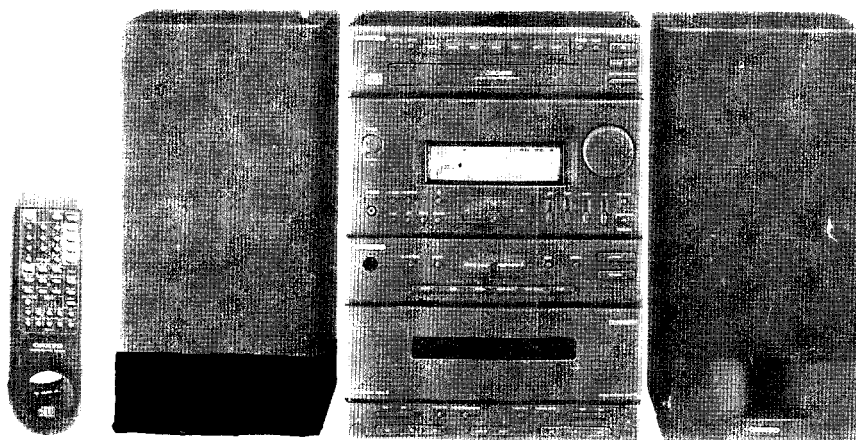


# ONKYO® SERVICE MANUAL

## PERSONAL COMPONENT SYSTEM

### PCS-207



U	120 AC, 60Hz
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#### SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK  $\Delta$  ON THE SCHEMATIC DIAGRAM AND IN THE PARTS LIST ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE THESE COMPONENTS WITH ONKYO PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL.

MAKE LEAKAGE-CURRENT OR RESISTANCE MEASUREMENTS TO DETERMINE THAT EXPOSED PARTS ARE ACCEPTABLY INSULATED FROM THE SUPPLY CIRCUIT BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.



# SERVICE PROCEDURES

## 1. Safety-check out

After correcting the original service problem, perform the following safety check before releasing the set to the customer:

Connect the insulating-resistance tester between the plug of power supply cord and chassis.

Specifications : More than 10 Mohm at 500V.

## 2. Replacing the fuses

For continued protection against fire hazard, replace only with same type and same rating fuse.

Circuit No.	Part No.	Description
F1	531200000	2A/250V
F2	531350001-BU	3.5A/125V
F3	531350001-BU	3.5A/125V
F4	531200000	2A/250V
F5	531100000	1A/250V
F6	531100000	1A/250V

## CAUTION ON REPLACEMENT OF OPTICAL PICKUP

The laser diode in the optical pickup block is so sensitive to static electricity, surge current and etc., that the components are liable to be broken down or its reliability remarkably deteriorated.

During repair, carefully take the following precautions. (The following precautions are included in the service parts.)

## PRECAUTIONS

### 1. Ground for the work-desk.

Place a conductive sheet such as a sheet of copper (with impedance lower than 10Mohm) on the work-desk and place the set on the conductive sheet so that the chassis.

### 2. Grounding for the test equipments and tools.

Test equipments and toolings should be grounded in order that their ground level is the same the ground of the power source.

### 3. Grounding for the human body.

Be sure to put on a wrist-strap for grounding whose other end is grounded.

Be particularly careful when the workers wear synthetic fiber clothes, or air is dry.

### 4. Select a soldering iron that permits no leakage and have the tip of the iron well-grounded.

### 5. Do not check the laser diode terminals with the probe of a circuit tester or oscilloscope.

## PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs a laser. Therefore, be sure to follow carefully the instructions below when servicing.

### WARNING!!

WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION, BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 30cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.

### Laser Diode Properties

- Material:GaAlAs
- Wavelength:760~800nm
- Emission Duration:continuous
- Laser output:max. 0.5mW\*

\*This output is the value measured at a distance about 1.8mm from the objective lens surface on the Optical Pick-up Block.

# PC BOARD PARTS LIST-AMPLIFIER/CD CHANGER (CA-207)

## CIRCUIT NO. PART NO. DESCRIPTION POWER PC BOARD (93804002)

CIRCUIT NO.	PART NO.	DESCRIPTION
ICs		
U1	310780590-AM	KA7805
U2,U4	310780990-AM	KA7809
U3	222790094JRC	NJM7909FA
Transistors		
Q1	2201285	2SD882Q
Q3	321901456-AK	9014C
Diodes		
D1,D3-D5	223894	1N4002
D2,D6-D8	22380003	1N5402
D9-D12	223894	1N4002
D13	339009750-BS	MAC97A-6
D15-D18	22380003	1N5402
ZD1	333015030-AK	ZENER, 15V 1/2W

CIRCUIT NO.	PART NO.	DESCRIPTION
Capacitors		
C17,C19,C20,C23,C36	242280031-AD	2200 $\mu$ F, 25V, Elect.
C18	241080051-AD	1000 $\mu$ F, 16V, Elect.
C21,C22	246880041-AD	6800 $\mu$ F, 35V, Elect.
C27	241080031-AD	1000 $\mu$ F, 25V, Elect.
C34	244770021	470 $\mu$ F, 16V, Elect.
C43	242270034-AD	220 $\mu$ F, 25V, Elect.
Connectors		
CON4W	504003313-AV	CONNECTOR, 3POS
CON5H	578002330	MULTI-CONNECTOR, 2POS
CON12W	500094000-AV	CONNECTOR, 9POS
Fuse		
F1,F4	531200000	FUSE, 2A 250V
F2,F3	531350001-BU	FUSE, 3.5A 125V
F5,F6	531100000	FUSE, 1A 250V

## CIRCUIT NO. PART NO. DESCRIPTION FRONT PANEL PC BOARD (938070004)

CIRCUIT NO.	PART NO.	DESCRIPTION
Transistor		
Q1	2210746	9014C
Diodes		
D1-D4	223163	1SS133
ZD1	223205	Zener, 7.5V 1.2W
LEDs		
LED1-LED4	334020411	204GDC-A
LED5	334020212	EL202IT
Capacitor		
C7	241060024-AD	10 $\mu$ F, 16V, Elect.
Switches		
JSW1	25030365	EVQ-WQG-F2024B, Rotary
SW1-SW33	516555007-AS	Tact Switch
Connectors		
CON4H	578003300	MULTI-CONN. 3POS

## CIRCUIT NO. PART NO. DESCRIPTION CON12H 578010270-AV MULTI-CONN. 10POS

CIRCUIT NO.	PART NO.	DESCRIPTION
Lamps		
LP1-LP4	806080400-LH	LAMP, 6V 50mA,T-46050

## CIRCUIT NO. PART NO. DESCRIPTION CD LCD PC BOARD (938070000)

CIRCUIT NO.	PART NO.	DESCRIPTION
IC		
U1	300152040-BA	SED1520FOA
LCD		
CD410	352807000	AE-9470,LCD
CONNECTORS		
CON15A	500170200-AV	CONNECTOR
CON15H	500170204-IR	CONNECTOR
CON16H	500140204-IR	CONNECTOR

