

SERVICE MANUAL

**AUTOREVERSE CASSETTE STEREO PLAYER
& ELECTRONIC SEEK TUNE AM / FM STEREO RADIO**

7479S

**FOR ADDITIONAL TECHNICAL DESCRIPTION, REFER TO THE SERVICE MANUAL
FOR 7480**

Printed in Japan Dec. '93 Modification Reserved

7479S

GENERAL INFORMATION

SEMICONDUCTORS:13 ICs, 2 FETs, 39 Transistors, 44 Diodes, 1 LED

DESCRIPTION	REF. NO.	Q'TY	EQUIVALENT
(AM radio)			
AM IC LA1135	V701	1	
RF amplifier HN3G01J	V702	1	
Switching transistor DTC114TK	V703	1	
Switching transistor UN2210(R)	V731	1	
Varactor diode HVR100	D701,703,704	3	
Switching diode 1SV172	D702	1	
Voltage suppression diode HZS5.1N(B2)	D731	1	
Switching diode MA165	D732,733,734	3	1SS133
(FM radio)			
FM frontend IC LA1175M	V601	1	
IF+NB+MPX IC LA1862M	V651	1	
RF amplifier FET 3SK126	V602	1	3SK195
Switching transistor UN2212	V903	1	DTC124ES
Switching transistor UN2212	V652,653	2	DTC124EK
Varactor diode SVC212	D601,602,604	3	1SV225
Switching diode 1SV172	D603	1	1SV172
Switching diode MA165	D651,652,653,654	4	1SS133
(Audio)			
Pre-amplifier IC M51524L	V101	1	
Analog switching IC HD14066BP	V103	1	μPD4066BP
Voltage follower IC M5218AFF	V105,106	2	
Power amplifier IC AN7173K	V131,231	2	
Dolby IC HA12135A	V501	1	
Muting transistor UN2212	V60,61,305,306, 308,502	6	DTC124EK
Switching transistor UN2212	V102	1	
Muting transistor 2SD1935(6)	V107,207	2	
Muting transistor UN2210(R)	V301,302	2	
AF amplifier transistor 2SC2712(GR)	V303,304	2	2SC2412KLN(E)
Muting transistor UN2112	V307	1	
(Power supply)			
Regulator IC LA5685N	V66	1	
Regulator transistor 2SD1994A(R)	V62	1	2SD863(E)
Voltage regulator zener diode HZS10N(B1)	D61	1	RD10N(B2)
Voltage shift diode MA165	D63	1	1SS133
(Mechanism, DTS & others)			
DTS micro computer μPD17005GF-615-3B9	V901	1	
Reset IC PST520(D)	V902	1	
Switching transistor 2SC2812(L6)	V1	1	DTC144TK
Switching transistor UN2212	V2,54,55,56,57,58, 63,904,905	9	DTC124EK
Switching transistor DTB123YK	V3,59	2	

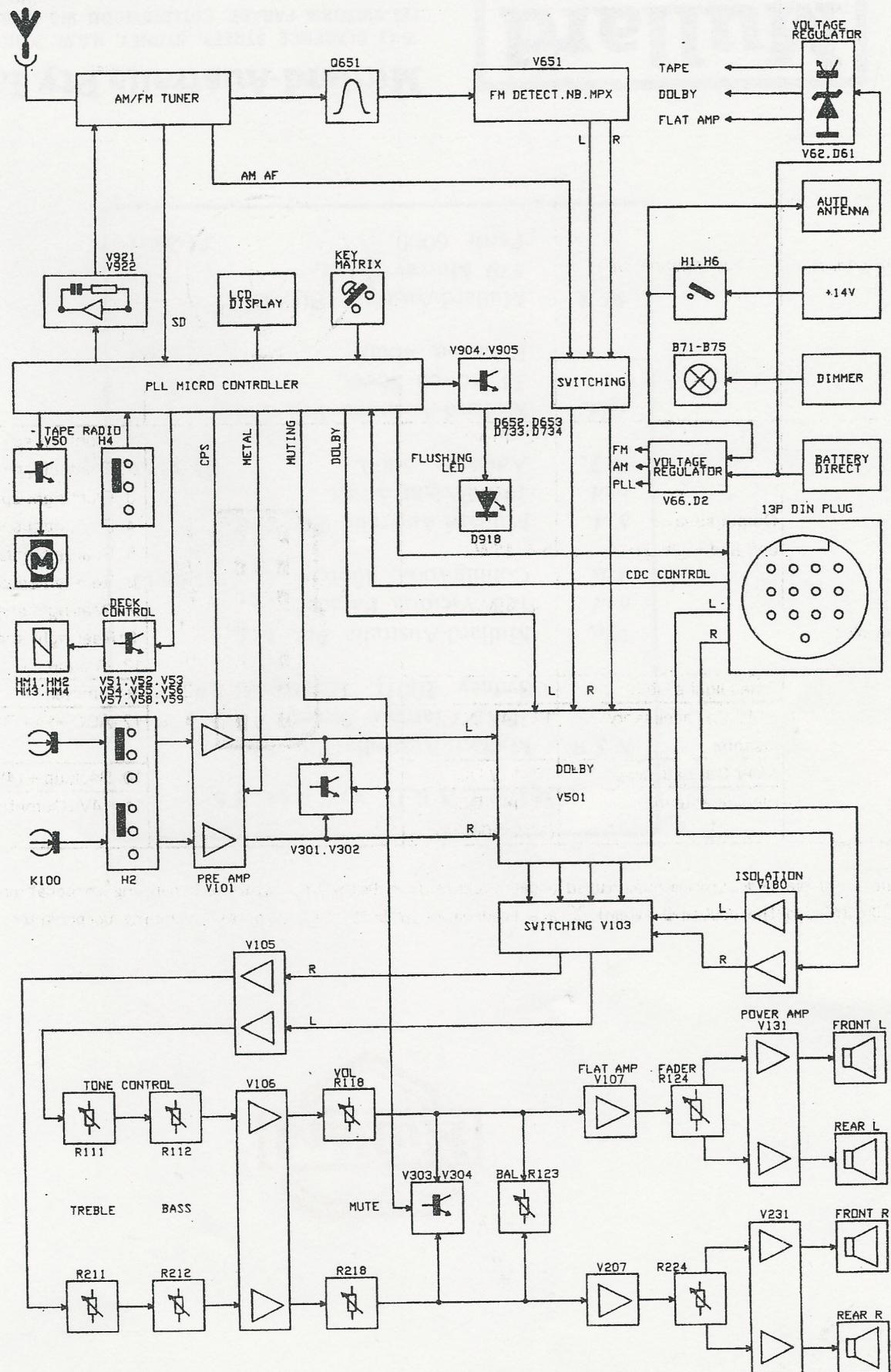
DESCRIPTION	REF. NO.	Q'TY	EQUIVALENT
Switching transistor 2SB1119(S)	V50,51,52,53	4	
Switching transistor 2SB1446(S)	V64	1	
Low pass filter transistor 2SC2712(BL)	V921,922	2	2SC2462,2SC1623
Protector diode ERB12(02)	D1	1	
Protector diode DSA3A(4)	D6	1	
Protector diode ERA15(02)	D50,51,52	3	
Protector diode MA165	D53	1	1SS133
Switching diode ERA15(02)	D62	1	
Switching diode SB10-03A3	D901	1	
Switching diode MA165	D902,905,906,907, 908,909,910,911, 912,913,914	11	1SS133
Indicator LED SLH-34VC	D918	1	
Protector diode HZS5.1N(B2)	D942,943,944,945, 946,947,948	7	

INPUT AND OUTPUT

Indication	For Connection of:	Sensitivity	Type of Socket	Connections
Antenna receptacle	Car radio aerial	1µV-3V		Aerial
13P socket	CD auto changer unit			
13P plug	Output speaker Left and Right CH	1-2. 15W 3-4. 15W 5-6. 15W 7-8. 15W		1. Front left speaker (+) 2. Front left speaker (-) 3. Front right speaker (+) 4. Front right speaker (-) 5. Rear left speaker (+) 6. Rear left speaker (-) 7. Rear right speaker (+) 8. Rear right speaker (-) 13. Ground
	Small light switch	9. -		9. Dimmer
	+14V Car accessory fusebox	12. 14V DC		12. ACC +14V DC (Input)
	+14V Car battery	10. 14V DC		10. Back up +14V (Input)
	Electric antenna	11. 14V DC (Max. 500mA)		11. 14V (Output)

* Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
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CIRCUIT FUNCTION DIAGRAM



SERVICE ALIGNMENT PROCEDURE

FM circuit

Equipment required

1. AC Volt meter.
2. Stabilized power supply (DC14V)
3. FM RF signal generator
4. Stereo modulator
5. DC voltage meter ($Z_i \geq 100k\text{ ohm}$)

Cautions during repair

When the front-end is defective, replace it by a new one because its internal block is difficult to repair.

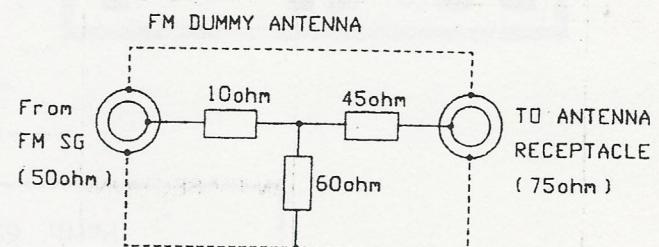


Fig.1

FM IF alignment

- (a) Connect the output of FM RF signal generator to the antenna through dummy antenna. Set the frequency of FM RF signal generator to 98.1MHz exactly, and tune the receiver to 98.1MHz as well. Let the output level of FM RF signal generator be 1mV. Refer to Fig.2.
- (b) Connect DC voltage meter to TP2 and TP3. The voltage range of the meter should be set lower than 0.5V and then align F621 until the indication of volt meter is at 0V.

FM MPX Circuit alignment

(A) Adjustment of stereo separation

- (a) Connect MPX filter (19kHz, 38kHz Null Filter) between the speaker output and AC Volt meter.
- (b) Tune the mode selector of the stereo modulator to the R channel. Align trimmer resistor R655 to obtain maximum separation.

In case L channel is selected by the mode selector, also perform the adjustment similarly. If the trimmer resistor R655 of the mode selector is set in different positions for R and L channels, align it so that equal separation can be obtained on both channels.

(B) Adjustment of FM search stop sensitivity

Connect the DC volt meter to TP1.

Set the frequency of FM RF signal generator to 98.1MHz and set the output to 1mV. While observing DC voltage meter, align trimmer resistor R658. The alignment is made until the indication of DC voltage is 3.5V. Refer to Fig.2,3.

Note: Regarding relationship between a signal output level and a reading of the signal generator,

- (1) Count directly a reading of the attenuator, in case the output of the signal generator is "Load type".
- (2) Count 1/2 of a reading of the attenuator, in case the output of the signal generator is "Open type".

DOLBY NR circuit

Equipment Required

1. AC Volt meter.
2. Stabilized power supply (DC 14V)
3. Dolby NR level calibration tape
(TEAC MTT-150 or equivalent)

Dolby NR tape level adjustment

- (a) Play back Dolby NR level calibration tape.
- (b) Set Dolby NR switch H904 to "OFF" position and adjust the trimmer resistor R105 (L ch) and R205 (R ch) for tape level adjustment in order to obtain 450mV of reading on Volt meter at the test point of TP4 (L ch) and TP5 (R ch).
- (c) The difference of the level between Forward and Reverse direction of the tape transport/reproduction should be $\pm 1\text{dB}$.

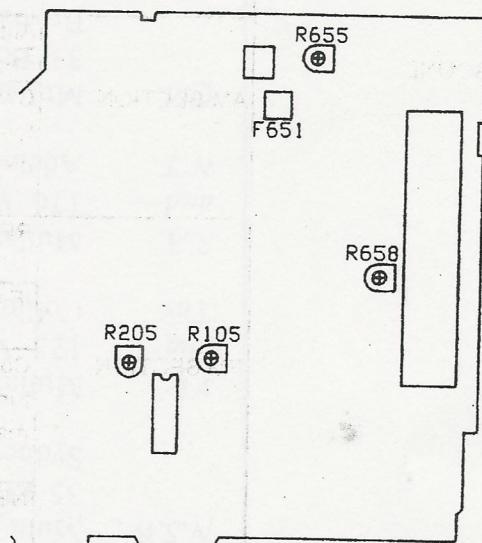


Fig.2

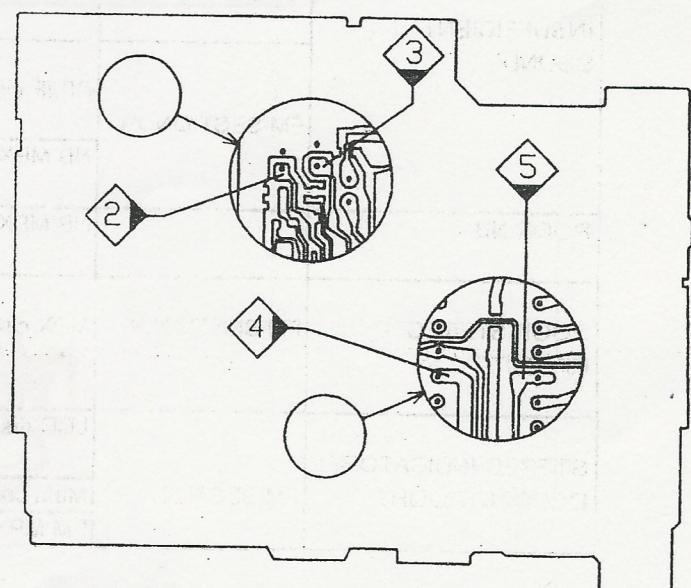


Fig.3

TROUBLESHOOTING

RADIO SECTION

SYMPTOM	DEFECTIVE CIRCUIT		DEFECTIVE POINT AND CAUSE
NO SOUND	AM/FM SECTION	Power supply circuit	* Power supply circuit is defective. V66 is defective. Check voltage of pin 14 (FM+B) and pin 2 (AM+B) on the tuner pack.
		PLL circuit	* PLL circuit is defective. Check voltage of pin 30,41 on V901. V905 is defective. * PLL circuit is defective (Vt does not change). Low pass filter circuit V921,V922 is defective. Check voltage of pin 7 and pin 13 on the tuner pack which will be change either 0V or about 9V.
	AM SECTION	Antenna input circuit	* Noise choke coil L702 is open or L704 is short.
		RF,OSC,IF circuit	* V701,V702 is defective.
	FM SECTION	Connection of the tuner pack and the main board	* Insufficient soldering at terminals of the main board. Check pattern at terminals of the tuner pack and the main board.
		RF,OSC circuit	* Semiconductors V602,V603 are defective. Check voltage of these semiconductors.
		IF circuit	* FM IC V651 is defective. Q601,Q651 is defective.
		Connection of the tuner pack and main board	* Insufficient soldering at terminals of the main board. Check printed circuit at terminals of the main board.
		NB,MPX circuit	* V651 is defective. Check pin voltage of V651.
INSUFFICIENT SOUND	AM/FM SECTION	Antenna input circuit	* Poor antenna contact. * Antenna input circuit is defective.
		RF,IF circuit	* V701,V702 is defective. * D701,D703,D704 is defective.
	FM SECTION	RF,IF circuit	* RF amplifier V602 is defective. * Diode D604 is defective. * Transformer F601 is defective.
		NB,MPX circuit	* FM IC V651 circuit is defective. Check pin voltage of V651.
POOR NB		NB,MPX circuit	* FM IC V651 is defective. Check pin voltage of V651.
POOR STEREO EFFECT	FM SECTION	MPX circuit	* R655 is misalignment. * Ceramic resonator Q652 is defective. * FM IC V651 is defective. Check pin voltage of V651.
STEREO INDICATOR DOES NOT LIGHT	FM SECTION	LCD display circuit	* Stereo indicator output terminal of V901 is defective.
		Main control circuit	* Check pin voltage of V901 pin No.27.
		FM MPX circuit	* FM IC V651 is defective.

