



Service Manual

TA-4, TA-4A, TA-4E Service Manual

Nakamichi

TA-4 TA-4A TA-4E

High Definition Tuner Amplifier




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1. GENERAL

1.1. CAUTIONS/WARNINGS

(1) Product Safety Notice

Parts marked with the symbol  in the schematic diagram 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.

(2) Leakage Current Check/Resistance Check

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.

(3) Lithium Battery Caution

Use **ONLY** replacement parts recommended by the manufacturer. Replacement must be done only by qualified service personnel because of risk for explosion.

WARNING

Litiumbatteri. Explosionsfare ved felaktig hantering. Byte får endast ske av sakkunnig personal enligt servicedokumentationens anvisningar.

ADVARSEL!

Lithiumbatterier. Eksplosionsfare. Udskiftning må kun foretages af en sagkyndig og som beskrevet i servicemanualen.

batterierne kun må udskiftes med batterier af samme fabrikat og type.

1.2. Destination

- TA-4: Other
- TA-4A: U.S.A. & Canada
- TA-4E: Europe

1.3. Voltage Selector

Voltage selector is installed on the rear panel of the TA-4 (Other). This voltage selector can select 110, 120, 220, or 240 V at customer's disposal.

1.4. Package Ass'y

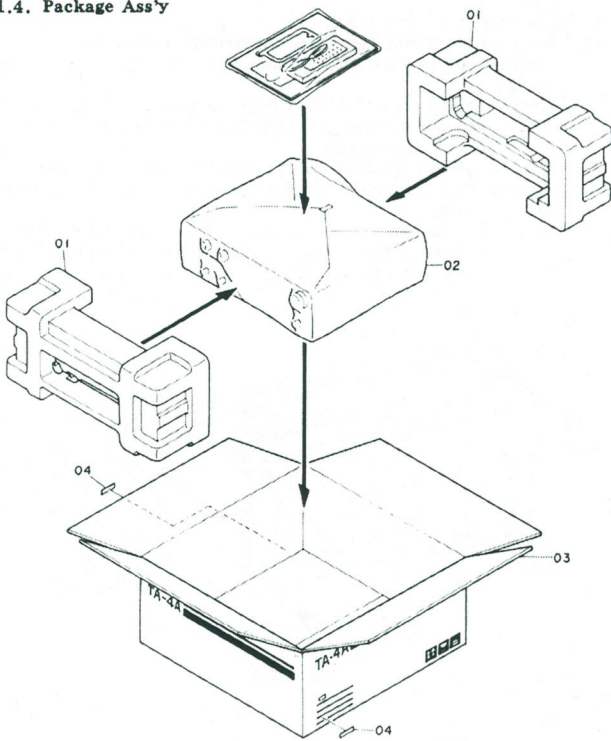


Fig. 1.1

1.5. Accessory Ass'y

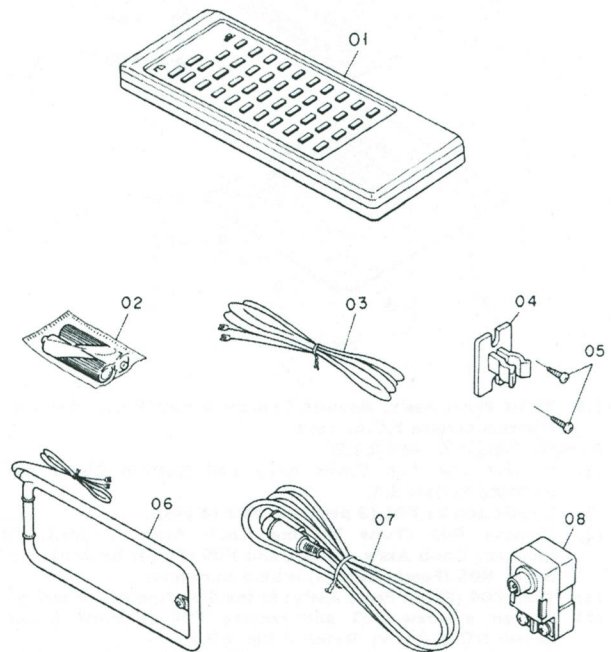


Fig. 1.2

Schematic Ref. No.	Part No.	Description	Q'ty	Schematic Ref. No.	Part No.	Description	Q'ty
		Package Ass'y				Accessory Ass'y	
01	OF04176A	Packing (TA-4/4E)	2	01	DA04183A	Remote Control Unit	1
	OF04175B	Packing (TA-4A)	2	02	0B90242A	Battery AA Type x 2 (TA-4/4E)	1
02	OF04212A	Soft Sheet (TA-4/4E)	1		0B90341A	Battery AA Type x 2 (TA-4A)	1
	OF04177A	Soft Sheet (TA-4A)	1	03	0B90320A	Feeder Antenna	1
03	OF04172A	Carton Box (TA-4)	1	04	0B90319A	AM Loop Antenna Holder	1
	OF04171A	Carton Box (TA-4A)	1	05	0E03496A	Screw 3.1x10 ⊕ (For Wood)	2
	OF04174A	Carton Box (TA-4E)	1			(Black Chromate)	
04	OM05281A	Serial Number Label (TA-4/4E)	2	06	0B90318A	AM Loop Antenna	1
	OM05199A	Serial Number Label (TA-4A)	2	07	0B83465A	8P DIN Cable	1
				08	0B90194A	Antenna Adapter F YAE21-0120 (TA-4/4A)	1
					0B90208A	Antenna Adapter EP FA-322 (TA-4E)	1
				—	OD04872D	Owner's Manual (English/German/French)	1
				—	OD04836C	Warranty Card (TA-4A)	1
				—	OJ05916A	Speaker Terminal Bush (TA-4E)	8

2. REMOVAL PROCEDURES

2.1. Top Cover Ass'y and Bottom Cover Ass'y

Refer to Fig. 2.1.

- (1) Loosen screws F01 (5 pcs.) and remove F02 (Top Cover Ass'y).
- (2) Loosen screws F03 (13 pcs.) and remove F04 (Bottom Cover Ass'y).
- (3) Loosen screws F05 (2 pcs.) and remove legs F06 (2 pcs.) in order to place the unit horizontally.

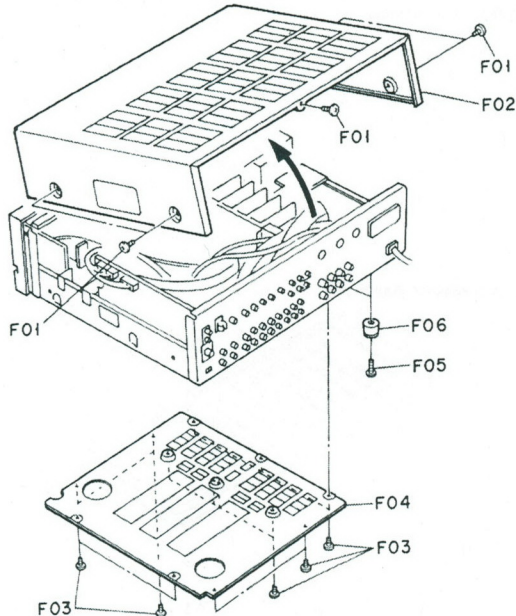


Fig. 2.1

2.2. Front Panel Ass'y, Remote Control Sensor P.C.B. Ass'y and Power Indicator P.C.B. Ass'y

Refer to Figs. 2.2.1 and 2.2.2.

- (1) Remove the Top Cover Ass'y and Bottom Cover Ass'y referring to item 2.1.
- (2) Loosen screws F01 (3 pcs.) and F02 (3 pcs.).
- (3) Remove F03 (Tone Volume Knob Ass'y, 2 pcs.), F04 (Selector Knob Ass'y, 2 pcs.), and F05 (Power Button).
Note: F05 (Power Button) is hard to remove.
- (4) Turn F06 (Front Panel Ass'y) in the direction of the arrow.
- (5) Loosen a screw F07 and remove F08 (Remote Control Sensor P.C.B. Ass'y). Refer to Fig. 2.2.2.
- (6) Loosen a screw F09 and remove F10 (Power Indicator P.C.B. Ass'y).

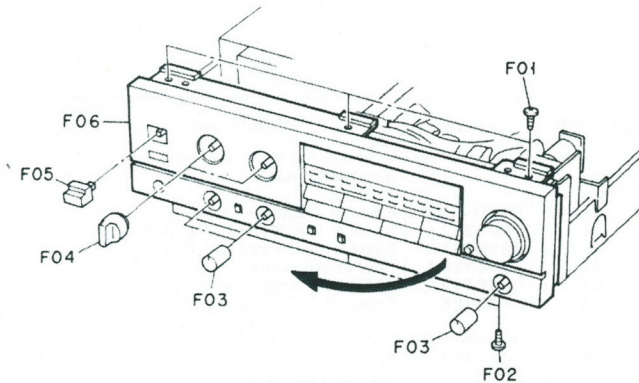


Fig. 2.2.1

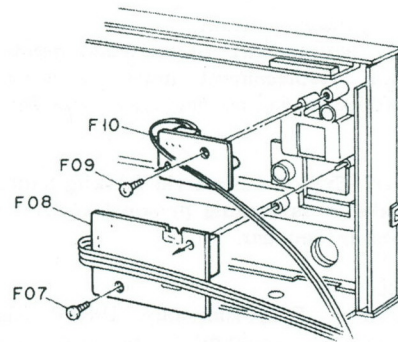


Fig. 2.2.2

2.3. Front Chassis Ass'y and Control Switch & Display P.C.B. Ass'y

Refer to Figs. 2.3.1 and 2.3.2.

- (1) Remove the Front Panel Ass'y referring to item 2.2.
- (2) Loosen screws F01 (4 pcs.) and remove F02 (Front Chassis Ass'y).
Note: As the pins of F02 (Front Chassis Ass'y) are inserted into the chassis, pull F02 (Front Chassis Ass'y) toward you to separate it.
- (3) Loosen screws F03 (6 pcs.), unhook Claws (2 pcs.), and remove F04 (Control Switch & Display P.C.B. Ass'y). Refer to Fig. 2.3.2.
Note: To disconnect flat cables of F04 (Control Switch & Display P.C.B. Ass'y) from Video & Logic P.C.B. Ass'y, refer to item 2.4.

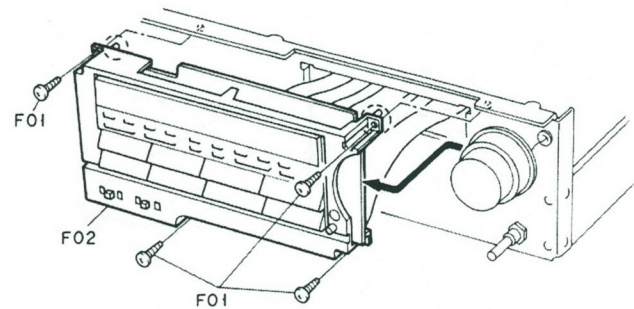


Fig. 2.3.1

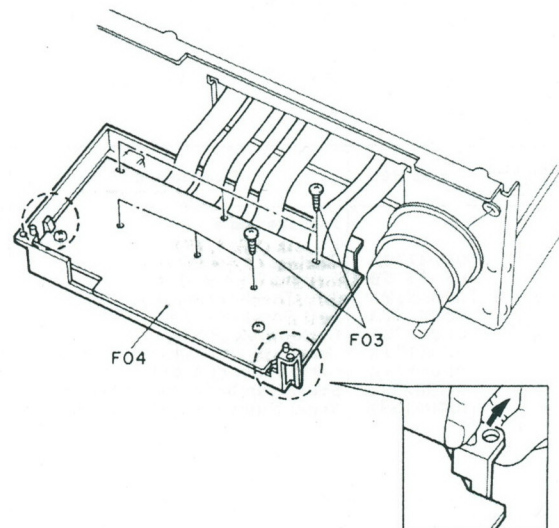


Fig. 2.3.2

2.4. How to Disconnect/Connect Flat Cable

Refer to Figs. 2.4.1 and 2.4.2.

- (1) To disconnect a flat cable, press down F01 (Connector Cover) strongly and remove F02 (Flat Cable). Refer to Fig. 2.4.1.
- (2) To connect a flat cable, straighten the leads of flat cable and position each lead to the grooves of connector. Refer to Fig. 2.4.2.
- (3) Press down F01 (Connector Cover) and insert F02 (Flat Cable).

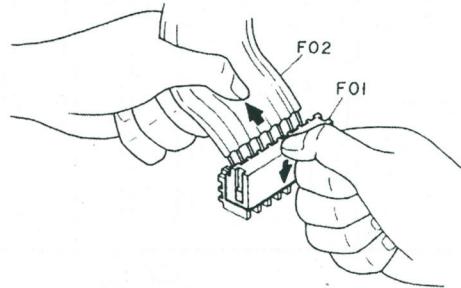


Fig. 2.4.1

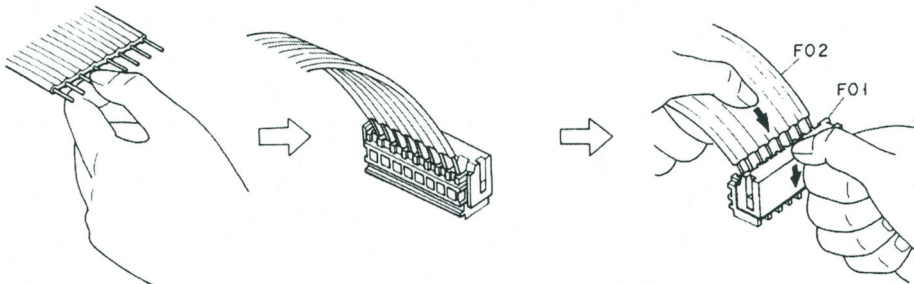


Fig. 2.4.2

2.5. Video & Logic P.C.B. Ass'y

Refer to Figs. 2.5.1 and 2.5.2.

- (1) Remove the Top Cover Ass'y referring to item 2.1.
- (2) Disconnect all connectors from F04 (Video & Logic P.C.B. Ass'y). Disconnect flat cables referring to item 2.4.
- (3) Loosen screw F01 (5 pcs.) and F02 (4 pcs.).
- (4) Unhook F03 using pliers.
- (5) Turn F04 (Video & Logic P.C.B. Ass'y) as shown in Fig. 2.5.2.

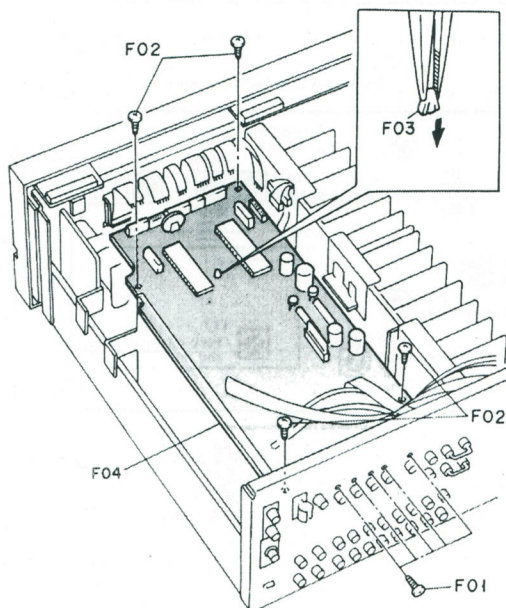


Fig. 2.5.1

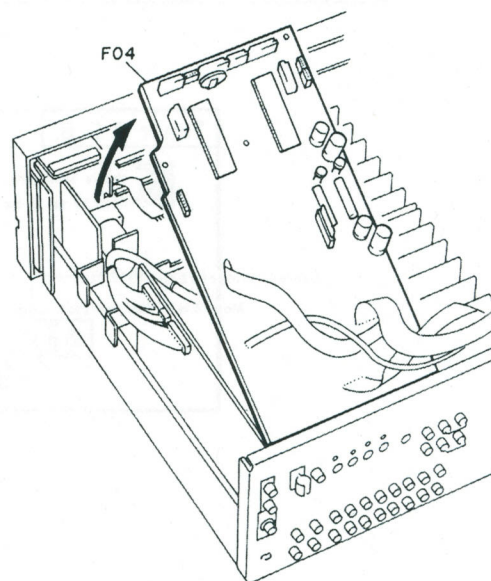


Fig. 2.5.2

3. PARTS LOCATION FOR ELECTRICAL ADJUSTMENT

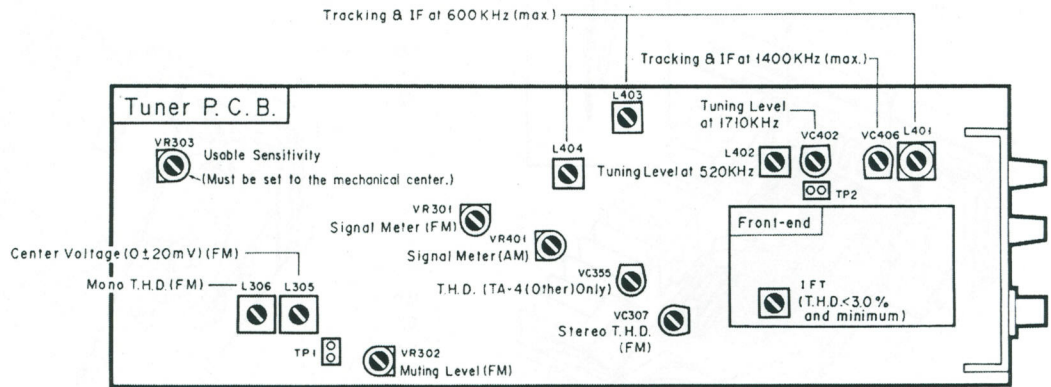
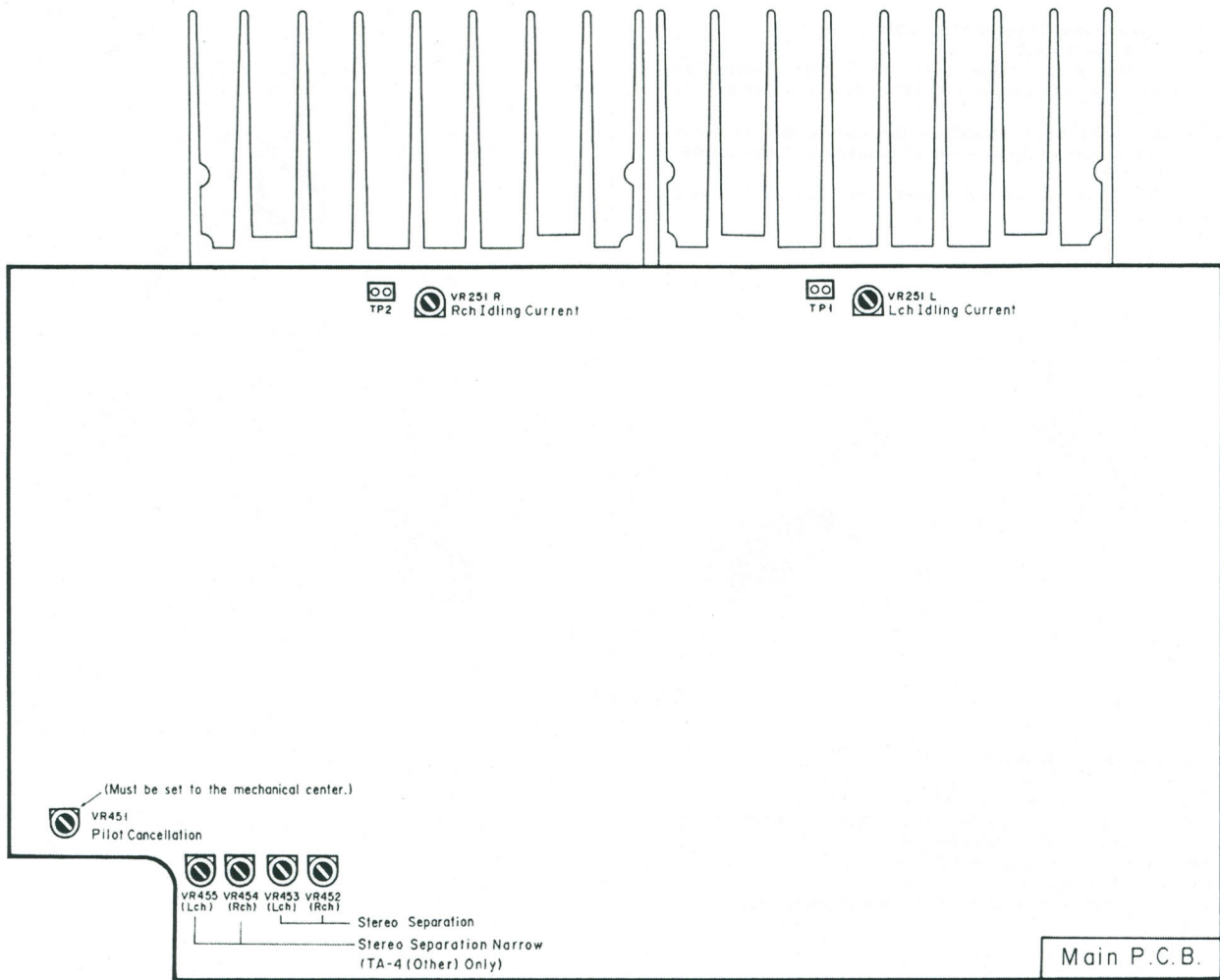


Fig. 3

4. ELECTRICAL ADJUSTMENTS

4.1. Power Amplifier Section

STEP	ITEM	SIGNAL SOURCE	OUTPUT CONNECTION	MODE	ADJUSTMENT	REMARKS
1	Idling Current	None	DC Voltmeter between both Pins of TP1 (Pins of TP2) on Main P.C.B.	Monitor Selector - CD Output Level - Min. Speaker Selector - OFF	Main P.C.B. VR251L VR251R	<ol style="list-style-type: none"> 1. Insert shorting plugs into the CD Player Input Jacks. 2. Turn ON the power and allow 3 minutes before adjustment. (Top Cover must be installed in this period of time.) 3. Adjust VR251L (VR251R) to obtain 25 mV \pm5 mV on the DC voltmeter.

4.2. Tuner Section

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

4.2.1. FM Tuner Section

STEP	ITEM	OUTPUT CONNECTION	MODE	ADJUSTMENT	REMARKS
1	Preliminary Step	See Fig. 4.1	Tuner Amplifier Monitor Selector - Tuner Band Selector - FM Rec.Out Selector - Tuner Signal Generator Freq. - 98 MHz RF Level - 65 dBf Modulation - See REMARKS		<ol style="list-style-type: none"> 1. Set the Tuner Amplifier as indicated in the MODE. 2. Adjustment and confirmation should be made after tuning in to the set carrier frequency of the Signal Generator. <p>Note: Contents of modulation</p> <ol style="list-style-type: none"> 1. For U.S.A., Canada & Other (Wide) <ul style="list-style-type: none"> o Stereo Audio: 1 kHz, 91% Pilot: 19 kHz, 9% o Mono Audio: 1 kHz, 100% 2. For Europe & Other (Narrow) <ul style="list-style-type: none"> o Stereo Audio: 1 kHz, 51% Pilot: 19 kHz, 9% o Mono Audio: 1 kHz, 60%
2	Usable Sensitivity Adjustment	Distortion Meter to Tape 1 Record Output Jacks	Tuner Amplifier Same as above Signal Generator Freq. - 98 MHz RF Level - 13.5 dBf Modulation - Mono	Tuner P.C.B. Front-end IFT	<ol style="list-style-type: none"> 1. Set the Tuner Amplifier to Manual mode by pressing the Tuning Mode button. 2. Adjust the IFT to obtain minimum distortion (total harmonic distortion (THD): 3% or less). 3. Set the frequency of the Signal Generator to 90 MHz/106 MHz and check that the THD is 3% or less.
3	Center Voltage and THD Adjustment	DC Voltmeter between both Pins of TP1 on Tuner P.C.B. and Distortion Meter to Tape 1 Record Output Jacks	Tuner Amplifier Same as above Signal Generator Freq. - 98 MHz RF Level - 65 dBf Modulation - Mono	Tuner P.C.B. L305 L306	<ol style="list-style-type: none"> 1. Set the Tuner Amplifier to Manual mode. 2. Adjust L305 so that the reading on the DC voltmeter is 0 V \pm20 mV. 3. Adjust L306 to obtain minimum distortion (THD: 0.07% or less). Repeat 2 and 3, if necessary.

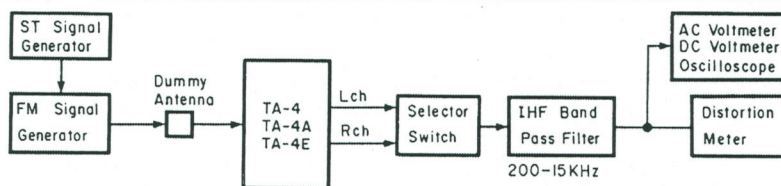


Fig. 4.1 FM Measuring Connection

STEP	ITEM	OUTPUT CONNECTION	MODE	ADJUSTMENT	REMARKS
4	Muting Level Adjustment	Oscilloscope to Tape 1 Record Output Jacks	Tuner Amplifier Same as above Signal Generator Freq. - 98 MHz RF Level - 30 dBf Modulation - Mono	Tuner P.C.B. VR302	<ol style="list-style-type: none"> 1. Set the Tuner Amplifier 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 30 dBf \pm6 dB.
5	Signal Strength Meter Level Adjustment	None	Tuner Amplifier Same as above Signal Generator Freq. - 98 MHz RF Level - 56 dBf Modulation - Mono	Tuner P.C.B. VR301	<ol style="list-style-type: none"> 1. Set the Tuner Amplifier 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 it gradually so that the segment 5 starts illuminating. At this point, check that the RF level of the Signal Generator is 52 to 64 dBf.
6	Stereo Separation Adjustment	AC Voltmeter to Tape 1 Record Output Jacks	Tuner Amplifier Same as above Signal Generator Freq. - 98 MHz RF Level - 65 dBf Modulation - L or R only	Main P.C.B. VR452 (Rch) VR453 (Lch) VR454 (Rch) VR455 (Lch) (Other only)	<p>For U.S.A., Canada & Europe versions:</p> <ol style="list-style-type: none"> 1. Set the Tuner Amplifier to Auto mode. 2. Apply modulation to only L channel. 3. Adjust VR452 (Rch) to obtain minimum reading on the AC voltmeter at the R channel output jack. 4. Apply modulation to only R channel. 5. Adjust VR453 (Lch) to obtain minimum reading on the AC voltmeter at the L channel output jack. <p>For Other version:</p> <ol style="list-style-type: none"> 1. Set the switches on the rear panel as follows: Freq. Step FM/AM - 100 kHz/10 kHz IF Band - Wide 2. Apply the same procedures as 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. Adjust VR454 (Rch) and VR455 (Lch) instead of VR452 and VR453.
7	Stereo THD Adjustment	Distortion Meter to Tape 1 Record Output Jacks	Tuner Amplifier Same as above Signal Generator Freq. - 98 MHz RF Level - 65 dBf Modulation - Stereo	Tuner P.C.B. VC307 VC355 (Other Only)	<ol style="list-style-type: none"> 1. Set the Tuner Amplifier to Auto mode. 2. Apply 1 kHz (L = -R) signal. 3. Adjust VC307 to obtain minimum distortion. 4. For Other version (Narrow) only, adjust VC355 to obtain minimum distortion.

4.2.2. AM Tuner Section

Note: Frequencies for Europe & Other (Narrow) are indicated in parentheses.

STEP	ITEM	OUTPUT CONNECTION	MODE	ADJUSTMENT	REMARKS
1	Tuning Level Adjustment	DC Voltmeter between both Pins of TP2 on Tuner P.C.B.	Tuner Amplifier Monitor Selector - Tuner Band Selector - AM Rec.Out Selector - Tuner Signal Generator Freq. - 520 (522) kHz/ 1710 (1611) kHz Modulation - 400 Hz 30%	Tuner P.C.B. L402 VC402	1. Set the frequency of the Signal Generator to 520 kHz (522 kHz) and make tuning. 2. Adjust L402 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 VC402 to obtain 22 V \pm 0.2 V on on DC voltmeter. 5. Repeat 1 through 4 once.
2	Tracking and IF Adjustment	AC Voltmeter to Tape 1 Record Output Jacks	Tuner Amplifier Same as above Signal Generator Freq. - 600 (603) kHz/ 1400 (1404) kHz RF Level - 82 dB μ Modulation - 400 Hz 30%	Tuner P.C.B. L401 L403 L404 VC406	1. Set the measurement instruments as shown in Fig. 4.2. Set the distance between the AM Loop Antenna of the TA-4/4A/4E and a test loop to 60 cm. To obtain 56 dB μ /m at the AM Loop Antenna, set the RF level output of the AM Signal Generator to 82 dB μ as loss is 26 dB in this setting. 2. Set the frequency of the Signal Generator to 600 kHz (603 kHz) and make tuning. 3. Adjust L401 to obtain maximum reading on the AC voltmeter. 4. Adjust L403 to obtain maximum reading on the AC voltmeter. 5. Adjust L404 to obtain maximum reading on the AC voltmeter. 6. Set the frequency to 1400 kHz (1404 kHz) and make tuning. 7. Adjust VC406 to obtain maximum reading on the AC voltmeter. 8. Repeat 2 through 7 once.
3	Signal Strength Meter Level Adjustment	None	Tuner Amplifier Same as above Signal Generator Freq. - 1000 (999) kHz RF Level - 106 dB μ Modulation - 400 Hz 30%	Tuner P.C.B. VR401	1. With the same setting as in Step 2, set the RF level output of the AM Signal Generator to 106 dB μ in order to obtain 80 dB μ /m at the AM Loop Antenna. 2. Adjust VR401 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.

