA1048 and 2A1175 are interchangeable with each other.
3. 2SC945, 2SC536SP, 2SC2458 and 2C2785 are interchangeable with each other.



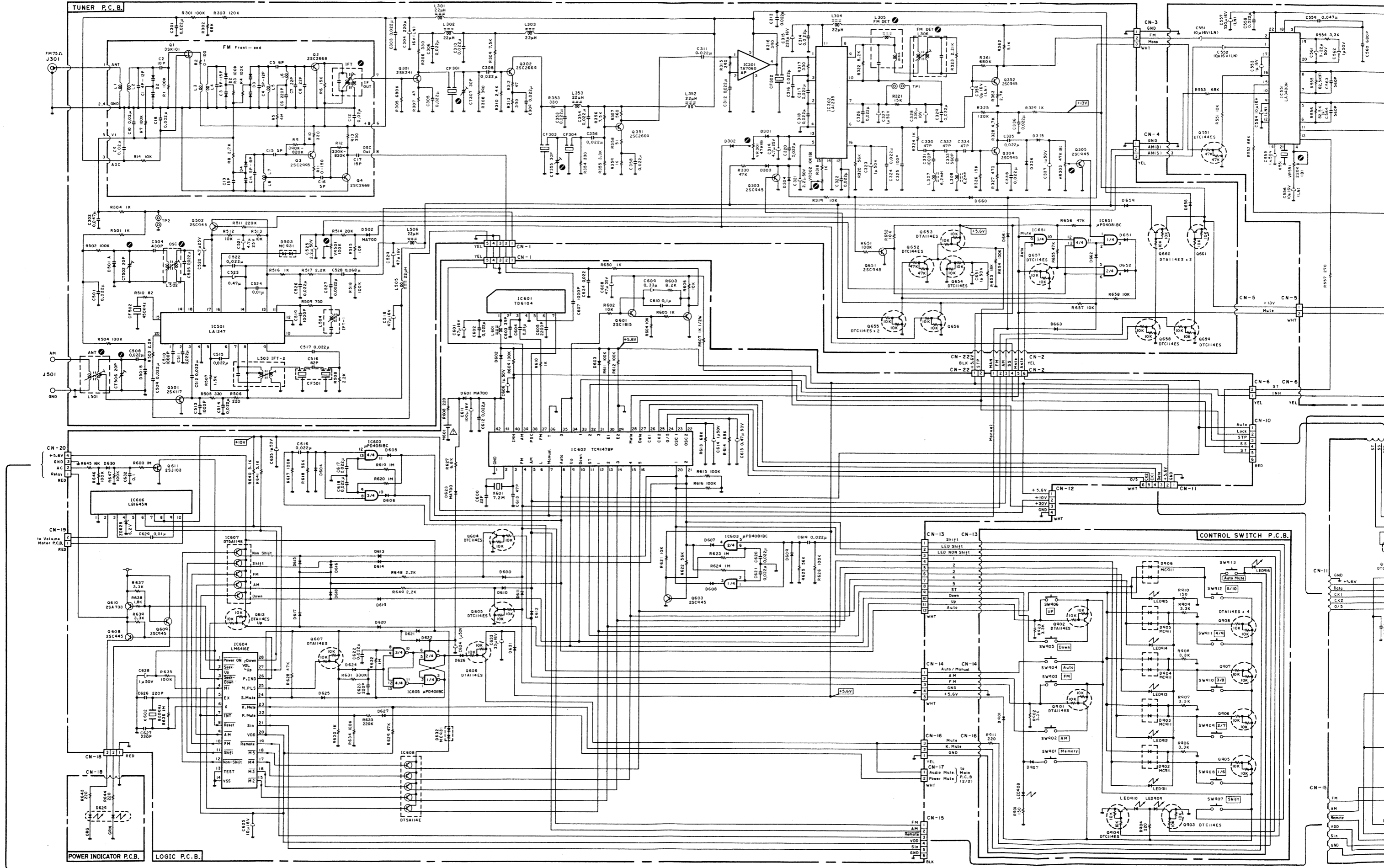


Fig. 6.2.2.2 For SR-4 (Australia)

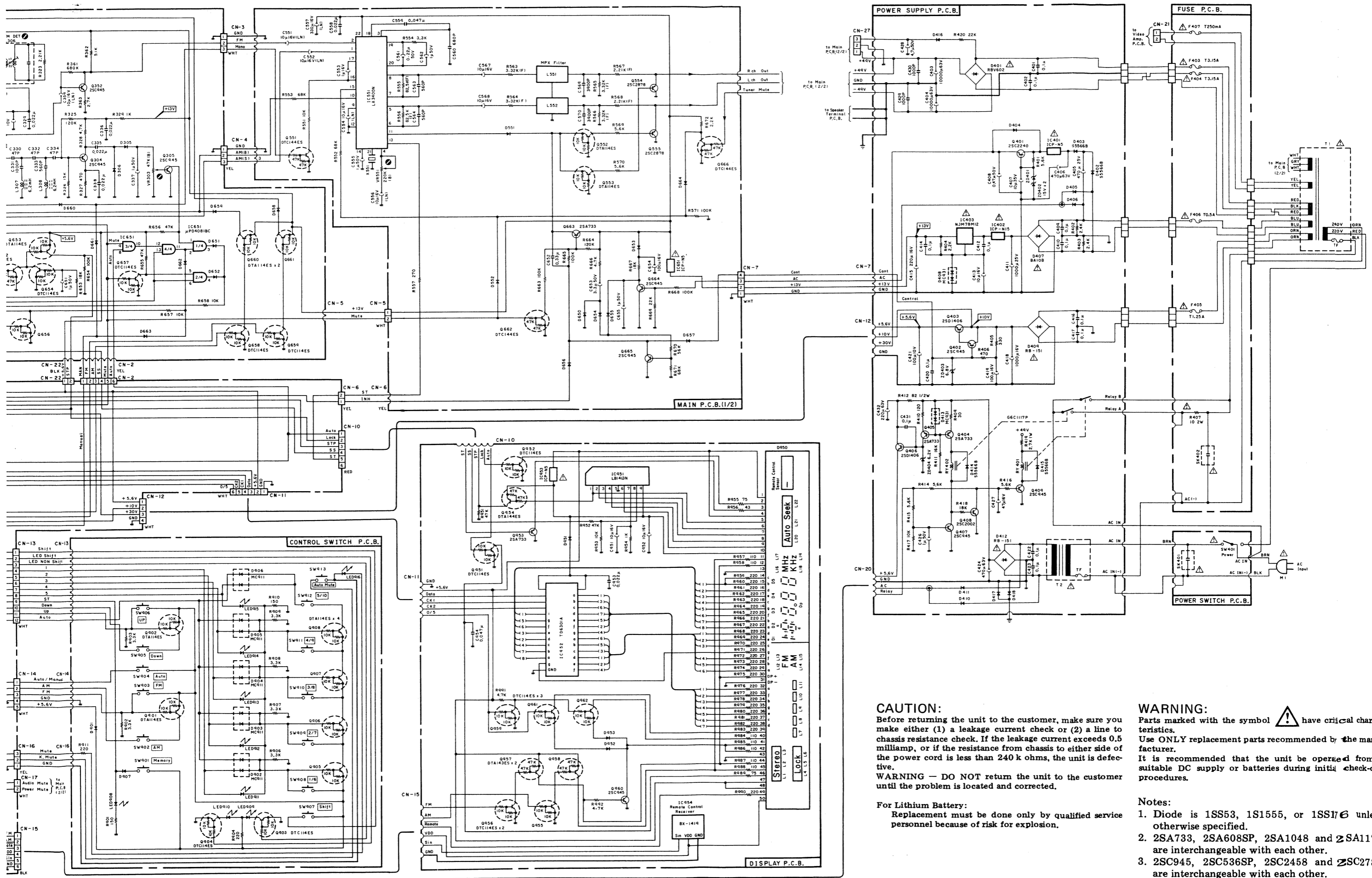


Fig. 6.2.2.2 For SR-4 (Australia)


**CAUTION:**

Before returning the unit to the customer, make sure you make either (1) a leakage current check or (2) a line to chassis resistance check. If the leakage current exceeds 0.5 milliamp, or if the resistance from chassis to either side of the power cord is less than 240 k ohms, the unit is defective. **WARNING - DO NOT** return the unit to the customer until the problem is located and corrected.

**For Lithium Battery:**

Replacement must be done only by qualified service personnel because of risk for explosion.

**WARNING:**

Parts marked with the symbol  have critical characteristics. Use **ONLY** replacement parts recommended by the manufacturer. It is recommended that the unit be powered from a suitable DC supply or batteries during initial check-out procedures.

**Notes:**

1. Diode is 1SS53, 1S1555, or 1SS176 unless otherwise specified.
2. 2SA733, 2SA608SP, 2SA1048 and 2SA1175 are interchangeable with each other.
3. 2SC945, 2SC536SP, 2SC2458 and 2SC2785 are interchangeable with each other.

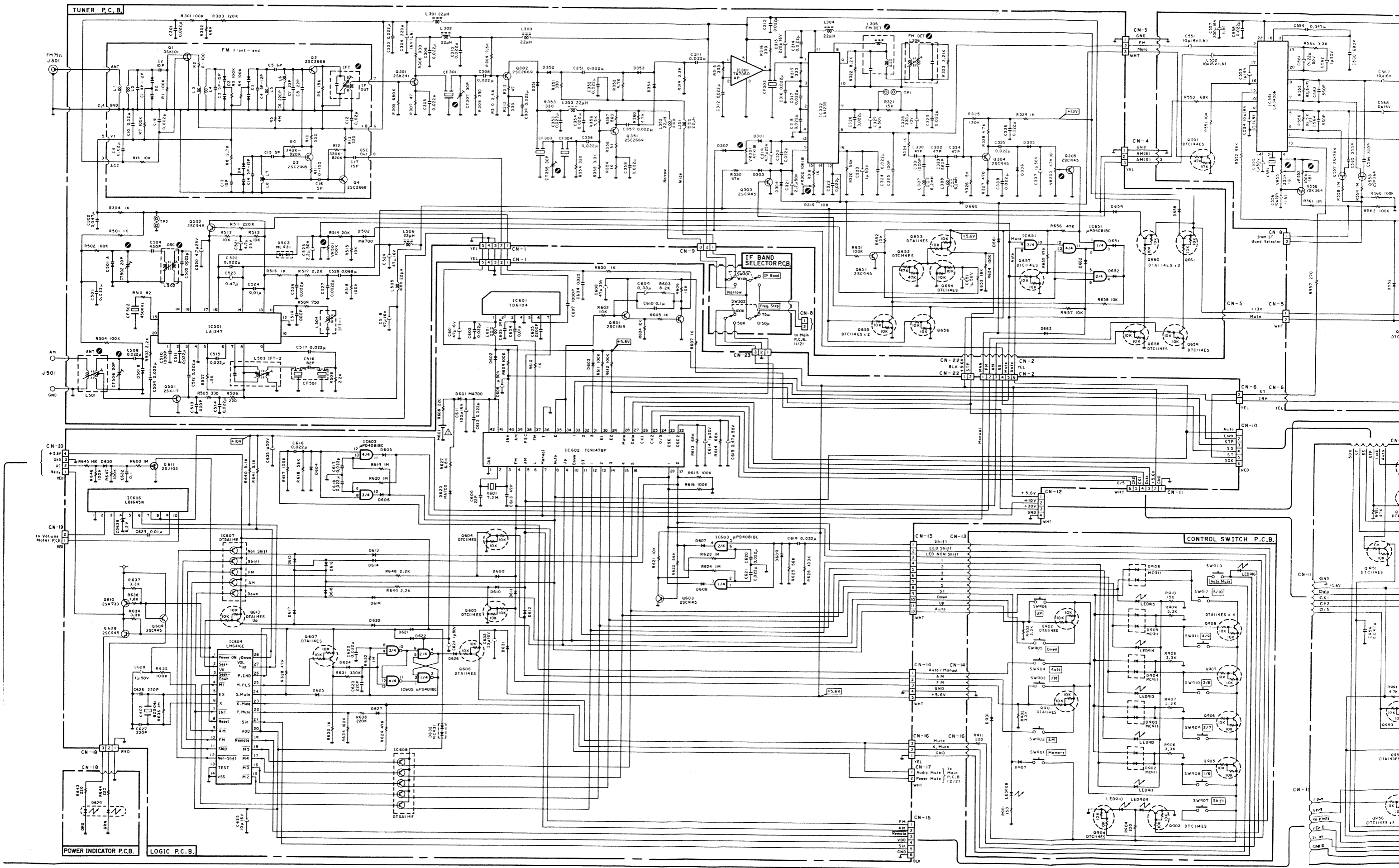


Fig. 6.2.2.3 Sor SR-4 (Other)

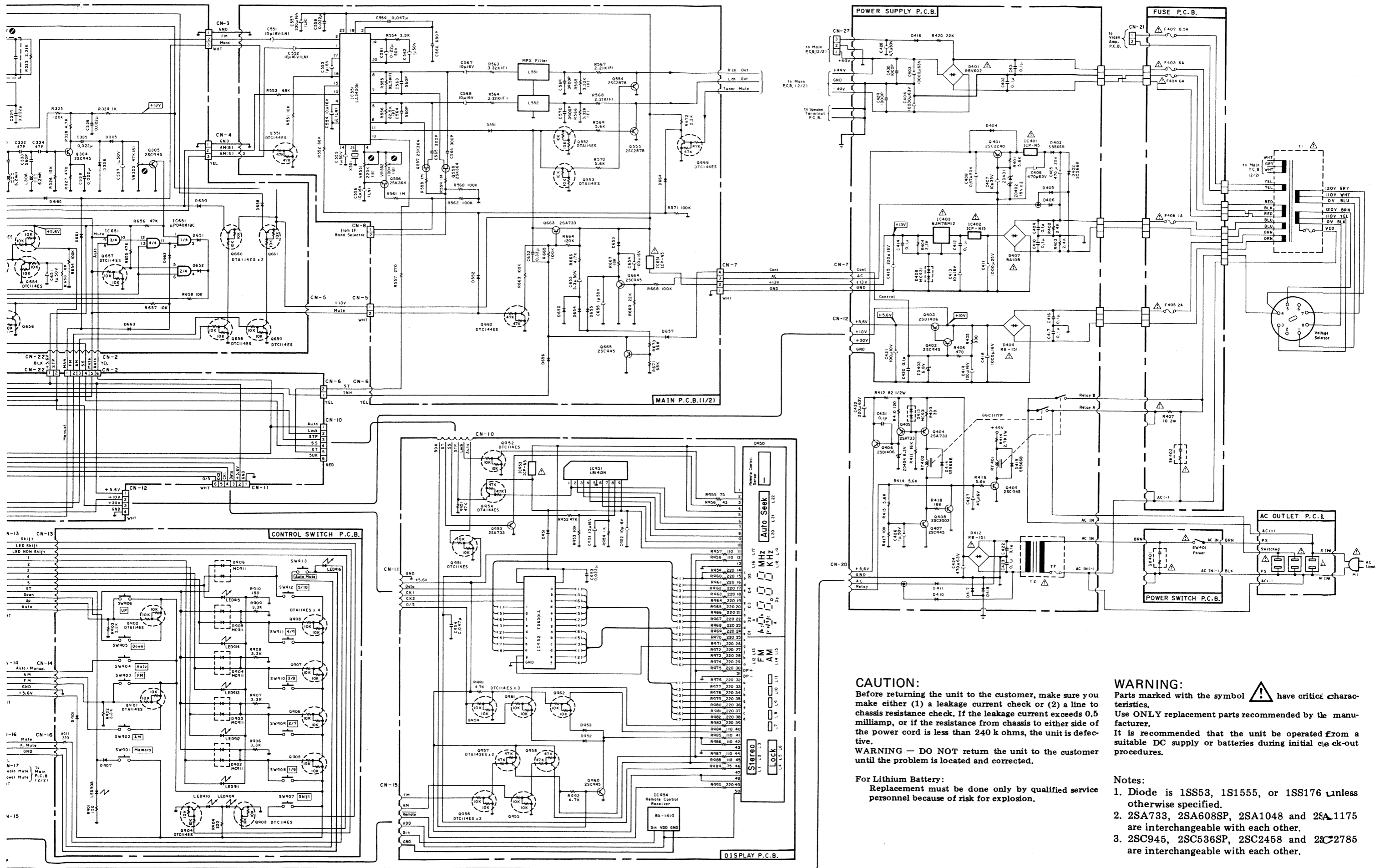



Fig. 6.2.2.3 Sor SR-4 (Other)