Cautions during repair

When the tuner pack is defective, replace it by a new one because its internal block is difficult to repair.

TROUBLESHOOTING

AUDIO SECTION

SYMPTOM	DEFECTIVE CIRCUIT	DEFECTIVE POINT AND CAUSE
NO SOUND	TAPE SECTION	Mechanism or motor * Motor does not run. Motor defective. Motor drive transistors V50,V54 is defective. Check voltage of pin 17 on V901.
		Solenoid * Solenoid does not operate. Solenoid HM1 open or solenoid drive transistors V58,V59 is defective. * Check pin voltage of pin 16 on V901.
		Pre-amplifier circuit * Pre-amplifier is defective. Check pin voltage of V101. * Head flexible printed circuit board is open.
	CD SECTION	Mute circuit * Main control IC V901 is defective. Check voltage of pin 47 on V901. Mute ON - High level Mute OFF - Low level * V301,V302 is defective.
		CD pre-amplifier circuit * CD isolation amplifier IC V180 is defective.
		CD,TAPE/RADIO switch circuit * Analog switch IC V103 is defective. * Main control IC V901 is defective. Check voltage of pin 19 on V901. CD,Tape mode - High level Radio mode - Low level.
	TAPE SECTION	Dolby mode switch circuit * Mode changing transistor V502 is defective. * Main control IC V901 is defective. Check voltage of pin 19 on V901.
		Dolby circuit * Dolby IC V501 is defective. Check pin voltage of V501.
DISTORTED SOUND OR INSUFFICIENT SOUND	TAPE SECTION	Pre-amplifier circuit * Pre-amplifier circuit is defective. Check pin voltage of V101.
		Head * Head surface is dirty. * Head azimuth angle is misalignment.
OSCILLATION	TAPE SECTION	Tape amplifier circuit * C101,C201 capacity is insufficient or open.
ABNORMAL TAPE SPEED	TAPE SECTION	Mechanism or motor * Mechanism is defective. * Motor is defective.
DOES NOT REVERSE (EITHER AUTO OR MANUAL)	TAPE SECTION	Auto reverse circuit * Does not reverse when end of tape comes. Mechanism is defective. Does not reverse when program selector was depressed. V53,V57 is defective. Mechanism control IC V901 is defective. Check Voltage of pin 22 on V901.
APS DOES NOT WORK	TAPE SECTION	APS circuit * APS IC V101 is defective Check pin voltage of V101. * Mechanism control IC V901 is defective. Check voltage of pin 8,79 on V901. Pin 79 sound - Low level No sound - High level
POOR DOLBY NR EFFECT	TAPE SECTION	Dolby circuit * Dolby IC V501 is defective. Check pin voltage of V501.

TROUBLESHOOTING

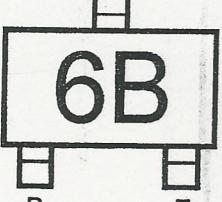
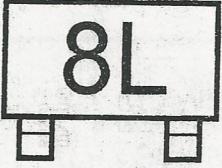
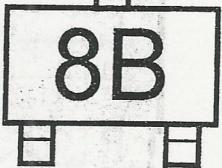
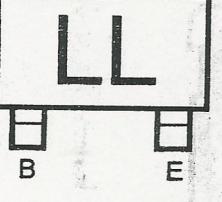
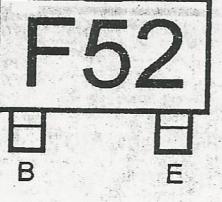
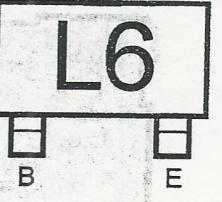
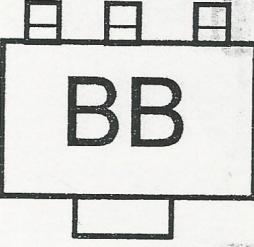
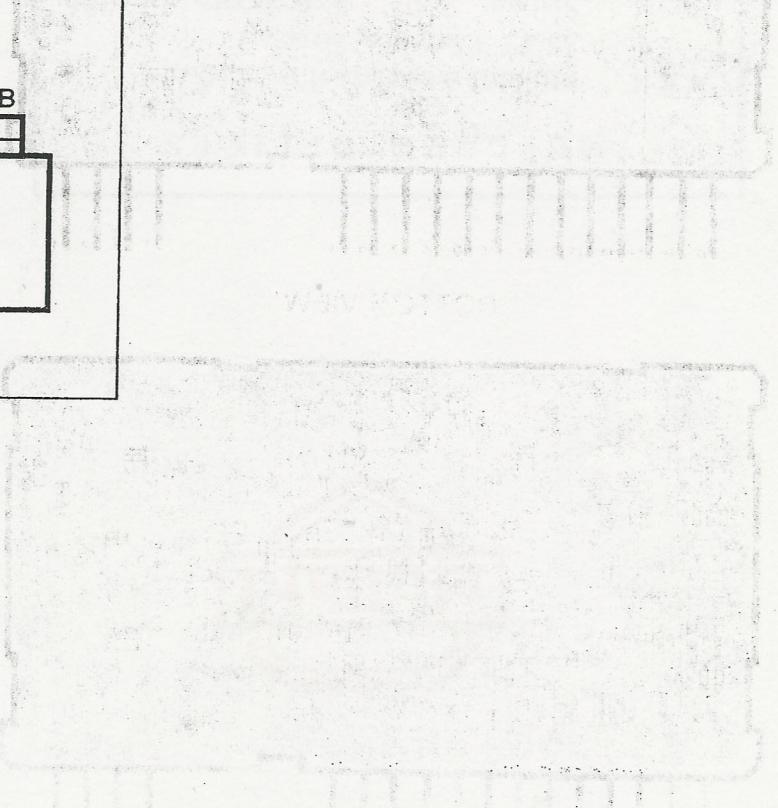
RADIO AND AUDIO SECTION

SYMPTOM	DEFECTIVE CIRCUIT		DEFECTIVE POINT AND CAUSE
NO SOUND	AUDIO SIGNAL CIRCUIT	Power supply circuit	* Fuse is open. * D1,D6 is short. * Voltage regulator circuit V62,V66,D61 is defective.
		Dolby circuit	* Dolby IC V501 is defective. Check pin voltage of V501.
		Mute circuit	* Muting transistor V303,V304,V305 is defective. * Main control IC V901 is defective. Check voltage of pin 47 on V901. Mute ON - Low level Mute OFF - High level
	CD SECTION	Power amplifier circuit	* Power amplifier circuit is defective. Check pin voltage of V131,V231.
		CD auto changer interface cable	* Surge protection diode D942 ~ D948 is defective. * One of the interface signal is open. * Main control IC V901 is defective.
	CD auto changer		* Disc is dirty or defective.
OSCILLATION		Power supply circuit	* Voltage regulator transistor and diode V62,D61 is defective. * C6,C7,C8 capacity is insufficient or open.
ENGINE NOISE IS EXTREME			* Voltage regulator transistor and diode V62,D61 is defective. * C1,C2 is defective.

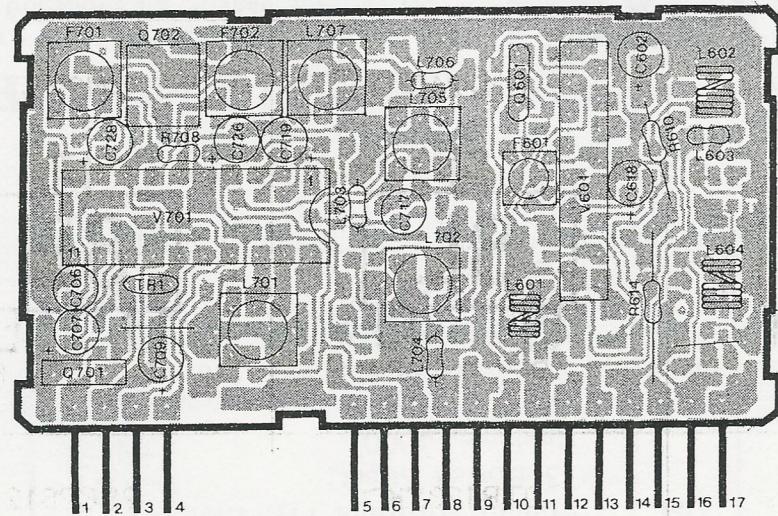
CONTROL SECTION

SYMPTOM	DEFECTIVE CIRCUIT		DEFECTIVE POINT AND CAUSE
POWER SWITCH DOES NOT ACCEPT		Key matrix circuit	* Key matrix circuit defective. * Check waveform of key source and key return.
		Main control circuit	* Main control IC V901 defective. Check voltage of pin 12,13 on V901. Pin 12 High level Acc ON Low level Acc OFF Pin 13 High level Back up ON Low level Back up OFF
CAN NOT OPERATE CD AUTO CHANGER		Key matrix circuit	* Key matrix circuit defective. * Check waveform of the key source and key return.
		Interface cable circuit	* One of the interface cable is open. * Protection diode defective.
		Main control circuit	* Main control IC V901 defective. Check pin voltage of V901.
LCD DOES NOT DISPLAY		Main control circuit	* Main control IC V901 defective.
AUTO ANTENNA DOES NOT FUNCTION		Auto antenna circuit	* Switching transistor V63,V64 defective.
THE UNIT SCAN'S BUT IT DOES NOT STOP	AM/FM SECTION	Stop circuit	* Main control IC V901 defective.
	AM SECTION	Stop circuit	* D732 is open. * Ceramic filter Q702 defective. * AM IC V703 defective.
	FM SECTION	Stop circuit	* R658 misalignment. * V651 defective. * Check pin voltage of V651.

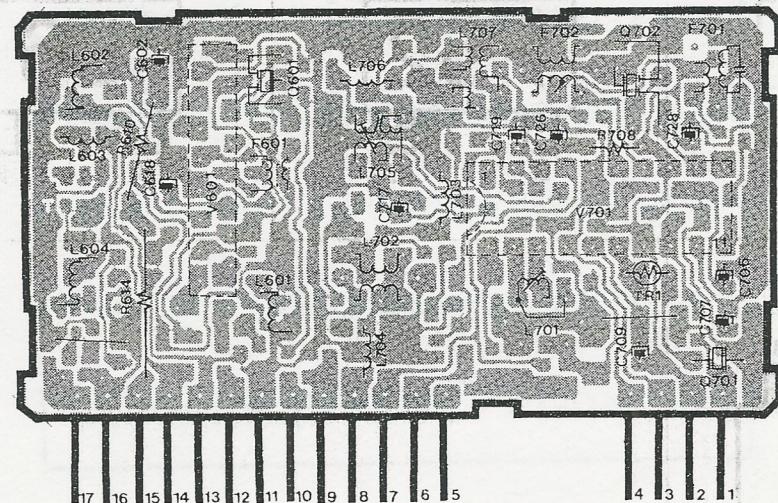
PIN ALOCATION OF CHIP TRANSISTOR

UN2112 	UN2210 	UN2212 
2SC2712 BL 	DTB123YK 	2SC2812 
2SB1119 		

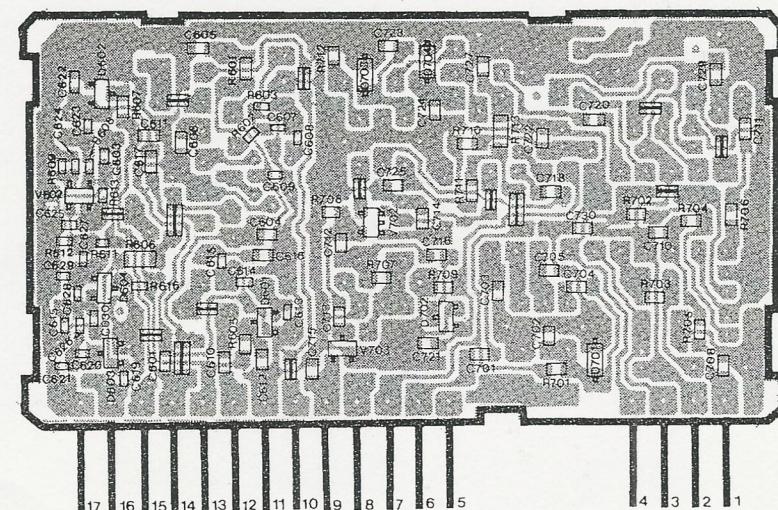
AM / FM CIRCUIT BOARD COMPONENT LOCATION GUIDE