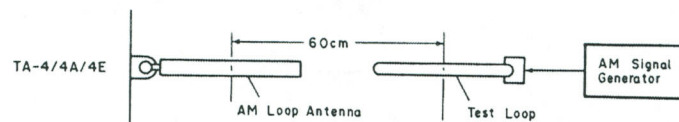


Fig. 4.2

5. MECHANISM ASS'Y AND PARTS LIST

5.1. Synthesis

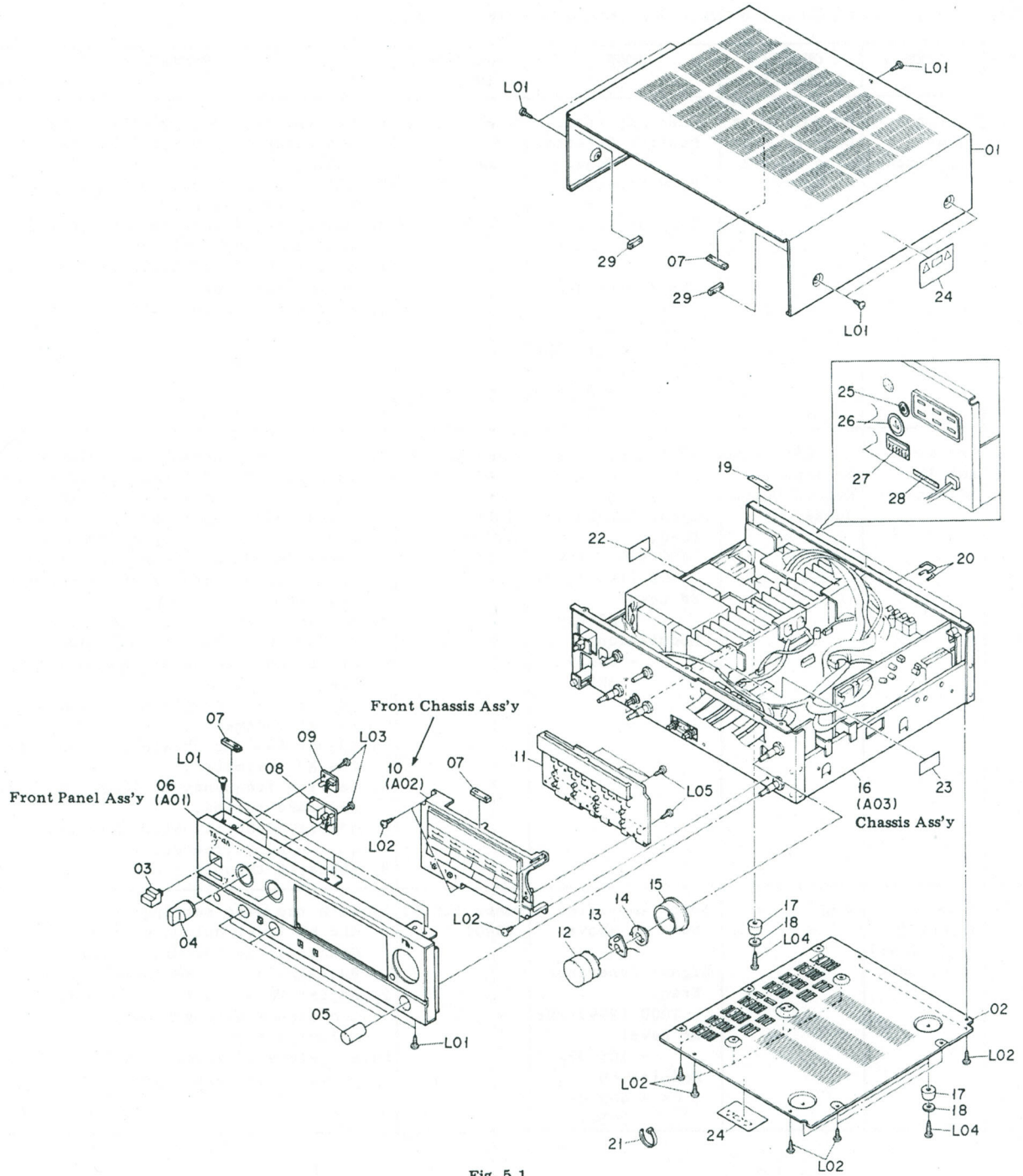


Fig. 5.1

Schematic Ref. No.	Part No.	Description	Q'ty
5.1. Synthesis			
		Synthesis	
01	OH05357A	Top Cover	1
02	OJ05626A	Bottom Cover	1
03	OH05340A	Power Button	1
04	HA05450A	Selector Knob Ass'y	2
05	HA05451A	Tone Volume Knob Ass'y	3
06	—	Front Panel Ass'y	1
07	OJ05633A	Top Cover Cushion	6
08	BA07297A	Remote Control Sensor P.C.B. Ass'y	1
09	BA07298A	Power Indicator P.C.B. Ass'y	1
10	—	Front Chassis Ass'y	1
11	BA07363A	Control Switch & Display P.C.B. Ass'y (TA-4/4E)	1
	BA07294A	Control Switch & Display P.C.B. Ass'y (TA-4A)	1
12	HA05465A	Master Volume Ass'y	1
13	BA07320A	Volume Indicator P.C.B. Ass'y	1
14	OH05356A	Volume Indicator P.C.B. Holder	1
15	HA05466A	Balance Knob Ass'y	1
16	—	Chassis Ass'y	1
17	OJ05420A	Leg N	4
18	OJ05461A	Leg Felt N	4
19	OJ05407A	Top Cover Sheet R	3
20	OB90342A	U-Shape Pin 14	2
21	OB90019A	Insu-Lock	42
22	OM05201B	Fuse Caution Label A (TA-4A)	1
23	OM05202A	Fuse Caution Label B (TA-4A)	1
24	OM04377B	Caution Label (TA-4A)	2
25	OM05148A	Production Date Label (TA-4A)	1
26	OM04113A	LA Label (TA-4 (U.S.A.))	1
27	OM04430A	Pass Label (TA-4/4E)	1
	OM05171A	Pass Label (TA-4A)	1
28	OM05281A	Serial Number Label (TA-4/4E)	1
	OM05199A	Serial Number Label (TA-4A)	1
29	OJ05706A	Side Rubber	2
L01	OE03433A	BT3x6 ⊕ Binding Projected (Black Chromate)	11
L02	OE00857A	BT3x6 ⊕ Binding	17
L03	OE00921A	BT3x8 ⊕ Binding (Black Chromate)	2
L04	OE00888A	BT3x12 ⊕ Binding	4
L05	OE00846A	BT3x8 ⊕ Pan	6
5.2. Front Panel Ass'y (A01)			
A01	—	Front Panel Ass'y	1
01	OH05331A	Front Panel (TA-4)	1
	OH05329B	Front Panel (TA-4A)	1
	OH05330A	Front Panel (TA-4E)	1
02	OH05103A	LED Lens B	2
03	OH05363C	Remote Control Lens	1
04	OJ05636A	Diffuser Sheet C	1
05	OH05334A	Front Escutcheon L	1
06	OJ05750A	Push Knob Spring	1
07	OH05341A	Push Button	1
08	OH05333A	Front Escutcheon R	1
5.3. Front Chassis Ass'y (A02)			
A02	—	Front Chassis Ass'y	1
01	HA05478A	Video-2 Button Ass'y	1
02	HA05479A	Tape-1 Button Ass'y	1
03	HA05480A	Tape-2 Button Ass'y	1
04	HA05481A	Tape-3 Button Ass'y	1
05	HA05490A	Phono Button Ass'y	1
06	HA05491A	CD Button Ass'y	1
07	HA05492A	Tuner Button Ass'y	1
08	HA05477A	Video-1 Button Ass'y	1
09	OH05346B	Function Plate	1
10	OH05343A	Preset Lens A	11
11	OH05335A	Front Mold	1
12	OJ05633A	Top Cover Cushion	1
13	OH05344A	Display Lens	1
14	OH05338A	Preset Knob A	12
15	OH05339A	Preset Knob B	4
16	OJ05750A	Push Spring	2
17	OH05341A	Push Button	2
18	OH05342A	Muting Knob	1

5.2. Front Panel Ass'y (A01)

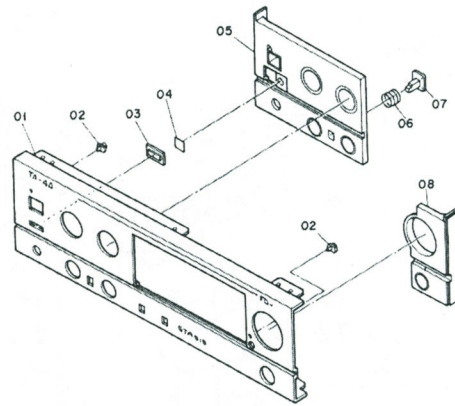


Fig. 5.2

5.3. Front Chassis Ass'y (A02)

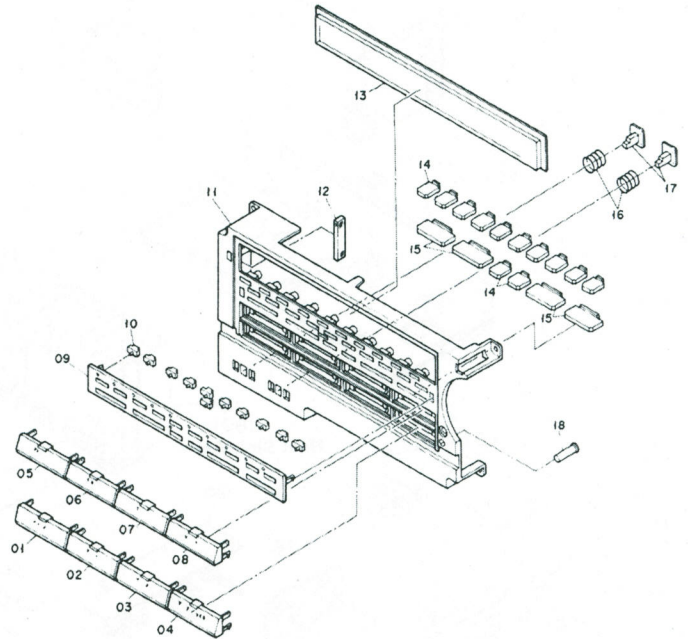


Fig. 5.3

5.4. Chassis Ass'y (A03)

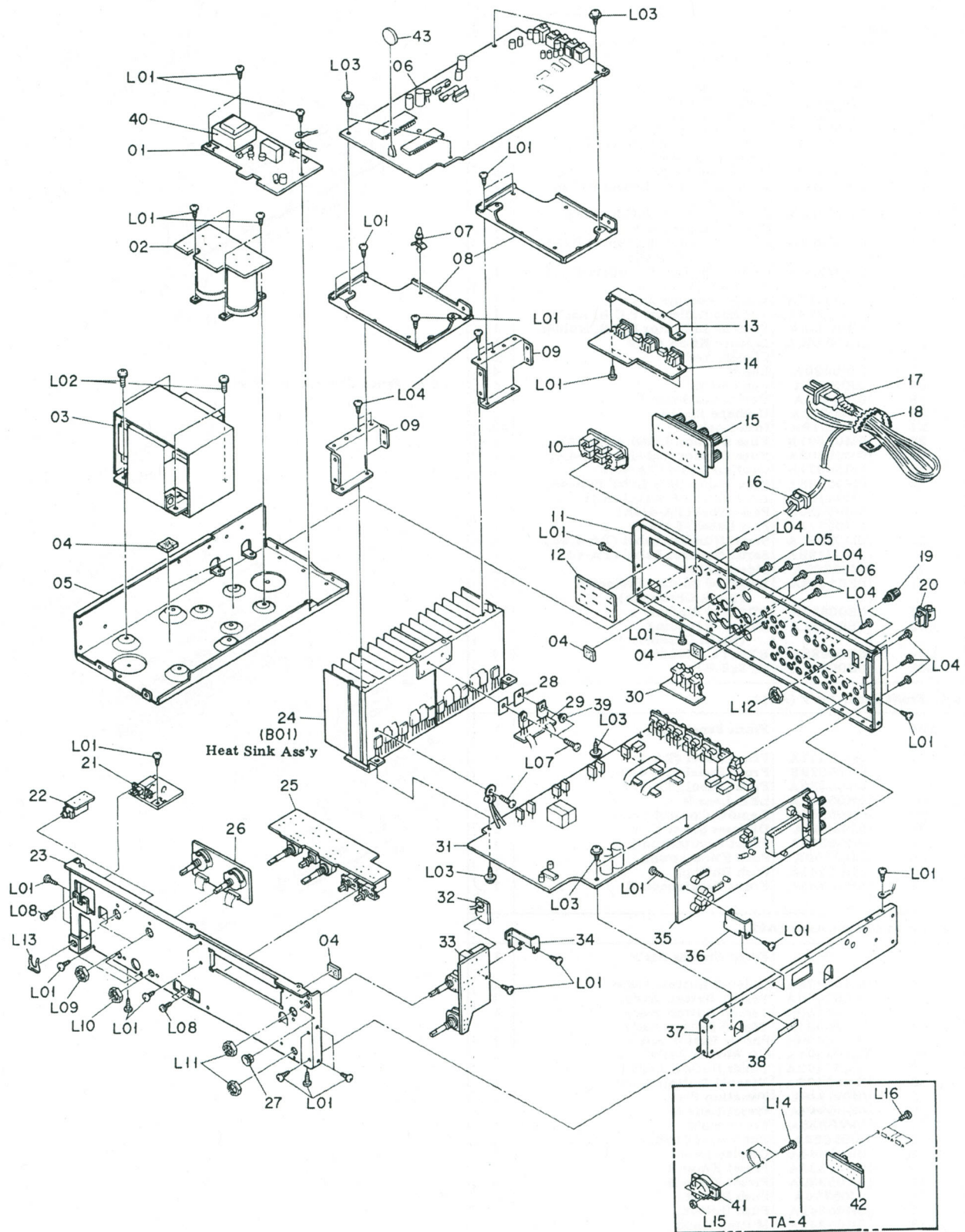


Fig. 5.4

Schematic Ref. No.	Part No.	Description	Q'ty	Schematic Ref. No.	Part No.	Description	Q'ty
5.4. Chassis Ass'y (A03)				L07	OE03138A	M3x10 ⊕ Binding	3
				L08	OE00510A	M3x8 ⊕ Pan (2A)	4
A03	—	Chassis Ass'y	1	L09	—	Nut	2
01	BA07364A	Standby P.C.B. Ass'y (TA-4)	1	L10	—	Nut	2
	BA07287A	Standby P.C.B. Ass'y (TA-4A)	1	L11	—	Nut	2
	BA07365A	Standby P.C.B. Ass'y (TA-4E)	1	L12	OJ05673A	Nut 70	1
02	BA07284A	Power Supply P.C.B. Ass'y	1	L13	OJ05427A	Mounting Plate	1
03	OB50118A	Power Transformer 110V—240V (TA-4)	1	L14	OE00986A	M3x10 ⊕ Binding (TA-4)	2
	OB50117A	Power Transformer (TA-4A)	1	L15	OE03176A	Nut Hex. M3 (TA-4)	2
	OB50119A	Power Transformer 220V—240V (TA-4E)	1	L16	OE03202A	M2.6x3 ⊕ Binding (Black Chromate) (TA-4)	4
04	OJ05307A	BS Damper	5	—	OE00174A	Earth Lug B-4 (TA-4E)	1
05	OJ05617B	Power Supply Chassis	1				
06	BA07360A	Video & Logic P.C.B. Ass'y (TA-4)	1				
	BA07296A	Video & Logic P.C.B. Ass'y (TA-4A)	1				
	BA07361A	Video & Logic P.C.B. Ass'y (TA-4E)	1				
07	OJ05637A	P.C.B. Spacer	1				
08	OJ05620B	Shield Plate	2				
09	OJ05622B	Heat Sink Holder A	2				
10	OB81706A	AC Outlet 3P (TA-4/4A)	1				
	OB81987A	AC Outlet S-16536 (TA-4E)	1				
11	OH05361A	Rear Panel (TA-4)	1				
	OH05358A	Rear Panel (TA-4A)	1				
	OH05359B	Rear Panel (TA-4E)	1				
12	OB60602A	AC Outlet P.C.B. (TA-4/4A)	1				
13	OJ05621A	DIN Jack Holder	1				
14	BA07323A	Remote Jack P.C.B. Ass'y	1				
15	BA07285A	Speaker Terminal P.C.B. Ass'y (TA-4/4A)	1				
	BA07555A	Speaker Terminal P.C.B. Ass'y (TA-4E)	1				
16	OB90280A	Cord Bushing (TA-4/4A)	1				
	OB90367A	Cord Bushing (TA-4E)	1				
17	OB80199A	AC Power Cord SPT-2 (TA-4/4A)	1				
	OB80124A	AC Power Cord (TA-4E)	1				
18	OJ05665A	Free-up Belt	1				
19	JA04383A	GND Terminal Ass'y	1				
20	OB90316A	AM Antenna Holder	1				
21	BA07283A	Power Switch P.C.B. Ass'y (TA-4/4A)	1				
	BA07553A	Power Switch P.C.B. Ass'y (TA-4E)	1				
22	BA07291A	Headphone Jack P.C.B. Ass'y	1				
23	OJ05619B	Front Chassis	1				
24	—	Heat Sink Ass'y	1				
25	BA07288A	Tone Control P.C.B. Ass'y (TA-4/4A)	1				
	BA07554A	Tone Control P.C.B. Ass'y (TA-4E)	1				
26	BA07286A	Selector P.C.B. Ass'y	1				
27	OJ05702A	Snap Bushing	1				
28	OJ05692A	Transistor Silicon Rubber B	2				
29	BA07331A	Transistor Joint P.C.B. Ass'y	1				
30	BA07290A	Pin Jack P.C.B. Ass'y	1				
31	BA07540A	Main P.C.B. Ass'y (TA-4)	1				
	BA07282A	Main P.C.B. Ass'y (TA-4A)	1				
	BA07541A	Main P.C.B. Ass'y (TA-4E)	1				
32	BA07289A	Volume Motor P.C.B. Ass'y	1				
33	BA07293A	Volume P.C.B. Ass'y	1				
34	OJ05632B	Volume Holder	1				
35	BA07357A	Tuner P.C.B. Ass'y (TA-4)	1				
	BA07295A	Tuner P.C.B. Ass'y (TA-4A)	1				
	BA07358A	Tuner P.C.B. Ass'y (TA-4E)	1				
36	OJ05631A	Tuner P.C.B. Holder	1				
37	OJ05618B	Side Chassis	1				
38	OM05210A	Amp. No. Seal (TA-4A)	1				
39	OB90369A	Transistor Bushing	1				
40	OB50115A	Sub Transformer 100V—240V (TA-4)	1				
	OB50114A	Sub Transformer (TA-4A)	1				
	OB50116A	Sub Transformer (TA-4E)	1				
41	OB70080A	Voltage Selector (TA-4)	1				
42	BA07543A	IF Band Switch P.C.B. Ass'y (TA-4)	1				
43	OB90241A	Lithium Battery	1				
L01	OE00857A	BT3x6 ⊕ Binding	34				
L02	OE03494A	M5x10 ⊕ Pan (2A)	4				
L03	OE03432A	BT3x6 ⊕ Tapping (Black Chromate)	8				
L04	OE00921A	BT3x8 ⊕ Binding (Black Chromate)	26				
L05	OE00818A	M3x8 ⊕ Binding (Black Chromate)	2				
L06	OE03433A	BT3x6 ⊕ Pan Projected (Black Chromate)	2				

5.5. Heat Sink Ass'y (B01)

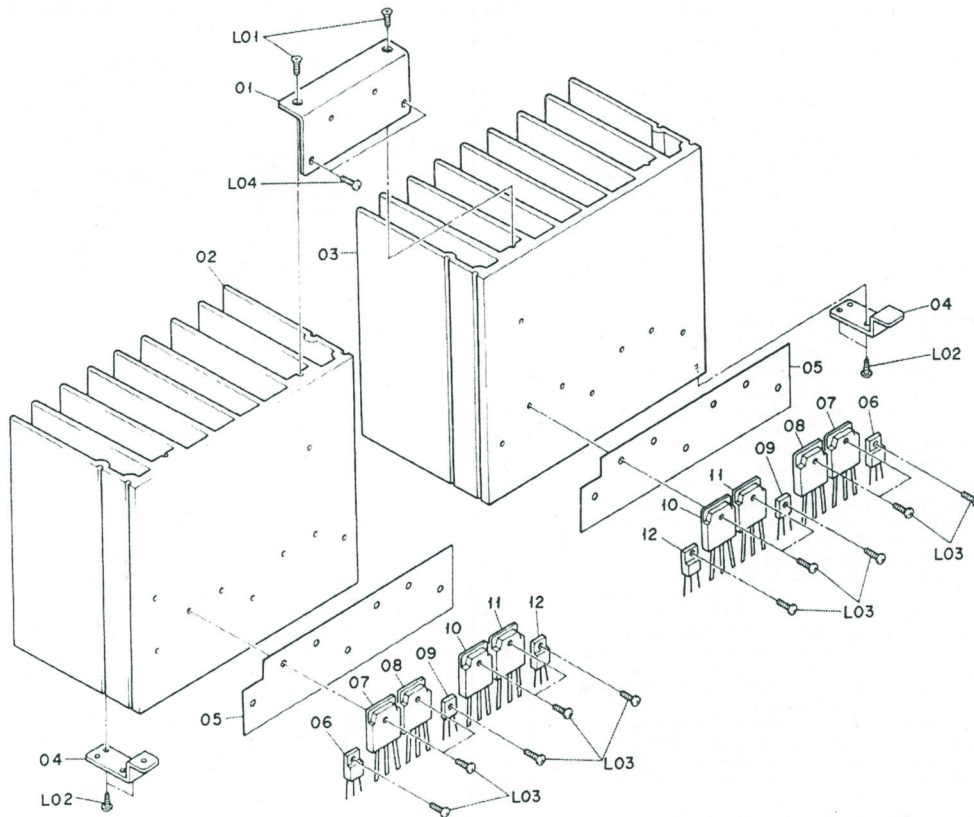


Fig. 5.5

Schematic Ref. No.	Part No.	Description	Q'ty
5.5. Heat Sink Ass'y (B01)			
B01	—	Heat Sink Ass'y	1
01	OJ05630A	Joint Holder	1
02	OJ05616A	Heat Sink	1
03	OJ05627A	Heat Sink R	1
04	OJ05623A	Heat Sink Holder B	2
05	OJ05700A	Transistor Silicon Rubber	2
06	OB10258A	Transistor 2SA1667 (O,Y) (Pair) [Q260L,R]	2
07	OB10250A	Transistor 2SC3856 (O,Y) (Pair) [Q264L,R]	2
08	OB10250A	Transistor 2SC3856 (O,Y) (Pair) [Q263L,R]	2
09	OB06316A	Transistor 2SD882 (R,S) (Pair) [Q258L,R]	2
10	OB10251A	Transistor 2SA1492 (O,Y) (Pair) [Q262L,R]	2
11	OB10251A	Transistor 2SA1492 (O,Y) (Pair) [Q261L,R]	2
12	OB10259A	Transistor 2SC4381 (O,Y) (Pair) [Q259L,R]	2
L01	OE03495A	BT 3x10 ⊕ Countersunk (Black Chromate)	2
L02	OE00921A	BT 3x8 ⊕ Binding (Black Chromate)	4
L03	OE03138A	M3x10 ⊕ Binding	14
L04	OE00818A	M3x8 ⊕ Binding	2
—	OB19011A	Thermistor [TH250]	1

6. 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
 CE — Electrolytic Capacitor, CML — Mylar Capacitor, CC — Ceramic Capacitor, CPP — PP Capacitor,
 CMM — Metalized Mylar Capacitor, CSP — Polystyrene Capacitor, C — Mica Capacitor

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

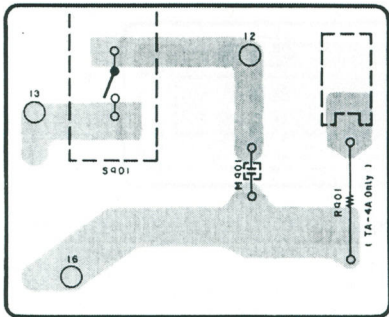
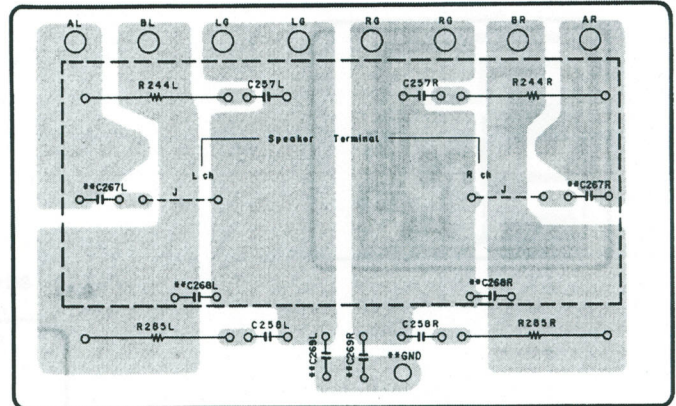


Fig. 6.1

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



** : TA-4E

Fig. 6.2

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

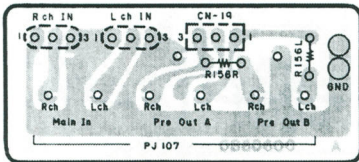


Fig. 6.3

6.4. Headphone Jack P.C.B. Ass'y

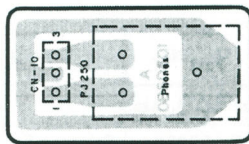


Fig. 6.4

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

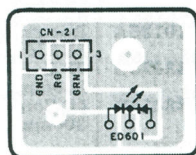


Fig. 6.5

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
6.1. Power Switch P.C.B. Ass'y			6.3. Pin Jack P.C.B. Ass'y		
	BA07283A	Power Switch P.C.B. Ass'y (TA-4/4A)		BA07290A	Pin Jack P.C.B. Ass'y
	BA07553A	Power Switch P.C.B. Ass'y (TA-4E)		OB60600A	Pin Jack P.C.B.
R901	OB60593A	Power Switch P.C.B. RK 4.7M 1/2W J (TA-4A)	R156L,R	OB09653A	RK 100 1/6W J
	OB20057A	Power Switch SDDLA1007U	PJ107	OB81949A	6P Pin Jack
S901	OB71008A	Earth Plate (TA-4/4A) (1)	CN19	OB81968A	3P-T Post EH-3PREDB3B
M901	OB41829A		6.4. Headphone Jack P.C.B. Ass'y		
	OJ05670A			BA07291A	Headphone Jack P.C.B. Ass'y
6.2. Speaker Terminal P.C.B. Ass'y				OB60601A	Headphone Jack P.C.B.
	BA07285A	Speaker Terminal P.C.B. Ass'y (TA-4/4A)		OB81757A	Headphone Jack
	BA07555A	Speaker Terminal P.C.B. Ass'y (TA-4E)	PJ250	OB83406B	3P Connector 350mm
	OB60595A	Speaker Terminal P.C.B.	CN10		
R244L,R	OB24199A	RF 22 1W J	6.5. Power Indicator P.C.B. Ass'y		
R285L,R	OB24199A	RF 22 1W J		BA07298A	Power Indicator P.C.B. Ass'y
C257L,R	OB01609A	CML 0.01μ 50V K		OB60608A	Power Indicator P.C.B.
C258L,R	OB01609A	CML 0.01μ 50V K	ED601	OB12421A	LED SPR-56PDWF GRN/RED
C267L,R	OB09290A	CC 0.01μ 50V Z (TA-4E)	CN21	OB83409A	2P Connector Ass'y
C268L,R	OB09290A	CC 0.01μ 50V Z (TA-4E)			
C269L,R	OB09290A	CC 0.01μ 50V Z (TA-4E)			
CN13	OB83420B	6P Connector 350mm			
	OB81950A	Speaker Terminal 8P (1)			

6.6. Volume Indicator P.C.B. Ass'y

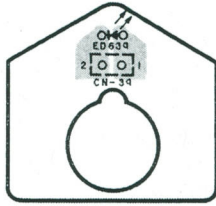


Fig. 6.6

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

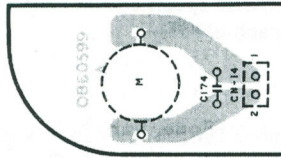


Fig. 6.7

6.8. Transistor Joint P.C.B. Ass'y

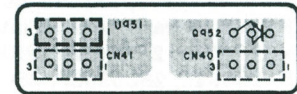


Fig. 6.8

6.9. Remote Control Sensor P.C.B. Ass'y

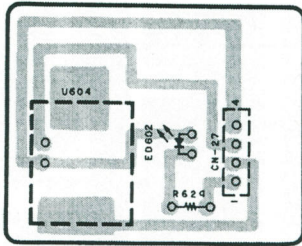


Fig. 6.9

6.10. IF Band Switch P.C.B. Ass'y

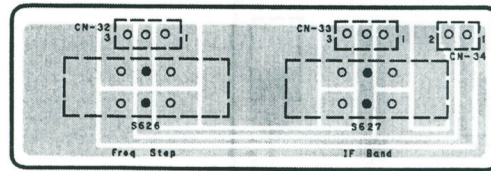


Fig. 6.10

6.11. Selector P.C.B. Ass'y

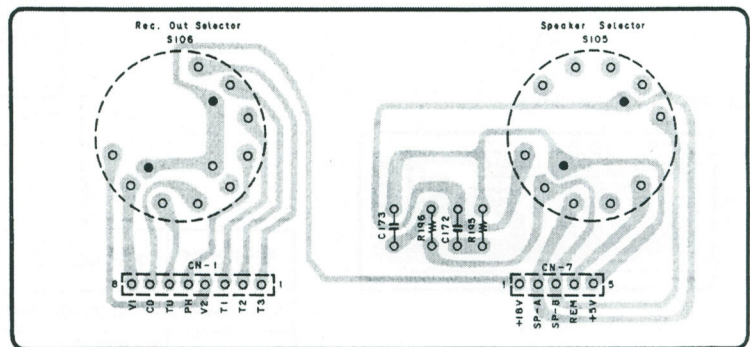


Fig. 6.11

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
6.6. Volume Indicator P.C.B. Ass'y			6.9. Remote Control Sensor P.C.B. Ass'y			6.11. Selector P.C.B. Ass'y		
ED639	BA07320A	Volume Indicator P.C.B. Ass'y	U604 ED602	BA07297A	Remote Control Sensor P.C.B. Ass'y	R195,196 C172,173 S105	BA07286A	Selector P.C.B. Ass'y
	OB60611A	Volume Indicator P.C.B.		OB60607A	Remote Control Sensor P.C.B.		OB60596A	Selector P.C.B.
	OB12395A	LED SLR-34PC3F P-GRN		OB11511A OB12395A	IC BX1407 LED SLR-34PC3F P-Green		OB09653A OB41917A OB70134A	RK 100 1/6W J CC 0.1μ 25V Z Rotary Switch SRRM 2-5
6.7. Volume Motor P.C.B. Ass'y			R629 CN27	OB09662A OB83410A 0J05416A	RK 240 1/6W J 4P Connector Ass'y 400mm LED Reflector (1)	S106	OB70135A	Rotary Switch SRRM 1-9
C174 CN14	BA07289A	Volume Motor P.C.B. Ass'y	6.10. IF Band Switch P.C.B. Ass'y			CN1 CN7	OB83425B	8P Connector Ass'y 350mm
	OB60599A	Volume Motor P.C.B.	S626,627 CN32 CN33 CN34	BA07543A	IF Band Switch P.C.B. Ass'y (TA-4)		OB83413B	5P Connector Ass'y 300mm
	OB41917A OB83401B	CC 0.1μ 25V Z 2P Connector 200mm		OB60609B	IF Band Switch P.C.B.			
6.8. Transistor Joint P.C.B. Ass'y			S626,627 CN32 CN33 CN34	OB70137A OB83429B OB83428B OB83430B	Slide Switch C.Cable Ass'y 3P C.Cable Ass'y 3P C.Cable Ass'y 2P			
U951 Q952 CN40,41	BA07331A	Transistor Joint P.C.B. Ass'y						
	OB60613A	Transistor Joint P.C.B.						
	OB11526A OB06452A OB83437A	IC NJM78M12 TR 2SD1406 (Y) Flat Wire 3P						