## CIRCUIT NO. PART NO. DESCRIPTION CD CPU PC BOARD (938070002)

CIRCUIT NO.	PART NO.	DESCRIPTION
THERMISTOR		
R133	150103901	10K, THERM
ICS		
U1	300874050	TMP87CK40F-4173
U2,U3	319062090-AK	BA6209N
U4	222780120	7812
U7	310405120-AK	BU4051BCF
U12-U15	310456050-AK	BA4560N
U16	310780590-AM	KA7805

CIRCUIT NO.	PART NO.	DESCRIPTION
TRANSISTOR		
Q2	321901456-AK	9014C

CIRCUIT NO.	PART NO.	DESCRIPTION
DIODES		
D3,D7-D13,JP2	332414830	1N148
	333003300	3V,ZENER
D4	333555130	5.1V,ZENER
D5	333008230	8.2V,ZENER
D6	333006830	6.8V,ZENER

CIRCUIT NO.	PART NO.	DESCRIPTION
CONNECTORS		
CON5W	500020321-AV	CONNECTOR
CON6H	578004400	MULTI
CON7W	500100221-AV	CONNECTOR
CON11W	500092001	CONNECTOR
CON12W	500100321-AV	CONNECTOR
CON15H	500170203-IR	SOCKET
CON20H	578012400	MULTI
CON32H	500140203-IR	SOCKET

CIRCUIT NO.	PART NO.	DESCRIPTION
COILS		
L1	521271010	270UH,FIXED
L2	521101010	100UH,FIXED

CIRCUIT NO.	PART NO.	DESCRIPTION
RESONATOR		
X1	551800000	CRYSTAL,8MHZ

**CIRCUIT NO. PART NO. DESCRIPTION**  
**CD CONTROL PC BOARD (938070000)**

RESISTORS		
VR1	181472302	4.7K, TRIM
VR2	181104302	100K, TRIM
ICS		
U1	308092363-AN	TC9236AF
U2	<u>308081914</u>	TA8191F
U3	315081020	TA8102P
U4	22240478	AN8377N
U5	310171020-B2	PCM1710U
TRANSISTORS		
Q1	3220001440	DTA144TS
Q2	322010640	2SB1064E
Q3	2213355	2SA933S-S
Q4	322012960-AN	2SA1296GR
Q5	2213284	2SC1740S-R
Q6	321901456-AK	9014C
Q8	322901250	JE9012H
DIODES		
D1,D2	223163	1SS133
D3	332414830	1N4148
ZD1	333555130	5.1V,ZENER
CONNECTORS		
CON7H	578010250	MULTI
CON9H-W	500082000	CONNECTOR
CON11H	576109400	MULTI
CON12W	500052000	CONNECTOR
CON13H	578006400	MULTI
COILS		
L1,L2	521101010	100UH,FIXED
L3	521271010	270UH,FIXED
RESONATOR		
X1	552016930	16.93MHZ
FILTERS		
F1,F2	553580002	EMI

**CIRCUIT NO. PART NO. DESCRIPTION**  
**HEADPHONE PC BOARD (938070006)**

Connector		
FC1	574015060-AV	FLAT CABLE, 6 PIN, Headphone
Socket		
J1	500090000-DA	EJS-3-0335N-01, Stereo jack

# PC BOARD PARTS LIST-CASSETTE DECK/TUNER (KA-207)

CIRCUIT NO.	PART NO.	DESCRIPTION	CIRCUIT NO.	PART NO.	DESCRIPTION
PREAMP PC BOARD (938070017)			DTS PC BOARD (938040009)		
<b>RESISTORS</b>			<b>Front End</b>		
U14-U17	181203206	20K, VOLUME	CON3	319876050-AW	VQ98760, Front End
U28,U29	181222206	2K2, VOLUME			
U31,U32	181104302	100K, TRIM			
<b>ICS</b>			<b>ICs</b>		
U1	315116710-BB	M51167BFP-TB	U2	22240749Y	LA1851N
U3	310110220-SD	CXA1102P	U3	22240039	LC7218M
U4	22240147	UPC1330HA	<b>Transistors</b>		
U8	310 56050-AK	BA4560N	Q1,Q2	2211772	2SC2001L
U5	310405220-AK	BU4052BCF	Q3,Q4	323011710-AN	2SK117Y
U19	310406620-AK	BU4066BCF	Q5	2215100	DTA143ES
<b>TRANSISTORS</b>			Q6	2215390	DTC143ES
Q1,Q4	321017401	2SC1740SR-S	Q7	2210746	DTC124XS
Q2	321014410-AK	DTC144ESTP	Q8	2215100	DTA143ES
Q3	2201285	2SD882-Q	Q9,Q10	2215390	DTC143ES
Q8	2211772	2SC2001-L	Q11	2213750	DTA144ES
Q9-Q12,Q14	321001440-AK	DTC144TS	Q12	321901851	9018H
Q15,Q16	2213290	DTC114ES	Q14	323001610-AN	2SK161Y
Q19,Q21,Q24	2211772	2SC2001-L	Q17	321901851	9018H
Q20,Q22	321017401	2SC1740SR-S	Q20	321901456-AK	9014C
Q23	321001440-AK	DTC144TS	Q21	322159550-AK	2SB1595Q
Q25-Q27	321014410-AK	DTC144ESTP	<b>Diodes</b>		
Q28	221281	DTC114YS	D1	223160	1S1585
Q29,Q30	321323010	DTC323TS	D2,D3	332414830	1N4148
<b>DIODES</b>			ZD1	333001330-AK	MIZJ13C, Zener
D3	333555130	5.1V,ZENER	<b>Capacitors</b>		
D4	333000430-01	4V3B,1/2W,ZENER	C1-C3	241050054-AD	1 $\mu$ F, 50V, Elect.
<b>CONNECTORS</b>			C4	243340054-AD	0.33 $\mu$ F, 50V, Elect.
CON8	500040002-AJ	HSP244V-01	C5	242250054-AD	2.2 $\mu$ F, 50V, Elect.
CON12H	500094000-AV	CONNECTOR	C6	242270024-AD	220 $\mu$ F, 16V, Elect.
CON17W	500042508	CONNECTOR	C7,C8	242240054-AD	0.022 $\mu$ F, 50V, Elect.
CON19WA	500052509	CONNECTOR	C9	244770021-AD	470 $\mu$ F, 16V, Elect.
CON19WB	500042509	CONNECTOR	C11	244760024-AD	47 $\mu$ F, 16V, Elect.
CON22W	500042506	CONNECTOR	C12	242260024-AD	22 $\mu$ F, 16V, Elect.
CON23WA	500050321-AV	CONNECTOR	C13	242250054-AD	2.2 $\mu$ F, 50V, Elect.
CON23WB	500030321-AV	CONNECTOR	C14	241070024-AD	100 $\mu$ F, 16V, Elect.
CON27W	500050200-IR	CONNECTOR	C15	241050054-AD	1 $\mu$ F, 50V, Elect.
CON28W	500060321-AV	CONNECTOR	C16	244750054-AD	4.7 $\mu$ F, 50V, Elect.
CON29H	576103150	CONNECTOR	C17	241050054-AD	1 $\mu$ F, 50V, Elect.
CON30H	576106160	CONNECTOR	C18	241060024-AD	10 $\mu$ F, 16V, Elect.
<b>COILS</b>			C20,C101	241040054-AD	0.1 $\mu$ F, 50V, Elect.
L3	521271010	270UH,FIXED	VC1	281200011	20pF, N450, Vari.Cap.
L4,L6	521101010	100UH,FIXED	VCD3,VCD4	223231	1SV149
L7,L8	521682010	6800UH,FIXED	<b>Resistors</b>		
<b>OSCILLATOR, FILTERS</b>			VR1	181103302	10K, TRIM
U18	552804011	105KHZ,OSC	VR2	181223302	22K, TRIM
U20,U21	553193001-BJ	19K,K7-J5/11127	<b>Coils</b>		
U22,U23	553104000-BJ	100K,K7-J5/101114	L1,L2	521101010	COIL, 100 $\mu$ H
L1,L5	553105181	105K,520T,GE90078	L6	522804001-CL	95 $\mu$ H, AM OSC.
CS007	938070021	PCB AS	L7	233401	IFT, FM
			L8	522804002-CL	230 $\mu$ H, AM ANT.
			L9	521101010	COIL, 100 $\mu$ H
			L10	521804661	660 ohm, Choke