TOP VIEW



BOTTOM VIEW



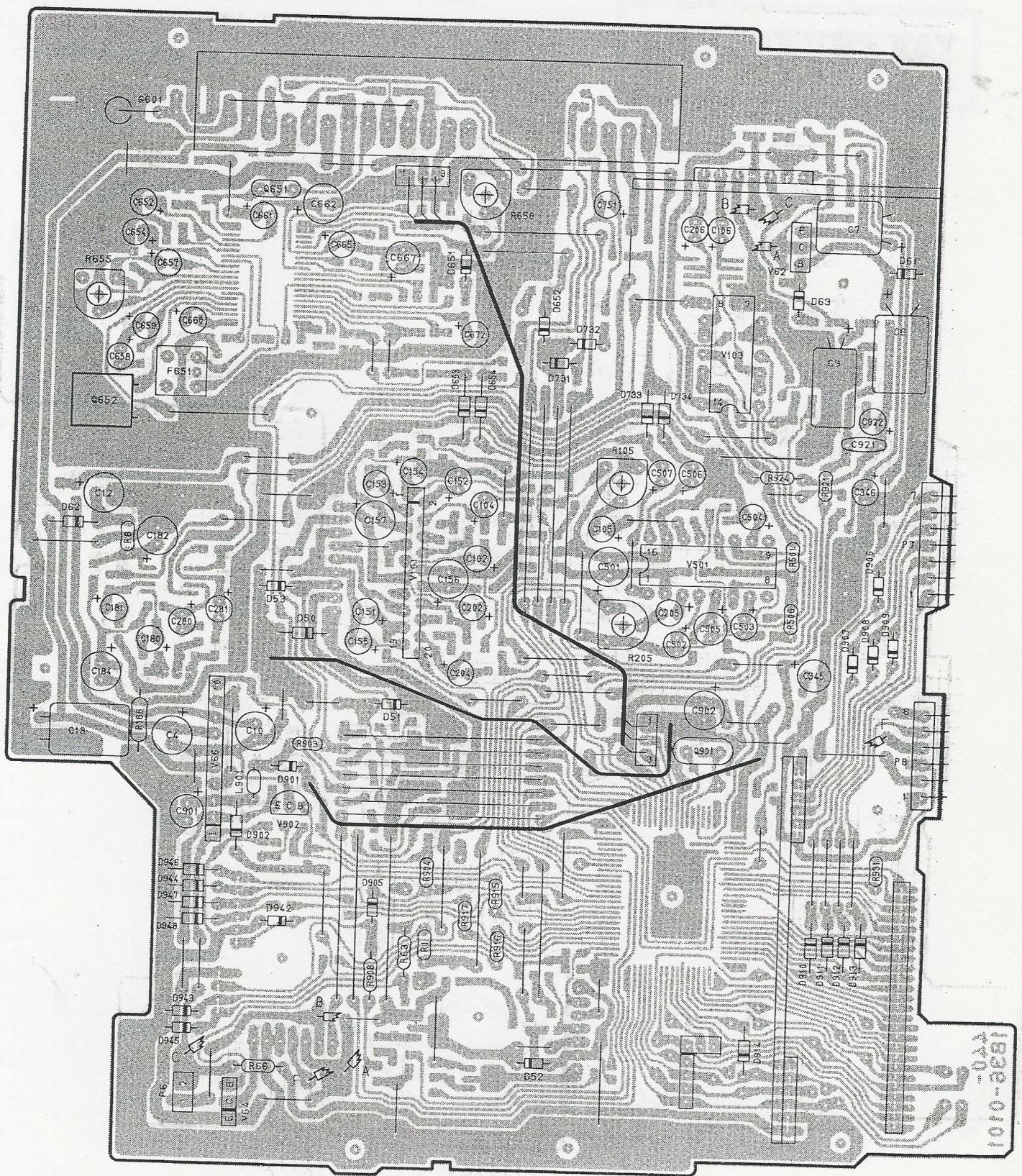
CHIP VIEW

REF. NO.33 AR-0226 AM/FM CIRCUIT BOARD ASSEMBLY PARTS LIST

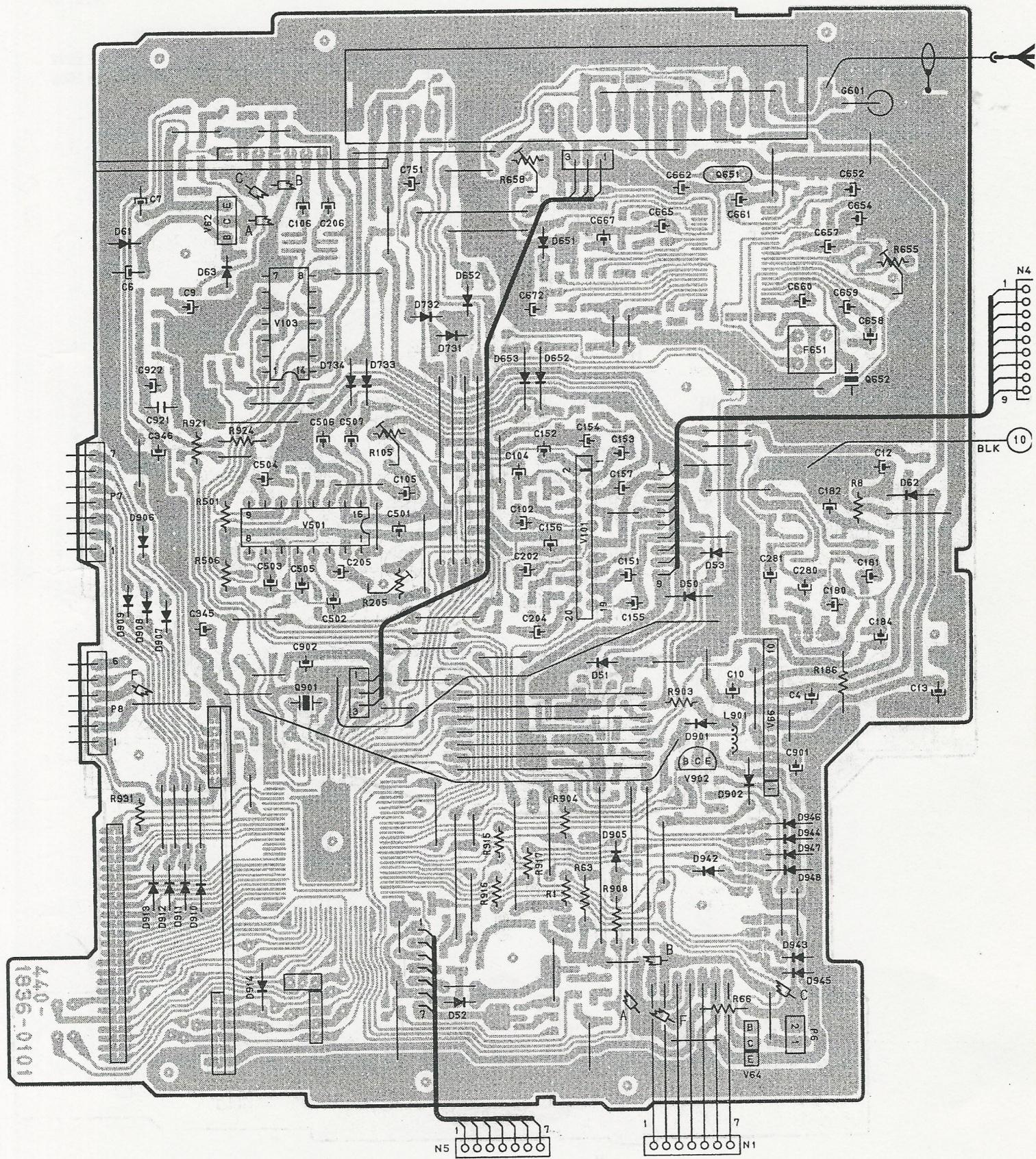
REF. NO.	DESCRIPTION	PART NO.	MFR'S NO.
C601	Chip capacitor 0.022µF 50V		263-223K-1HJB-302
C602	Electrolytic capacitor 10µF 16V		250-100M-1C00-114
C603	Chip capacitor 0.022µF 50V		263-223K-1HJB-320
C604	Chip capacitor 0.022µF 50V		263-223K-1HJB-302
C605	Chip capacitor 0.022µF 50V		263-223K-1HJB-302
C606	Chip capacitor 0.022µF 50V		263-223K-1HJB-302
C607	Chip capacitor 12pF 50V		265-120J-1HUJ-320
C608	Chip capacitor 120pF 50V		265-121J-1HCH-320
C609	Chip capacitor 0.01µF 50V		263-103K-1HJB-320
C610	Chip capacitor 0.001µF 50V		263-102K-1HJB-300
C611	Chip capacitor 0.01µF 50V		263-103K-1HJB-301
C612	Chip capacitor 39pF 50V		265-390J-1HUJ-300
C613	Chip capacitor 2pF 50V		265-2R0C-1HUJ-320
C614	Chip capacitor 12pF 50V		265-120J-1HUJ-320
C615	Chip capacitor 39pF 50V		265-390J-1HUJ-320
C616	Chip capacitor 10pF 50V		265-100C-1HUJ-300
C617	Chip capacitor 4pF 50V		265-4R0C-1HUJ-300
C618	Electrolytic capacitor 10µF 16V		250-100M-1C00-114
C619	Chip capacitor 0.01µF 50V		263-103K-1HJB-320
C620	Chip capacitor 0.001µF 50V		263-102K-1HJB-320
C621	Chip capacitor 39pF 50V		265-390J-1HUJ-320
C622	Chip capacitor 3pF 50V		265-3R0C-1HUJ-300
C623	Chip capacitor 3pF 50V		265-3R0C-1HUJ-320
C624	Chip capacitor 0.01µF 50V		263-103K-1HJB-320
C625	Chip capacitor 0.022µF 50V		263-223K-1HJB-320
C626	Chip capacitor 22pF 50V		265-220J-1HUJ-320
C627	Chip capacitor 7pF 50V		265-7R0D-1HUJ-320
C628	Chip capacitor 2pF 50V		265-2R0C-1HUJ-320
C629	Chip capacitor 5pF 50V		265-5R0C-1HUJ-320
C630	Chip capacitor 22pF 50V		265-220J-1HUJ-320
C701	Chip capacitor 0.01µF 50V		263-103K-1HJB-301
C702	Chip capacitor 6pF 50V		265-6R0C-1HSH-300
C703	Chip capacitor 100pF 50V		265-101J-1HCH-300
C704	Chip capacitor 36pF 50V		265-360G-1HRH-300
C705	Chip capacitor 0.047µF 50V		263-473K-1EJB-302
C706	Electrolytic capacitor 4.7µF 25V		250-4R7M-1E00-114
C707	Electrolytic capacitor 3.3µF 50V		250-3R3M-1H00-114
C708	Chip capacitor 0.033µF 50V		263-333K-1HJB-302
C709	Electrolytic capacitor 1µF 50V		250-1R0M-1H00-114
C710	Chip capacitor 0.01µF 50V		263-103K-1HJB-301
C711	Chip capacitor 0.01µF 50V		263-103K-1HJB-301
C712	Chip capacitor 0.01µF 50V		263-103K-1HJB-301
C713	Chip capacitor 0.0015µF 50V		263-152K-1HJB-300
C714	Chip capacitor 0.0033µF 50V		263-332K-1HJB-300
C715	Chip capacitor 0.022µF 50V		263-223K-1HJB-302
C716	Chip capacitor 0.0018µF 50V		263-182K-1HJB-300
C717	Electrolytic capacitor 47µF 10V		250-470M-1A00-122
C718	Chip capacitor 0.01µF 50V		263-103K-1HJB-301
C719	Electrolytic capacitor 4.7µF 25V		250-4R7M-1E00-114
C720	Chip capacitor 0.01µF 50V		263-103K-1HJB-301
C721	Chip capacitor 0.01µF 50V		263-103K-1HJB-301
C722	Chip capacitor 0.022µF 50V		263-223K-1HJB-302
C723	Chip capacitor 1pF 50V		265-1R0C-1HSH-300
C724	Chip capacitor 2pF 50V		265-2R0C-1HSH-300
C725	Chip capacitor 0.022µF 50V		263-223K-1HJB-302
C726	Electrolytic capacitor 33µF 10V		250-330M-1A00-122
C727	Chip capacitor 0.022µF 50V		263-223K-1HJB-302
C728	Electrolytic capacitor 33µF 10V		250-330M-1A00-122
C729	Chip capacitor 0.01µF 50V		263-103K-1HJB-301
C730	Chip capacitor 0.01µF 50V		263-103K-1HJB-301