6.12. Remote Jack P.C.B. Ass'y

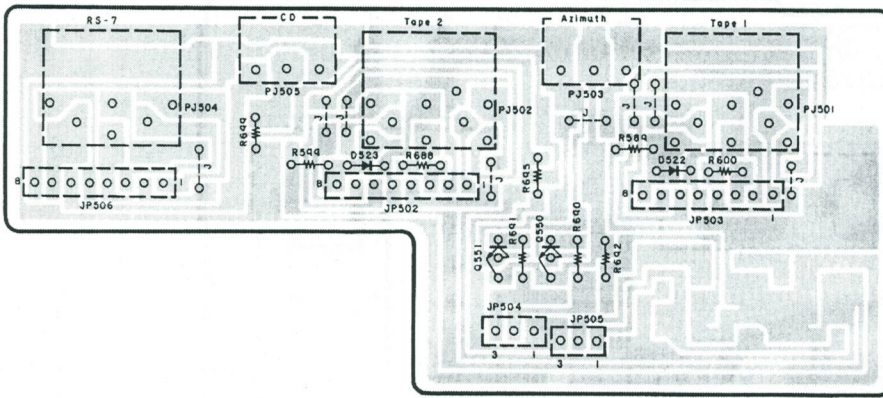


Fig. 6.12

6.13. Volume P.C.B. Ass'y

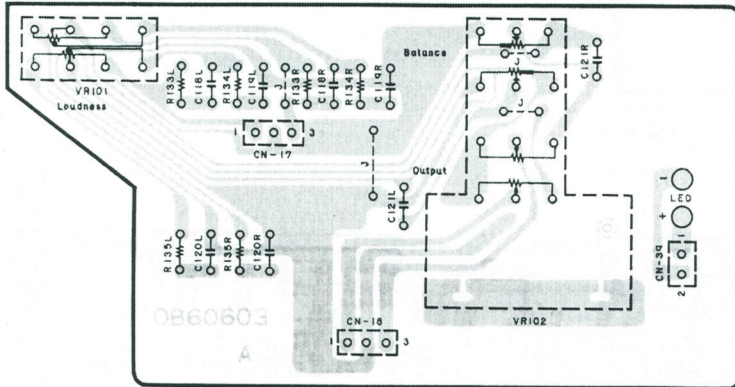


Fig. 6.13

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

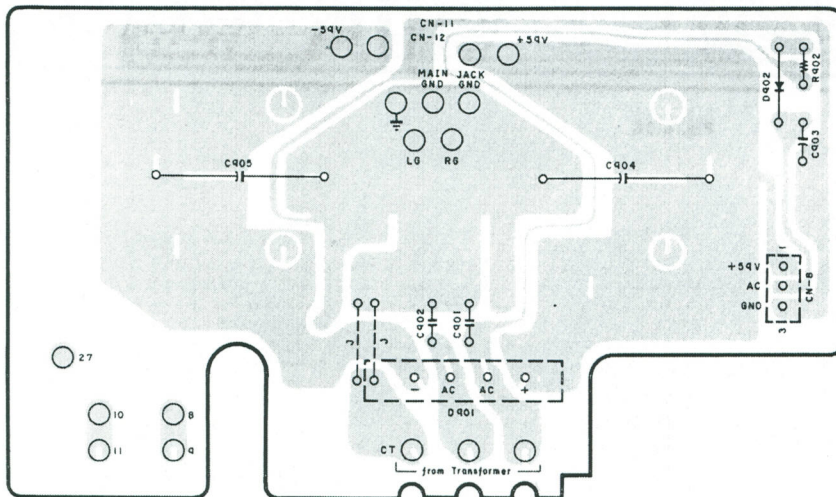


Fig. 6.14

Schematic Ref. No.	Part No.	Description
6.12. Remote Jack P.C.B. Ass'y		
	BA07323A	Remote Jack P.C.B. Ass'y
Q550,551	OB60614A	Remote Jack P.C.B.
D522,523	OB10113A	TR 2SC1815 (GR)
R589	OB06398A	SID 1S5176
R599	OB09637A	RK 22 1/6W J
R600	OB09637A	RK 22 1/6W J
R688	OB09677A	RK 1K 1/6W J
R690,691	OB09677A	RK 1K 1/6W J
R692	OB09717A	RK 47K 1/6W J
R695	OB09637A	RK 22 1/6W J
R699	OB09709A	RK 22K 1/6W J
PJ501,502	OB09637A	RK 22 1/6W J
PJ503	OB81754A	8P Din Socket
PJ504	OB81952A	ST Mini Jack
PJ505	OB81953A	6P Din Socket
	OB81952A	ST Mini Jack
	OJ05621A	Remote Jack Holder (1)
6.13. Volume P.C.B. Ass'y		
	BA07293A	Volume P.C.B. Ass'y
VR101	OB60603A	Volume P.C.B.
VR102	OB30091A	VR 300K
	OB30092A	Volume
R133L,R	OB09709A	250KMN+50KB
R134L,R	OB09709A	RK 22K 1/6W J
R135L,R	OB09699A	RK 8.2K 1/6W J
C118L,R	OB09707A	RK 18K 1/6W J
C119L,R	OB41274A	CML 1000P 50V J
C120L,R	OB41290A	CML 0.022μ 50V J
C121L,R	OB41298A	CML 0.1μ 50V J
CN17	OB41702A	CBP 22P 50V J
	OB83422B	3P Connector
CN18	OB81760A	400mm
		3P-T Post EH-3P
CN39	OB83424A	WHT Cable Ass'y 2P
6.14. Power Supply P.C.B. Ass'y		
	BA07284A	Power Supply P.C.B. Ass'y
D901	OB60594B	Power Supply P.C.B.
D902	OB12617A	SID KBU8D
R902	OB12586A	SID 1N4002
C901,902	OB09711A	RK 27K 1/6W J
C903	OB41537A	CML 0.1μ 100V J
C904,905	OB40126A	CE 4.7μ 63V
CN8	OB40511A	CE 1200μ 71V
	OB83407B	3P Connector Ass'y
CN11	OB83418B	350mm
		2P Connector Ass'y
CN12	OB83419B	400mm
		2P Connector Ass'y
		500mm
	OJ05625B	Heat Sink (1)
	OJ05701A	Transister Silicon Rubber D (1)

6.15. Standby P.C.B. Ass'y

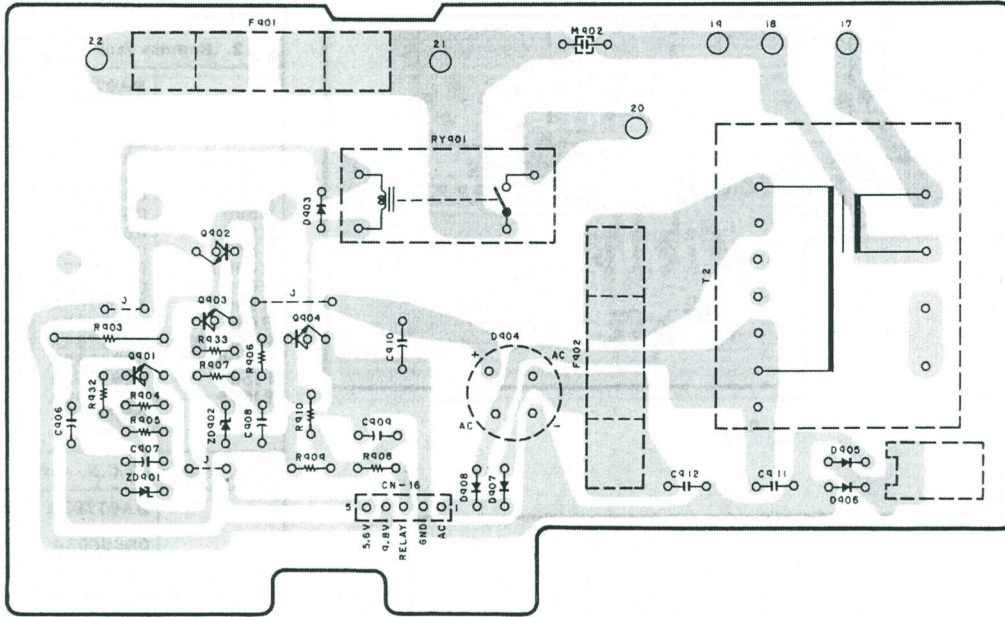


Fig. 6.15

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

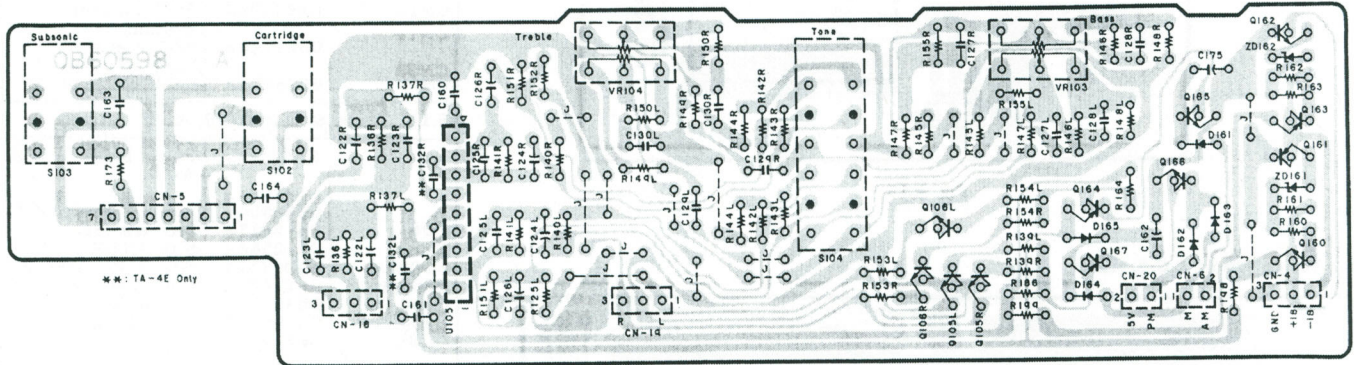


Fig. 6.16

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
6.15. Standby P.C.B. Ass'y			6.16. Tone Control P.C.B. Ass'y		
	BA07364A	Standby P.C.B. Ass'y (TA-4)		BA07288A	Tone Control P.C.B. Ass'y (TA-4/4A)
	BA07287A	Standby P.C.B. Ass'y (TA-4A)		BA07554A	Tone Control P.C.B. Ass'y (TA-4E)
	BA07365A	Standby P.C.B. Ass'y (TA-4E)			
Q901	OB60597A	Standby P.C.B.	U105	OB60598A	Tone Control P.C.B.
	OB06066A	TR 2SD471 (L,M) (TA-4)	Q105L,R	OB11512A	IC NJM5532SD
	OB06100A	TR 2SC945 (K,P,Q) (TA-4A/4E)	Q106L,R	OB06299A	TR 2SC2878
Q902	OB06452A	TR 2SD1406 (TA-4/4E)	Q160	OB06299A	TR 2SC2878
	OB06066A	TR 2SD471 (L,M) (TA-4A)	Q161	OB06142A	TR 2SC2240 (BL)
Q903	OB06100A	TR 2SC945 (K,P,Q)	Q162	OB06013A	TR 2SA733 (P,Q)
Q904	OB06322A	TR 2SC2002 (K,L)	Q163	OB06100A	TR 2SC945 (K,P,Q)
ZD901	OB12619A	ZD 6.8V	Q164	OB10050A	TR 2SA970 (BL)
		RD6.8ES-T1B2	Q165	OB10053A	TR DTA144ES
ZD902	OB12623A	ZD 11V	Q166	OB10062A	TR DTC144ES
		RD11ES-T1B2	Q167	OB10062A	TR DTC144ES
D903	OB06398A	SiD 1SS176	ZD161,162	OB10053A	TR DTA144ES
D904	OB12604A	SiD W02M	D161,162	OB12177A	ZD 13V
D905,906	OB06398A	SiD 1SS176	D163,164		RD13JS-T1B2
D907,908	OB12624A	SiD 1SS177 (TA-4)	D165	OB06398A	SiD 1SS176
		OB06398A	VR103	OB06398A	SiD 1SS176
R903	OB24200A	RF 56 1W J	VR104	OB06398A	SiD 1SS176
R904,905	OB09677A	RK 1K 1/6W J	R136L,R	OB30093A	Volume 50KCx2
R906,907	OB09669A	RK 470 1/6W J	R137L,R	OB30094A	Volume 100KCx2
R908	OB09677A	RK 1K 1/6W J	R139L,R	OB09727A	RK 120K 1/6W J
R909	OB09709A	RK 22K 1/6W J	R140L,R	OB25099A	RM 100 1/4W F
R910	OB09629A	RK 10K 1/6W J	R141L,R	OB09717A	RK 47K 1/6W J
R932,933	OB09677A	RK 1K 1/6W J	R142L,R	OB09725A	RK 100K 1/6W J
C906	OB40121A	CE 220μ 50V (TA-4)	R143L,R	OB09749A	RK 1M 1/6W J
		OB40079A	R144L,R	OB22570A	RM 12.0K 1/4W F
		OB40116A	R145L,R	OB22570A	RM 12.0K 1/4W F
		OB01412A	R146L,R	OB25195A	RM 1.00K 1/4W F
		OB40119A	R147L,R	OB09703A	RK 12K 1/6W J
		OB01403A	R148L,R	OB09705A	RK 15K 1/6W J
		OB01836A	R149L,R	OB09669A	RK 470 1/6W J
		OB40335A	R150L,R	OB09684A	RK 2K 1/6W J
		OB40081A	R151L,R	OB09687A	RK 2.7K 1/6W J
		OB01603A	R152L,R	OB09673A	RK 680 1/6W J
		OB90332A	R153L,R	OB09725A	RK 100K 1/6W J
		OB90334A	R154L,R	OB25195A	RM 1.00K 1/4W F
			R155L,R	OB09653A	RK 100 1/6W J
			R160	OB09717A	RK 47K 1/6W J
			R161,162	OB09723A	RK 82K 1/6W J
			R163	OB09685A	RK 2.2K 1/6W J
			R164	OB09695A	RK 5.6K 1/6W J
			R173	OB09685A	RK 2.2K 1/6W J
			R186	OB09725A	RK 100K 1/6W J
			R198,199	OB09731A	RK 180K 1/6W J
			C122L,R	OB09725A	RK 100K 1/6W J
			C123L,R	OB09645A	RK 47 1/6W J
			C124L,R	OB40612A	CE 0.33μ 50V (LN)
			C125L,R	OB41788A	CSP 220P 50V J
			C126L,R	OB09933A	CE 2.2μ 50V (LN)
			C127L,R	OB41922A	CSP 47P 50V J
			C128L,R	OB09933A	CE 2.2μ 50V (LN)
			C129L,R	OB41296A	CML 0.068μ 50V J
			C130L,R	OB41305A	CML 0.39μ 50V J
			C132L,R	OB09189A	CML 2700P 50V J
				OB05832A	CML 0.018μ 50V J
				OB41735A	CC 100P 50V J (TA-4E)
F901	OB90354A	Fuse 6A 125V (TA-4/4A)	C160,161	OB41298A	CML 0.1μ 50V J
	OB90356A	Fuse T3.15A 250V (TA-4E)	C162	OB01400A	CE 100μ 16V
F902	OB90335A	Fuse 0.5A 250V (TA-4/4A)	C163,164	OB01603A	CML 0.1μ 50V K
	OB90288A	Fuse T500mA 250V (TA-4E)	C175	OB01405A	CE 1μ 50V
CN16	OB83414B	5P Connector Ass'y 400mm	S102,103	OB70132A	Push Switch SPUN2-2
M902	OB41829A	CC 4700P 100V Z	S104	OB70133A	Push Switch SPUN4-2
	OE00510A	M3x8 ⊕ Pan (2A) (TA-4) (1)	CN4	OB83408B	3P Connector Ass'y 450mm
	OJ05670A	Earth Plate (1)	CN5	OB83415B	7P Connector Ass'y 330mm
	OJ05846A	Heat Sink (TA-4) (1)	CN6	OB83404B	2P Connector Ass'y 350mm
	OB80204A	Terminal Pin (K) (TA-4) (1)	CN18	OB83421B	3P Connector Ass'y 250mm
	OB81930A	Fuse Holder SN-5051 (TA-4/4A) (4)	CN19	OB83423B	3P Connector Ass'y 400mm
	OB81848A	Fuse Holder Z-N1152 (TA-4E) (4)	CN20	OB83403B	2P Connector Ass'y 270mm
	OM03936B	Fuse Label T3.15A 250V (TA-4E) (1)			
	OM04096C	Fuse Label T500mA 250V (TA-4E) (2)			

6.17. Control Switch & Display P.C.B. Ass'y

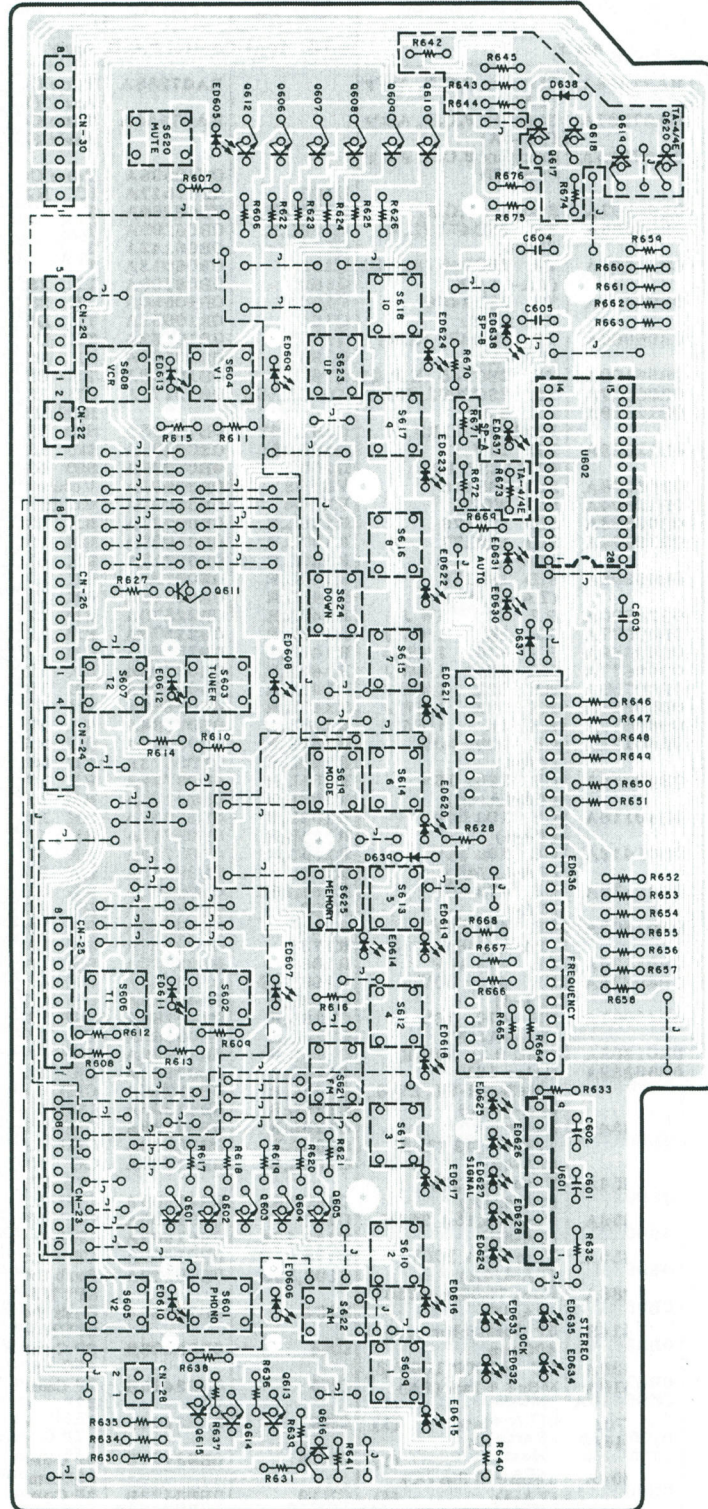


Fig. 6.17

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
6.17. Control Switch & Display P.C.B. Ass'y			R636,637	OB09655A	RK 120 1/6W J
			R638	OB09655A	RK 120 1/6W J
	BA07363A	Control Switch & Display P.C.B. Ass'y (TA-4/4E)	R639,640	OB09717A	RK 47K 1/6W J
			R641	OB09717A	RK 47K 1/6W J
	BA07294A	Control Switch & Display P.C.B. Ass'y (TA-4A)	R642	OB09701A	RK 10K 1/6W J (TA-4/4E)
			R643,644	OB09693A	RK 4.7K 1/6W J (TA-4/4E)
	OB60604B	Control Switch & Display P.C.B.	R645	OB09693A	RK 4.7K 1/6W J (TA-4/4E)
U601	OB11244A	IC LB1413N	R646,647	OB09662A	RK 240 1/6W J
U602	OB11523A	IC TD6301AN	R648,649	OB09662A	RK 240 1/6W J
Q601,602	OB10257A	TR 2SC2021 (S)	R650,651	OB09662A	RK 240 1/6W J
Q603,604	OB10257A	TR 2SC2021 (S)	R652,653	OB09662A	RK 240 1/6W J
Q605,606	OB10257A	TR 2SC2021 (S)	R654,655	OB09662A	RK 240 1/6W J
Q607,608	OB10257A	TR 2SC2021 (S)	R656,657	OB09662A	RK 240 1/6W J
Q609,610	OB10257A	TR 2SC2021 (S)	R658,659	OB09662A	RK 240 1/6W J
Q611,612	OB10257A	TR 2SC2021 (S)	R660,661	OB09662A	RK 240 1/6W J
Q613,614	OB10257A	TR 2SC2021 (S)	R662,663	OB09662A	RK 240 1/6W J
Q615,616	OB10256A	TR 2SA937 (R)	R664,665	OB09662A	RK 240 1/6W J
Q617,618	OB10257A	TR 2SC2021 (S) (TA-4/4E)	R666	OB09662A	RK 240 1/6W J
Q619,620	OB10257A	TR 2SC2021 (S) (TA-4/4E)	R667	OB09655A	RK 120 1/6W J
D637	OB06398A	SiD 1SS176	R668	OB09679A	RK 1.2K 1/6W J
D638	OB06398A	SiD 1SS176 (TA-4/4E)	R669,670	OB09668A	RK 430 1/6W J
D639	OB06398A	SiD 1SS176	R671,672	OB09655A	RK 120 1/6W J (TA-4/4E)
ED605,606	OB12395A	LED SLR-34PC3F P-Green	R673	OB09662A	RK 240 1/6W J (TA-4/4E)
ED607,608	OB12395A	LED SLR-34PC3F P-Green	R674	OB09655A	RK 120 1/6W J (TA-4/4E)
ED609,610	OB12395A	LED SLR-34PC3F P-Green	R675,676	OB09659A	RK 180 1/6W J
ED611,612	OB12395A	LED SLR-34PC3F P-Green	C601,602	OB40162A	CE 10μ 16V
ED613,614	OB12395A	LED SLR-34PC3F P-Green	C603	OB41787A	CC 0.022μ 25V Z
ED615,616	OB12395A	LED SLR-34PC3F P-Green	C604,605	OB41911A	CC 470P 50V J
ED617,618	OB12395A	LED SLR-34PC3F P-Green	S601,602	OB70043A	Tact Switch SKHHPM
ED619,620	OB12395A	LED SLR-34PC3F P-Green	S603,604	OB70043A	Tact Switch SKHHPM
ED621,622	OB12395A	LED SLR-34PC3F P-Green	S605,606	OB70043A	Tact Switch SKHHPM
ED623,624	OB12395A	LED SLR-34PC3F P-Green	S607,608	OB70043A	Tact Switch SKHHPM
ED625,626	OB12625A	LED SLR-34PG3F P-Green	S609,610	OB70043A	Tact Switch SKHHPM
ED627,628	OB12625A	LED SLR-34PG3F P-Green	S611,612	OB70043A	Tact Switch SKHHPM
ED629,630	OB12625A	LED SLR-34PG3F P-Green	S613,614	OB70043A	Tact Switch SKHHPM
ED631,632	OB12625A	LED SLR-34PG3F P-Green	S615,616	OB70043A	Tact Switch SKHHPM
ED633,634	OB12625A	LED SLR-34PG3F P-Green	S617,618	OB70043A	Tact Switch SKHHPM
ED635	OB12625A	LED SLR-34PG3F P-Green	S619,620	OB70043A	Tact Switch SKHHPM
ED636	OB12616A	LED Display LTF2501 (TA-4/4E)	S621,622	OB70043A	Tact Switch SKHHPM
	OB12608A	LED Display LTF2401 (TA-4A)	S623,624	OB70043A	Tact Switch SKHHPM
ED637,638	OB12625A	LED SLR-34PG3F P-Green	S625	OB70043A	Tact Switch SKHHPM
R606	OB09707A	RK 18K 1/6W J	CN22	OB83402B	2P Connector Ass'y 250mm
R607	OB09662A	RK 240 1/6W J	CN23	OB83380A	8P Flat Cable 230mm
R608,609	OB09681A	RK 1.5K 1/6W J	CN24	OB83376A	4P Flat Cable 170mm
R610,611	OB09681A	RK 1.5K 1/6W J	CN25,26	OB83378A	8P Flat Cable 170mm
R612,613	OB09681A	RK 1.5K 1/6W J	CN28	OB83405B	2P Connector Ass'y 450mm
R614,615	OB09681A	RK 1.5K 1/6W J	CN29	OB83377A	5P Flat Cable 170mm
R616	OB09662A	RK 240 1/6W J	CN30	OB83379A	8P Flat Cable 190mm
R617,618	OB09707A	RK 18K 1/6W J		OH05336A	Display Reflector (1)
R619,620	OB09707A	RK 18K 1/6W J		OH05345A	Display Overlay (1)
R621,622	OB09707A	RK 18K 1/6W J		OJ05634A	Diffuser Sheet A (1)
R623,624	OB09707A	RK 18K 1/6W J		OJ05635B	Diffuser Sheet B (1)
R625,626	OB09707A	RK 18K 1/6W J		OJ05416A	LED Reflector (8)
R627	OB09707A	RK 18K 1/6W J			
R628	OB09662A	RK 240 1/6W J			
R630	OB09717A	RK 47K 1/6W J			
R631	OB09677A	RK 1K 1/6W J			
R632	OB09701A	RK 10K 1/6W J			
R633	OB09677A	RK 1K 1/6W J			
R634,635	OB09701A	RK 10K 1/6W J			