CIRCUIT NO.	PART NO.	DESCRIPTION
	<b>Connectors</b>	
CON1	500050201-IR	SOCKET, 5POS
CON2	500120201-IR	SOCKET, 12POS
CON4	498040002-AJ	ANTENNA TERMINAL
	<b>Resonators</b>	
BPF2,BPF3	3010071	10.7MA5-A
MFT	553580000	450PS, Filter
XT1	552004570	KBR457HS15
XT2	3010141	7.2MHz, KD1520FPA

**CIRCUIT NO. PART NO. DESCRIPTION**  
**TUNER PANEL PC BOARD (938070014)**

	<b>IC</b>	
IR1	22240039	RPM-638CBR
	<b>Transistor</b>	
Q1	2210746	9014C
	<b>Capacitor</b>	
C2	242270024-AD	220 $\mu$ F, 16V, Elect.
	<b>Switches</b>	
SW1-SW12	25035652	TACT SWITCH
	<b>Connectors</b>	
CON1	578010260	MULTI-CONN. 10POS

**CIRCUIT NO. PART NO. DESCRIPTION**  
**CASS PANEL PC BOARD (938070015)**

	<b>IC</b>	
U2	22240039	BU2042F
	<b>Diodes</b>	
X1,X2	334020411	204GDC-A
X3	223205	EL202IT
X4-X7	334020411	204GDC-A
X8,X9	223205	EL202IT
X10	334020411	204GDC-A
	<b>Switches</b>	
SW14,SW15, SW17-SW29	25035652	TACT SWITCH
	<b>Cable</b>	
FC2A	574350070	FLAT CB, 7PINS
	<b>Connector</b>	
	578002300	MULTI-CONN. 2POS

**CIRCUIT NO. PART NO. DESCRIPTION**  
**DECK CPU PC BOARD (938070016)**

	<b>Resistor</b>	
R99,R109	113560230	56 kohm, Metal
U5	181502206	5 kohm, Vabiable Resistor
	<b>Capacitors</b>	
C1	241060024-AD	10 $\mu$ F, 16V, Elect.
C2-C4,C134,C145, C149	241070024-AD	100 $\mu$ F, 16V, Elect.
C14,C130,C131,	242250054-AD	2.2 $\mu$ F, 50V, Elect.

CIRCUIT NO.	PART NO.	DESCRIPTION
	<b>C162</b>	
C18,C19,C23, C143,C151,C159, C161,C163,C164	244770021-AD	470 $\mu$ F, 16V, Elect.
C70,C129,C139, C140	244750054-AD	4.7 $\mu$ F, 50V, Elect.
C82,C85,173,C174	221104104-EF	0.1 $\mu$ F, 100V, Mylar
C119,C124,C181, C182,C185,C238, C239	242260024-AD	22 $\mu$ F, 16V, Elect.
C120,C121,C233	241060054-AD	10 $\mu$ F, 50V, Elect.
C122,C123,C125, C138,C144	241070044-AD	100 $\mu$ F, 35V, Elect.
C141,C180,C183, C184	242270024-AD	220 $\mu$ F, 16V, Elect.
C146	244770002	470 $\mu$ F, 25V, Elect.
C147,C148	243350054-AD	3.3 $\mu$ F, 50V, Elect.
C152,C153	241050054-AD	1 $\mu$ F, 50V, Elect.
C157,C171,C177, C178	221222504-EF	2200pF, 100V, Mylar
C165,C166	241080001-AD	1000 $\mu$ F, 35V, Elect.
C167,C168	221103104-EF	0.01 $\mu$ F, 100V, Mylar
C169	241040054-AD	0.1 $\mu$ F, 50V, Elect.
C234	242240054-AD	0.22 $\mu$ F, 50V, Elect.

<b>ICs</b>		
U1,U2	22240039	BU2042
U3	22240841Y	BR93LC46
U4	300874051	TMP87CH40F-4174
U6	310915410-AN	TC9154AP
U7	310387010-AK	BA3870
U8,U16	311521850-AK	BA15218N
U9	310456050-AK	BA4560N
U11	310414240-BF	STK4142MKII
U15	310123750-AL	$\mu$ PC1237HA

<b>Transistors</b>		
Q1,Q3,Q5,Q9,Q10	321901456-AK	9014C
Q11,Q12	322159550-AK	2SB1595Q
Q13	321901456-AK	9014C
Q19,Q20	322159550-AK	2SB1595Q
Q23	32101740	2SC1740SR-S
Q24	321014410-AK	DTC144ESTP
Q25,Q26	321901456-AK	9014C
Q27,Q28	2211772	2SC2001L
Q29,Q30	2213510	DTC144TS
Q31	321014410-AK	DTC144ESTP
Q32-Q34	321014410-AK	DTC144ESTP

<b>Diodes</b>		
D1	332414830	1N4148
D2	333002230	2.2V 1/2W, Zener
D3	333004730-AK	4.7V 1/2W, Zener
D4,D5	333555130	5.1V 1/2W, Zener
D6	332414830	1N4148
D9,D10	333555130	5.1V 1/2W, Zener
D15-D17	223205	1N4002
D18-D20	332414830	1N4148

<b>Socket</b>		
J1	500040001-AJ	HSP-134V-04, 4POS
J4	500030000-AJ	HSP-202V-05, 3PIN
CON24W	500110100-MX	52328-1110, 11POS
CON25W	500130100	52328-1310, 12POS

CIRCUIT NO.	PART NO.	DESCRIPTION
	Connector	
CON16H	500140303-AV	CONNECTOR, 14PINS
CON18H	578003300	MULTI-CONN. 3POS
CON19H	578104190	MULTI-CONN. 4POS
CON19H	578105190	MULTI-CONN. 5POS
CON20W	500100221-AV	CONNECTOR, 10POS
CON22H	578004200	MULTI-CONN. 4POS
CON23H	578005220	MULTI-CONN. 5POS
CON23H	578003220	MULTI-CONN. 3POS
CON26W	500120200-IR	CONNECTOR, 12POS
CON28H	5781016340-AV	MULTI-CONN. 6POS