REF. NO.	DESCRIPTION	PART NO.	MFR'S NO.
D601	Varactor diode SVC212	ETD-SVC212	305-0025-0001
D602	Varactor diode SVC212	ETD-SVC212	305-0025-0001
D603	Diode 1SV172	ETD-1SV172	304-0101-0001
D604	Varactor diode SVC212	ETD-SVC212	305-0025-0001
D701	Varactor diode HVR100	ETD-HVR100	305-0026-0001
D702	Diode 1SV172	ETD-1SV172	304-0101-0001
D703	Varactor diode HVR100	ETD-HVR100	305-0026-0001
D704	Varactor diode HVR100	ETD-HVR100	305-0026-0001
F601	IFT	ELD-0539	351-0539-1300
F701	IFT	ELD-0310	351-0310-1300
F702	IFT	ELD-0309	351-0309-1300
L601	OSC coil	ELA-0140	352-0140-1300
L602	RF coil	ELA-0139	352-0139-1300
L603	Inductor 2.2μH	ELD-0398	351-0398-1201
L604	ANT coil	ELA-0138	352-0138-1300
L701	OSC coil	ELD-0314	351-0314-1300
L702	ANT coil	ELD-0536	351-0536-1300
L703	Inductor 1.5μH	ELD-0420	351-0420-1200
L704	Inductor 4.7μH	ELD-0334	351-0334-1201
L705	RF coil	ELD-0537	351-0537-1300
L706	Inductor 56μH	ELD-0434	351-0434-1200
L707	RF coil	ELD-0538	351-0538-1300
L708	Inductor 56μH	ELD-0434	351-0434-1200
Q601	Ceramic filter	EOP-0079	360-0079-0400
Q701	Ceramic filter	EOP-0081	360-0081-0400
Q702	Ceramic filter	EOP-0080	360-0080-0400
R601	Chip resistor 1M ohm 1/10W ±5%		202-105J-2A00-150
R602	Chip resistor 1k ohm 1/16W ±5%		202-102J-1J00-190
R603	Chip resistor 330 ohm 1/16W ±5%		202-331J-1J00-190
R605	Chip resistor 22k ohm 1/10W ±5%		202-223J-2A00-150
R606	Chip resistor 100 ohm 1/8W ±5%		202-101J-2B00-140
R607	Chip resistor 100k ohm 1/10W ±5%		202-104J-2A00-150
R608	Chip resistor 27 ohm 1/16W ±5%		202-270J-1J00-190
R609	Chip resistor 270 ohm 1/16W ±5%		202-271J-1J00-190
R610	Carbon film resistor 22k ohm 1/6W ±5%		200-223J-2C00-010
R611	Chip resistor 100k ohm 1/16W ±5%		202-104J-1J00-190
R612	Chip resistor 100k ohm 1/16W ±5%		202-104J-1J00-190
R613	Chip resistor 560k ohm 1/16W ±5%		202-564J-1J00-190
R614	Carbon film resistor 3.3k ohm 1/6W ±5%		200-332J-2C00-010
R615	Chip resistor 100k ohm 1/16W ±5%		202-104J-1J00-190
R616	Chip resistor 100k ohm 1/16W ±5%		202-104J-1J00-190
R701	Chip resistor 100k ohm 1/10W ±5%		202-104J-2A00-150
R702	Chip resistor 10k ohm 1/10W ±5%		202-103J-2A00-150
R703	Chip resistor 120 ohm 1/10W ±5%		202-121J-2A00-150
R704	Chip resistor 10k ohm 1/10W ±5%		202-103J-2A00-150
R705	Chip resistor 1.5k ohm 1/10W ±5%		202-152J-2A00-150
R706	Chip resistor 220 ohm 1/10W ±5%		202-221J-2A00-150
R707	Chip resistor 10k ohm 1/10W ±5%		202-103J-2A00-150
R708	Chip resistor 1M ohm 1/10W ±5%		202-105J-2A00-150
R709	Chip resistor 1k ohm 1/10W ±5%		202-102J-2A00-150
R710	Chip resistor 33 ohm 1/10W ±5%		202-330J-2A00-150
R711	Chip resistor 220k ohm 1/10W ±5%		202-224J-2A00-150
R712	Chip resistor 1k ohm 1/10W ±5%		202-102J-2A00-150
R713	Chip resistor 220k ohm 1/8W ±5%		202-224J-2B00-140
TR1	Thermister	ETS-0066	326-0066-0000
V601	FM IC LA1175M	ETI-LA1175M	310-0226-0000
V602	FET 3SK126	ETTF-3SK126	300-0047-0001
V701	AM IC LA1135	ETI-LA1135	310-0148-0000
V702	HN3G01J	ETTF-HN3G01J	300-0056-0001
V703	Transistor DTC114TK	ETTC-DTC114TK	302-0152-0001

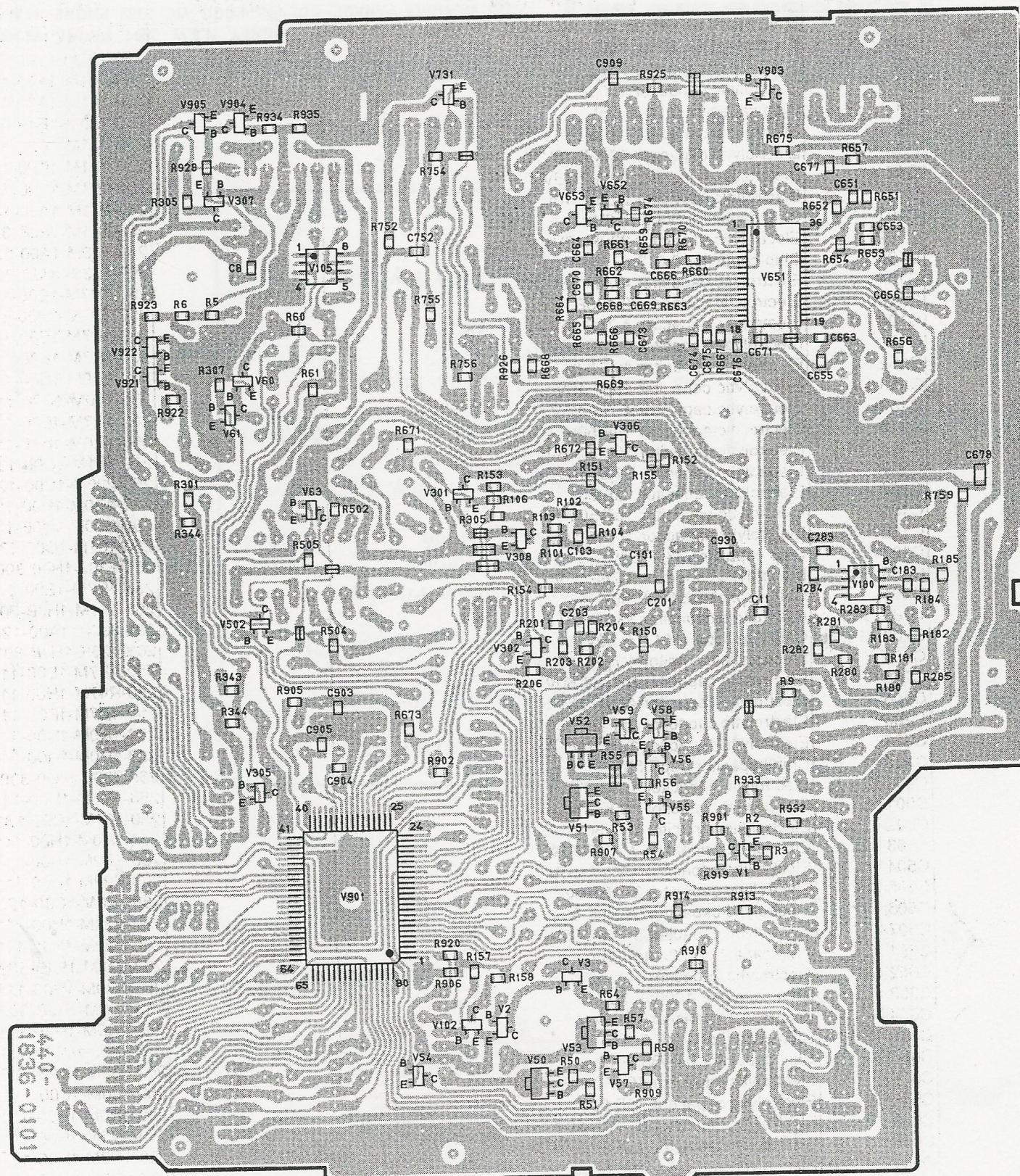
MAIN CIRCUIT BOARD COMPONENT LOCATION GUIDE



TOP VIEW



BOTTOM VIEW



CHIP VIEW

REF. NO.29 CTP-1980X1 MAIN CIRCUIT BOARD ASSEMBLY PARTS LIST

REF. NO.	DESCRIPTION	PART NO.	MFR'S NO.
C4	Main board printed circuit board		440-1836-0101
C6	Electrolytic capacitor 100µF 16V		250-101M-1C00-133
C7	Electrolytic capacitor 220µF 10V		250-221M-1A00-136
C8	Electrolytic capacitor 100µF 10V		250-101M-1A00-126
C9	Chip capacitor 0.01µF 25V		263-103M-1EJB-300
C10	Electrolytic capacitor 220µF 16V		250-221M-1C00-136
C12	Electrolytic capacitor 100µF 16V		250-101M-1C00-133
C13	Electrolytic capacitor 220µF 10V		250-221M-1A00-136
C101	Chip capacitor 560pF 50V		263-561M-1HJB-300
C102	Electrolytic capacitor 33µF 10V		250-330M-1A00-120
C103	Chip capacitor 0.012µF 50V		263-123K-1HJB-300
C104	Electrolytic capacitor 4.7µF 25V		250-4R7M-1E00-111
C105	Electrolytic capacitor 0.47µF 50V		250-R47M-1H00-111
C106	Electrolytic capacitor 4.7µF 25V		250-4R7M-1E00-111
C151	Electrolytic capacitor 4.7µF 25V		250-4R7M-1E00-111
C152	Electrolytic capacitor 1µF 50V		250-1R0M-1C00-111
C153	Electrolytic capacitor 10µF 16V		250-100M-1C00-111
C154	Electrolytic capacitor 4.7µF 25V		250-4R7M-1E00-111
C155	Electrolytic capacitor 1µF 50V		250-1R0M-1H00-111
C156	Electrolytic capacitor 100µF 16V		250-101M-1C00-133
C157	Electrolytic capacitor 22µF 16V		250-220M-1C00-120
C180	Electrolytic capacitor 1µF 50V		250-1R0M-1H00-111
C181	Electrolytic capacitor 1µF 50V		250-1R0M-1H00-111
C182	Electrolytic capacitor 100µF 16V		250-101M-1C00-133
C183	Chip capacitor 33pF 50V		265-330J-1H00-300
C184	Electrolytic capacitor 4.7µF 25V		250-4R7M-1E00-111
C201	Chip capacitor 560pF 50V		263-561M-1HJB-300
C202	Electrolytic capacitor 33µF 10V		250-330M-1A00-120
C203	Chip capacitor 0.012µF 50V		263-123K-1HJB-300
C204	Electrolytic capacitor 4.7µF 25V		250-4R7M-1E00-111
C205	Electrolytic capacitor 0.47µF 50V		250-R47M-1H00-111
C206	Electrolytic capacitor 4.7µF 25V		250-4R7M-1E00-111
C280	Electrolytic capacitor 1µF 50V		250-1R0M-1H00-111
C281	Electrolytic capacitor 1µF 50V		265-330J-1H00-300
C283	Chip capacitor 33pF 50V		250-1R0M-1H00-111
C346	Electrolytic capacitor 1µF 50V		250-101M-1C00-133
C501	Electrolytic capacitor 100µF 16V		250-1R0M-1H00-111
C502	Electrolytic capacitor 1µF 50V		250-R22M-1H00-111
C503	Electrolytic capacitor 0.22µF 50V		250-R22M-1H00-111
C504	Electrolytic capacitor 0.22µF 50V		250-220M-1C00-120
C505	Electrolytic capacitor 22µF 16V		250-R22M-1H00-111
C506	Electrolytic capacitor 0.22µF 50V		250-R22M-1H00-111
C507	Electrolytic capacitor 0.22µF 50V		263-223M-1EJB-300
C651	Chip capacitor 0.022µF 25V		250-1R0M-1H00-111
C652	Electrolytic capacitor 1µF 50V		263-102M-1HJB-300
C653	Chip capacitor 1000pF 50V		250-1R0M-1H00-111
C654	Electrolytic capacitor 1µF 50V		250-1R0M-1H00-111
C655	Chip capacitor 12pF 50V		265-120J-1HCH-300
C656	Chip capacitor 0.0033µF 50V		263-332M-1HJB-300
C657	Electrolytic capacitor 10µF 16V		250-100M-1C00-111
C658	Electrolytic capacitor 1µF 50V		250-1R0M-1H00-111
C659	Electrolytic capacitor 0.22µF 50V		250-R22M-1H00-111
C660	Electrolytic capacitor 1µF 50V		250-1R0M-1H00-111
C661	Electrolytic capacitor 1µF 50V		250-1R0M-1H00-111
C662	Electrolytic capacitor 100µF 16V		250-101M-1C00-133
C663	Chip capacitor 220pF 50V		265-221J-1H00-300
C664	Chip capacitor 0.047µF 25V		263-473M-1EJB-301
C665	Electrolytic capacitor 1µF 50V		250-1R0M-1H00-111
C666	Chip capacitor 0.01µF 25V		263-103M-1EJB-300