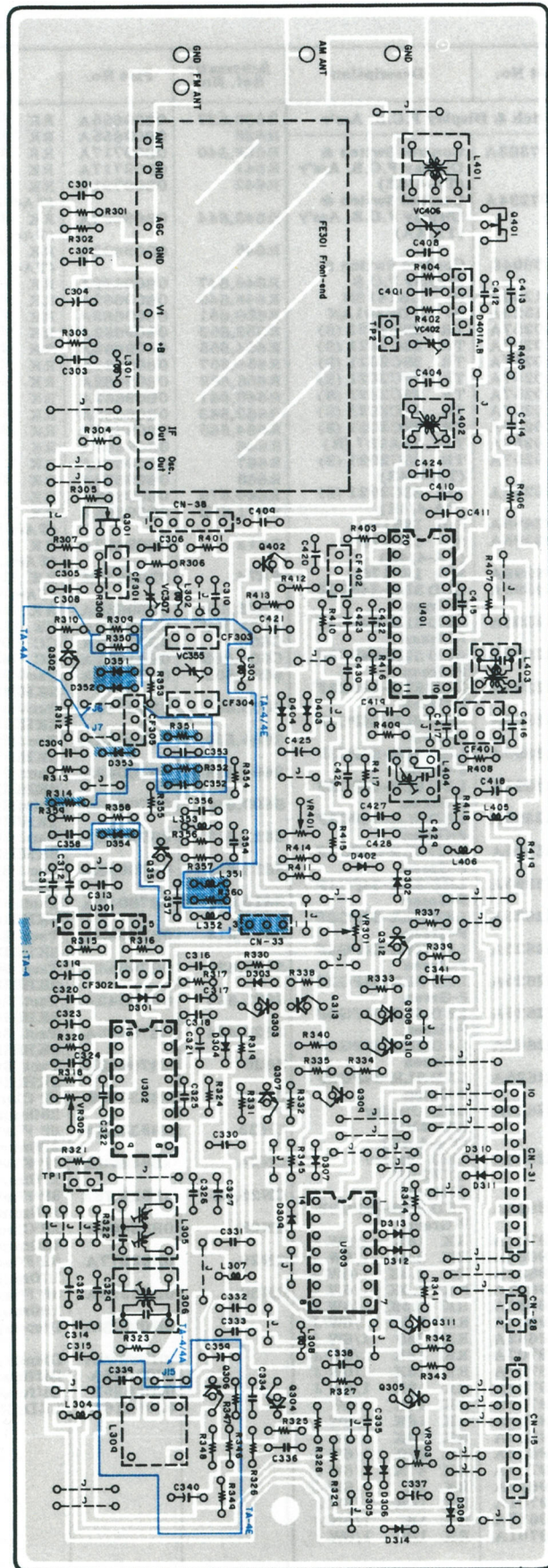


Fig. 6.18

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
6.18. Tuner P.C.B. Ass'y			R310	OB09686A	RK 2.4K 1/6W J	C301	OB41787A	CC 0.022μ 25V Z
			R312	OB09645A	RK 47 1/6W J	C302	OB41294A	CML 0.047μ 50V J
			R313	OB09667A	RK 390 1/6W J	C303	OB41290A	CML 0.022μ 50V J
			R314	OB09689A	RK 3.3K 1/6W J	C304	OB40420A	CE 220μ 16V (LN)
	BA07357A	Tuner P.C.B. Ass'y (TA-4)				C305,306	OB41787A	CC 0.022μ 25V Z
	BA07295A	Tuner P.C.B. Ass'y (TA-4A)	R315,316	OB09667A	RK 390 1/6W J	C308,309	OB41787A	CC 0.022μ 25V Z
	BA07358A	Tuner P.C.B. Ass'y (TA-4E)	R317	OB09665A	RK 330 1/6W J	C310,311	OB41787A	CC 0.022μ 25V Z
			R318	OB09677A	RK 1K 1/6W J	C312	OB41787A	CC 0.022μ 25V Z
			R319	OB09701A	RK 10K 1/6W J	C313,314	OB41290A	CML 0.022μ 50V J
			R320	OB09719A	RK 56K 1/6W J	C315	OB40420A	CE 220μ 16V (LN)
			R321	OB09705A	RK 15K 1/6W J	C316,317	OB41787A	CC 0.022μ 25V Z
U301	OB60605A	Tuner P.C.B.				C318	OB41787A	CC 0.022μ 25V Z
U302	OB11156A	IC TA7060AP				C319	OB01402A	CE 4.7μ 25V
U303	OB11157A	IC LA1235				C320	OB41787A	CC 0.022μ 25V Z
U303	OB06219A	IC μPD4081BC				C321	OB09372A	CE 2.2μ 50V
U401	OB11243A	IC LA1247				C322	OB41787A	CC 0.022μ 25V Z
Q301	OB10127A	FET 2SK241 (GR)	R322	OB09699A	RK 8.2K 1/6W J	C323	OB01405A	CE 1μ 50V
Q302	OB10174A	TR 2SC2669 (O,Y)	R323	OB25228A	RM 2.21K 1/6W F	C324	OB41787A	CC 0.022μ 25V Z
Q303,304	OB06100A	TR 2SC945 (K,P,Q)	R324	OB09677A	RK 1K 1/6W J	C325	OB41787A	CC 0.022μ 25V Z
Q305	OB06100A	TR 2SC945 (K,P,Q)	R325	OB09727A	RK 120K 1/6W J	C326	OB41909A	CC 100P 50V J
Q306	OB10025A	TR 2SC945L (P,K)	R326	OB09705A	RK 15K 1/6W J	C326	OB41787A	CC 0.022μ 25V Z
			R327	OB09669A	RK 470 1/6W J	C327	OB01405A	CE 1μ 50V
Q307,308	OB06100A	TR 2SC945 (K,P,Q)	R328	OB09693A	RK 4.7K 1/6W J	C328	OB40066A	CE 330μ 10V
Q309	OB06013A	TR 2SA733 (P,Q)	R329	OB09677A	RK 1K 1/6W J	C329	OB41787A	CC 0.022μ 25V Z
Q310	OB10068A	TR DTC114ES	R330	OB09717A	RK 47K 1/6W J	C330	OB41907A	CC 47P 50V J
Q311,312	OB06100A	TR 2SC945 (K,P,Q)	R331	OB09725A	RK 100K 1/6W J	C331	OB41912A	CC 1000P 50V Z
Q313	OB06100A	TR 2SC945 (K,P,Q)	R332	OB09701A	RK 10K 1/6W J	C332	OB41907A	CC 47P 50V J
Q351	OB10174A	TR 2SC945 (K,P,Q)	R333	OB09717A	RK 47K 1/6W J	C333	OB41921A	CSP 560P 50V J
			R334,335	OB09701A	RK 10K 1/6W J	C334	OB41907A	CC 47P 50V J
Q401	OB06129A	FET 2SK117 (Y)	R337,338	OB09701A	RK 10K 1/6W J	C335,336	OB41787A	CC 0.022μ 25V Z
Q402	OB06100A	TR 2SC945 (K,P,Q)	R339	OB09707A	RK 18K 1/6W J	C337	OB01405A	CE 1μ 50V
D301	OB06398A	SiD 1SS176	R340	OB09725A	RK 100K 1/6W J	C338	OB41787A	CC 0.022μ 25V Z
D302,303	OB06398A	SiD 1SS176	R341	OB09701A	RK 10K 1/6W J	C339	OB41219A	CPP 560P 100V
D304,305	OB06398A	SiD 1SS176	R342,343	OB09717A	RK 47K 1/6W J			(TA-4E)
D306,307	OB06398A	SiD 1SS176	R344,345	OB09701A	RK 10K 1/6W J	C340	OB01400A	CE 100μ 16V
D308,309	OB06398A	SiD 1SS176	R346	OB09694A	RK 5.1K 1/6W J			(TA-4E)
D310,311	OB06398A	SiD 1SS176				C341	OB01405A	CE 1μ 50V
D312,313	OB06398A	SiD 1SS176	R347	OB09745A	RK 680K 1/6W J	C352	OB41787A	CC 0.022μ 25V
D314	OB06398A	SiD 1SS176	R348	OB09687A	RK 2.7K 1/6W J			(TA-4)
D351,352	OB06398A	SiD 1SS176				C353,354	OB41787A	CC 0.022μ 25V
			R349	OB09669A	RK 470 1/6W J			(TA-4/4E)
D353,354	OB06398A	SiD 1SS176				C356,357	OB41787A	CC 0.022μ 25V
			R350	OB09665A	RK 330 1/6W J			(TA-4/4E)
D401	OB12386A	Varicap KV1226Y	R351	OB09665A	RK 330 1/6W J	C358	OB41787A	CC 0.022μ 25V
D402	OB12363A	SiD MA700	R352	OB09693A	RK 4.7K 1/6W J			(TA-4)
D403,404	OB06398A	SiD 1SS176				C401	OB41787A	CC 0.022μ 25V Z
CF301,302	OB41918A	Ceramic Filter SFE10.7MLA	R353	OB09665A	RK 330 1/6W J	C404	OB41920A	CSP 430P 50V J
						C408,409	OB41787A	CC 0.022μ 25V Z
CF303,304	OB41746A	Ceramic Filter SFE10.7MS3GH15A	R354	OB09665A	RK 330 1/6W J	C410	OB41912A	CC 1000P 50V Z
						C411,412	OB41787A	CC 0.022μ 25V Z
CF305	OB41918A	Ceramic Filter SFE10.7MLA	R355	OB09689A	RK 3.3K 1/6W J	C413	OB41912A	CC 1000P 50V Z
						C414,415	OB41787A	CC 0.022μ 25V Z
CF401	OB41701A	Ceramic Filter SFZ450G3L	R356	OB09698A	RK 7.5K 1/6W J	C416	OB41908A	CC 82P 50V J
						C417	OB41787A	CC 0.022μ 25V Z
CF402	OB92003A	Ceramic Resonator 450KHz	R357	OB09671A	RK 560 1/6W J	C418	OB01403A	CE 47μ 16V
						C419	OB41912A	CC 1000P 50V Z
L301,302	OB51239A	Coil 22μH (K)	R358	OB09650A	RK 75 1/6W J	C420,421	OB01402A	CE 4.7μ 25V
L303,304	OB51239A	Coil 22μH (K)				C422	OB41787A	CC 0.022μ 25V Z
L305	OB51240A	FM DET Coil A				C423	OB40111A	CE 0.47μ 50V
L306	OB51241A	FM DET Coil B				C424	OB41787A	CC 0.022μ 25V Z
L307,308	OB51243A	Choke Coil 6.2mH	R359	OB09677A	RK 1K 1/6W J	C425	OB09372A	CE 2.2μ 50V
L309	OB51288A	L.P.F. Filter (TA-4E)				C426	OB41787A	CC 0.022μ 25V Z
			R360	OB09693A	RK 4.7K 1/6W J	C427	OB41913A	CC 2200P 50V M
L351	OB51239A	Coil 22μH (K)				C428	OB41292A	CML 0.033μ 50V J
						C429	OB01403A	CE 47μ 16V
L352,353	OB51239A	Coil 22μH (K)	R401	OB09677A	RK 1K 1/6W J	C430	OB41914A	CC 0.01μ 50V Z
			R402	OB09725A	RK 100K 1/6W J	TP1,2	OB81759A	2P-T Post EH-2P
			R403	OB09685A	RK 2.2K 1/6W J	PJ301	OB81977A	Antenna Terminal F
L401	OB51282A	ANT Coil	R404	OB09725A	RK 100K 1/6W J			(TA-4/4A)
L402	OB51279A	OSC Coil	R405	OB09665A	RK 330 1/6W J			Antenna Terminal F
L403	OB51280A	AM IFT1 Coil	R406	OB09661A	RK 220 1/6W J			(TA-4E)
L404	OB51281A	AM IFT2 Coil	R407	OB09681A	RK 1.5K 1/6W J	CN15	OB81974A	8P-T Post EH-8P
L405,406	OB51239A	Coil 22μH (K)	R408	OB09685A	RK 2.2K 1/6W J			BLK
VR301	OB32084A	Semi VR 47KB	R409	OB09674A	RK 750 1/6W J	CN28	OB81759A	2P-T Post EH-2P
VR302	OB32080A	Semi VR 10KB	R410	OB09651A	RK 82 1/6W J			WHT
VR303	OB32084A	Semi VR 47KB	R411	OB09733A	RK 220K 1/6W J	CN31	OB83417A	10P Connector 250mm
VR401	OB32086A	Semi VR 100KB	R412,413	OB09701A	RK 10K 1/6W J	CN33	OB81760A	3P-T Post EH-3P
R301	OB09725A	RK 100K 1/6W J	R414	OB09708A	RK 20K 1/6W J			(TA-4)
R302	OB09721A	RK 68K 1/6W J	R415	OB09701A	RK 10K 1/6W J	CN38	OB83427A	5P Connector 260mm
R303	OB09727A	RK 120K 1/6W J	R416	OB09677A	RK 1K 1/6W J			Front-end FE407-A16
R304	OB09677A	RK 1K 1/6W J	R417	OB09685A	RK 2.2K 1/6W J			(TA-4/4A)
R305	OB09745A	RK 680K 1/6W J	R418	OB09725A	RK 100K 1/6W J			Front-end FE407-G58
R306	OB09665A	RK 330 1/6W J	R419	OB09709A	RK 22K 1/6W J	FE301	OB91016A	(TA-4E)
R307	OB09645A	RK 47 1/6W J	VC307	OB42012A	C Trimmer 30P			Terminal Holder (2)
R308	OB09667A	RK 390 1/6W J	VC355	OB42012A	C Trimmer 30P			
R309	OB09698A	RK 7.5K 1/6W J	VC402	OB42011A	C Trimmer 20P			
			VC406	OB42011A	C Trimmer 20P			

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
6.19. Video & Logic P.C.B. Ass'y			D516	OB06398A	SiD 1SS176	R575,576	OB01846A	RK 4.7K 1/4W J
			D517	OB06181A	SiD 1SS53	R577	OB01846A	RK 4.7K 1/4W J
	BA07360A	Video & Logic P.C.B. Ass'y (TA-4)	D518,519	OB06398A	SiD 1SS176	R578,579	OB09693A	RK 4.7K 1/6W J
			D520,521	OB06398A	SiD 1SS176	R580	OB09693A	RK 4.7K 1/6W J
	BA07296A	Video & Logic P.C.B. Ass'y (TA-4A)	D524,525	OB06398A	SiD 1SS176	R581,582	OB05641A	RK 47K 1/4W J
			D526,527	OB06398A	SiD 1SS176	R583,584	OB05641A	RK 47K 1/4W J
			D528,529	OB06398A	SiD 1SS176	R585,586	OB05641A	RK 47K 1/4W J
	BA07361A	Video & Logic P.C.B. Ass'y (TA-4E)	D530	OB06398A	SiD 1SS176	R587,588	OB05641A	RK 47K 1/4W J
			D531	OB06181A	SiD 1SS53	R590,591	OB09717A	RK 47K 1/6W J
			D532	OB06398A	SiD 1SS176	R592,593	OB09717A	RK 47K 1/6W J
			D534	OB06398A	SiD 1SS176	R594,595	OB09717A	RK 47K 1/6W J
			D535	OB06181A	SiD 1SS53	R596,597	OB09717A	RK 47K 1/6W J
	OB60606A	Video & Logic P.C.B.	D951	OB12604A	SiD W02M	R598	OB09717A	RK 47K 1/6W J
			D953,954	OB06398A	SiD 1SS176	R601,602	OB09733A	RK 220K 1/6W J
			D955	OB06398A	SiD 1SS176	R603,604	OB09733A	RK 220K 1/6W J
U501	OB11250A	IC LB1645N	D956	OB12604A	SiD W02M	R681,682	OB09717A	RK 47K 1/6W J
U502	OB06143A	IC μ PD4001BC	D957,958	OB06398A	SiD 1SS176	R683,684	OB09717A	RK 47K 1/6W J
U503	OB06219A	IC μ PD4081BC	D959,960	OB12624A	SiD 1SS177	R685,686	OB09717A	RK 47K 1/6W J
U504	OB11513A	IC μ PD74HC237	D961,962	OB12586A	SiD 1N4002	R687	OB09717A	RK 47K 1/6W J
U505	OB11502A	IC μ PD75104CW	D963	OB06398A	SiD 1SS176	R693,694	OB09681A	RK 1.5K 1/6W J
U506	OB11161A	IC TC9147BP	D966,967	OB06398A	SiD 1SS176	R696,697	OB09701A	RK 10K 1/6W J
U507	OB11159A	IC TD6104P	D968,969	OB06398A	SiD 1SS176	R698	OB09709A	RK 22K 1/6W J
U952	OB11248A	IC ICP-N5	D1001	OB12604A	SiD W02M	R951	OB09665A	RK 330 1/6W J
U953	OB11335A	IC ICP-N15	D1003,1004	OB06398A	SiD 1SS176	R952	OB09669A	RK 470 1/6W J
U1001,1002	OB06169A	IC TC4066BP	D1005,1006	OB06398A	SiD 1SS176	R953,954	OB09686A	RK 2.4K 1/6W J
Q501,502	OB10113A	TR 2SC1815 (GR)	D1007,1008	OB06398A	SiD 1SS176	R955	OB09685A	RK 2.2K 1/6W J
Q503	OB10113A	TR 2SC1815 (GR)	X501	OB92014A	Ceramic Resonator	R956	OB09695A	RK 5.6K 1/6W J
Q504	OB10116A	TR 2SA1015 (GR)	X502	OB92006A	Ceramic Resonator	R957	OB09733A	RK 220K 1/6W J
Q505,506	OB10113A	TR 2SC1815 (GR)	L501	OB51239A	X'7al 7.2MHz	R958	OB09725A	RK 100K 1/6W J
Q507,508	OB10116A	TR 2SA1015 (GR)	L502	OB51286A	Coil 22 μ H	R959	OB09709A	RK 22K 1/6W J
Q509,510	OB10116A	TR 2SA1015 (GR)	R500	OB09677A	Coil 470 μ H	R960	OB09707A	RK 18K 1/6W J
Q511	OB10113A	TR DTC114ES	R501	OB09725A	RK 1K 1/6W J	R961	OB09693A	RK 4.7K 1/6W J
Q512,513	OB10113A	TR 2SC1815 (GR)	R502	OB09725A	RK 100K 1/6W J	R962	OB09727A	RK 120K 1/6W J
Q514,515	OB10088A	TR 2SC1815L (GR) (Low Noise)	R503	OB09707A	RK 18K 1/6W J	R963	OB09719A	RK 56K 1/6W J
Q516,517	OB10113A	TR 2SC1815 (GR)	R504	OB09695A	RK 5.6K 1/6W J	R964	OB09721A	RK 68K 1/6W J
Q518,519	OB10113A	TR 2SC1815 (GR)	R505,506	OB09697A	RK 6.8K 1/6W J	R965,966	OB09725A	RK 100K 1/6W J
Q520,521	OB10113A	TR 2SC1815 (GR)	R507	OB09725A	RK 100K 1/6W J	R967	OB09717A	RK 47K 1/6W J
Q522,523	OB10113A	TR 2SC1815 (GR)	R508	OB01888A	RK 10K 1/4W J	R968	OB09701A	RK 10K 1/6W J
Q524,525	OB10116A	TR 2SA1015 (GR)	R509	OB09669A	RK 470 1/6W J	R969	OB09694A	RK 5.1K 1/6W J
Q526,527	OB10116A	TR 2SA1015 (GR)	R510,511	OB09701A	RK 10K 1/6W J	R970,971	OB09701A	RK 10K 1/6W J
Q528,529	OB10116A	TR 2SA1015 (GR)	R512	OB09695A	RK 5.6K 1/6W J	R972	OB09694A	RK 5.1K 1/6W J
Q530,531	OB10116A	TR 2SA1015 (GR)	R513	OB09689A	RK 3.3K 1/6W J	R973	OB09701A	RK 10K 1/6W J
Q532	OB10116A	TR 2SA1015 (GR)	R514	OB09683A	RK 1.8K 1/6W J	R1001	OB09681A	RK 1.5K 1/6W J
Q533,534	OB10113A	TR 2SC1815 (GR)	R515,516	OB09689A	RK 3.3K 1/6W J	R1002	OB09725A	RK 100K 1/6W J
Q535,536	OB10113A	TR 2SC1815 (GR)	R517	OB09661A	RK 220 1/6W J	R1003	OB09701A	RK 10K 1/6W J
Q537,538	OB10113A	TR 2SC1815 (GR)	R518	OB09701A	RK 10K 1/6W J	R1004	OB09649A	RK 68 1/6W J
Q539,540	OB10113A	TR 2SC1815 (GR)	R519	OB09725A	RK 100K 1/6W J	R1005	OB09661A	RK 220 1/6W J
Q541,542	OB10113A	TR 2SC1815 (GR)	R520,521	OB09661A	RK 220 1/6W J	R1006	OB20514A	RK 100 1/2W J
Q543,544	OB10113A	TR 2SC1815 (GR)	R522,523	OB09701A	RK 10K 1/6W J	R1007	OB09669A	RK 470 1/6W J
Q545,546	OB10113A	TR 2SC1815 (GR)	R524,525	OB09725A	RK 100K 1/6W J	R1008	OB09683A	RK 1.8K 1/6W J
Q547,548	OB10113A	TR 2SC1815 (GR)	R526,527	OB09725A	RK 100K 1/6W J	R1009	OB09669A	RK 470 1/6W J
Q552,553	OB10113A	TR 2SC1815 (GR)	R528	OB09725A	RK 100K 1/6W J	R1010	OB09677A	RK 1K 1/6W J
Q554,555	OB10113A	TR 2SC1815 (GR)	R529	OB09717A	RK 47K 1/6W J	R1011	OB09665A	RK 330 1/6W J
Q556	OB10113A	TR 2SC1815 (GR)	R530	OB09663A	RK 270 1/6W J	R1012	OB09679A	RK 1.2K 1/6W J
Q557	OB10062A	TR DTC144ES	R531	OB09693A	RK 4.7K 1/6W J	R1013	OB09691A	RK 3.9K 1/6W J
Q951	OB10113A	TR 2SC1815 (GR)	R532	OB09717A	RK 47K 1/6W J	R1014	OB09651A	RK 82 1/6W J
Q953	OB06142A	TR 2SC2240 (BL)	R533,534	OB09677A	RK 1K 1/6W J	R1015	OB09701A	RK 10K 1/6W J
Q954,955	OB10113A	TR 2SC1815 (GR)	R535,536	OB09677A	RK 1K 1/6W J	R1016	OB09649A	RK 68 1/6W J
Q956	OB10116A	TR 2SA1015 (GR)	R537,538	OB09677A	RK 1K 1/6W J	R1017	OB20514A	RK 100 1/2W J
Q957	OB10113A	TR 2SC1815 (GR)	R539,540	OB09677A	RK 1K 1/6W J	R1018	OB09661A	RK 220 1/6W J
Q958	OB06013A	TR 2SA733 (P,Q)	R541,542	OB09677A	RK 1K 1/6W J	R1019	OB09669A	RK 470 1/6W J
Q959	OB10113A	TR 2SC1815 (GR)	R543,544	OB09677A	RK 1K 1/6W J	R1020	OB09683A	RK 1.8K 1/6W J
Q960	OB06013A	TR 2SA733 (P,Q)	R545,546	OB09677A	RK 1K 1/6W J	R1021	OB09677A	RK 1K 1/6W J
Q961	OB10113A	TR 2SC1815 (GR)	R547	OB09693A	RK 4.7K 1/6W J	R1022	OB09669A	RK 470 1/6W J
Q1001	OB06452A	TR 2SD1406 (Y)	R548	OB09725A	RK 100K 1/6W J	R1023	OB09665A	RK 330 1/6W J
Q1002	OB06100A	TR 2SC945 (K,P,Q)	R549	OB09701A	RK 10K 1/6W J	R1024	OB09691A	RK 3.9K 1/6W J
Q1003	OB06013A	TR 2SA733 (P,Q)	R550	OB09739A	RK 390K 1/6W J	R1025	OB09679A	RK 1.2K 1/6W J
Q1004,1005	OB06100A	TR 2SC945 (K,P,Q)	R551,552	OB09709A	RK 22K 1/6W J	R1026	OB09651A	RK 82 1/6W J
Q1006	OB06013A	TR 2SA733 (P,Q)	R553,554	OB09685A	RK 2.2K 1/6W J	R1027,1028	OB09650A	RK 75 1/6W J
Q1007	OB06100A	TR 2SC945 (K,P,Q)	R555	OB09701A	RK 10K 1/6W J	R1029	OB09650A	RK 75 1/6W J
Q1008	OB10116A	TR 2SA1015 (GR)	R556	OB09701A	RK 10K 1/6W J	R1030,1031	OB05776A	RK 1M 1/4W J
ZD504	OB12622A	ZD 5.6V	R557	OB20093A	RK 1.5M 1/6W J	R1032,1033	OB05776A	RK 1M 1/4W J
		RD5.6JB-T1B3	R558	OB09731A	RK 180K 1/6W J	R1034,1035	OB05776A	RK 1M 1/4W J
ZD952	OB12619A	RD 6.8V	R559	OB09733A	RK 220K 1/6W J	R1036	OB01857A	RK 1K 1/4W J
		RD6.8ES-T1B2	R560	OB09693A	RK 4.7K 1/6W J	C501	OB01836A	CE 47 μ 10V
ZD964,965	OB12621A	RD 15V	R561	OB09725A	RK 100K 1/6W J	C502	OB09372A	CE 2.2 μ 50V
		RD15ES-T1B1	R562,563	OB09721A	RK 68K 1/6W J	C503	OB41917A	CC 0.1 μ 25V Z
ZD1002	OB12177A	ZD 13V	R564	OB09725A	RK 100K 1/6W J	C504	OB41914A	CC 0.01 μ 50V Z
		RD13JS-T1B2	R565	OB09677A	RK 1K 1/6W J	C505	OB01405A	CE 1 μ 50V
D501,502	OB06398A	SiD 1SS176	R566,567	OB09725A	RK 100K 1/6W J	C506	OB41787A	CC 0.022 μ 25V Z
D503	OB06398A	SiD 1SS176	R568	OB09701A	RK 10K 1/6W J	C507	OB05885A	CE 100 μ 10V
D505,506	OB06398A	SiD 1SS176	R569	OB09677A	RK 1K 1/6W J	C508	OB01405A	CE 1 μ 50V
D507	OB12363A	SiD MA700	R570	OB09699A	RK 8.2K 1/6W J	C509	OB05681A	CML 0.01 μ 50V J
D508	OB06398A	SiD 1SS176	R571	OB09701A	RK 10K 1/6W J	C510,511	OB41903A	CC 33P 50V J
D509	OB12363A	SiD MA700	R572	OB09677A	RK 1K 1/6W J	C512	OB01405A	CE 1 μ 50V
D510,511	OB06398A	SiD 1SS176	R573,574	OB00346A	RK 1K 1/2W J	C513	OB41787A	CC 0.022 μ 25V Z
D512,513	OB06398A	SiD 1SS176		OB01846A	RK 4.7K 1/4W J	C514	OB01405A	CE 1 μ 50V
D514,515	OB06398A	SiD 1SS176				C515	OB05899A	CE 220 μ 10V

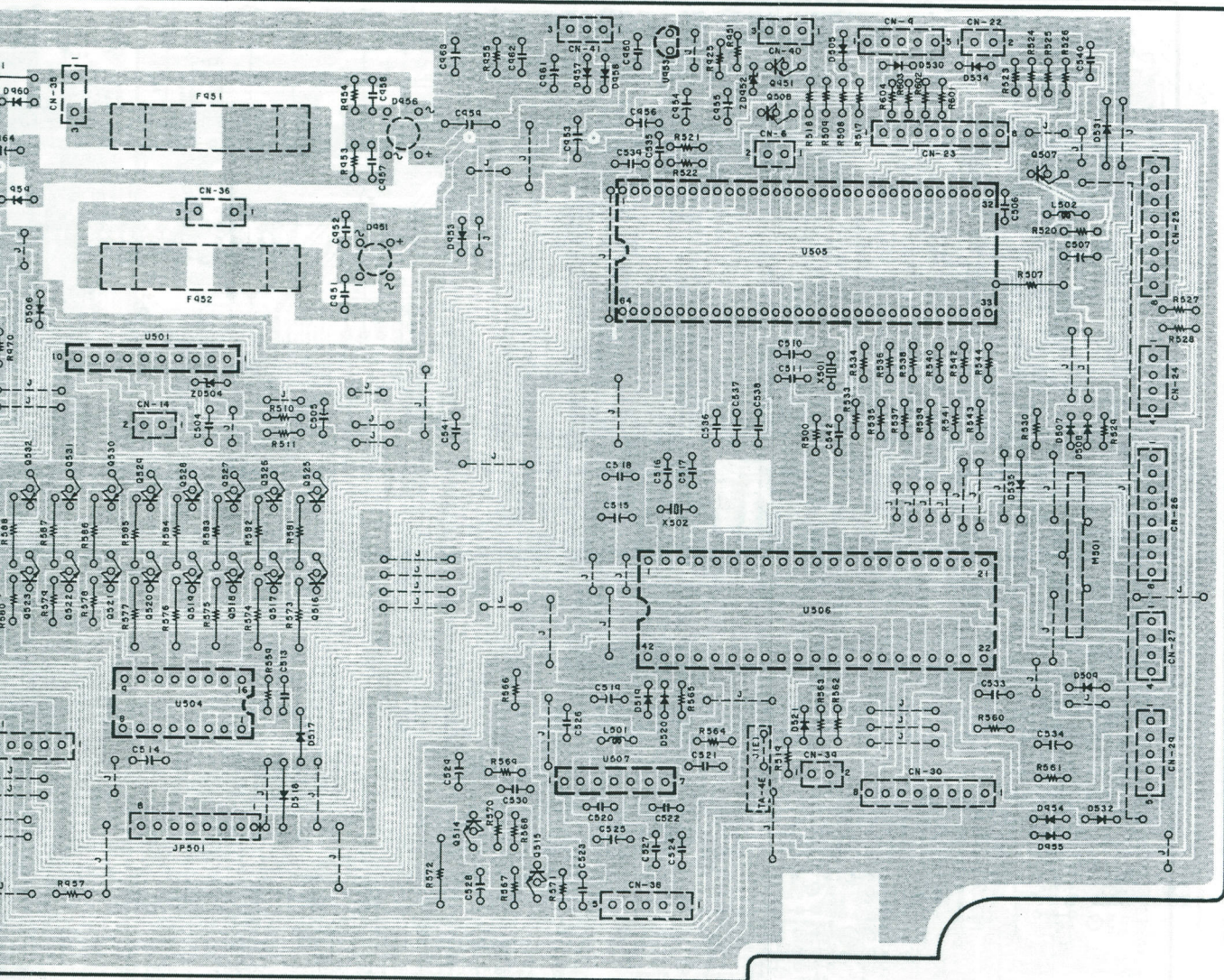
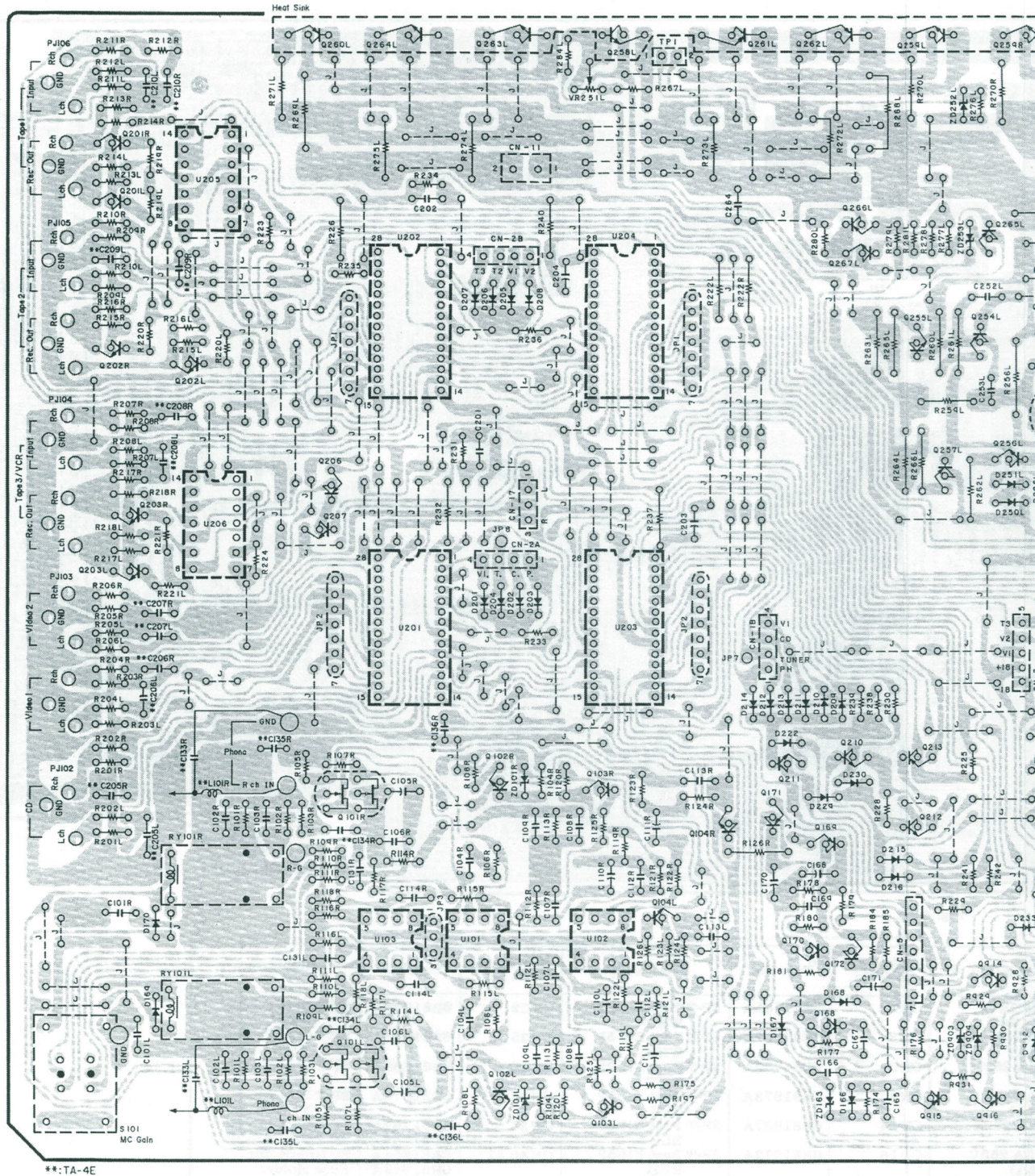