	Coils	
L1-L3	521470001-01	47 $\mu$ H
L4,L5	521309001	COIL, AIR COIL
L9	521101010	100 $\mu$ H, AX
	Relay	
RLY1	540180400	VK43830, Relay
	Resonator	
X1	554000080-BE	8.00MTZ, 8MHz, Ceramic

	Connector	
CON17H	576104220-AV	

**CIRCUIT NO. PART NO. DESCRIPTION**  
**SPEAKER PC BOARD (928070101)**

	Capacitor	
C	242750051	2.7 $\mu$ F, 50V, Nonpol. Elect.
	Coil	
L	521807681	0.68mH, Choke

**CIRCUIT NO. PART NO. DESCRIPTION**  
**HEADPHONE PC BOARD (938070006)**

	Connector	
FC1	574015060-AV	FLAT CABLE, 6 PIN, Headphone
	Socket	
J1	500090000-DA	EJS-3-0335N-01, Stereo jack

**CIRCUIT NO. PART NO. DESCRIPTION**  
**SURROUND PC BOARD (938070021)**

	ICs	
U11	310918710-AN	TC9187AN
U24	310456050-AK	BA4560N
U25	22240280	TA2041F
U26,U27	310382460-AK	BA3824LS
	Transistors	
Q5,Q6	2212600	2SK362
	Capacitors	
C3,C42,C216	244770021	470 $\mu$ F, 16V, Elect.
C39,C70,C90,C97,	241050054-AD	1 $\mu$ F, 50V, Elect.
C101		
C58,C63	243350054-AD	3.3 $\mu$ F, 50V, Elect.
C69,C74	241040054-AD	0.1 $\mu$ F, 50V, Elect.
C71,C72	242270024-AD	220 $\mu$ F, 16V, Elect.

CIRCUIT NO.	PART NO.	DESCRIPTION
C73	244760024-AD	47 $\mu$ F, 16V, Elect.
C76,C84	242260024-AD	22 $\mu$ F, 16V, Elect.
C77,C83,C86,C105	244750054-AD	4.7 $\mu$ F, 50V, Elect.
C78,C103	244740054-AD	0.47 $\mu$ F, 50V, Elect.
C81,C96	221154101	0.15 $\mu$ F, 100V, Mylar
C82,C102,C184,	221473104-EF	0.047 $\mu$ F, 100V, Mylar
C189		
C85,C100,C163,	221153104-EF	0.015 $\mu$ F, 100V, Mylar
C182,C188		
C87,C91	242250054-AD	2.2 $\mu$ F, 50V, Elect.
C88,C89	241060024-AD	10 $\mu$ F, 16V, Elect.
C98	241070024-AD	100 $\mu$ F, 16V, Elect.
C165,C166,C170,	221682504-EF	0.0068 $\mu$ F, 100V, Mylar
C171,C173,C181,		
C187		
C167-C169	221152504-EF	1500pF, 100V, Mylar
C174,C178	226681500-PI	680pF, 100V, Film
C175,C179	226221100	220pF, 100V, Poly
C176,C180	221272104	0.0027 $\mu$ F, 100V, Mylar
C177,C186	221182504-EF	1800pF, 100V, Mylar
C183,C185	221332504-EF	3300pF, 100V, Mylar

	Connectors	
CON17W	500042510	CONNECTOR, 4POS
CON18W	504003313-AV	WAFER 3POS
CON20W	500082510	CONNECTOR, 8POS

**CIRCUIT NO. PART NO. DESCRIPTION**  
**SYSTEM CONNECT PC BOARD (938070013)**

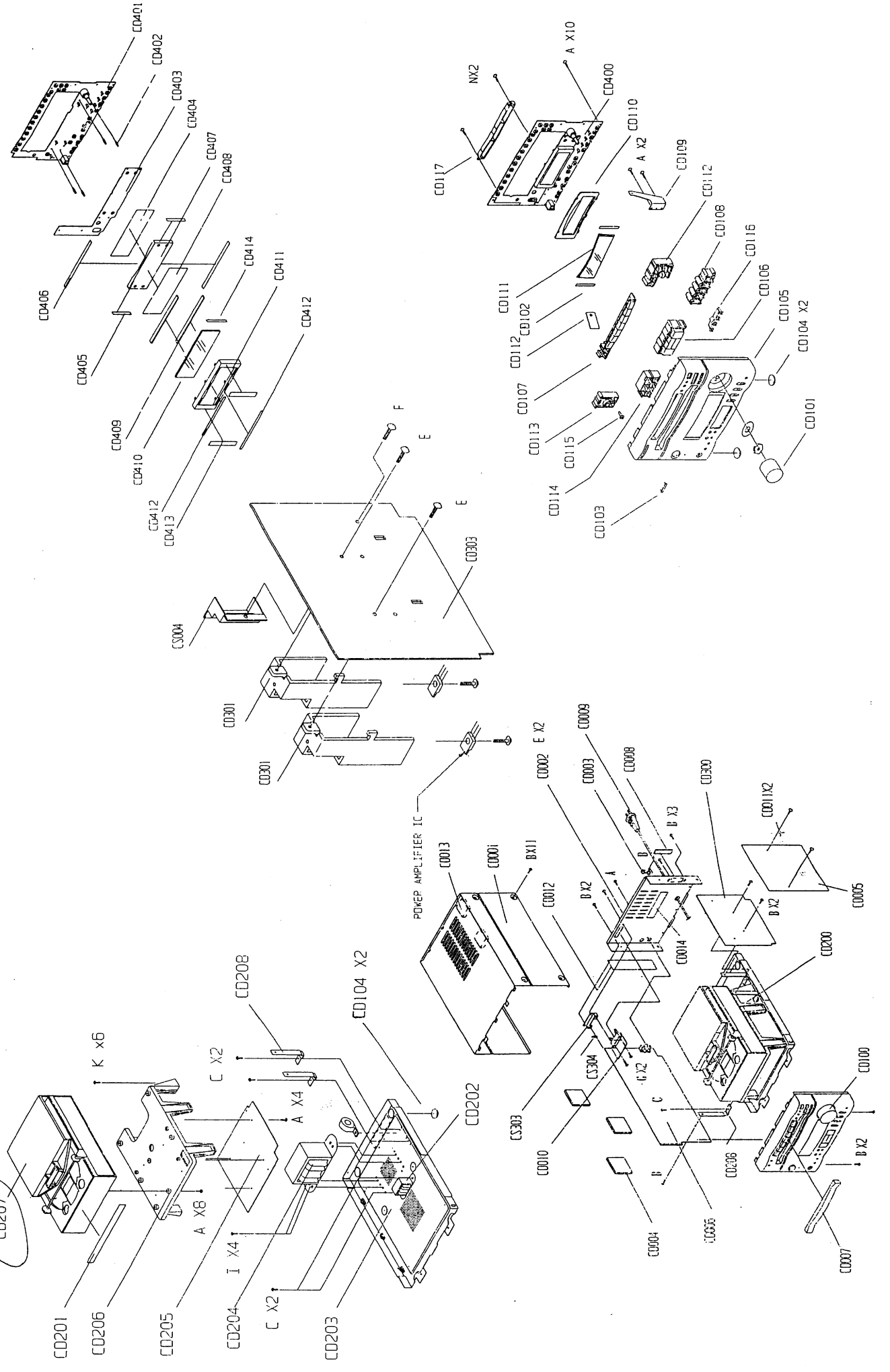
	Connectors	
CON16A	500140303-AV	CONNECTOR, 14PIN
CON16B	500140301-AV	CONNECTOR, 14PIN