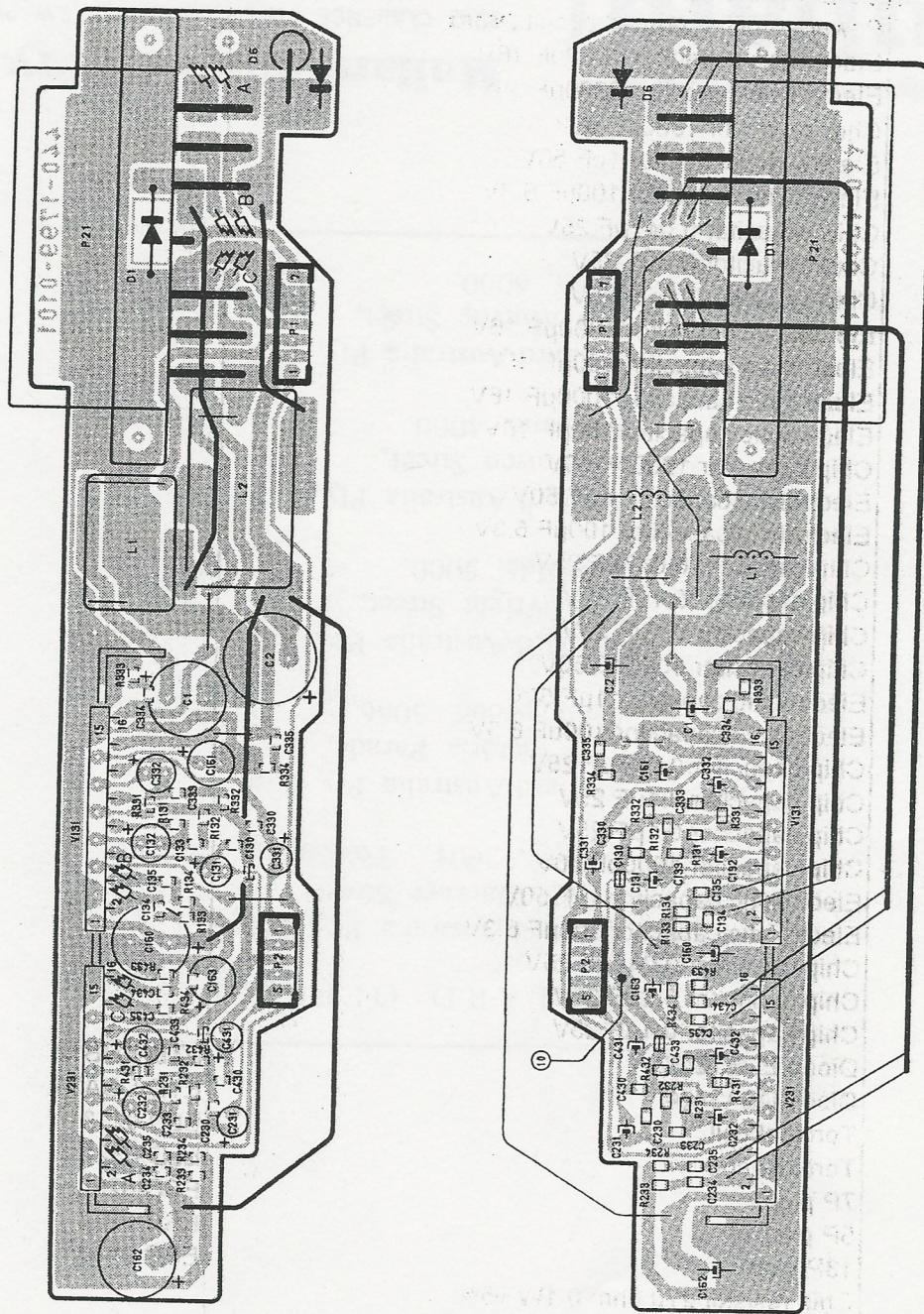
REF. NO.	DESCRIPTION	PART NO.	MFR'S NO.
C667	Electrolytic capacitor 22μF 16V		250-220M-1C00-120
C668	Chip capacitor 0.0033μF 50V		263-332M-1HJB-300
C669	Chip capacitor 0.0068μF 50V		263-682K-1HJB-300
C670	Chip capacitor 4700pF 50V		263-472K-1HJB-300
C671	Chip capacitor 0.022μF 25V		263-223M-1EJB-300
C672	Electrolytic capacitor 3.3μF 50V		250-3R3M-1H00-111
C673	Chip capacitor 0.022μF 25V		263-223M-1EJB-300
C674	Chip capacitor 0.022μF 25V		263-223M-1EJB-300
C675	Chip capacitor 0.01μF 25V		263-103M-1EJB-300
C676	Chip capacitor 0.022μF 25V		263-223M-1EJB-300
C677	Chip capacitor 0.047μF 25V		263-473M-1EJB-301
C678	Chip capacitor 1μF 16V		263-105Z-1CJF-312
C751	Electrolytic capacitor 1μF 50V		250-1R0M-1H00-111
C752	Chip capacitor 0.022μF 25V		263-223M-1EJB-300
C901	Solid aluminum capacitor 4.7μF 10V		253-4R7M-1A00-030
C902	Electrolytic capacitor 220μF 6.3V		250-221M-0J00-139
C903	Chip capacitor 0.01μF 25V		263-103M-1EJB-300
C904	Chip capacitor 15pF 50V		265-150J-1HCH-300
C905	Chip capacitor 15pF 50V		265-150J-1HCH-300
C909	Chip capacitor 0.047μF 25V		263-473M-1EJB-301
C921	Monolithic capacitor 0.068μF 16V		262-683M-1CJR-120
C922	Electrolytic capacitor 2.2μF 50V		250-2R2M-1H00-111
C930	Chip capacitor 0.01μF 25V		263-103M-1EJB-300
D50	Diode ERA15(02)	ETD-ERA15	304-0064-1001
D51	Diode ERA15(02)	ETD-ERA15	304-0064-1001
D52	Diode ERA15(02)	ETD-ERA15	304-0064-1001
D53	Diode MA165	ETD-MA165	304-0037-0001
D61	Zener diode HZS10N(B1)	ETD-HZS10N	306-0101-1001
D62	Diode ERA15(02)	ETD-ERA15	304-0064-1001
D63	Diode MA165	ETD-MA165	304-0037-0001
D651	Diode MA165	ETD-MA165	304-0037-0001
D652	Diode MA165	ETD-MA165	304-0037-0001
D653	Diode MA165	ETD-MA165	304-0037-0001
D654	Diode MA165	ETD-MA165	304-0037-0001
D731	Zener diode HZS5.1N(B2)	ETD-MA165	304-0037-0001
D732	Diode MA165	ETD-HZS5.1N	306-0094-1101
D733	Diode MA165	ETD-MA165	304-0037-0001
D734	Diode MA165	ETD-MA165	304-0037-0001
D901	Diode SB10-03A3	ETD-SB10-03A3	304-0117-0001
D902	Diode MA165	ETD-MA165	304-0037-0001
D905	Diode MA165	ETD-MA165	304-0037-0001
D906	Diode MA165	ETD-MA165	304-0037-0001
D907	Diode MA165	ETD-MA165	304-0037-0001
D908	Diode MA165	ETD-MA165	304-0037-0001
D909	Diode MA165	ETD-MA165	304-0037-0001
D910	Diode MA165	ETD-MA165	304-0037-0001
D911	Diode MA165	ETD-MA165	304-0037-0001
D912	Diode MA165	ETD-MA165	304-0037-0001
D913	Diode MA165	ETD-MA165	304-0037-0001
D914	Diode MA165	ETD-MA165	304-0037-0001
D942	Zener diode HZS5.1N(B2)	ETD-HZS5.1N	306-0094-1101
D943	Zener diode HZS5.1N(B2)	ETD-HZS5.1N	306-0094-1101
D944	Zener diode HZS5.1N(B2)	ETD-HZS5.1N	306-0094-1101
D945	Zener diode HZS5.1N(B2)	ETD-HZS5.1N	306-0094-1101
D946	Zener diode HZS5.1N(B2)	ETD-HZS5.1N	306-0094-1101
D947	Zener diode HZS5.1N(B2)	ETD-HZS5.1N	306-0094-1101
D948	Zener diode HZS5.1N(B2)	ETD-HZS5.1N	306-0094-1101
F651	Detector coil	ELD-0533	351-0533-1300
G601	Surge protector	EIN-0005	431-0005-0000
L901	Inductor 220μH	ELD-0379	351-0379-1201

REF. NO.	DESCRIPTION	PART NO.	MFR'S NO.
P7	7P L angle plug	ESC-0456	412-0456-0000
P8	5P L angle plug	ESC-0457	412-0457-0000
Q652	Ceramic resonator	EOC-0052	361-0052-0400
Q901	Crystal 4.5MHz	EOC-0022	361-0022-4600
Q951	Ceramic filter	EOP-0010	360-0010-0401
R1	Carbon film resistor 1k ohm 1/6W ±5%		200-102J-2C00-110
R2	Chip resistor 12k ohm 0.1W ±5%		202-123J-2A00-150
R3	Chip resistor 1k ohm 0.1W ±5%		202-102J-2A00-150
R5	Chip resistor 4.7k ohm 0.1W ±5%		202-472J-2A00-150
R6	Chip resistor 1k ohm 0.1W ±5%		202-102J-2A00-150
R8	Carbon film resistor 68 ohm 1/6W ±5%		200-680J-2C00-110
R9	Chip resistor 22k ohm 0.1W ±5%		202-223J-2A00-150
R50	Chip resistor 22k ohm 0.1W ±5%		202-222J-2A00-150
R51	Chip resistor 2.2k ohm 0.1W ±5%		202-223J-2A00-150
R53	Chip resistor 22k ohm 0.1W ±5%		202-681J-2A00-150
R54	Chip resistor 680 ohm 0.1W ±5%		202-223J-2A00-150
R55	Chip resistor 22k ohm 0.1W ±5%		202-681J-2A00-150
R56	Chip resistor 680 ohm 0.1W ±5%		202-223J-2A00-150
R57	Chip resistor 22k ohm 0.1W ±5%		202-681J-2A00-150
R58	Chip resistor 680 ohm 0.1W ±5%		202-681J-2A00-150
R60	Chip resistor 10k ohm 0.1W ±5%		202-103J-2A00-150
R61	Chip resistor 4.7k ohm 0.1W ±5%		202-472J-2A00-150
R63	Carbon film resistor 1.5k ohm 1/6W ±5%		200-152J-2C00-110
R64	Chip resistor 47k ohm 0.1W ±5%		202-473J-2A00-150
R66	Carbon film resistor 15 ohm 1/6W ±5%		200-150J-2C00-110
R101	Chip resistor 180 ohm 0.1W ±5%		202-181J-2A00-150
R102	Chip resistor 12k ohm 0.1W ±5%		202-123J-2A00-150
R103	Chip resistor 330k ohm 0.1W ±5%		202-334J-2A00-150
R104	Chip resistor 18k ohm 0.1W ±5%		202-183J-2A00-150
R105	Trimmer resistor 20k ohm-B	ECRV-1006	340-1006-0200
R106	Chip resistor 1k ohm 0.1W ±5%		202-102J-2A00-150
R150	Chip resistor 47k ohm 0.1W ±5%		202-473J-2A00-150
R151	Chip resistor 470k ohm 0.1W ±5%		202-474J-2A00-150
R152	Chip resistor 1k ohm 0.1W ±5%		202-102J-2A00-150
R153	Chip resistor 18k ohm 0.1W ±5%		202-183J-2A00-150
R154	Chip resistor 22 ohm 0.1W ±5%		202-220J-2A00-150
R155	Chip resistor 270 ohm 0.1W ±5%		202-271J-2A00-150
R157	Chip resistor 100k ohm 0.1W ±5%		202-104J-2A00-150
R158	Chip resistor 18k ohm 0.1W ±5%		202-183J-2A00-150
R180	Chip resistor 22k ohm 0.1W ±5%		202-223J-2A00-150
R181	Chip resistor 47k ohm 0.1W ±5%		202-473J-2A00-150
R182	Chip resistor 47k ohm 0.1W ±5%		202-473J-2A00-150
R183	Chip resistor 47k ohm 0.1W ±5%		202-473J-2A00-150
R184	Chip resistor 47k ohm 0.1W ±5%		202-473J-2A00-150
R185	Chip resistor 100k ohm 0.1W ±5%		202-104J-2A00-150
R186	Carbon film resistor 10 ohm 1/6W ±5%		200-100J-2C00-110
R201	Chip resistor 180 ohm 0.1W ±5%		202-181J-2A00-150
R202	Chip resistor 12k ohm 0.1W ±5%		202-123J-2A00-150
R203	Chip resistor 330k ohm 0.1W ±5%		202-334J-2A00-150
R204	Chip resistor 18k ohm 0.1W ±5%		202-183J-2A00-150
R205	Trimmer resistor 20k ohm-B	ECRV-1006	340-1006-0200
R206	Chip resistor 1k ohm 0.1W ±5%		202-102J-2A00-150
R280	Chip resistor 22k ohm 0.1W ±5%		202-223J-2A00-150
R281	Chip resistor 47k ohm 0.1W ±5%		202-473J-2A00-150
R282	Chip resistor 47k ohm 0.1W ±5%		202-473J-2A00-150
R283	Chip resistor 47k ohm 0.1W ±5%		202-473J-2A00-150
R284	Chip resistor 47k ohm 0.1W ±5%		202-473J-2A00-150
R285	Chip resistor 100k ohm 0.1W ±5%		202-104J-2A00-150
R301	Chip resistor 10k ohm 0.1W ±5%		202-103J-2A00-150
R305	Chip resistor 68k ohm 0.1W ±5%		202-683J-2A00-150

REF. NO.	DESCRIPTION	PART NO.	MFR'S NO.
R306	Chip resistor 10k ohm 0.1W ±5%		202-103J-2A00-150
R307	Chip resistor 4.7k ohm 0.1W ±5%		202-472J-2A00-150
R344	Chip resistor 4.7k ohm 0.1W ±5%		202-472J-2A00-150
R501	Carbon film resistor 10 ohm 1/6W ±5%		202-472J-2A00-150
R502	Chip resistor 18k ohm 0.1W ±5%		200-100J-2C00-110
R504	Chip resistor 10k ohm 0.1W ±5%		202-183J-2A00-150
R505	Chip resistor 10k ohm 0.1W ±5%		202-103J-2A00-150
R506	Carbon film resistor 10k ohm 1/6W ±5%		200-103J-2C00-150
R651	Chip resistor 3.9k ohm 0.1W ±5%		202-392J-2A00-150
R652	Chip resistor 390 ohm 0.1W ±5%		202-391J-2A00-150
R653	Chip resistor 8.2k ohm 0.1W ±5%		202-822J-2A00-150
R654	Chip resistor 15k ohm 0.1W ±5%		202-153J-2A00-150
R655	Trimmer resistor 50k ohm-B	ECRV-1007	340-1007-0200
R656	Chip resistor 5.6k ohm 0.1W ±5%		202-562J-2A00-150
R657	Chip resistor 4.7 ohm 0.1W ±5%		202-4R7J-2A00-150
R658	Trimmer resistor 10k ohm-B	ECRV-0397	340-0397-0100
R659	Chip resistor 4.7k ohm 0.1W ±5%		202-472J-2A00-150
R660	Chip resistor 27k ohm 0.1W ±5%		202-273J-2A00-150
R661	Chip resistor 47k ohm 0.1W ±5%		202-473J-2A00-150
R662	Chip resistor 6.8k ohm 0.1W ±5%		202-682J-2A00-150
R663	Chip resistor 6.8k ohm 0.1W ±5%		202-682J-2A00-150
R664	Chip resistor 68k ohm 0.1W ±5%		202-683J-2A00-150
R665	Chip resistor 2.7k ohm 0.1W ±5%		202-272J-2A00-150
R666	Chip resistor 27k ohm 0.1W ±5%		202-273J-2A00-150
R667	Chip resistor 4.7k ohm 0.1W ±5%		202-472J-2A00-150
R668	Chip resistor 56k ohm 0.1W ±5%		202-563J-2A00-150
R669	Chip resistor 56k ohm 0.1W ±5%		202-563J-2A00-150
R670	Chip resistor 47k ohm 0.1W ±5%		202-473J-2A00-150
R671	Chip resistor 5.6k ohm 0.1W ±5%		202-562J-2A00-150
R672	Chip resistor 5.6k ohm 0.1W ±5%		202-562J-2A00-150
R673	Chip resistor 47k ohm 0.1W ±5%		202-473J-2A00-150
R674	Chip resistor 22k ohm 0.1W ±5%		202-223J-2A00-150
R675	Chip resistor 4.7 ohm 0.1W ±5%		202-4R7J-2A00-150
R752	Chip resistor 39k ohm 0.1W ±5%		202-393J-2A00-150
R754	Chip resistor 10k ohm 0.1W ±5%		202-103J-2A00-150
R755	Chip resistor 22k ohm 0.1W ±5%		202-223J-2A00-150
R756	Chip resistor 68k ohm 0.1W ±5%		202-683J-2A00-150
R759	Chip resistor 4.7 ohm 0.1W ±5%		202-4R7J-2A00-150
R901	Carbon film resistor 100k ohm 1/6W ±5%		200-104J-2C00-110
R902	Chip resistor 4.7k ohm 0.1W ±5%		202-472J-2A00-150
R903	Carbon film resistor 100k ohm 1/6W ±5%		200-104J-2C00-110
R904	Chip resistor 100k ohm 0.1W ±5%		202-104J-2A00-150
R905	Chip resistor 3.3M ohm 0.1W ±5%		202-104J-2A00-150
R906	Chip resistor 100k ohm 0.1W ±5%		202-335J-2A00-150
R907	Chip resistor 100k ohm 0.1W ±5%		202-104J-2A00-150
R908	Carbon film resistor 470 ohm 1/6W ±5%		202-104J-2A00-150
R909	Chip resistor 330k ohm 0.1W ±5%		200-471J-2C00-110
R913	Chip resistor 470 ohm 0.1W ±5%		202-334J-2A00-150
R914	Chip resistor 470 ohm 0.1W ±5%		202-471J-2A00-150
R915	Carbon film resistor 470 ohm 1/6W ±5%		202-471J-2A00-150
R916	Carbon film resistor 470 ohm 1/6W ±5%		200-471J-2C00-110
R917	Carbon film resistor 470 ohm 1/6W ±5%		200-471J-2C00-110
R918	Chip resistor 470 ohm 0.1W ±5%		200-471J-2C00-110
R919	Chip resistor 47k ohm 0.1W ±5%		202-471J-2A00-150
R920	Chip resistor 100k ohm 0.1W ±5%		202-473J-2A00-150
R921	Carbon film resistor 4.7k ohm 1/6W ±5%		202-104J-2A00-150
R922	Chip resistor 1k ohm 0.1W ±5%		200-472J-2C00-110
R923	Chip resistor 10k ohm 0.1W ±5%		202-102J-2A00-150
R924	Carbon film resistor 100 ohm 1/6W ±5%		202-103J-2A00-150
R925	Chip resistor 4.7k ohm 0.1W ±5%		200-101J-2C00-110
			202-472J-2A00-150