Fig. 6.19

Description	Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
22μ 16V	CN2	OB81765A	8P-T Post EH-8P WHT	CN32	OB81968A	3P-T Post EH-3P RED (TA-4)
22μ 16V	CN3	OB81762A	5P-T Post EH-5P WHT	CN35	OB81760A	3P-T Post EH-3P WHT
1A 250V 4/4A)	CN6	OB81759A	2P-T Post EH-2P WHT	CN36	OB81968A	3P-T Post EH-3P RED
T1A 250V 4E)	CN9	OB81973A	5P-T Post EH-5P BLK	CN37	OB81970A	3P-T Post EH-3P YEL
2A 250V 4/4A)	CN14	OB81967A	2P-T Post EH-2P BLK	CN38	OB81762A	5P-T Post EH-5P
T2A 250V 4E)	CN16	OB81972A	5P-T Post EH-5P RED	CN39	OB81759A	2P-T Post EH-2P
0.5A 250V 4/4A)	CN21	OB81969A	3P-T Post EH-3P BLK	CN40,41	OB81954A	3P Connector
T500mA 250V 4E)	CN22	OB81966A	2P-T Post EH-2P RED		OB81848A	Fuse Holder (TA-4E) (6)
Wire 8P 260	CN23	OB81959A	8P Connector		OB81930A	Fuse Holder SN-5051 (TA-4/4A) (6)
Wire 8P 220	CN24	OB81955A	4P Connector		OJ05704A	Shield Plate B (1)
Wire 8P 320	CN25,26	OB81959A	8P Connector		OJ05705B	Shield Plate (1)
Wire 3P 320	CN27	OB81761A	4P-T Post EH-4P WHT		OM04191A	Fuse Label T1A 250V (TA-4E) (1)
Wire 3P 400					OM05295A	Fuse Label T2A 250V (TA-4E) (1)
Wire 8P 250	CN29	OB81956A	5P Connector			
n Jack	CN30	OB81959A	8P Connector			
n Jack	CN31	OB81767A	10P-T Post EH-10P WHT			

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



**TA-4E

Fig. 6.20

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Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
6.20. Main P.C.B. Ass'y			ZD254,255	OB12619A	ZD 6.8V	R179	OB09661A	RK 220 1/6W J
	BA07540A	Main P.C.B. Ass'y (TA-4)	ZD256	OB12618A	RD6.8ES-T1B2	R180	OB09697A	RK 6.8K 1/6W J
	BA07282A	Main P.C.B. Ass'y (TA-4A)	ZD903,904	OB12620A	ZD 4.7V	R181	OB09689A	RK 3.3K 1/6W J
	BA07541A	Main P.C.B. Ass'y (TA-4E)	ZD905	OB12168A	RD4.7ES-T1B2	R184,185	OB09713A	RK 33K 1/6W J
					ZD 12V	R187,188	OB09717A	RK 47K 1/6W J
					RD12ES-T1B2	R189,190	OB09717A	RK 47K 1/6W J
					ZD 10V	R191,192	OB09717A	RK 47K 1/6W J
					RD10JS-T1B2	R193,194	OB09717A	RK 47K 1/6W J
					SiD 1SS176	R197	OB09749A	RK 1M 1/6W J
	OB60592B	Main P.C.B.	D166,167	OB06398A	SiD 1SS176	R201L,R	OB09719A	RK 56K 1/6W J
U101	OB11204A	IC NJM5532DD	D168,169	OB06398A	SiD 1SS176	R202L,R	OB09653A	RK 100 1/6W J
U102	OB11005A	IC NJM072DE	D201,202	OB06398A	SiD 1SS176	R203L,R	OB09719A	RK 56K 1/6W J
U103	OB06124B	IC NJM4558D	D203,204	OB06398A	SiD 1SS176	R204L,R	OB09653A	RK 100 1/6W J
U104	OB11050A	IC NJM4558S	D205,206	OB06398A	SiD 1SS176	R205L,R	OB09719A	RK 56K 1/6W J
U201,202	OB11514A	IC LC7816	D207,208	OB06398A	SiD 1SS176	R206L,R	OB09653A	RK 100 1/6W J
U203,204	OB11514A	IC LC7816	D209,210	OB06398A	SiD 1SS176	R207L,R	OB09719A	RK 56K 1/6W J
U205,206	OB11056A	IC LC4966	D211,212	OB06398A	SiD 1SS176	R208L,R	OB09653A	RK 100 1/6W J
U250	OB11246A	IC μPC1237H	D213,214	OB06398A	SiD 1SS176	R209L,R	OB09719A	RK 56K 1/6W J
U451	OB11515A	IC LA3450	D215,216	OB06398A	SiD 1SS176	R210L,R	OB09653A	RK 100 1/6W J
Q101L,R	OB10187A	FET 2SK146 (GR,BL)	D217,218	OB06398A	SiD 1SS176	R211L,R	OB09719A	RK 56K 1/6W J
Q102L,R	OB06142A	TR 2SC2240 (BL)	D219,220	OB06398A	SiD 1SS176	R212L,R	OB09653A	RK 100 1/6W J
Q103L,R	OB06299A	TR 2SC2878	D221,222	OB06398A	SiD 1SS176	R213L,R	OB09725A	RK 100K 1/6W J
Q104L,R	OB06299A	TR 2SC2878	D223,224	OB06398A	SiD 1SS176	R214L,R	OB09661A	RK 220 1/6W J
Q168	OB06100A	TR 2SC945 (K,P,Q)	D225,226	OB06398A	SiD 1SS176	R215L,R	OB09725A	RK 100K 1/6W J
Q169	OB06013A	TR 2SA733 (P,Q)	D227,228	OB06398A	SiD 1SS176	R216L,R	OB09661A	RK 220 1/6W J
Q170	OB06100A	TR 2SC945 (K,P,Q)	D229,230	OB06398A	SiD 1SS176	R217L,R	OB09725A	RK 100K 1/6W J
Q171	OB10053A	TR DTA144ES	D231,232	OB06398A	SiD 1SS176	R218L,R	OB09661A	RK 220 1/6W J
Q172	OB06013A	TR 2SA733 (P,Q)	D233	OB06398A	SiD 1SS176	R219L,R	OB09717A	RK 47K 1/6W J
Q201L,R	OB06299A	TR 2SC2878	D250L,R	OB06398A	SiD 1SS176	R220L,R	OB09717A	RK 47K 1/6W J
Q202L,R	OB06299A	TR 2SC2878	D251L,R	OB06398A	SiD 1SS176	R221L,R	OB09717A	RK 47K 1/6W J
Q203L,R	OB06299A	TR 2SC2878	D252,253	OB06398A	SiD 1SS176	R222L,R	OB05623A	RK 1.2K 1/4W J
Q204	OB10053A	TR DTA144ES	D254,255	OB06398A	SiD 1SS176	R223,224	OB09725A	RK 100K 1/6W J
Q205	OB10062A	TR DTC144ES	D451,452	OB06398A	SiD 1SS176	R225	OB09717A	RK 47K 1/6W J
Q206	OB10053A	TR DTA144ES	D453,454	OB06398A	SiD 1SS176	R226	OB01889A	RK 100K 1/4W J
Q207	OB10062A	TR DTC144ES	D455	OB06398A	SiD 1SS176	R228	OB09717A	RK 47K 1/6W J
Q208	OB10053A	TR DTA144ES	D909	OB12418A	SiD UB-151	R229,230	OB09717A	RK 47K 1/6W J
Q209	OB10062A	TR DTC144ES	D910,911	OB06398A	SiD 1SS176	R231	OB09733A	RK 220K 1/6W J
Q210,211	OB10062A	TR DTC144ES	D912,913	OB06398A	SiD 1SS176	R232	OB01889A	RK 100K 1/4W J
Q212	OB06100A	TR 2SC945 (K,P,Q)	X451	OB41927A	Ceramic Resonator	R233	OB09705A	RK 15K 1/6W J
Q213	OB10053A	TR DTA144ES			CSB456F11	R234	OB09733A	RK 220K 1/6W J
Q250L,R	OB10261A	FET 2SK389	L101L,R	OB51266A	Coil 48μH (TA-4E)	R235	OB09725A	RK 100K 1/6W J
Q251L,R	OB06142A	TR 2SC2240 (BL)	L451,452	OB51237A	M.P.X. Filter	R236	OB09705A	RK 15K 1/6W J
Q252L,R	OB06142A	TR 2SC2240 (BL)	L453	OB51283A	Coil 15mH	R237	OB05625A	RK 220K 1/4W J
Q253L,R	OB06142A	TR 2SC2240 (BL)	VR251L,R	OB32076A	Semi VR 2KB	R238	OB09725A	RK 100K 1/6W J
Q254L,R	OB10221A	TR 2SA1145 (Y)	VR451	OB32082A	Semi VR 22KB	R239	OB05625A	RK 220K 1/4W J
Q255L,R	OB10222A	TR 2SC2705 (Y)	VR452	OB32140A	Semi VR 1.5M	R240	OB09705A	RK 15K 1/6W J
Q256L,R	OB10222A	TR 2SC2705 (Y)	VR453	OB32140A	Semi VR 1.5M	R241	OB09725A	RK 100K 1/6W J
Q257L,R	OB10221A	TR 2SA1145 (Y)	VR454	OB32140A	Semi VR 1.5M (TA-4)	R242	OB09701A	RK 10K 1/6W J
Q265L,R	OB10050A	TR 2SA970 (BL)	VR455	OB32140A	Semi VR 1.5M (TA-4)	R250L,R	OB22567A	RM 100 1/4W F
Q266L,R	OB10050A	TR 2SA970 (BL)				R251L,R	OB01683A	RK 15K 1/4W J
Q267L,R	OB10222A	TR 2SC2705 (Y)	R101L,R	OB25359A	RM 51.1K 1/6W F	R252L,R	OB21495A	RF 820 1/6W J
Q268,269	OB06142A	TR 2SC2240 (BL)	R102L,R	OB25099A	RM 100 1/6W F	R253L,R	OB05641A	RK 47K 1/4W J
Q270	OB06013A	TR 2SA733 (P,Q)	R103L,R	OB09623A	RK 5.6 1/6W J	R254L,R	OB01679A	RK 100 1/4W J
Q271,272	OB10050A	TR 2SA970 (BL)	R104L,R	OB09695A	RK 5.6K 1/6W J	R255L,R	OB01933A	RK 220 1/4W J
Q273,274	OB06142A	TR 2SC2240 (BL)	R105L,R	OB09693A	RK 4.7K 1/6W J	R256L,R	OB24190A	RF 47K 1/2W J
Q451	OB06100A	TR 2SC945 (K,P,Q)	R106L,R	OB09611A	RK 1.8 1/6W J	R257L,R	OB01846A	RK 4.7K 1/4W J
Q452,453	OB10151A	FET 2SK364 (TA-4)	R107L,R	OB09693A	RK 4.7K 1/6W J	R258L,R	OB09757A	RM 1.54K 1/4W F
Q454	OB10151A	FET 2SK364 (TA-4)	R108L,R	OB09683A	RK 1.8K 1/6W J	R259L,R	OB22747A	RM 42.2K 1/4W F
Q455	OB10113A	TR 2SC1815 (GR)	R109L,R	OB22644A	RM 1.54K 1/6W F	R260L,R	OB24188A	RF 180 1/4W J
Q456,457	OB10116A	TR 2SA1015 (GR)	R110L,R	OB25101A	RM 105 1/6W F	R261L,R	OB01857A	RK 1K 1/4W J
Q458,459	OB06299A	TR 2SC2878	R111L,R	OB25079A	RM 61.9 1/6W F	R262L,R	OB24183A	RF 180 1/4W J
Q460	OB10151A	FET 2SK364 (TA-4)	R112L,R	OB25479A	RM 90.9K 1/6W F	R263L,R	OB09420A	RM 2.2K 1/4W F
Q905	OB06066A	TR 2SD471 (L,M)	R113L,R	OB25375A	RM 75.0K 1/6W F	R264L,R	OB09420A	RM 2.2K 1/4W F
Q906	OB06100A	TR 2SC945 (K,P,Q)	R114L,R	OB25164A	RM 475 1/6W F	R265L,R	OB05959A	RK 75 1/4W J
Q907	OB06013A	TR 2SA733 (P,Q)	R115L,R	OB09749A	RK 1M 1/6W J	R266L,R	OB05959A	RK 75 1/4W J
Q908	OB06100A	TR 2SC945 (K,P,Q)	R116L,R	OB09749A	RK 1M 1/6W J	R267L,R	OB09681A	RK 1.5K 1/6W J
Q909,910	OB06013A	TR 2SA733 (P,Q)	R117L,R	OB09737A	RK 1M 1/6W J	R268L,R	OB24198A	RF 10 1/2W J
Q911	OB06100A	TR 2SC945 (K,P,Q)	R118L,R	OB09749A	RK 330K 1/6W J	R269L,R	OB24198A	RF 10 1/2W J
Q912	OB06013A	TR 2SA733 (P,Q)	R119L,R	OB09749A	RK 1M 1/6W J	R270L,R	OB24196A	RF 3.3 1/4W J
Q913	OB06069A	TR 2SB564 (L,M)	R120L,R	OB25258A	RM 4.53K 1/6W F	R271L,R	OB24196A	RF 3.3 1/4W J
Q914	OB06322A	TR 2SC2002 (K,L)	R121L,R	OB09749A	RK 1M 1/6W J	R272L,R	OB24094A	RC 1 5W K
Q915	OB06372A	TR 2SA953 (K,L)	R122L,R	OB09741A	RK 470K 1/6W J	R273L,R	OB24094A	RC 1 5W K
Q916	OB06013A	TR 2SA733 (P,Q)	R123L,R	OB09687A	RK 2.7K 1/6W J	R274L,R	OB24094A	RC 1 5W K
ZD101L,R	OB12168A	ZD 10V	R124L,R	OB09725A	RK 100K 1/6W J	R275L,R	OB24094A	RC 1 5W K
ZD163	OB12620A	RD10JS-T1B2	R125L,R	OB09670A	RK 510 1/6W J	R276L,R	OB09689A	RK 3.3K 1/6W J
ZD250L,R	OB12168A	ZD 12V	R126L	OB09741A	RK 470K 1/6W J	R277L,R	OB09723A	RK 82K 1/6W J
ZD251L,R	OB12619A	RD12ES-T1B2	R126R	OB09717A	RK 47K 1/6W J	R278L,R	OB09713A	RK 33K 1/6W J
ZD252L,R	OB12619A	ZD 6.8V	R127L,R	OB05641A	RK 47K 1/4W J	R279L,R	OB09731A	RK 180K 1/6W J
ZD253L,R	OB12499A	RD6.8ES-T1B2	R128L,R	OB09725A	RK 100K 1/6W J	R280L,R	OB09737A	RK 330K 1/6W J
		ZD 6.8V	R129L,R	OB09725A	RK 100K 1/6W J	R281L,R	OB09737A	RK 330K 1/6W J
		RD6.8ES-T1B2	R130L,R	OB09725A	RK 100K 1/6W J	R282L,R	OB24197A	RF 5.6 2W J
		ZD 7.5V	R131L,R	OB09670A	RK 510 1/6W J	R283L,R	OB24201A	RF 330 2W J
		RD7.5ES-T1B2	R132L,R	OB09725A	RK 100K 1/6W J	R284L,R	OB09693A	RK 4.7K 1/6W J
			R174	OB09727A	RK 120K 1/6W J	R286L,R	OB05577A	RK 3.3K 1/4W J
			R175	OB09725A	RK 100K 1/6W J	R287,288	OB24189A	RF 1.2K 1W J
			R176,177	OB09717A	RK 47K 1/6W J	R289	OB05614A	RK 1.8K 1/4W J
			R178	OB09709A	RK 22K 1/6W J	R290	OB09301A	RK 2K 1/4W J

	Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
J	R291	OB09701A	RK 10K 1/6W J	C207L,R	OB41082A	CML 1000P (TA-4E)	CN20	OB81966A	2P-T Post EH-2P RED
J	R292	OB09733A	RK 220K 1/6W J						
J	R293	OB09724A	RK 91K 1/6W J	C208L,R	OB41082A	CML 1000P (TA-4E)	CN34	OB81759A	2P-T Post EH-2P (TA-4)
J	R294	OB09719A	RK 56K 1/6W J						
J	R295	OB09707A	RK 18K 1/6W J	C209L,R	OB41082A	CML 1000P (TA-4E)		OB83396A	Flat Cable 7P 110
J	R296	OB09717A	RK 47K 1/6W J						(2)
J	R297	OB09701A	RK 10K 1/6W J	C210L,R	OB41082A	CML 1000P (TA-4E)		OB83391A	Flat Cable 3P 170
J	R298	OB09661A	RK 220 1/6W J						(1)
J	R299	OB09693A	RK 4.7K 1/6W J	C250L,R	OB41704A	CSP 330P 50V J		OB83390A	Flat Cable 3P 80
J	R451	OB09701A	RK 10K 1/6W J	C251L,R	OB09852A	CML 4700P 50V J			(1)
J	R452	OB09689A	RK 3.3K 1/6W J	C252L,R	OB41923A	CSP 22P 125V K		OB83392B	Flat Cable 3P 270
J	R453	OB09721A	RK 68K 1/6W J	C253L,R	OB41923A	CSP 22P 125V K			(1)
J	R454	OB09701A	RK 10K 1/6W J	C254L,R	OB40154A	CE 47μ 16V (LN)		OB83393B	Flat Cable 3P 370
J	R455	OB09677A	RK 1K 1/6W J	C255L,R	OB41823A	CML 0.01μ 50V J			(1)
J	R457	OB09721A	RK 68K 1/6W J	C256L,R	OB41537A	CML 0.1μ 100V J		OB83432A	Lead Wire 150 (1)
J	R458,459	OB09741A	RK 470K 1/6W J	C259	OB90372A	CE 2.2μ 50V		OB83433A	Lead Wire 200 (1)
J	R460,461	OB09725A	RK 100K 1/6W J	C260	OB40127A	CE 10μ 63V		OM04191A	Fuse Label T1A
J	R462,463	OB09689A	RK 3.3K 1/6W J	C261	OB09372A	CE 2.2μ 50V			(2)
J	R464,465	OB09689A	RK 3.3K 1/6W J	C262	OB05899A	CE 220μ 10V			
J	R466	OB09677A	RK 1K 1/6W J (TA-4)	C263	OB1400A	CE 100μ 16V			
J				C264,265	OB41926A	CML 0.1μ 250V J			
J	R467,468	OB09749A	RK 1M 1/6W J (TA-4)	C266L,R	OB41005A	CC 180P 50V J (TA-4E)			
J	R469	OB09725A	RK 100K 1/6W J (TA-4)	C451	OB01400A	CE 100μ 16V	Q258L,R	OB06316A	TR 2SD882 (R,S) (Pair)
J	R470,471	OB09749A	RK 1M 1/6W J (TA-4)	C452	OB09860A	CML 0.022μ 50V J	Q259L,R	OB10259A	TR 2SC4381 (O,Y) (Pair)
J	R472	OB09725A	RK 100K 1/6W J (TA-4)	C453	OB40418A	CE 330μ 16V (LN)	Q260L,R	OB10258A	TR 2SA1667 (O,Y) (Pair)
J				C454	OB41911A	CC 470P 50V J	Q261L,R	OB10251A	TR 2SA1492 (O,Y) (Pair)
J	R473	OB09717A	RK 47K 1/6W J	C455	OB41294A	CML 0.047μ 50V J	Q262L,R	OB10251A	TR 2SA1492 (O,Y) (Pair)
J	R476,477	OB09695A	RK 5.6K 1/6W J	C456	OB40111A	CE 0.47μ 50V	Q263L,R	OB10250A	TR 2SC3856 (O,Y) (Pair)
J	R478,479	OB09701A	RK 10K 1/6W J	C457	OB01405A	CE 1μ 50V	Q264L,R	OB10250A	TR 2SC3856 (O,Y) (Pair)
J	R480	OB09703A	RK 12K 1/6W J	C460	OB05652A	CML 4700P 50V J			
J	R481	OB09717A	RK 47K 1/6W J	C462,463	OB40111A	CE 0.47μ 50V			
J	R911,912	OB24194A	RF 10 1/6W J	C464,465	OB41228A	CPP 510P 100V J (TA-4/E)			
J	R913,914	OB09685A	RK 2.2K 1/6W J						
J	R915	OB09677A	RK 1K 1/6W J	C466,467	OB09816A	CE 10μ 16V (LN)			
J	R916	OB09725A	RK 100K 1/6W J	C468,469	OB41281A	CML 3900P 50V J	TH250	OB19011A	Thermistor
J	R917	OB09687A	RK 2.7K 1/6W J	C470	OB01412A	CE 10μ 16V		OB90369A	Transistor Bush (1)
J	R918	OB09685A	RK 2.2K 1/6W J	C471	OB09932A	CE 22μ 16V (LN)		OE00818A	M3x8 ⊕ Binding (2)
J	R919	OB09677A	RK 1K 1/6W J	C472,473	OB41395A	CPP 240P 50V J (TA-4)		OE00921A	BT3x8 ⊕ Binding (Black Chromate) (2)
J	R920,921	OB24194A	RF 10 1/6W J						
J	R922	OB09685A	RK 2.2K 1/6W J	C474,475	OB01405A	CE 1μ 50V			
J	R923	OB09697A	RK 6.8K 1/6W J	C476	OB41914A	CC 0.01μ 50V Z		OE03138A	M3x10 ⊕ Binding (17)
J	R924	OB09701A	RK 10K 1/6W J	C913,914	OB40514A	CE 2200μ 35V (LN)			
J	R925	OB09693A	RK 4.7K 1/6W J	C915,916	OB01603A	CML 0.1μ 50V K		OE03495A	BT3x10 ⊕ Countersunk (Black Chromate) (2)
J	R926,927	OB09701A	RK 10K 1/6W J	C917,918	OB41217A	CPP 470P 100V J			
J	R928	OB09701A	RK 10K 1/6W J	RY101L,R	OB90279A	Relay 24V DS2Y-S-DC24V			
J	R929	OB09685A	RK 2.2K 1/6W J						
J	R930	OB09701A	RK 10K 1/6W J						
J	R931	OB09685A	RK 2.2K 1/6W J	RY250,251	OB90333A	Relay 24V 24MBU-510-UL		OJ05616A	Heat Sink (1)
J	R934	OB09685A	RK 2.2K 1/6W J	RY252	OB90279A	Relay 24V DS2Y-S-DC24V		OJ05623A	Heat Sink Holder B (2)
J	C101L,R	OB41298A	CML 0.1μ 50V J						
J	C102L,R	OB41703A	CSP 100P 50V J	S101	OB70136A	Slide Switch SSSP-2		OJ05627A	Heat Sink R (1)
J	C103L,R	OB41238A	CPP 3600P 100V J					OJ05630A	Joint Holder (1)
J	C104L,R	OB41300A	CML 0.15μ 50V J	F903,904	OB90336A	Fuse 1A 250V (TA-4/4A)		OJ05692A	Transistor Silicon Rubber B (2)
J	C105L,R	OB40513A	CE 1000μ 6.3V (LN)					OJ05700A	Transistor Silicon Rubber (2)
J	C106L,R	OB41705A	CSP 1000P 50V J						
J	C107L,R	OB41138A	CPP 3600P 100V G						
J	C108L,R	OB41117A	CPP 470P 100V G	TP1,2	OB81759A	2P-T Post			
J	C109L,R	OB41118A	CPP 510P 100V G	PJ101	OB81962A	2P Pin Jack			
J	C110L,R	OB09933A	CE 2.2μ 50V (LN)	PJ102	OB81963A	2P Pin Jack			
J	C111L,R	OB09816A	CE 10μ 16V (LN)	PJ103,104	OB81948A	4P Pin Jack			
J	C112L,R	OB09860A	CML 0.022μ 50V J	PJ105,106	OB81948A	4P Pin Jack			
J	C113L,R	OB41218A	CPP 510P 100V J	CN1A	OB81761A	4P-T Post EH-4P			
J	C114L,R	OB41302A	CML 0.22μ 50V J	CN1B	OB81971A	4P-T Post EH-4P BLK			
J	C117L,R	OB09816A	CE 10μ 16V (LN)	CN2AB	OB83426B	8P Connector 350mm			
J	C131L,R	OB41302A	CML 0.22μ 50V J	CN3	OB83412B	5P Connector 300mm			
J	C133L,R	OB09286A	CC 470P 50V K (TA-4E)	CN4	OB81760A	3P-T Post EH-3P WHT			
J	C134L,R	OB41735A	CC 100P 50V J (TA-4E)	CN5	OB81764A	7P-T Post EH-7P WHT			
J	C135L,R	OB09288A	CC 1000P 50V K (TA-4E)	CN7	OB81973A	5P-T Post EH-5P BLK			
J	C136L,R	OB09288A	CC 1000P 50V K (TA-4E)	CN8	OB81760A	3P-T Post EH-3P WHT			
J	C165	OB40101A	CE 22μ 35V	CN9	OB83411B	5P Connector 230mm			
J	C166	OB09163A	CE 10μ 16V (BP)	CN10	OB81968A	3P-T Post EH-3P RED			
J	C167	OB01603A	CML 0.1μ 50V K	CN11,12	OB81975A	2P-T Post VH-2P			
J	C168	OB09372A	CE 2.2μ 50V	CN13	OB81976A	6P-T Post VH-6P			
J	C169	OB01603A	CML 0.1μ 50V K	CN15	OB83416B	8P Connector 230mm			
J	C170	OB09372A	CE 2.2μ 50V	CN17	OB81760A	3P-T Post EH-3P			
J	C171	OB01862A	CE 22μ 16V						
J	C201,202	OB09291A	CC 0.022μ 50V Z						
J	C203,204	OB09372A	CE 2.2μ 50V						
J	C205L,R	OB41082A	CML 1000P (TA-4E)						
J	C206L,R	OB41082A	CML 1000P (TA-4E)						

7. SCHEMATIC DIAGRAMS

7.1. IC Block Diagrams

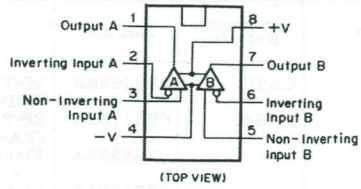


Fig. 7.1.1 Operational Amp. IC NJM4558D, NJM072DE, NJM5532DD

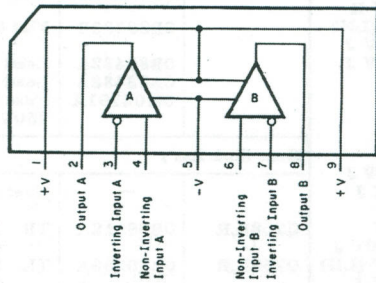


Fig. 7.1.2 Operational Amp. IC NJM4558S, NJM5532SD

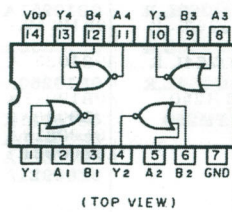


Fig. 7.1.3 NOR Gate C-MOS IC μ PD4001BC

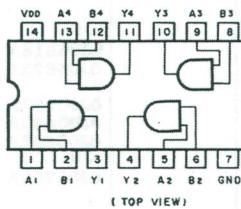


Fig. 7.1.4 AND Gate C-MOS IC μ PD4081BC

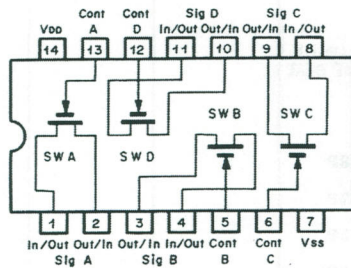


Fig. 7.1.5 Bilateral Switch IC TC4066BP, LC4966

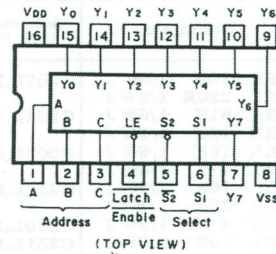


Fig. 7.1.6 3-to-8 Line Decoder IC μ PD74HC237

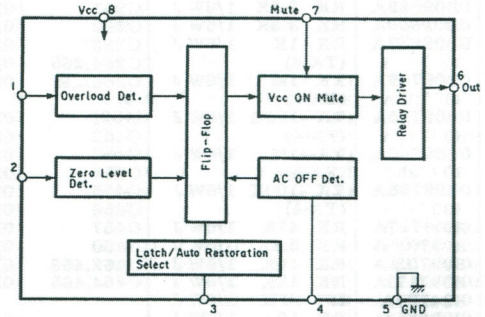


Fig. 7.1.8 Power Amp. Protector IC μ PC1237H

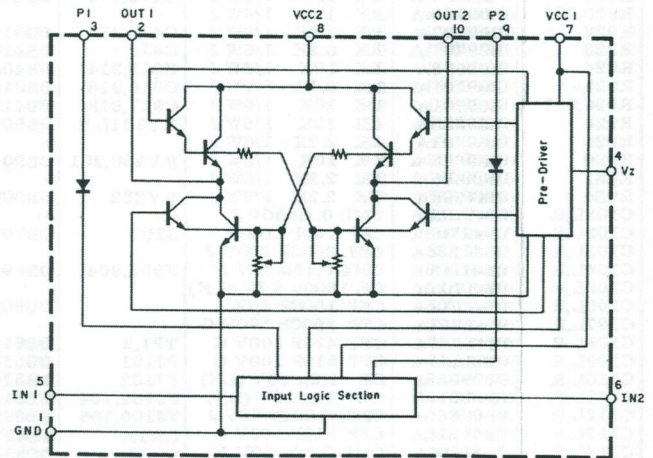
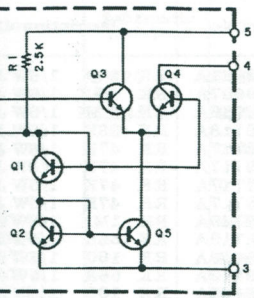
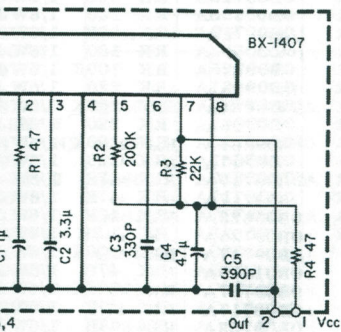