## CHASSIS EXPLODED VIEW PARTS LIST-AMPLIFIER/CD CHANGER (CA-207)

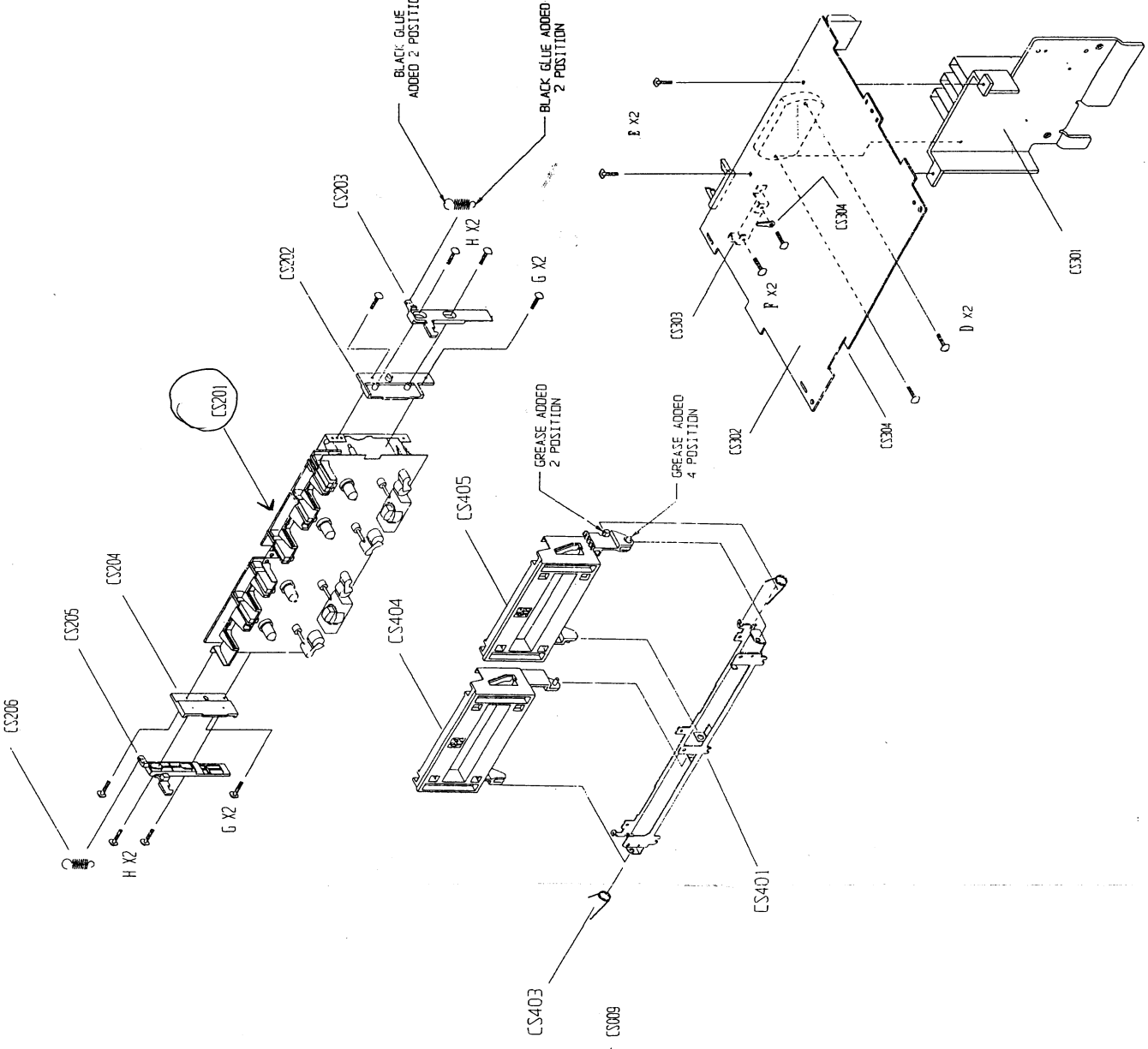
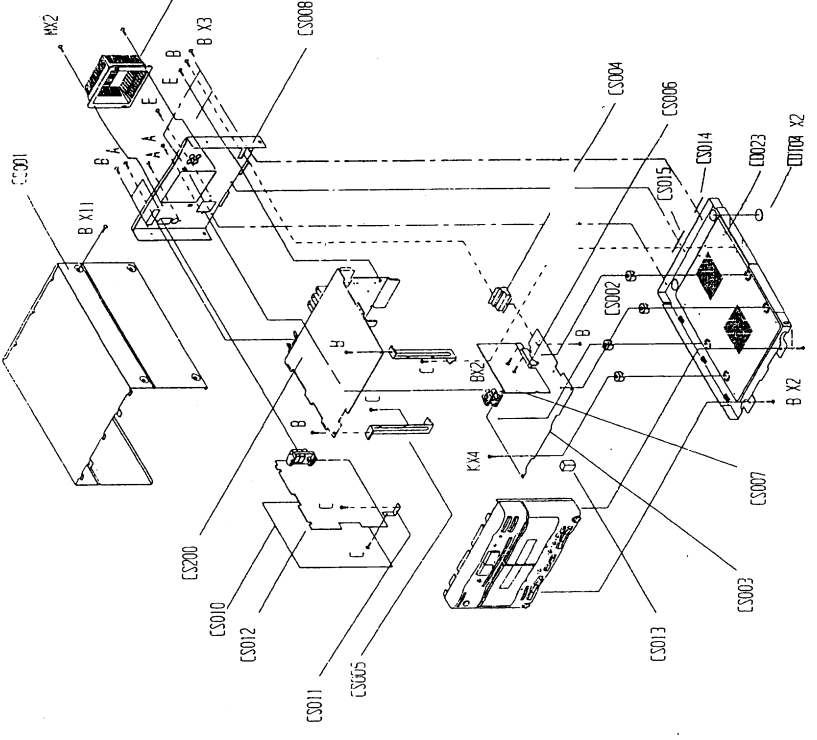
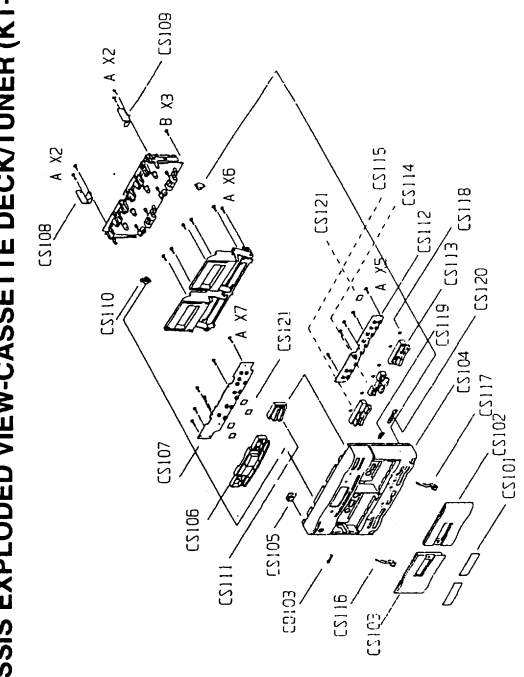
REF NO.	PART NO.	DESCRIPTION
CD001	408070501-00	TOP COVER
CD002	408070503-02	REAR PANEL
CD003	735550031	STRAIN RELIEF
CD004	801400004-00	INSULATION
CD005	800500017-00	SPONGE
CD006	938070002	CD CPU PC BOARD
CD007	738071003-00	CD TRAY
CD008	838043104-00	PLASTIC COVER, 9 PIN CONNECTOR
CD009	579804001-00	AC CORD
CD010	938070013	CONNECTOR PCB ASS'Y
CD011	441403009-00	PLASTIC RIVET
CD012	604804006-00	OVERLAY
CD101	738082007-00	VOLUME KNOB
CD102	995303	BOUBLE SIDE TYPE
CD103	738079901-00	LOGO BADGE
CD104	800400009-00	LEG
CD105	738070102-00	CD FRONT PANEL
CD106	738082003-00	CURSOR KNOB
CD107	738072009-00	DISC NO. BUTTON
CD108	738082004-00	FUNCTION BUTTON
CD109,CD112	408020507-00	MOUNT BRACKET
CD110	738084001-00	LENS BEVEL BRACKET
CD111	738083001-00	MAIN DISPLAY LENS
CD113	738082001-00	STAND BY BUTTON
CD114	738082002-00	SOUND EFFECT BUTTON
CD115	738083302-00	KNOB INDICATOR B
CD116	738083301-00	KNOB INDICATOR A
CD117	738074101-00	SUPPORT HOLDER
CD201	807100003-00	FELT
CD202	523804015	TT-035940090, POWER TRANSFORMER
CD203	408070502-01	CHASSIS
CD204	523804014	TT-076940080, POWER TRANSFORMER
CD205	938070000	CD CONTROL PC BOARD
CD206	738074001-01	CD MOUNTING BRACKET
CD207	540880701	CD MECHA AS
CD208	408020108-00	POWER PC BOARD BRACKET
CD301	408020201-00	HEATSINK
CD303	938040002	POWER PC BOARD
CD401	938070004	FRONT PANEL PC BOARD
CD402	801300008-00	PCB SPACER
CD403	938070012	CD LCD PC BOARD
CD404	804000008-00	REFLECTER
CD405	804000007-00	REFLECTER
CD406	804000006-00	REFLECTER
CD407	738073001-00	BACK LIGHT LENS
CD408	803700001-00	DIFFUSER WHITE
CD409	807200001-00	ZEBRA
CD411	408070101-00	DISPLAY LENS BRACKET
CD412	807100001-00	FELT
CD413	807100002-00	FELT
CD414	807180701-00	FELT