REF. NO.	DESCRIPTION	PART NO.	MFR'S NO.
R926	Chip resistor 10k ohm 0.1W ±5%		202-103J-2A00-150
R928	Chip resistor 56k ohm 0.1W ±5%		202-563J-2A00-150
R931	Carbon film resistor 220 ohm 1/6W ±5%		200-221J-2C00-110
R932	Chip resistor 2.7k ohm 0.1W ±5%		202-272J-2A00-150
R933	Chip resistor 15k ohm 0.1W ±5%		202-153J-2A00-150
R934	Chip resistor 150k ohm 0.1W ±5%		202-154J-2A00-150
R935	Chip resistor 1k ohm 0.1W ±5%		202-102J-2A00-150
V1	Chip transistor 2SC2812(L6)	ETTC-2SC2812	302-0109-1201
V2	Chip transistor UN2212	ETTC-UN2212	302-0210-0001
V3	Chip transistor DTB123YK	ETTB-DTB123YK	301-0105-0001
V50	Chip transistor 2SB1119(S)	ETTB-2SB1119	301-0099-1201-014
V51	Chip transistor 2SB1119(S)	ETTB-2SB1119	301-0099-1201-014
V52	Chip transistor 2SB1119(S)	ETTB-2SB1119	301-0099-1201-014
V53	Chip transistor 2SB1119(S)	ETTB-2SB1119	301-0099-1201-014
V54	Chip transistor UN2212	ETTC-UN2212	302-0210-0001
V55	Chip transistor UN2212	ETTC-UN2212	302-0210-0001
V56	Chip transistor UN2212	ETTC-UN2212	302-0210-0001
V57	Chip transistor UN2212	ETTC-UN2212	302-0210-0001
V58	Chip transistor UN2212	ETTC-UN2212	302-0210-0001
V59	Chip transistor DTB123YK	ETTB-DTB123YK	301-0105-0001
V60	Chip transistor UN2212	ETTC-UN2212	302-0210-0001
V61	Chip transistor UN2212	ETTC-UN2212	302-0210-0001
V62	Transistor 2SD1994A(R)	ETTD-2SD1994A	302-0207-1101-006
V63	Chip transistor UN2212	ETTC-UN2212	302-0210-0001
V64	Transistor 2SB1446(S)	ETTB-2SB1446	301-0103-1101-003
V66	Regulator IC LA5685N	ETI-LA5685N	310-0453-0000
V101	Pre-amplifier IC M51524L	ETI-M51524L	310-0361-0000
V102	Chip transistor UN2212	ETTC-UN2212	302-0210-0001
V103	Analog switching IC HD14066BP	ETI-HD14066BP	310-0222-0000
V105	Isolation amplifier IC M5218AFP	ETI-M5218AFP	310-0358-0001
V301	Chip transistor UN2210(R)	ETTC-UN2210	302-0211-1101-006
V302	Chip transistor UN2210(R)	ETTC-UN2210	302-0211-1101-006
V305	Chip transistor UN2212	ETTC-UN2212	302-0210-0001
V306	Chip transistor UN2212	ETTC-UN2212	302-0210-0001
V307	Chip transistor UN2112	ETTC-UN2212	301-0112-0001
V308	Chip transistor UN2212	ETTC-UN2212	302-0210-0001
V501	Dolby IC HA12135A	ETI-HA12135A	310-0413-0000
V502	Chip transistor UN2212	ETTC-UN2212	302-0210-0001
V651	FM IF,NB,MPX IC LA1862M	ETI-LA1862M	310-0490-0000
V652	Chip transistor UN2212	ETTC-UN2212	302-0210-0001
V653	Chip transistor UN2212	ETTC-UN2212	302-0210-0001
V731	Chip transistor UN2210(R)	ETTC-UN2210	302-0211-1101-006
V901	DTS micro computer µPD17005GF-615-3B9	ETI-µPD17005GF	310-0466-0000
V902	Reset IC PST520D	ETI-PST520D	310-0264-1400
V903	Chip transistor UN2212	ETTC-UN2212	302-0210-0001
V904	Chip transistor UN2212	ETTC-UN2212	302-0210-0001
V905	Chip transistor UN2212	ETTC-UN2212	302-0210-0001
V921	Chip transistor 2SC2712(BL)	ETTC-2SC2712	302-0173-1301
V922	Chip transistor 2SC2712(BL)	ETTC-2SC2712	302-0173-1301
	Jumper chip		202-0R00-2A00-150
	Jumper chip		209-0003-0000
	Terminal lug	PP-0521	100-6521-0000
	2P plug	ESC-0229	412-0229-0000
	3P plug	ESC-0450	412-0450-0000
	4P plug	ESC-0451	412-0451-0000

POWER AMPLIFIER CIRCUIT BOARD COMPONENT LOCATION GUIDE



TOP VIEW

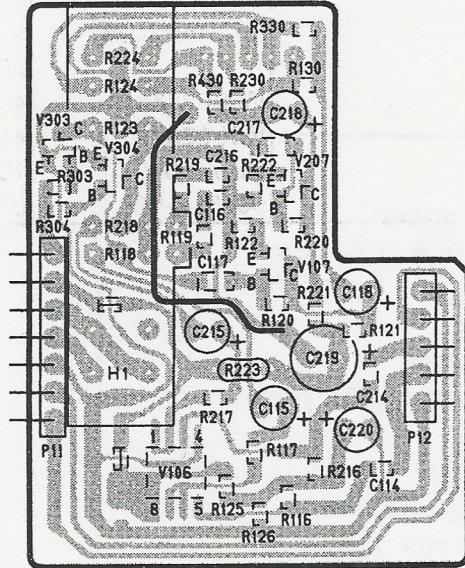
BOTTOM VIEW

REF. NO.25 CTP-1981X1 POWER AMPLIFIER CIRCUIT BOARD ASSEMBLY PARTS LIST

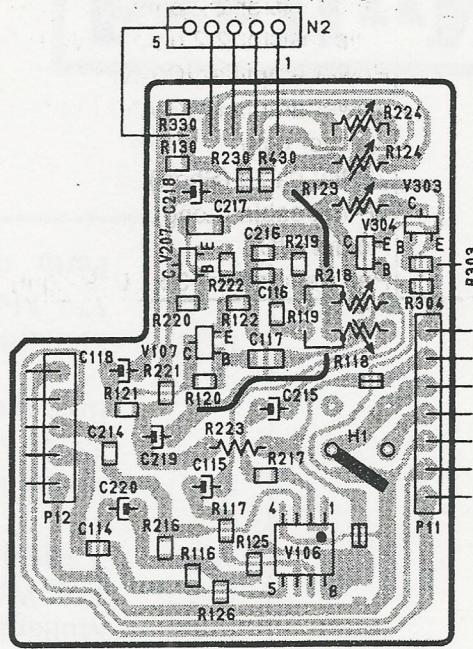
REF. NO.	DESCRIPTION	PART NO.	MFR'S NO.
C1	Power amplifier printed circuit board		440-1799-0101
C2	Electrolytic capacitor 1000µF 16V		250-102M-1C00-057
C130	Electrolytic capacitor 2200µF 16V		250-222M-1C00-066
C130	Chip capacitor 1000pF 50V		263-102M-1HJB-300
C131	Electrolytic capacitor 1µF 50V		250-1R0M-1H00-114
C132	Electrolytic capacitor 100µF 6.3V		250-101M-0J00-122
C133	Chip capacitor 0.047µF 25V		263-473M-1EJB-302
C134	Chip capacitor 0.1µF 25V		263-104M-1EJB-302
C135	Chip capacitor 0.1µF 25V		263-104M-1EJB-302
C160	Electrolytic capacitor 1000µF 16V		250-102M-1C00-057
C161	Electrolytic capacitor 100µF 16V		250-101M-1C00-133
C162	Electrolytic capacitor 1000µF 16V		250-102M-1C00-057
C163	Electrolytic capacitor 100µF 16V		250-101M-1C00-133
C230	Chip capacitor 1000pF 50V		263-102M-1HJB-300
C231	Electrolytic capacitor 1µF 50V		250-1R0M-1H00-114
C232	Electrolytic capacitor 100µF 6.3V		250-101M-0J00-122
C233	Chip capacitor 0.047µF 25V		263-473M-1EJB-302
C234	Chip capacitor 0.1µF 25V		263-104M-1EJB-302
C235	Chip capacitor 0.1µF 25V		263-104M-1EJB-302
C330	Chip capacitor 1000pF 50V		263-102M-1HJB-300
C331	Electrolytic capacitor 1µF 50V		250-1R0M-1H00-114
C332	Electrolytic capacitor 100µF 6.3V		250-101M-0J00-122
C333	Chip capacitor 0.047µF 25V		263-473M-1EJB-302
C334	Chip capacitor 0.1µF 25V		263-104M-1EJB-302
C335	Chip capacitor 0.1µF 25V		263-104M-1EJB-302
C430	Chip capacitor 1000pF 50V		263-102M-1HJB-300
C431	Electrolytic capacitor 1µF 50V		250-1R0M-1H00-114
C432	Electrolytic capacitor 100µF 6.3V		250-101M-0J00-122
C433	Chip capacitor 0.047µF 25V		263-473M-1EJB-302
C434	Chip capacitor 0.1µF 25V		263-104M-1EJB-302
C435	Chip capacitor 0.1µF 25V		263-104M-1EJB-302
D1	Diode ERB12(02)	ETD-ERB12	304-0032-1100
D6	Diode DSA3A(4)	ETD-DSA3A	304-0100-1200
L1	Toroidal coil	ELD-0213	351-0213-5700
L2	Toroidal coil	ELD-0321	351-0321-5700
P1	7P plug	ESC-0232	412-0232-0000
P2	5P plug	ESC-0274	412-0274-0000
P21	13P plug	ESC-0449	412-0449-0000
R131	Chip resistor 270 ohm 0.1W ±5%		202-271J-2A00-150
R132	Chip resistor 220 ohm 0.1W ±5%		202-221J-2A00-150
R133	Chip resistor 2.2 ohm 0.1W ±5%		202-2R2J-2A00-150
R134	Chip resistor 2.2 ohm 0.1W ±5%		202-2R2J-2A00-150
R231	Chip resistor 270 ohm 0.1W ±5%		202-271J-2A00-150
R232	Chip resistor 220 ohm 0.1W ±5%		202-221J-2A00-150
R233	Chip resistor 2.2 ohm 0.1W ±5%		202-2R2J-2A00-150
R234	Chip resistor 2.2 ohm 0.1W ±5%		202-2R2J-2A00-150
R331	Chip resistor 270 ohm 0.1W ±5%		202-271J-2A00-150
R332	Chip resistor 220 ohm 0.1W ±5%		202-221J-2A00-150
R333	Chip resistor 2.2 ohm 0.1W ±5%		202-2R2J-2A00-150
R334	Chip resistor 2.2 ohm 0.1W ±5%		202-2R2J-2A00-150
R431	Chip resistor 270 ohm 0.1W ±5%		202-271J-2A00-150
R432	Chip resistor 220 ohm 0.1W ±5%		202-221J-2A00-150

REF. NO.	DESCRIPTION	PART NO.	MFR'S NO.
R433	Chip resistor 2.2 ohm 0.1W ±5%		202-2R2J-2A00-150
R434	Chip resistor 2.2 ohm 0.1W ±5%		202-2R2J-2A00-150
V131	Power amplifier IC AN7173K	ETI-AN7173K	310-0404-0000
V231	Power amplifier IC AN7173K Jumper chip	ETI-AN7173K	310-0404-0000
	2P flat cable (Short)	WX-0283	202-0R00-2A00-150
	2P flat cable (Long)	WX-0284	471-0283-0000
	Holder - IC	PL-7490	471-0284-0001
	Pan head screw 3 x 10 (P-tight)	006310PT	100-7490-0000
			020-0300-1000-421