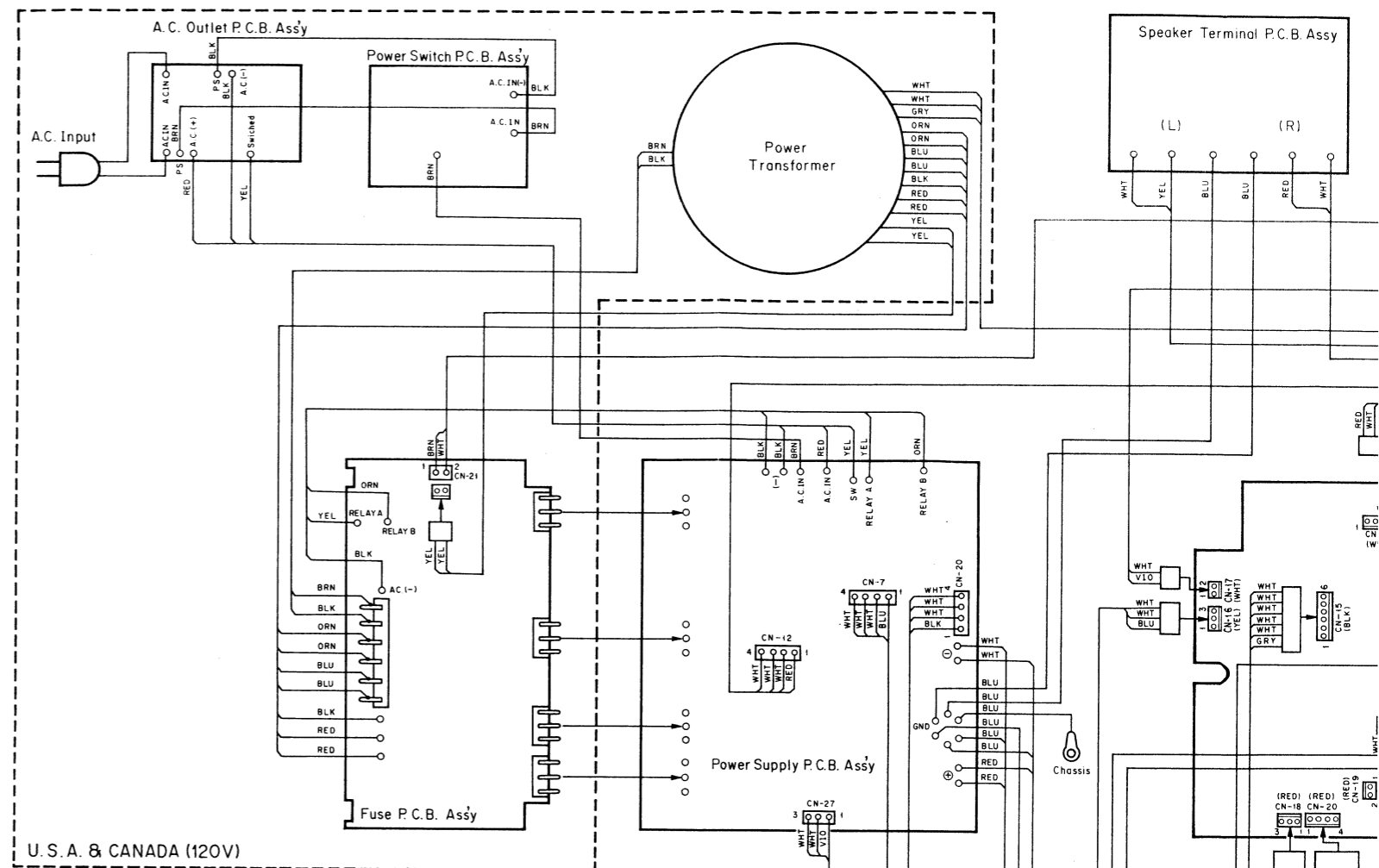
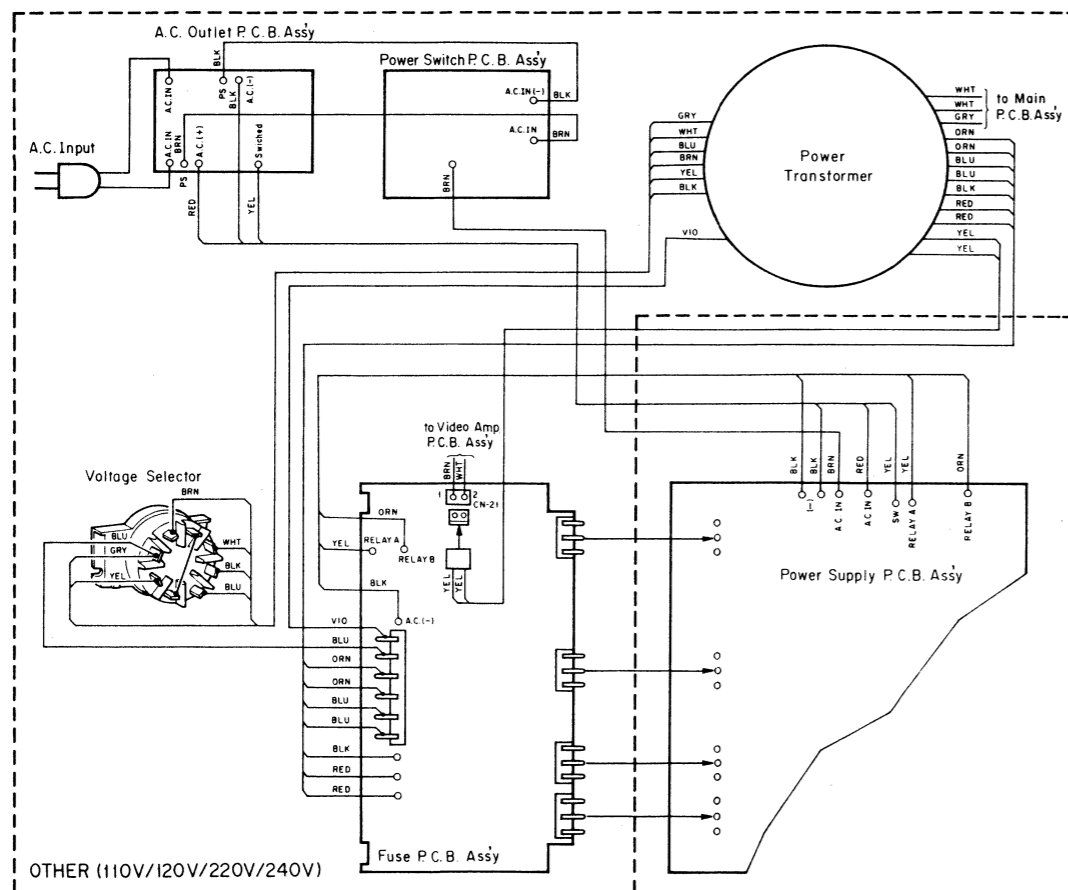
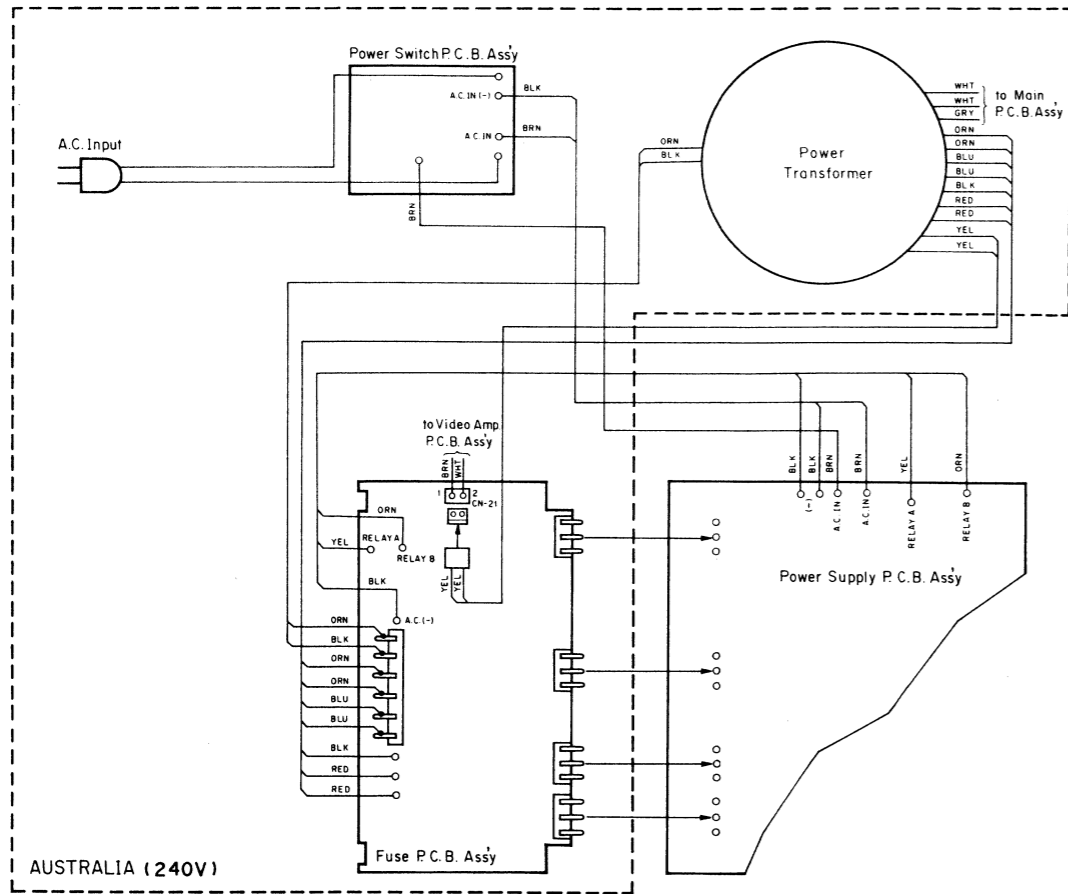
**CAUTION:**  
 Before returning the unit to the customer, make sure you make either (1) a leakage current check or (2) a line to chassis resistance check. If the leakage current exceeds 0.5 milliamp, or if the resistance from chassis to either side of the power cord is less than 240 k ohms, the unit is defective.  
**WARNING — DO NOT** return the unit to the customer until the problem is located and corrected.

**For Lithium Battery:**  
 Replacement must be done only by qualified service personnel because of risk for explosion.

**WARNING:**  
 Parts marked with the symbol  have critical characteristics. Use **ONLY** replacement parts recommended by the manufacturer. It is recommended that the unit be operated from a suitable DC supply or batteries during initial check-out procedures.

- Notes:**
- Diode is 1SS53, 1S1555, or 1SS176 unless otherwise specified.
  - 2SA733, 2SA608SP, 2SA1048 and 2SA1175 are interchangeable with each other.
  - 2SC945, 2SC536SP, 2SC2458 and 2SC2785 are interchangeable with each other.

7. WIRING DIAGRAM

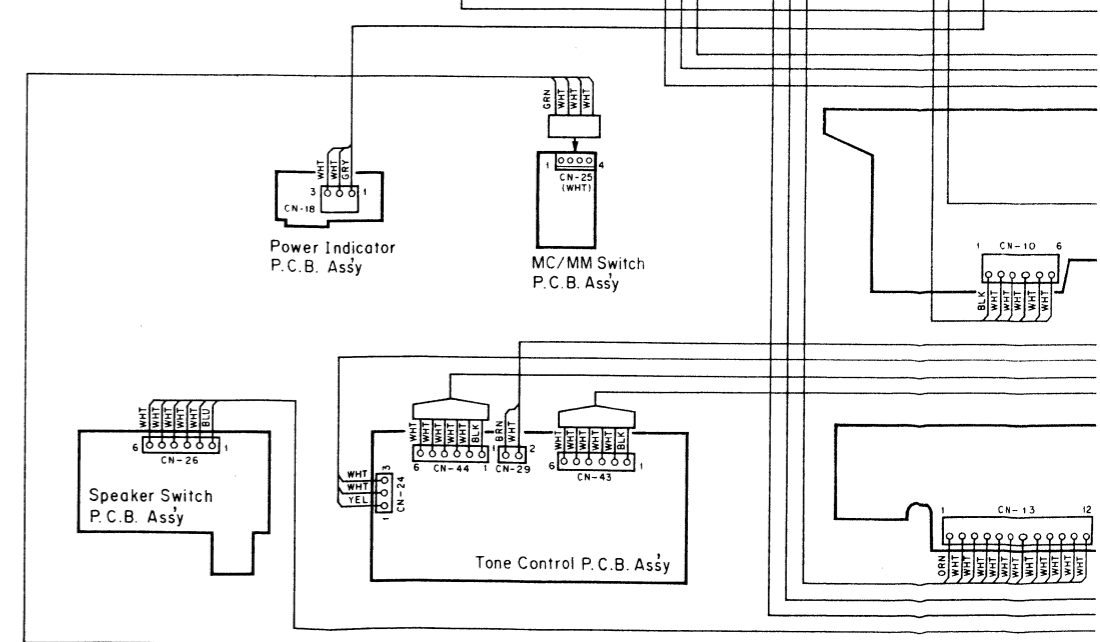


Notes:

1. Table of wire colors

- |              |              |
|--------------|--------------|
| BRN - Brown  | BLU - Blue   |
| RED - Red    | VIO - Violet |
| ORN - Orange | GRY - Gray   |
| YEL - Yellow | WHT - White  |
| GRN - Green  | BLK - Black  |

2. Component side view of the P.C.B. is illustrated unless otherwise specified.



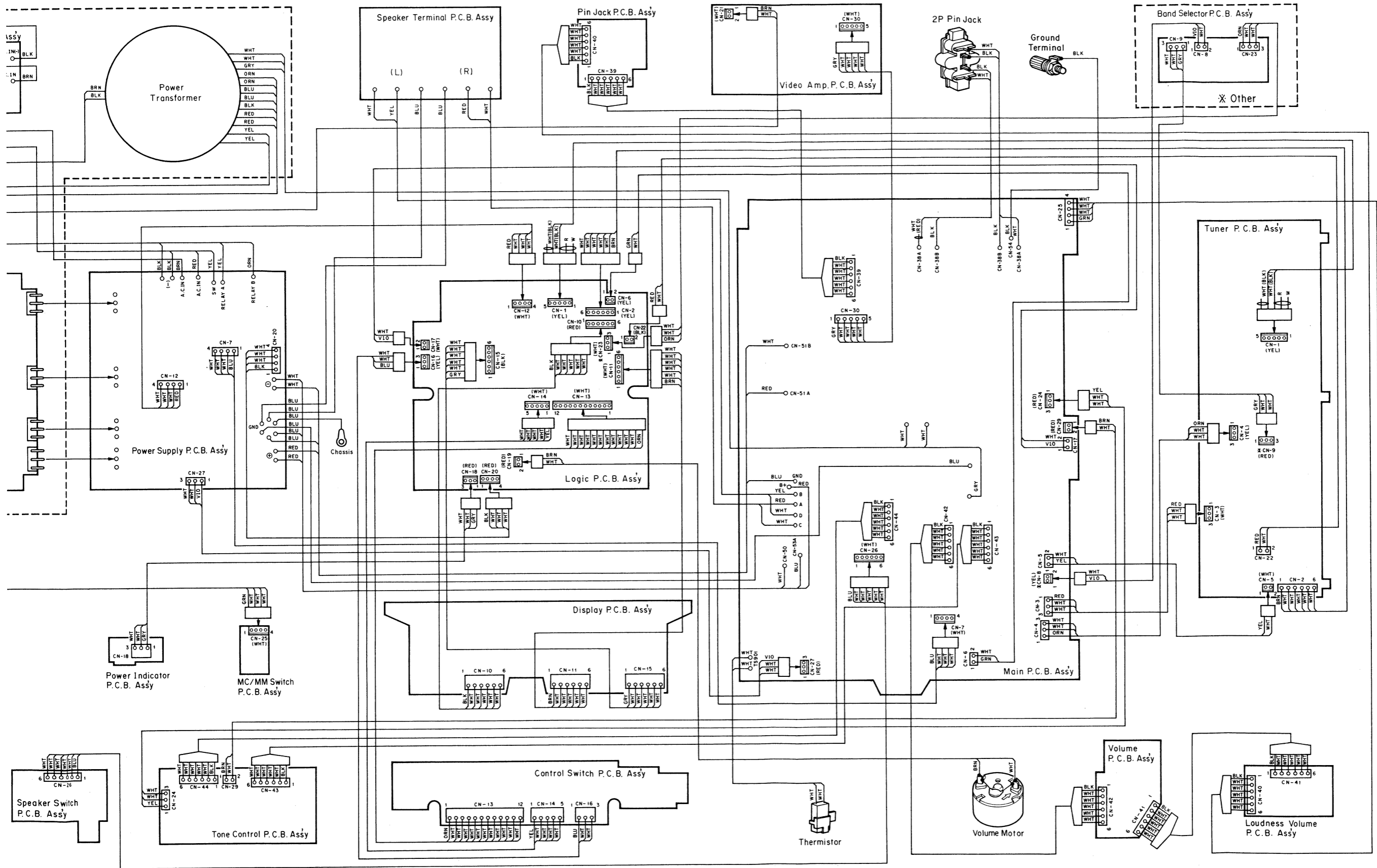


Fig. 7







# Service Information



Model Nakamichi SR-4E (Germany)  
 (Stereo Receiver)  
 Serial No. from D10601001 -  
 Subject Service Manual for SR-4E (Germany)

No. OOD-SI-3104 (1/24)  
 Date 24 August 1987

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3. 10.	Fuse P.C.B. Ass'y	9
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3. 13.	Power Supply P.C.B. Ass'y	12
3. 14.	Logic P.C.B. Ass'y	14
3. 15.	Display P.C.B. Ass'y	16
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## 1. GENERAL

### 1.1. Introduction

For the following items, refer to the Service Manual SR-4/SR-4A which has already been issued by Nakamichi.