# CHASSIS EXPLODED VIEW-AMPLIFIER/CD CHANGER (CA-207)



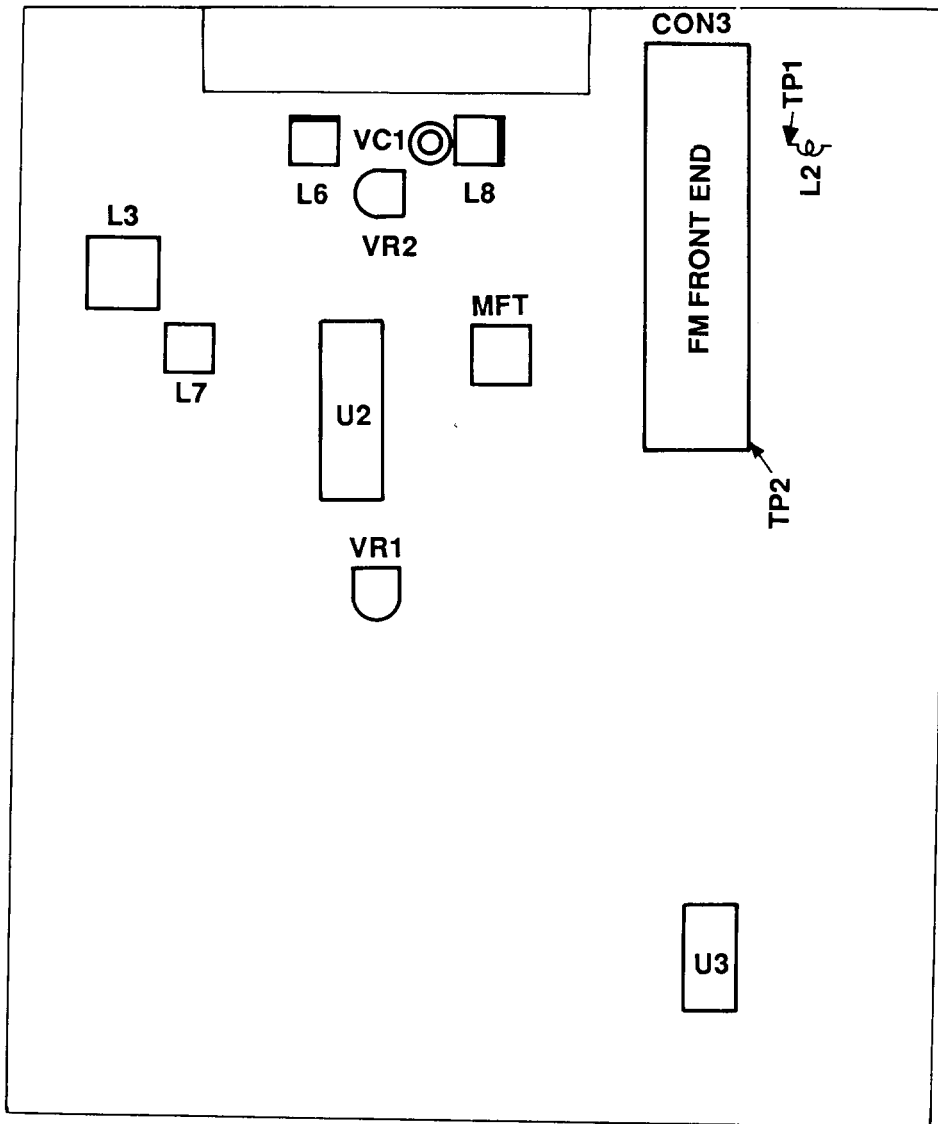
CHASSIS EXPLODED VIEW-CASSETTE DECK/TUNER (KT-207)