Fig. 7.1.10 Motor Control IC LE1



7.1.7 FM IF Amp. IC TA7060AP



Remote Control Receiver IC BX-1407

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

1645N

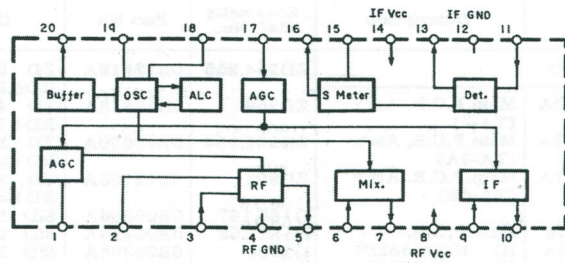


Fig. 7.1.11 AM Tuner IC LA1247

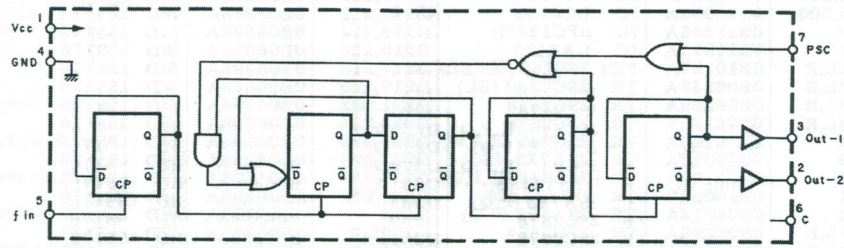


Fig. 7.1.12 ECL Prescaler (FM) IC TD6104P

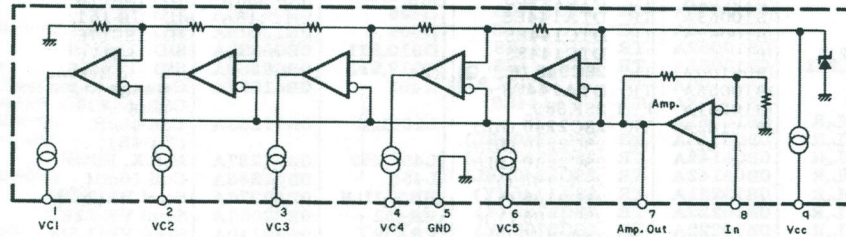


Fig. 7.1.13 Signal Meter Driver IC LB1413N

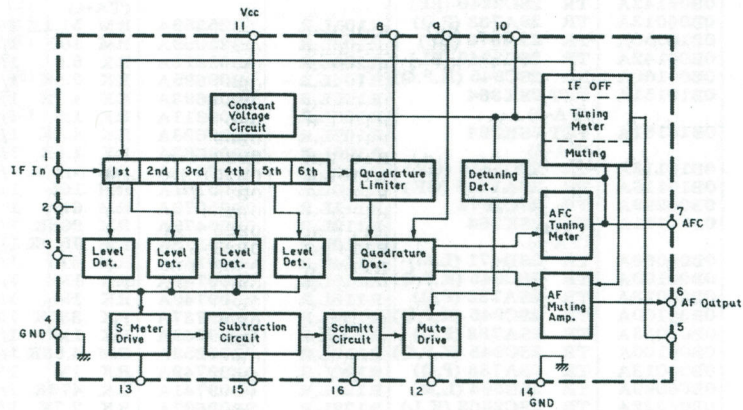


Fig. 7.1.14 FM IF Amp. & Detector IC LA1235

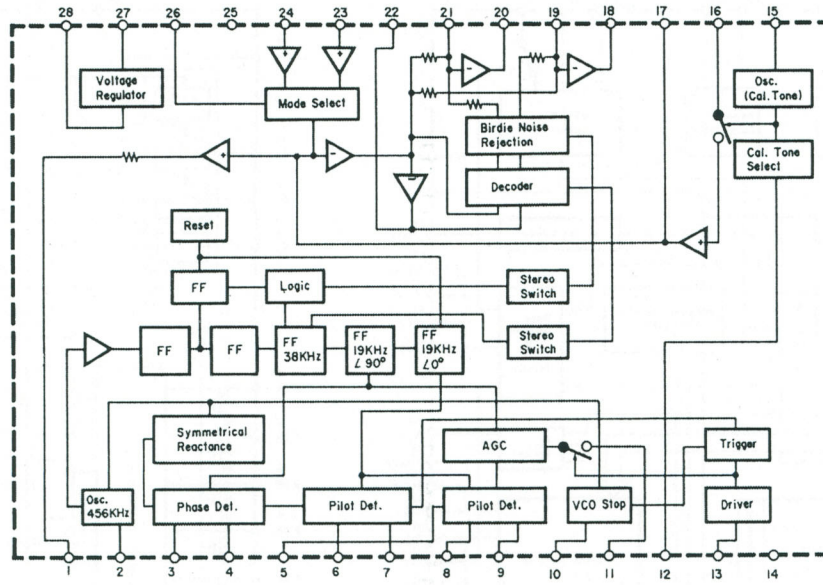


Fig. 7.1.15 PLL FM MPX Demodulator IC LA3450

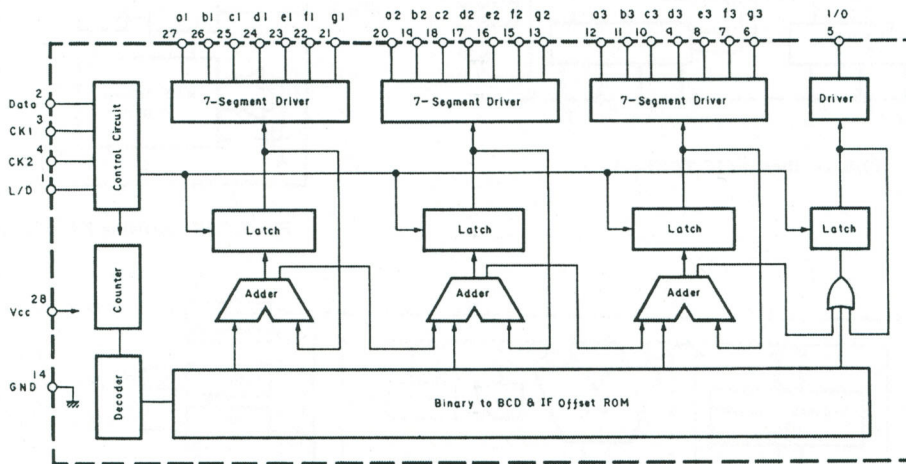


Fig. 7.1.16 Display Driver IC TD6301AN

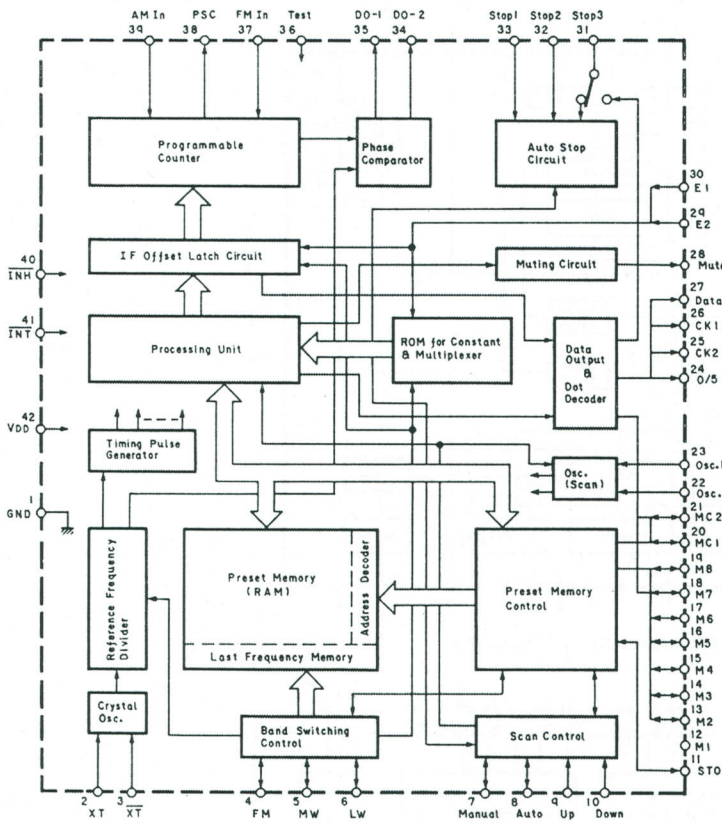


Fig. 7.1.17 PLL Synthesizer IC TC9147BP

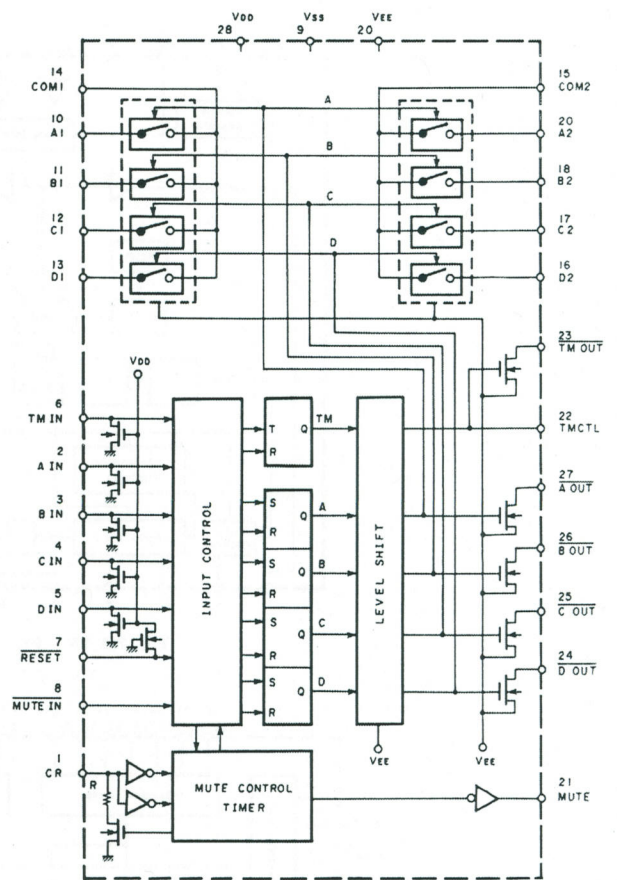


Fig. 7.1.18 Analog Function Switch LC7816

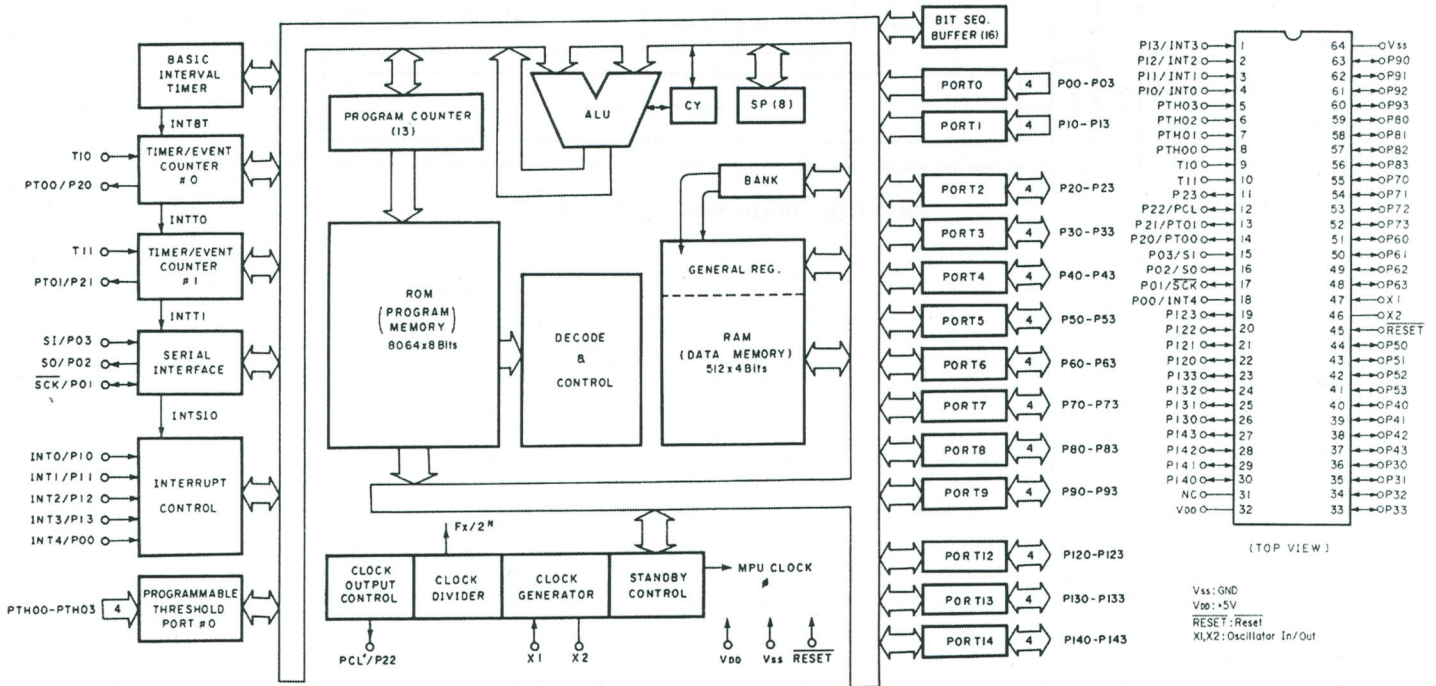
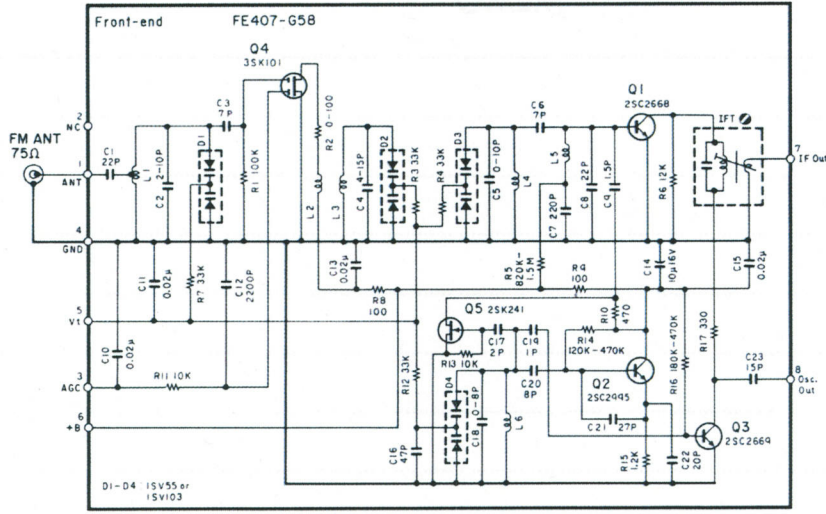
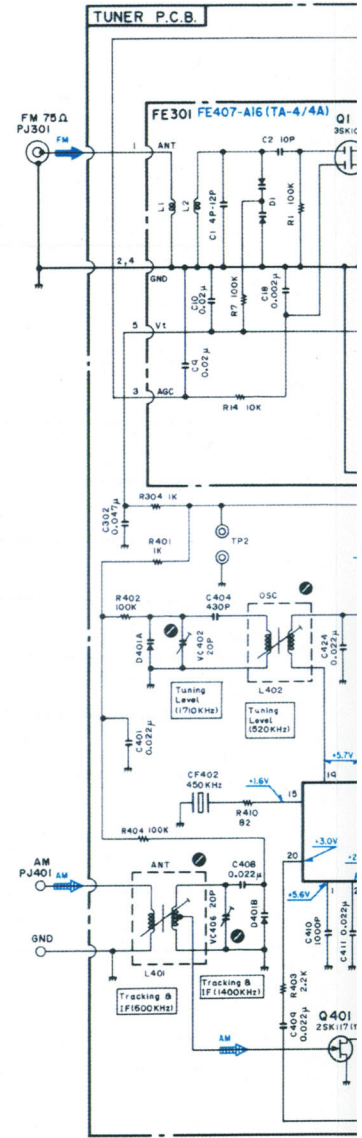


Fig. 7.1.19 MPU μPD75104CW

7.2. Schematic Diagrams
7.2.1. Tuner Section



FM Front-end for TA-4E



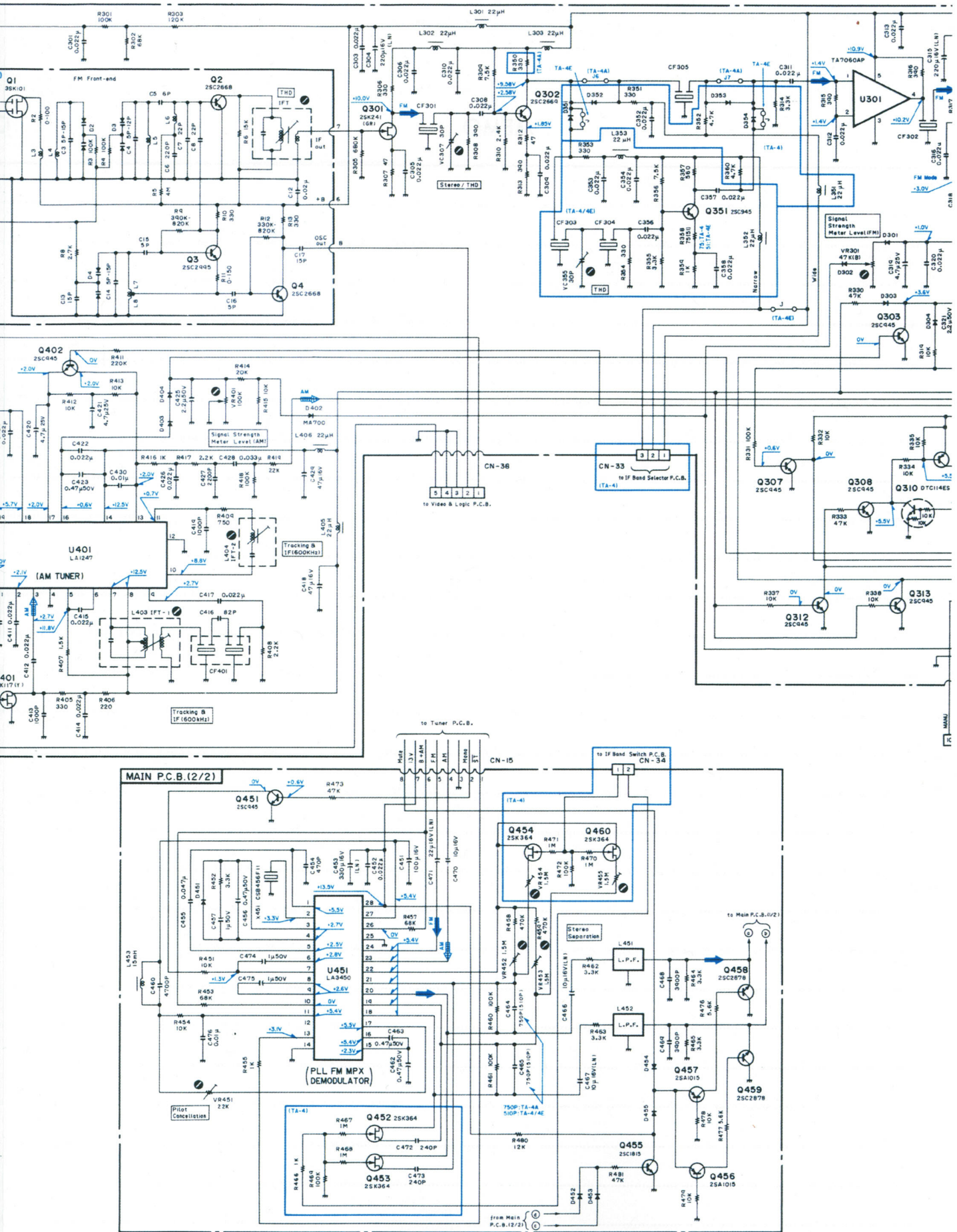
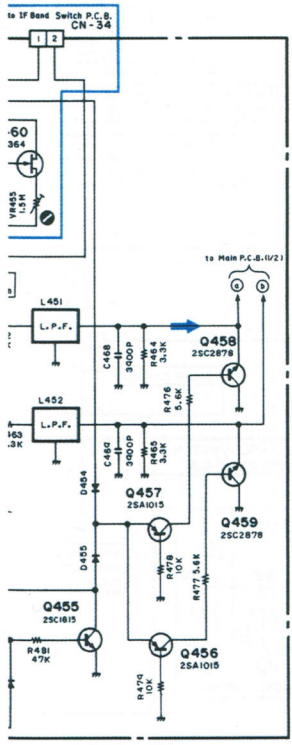
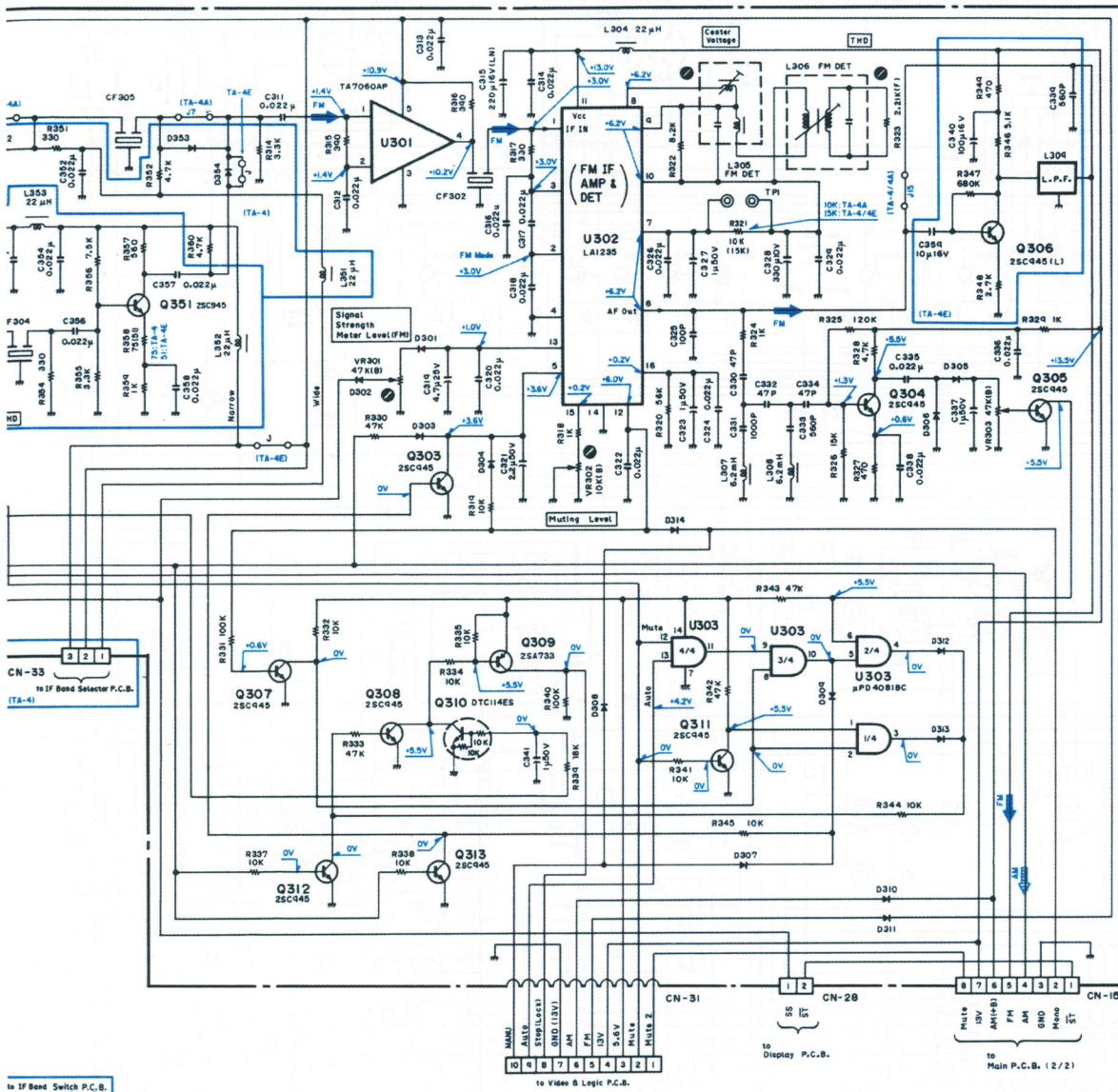


Fig. 7.2.1

306



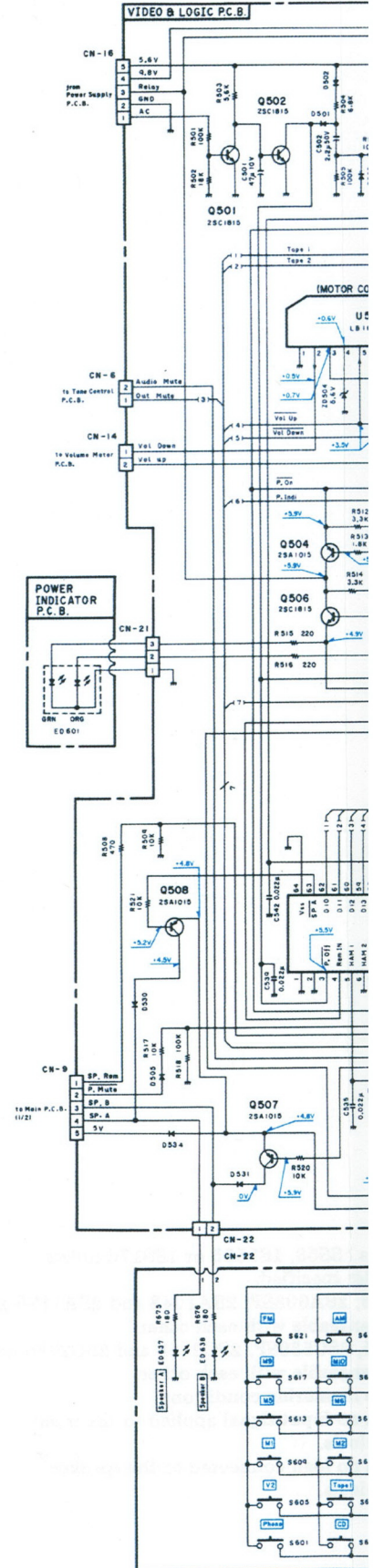
7.2.1

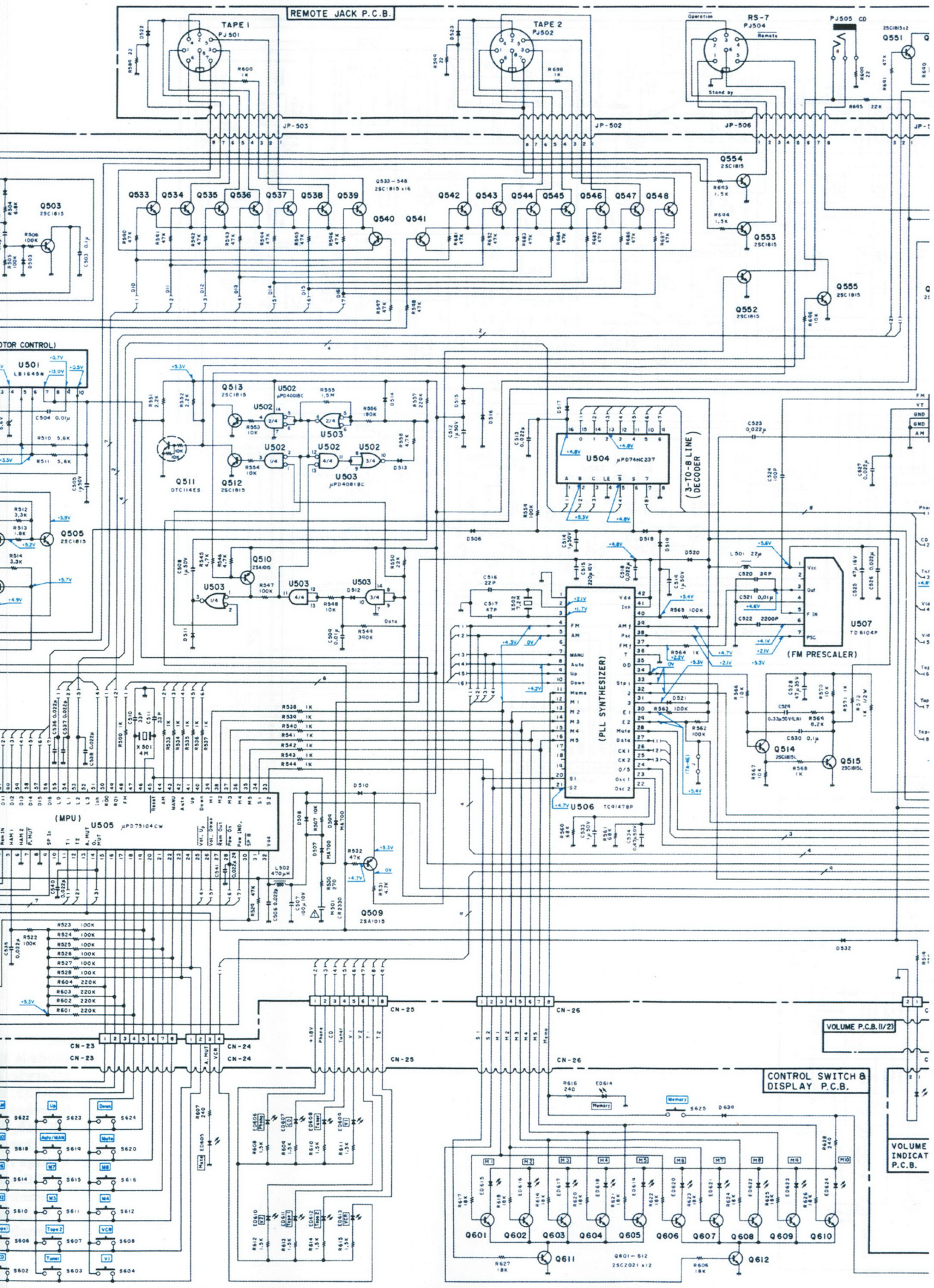
- Notes:
1. Diode is 1S otherwise s
 2. 2SA733, 2I interchange
 3. 2SC945, 2I interchange
 4. Voltage me
 - With no terminal
 - With no terminal