- o Parts Location for Electrical Adjustment
- o Electrical Adjustments: Apply the adjustment procedures for Australia version.
- o IC Block Diagrams
- o Block Diagrams

### 1.2. Package Ass'y and Accessory Ass'y

Schematic Ref. No.	Part No.	Description	Q'ty	Schematic Ref. No.	Part No.	Description	Q'ty
	FA03594A	Package Ass'y (SR-4E (Germany))	1		DA04056A	Accessory Ass'y (SR-4E (Germany))	1
01	OF04058A	Carton Box (SR-4E)	1	01	OB90070A	AM Loop Antenna Holder	1
02	OF04041A	Packing L	1	02	OB90081A	Feeder Antenna	1
03	OF04042A	Packing R	1	03	OB90208A	Antenna Adapter EP	1
04	OF03670A	Poly-Sheet	1	04	OB90198A	AM Loop Antenna	1
				05	OB90242A	Battery	1
				06	DA04042A	Remote Control Unit	1
				—	OD03092B	Poly-Bag 320x340x0.08	1
				—	OD04449A	Important Notice Card	1
				—	OD04764B	Owner's Manual SR-4E/3E/2E, SR-4/3/2 (English/German/French)	1
				—	OF04043A	Poly-Bag 80x150	1

## 2. MECHANISM ASS'Y AND PARTS LIST

### 2.1. Synthesis

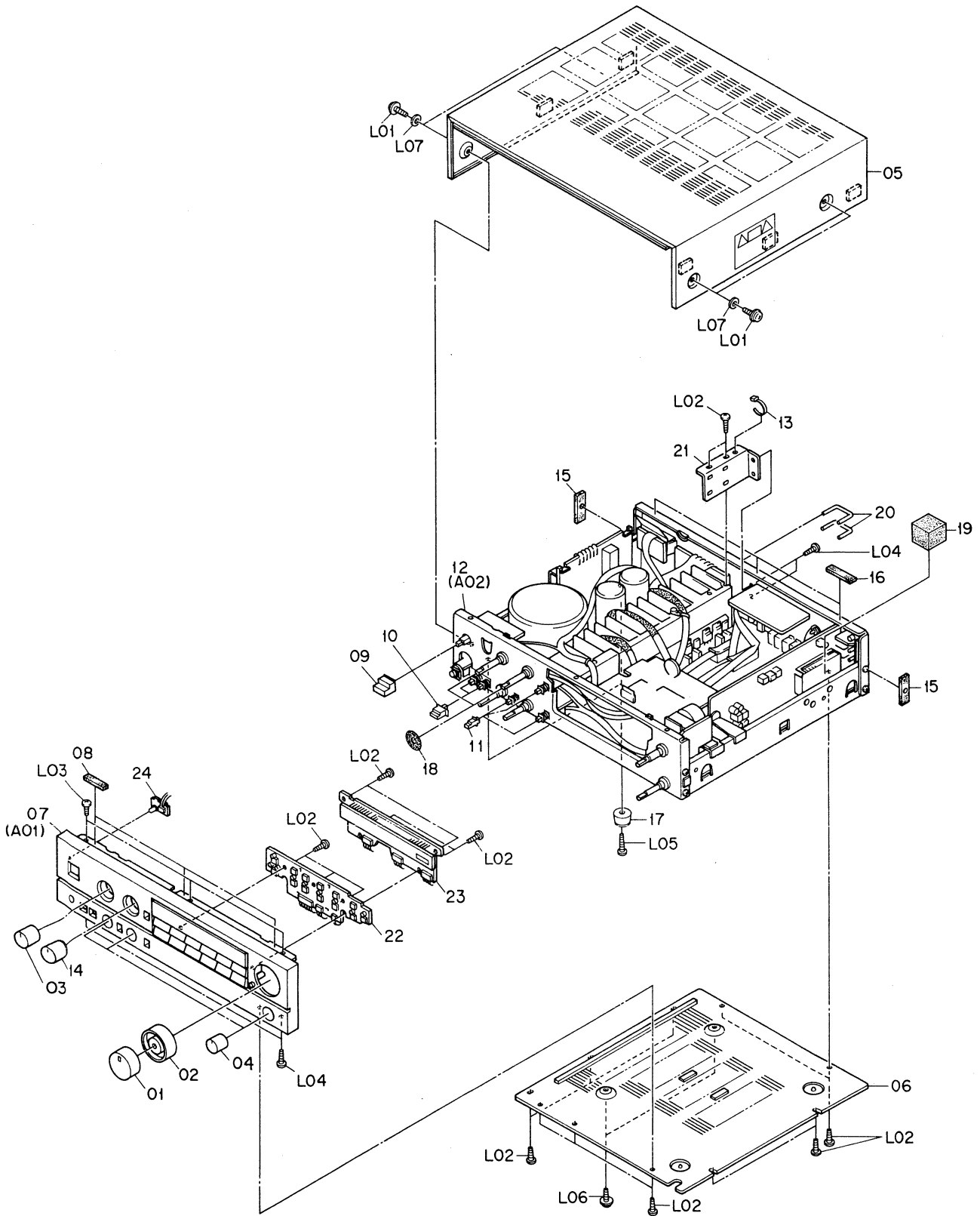


Fig. 2.1

2.2. Front Panel Ass'y (A01)

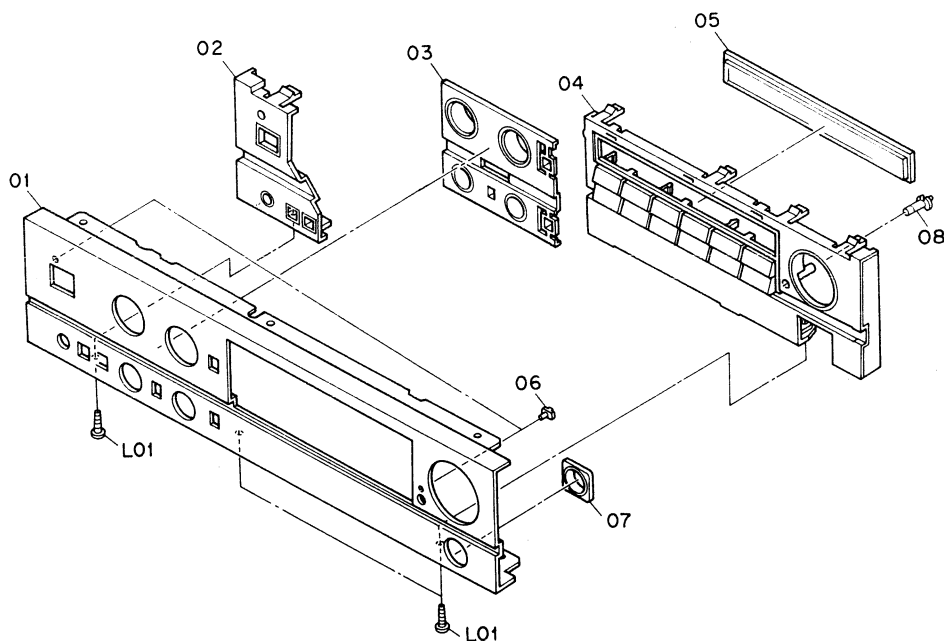


Fig. 2.2

Schematic Ref. No.	Part No.	Description	Q'ty	Schematic Ref. No.	Part No.	Description	Q'ty
		<b>Synthesis</b> Serial No.: D10601001 -		<b>A01</b>	<b>HA05271A</b>	<b>Front Panel Ass'y (SR-4E (Germany))</b> Serial No.: D10601001 -	<b>1</b>
01	HA05241A	Volume Knob Ass'y	1				
02	HA05242A	Balance Knob Ass'y	1	01	OH05086A	Front Panel	1
03	HA05105A	Selector Knob Ass'y	1	02	OH04935C	Front Escutcheon L	1
04	HA05106A	Tone Control Knob Ass'y	3	03	OH04936A	Front Escutcheon C	1
05	HA05234A	Top Cover Ass'y (Consisting of the followings:)	1	04	HA05224A	Front Escutcheon R Ass'y	1
	(OH04934C)	Top Cover	(1)	05	OH04938A	Display Lens	1
	(OJ05261A)	Top Cover Cushion	(5)	06	OH05039A	Power Lens	2
	(OM04377B)	Caution Label	(1)	07	OH05040A	Loudness Escutcheon	1
	(MA01001A)	F. Code Labels	(1)	08	OH05041A	Muting Switch Knob	1
06	JA04283A	Bottom Cover Ass'y (Consisting of the followings:)	1	L01	OE00921A	BT3x8 @ Binding (Black Chromate)	3
	(OE00888A)	BT3x12 @ Binding	(2)				
	(OJ05162A)	Leg T-S	(2)				
	(OJ05309A)	BS Damper 1 VR	(2)				
	(OJ05324C)	Bottom Cover	(1)				
	(OJ05367A)	Heat Sink Cushion	(1)				
	(OM04377B)	Caution Label	(1)				
07	HA05271A	Front Panel Ass'y (SR-4E (Germany))	1				
08	OJ05364A	Top Cover Cushion T4	5				
09	OH04947A	Power Switch Knob	1				
10	OH04950B	Push Switch Knob 10L	2				
11	OH04949B	Push Switch Knob 5L	3				
12	JA04289A	Chassis Ass'y (SR-4E (Germany))	1				
13	OB90019A	Insu-Lock SKB80	37				
14	HA05243A	Selector Knob Ass'y	1				
15	OJ05226A	Side Cushion	2				
16	OJ05363A	Top Cover Cushion T3	3				
17	OJ05162A	Leg T-S	2				
18	OJ05258B	Selector Knob Himelon	2				
19	OJ05365A	Front-end Cushion	1				
20	OB90256A	U-shape Pin 14	2				
21	OJ05204B	Heat Sink Holder C	1				
22	BA06593A	Control Switch P.C.B. Ass'y	1				
23	BA06646A	Display P.C.B. Ass'y	1				
24	BA06645A	Power Indicator P.C.B. Ass'y	1				
L01	OE03032A	BT4x8 @ Pan Washer-faced (Black Chromate)	4				
L02	OE00868A	BT3x8 @ Binding	19				
L03	OE00857A	BT3x6 @ Binding	3				
L04	OE00921A	BT3x8 @ Binding (Black Chromate)	4				
L05	OE00888A	BT3x12 @ Binding	2				
L06	OE03157A	BT3x8 @ Binding with Washer	2				
L07	OE03410A	Washer 4.3x8x0.8	4				
-	OM04897A	Serial No. Seal	1				
-	OM04952A	DBP Label	1				

2.3. Chassis Ass'y (A02)

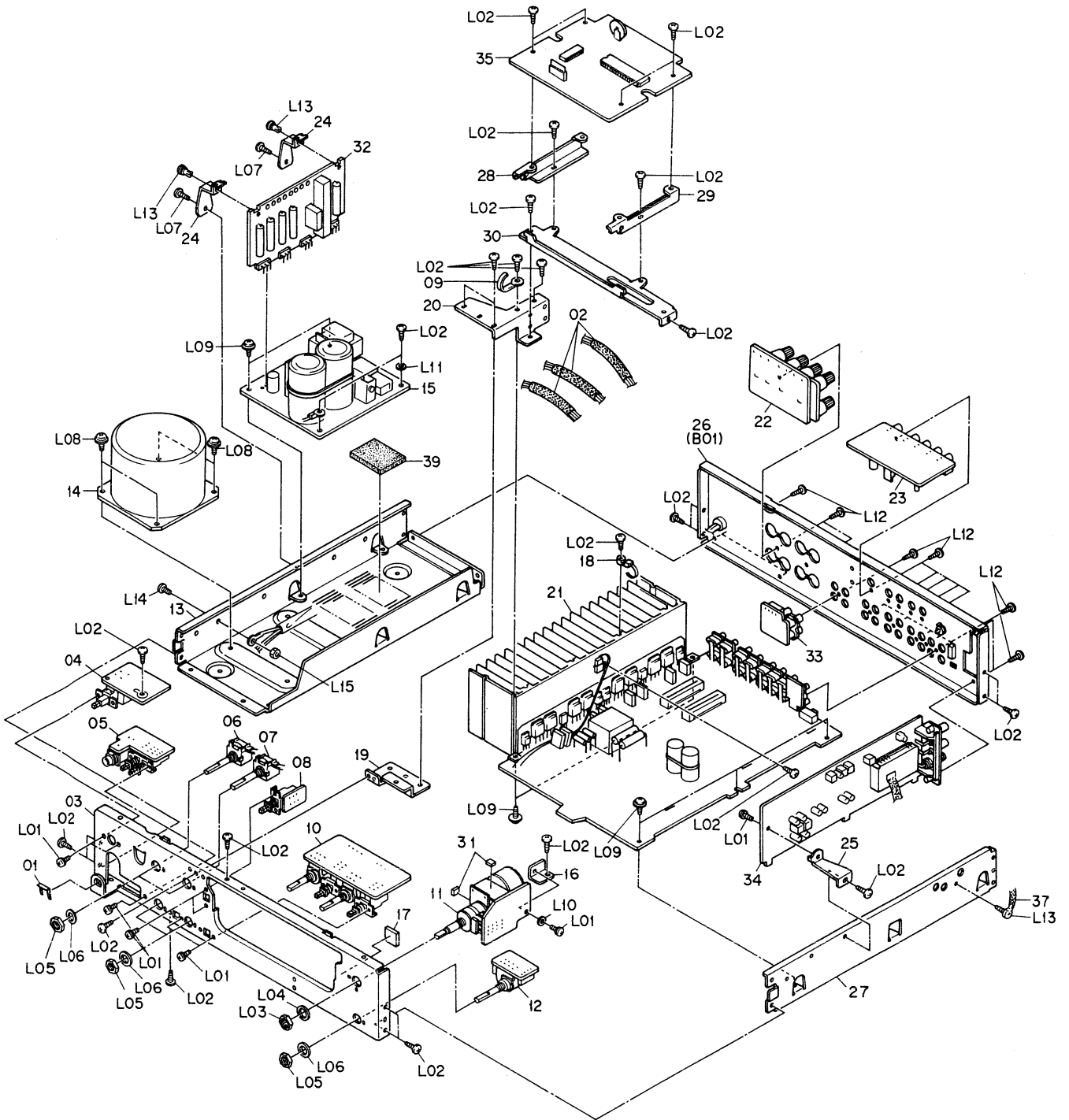


Fig. 2.3

2.4. Rear Panel Ass'y (B01)

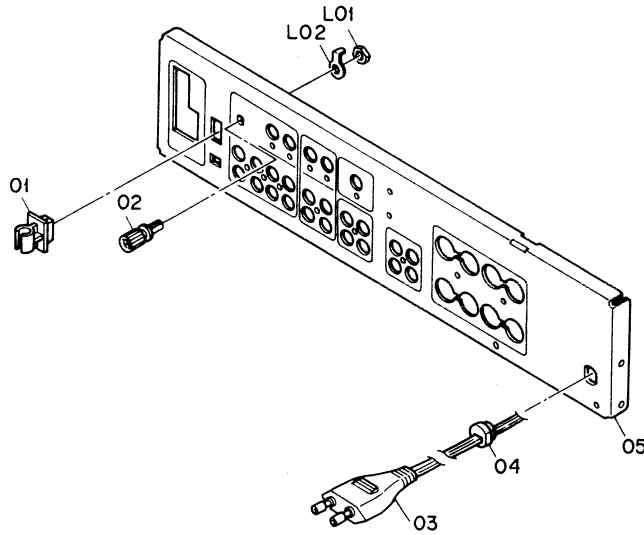


Fig. 2.4

Schematic Ref. No.	Part No.	Description	Q'ty	Schematic Ref. No.	Part No.	Description	Q'ty
A02	JA04289A	Chassis Ass'y (SR-4E (Germany)) Serial No.: D10601001 -	1	L16	OE03321A	ST3x6 @ Binding	1
				—	OJ05373B	Diode Barrier	1
				—	OM04956A	Lithium Battery Caution Label	1
				—	OM03700A	Earth Mark Label	1
01	OJ05092A	Snap Plate	1	B01	HA05268A	Rear Panel Ass'y (SR-4E (Germany)) Serial No.: D10601001 -	1
02	OB80126A	Glass Fiber Tube	3				
03	OJ05339A	Front Chassis	1	01	OB90071A	AM Loop Antenna Holder	1
04	BA06845A	Power Switch P.C.B. Ass'y	1	02	OB81604A	Ground Terminal T-5435	1
05	BA06600A	Speaker Switch P.C.B. Ass'y	1	03	OB90270A	Power Cord	1
06	OB70101A	Rotary Switch 370mm	1	04	OB08325A	Cord Bushing SR-6W-1	1
07	OB70102A	Rotary Switch 340mm	1	05	OH05087A	Rear Panel	1
08	BA06608A	MM/MC Switch P.C.B. Ass'y	1	L01	—	Nut Ground Terminal	(1)
09	OE03145A	Coating Clip CS-9	1	L02	—	Earth Lug (Ground Terminal)	(1)
10	BA06598A	Tone Control P.C.B. Ass'y	1				
11	BA06597A	Volume Motor P.C.B. Ass'y	1				
12	BA06604A	Loudness Volume P.C.B. Ass'y	1				
13	OJ05325B	Power Supply Chassis	1				
14	OB50088A	Power Transformer	1				
15	BA06599A	Power Supply P.C.B. Ass'y	1				
16	OJ05331A	Motor Holder	1				
17	OJ05307A	BS Damper 1R	1				
18	OB90210A	Insu-Lock T30MR-HS	1				
19	OJ05323B	Heat Sink Holder B	1				
20	OJ05334A	Heat Sink Holder A	1				
21	BA06849A	Main P.C.B. Ass'y	1				
22	BA06843A	Speaker Terminal P.C.B. Ass'y	1				
23	BA06842A	Video Amp. P.C.B. Ass'y	1				
24	OJ05321A	Fuse P.C.B. Holder	2				
25	OJ05322A	Tuner P.C.B. Holder	1				
26	HA05268A	Rear Panel Ass'y (SR-4E (Germany))	1				
27	OJ05202C	Side Chassis	1				
28	OJ05332A	Logic P.C.B. Holder L	1				
29	OJ05333A	Logic P.C.B. Holder R	1				
30	OJ05340B	P.C.B. Holder	1				
31	OJ05366A	Volume Damper	2				
32	BA06848A	Fuse P.C.B. Ass'y	1				
33	BA06844A	Pin Jack P.C.B. Ass'y	1				
34	BA06846A	Tuner P.C.B. Ass'y	1				
35	BA06610A	Logic P.C.B. Ass'y	1				
36	OJ05380A	P.C.B. Cushion	1				
37	OB81738A	GND Wire	1				
L01	OE00612A	M3x6 @ Pan (2A)	9				
L02	OE00868A	BT3x8 @ Binding	26				
L03	—	Nut Hex. M9	(1)				
L04	—	Washer	(1)				
L05	—	Nut Hex. M7	(5)				
L06	—	Washer	(5)				
L07	OE00857A	BT3x6 @ Binding	2				
L08	OE03032A	BT4x8 @ Pan Washer-faced (Black Chromate)	4				
L09	OE03157A	BT3x8 @ Binding with Washer	7				
L10	OE03409A	Washer 3.2x5.7x1.2 (Copper)	1				
L11	OJ05294A	Washer 3.1x8x1 (Copper)	1				
L12	OE00921A	BT3x8 @ Binding (Black Chromate)	17				
L13	OJ05284A	Plastic Rivet 3x4.5	2				
L14	OE00506A	Nut Hex. M4	1				
L15	OE00929A	M4x8 @ Binding	1				

3. MOUNTING DIAGRAMS AND PARTS LIST

- Notes: 1. Mounting diagram shows a dip side view of the printed circuit board.  
 2. Diode is 1SS53, 1S1555, or 1SS176 unless otherwise specified.  
 3. Following transistors are interchangeable with each other.  
 a. 2SA733, 2SA608SP, 2SA1048, 2SA1175  
 b. 2SC945, 2SC536SP, 2SC2458, 2SC2785  
 4. Abbreviation for part name:  
 TR — Transistor, SiD — Silicon Diode, ZD — Zener Diode, Varicap — Variable Capacitance Diode  
 RK — Carbon Resistor, RM — Metal Film Resistor, RF — Fail Safe Type Resistor, RW — Wire Wound Resistor  
 CE — Electrolytic Capacitor, CM — Mylar Capacitor, CC — Ceramic Capacitor, CP — PP Capacitor  
 CMM — Metalized Mylar Capacitor, CSP — Polystyrene Capacitor, C — Mica Capacitor