## CHASSIS EXPLODED PARTS LIST-CASSETTE DECK/TUNER (KT-207)

REF.NO.	PART NO.	DESCRIPTION
CS001	408040105-00	BRACKET, DTS
CS002	733083438-00	SPACER PCB
CS003	938070017	PREAMP PCB ASS'Y
CS004	408020112-00	BKT,9 PINS CONN.
CS005	408070107-00	BKT,DECK CPU BRACKET
CS006	408040108-00	BKT,SURROUND
CS007	938040021	PCB ASS'Y, SURROUND
CS008	408070507-00	REAR PANEL, CASS
CS009	738023103-00	HEATSINK COVER
CS010	801400005-01	INSULATION SHEET
CS012	938040009	DTS PCB ASS'Y, U TYPE
CS013	800600007-00	CUSHION, DTS
CS014	801480701-00	INSULATION SHEET
CS015	801480702-00	INSULATION SHEET
CS023	408070502-01	CHASSIS BOTTOM
CS101	738073003-00	LENS,CASS DOOR
CS102	738073102-00	CASSETTE DOOR COVER, RIGHT
CS103	738073101-00	CASSETTE DOOR COVER, LEFT
CS104	738070103-01	CASSETTE FRONT PANEL
CS105	738073002-00	LENS,REMOTE SENSOR
CS106	738072006-00	KNOB,PRESET, UP/DOWN
CS107	938070014	TUNER PANEL PCB ASS'Y
CS108	408070102-00	BKT,RETAINER LEFT
CS109	408070104-00	BKT,RETAINER RIGHT
CS110	738074201-00	DAMPING GEAR
CS111	738072007-00	KNOB,TUNING, UP/DOWN
CS112	938070015	CASS PANEL PCB ASS'Y
CS113	738072005-00	KNOB,CASS, RIGHT
CS114	738072003-00	KNOB,RECORD
CS115	738072004-00	KNOB,CASS, LEFT
CS116	738072001-00	KNOB,EJECT, LEFT
CS117	738072002-00	KNOB,EJECT, RIGHT
CS118	738073303-00	KNOB,INDICATOR E
CS119	738073301-00	KNOB,INDICATOR C
CS120	738073302-00	KNOB,INDICATOR D
CS121	801480703-00	INSULATION SHEET
CS201	540780400-TK	DECK MECHA, CWS425RP
CS202	738074102-00	HOLDER,EJECT LEVEL GUIDE LEFT
CS203	738074003-01	BKT,EJECT SLIDER R
CS204	738074103-00	HOLDER,EJECT LEVEL GUIDE RIGHT
CS205	738074002-01	BKT,EJECT SLIDER L
CS206	452802101-32	SPRING,COMP.NI
CS301	408020201-00	HEATSINK, MAIN AMP
CS302	938070016	DECK CPU PCB ASS'Y
CS303	408040109-01	BKT,SYS.CONNECT
CS304	938070020	PCB ASS'Y, EP ROM
CS305	806200001-00	CHIP TERMINAL
CS401	408070103-00	BKT,BRACKET-F
CS403	456807002-21	SPRING,CASS DOOR
CS404	738071004-01	CASS DOOR LEFT
CS405	738071002-01	CASS DOOR RIGHT

# ALIGNMENT PROCEDURE-TUNER



DTS PC BOARD TEST POINTS

# ALIGNMENT PROCEDURE-TUNER

## Instruments Required

### Signal Source:

1. AM Signal Generator
2. FM Signal Generator
3. Sweep Generator (10.7 MHz for FM)

### Output Indicator:

4. VTVM
5. Oscilloscope

## General Preparation

1. Check source voltage.
2. Set function switch to band being aligned.
3. Volumes control should be turned to minimum (unless noted otherwise).
4. Connect low side of signal source and output indicator to chassis ground unless otherwise specified. Ground connection should be kept close to high side connection.
5. Signal input should be kept as low as possible to avoid AGC and AFC action. (Set output indicator to high sensitivity.)
6. Standard modulation is 400 Hz at 30% amplitude for AM, 1 kHz at 75 kHz deviation for FM.

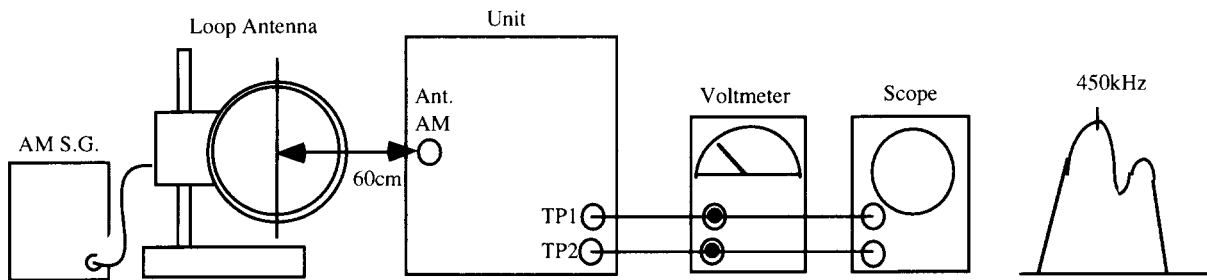


Figure 1

Figure 2

## AM IF Alignment

No.	Signal Source Connect to	Set Signal to	Alignment Indicator Connect to	Set Radio to	Adjust	Adjust for	Remark
AM RF Gen.		Oscilloscope or VTVM					
1	A standard radiation loop (See fig. 3)	450 kHz		Quiet Point	MFT	Maximum output (See Fig. 2)	Volume control min-position
2	Repeat for max. out.						

# ALIGNMENT PROCEDURE-TUNER

## AM RF Alignment

No.	Signal Source Connect to	Set Signal to	Alignment Indicator Connect to	Set Radio to	Adjust	Adjust for	Remark
AM Signal Gen.							
1	A standard radiation loop ant. (See Fig. 1)	530 kHz (modulated)	DC meter across TP1, TP2 VTVM across speaker load	530 kHz (Low end)	L6 (osc. coil)	VT= 1V±0.005V	Volume control max-position
2		600 kHz (modulated)		600 kHz	L8 (ant. coil)	Maximum	
3		1400 kHz (modulated)		1400kHz	VC1	Maximum	
4	Repeat steps 2 and 3 as necessary to minimize tracking error and also step 1 if necessary.						