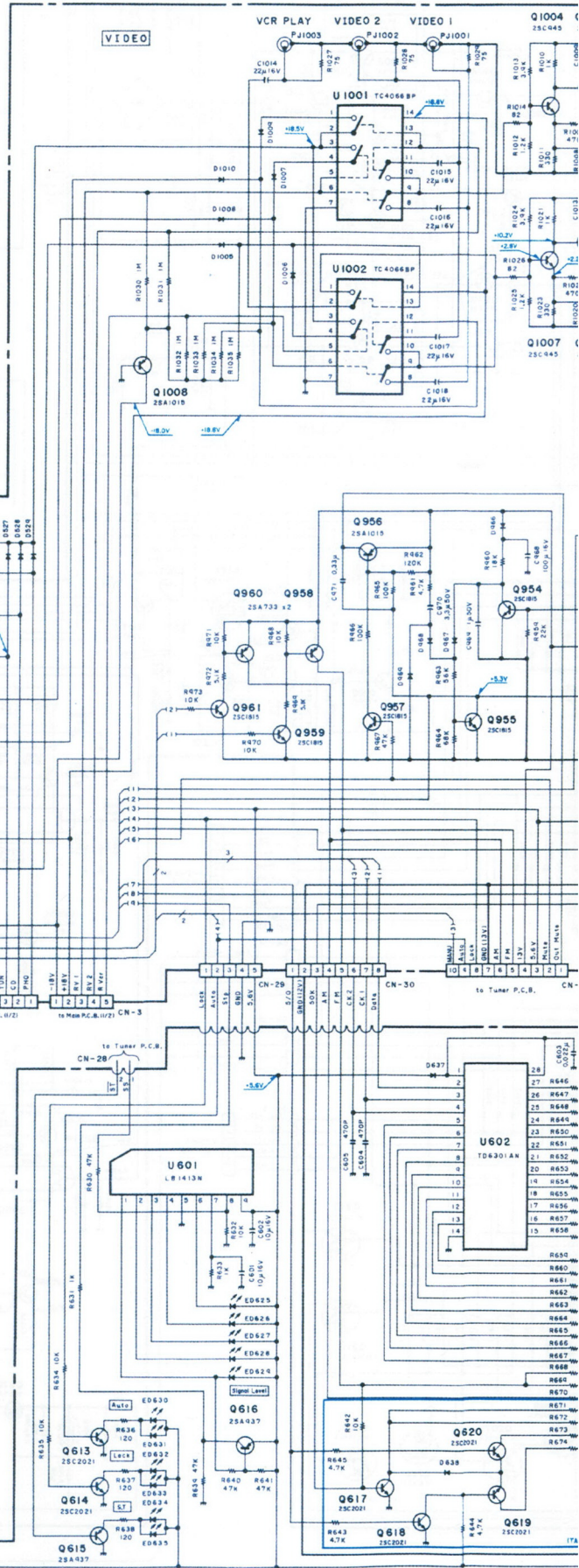
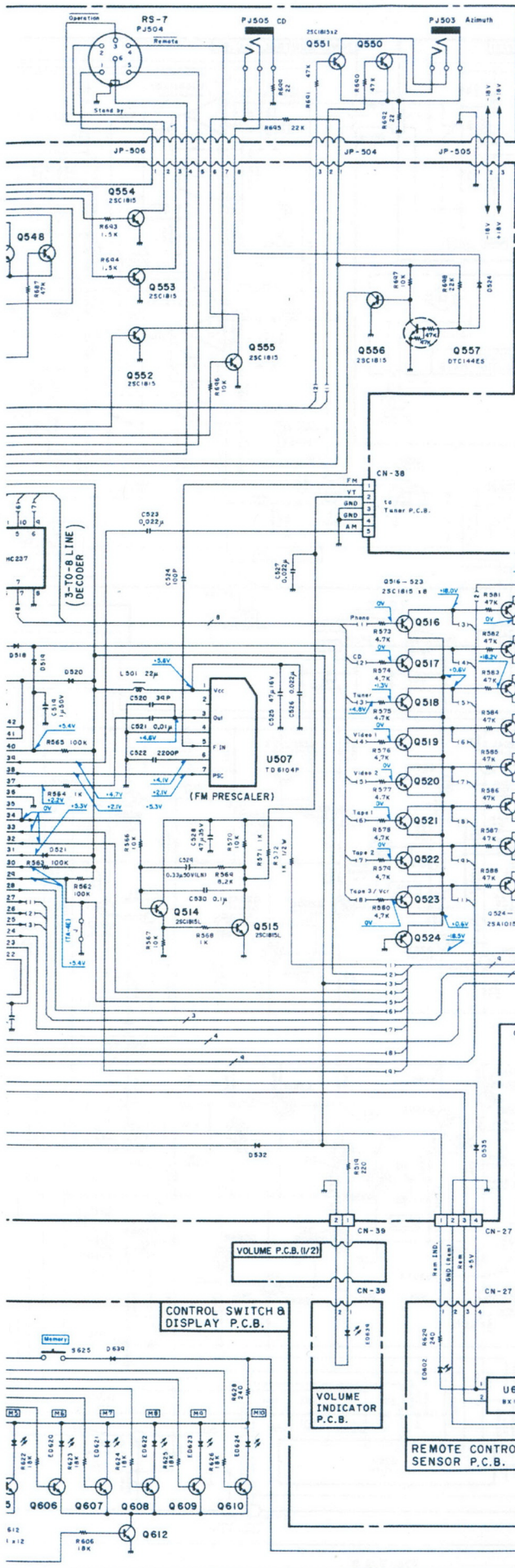
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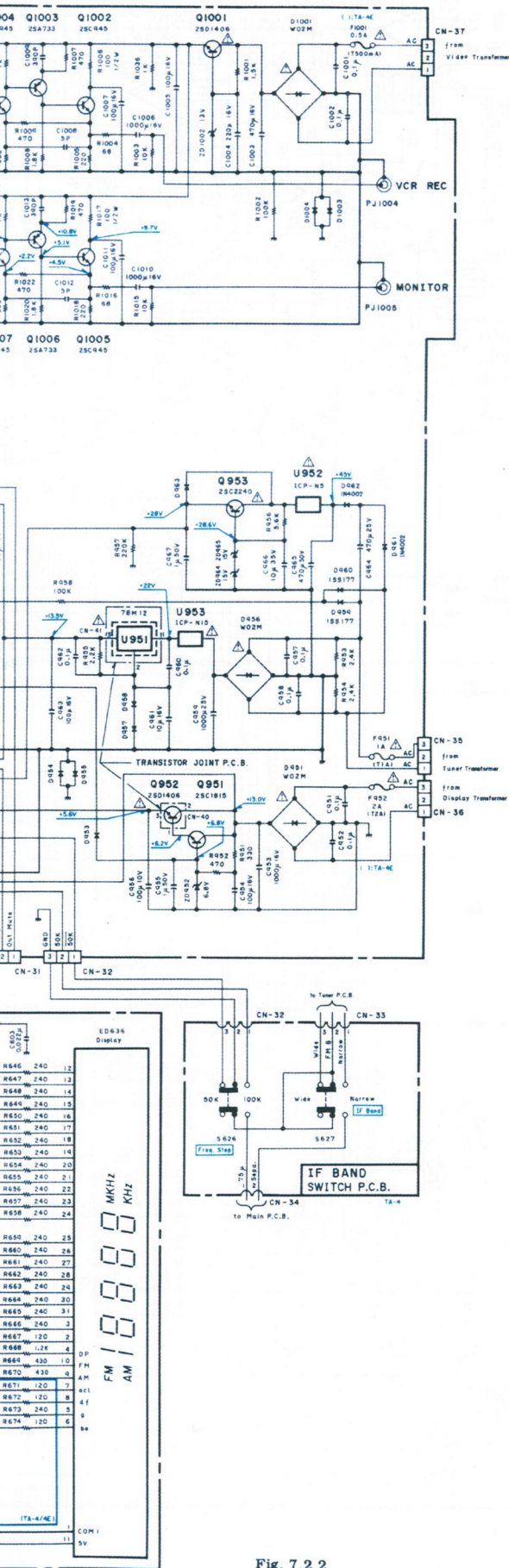
1SS53, 1S1555 or 1SS176 unless
specified.
2SA608SP, 2SA1048 and 2SA1175 are
interchangeable with each other.
2SC536SP, 2SC2458 and 2SC2785 are
interchangeable with each other.
measuring conditions
no input signal applied to the input
terminals.
no load connected to the speaker
terminals.

7.2.2. Video and Control Section









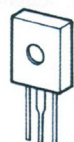
2SA733
2SA953
2SA970
2SA1015
2SC945
2SC1815
2SC2002
2SC2240
2SC2878



2SA1145
2SC2705



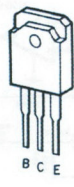
2SA937
2SC2021



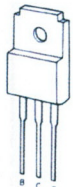
2SD882



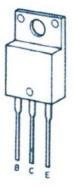
2SB564
2SD471



2SA1492
2SC3856



2SD1406



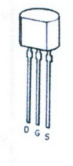
2SA1667
2SC4381



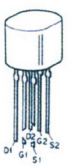
2SC2669
DTA144ES
DTC114ES
DTC144ES



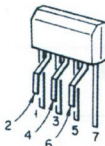
2SK241



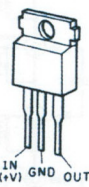
2SK117
2SK364



2SK146



2SK389



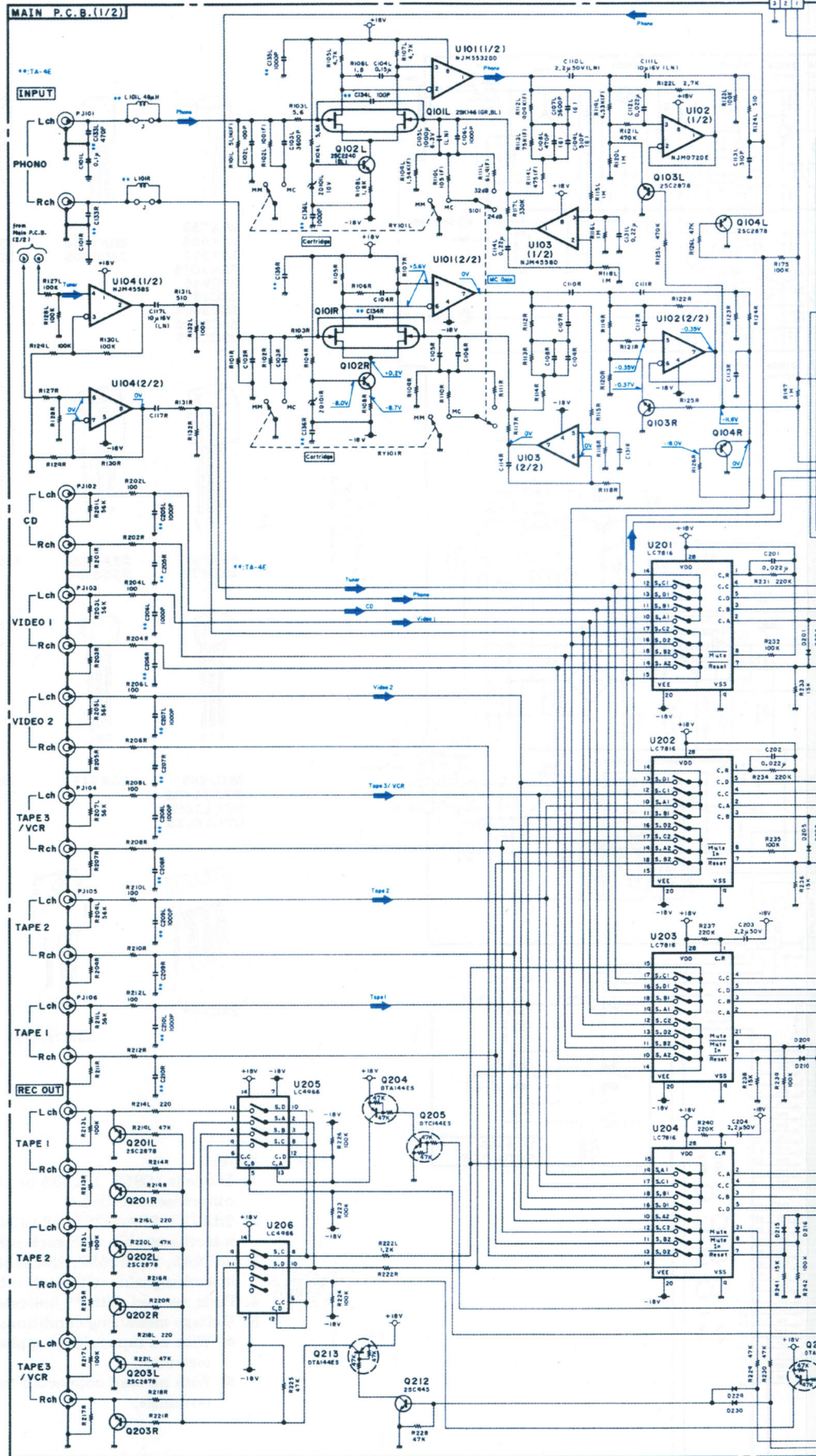
NJM78M12

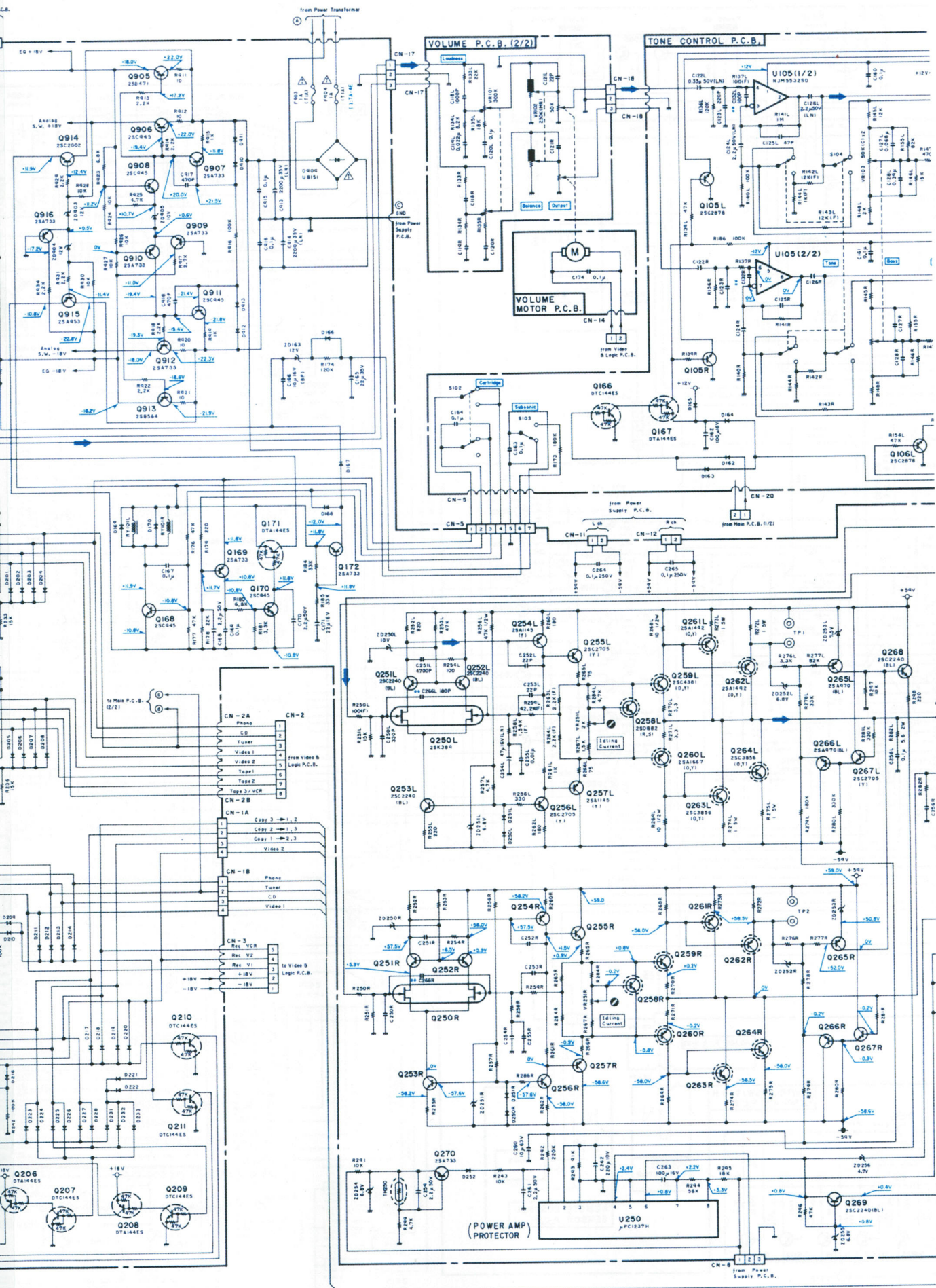
Notes:

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. Parts marked with ** indicate those for TA-4E.
5. Voltage measuring conditions
 - With no input signal applied to the input terminals.
 - With no load connected to the speaker terminals.

Fig. 7.2.2

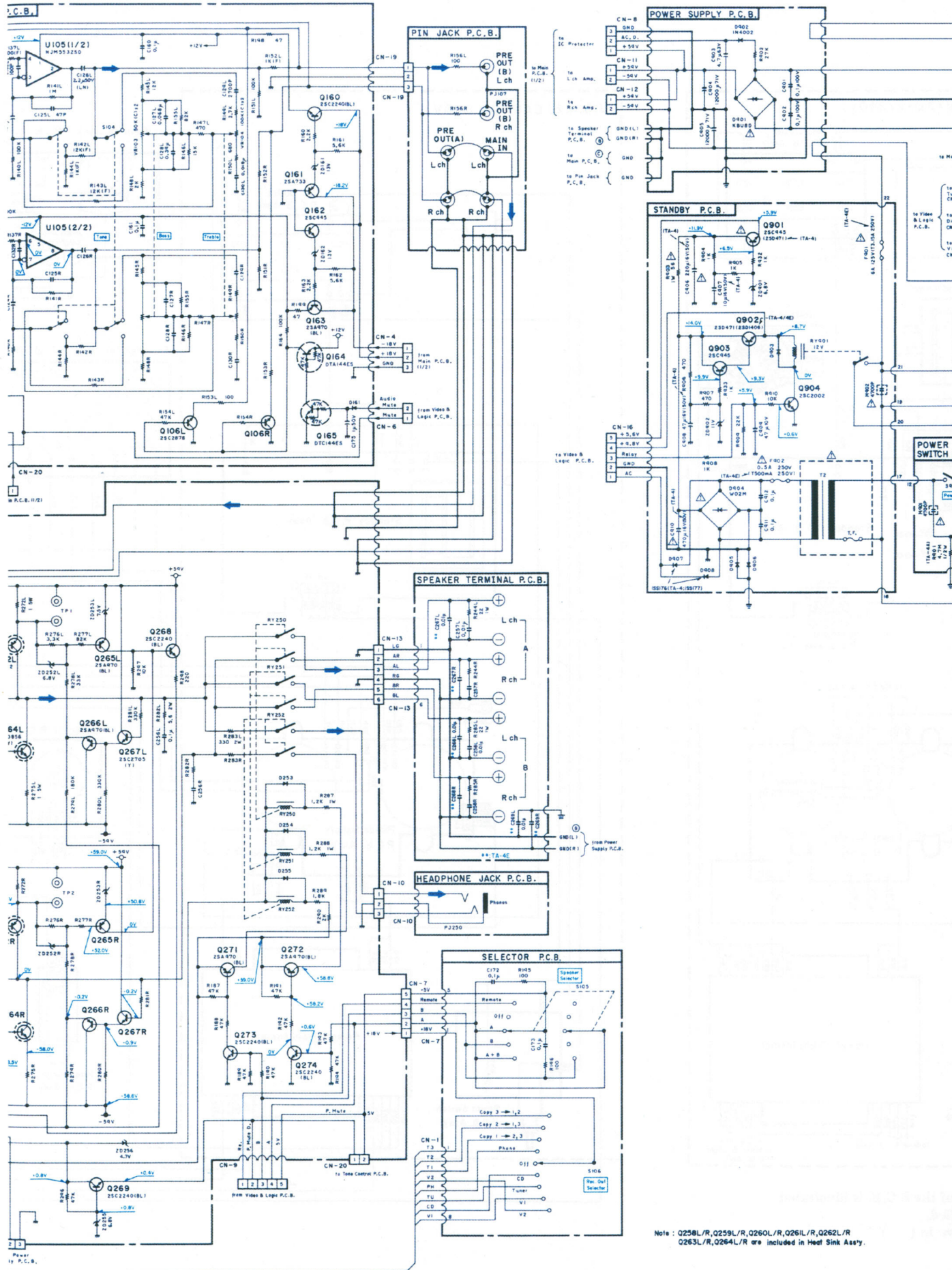
7.2.3. Amplifier Section



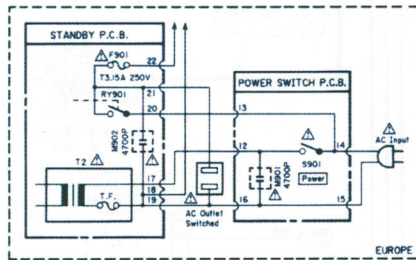
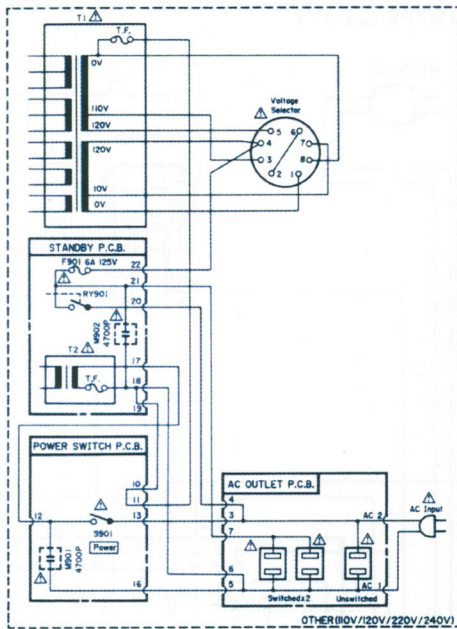
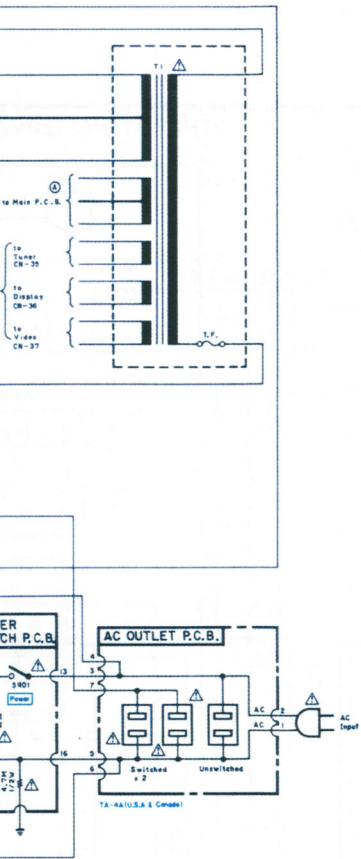


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Fig. 7.2.3



Note: Q258L/R, Q259L/R, Q260L/R, Q261L/R, Q262L/R, Q263L/R, Q264L/R are included in Heat Sink Assy.



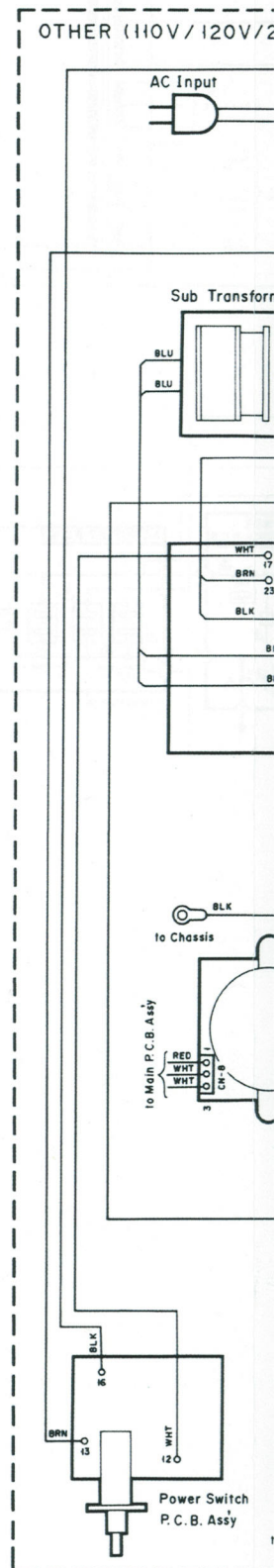
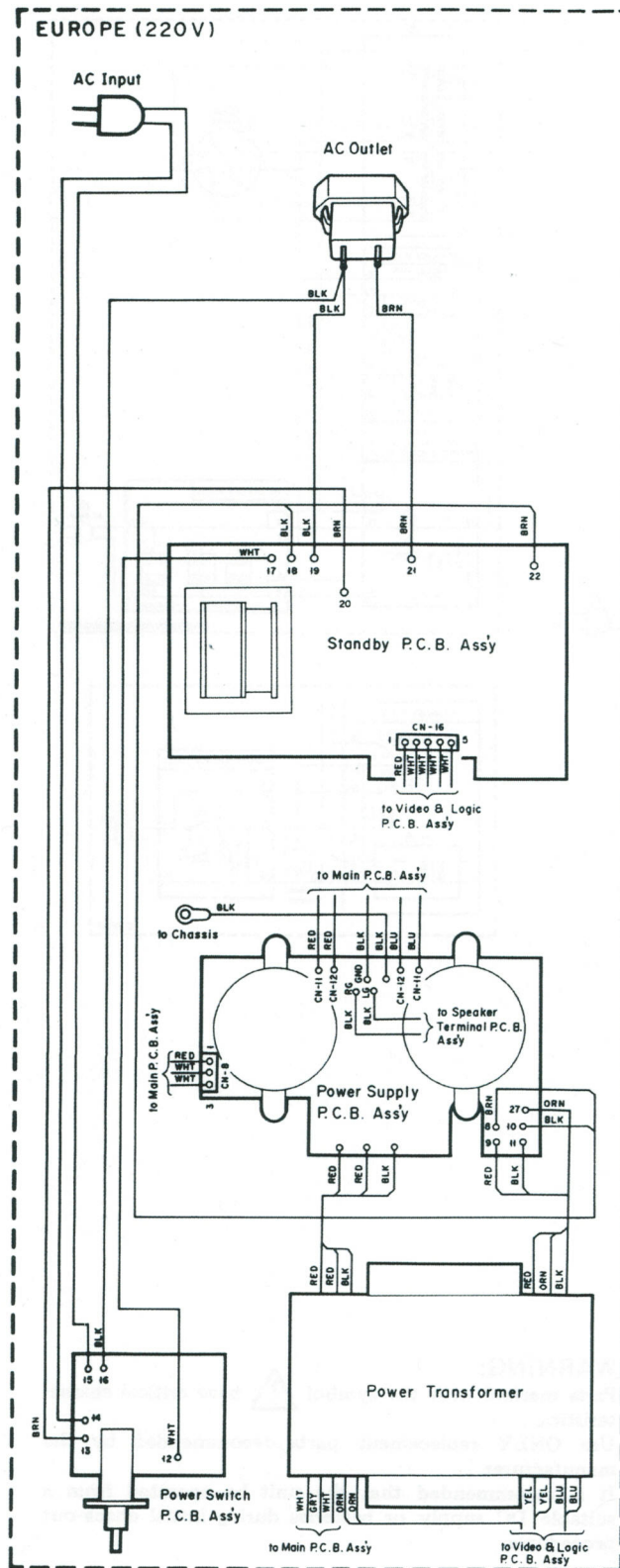
WARNING:

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.