3.1. Power Switch P.C.B. Ass'y

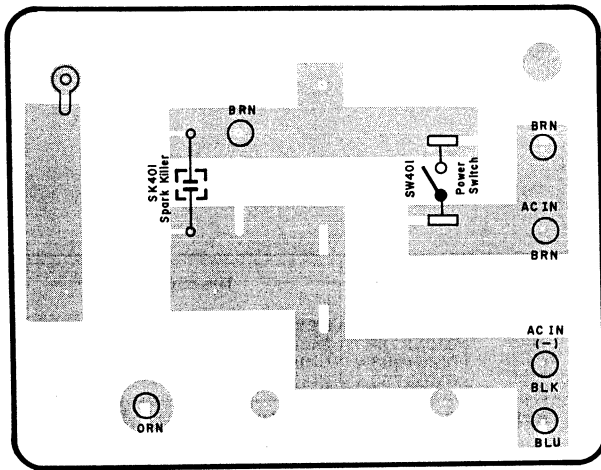


Fig. 3.1

3.2. Pin Jack P.C.B. Ass'y

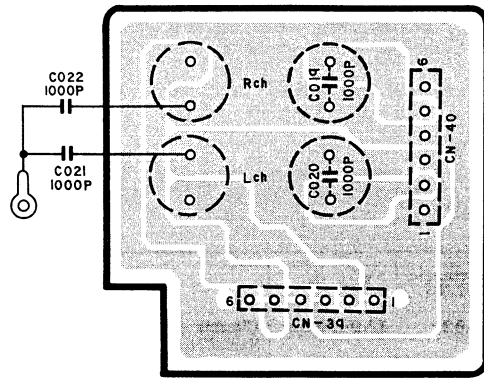


Fig. 3.2

3.3. Power Indicator P.C.B. Ass'y

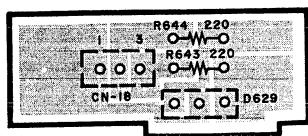


Fig. 3.3

3.4. MM/MC Switch P.C.B. Ass'y

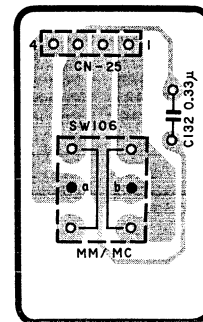


Fig. 3.4

3.5. Speaker Switch P.C.B. Ass'y

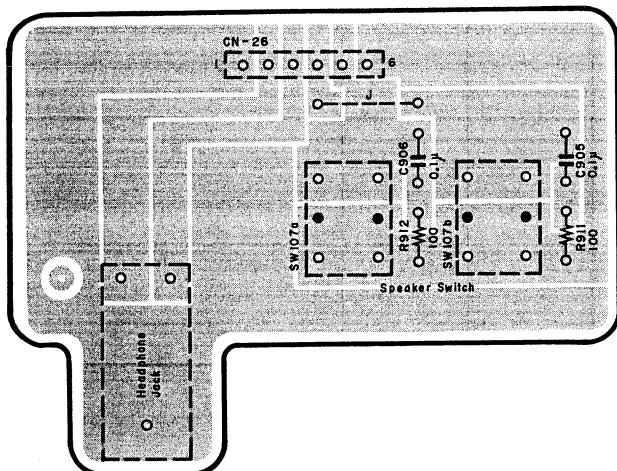


Fig. 3.5

3.6. Loudness Volume P.C.B. Ass'y

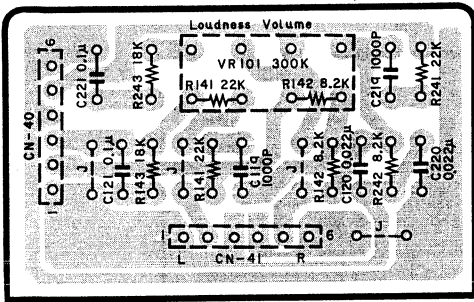


Fig. 3.6

3.7. Volume Motor P.C.B. Ass'y

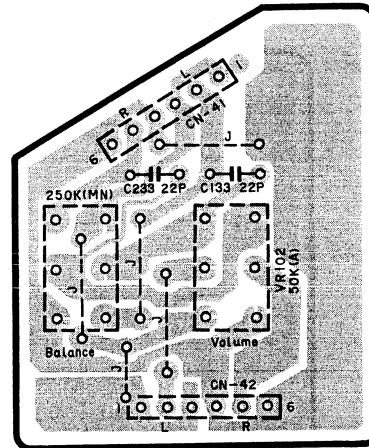


Fig. 3.7

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
SW401 SK401	BA06845A	Power Switch P.C.B. Ass'y	R911,912 C905,906 SW107 CN26	BA06600A	Speaker Switch P.C.B. Ass'y
	OB60443A	Power Switch P.C.B.		OB60444A	Speaker Switch P.C.B.
	OB71006A	Power Switch SDL1P		OB09653A	RK 100 1/6W J
	OB90264A	Spark Killer XE-333		OB41298A	CMM 0.1μ 50V J
	OB82994A	PD Connector V430 BRN (2)		OB70098A	Push Switch SPUN22
	OB82995A	PD Connector V430 BLK (1)		OB82966A	6P Connector WHT
C019,020 021,022 CN39,40	BA06844A	Pin Jack P.C.B. Ass'y	VR101 R141,241 R142,242 R143,243 C119,219 C120,220 C121,221 CN40,41	BA06604A	Loudness Volume P.C.B. Ass'y
	OB60435D	Pin Jack P.C.B.		OB60433D	Loudness Volume P.C.B.
	OB41007A	CC 1000P 25V		OB30075A	VR 300K (B)x2
	OB81013A	Dip Mate 6P WH6D-1		OB09709A	RK 22K 1/6W J
	OB81710A	4P Pin Jack WH6D-1 (1)		OB09699A	RK 8.2K 1/6W J
D629 R643,644 CN18	OB83133A	GND Wire (1)	OB09707A	RK 18K 1/6W J	
	BA06645A	Power Indicator P.C.B. Ass'y	OB41791A	CSP 1000P 50V J	
	OB60449A	Power Indicator P.C.B.	OB41290A	CM 0.022μ 50V J	
	OB12421A	LED SRP-56PDWF (GRN/RED)	OB41298A	CMM 0.1μ 50V J	
C132 SW106 CN25	OB82958A	RK 220 1/6W J	OB81013A	Dip Mate 6P WH6D-1	
	BA06608A	MM/MC Switch P.C.B. Ass'y	VR102 C133,233 C630 CN19 CN41,42	BA06597A	Volume Motor P.C.B. Ass'y
	OB60436D	MM/MC Switch P.C.B.		OB60434D	Volume Motor P.C.B.
	OB41304A	CMM 0.33μ 50V J		OB30074A	Volume Motor Ass'y
	OB70105A	Push Switch SPUN12 6.5mm		OB41702A	CSP 22P 50V J
OB82965A	4P Connector WHT	OB41617A		CC 0.1μ 25V Z	
			OB82959A	2P Connector RED	
			OB81013A	Dip Mate 6P WH6D-1	

3.8. Speaker Terminal P.C.B. Ass'y

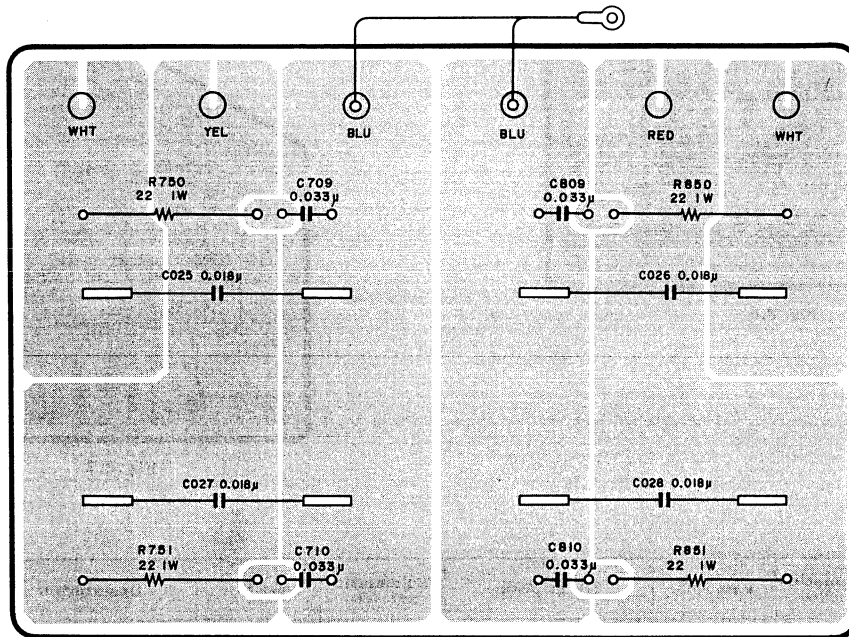


Fig. 3.8

3.9. Tone Control P.C.B. Ass'y

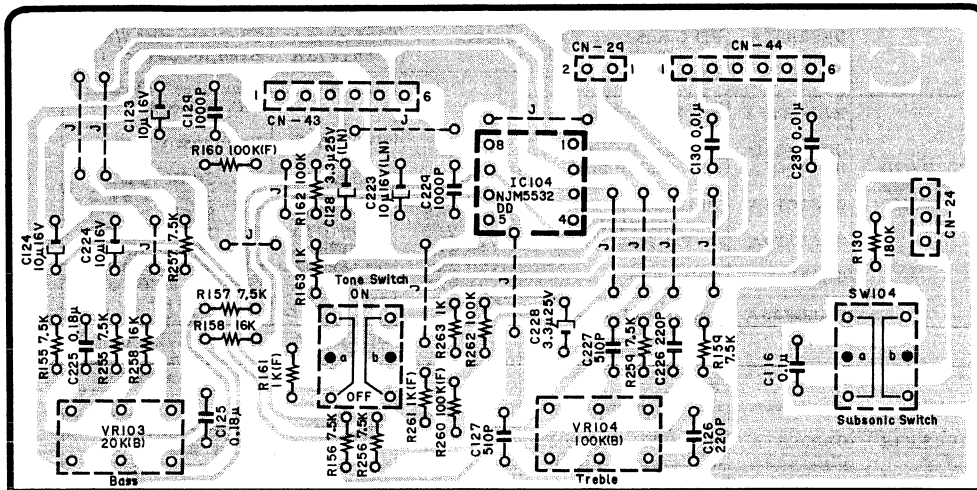


Fig. 3.9

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
R750,751 850,851 C025,026 027,028 C709,710 809,810	BA06843A	Speaker Terminal P.C.B Ass'y	IC104 VR103 VR104 R130 R155,156 157,159 255,256 257,259 R158,258 R160,260 R161,261 R162,262 R163,263 SW103,104 C116 C123,124 223,224	BA06598A	Tone Control P.C.B. Ass'y	C125,225	OB41301A	CMM 0.18µ 50V J
	OB60446A	Speaker Terminal P.C.B.		OB60432D	Tone Control P.C.B.	C126,226	OB41788A	CSP 220P 50V J
	OB24140A	RF 22 1W		OB11204A	IC NJM5532DD	C127,227	OB41789A	CSP 510P 50V J
	OB41289A	CM 0.018µ 50V J		OB30073A	VR 20K (B)x2	C128,228	OB40460A	CE 3.3µ 50V (LN)
	OB41292A	CMM 0.033µ 50V J		OB30062A	VR 100K (B)x2	C129,229	OB41791A	CSP 1000P 50V J
	OB81595B	Speaker Terminal 8P (1)		OB09731A	RK 180K 1/6W J	C130,230	OB41286A	CM 0.01µ 50V J
	OB83056B	GND Wire (1)		OB09698A	RK 7.5K 1/6W J	CN24	OB82964A	3P Connector RED
						CN29	OB83004A	2P Connector RED
						CN43,44	OB81013A	Dip Mate 6P WH6D-1
							OB82972A	Ribbon Cable 6P 410mm (1)
							OB82973A	Ribbon Cable 6P 310mm (1)



3.10. Fuse P.C.B. Ass'y

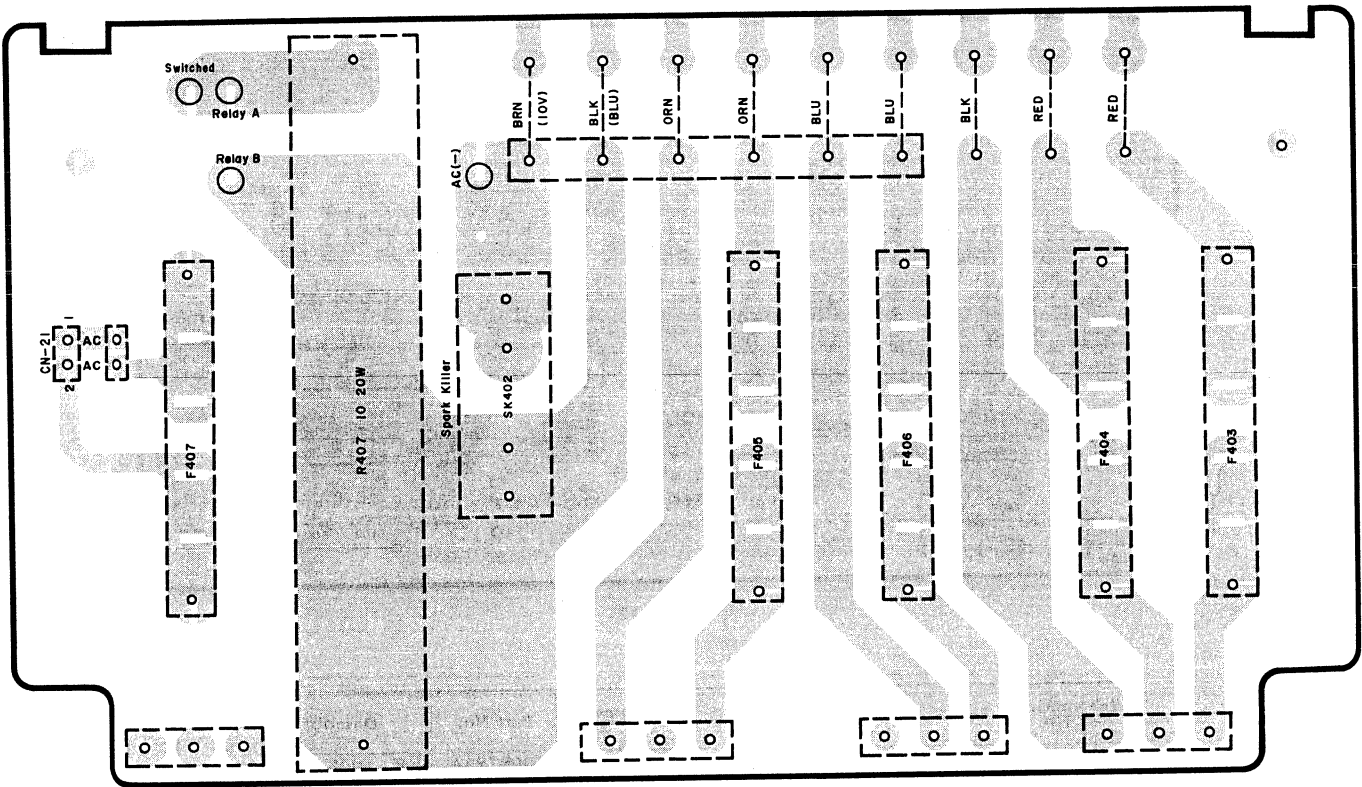


Fig. 3.10

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
	BA06848A	Fuse P.C.B. Ass'y		OM04194A	Fuse Label T315mA (1)
R407	OB60447A	Fuse P.C.B.		OM04391A	Fuse Label T1.25A (1)
SK402	OB24145A	RC 10 2W		OM04443A	Fuse Label T3.15Ax2 (1)
F403,404	OB90264A	Spark Killer			
F405	OB08281A	Fuse T3.15A 250V			
F406	OB02240A	Fuse T1.25A 250V			
F407	OB08263U	Fuse T315mA 250V			
CN21	OB08252A	Fuse T250mA 250V			
	OB82961A	2P Connector WHT			
	OB81634A	2P-T Post (1)			
	OB81740A	6P Terminal (1)			
	OB81709A	3P-T Post L Angle (4)			
	OB08349B	Fuse Clip (10)			
	OM04137A	Fuse Label T250mA (1)			