VOLUME CONTROL CIRCUIT BOARD COMPONENT LOCATION GUIDE



TOP VIEW

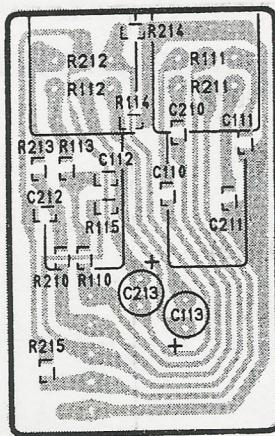


BOTTOM VIEW

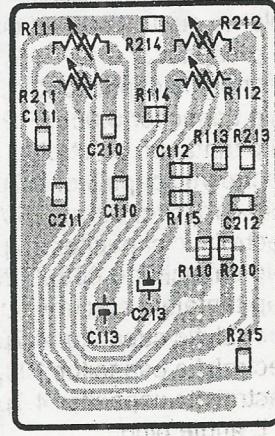
REF. NO.31 CTP-1981X2 VOLUME CONTROL CIRCUIT BOARD ASSEMBLY PARTS LIST

REF. NO.	DESCRIPTION	PART NO.	MFR'S NO.
C114	Volume control printed circuit board		440-1799-0201
C115	Chip capacitor 0.1µF 25V		263-104M-1EJB-302
C116	Electrolytic capacitor 2.2µF 50V (Low leakage)		252-2R2M-1H00-114
C117	Chip capacitor 0.068µF 25V		263-683M-1EJB-302
C118	Chip tantalum electrolytic capacitor 1µF 16V		255-1R0M-1C00-105
C214	Electrolytic capacitor 4.7µF 25V		250-4R7M-1E00-114
C215	Chip capacitor 0.1µF 25V		263-104M-1EJB-302
C216	Electrolytic capacitor 2.2µF 50V (Low leakage)		252-2R2M-1H00-114
C217	Chip capacitor 0.068µF 25V		263-683M-1EJB-302
C218	Chip tantalum electrolytic capacitor 1µF 16V		255-1R0M-1C00-105
C219	Electrolytic capacitor 4.7µF 25V		250-4R7M-1E00-114
C220	Electrolytic capacitor 100µF 16V		250-101M-1C00-133
P11	Electrolytic capacitor 4.7µF 25V		250-4R7M-1E00-114
P12	7P L angle plug	ESC-0458	412-0458-0000
R116	5P L angle plug	ESC-0459	412-0459-0000
R117	Chip resistor 100k ohm 0.1W ±5%		202-104J-2A00-150
H1	Chip resistor 3.3k ohm 0.1W ±5%		202-332J-2A00-150
R118	Variable resistor with switch	ECRV-0085	341-0085-0101
R123	Power ON/OFF		
R124	Volume control 50k ohm-A		
R218	Balance control 30k ohm-B		
R224	Fader control 30k ohm-B		
R119	Volume control 50k ohm-A		
R120	Fader control 30k ohm-B		
R121	Chip resistor 4.7k ohm 0.1W ±5%		202-472J-2A00-150
R122	Chip resistor 680k ohm 0.1W ±5%		202-684J-2A00-150
R123	Chip resistor 3.3k ohm 0.1W ±5%		202-332J-2A00-150
R124	Chip resistor 470 ohm 0.1W ±5%		202-471J-2A00-150
R125	Chip resistor 100k ohm 0.1W ±5%		202-104J-2A00-150
R126	Chip resistor 100k ohm 0.1W ±5%		202-104J-2A00-150
R130	Chip resistor 4.7k ohm 0.1W ±5%		202-472J-2A00-150
R216	Chip resistor 100k ohm 0.1W ±5%		202-104J-2A00-150
R217	Chip resistor 3.3k ohm 0.1W ±5%		202-332J-2A00-150
R219	Chip resistor 4.7k ohm 0.1W ±5%		202-472J-2A00-150
R220	Chip resistor 680k ohm 0.1W ±5%		202-684J-2A00-150
R221	Chip resistor 3.3k ohm 0.1W ±5%		202-332J-2A00-150
R222	Chip resistor 470 ohm 0.1W ±5%		202-471J-2A00-150
R223	Carbon film resistor 820 ohm 1/6W ±5%		202-821J-2C00-110
R230	Chip resistor 4.7k ohm 0.1W ±5%		202-472J-2A00-150
R303	Chip resistor 10k ohm 0.1W ±5%		202-103J-2A00-150
R304	Chip resistor 10k ohm 0.1W ±5%		202-103J-2A00-150
R330	Chip resistor 4.7k ohm 0.1W ±5%		202-472J-2A00-150
R430	Chip resistor 4.7k ohm 0.1W ±5%		202-472J-2A00-150
V106	Buffer IC M5218AFP	ETI-M5218AFP	310-0358-0001
V107	Chip transistor 2SD1935(6)	ETTD-2SD1935	302-0212-1201-014
V207	Chip transistor 2SD1935(6)	ETTD-2SD1935	302-0212-1201-014
V303	Chip transistor 2SC2712(GR)	ETTC-2SC2712	302-0173-1201
V304	Chip transistor 2SC2712(GR)	ETTC-2SC2712	302-0173-1201
	Jumper chip		202-0R00-2A00-150

TONE CONTROL CIRCUIT BOARD COMPONENT LOCATION GUIDE



TOP VIEW

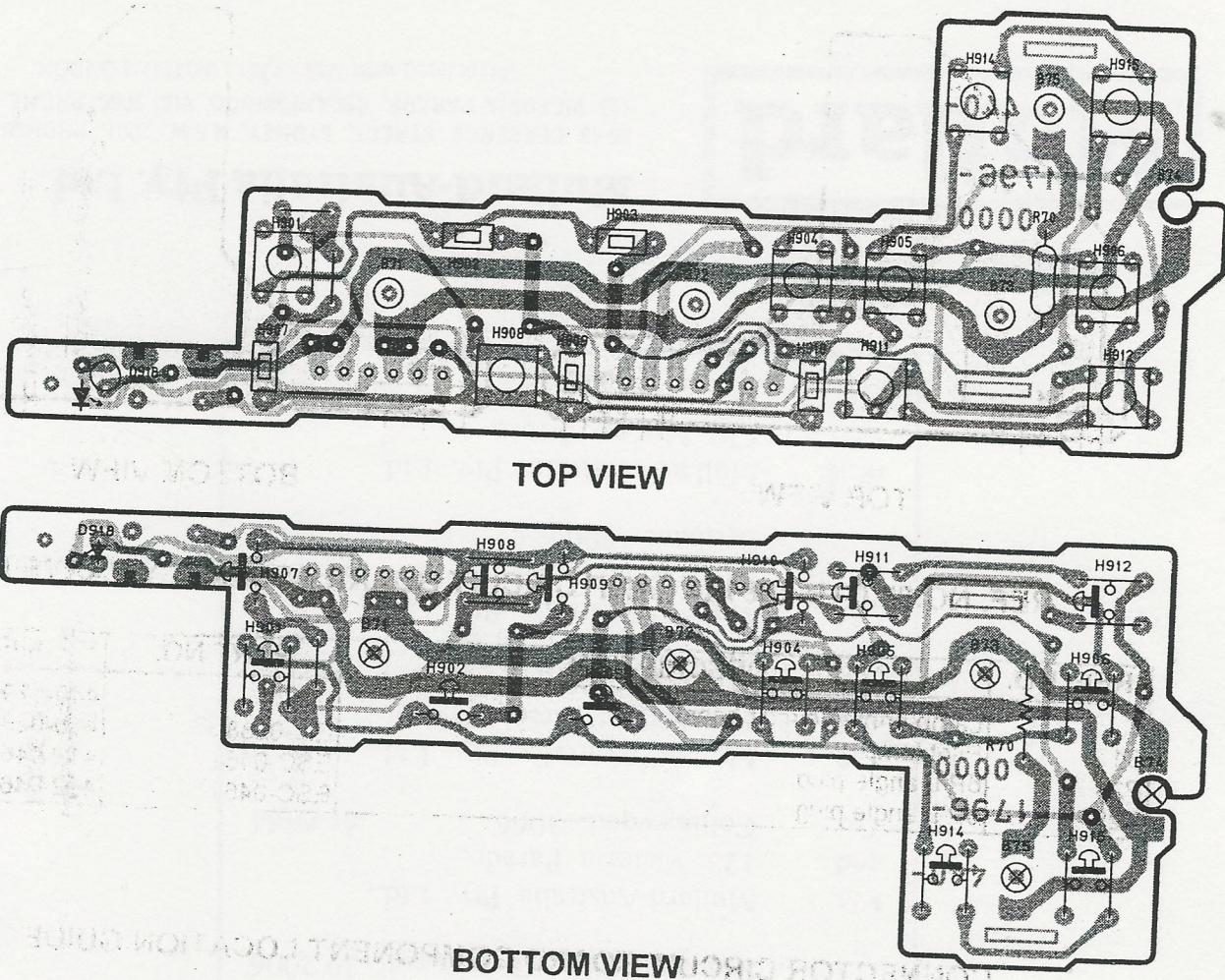


BOTTOM VIEW

REF. NO.16 CTP-1981X3 TONE CONTROL CIRCUIT BOARD ASSEMBLY PARTS LIST

REF. NO.	DESCRIPTION	PART NO.	MFR'S NO.
C110	Tone control printed circuit board		440-1799-0300
C111	Chip capacitor 0.0068µF 50V		263-682M-1HJB-300
C112	Chip capacitor 0.047µF 25V		263-473M-1EJB-301
C113	Chip capacitor 0.1µF 25V		263-104M-1EJB-302
C210	Electrolytic capacitor 0.47µF 50V		250-R47M-1H00-114
C211	Chip capacitor 0.0068µF 50V		263-682M-1HJB-300
C212	Chip capacitor 0.047µF 25V		263-473M-1EJB-301
C213	Chip capacitor 0.1µF 25V		263-104M-1EJB-302
R110	Electrolytic capacitor 0.47µF 50V		250-R47M-1H00-114
R111	Chip resistor 3.3k ohm 0.1W ±5%		202-332J-2A00-150
R211	Variable resistor	ECRV-0046	341-0046-0100
R112	Treble control 20k ohm-A		
R212	Treble control 20k ohm-A		
R113	Variable resistor	ECRV-0046	341-0046-0100
R114	Bass control 20k ohm-A		
R213	Bass control 20k ohm-A		
R115	Chip resistor 470 ohm 0.1W ±5%		202-471J-2A00-150
R214	Chip resistor 560 ohm 0.1W ±5%		202-561J-2A00-150
R215	Chip resistor 1.2k ohm 0.1W ±5%		202-122J-2A00-150
R210	Chip resistor 3.3k ohm 0.1W ±5%		202-332J-2A00-150
R211	Chip resistor 470 ohm 0.1W ±5%		202-471J-2A00-150
R212	Chip resistor 560 ohm 0.1W ±5%		202-561J-2A00-150
R213	Chip resistor 1.2k ohm 0.1W ±5%		202-122J-2A00-150

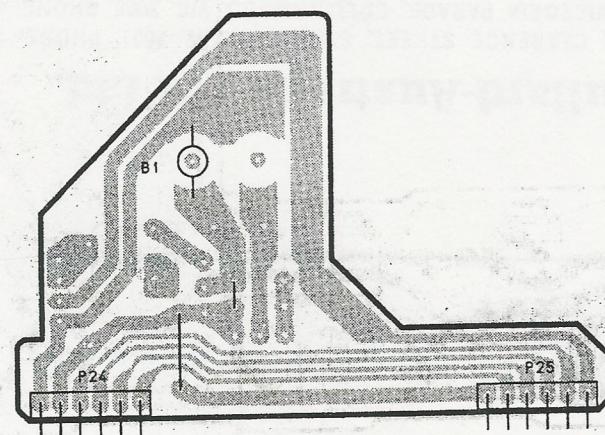
SWITCH CIRCUIT BOARD COMPONENT LOCATION GUIDE



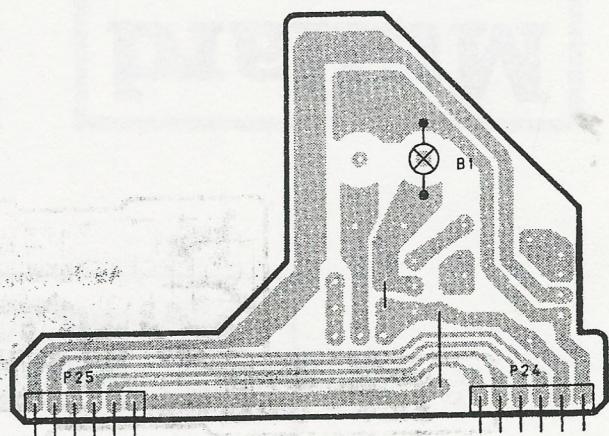
REF. NO.8 CTP-1783 SWITCH CIRCUIT BOARD ASSEMBLY PARTS LIST

REF. NO.	DESCRIPTION	PART NO.	MFR'S NO.
B71	Switch printed circuit board		440-1796-0000
B72	Pilot lamp	EIL-0242	430-0242-0000
B73	Pilot lamp	EIL-0242	430-0242-0000
B74	Pilot lamp	EIL-0242	430-0242-0000
B75	Pilot lamp	EIL-0242	430-0242-0000
D918	LED SLH-34VC	EIL-0242	430-0242-0000
H901	Tact switch	ETD-SLH-34VC	320-0114-0000
H902	Tact switch	ESS-0569	400-0569-1300
H903	Tact switch	ESS-0593	400-0593-0200
H904	Tact switch	ESS-0593	400-0593-0200
H905	Tact switch	ESS-0569	400-0569-1300
H906	Tact switch	ESS-0569	400-0569-1300
H907	Tact switch	ESS-0569	400-0569-1300
H908	Tact switch	ESS-0593	400-0593-0200
H909	Tact switch	ESS-0569	400-0569-1300
H910	Tact switch	ESS-0593	400-0593-0200
H911	Tact switch	ESS-0593	400-0593-0200
H912	Tact switch	ESS-0569	400-0569-1300
H914	Tact switch	ESS-0569	400-0569-1300
H915	Tact switch	ESS-0569	400-0569-1300
R70	Carbon film resistor 10 ohm 1/4W ±5%	ESS-0569	200-100J-2E00-010

LAMP CIRCUIT BOARD COMPONENT LOCATION GUIDE



TOP VIEW

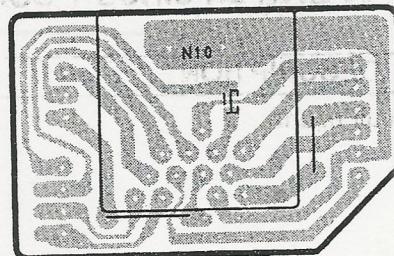


BOTTOM VIEW

REF. NO.38 CTP-1981X4 LAMP CIRCUIT BOARD ASSEMBLY PARTS LIST

REF. NO.	DESCRIPTION	PART NO.	MFR'S NO.
B1	Lamp printed circuit board	EIL-0238	440-1799-0400
P24	Pilot lamp	ESC-0461	430-0238-0000
P25	6P L angle plug	ESC-0461	412-0461-0000
	6P L angle plug	ESC-0461	412-0461-0000