8. WIRING DIAGRAM



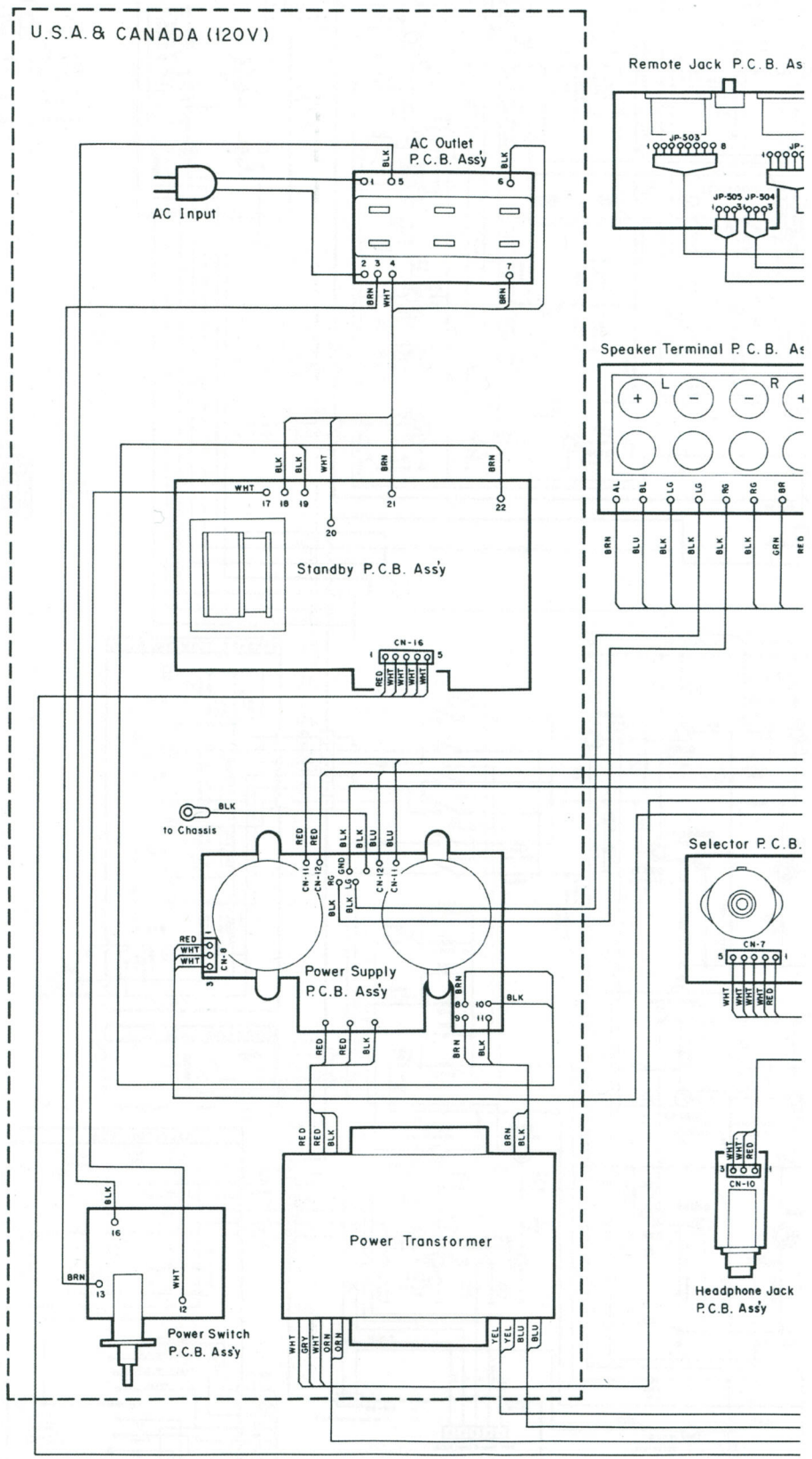
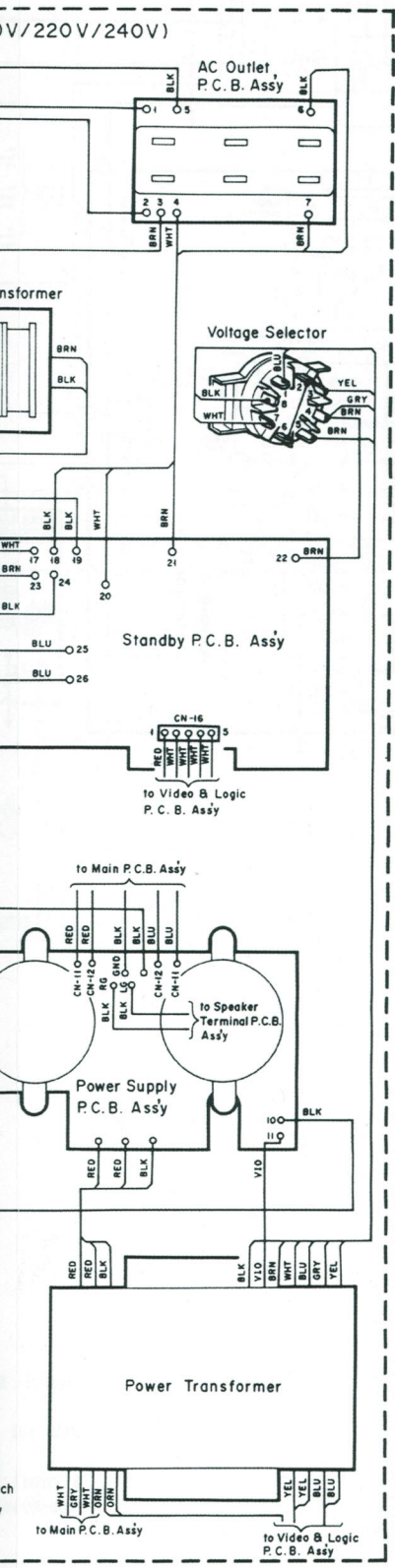
Notes: 1. Table of wire colors

- | | |
|--------------|--------------|
| 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 unit unless otherwise specified.

3. Wire tube color is shown in the diagram.

Ma



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 fied.
 own in ().

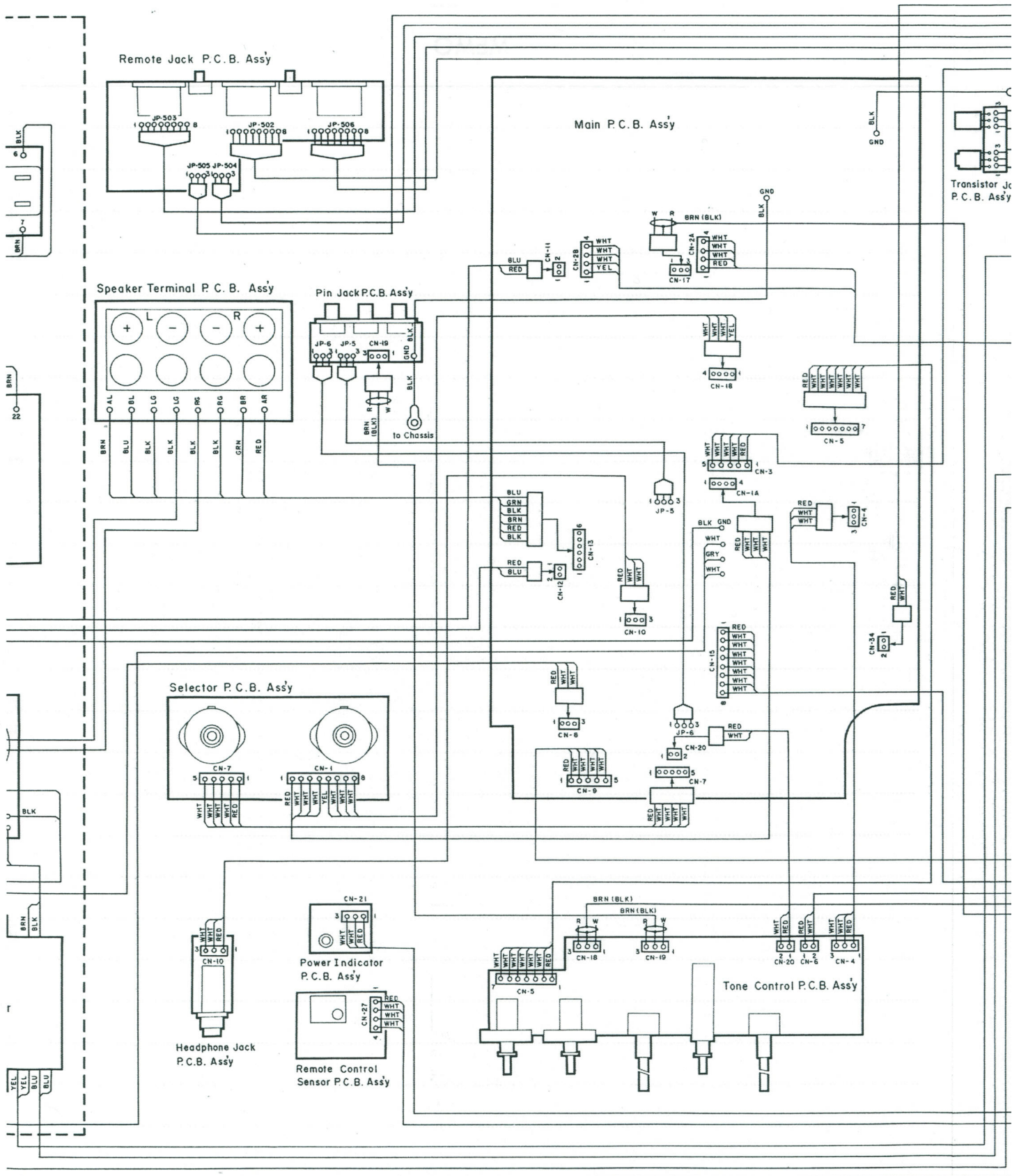
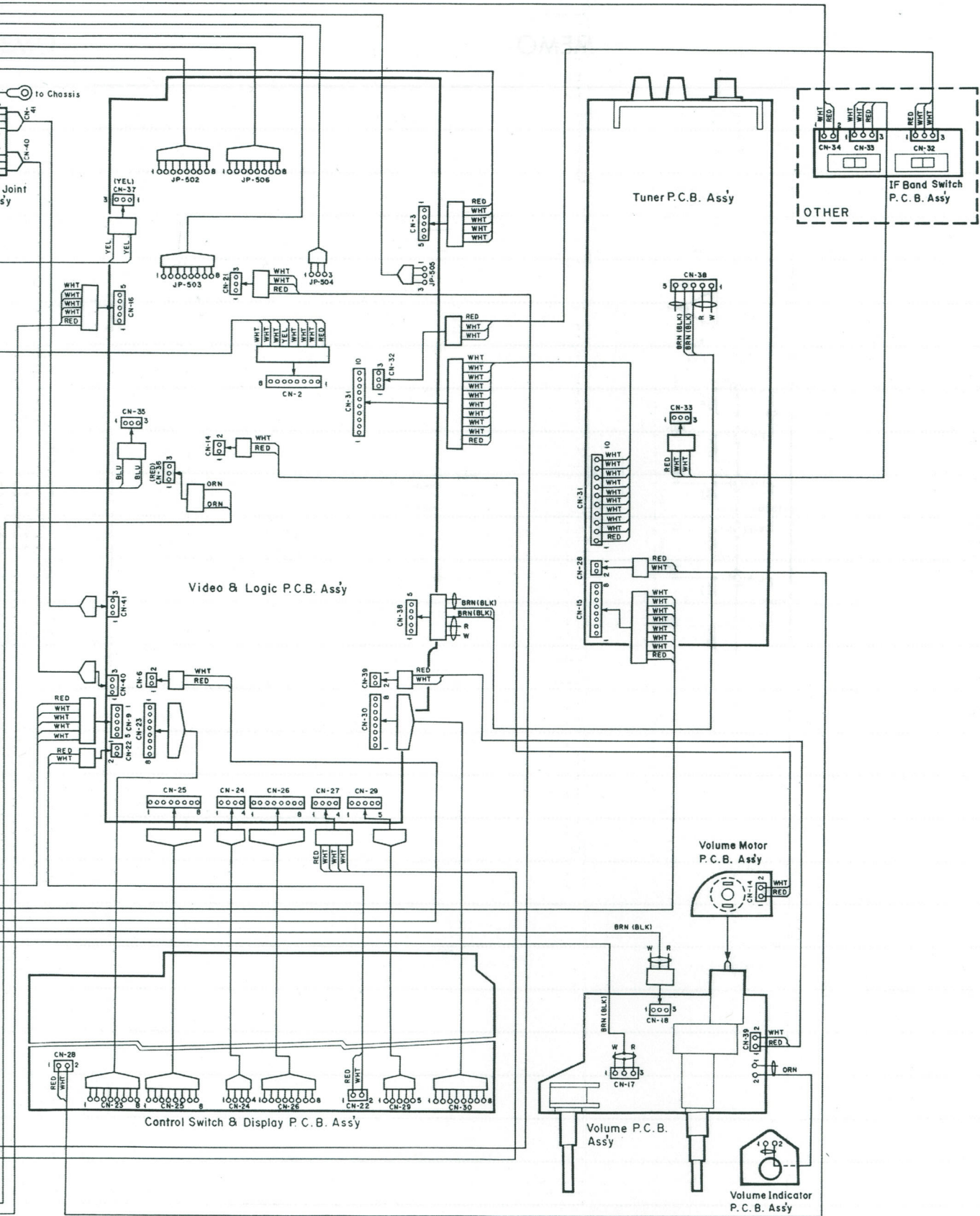


Fig. 8

ML



9. BLOCK DIAGRAMS

9.1. Tuner Section

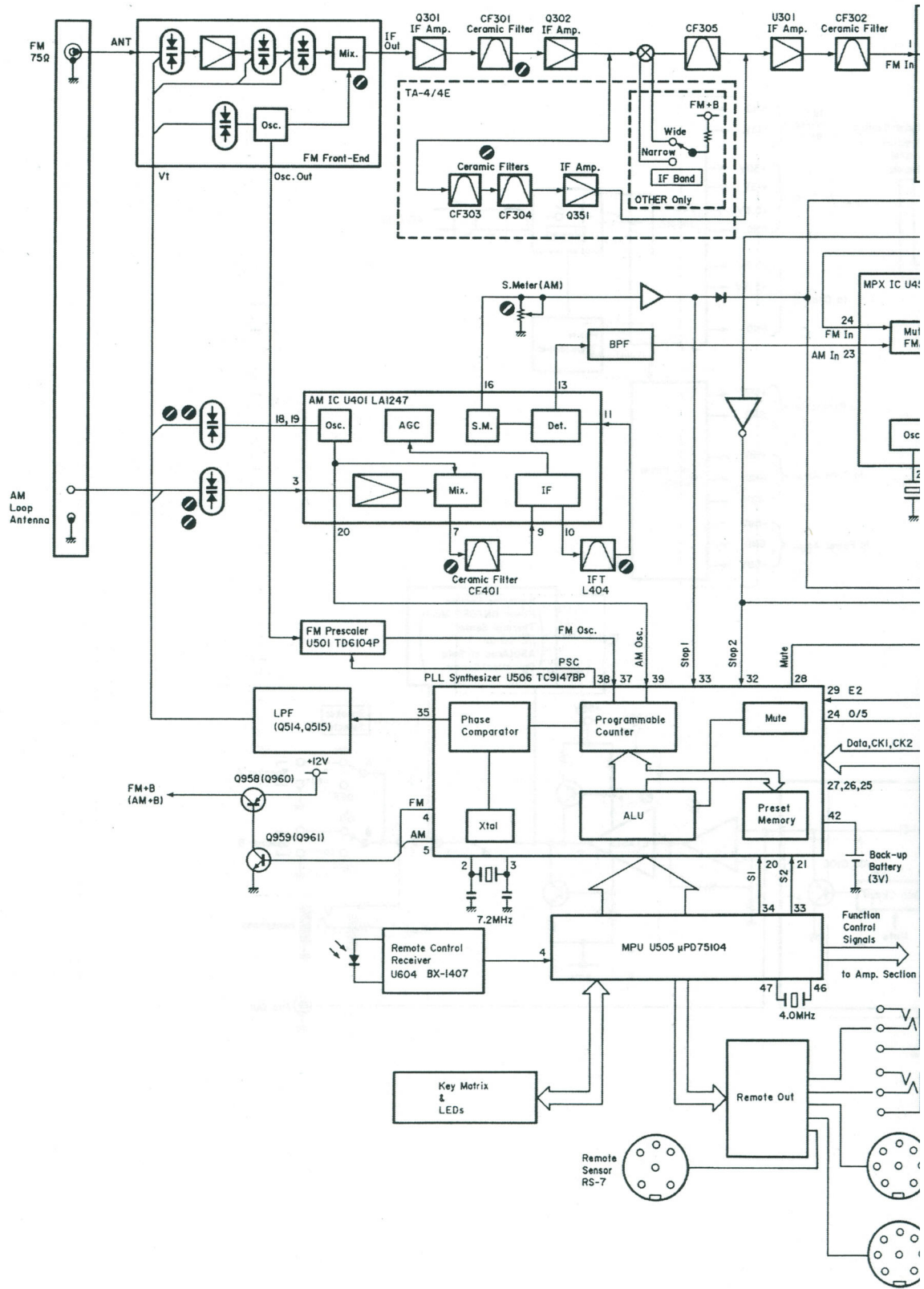
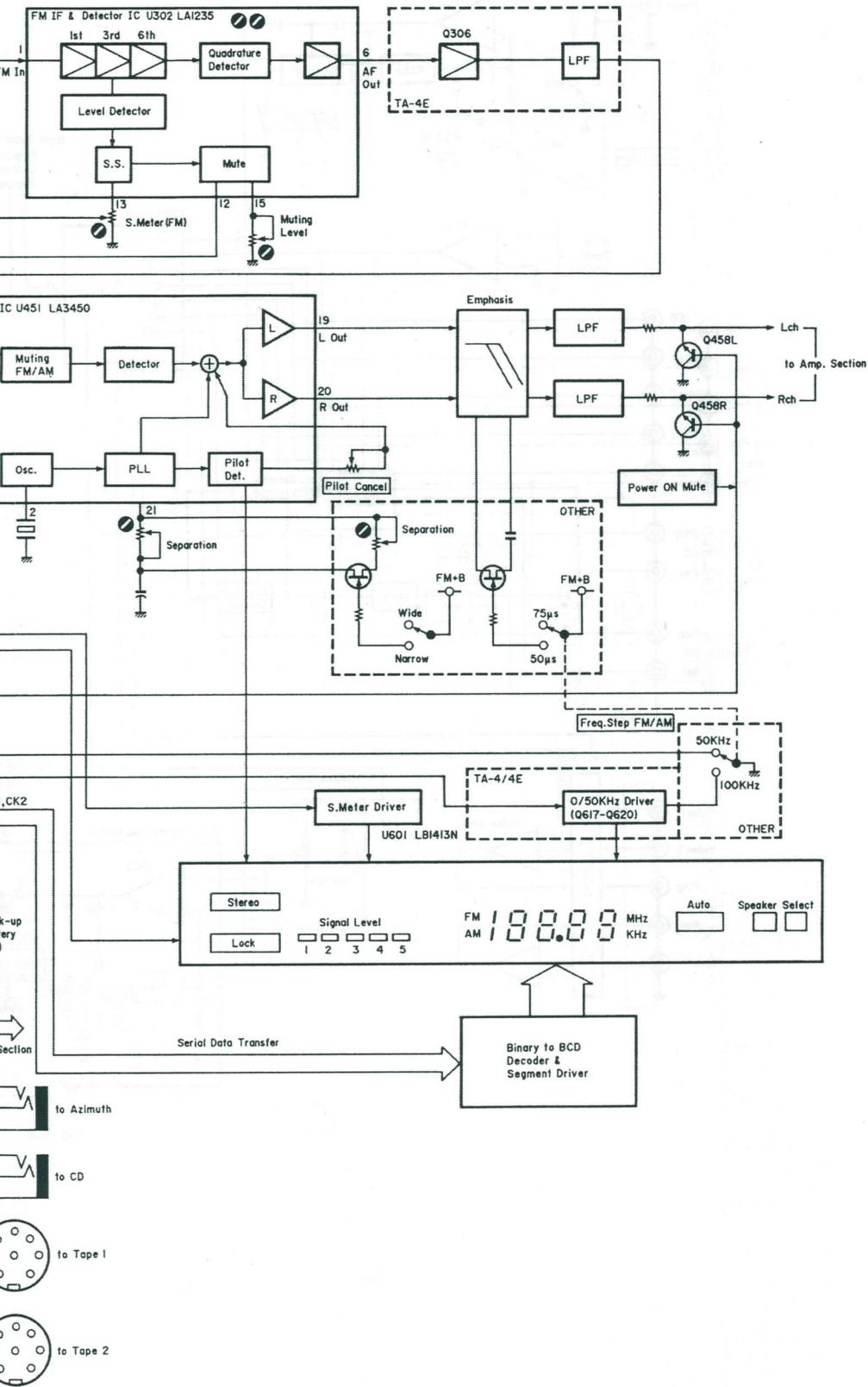


Fig. 9.1



9.2. Amplifier Section

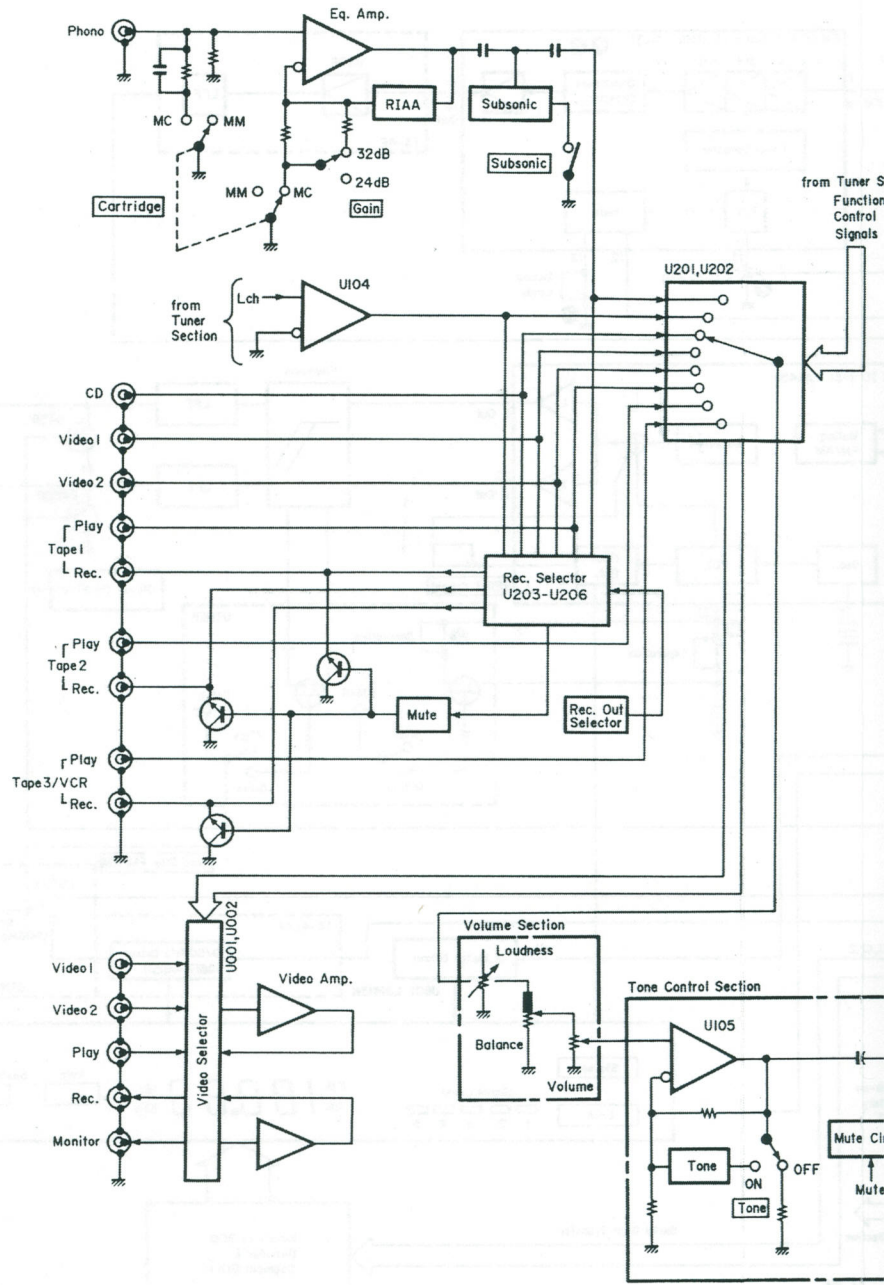
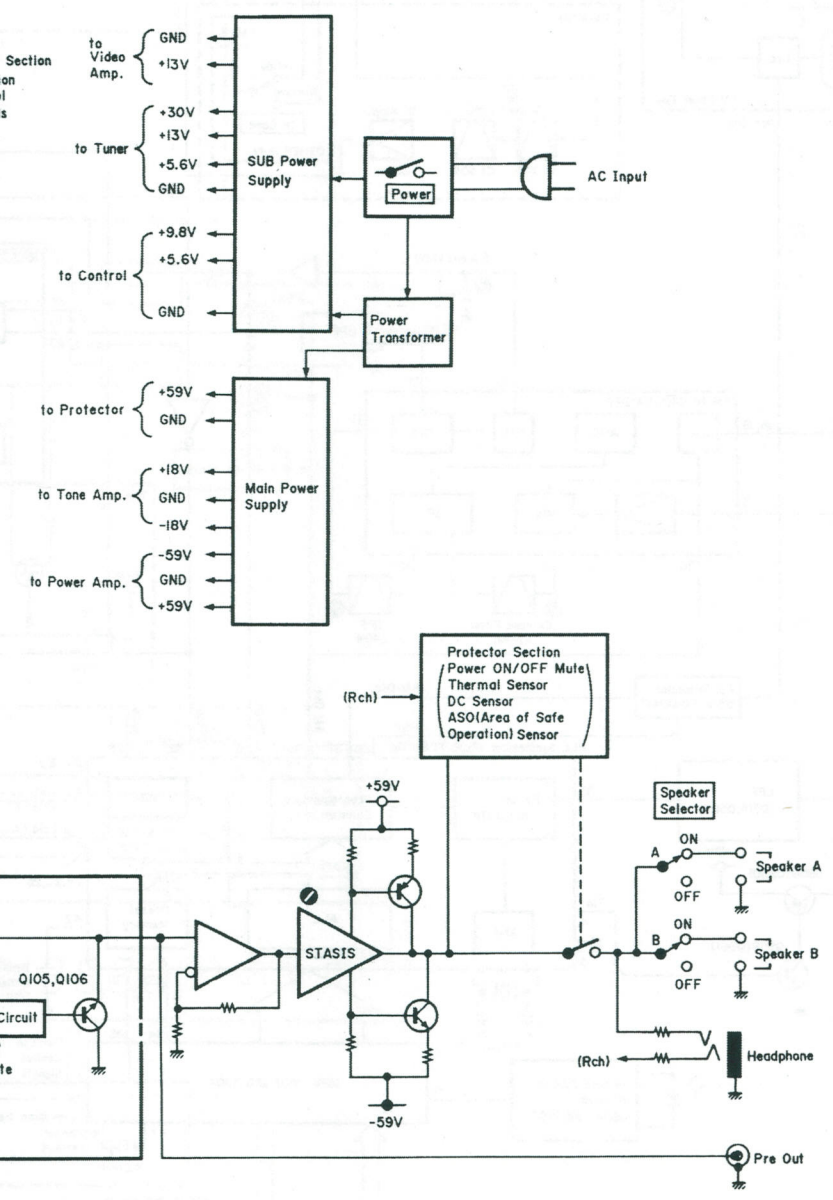


Fig. 9.2

35a



10. 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	100 watts per channel into 8 ohms, both channels driven, 20–20,000 Hz, at no greater than 0.1% THD
Dynamic Output Power	132 watts per channel into 8 ohms 167 watts per channel into 4 ohms
Power Bandwidth	5–60,000 Hz 5–30,000 Hz (TA-4E)
Frequency Response	20–20,000 Hz; +0, –0.5 dB 20–20,000 Hz; +0, –1 dB (TA-4E) 5–85,000 Hz; +0, –3 dB 5–45,000 Hz; +0, –3 dB (TA-4E)
Signal to Noise Ratio (A-WTD, Input Shorted)	Better than 100 dB re Rated Power Better than 83 dB (IHF-A-202)
Total Harmonic Distortion (8 ohms, Rated Power, 20 Hz–20 kHz)	Less than 0.1%
Headphone Rated Output (40 ohms)	234 mW
Output Current Capability	28 A peak per channel

Preamplifier Section

Note: Unless noted otherwise, specifications are in accordance with IHF-A-202. Except for Sensitivity, S/N, Tone Control 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 μ V (Gain: 32/24 dB)
Phono MM	2.5 mV
CD/Tape/Video	150 mV
Main In	1.0 V
Sensitivity (for 1-watt output, IHF-A-202)	
Phono MC	6.0/16 μ V (Gain: 32/24 dB)
Phono MM	0.25 mV
CD/Tape/Video	15 mV
Main In	100 mV
Input Impedance	
Phono MC	100 ohms
Phono MM	47 kohms
CD/Tape/Video	20 kohms
Main In	15 kohms
Maximum Input Level (1 kHz)	
Phono MC	4.0/10 mV (Gain: 32/24 dB)
Phono MM	180 mV
Pre Output Level/Impedance	1.0 V/1 kohms
Record Output Level/Impedance	150 mV/1.5 kohms
Total Harmonic Distortion (1 kHz, to Rec. Out, at 1 V)	
Phono MC	Less than 0.007% (either gain)
Phono MM	Less than 0.005%
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	Better than 70 dB (either gain) Better than 68 dB (either gain) (TA-4E)
Phono MM	Better than 78 dB Better than 76 dB (TA-4E)

Tone Controls

Bass 20 Hz, ± 10 dB
Treble 20 kHz, ± 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) TA-4 (Other) (See Note) & TA-4A

Note: Selector switch settings for Other Model

Frequency Step FM/AM: 100 kHz/10 kHz, De-emphasis: 75 μ 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 11.0 dBf/1.9 μ V

(Mono)

50-dB Quieting Sensitivity

Mono 14.7 dBf/3.0 μ V

Stereo 37.5 dBf/41.1 μ V

Signal to Noise Ratio at 65 dBf

Mono Better than 82 dB

Stereo Better than 75 dB

Muting Threshold 30 dBf/17.3 μ V

Frequency Response 20-15,000 Hz ± 1 dB

Total Harmonic Distortion (1 kHz)

Mono Less than 0.07%

Stereo Less than 0.07%

Capture Ratio 2.0 dB

Alternate Channel Selectivity . . . 65 dB (± 400 kHz)

Stereo Separation at 1 kHz Better than 50 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 μ /m

Signal to Noise Ratio at 90 Better than 52 dB

dB μ /m

Total Harmonic Distortion Less than 0.5%

at 90 dB μ /m

Selectivity Better than 20 dB (± 10 kHz)

(2) TA-4 (Other) (See Note) & TA-4E

Note: Selector switch settings for Other Model

Frequency Step FM/AM: 50 kHz/9 kHz, De-emphasis: 50 μ 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	87.50—108.00 MHz in 50 kHz steps
IHF Usable Sensitivity (Mono)	11.0 dBf/1.9 μ V
50-dB Quieting Sensitivity	
Mono	23.0 dBf/7.7 μ V
Stereo	44.0 dBf/86.8 μ V
Signal to Noise Ratio at 65 dBf	
Mono	Better than 72 dB (TA-4E)/78 dB (TA-4 (Other))
Stereo	Better than 67 dB (TA-4E)/68 dB (TA-4 (Other))
Muting Threshold	30 dBf/17.3 μ 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 1 kHz	Better than 40 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 μ /m
Signal to Noise Ratio at 90	Better than 52 dB
dB μ /m	
Total Harmonic Distortion	Less than 0.5%
at 90 dB μ /m	
Selectivity	Better than 20 dB (\pm 9 kHz)

General

Power Source	120, 220, 240 or 110/120/220/240 V AC, 50/60 Hz (According to country of sale)
Power Consumption	425 watts max.
Convenience Outlets	Switched (2 pcs.) + Unswitched (1 pce.) (TA-4 (Other) & TA-4A) Switched (1 pce.) (TA-4E)
Dimensions	430 (W) x 125 (H) x 370 (D) mm 16-15/16 (W) x 4-15/16 (H) x 14-9/16 (D) inches
Approximate Weight	15.0 kg, 33 lbs. 1 oz.

Remote Control Unit (RM-4TA)

Principle	Infrared Pulse System
Power Supply	3 V DC (1.5 V x 2)
Dimensions	64 (W) x 18 (H) x 176 (D) mm 2-1/2 (W) x 11/16 (H) x 6-15/16 (D) inches
Approximate Weight	140 g, 5 oz. (including batteries)

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