3.11. Video Amp. P.C.B. Ass'y

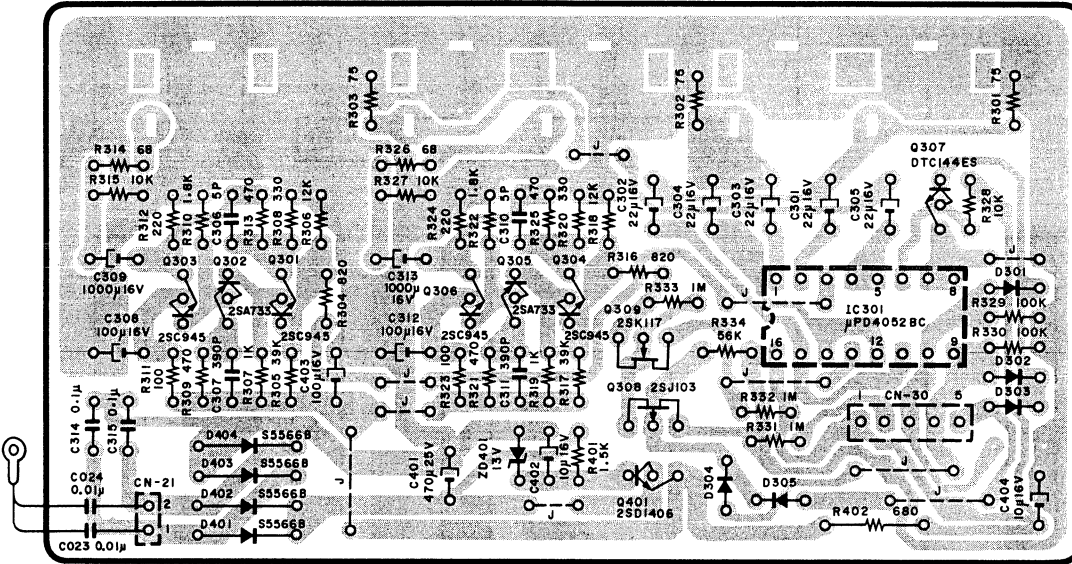


Fig. 3.11

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
	BA06842A	Video Amp. P.C.B. Ass'y	R329,330	OB09725A	RK 100K 1/6W J
			R331,332	OB09749A	RK 1M 1/6W J
			333		
	OB60389E	Video Amp. P.C.B.	R334	OB09719A	RK 56K 1/6W J
IC301	OB11247A	IC $\mu$ PD4052BC	R401	OB09681A	RK 1.5K 1/6W J
Q301,303	OB01872A	TR 2SC945L (P,Q)	R402	OB05794A	RK 680 1/4W J
304,306			C023,024	OB41286A	CM 0.01 $\mu$ 50V J
Q302,305	OB06013A	TR 2SA733 (P,Q)	C301,302	OB01862A	CE 22 $\mu$ 16V
Q307	OB10062A	TR DTC144ES	303,304		
Q308	OB10211A	FET 2SJ103	305		
Q309	OB06129A	FET 2SK117 (Y)	C306,310	OB09276A	CC 5P 50V
Q401	OB06452A	TR 2SD1406 (Y)	C307,311	OB41002A	CP 390P 100V J
D301-305	OB06398A	SiD 1SS176 (5)	C308,312	OB01400A	CE 100 $\mu$ 16V
D401-404	OB12362A	SiD S5566B (4)	403		
ZD401	OB12317A	ZD 13V MTZ13B	C309,313	OB40082A	CE 1000 $\mu$ 16V
R301,302	OB09650A	RK 75 1/6W J	C314,315	OB41298A	CMM 0.1 $\mu$ 50V J
303			C401	OB40094A	CE 470 $\mu$ 25V
R304,316	OB09675A	RK 820 1/6W J	C402,404	OB01412A	CE 10 $\mu$ 16V
R305,317	OB09715A	RK 39K 1/6W J	CN21	OB81223A	2P-T Post WHT
R306,318	OB09703A	RK 12K 1/6W J	CN30	OB81235A	5P-T Post WHT
R307,319	OB09677A	RK 1K 1/6W J		OB81592B	Pin Jack 1P (5)
R308,320	OB09665A	RK 330 1/6W J		OB83133A	GND Wire 80 (1)
R309,313	OB09669A	RK 470 1/6W J			
321,325					
R310,322	OB09683A	RK 1.6K 1/6W J			
R311,323	OB09653A	RK 100 1/6W J			
R312,324	OB09661A	RK 220 1/6W J			
R314,326	OB09649A	RK 68 1/6W J			
R315,327	OB09701A	RK 10K 1/6W J			
328					

3.13. Power Supply P.C.B. Ass'y

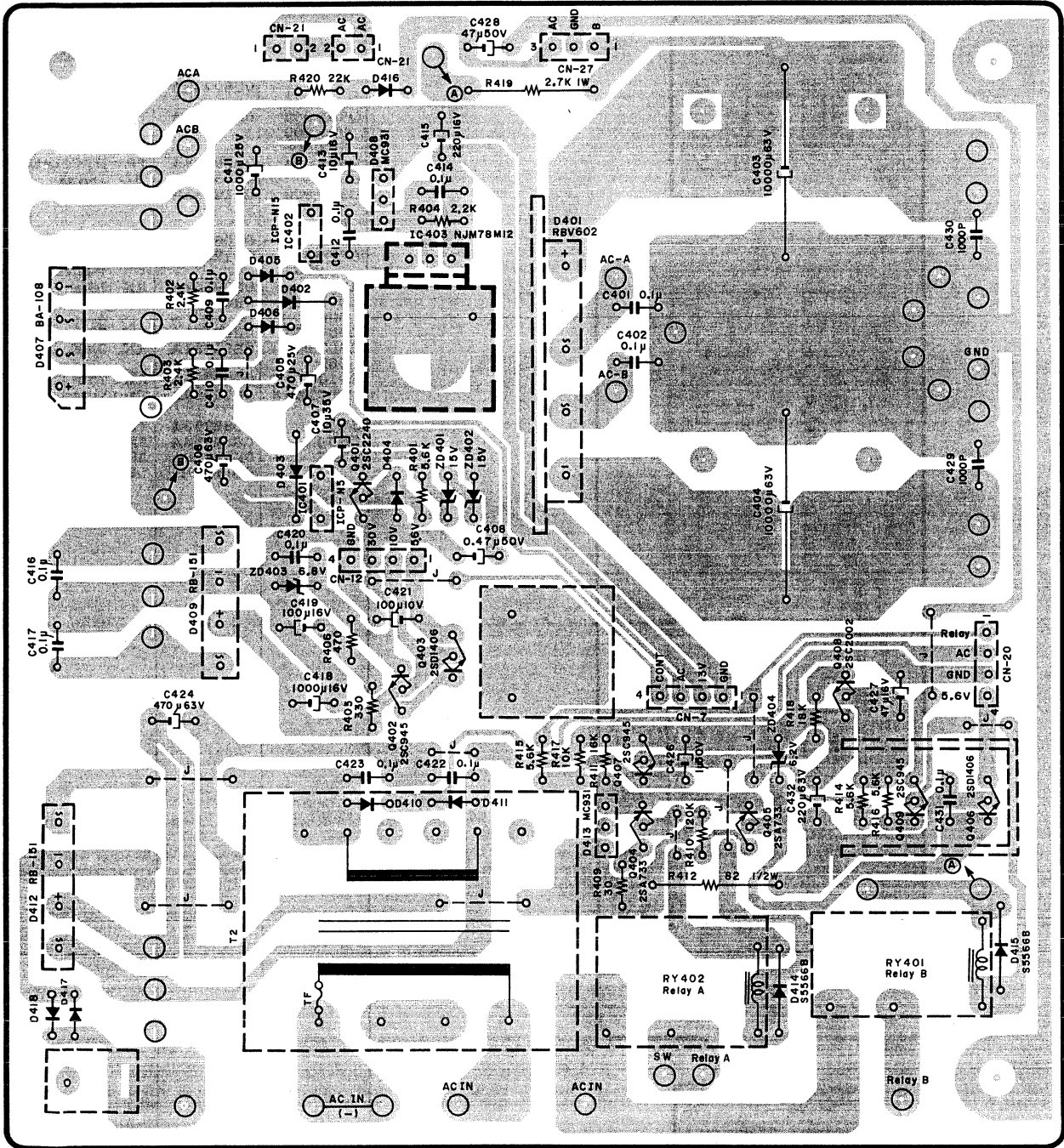


Fig. 3.13

3.12. Control Switch P.C.B. Ass'y

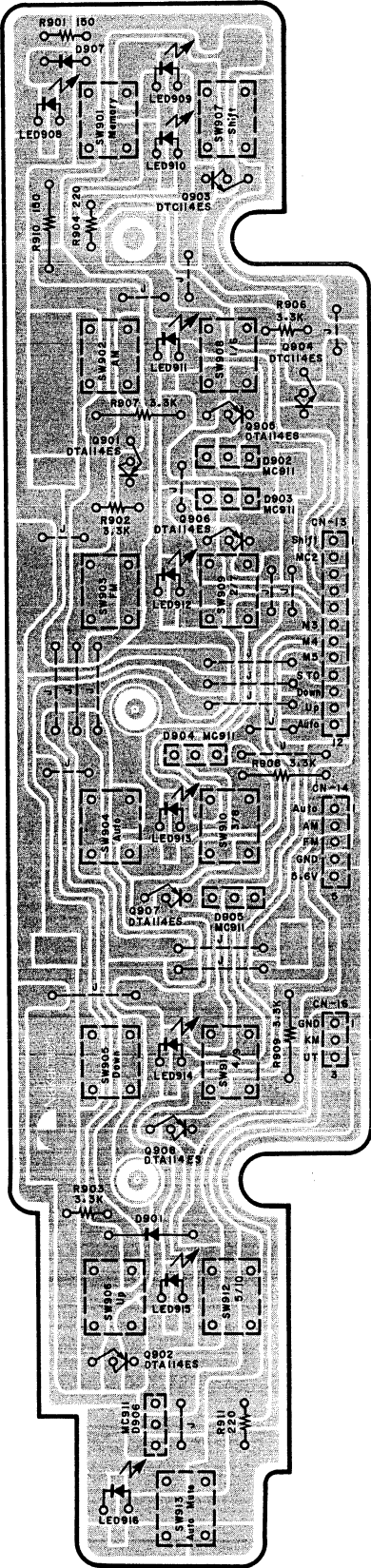


Fig. 3.12

Schematic Ref. No.	Part No.	Description
	BA06593A	Control Switch P.C.B. Ass'y
	OB60442A	Control Switch P.C.B.
Q901,902 905,906 907,908	OB10058A	TR DTA114ES
Q903,904	OB10068A	TR DTC114ES
D901	OB06181A	SID 1SS53
D902,903 904,905 906	OB12391A	SID MC911
D907	OB06398A	SID 1SS176
LED908-916	OB12395A	LED SLR-34PC3F P-Green (9)
R901	OB09657A	RK 150 1/6W J
R902,903 906	OB09689A	RK 3.3K 1/6W J
R904,911	OB09661A	RK 220 1/6W J
R907,908 909	OB01681A	RK 3.3K 1/4W J
R910	OB05795A	RK 150 1/4W J
SW901-913	OB70062A	Tact Switch KHH10910 (13)
CN13	OB82953A	12P Connector WHT
CN14	OB82954A	5P Connector WHT
CN16	OB82956A	3P Connector YEL
	OJ05209B	LED Reflector (9)

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
	BA06599A	Power Supply P.C.B. Ass'y		OB82997B	PD Connector V150 RED (1)
	OB60440A	Power Supply P.C.B.		OB82998A	PD Connector V150 ORN (1)
IC401	OB11248A	IC ICP-N5-T104		OB82999B	PD Connector V150 YEL (2)
IC402	OB11335A	IC ICP-N15-T104		OB83003A	PD Connector V230 BLU (2)
Q401	OB10078A	TR 2SC2240 (GR)		OB83000A	GND Cable V070 BLU (1)
Q402,407	OB01872A	TR 2SC945L (P,Q)		OB90019A	Insu-Lock SKB80 (7)
409				OB90206A	Insu-Lock SKB4M (1)
Q404,405	OB06013A	TR 2SA733 (P,Q)		OE03355A	Earth Lug MET31-0113 (1)
Q408	OB06322A	TR 2SC2002 (K,L)		OJ05309A	BS Damper 1VR (1)
D402,403	OB12362A	SID S5566B		OJ05362A	Earth Plate (1)
414,415				OB11252A	IC 78M12
D404,405	OB06398A	SID 1SS176		OE00612A	M3x6 @Pan (2A) (1)
406,410				OJ05351A	TR Heat Sink (1)
411,416				OB06452A	TR 2SD1406 (Y)
417,418				OE00612A	M3x6 @Pan (2A) (1)
D407	OB06282A	SID DBA10B.C.	IC403	OJ05351A	TR Heat Sink (1)
D408,413	OB12420A	SID MC931		OB06452A	TR 2SD1406 (Y)
D409,412	OB06183A	SID RB-151	Q403	OE00612A	M3x6 @Pan (2A) (1)
ZD401,402	OB12464A	ZD 15V UTZJ15C		OJ05351A	TR Heat Sink (1)
ZD403	OB12440A	ZD 6.8V UTZJ6.8C		OB06452A	TR 2SD1406 (Y)
ZD404	OB12437A	ZD 6.2V UTZJ6.2C	Q406	OB08680B	Heat Sink A (1)
RY401	OB90250A	Relay 24V G6C-1117P		OE00972A	Nut Hex, M3 (1)
RY402	OB90249A	Relay 12V G6C-1117P		OE03319A	M3x8 @Binding (1)
T2	OB50090A	Power Transformer	D401	OB12388A	SID RBV-602
R401,414	OB09695A	RK 5.6K 1/6W J		OE03030A	M3x6 @Binding (1)
415,416				OJ05335B	SID Heat Sink (1)
R402,403	OB09686A	RK 2.4K 1/6W J			
R404	OB09685A	RK 2.2K 1/6W J			
R405	OB09665A	RK 330 1/6W J			
R406	OB09669A	RK 470 1/6W J			
R409	OB09640A	RK 30 1/6W J			
R410	OB09655A	RK 120 1/6W J			
R411	OB09706A	RK 16K 1/6W J			
R412	OB09253A	RF 82 1/2W J			
R417	OB09701A	RK 10K 1/6W J			
R418	OB09707A	RK 18K 1/6W J			
R419	OB24061A	RF 2.7K 1W J			
R420	OB09709A	RK 22K 1/6W J			
C401,402	OB41298A	CMM 0.1μ 50V J			
409,410					
412,414					
416,417					
420,422					
423,431					
C403,404	OB40454A	CE 10000μ 63V			
C405	OB40094A	CE 470μ 25V			
C406,424	OB40134A	CE 470μ 63V			
C407	OB40100A	CE 10μ 35V			
C408	OB40462A	CE 0.47μ 50V			
C411	OB40095A	CE 1000μ 25V			
C413,426	OB01412A	CE 10μ 16V			
C415	OB40079A	CE 220μ 16V			
C418	OB40082A	CE 1000μ 16V			
C419	OB40078A	CE 100μ 16V			
C421	OB40464A	CE 100μ 10V			
C427	OB40077A	CE 47μ 16V			
C428	OB40115A	CE 4.7μ 50V			
C429,430	OB41791A	CSP 1000P 50V J			
C432	OB40132A	CE 220μ 63V			
CN7	OB82947A	4P Connector WHT			
CN12	OB82952A	4P Connector WHT			
CN20	OB82960A	4P Connector RED			
CN27	OB82967A	3P Connector RED			
	OB82983A	PD Connector V340 RED (1)			
	OB82984A	PD Connector V340 WHT (1)			
	OB82985A	PD Connector V290 RED (1)			
	OB82986A	PD Connector V290 WHT (1)			
	OB82987A	PD Connector V330 BLU (1)			
	OB82988A	PD Connector V300 BLU (2)			
	OB82990A	PD Connector V260 YEL (1)			
	OB82991A	PD Connector V150 RED (2)			
	OB82992A	PD Connector V150 WHT (1)			
	OB82993A	PD Connector V100 BLU (1)			
	OB82996A	PD Connector V150 BLK (2)			