CONNECTOR CIRCUIT BOARD COMPONENT LOCATION GUIDE

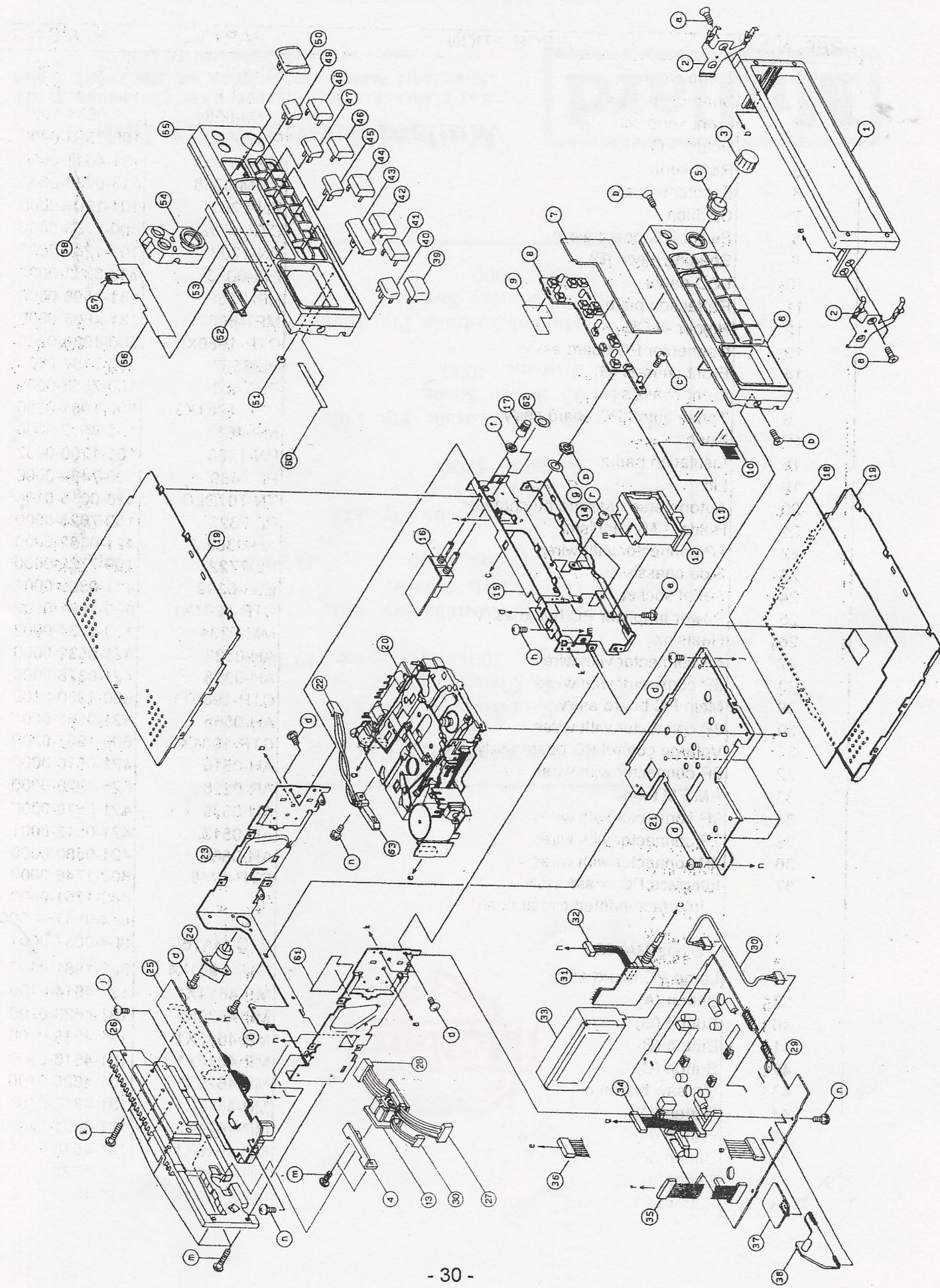


TOP VIEW

REF. NO.13 CTP-1980X2 CONNECTOR CIRCUIT BOARD ASSEMBLY PARTS LIST

REF. NO.	DESCRIPTION	PART NO.	MFR'S NO.
N10	Connector printed circuit board Chip resistor 0 ohm 0.1W 13P socket	ESJ-0323	440-1836-0201 202-0R00-2A00-150 411-0323-0000

EXPLODED VIEW - CABINET



MECHANICAL PARTS LIST - CABINET

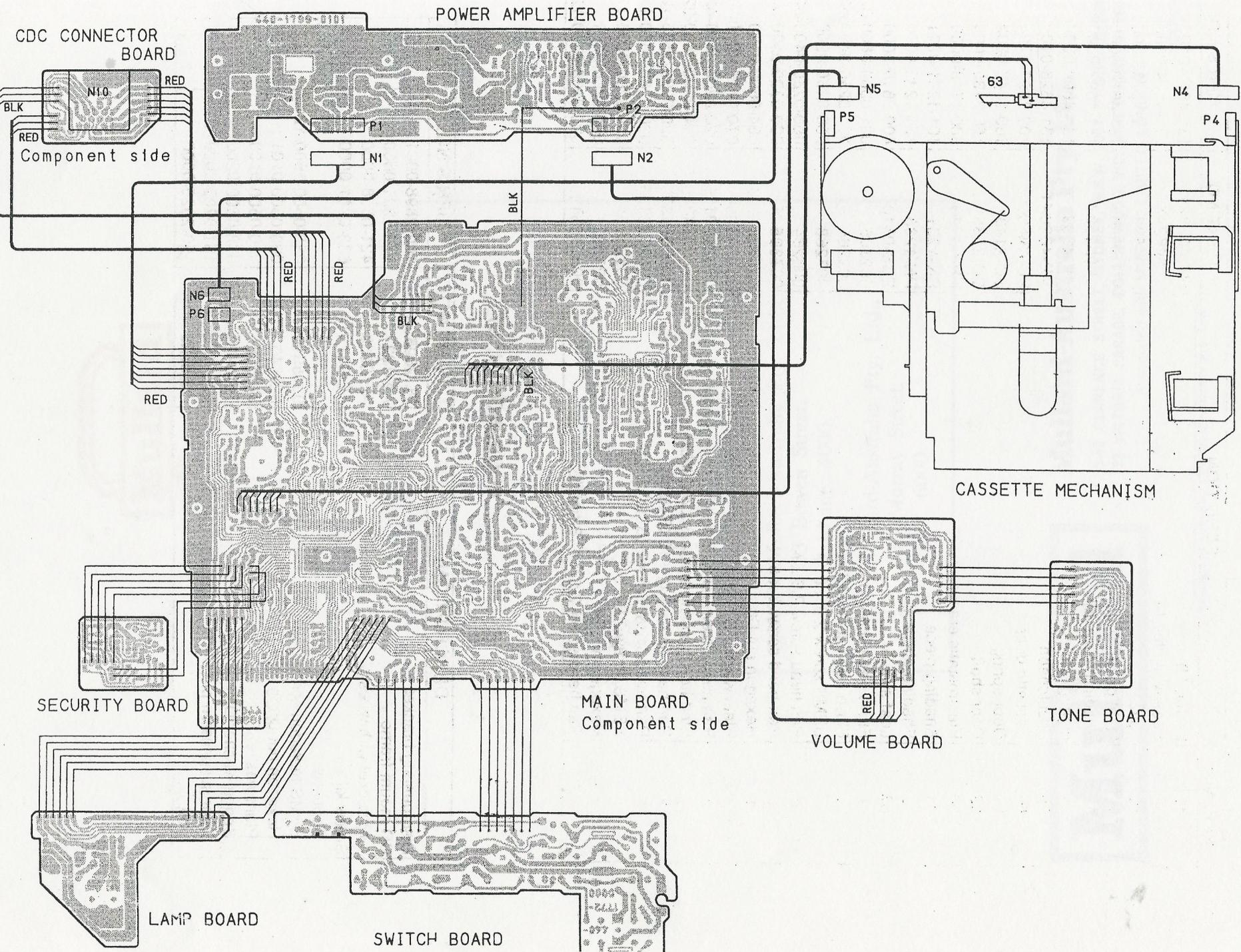
REF. NO.	DESCRIPTION	PART NO.	MFR'S NO.
1	Trimplate	MP-4257	131-4257-0002
2	Snap-in spring	PL-7281	100-7281-0002
3	Front knob set	CMM-0684	613-0684-0001
4	Holder - Cord	PL-7553	100-7553-0000
5	Rear knob	MP-4611	131-4611-0000
6	Escutcheon ass'y	CMM-0738	613-0738-0003
7	Cushion	PN-1201	101-1201-0000
8	Switch PC board ass'y	CTP-1783	600-1783-0002
9	Shading piece (B)	PN-1202	101-1202-0001
10	LCD panel	EIX-0033	333-0033-0002
11	Reflection plate	HPN-1596	181-1596-0000
12	Holder - LCD	MP-4608	131-4608-0000
13	Connector PC board ass'y	CTP-1980X2	600-1980-0200
14	Front chassis (B)	PL-7557	100-7557-0000
15	Front chassis (A)	PL-7556	100-7556-0001
16	Tone control PC board ass'y	CTP-1981X3	600-1981-0300
17	Knob	MP-4613	131-4613-0000
18	Insulation paper	PN-1200	101-1200-0002
19	Lid	PL-7489	100-7489-0006
20	Autoreverse cassette mechanism	TN-707DLC	626-0015-0100 0301
21	Holder - Mechanism	PL-7623	100-7623-0000
22	2P connector with wires	AH-0382	421-0382-0000
23	Side chassis	PL-7722	100-7722-0000
24	Aerial socket	ESJ-0309	411-0309-0001
25	Power amplifier PC board ass'y	CTP-1981X1	600-1981-0102
26	Heatsink	MM-0234	130-0234-0002
27	4P connector with wires	AH-0532	421-0532-0000
28	6P connector with wires	AH-0378	421-0378-0000
29	Main PC board ass'y	CTP-1980X1	600-1980-0102
30	3P connector with wires	AH-0565	421-0565-0001
31	Volume control PC board ass'y	CTP-1981X2	600-1981-0200
32	5P connector with wires	AH-0510	421-0510-0000
33	AM/FM tuner	AR-0226	625-0226-0000
34	9P connector with wires	AH-0579	421-0579-0000
35	7P connector with wires	AH-0513	421-0513-0001
36	9P connector with wires	AH-0580	421-0580-0000
37	Interface PC board ass'y Interface printed circuit board	CTP-1746	600-1746-0000 440-1751-0000 or 440-1764-0000
	Diode MA165	ETD-MA165	304-0037-0001
38	Lamp PC board ass'y	CTP-1981X4	600-1981-0400
39	Button (A)	MP-4614X1	131-4614-0100
40	Button (G)	MP-4620X2	131-4620-0200
41	Button (B)	MP-4615X1	131-4615-0100
42	Button (C)	MP-4616X1	131-4616-0100
43	Seesaw button (B)	MP-4625X1	131-4625-0100
44	Button (D)	MP-4617X1	131-4617-0100
45	Button (H)	MP-4621X2	131-4621-0200
46	Button (E)	MP-4618X1	131-4618-0100
47	Button (I)	MP-4622X1	131-4622-0100
48	Button (F)	MP-4619X1	131-4619-0100

REF. NO.	DESCRIPTION	PART NO.	MFR'S NO.
49	Button (J)	MP-4623X1	131-4623-0100
50	Seesaw button (A)	MP-4624X1	131-4624-0100
51	Lenz	MP-4573	131-4573-0000
52	Light guide	MP-4610	131-4610-0000
53	Shading piece(A)	HPN-1597	181-1597-0000
54	Light guide	MP-4609	131-4609-0000
55	Escutcheon	MP-4626X1	131-4626-0100
56	Cassette door	PL-7397X42	100-7397-4204
57	Door spring	SC-2143	160-2143-0002
58	Door shaft	CC-3135	150-3135-0000
60	Electrostatic eraser	HPP-1719	800-1719-0000
61	Shading piece	PN-1231	101-1231-0001
62	Shading piece (E)	PN-1238	101-1238-0000
63	Leaf switch	ESS-0610	400-0610-3000
a	Flush head screw 3 x 6	002306	001-0300-0600-021
b	Flush head screw 2.6 x 4	002264	001-0260-0400-021
c	SEMS screw 2.6 x 8	093268	050-0260-0800-120
d	Pan head screw 2.6 x 4	006264	000-0260-0400-021
e	Pan head screw 3 x 5	006305	000-0300-0500-021
f	Hexagon nut D6	020620	064-0600-0100
g	Plain washer D7	010705	070-0700-0001
h	Pan head screw 2 x 5 (P-tight)	006205PT	020-0200-0500-421
j	Bind head tapping screw 3 x 8 (Black)	088308K	014-0300-0800-222
k	Pan head screw 2.6 x 16 (S-tight)	0062616ST	020-0260-1600-121
m	Pan head screw 2.6 x 8 (S-tight)	006268ST	020-0260-0800-121
n	SEMS screw 2.6 x 5	093265	050-0260-0500-120
p	Hexagon nut D7	020720	064-0700-0100
r	Pan head screw 2.6 x 4 (S-tight)	006264ST	020-0260-0400-121

ACCESSORY LIST

DESCRIPTION	PART NO.	MFR'S NO..	Q'TY
Dismounting bracket	PL-2898	100-2898-0001	2
CD mount frame	AA-1221	179-1221-0000	1
13P socket with wires	AH-0558	421-0558-0000	1
Screw kit	AS-0211	633-0211-0000	1
Contains;			
SEMS hexagon screw 5 x 16	0945016	055-0500-1600-121	1
Hexagon nut D5	020540	060-0500-0101	2
Plain washer D5	010508	070-0500-0100	2
Spring washer D5	0115210	072-0500-0200	2
Rear suspension plug	MR-0203	131-3203-0000	1
Bolt	CS-0525	150-2525-0000	1

WIRING LAYOUT



SCHEMATIC DIAGRAM