3.14. Logic P.C.B. Ass'y

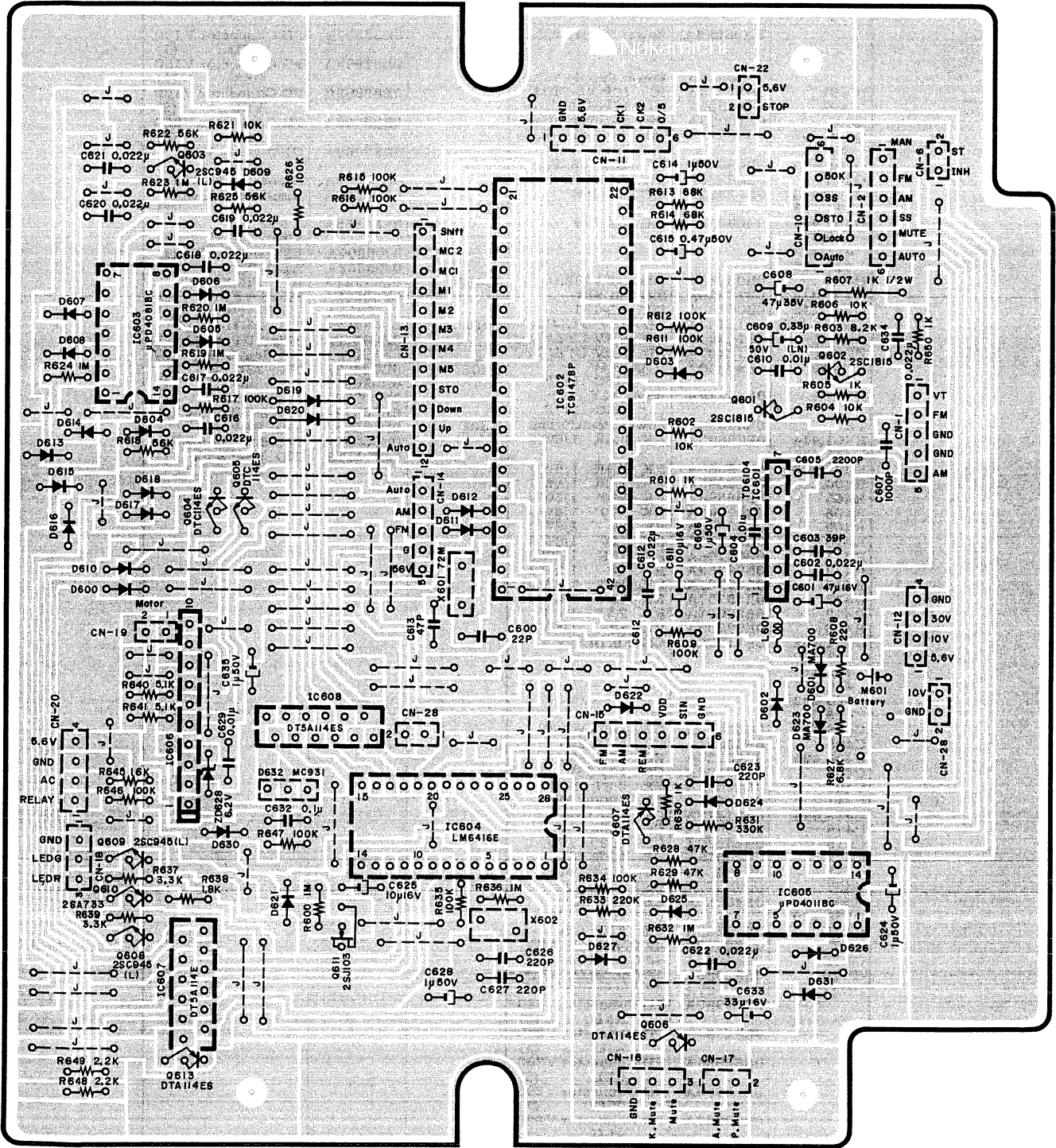


Fig. 3.14

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
	BA06610A	Logic P.C.B. Ass'y	CN2	OB81242A	6P-T Post YEL
	OB60439A	Logic P.C.B.	CN6	OB81226A	2P-T Post YEL
IC601	OB11159A	IC TD6104	CN10	OB81241A	6P-T Post RED
IC602	OB11161A	IC TC9147BP	CN11	OB81239A	6P-T Post WHT
IC603	OB06219A	IC $\mu$ PD4081BC	CN12	OB81231A	4P-T Post WHT
IC604	OB11279A	IC LM6416E	CN13	OB81263A	12P-T Post WHT
IC605	OB06178A	IC $\mu$ PD4011BC	CN14	OB81235A	5P-T Post WHT
IC606	OB11250A	IC LB1645N	CN15	OB81240A	6P-T Post BLK
IC607,608	OB11334A	IC DT5A114E	CN16	OB81230A	3P-T Post YEL
Q601,602	OB10088A	TR 2SC1815L (GR)	CN17	OB81223A	2P-T post WHT
Q603,608	OB01872A	TR 2SC945L (P,Q)	CN18	OB81229A	3P-T Post RED
609			CN19	OB81225A	2P-T Post RED
Q604,605	OB10068A	TR DTC114ES	CN20	OB81233A	4P-T Post RED
Q606,607	OB10058A	TR DTA114ES	CN22	OB81224A	2P-T Post BLK
613			CN28	OB82979A	2P Connector
Q610	OB06013A	TR 2SA733 (P,Q)			
Q611	OB10211A	FET 2SJ103 (GR,BL)			
D600	OB06398A	SiD 1SS176 (26)			
602,618					
621,622					
624,625					
626,627					
630,631					
D601,623	OB12363A	SiD MA700			
D619,620	OB06181A	SiD 1SS53			
D632	OB12420A	SiD MC931			
ZD628	OB12437A	ZD 6.2V UTZJ6.2C			
L601	OB51239A	Micro Coil LAL02TA220K			
X601	OB92006A	Crystal 7.2MHz FYX-TE725S17			
X602	OB02307A	Resonator 800kHz KBR800H			
M601	OB90241A	Lithium Battery 3V CR2330-1GV5			
R600,619	OB09749A	RK 1M 1/6W J			
620,623					
624,632					
636					
R602,604	OB09701A	RK 10K 1/6W J			
606,621					
R603	OB09699A	RK 8.2K 1/6W J			
R605,610	OB09677A	RK 1K 1/6W J			
630,650					
R607	OB24114A	RF 1K 1/2W J			
R608	OB09661A	RK 220 1/6W J			
R609,611	OB09725A	RK 100K 1/6W J			
612,615					
616,617					
626,634					
635,646					
647					
R613,614	OB09721A	RK 68K 1/6W J			
R618,622	OB09719A	RK 56K 1/6W J			
625					
R627	OB09697A	RK 6.8K 1/6W J			
R628,629	OB09717A	RK 47K 1/6W J			
R631	OB09737A	RK 330K 1/6W J			
R633	OB09733A	RK 220K 1/6W J			
R637,639	OB09689A	RK 3.3K 1/6W J			
R638	OB09683A	RK 1.8K 1/6W J			
R640,641	OB09694A	RK 5.1K 1/6W J			
R645	OB09706A	RK 16K 1/6W J			
R648,649	OB09685A	RK 2.2K 1/6W J			
C600	OB41708A	CC 22P 50V J			
C601	OB01403A	CE 47 $\mu$ 16V			
C602,612	OB41787A	CC 0.022 $\mu$ 25V Z			
616-621		(9)			
634					
C603	OB41187A	CC 39P 50V J			
C604,629	OB41553A	CC 0.01 $\mu$ 25V Z			
C605	OB09586A	CC 2200P 50V K			
C606,614	OB01405A	CE 1 $\mu$ 50V			
624,628					
635					
C607	OB09288A	CC 1000P 50V K			
C608	OB40103A	CE 47 $\mu$ 35V			
C609	OB09327A	CE 0.33 $\mu$ 50V (LN)			
C610,632	OB41298A	CMM 0.1 $\mu$ 50V J			
C611	OB01400A	CE 100 $\mu$ 16V			
C613	OB41709A	CC 47P 50V J			
C615	OB40111A	CE 0.47 $\mu$ 50V			
C622	OB41290A	CM 0.022 $\mu$ 50V J			
C623	OB41278A	CM 2200P 50V J			
C625	OB01412A	CE 10 $\mu$ 16V			
C626,627	OB41734A	CC 220P 50V J			
C633	OB40076A	CE 33 $\mu$ 16V			
CN1	OB81238A	5P-T Post YEL			

3.15. Display P.C.B. Ass'y

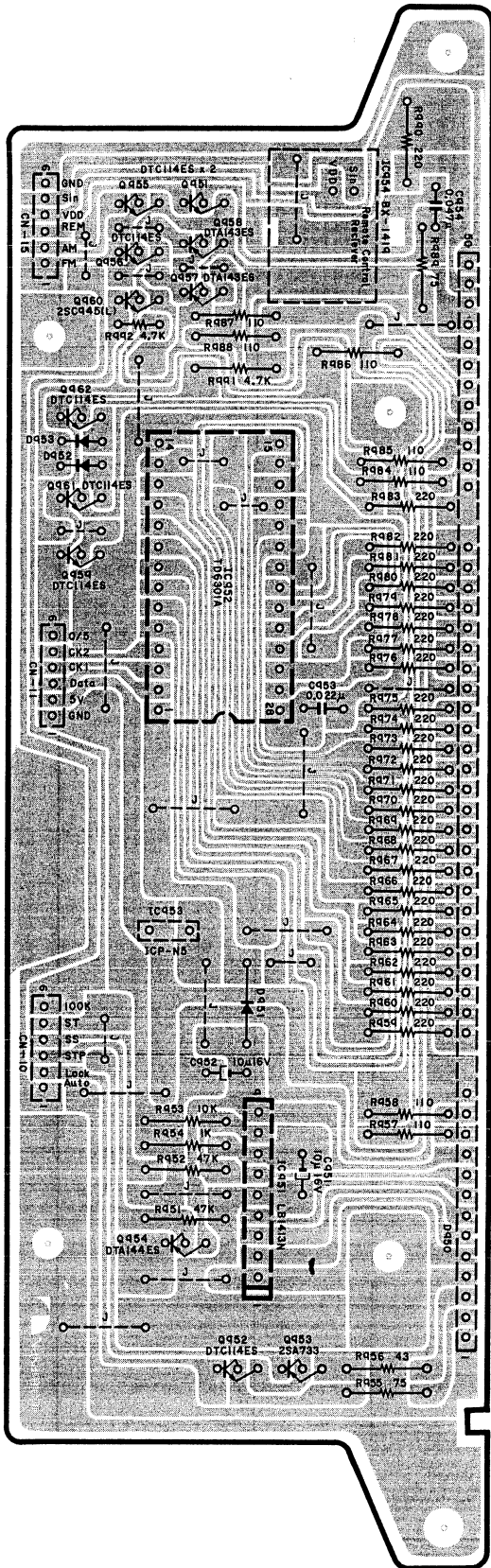


Fig. 3.15

Schematic Ref. No.	Part No.	Description
	<b>BA06646A</b>	<b>Display P.C.B. Ass'y</b>
IC951	OB60441A	Display P.C.B.
IC952	OB11244A	IC LB1413N
IC953	OB11160A	IC TD6301A
IC953	OB11248A	IC ICP-N5-T104
IC954	OB19005A	IC BX-1419
Q951,952	OB10068A	TR DTC114ES
955,956		
Q953	OB06013A	TR 2SA733 (P,Q)
Q954	OB10053A	TR DTA144ES
Q957,958	OB10060A	TR DTA143ES
Q959,961	OB10068A	TR DTC114ES
962		
Q960	OB01872A	TR 2SC945L (P,Q)
D950	OB12414A	Display SL7823-03
D951	OB06181A	SiD 1SS53
D952,953	OB06398A	SiD 1SS176
R951,952	OB05641A	RK 47K 1/4W J
R953	OB01888A	RK 10K 1/4W J
R954	OB01857A	RK 1K 1/4W J
R955,989	OB05959A	RK 75 1/4W J
R956	OB20415A	RK 43 1/4W J
R957,958	OB20416A	RK 110 1/4W J
984-988		
R959-983	OB01933A	RK 220 1/4W J
990		(7) (26)
R991	OB01846A	RK 4.7K 1/4W J
R992	OB09693A	RK 4.7K 1/6W J
C951,952	OB40009A	CE 10µ 16V
C953	OB41554A	CC 0.022µ 25V Z
C954	OB41555A	CC 0.047µ 25V Z
CN10	OB82950A	6P Connector RED
CN11	OB82951A	6P Connector WHT
CN15	OB82955A	6P Connector BLK
	OE00846A	BT3x8 @Pan (2)



4. SCHEMATIC DIAGRAMS

4.1. Amplifier Section

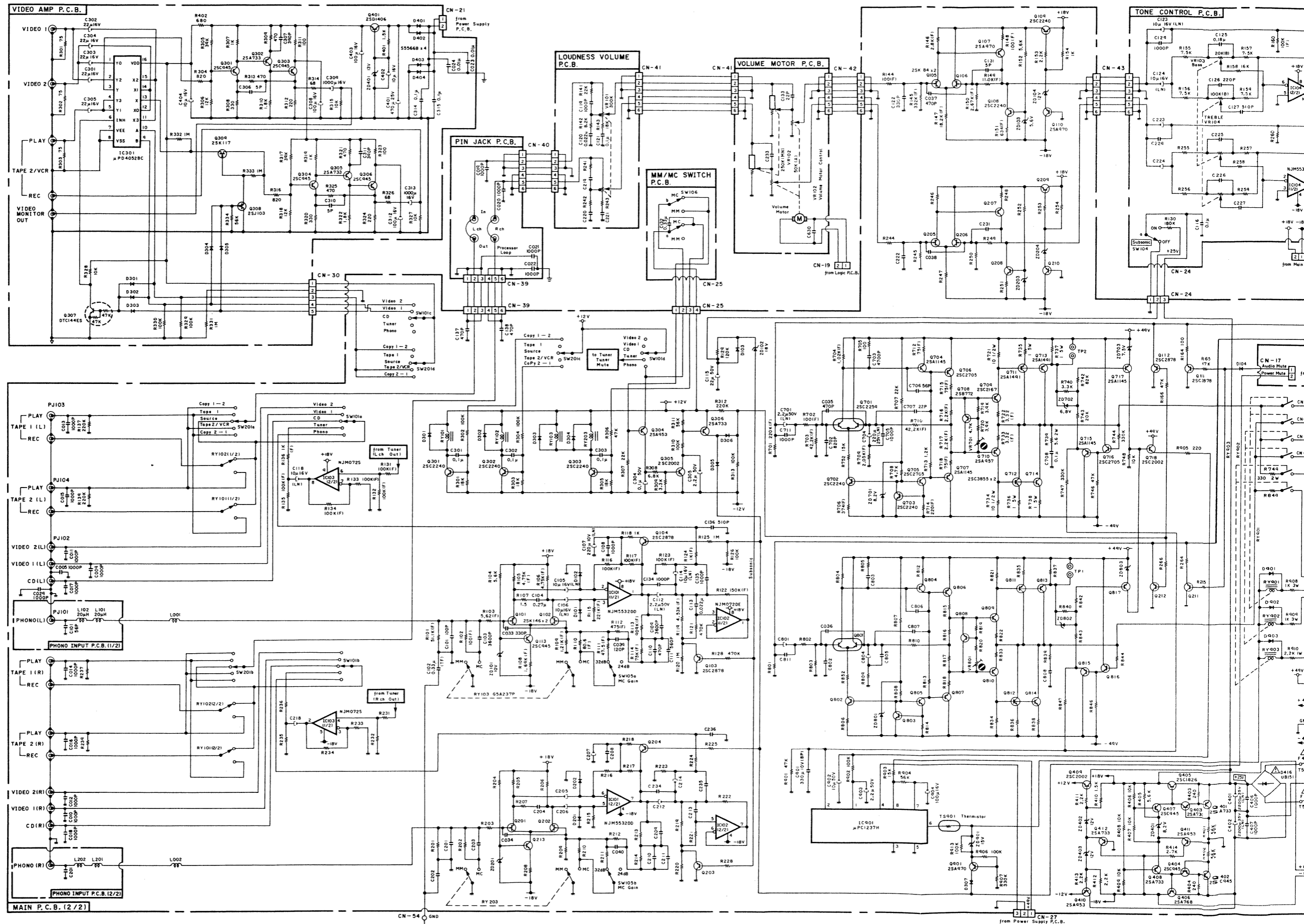


Fig. 4.1

Notes: 1. Diode is 1SS53, 1S1555, or 1SS176 unless otherwise  
 2. 2SA733, 2SA608SP, 2SA1048 and 2SA1175 are inte  
 3. 2SC945, 2SC536SP, 2SC2458 and 2SC2785 are inte

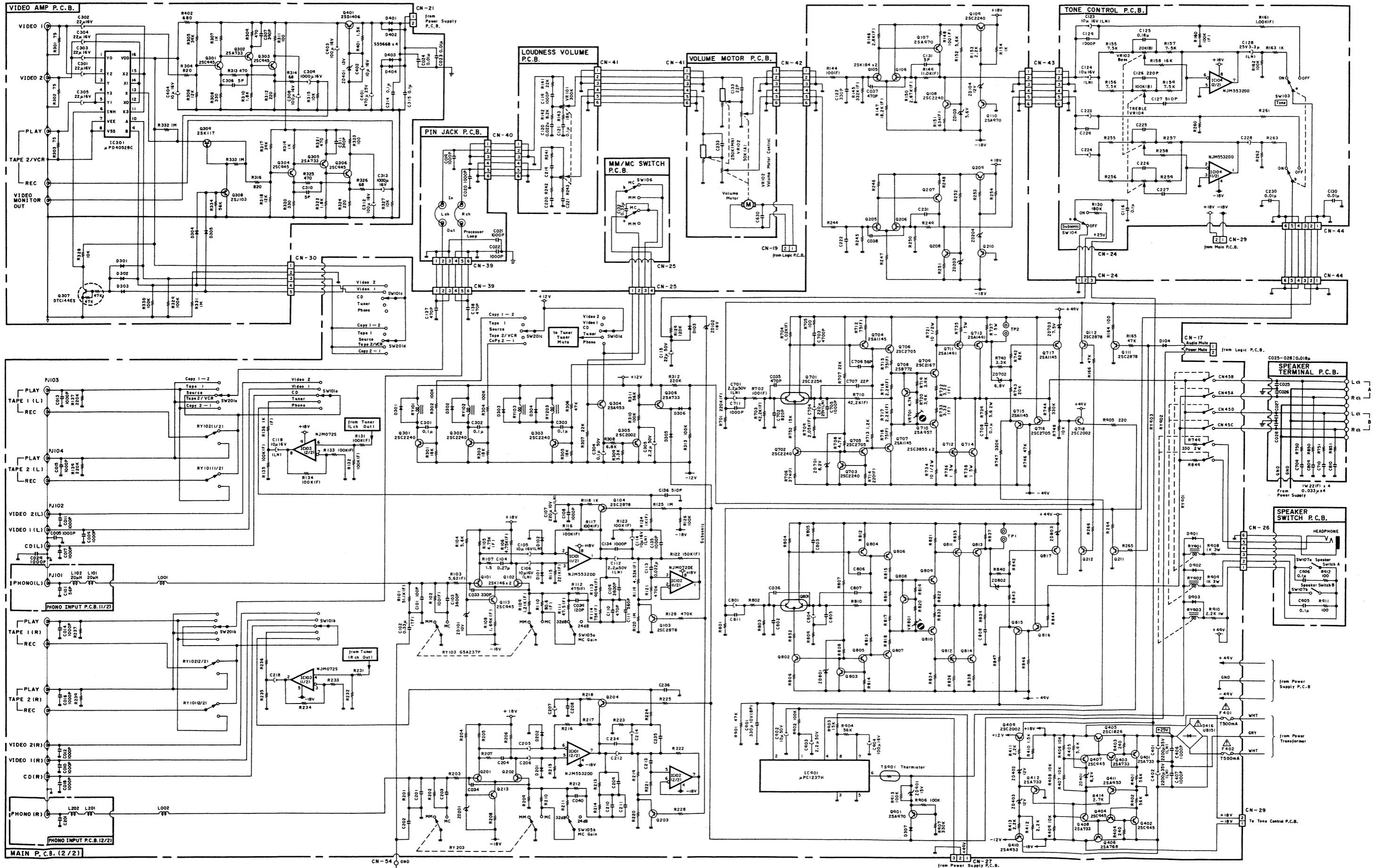


Fig. 4.1

- Notes: 1. Diode is 1SS53, 1S1555, or 1SS176 unless otherwise specified.  
 2. 2SA733, 2SA608SP, 2SA1048 and 2SA1175 are interchangeable with each other.  
 3. 2SC945, 2SC536SP, 2SC2458 and 2SC2785 are interchangeable with each other.

4.2. Tuner and Power Supply Section

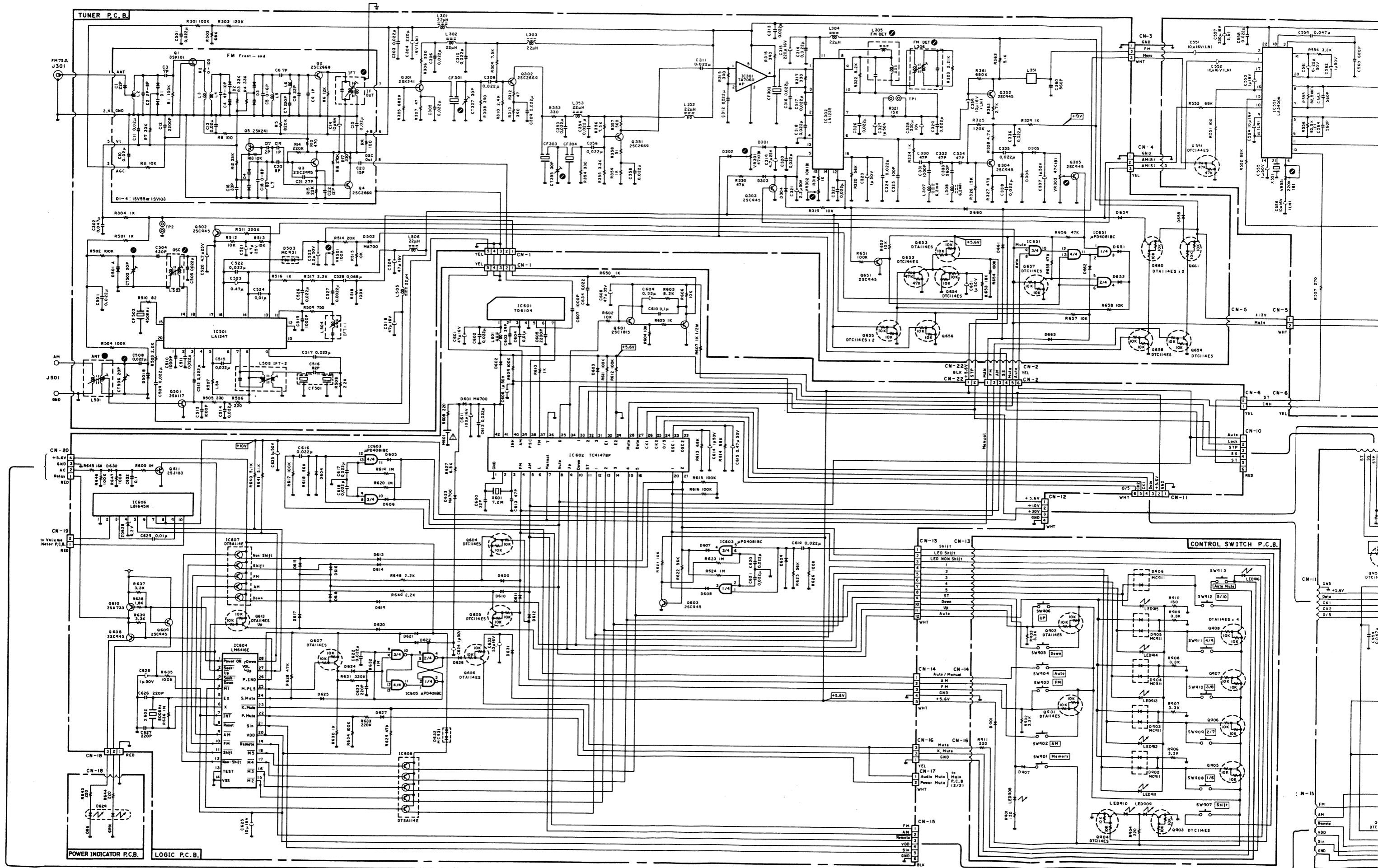
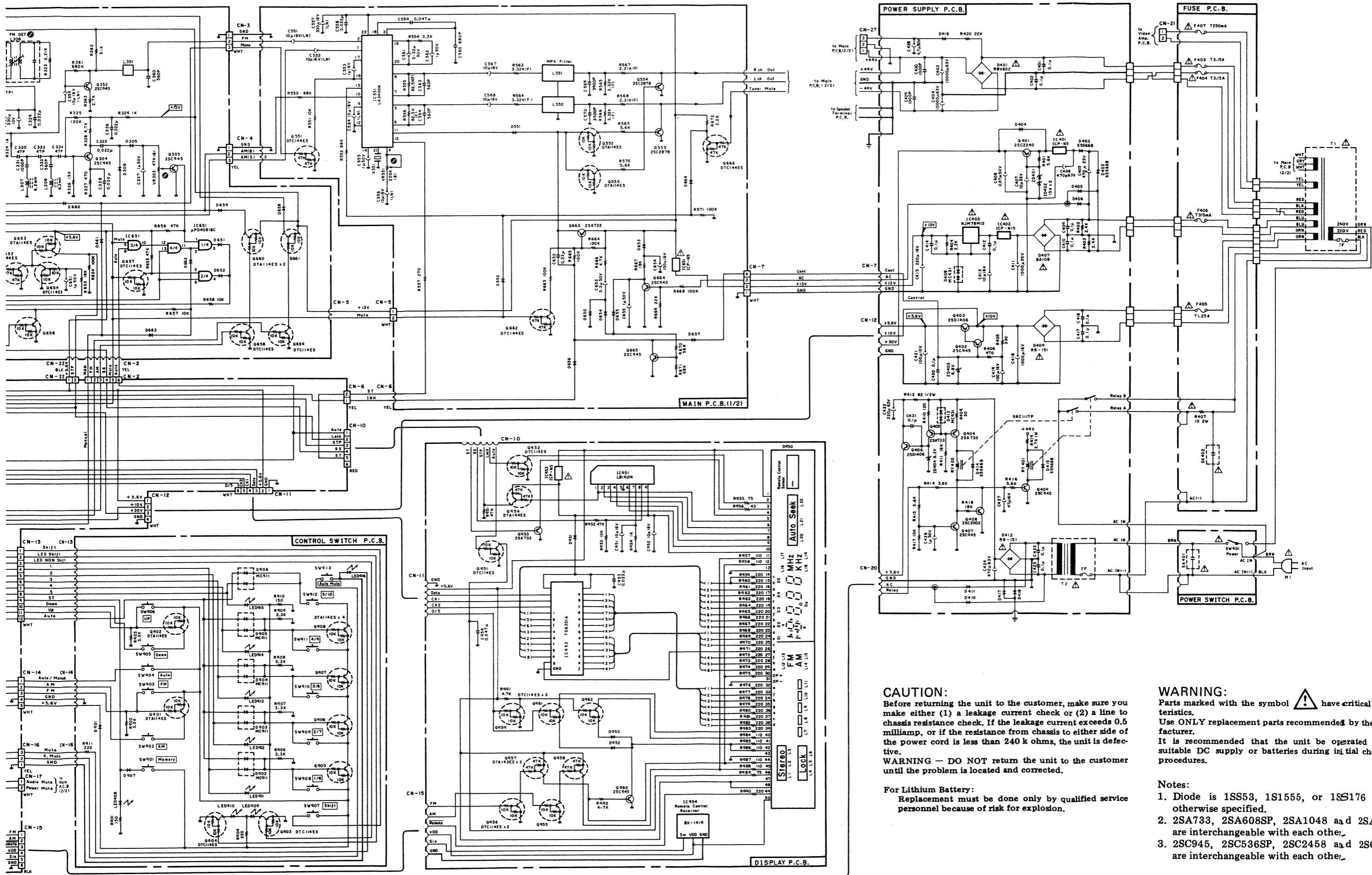



Fig. 4.2



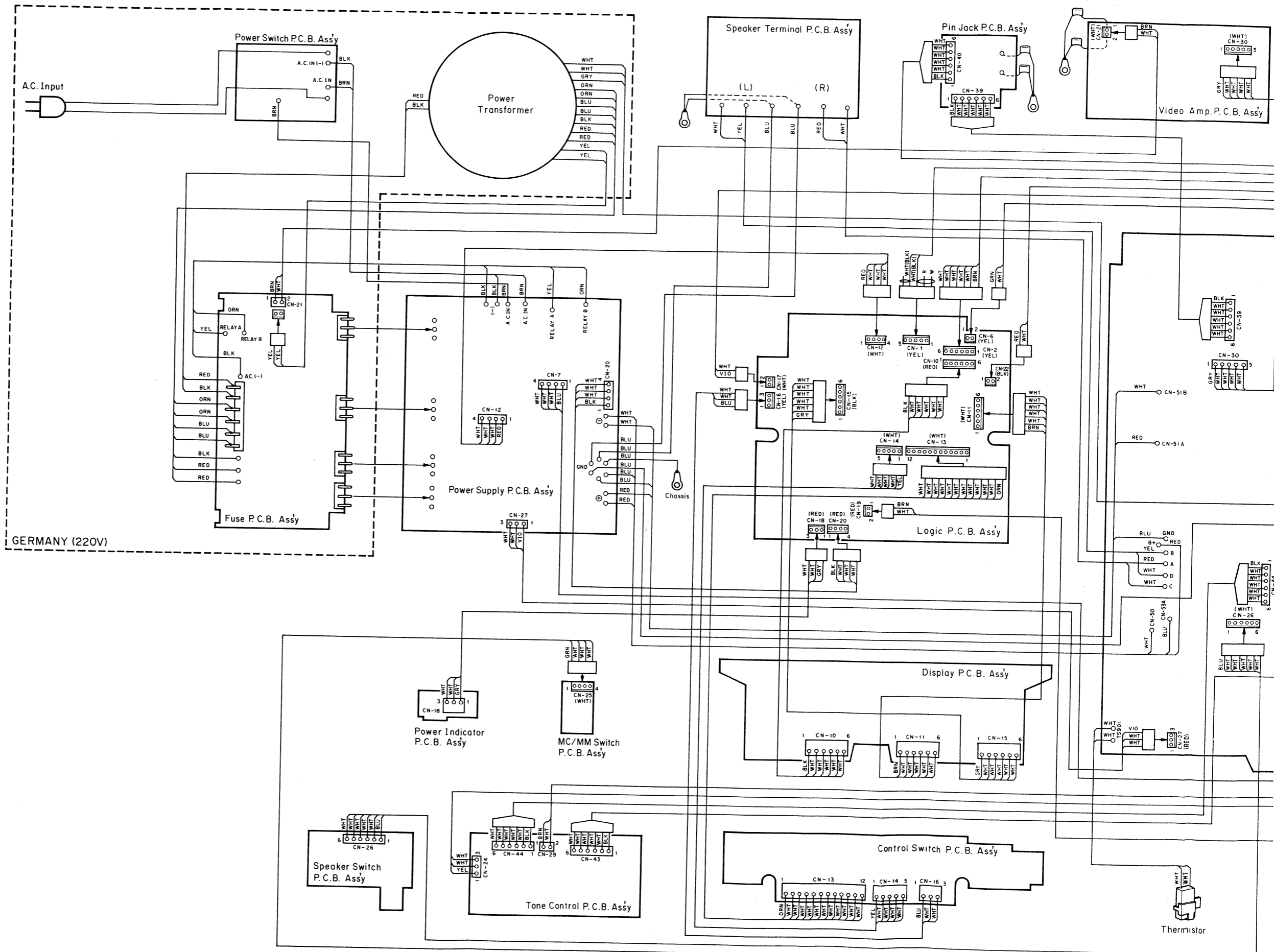
**CAUTION:**  
 Before returning the unit to the customer, make sure you make either (1) a leakage current check or (2) a line to chassis resistance check. If the leakage current exceeds 0.5 milliamp, or if the resistance from chassis to either side of the power cord is less than 240 k ohms, the unit is defective.  
**WARNING - DO NOT** return the unit to the customer until the problem is located and corrected.

**WARNING:**  
 Parts marked with the symbol  have critical characteristics. Use **ONLY** replacement parts recommended by the manufacturer. It is recommended that the unit be operated from a suitable DC supply or batteries during initial check-out procedures.

**For Lithium Battery:**  
 Replacement must be done only by qualified service personnel because of risk for explosion.

- Notes:**
1. Diode is 1SS53, 1S1555, or 1S176 unless otherwise specified.
  2. 2SA733, 2SA608SP, 2SA1048 and 2SA1175 are interchangeable with each other.
  3. 2SC945, 2SC536SP, 2SC2458 and 2SC2785 are interchangeable with each other.

5. WIRING DIAGRAM

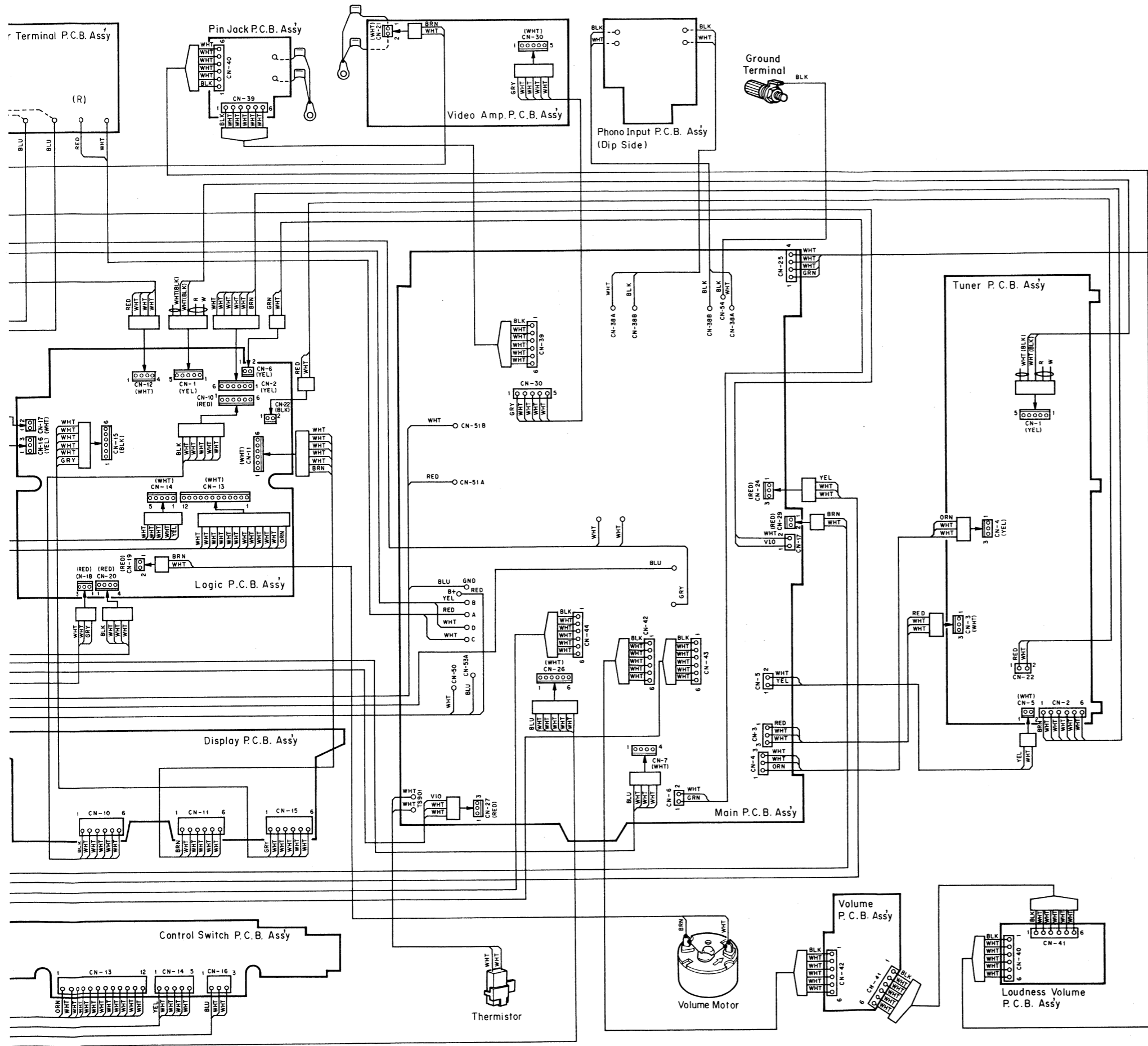


GERMANY (220V)

- Notes:
- Table of wire colors
 

BRN - Brown	BLU - Blue
RED - Red	VIO - Violet
ORN - Orange	GRY - Gray
YEL - Yellow	WHT - White
GRN - Green	BLK - Black
  - Component side view of the P.C.B. is illustrated unless otherwise specified.

Fig. 5



## 6. SPECIFICATIONS

## Power Amplifier Section

Note: Unless noted otherwise specifications are in accordance with IHF-A-202 measured from any high-level input (CD/VIDEO/TAPE) to the speaker output.

Continuous Average Output Power	60 watts per channel into 8 ohms, both channels driven, 20–20,000 Hz at no greater than 0.1% THD
Dynamic Output Power	85 watts per channel into 8 ohms 125 watts per channel into 4 ohms
Dynamic Head Room (8 ohms)	1.5 dB
Power Bandwidth	5–30,000 Hz
Frequency Response	20–20,000 Hz; +0, –1 dB 5–45,000 Hz; +0, –3 dB
Signal to Noise Ratio (A-WTD, Input Shorted)	Better than 105 dB re Rated Power Better than 85 dB (IHF-A-202)
Total Harmonic Distortion (8 ohms, Rated Power, 20 Hz – 20 kHz)	Less than 0.1%
Intermodulation Distortion (8 ohms, Rated Power, 60 Hz:7 kHz, 4:1)	Less than 0.1%
Headphone Rated Output (40 ohms)	140 mW
Output Current Capability	25A peak per channel

## Preamplifier Section

Note: Unless noted otherwise specifications are in accordance with IHF-A-202. Except for Sensitivity, S/N, Tone and Loudness characteristics (which are measured to the speaker outputs), measurements are made from the specified input to Rec. Out.

Sensitivity: (for rated Output)	
Phono MC (Gain: 32/24 dB)	60/160 $\mu$ V
Phono MM	2.5 mV
CD/Tape	200 mV
Video	200 mV
Sensitivity: (for 1-watt output, IHF-A-202)	
Phono MC (Gain: 32/24 dB)	7.8/21 $\mu$ V
Phono MM	0.32 mV
CD/Tape	26 mV
Video	26 mV
Input Impedance	
Phono MC	100 ohms
Phono MM	47 kohms
CD/Tape	20 kohms
Video	20 kohms
Maximum Input Level (1 kHz)	
Phono MC (Gain: 32/24 dB)	3/8 mV
Phono MM	140 mV
Record Output Level/ Impedance	200 mV/1 kohms
Total Harmonic Distortion (1 kHz, to Rec Out, at 1 V)	
Phono MC	Less than 0.003% (either gain)
Phono MM	Less than 0.002%
RIAA Deviation	
Phono MC	30–20,000 Hz $\pm$ 0.5 dB
Phono MM	30–20,000 Hz $\pm$ 0.5 dB
Signal to Noise Ratio (to speaker output, IHF-A-202)	
Phono MC with 32 dB Gain	Better than 71 dB
24 dB Gain	Better than 70 dB
Phono MM	Better than 78 dB

SR-4E (Germany) OOD-SI-3104 (24/24)

**Tone Controls**

Bass . . . . . 20 Hz,  $\pm 10$  dB  
Treble . . . . . 20 kHz,  $\pm 10$  dB  
Variable Loudness . . . . . 20 Hz, +20 dB; 20 kHz, +6 dB  
(re maximum attenuation: -40 dB at 1 kHz)  
Subsonic Filter (Phono Only) . . Cutoff Frequency 20 Hz, -12 dB/octave

**Tuner Section**

**[FM Section]**

Note: All RF levels in microvolts given re 300-ohm antenna input. Modulation: Mono 60%, Stereo Pilot 9%, Stereo Audio Signal 51%. All measurements made at Rec. Out Jack.

Frequency Range . . . . . 87.50-108.00 MHz in 50 kHz steps

IHF Usable Sensitivity . . . . . 11 dBf/1.9  $\mu$ V

(Mono)

**50-dB Quieting Sensitivity**

Mono . . . . . 23.0 dBf/7.7  $\mu$ V

Stereo . . . . . 43.0 dBf/77.4  $\mu$ V

**Signal to Noise Ratio at 65 dBf**

Mono . . . . . Better than 72 dB

Stereo . . . . . Better than 67 dB

Muting Threshold . . . . . 30 dBf/17.3  $\mu$ V

Frequency Response . . . . . 20-15,000 Hz  $\pm 1$  dB

**Total Harmonic Distortion (1 kHz)**

Mono . . . . . Less than 0.20%

Stereo . . . . . Less than 0.25%

Capture Ratio . . . . . 2.0 dB

Alternate Channel Selectivity . . 70 dB ( $\pm 300$  kHz)

Stereo Separation at 100 Hz . . . Better than 43 dB

at 1 kHz . . . . . Better than 43 dB

at 10 kHz . . . . . Better than 27 dB

Spurious Response Rejection . . . Better than 90 dB

Image Rejection . . . . . Better than 75 dB

IF Rejection . . . . . Better than 80 dB

AM Suppression . . . . . Better than 60 dB

**[AM Section]**

Note: Modulation - 400 Hz, 30%

Frequency Range . . . . . 522-1,611 kHz in 9 kHz steps

Sensitivity . . . . . 53 dB $\mu$ /m

Signal to Noise Ratio at 90 . . . . . Better than 52 dB

dB $\mu$ /m

Total Harmonic Distortion . . . . . Less than 0.3%

at 90 dB $\mu$ /m

Selectivity . . . . . Better than 20 dB ( $\pm 9$  kHz)

**General**

Power Source . . . . . 220 V AC, 50/60 Hz

Power Consumption . . . . . 350 watts max.

Dimensions . . . . . 430 (W) x 100 (H) x 370 (D) mm

16-15/16 (W) x 3-15/16 (H) x 14-9/16 (D) inches

Approximate Weight . . . . . 9.8 kg, 21 lbs. 10 oz.

• Specifications and design are subject to change for further improvement without notice.



# 8. BLOCK DIAGRAMS

## 8.1. Tuner Section

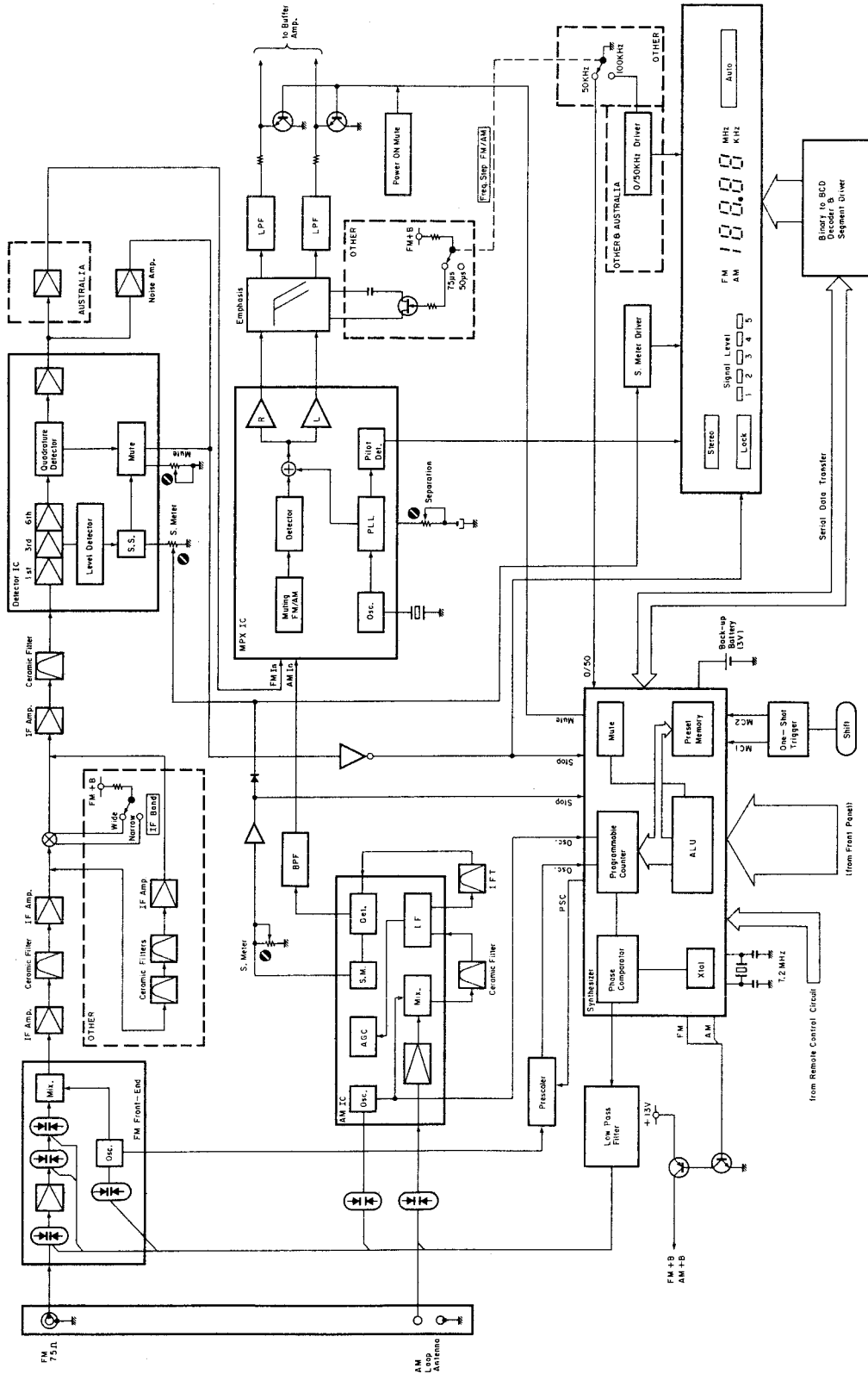


Fig. 8.1

## 8.2. Amplifier Section

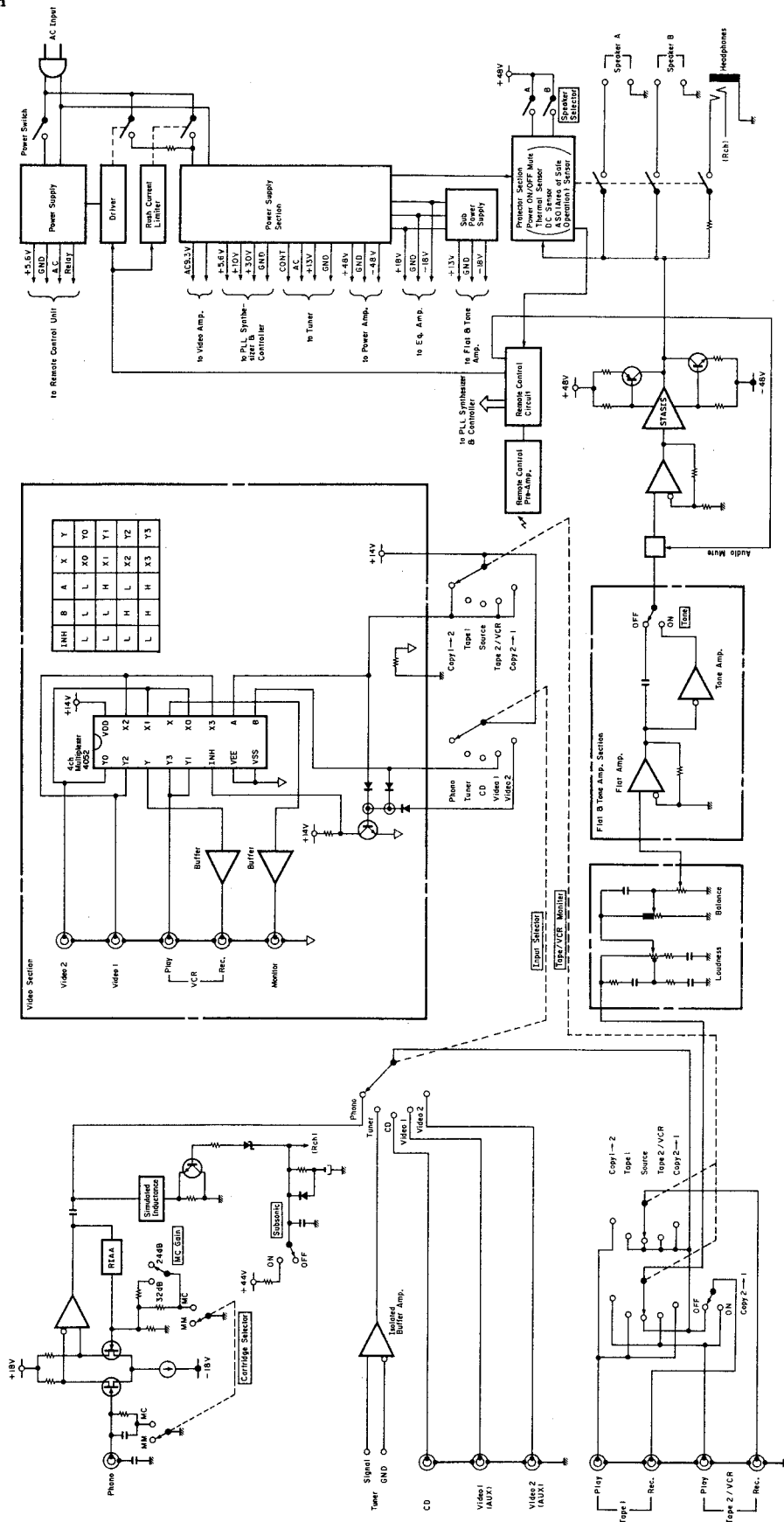


Fig. 8.2

## 9. SPECIFICATIONS

### Power Amplifier Section

Note: Unless noted otherwise specifications are in accordance with IHF-A-202 measured from any high-level input (CD/VIDEO/TAPE) to the speaker output.

Continuous Average Output Power	60 watts per channel into 8 ohms, both channels driven, 20–20,000 Hz at no greater than 0.1% THD
Dynamic Output Power	85 watts per channel into 8 ohms 125 watts per channel into 4 ohms
Dynamic Head Room (8 ohms)	1.5 dB
Power Bandwidth	5–60,000 Hz
Frequency Response	20–20,000 Hz; +0, –0.5 dB 5–75,000 Hz; +0, –3 dB
Signal to Noise Ratio (A-WTD, Input Shorted)	Better than 105 dB re Rated Power Better than 85 dB (IHF-A-202)
Total Harmonic Distortion (8 ohms, Rated Power, 20 Hz – 20 kHz)	Less than 0.1%
Intermodulation Distortion (8 ohms, Rated Power, 60 Hz:7 kHz, 4:1)	Less than 0.1%
Headphone Rated Output (40 ohms)	140 mW
Output Current Capability	25A peak per channel

### Preamplifier Section

Note: Unless noted otherwise specifications are in accordance with IHF-A-202. Except for Sensitivity, S/N, Tone and Loudness characteristics (which are measured to the speaker outputs), measurements are made from the specified input to Rec. Out.

#### Sensitivity: (for rated Output)

Phono MC	60/160 $\mu$ V
(Gain: 32/24 dB)	
Phono MM	2.5 mV
CD/Tape	200 mV
Video	200 mV

#### Sensitivity: (for 1-watt output per IHF-A-202)

Phono MC	7.8/21 $\mu$ V
(Gain: 32/24 dB)	
Phono MM	0.32 mV
CD/Tape	26 mV
Video	26 mV

#### Input Impedance

Phono MC	100 ohms
Phono MM	47 kohms
CD/Tape	20 kohms
Video	20 kohms

#### Maximum Input Level (1 kHz)

Phono MC	3/8 mV
(Gain: 32/24 dB)	
Phono MM	140 mV

Record Output Level/ . . . . . 200 mV/1 kohms

#### Impedance

#### Total Harmonic Distortion (1 kHz, to Rec Out, at 1 V)

Phono MC	Less than 0.003% (either gain)
Phono MM	Less than 0.002%

#### RIAA Deviation

Phono MC	30–20,000 Hz $\pm$ 0.5 dB
Phono MM	30–20,000 Hz $\pm$ 0.5 dB

#### Signal to Noise Ratio (to speaker output per IHF-A-202)

Phono MC with 32 dB Gain	Better than 73 dB
24 dB Gain	Better than 72 dB
Phono MM	Better than 80 dB

**Tone Controls**

Bass . . . . . 20 Hz,  $\pm 10$  dB  
Treble . . . . . 20 kHz,  $\pm 10$  dB  
Variable Loudness . . . . . 20 Hz, +20 dB; 20 kHz, +6 dB  
(re maximum attenuation: -40 dB at 1 kHz)  
Subsonic Filter (Phono Only) . . Cutoff Frequency 20 Hz, -12 dB/octave

**Tuner Section**

(1) SR-4A & SR-4 (Canada & Other (see Note))

Note: Selector switch settings for Other Model  
Frequency Step FM/AM: 100 kHz/10 kHz, De-emphasis: 75  $\mu$ s,  
IF Band: Wide

**[FM Section]**

Note: All RF levels in microvolts given re 300-ohm antenna input. Modulation: Mono 100%, Stereo Pilot 9%, Stereo Audio Signal 91%. All measurements made at Rec. Out Jack.

Frequency Range . . . . . 87.5-108.0 MHz in 100 kHz steps  
IHF Usable Sensitivity . . . . . 11 dBf/1.9  $\mu$ V  
(Mono)  
50-dB Quieting Sensitivity  
Mono . . . . . 14.7 dBf/3.0  $\mu$ V  
Stereo . . . . . 37.5 dBf/41.1  $\mu$ V  
Signal to Noise Ratio at 65 dBf  
Mono . . . . . Better than 82 dB  
Stereo . . . . . Better than 76 dB  
Muting Threshold . . . . . 30 dBf/17.3  $\mu$ V  
Frequency Response . . . . . 20-15,000 Hz  $\pm 1$  dB  
Total Harmonic Distortion (1 kHz)  
Mono . . . . . Less than 0.05%  
Stereo . . . . . Less than 0.07%  
Capture Ratio . . . . . 2.0 dB  
Alternate Channel Selectivity . . 55 dB ( $\pm 400$  kHz)  
Stereo Separation at 100 Hz . . . Better than 46 dB  
at 1 kHz . . . . . Better than 50 dB  
at 10 kHz . . . . . Better than 46 dB  
Spurious Response Rejection . . . Better than 90 dB  
Image Rejection . . . . . Better than 75 dB  
IF Rejection . . . . . Better than 80 dB  
AM Suppression . . . . . Better than 60 dB

**[AM Section]**

Note: Modulation - 400 Hz, 30%

Frequency Range . . . . . 520-1,710 kHz in 10 kHz steps  
Sensitivity . . . . . 53 dB $\mu$ /m  
Signal to Noise Ratio at 90 . . . . . Better than 52 dB  
dB $\mu$ /m  
Total Harmonic Distortion . . . . . Less than 0.3%  
at 90 dB $\mu$ /m  
Selectivity . . . . . Better than 20 dB ( $\pm 10$  kHz)

(2) SR-4 (Australia & Other (see Note))

Note: Selector switch settings for Other Model  
Frequency Step FM/AM: 50 kHz/9 kHz, De-emphasis: 50  $\mu$ s,  
IF Band: Narrow

**[FM Section]**

Note: All RF levels in microvolts given re 300-ohm antenna input. Modulation: Mono 60%, Stereo Pilot 9%, Stereo Audio Signal 51%. All measurements made at Rec. Out Jack.

Frequency Range . . . . . 87.5—108.00 MHz in 50 kHz steps  
 IHF Usable Sensitivity . . . . . 11 dBf/1.9  $\mu$ V  
 (Mono)  
 50-dB Quieting Sensitivity  
   Mono . . . . . 21.0 dBf/6.1  $\mu$ V  
   Stereo . . . . . 42.0 dBf/69.0  $\mu$ V  
 Signal to Noise Ratio at 65 dBf  
   Mono . . . . . Better than 74 dB (for Australia), Better than 77 dB (for Other)  
   Stereo . . . . . Better than 69 dB (for Australia), Better than 71 dB (for Other)  
 Muting Threshold . . . . . 30 dBf/17.3  $\mu$ V  
 Frequency Response . . . . . 20—15,000 Hz  $\pm$ 1 dB  
 Total Harmonic Distortion (1 kHz)  
   Mono . . . . . Less than 0.12% (for Australia), Less than 0.15% (for Other)  
   Stereo . . . . . Less than 0.20% (for Australia), Less than 0.25% (for Other)  
 Capture Ratio . . . . . 2.0 dB  
 Alternate Channel Selectivity . . . . . 70 dB ( $\pm$ 300 kHz)  
 Stereo Separation at 100 Hz . . . . . Better than 43 dB  
   at 1 kHz . . . . . Better than 43 dB  
   at 10 kHz . . . . . Better than 37 dB  
 Spurious Response Rejection . . . . . Better than 90 dB  
 Image Rejection . . . . . Better than 75 dB  
 IF Rejection . . . . . Better than 80 dB  
 AM Suppression . . . . . Better than 60 dB

**[AM Section]**

Note: Modulation — 400 Hz, 30%

Frequency Range . . . . . 522—1,611 kHz in 9 kHz steps  
 Sensitivity . . . . . 53 dB $\mu$ /m  
 Signal to Noise Ratio at 90 . . . . . Better than 52 dB  
 dB $\mu$ /m  
 Total Harmonic Distortion . . . . . Less than 0.3%  
 at 90 dB $\mu$ /m  
 Selectivity . . . . . Better than 20 dB ( $\pm$ 9 kHz)

**General**

Power Source . . . . . 110, 120, 220 or 240 V AC, 50/60 Hz (According to country of sale)  
 Power Consumption . . . . . 350 watts max.  
 Convenience Outlets . . . . . Switched: 2, Unswitched: 1 (for U.S.A., Canada & Other only)  
 Dimensions . . . . . 430 (W) x 100 (H) x 370 (D) mm  
   16-15/16 (W) x 3-15/16 (H) x 14-9/16 (D) inches  
 Approximate Weight . . . . . 9.8 kg, 21 lbs. 10 oz.

- Specifications and design are subject to change for further improvement without notice.
- STASIS manufactured under license from Threshold Corporation.
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Service Manual

# Nakamichi SR-4, SR-4A

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