## FM IF Alignment

No.	Alignment	Frequency Signal Generator	Tuning Setting	Adjust	Adjust For
1	calibration of IF (See Fig. 3)	10.7 MHz	Front End	L7	Maximum Output (See Fig. 4)

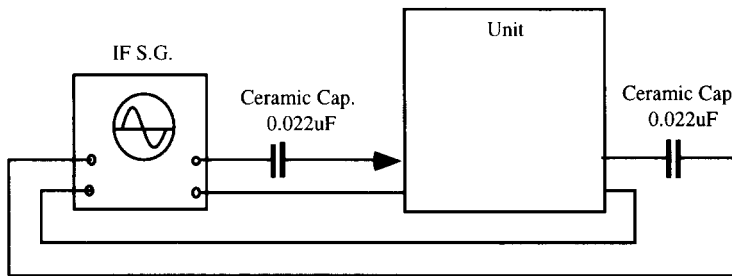


Figure 3

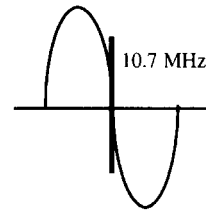


Figure 4

## ALIGNMENT PROCEDURE-TUNER

### FM IF Offset Adjustment

Signal Source	Signal Generator Frequency	Output	Frequency Setting	Adjustment	Remarks
FM signal generator connected to FM Ant.	98MHz 60 dB	DC Voltmeter connected across R40	98MHz	L7	0V ± 15mV

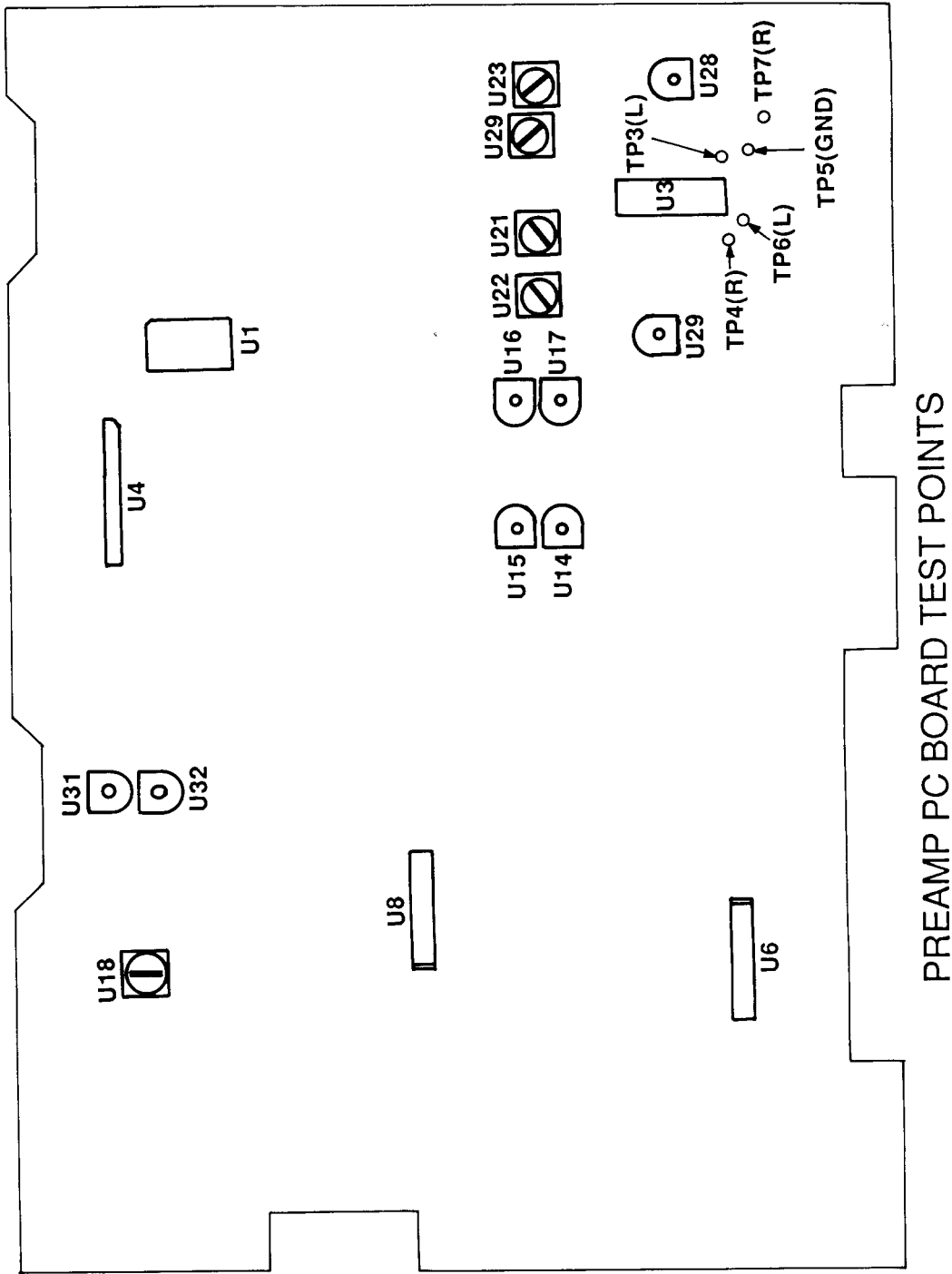
### FM Auto Tuning Adjustment

Signal Source	Signal Generator Frequency	Output	Frequency Setting	Adjustment	Remarks
FM signal generator connected to FM Ant.	98MHz Mod. 22.5kHz 30 dB	Display (LCD1)	98MHz	VR2	Adjust until "TUNED" appear in the display.

### AM Auto Tuning Adjustment

Signal Source	Signal Generator Frequency	Output	Frequency Setting	Adjustment	Remarks
AM signal generator connected to AM Ant.	1000kHz 30% 76 dB	Display (LCD1)	1000kHz	VR1	Adjust until "TUNED" appear in the display.

# ALIGNMENT PROCEDURE-CASSETTE





## ALIGNMENT PROCEDURE-CASSETTE

### CASSETTE DECK HEAD AZIMUTH ADJUSTMENT

1. Insert test tape TCC-153 into deck B, in forward play mode.
2. VTVM connect to TP7(R) & TP6(L) & TP5(GND).
3. Adjust to left side screw for the maximum output.
4. In reverse play mode.
5. Adjust the left side screw for the maximum output.
6. Insert test tape TCC-153 into deck 2, in play mode.
7. Adjust the right side screw for the maximum output.

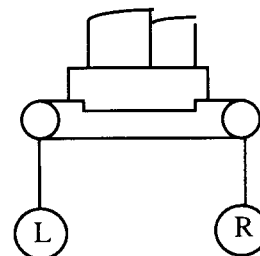


Figure 8

### CASSETTE TAPE SPEED ADJUSTMENT

1. Insert test tape MTT-111N into deck B.
2. Digital counter connect to TP3(L) & TP4(R) & TP5(GND).
3. Adjust U5, and let counter reading as 2970 Hz - 3030 Hz.

### OSCILLATOR FREQUENCY ADJUSTMENT

1. Digital counter connect across C145.
2. AC-224 test tape into deck B in record and play mode.
3. Adjust U18, let counter reading as 105kHz - 105.3kHz.

### TAPE ADJUSTMENT

1. Insert test tape MTT-5521 into deck B, MTT-118 into deck A.
2. Deck B in record mode, deck A in play mode, normal dubbing.
3. Scope (mono) connect to TP6 & TP5.
4. Adjust U22 (L-CH) for the minimum output.
5. Scope (mono) connect to TP7 & TP5.
6. Adjust U23 (R-CH) for the minimum output.

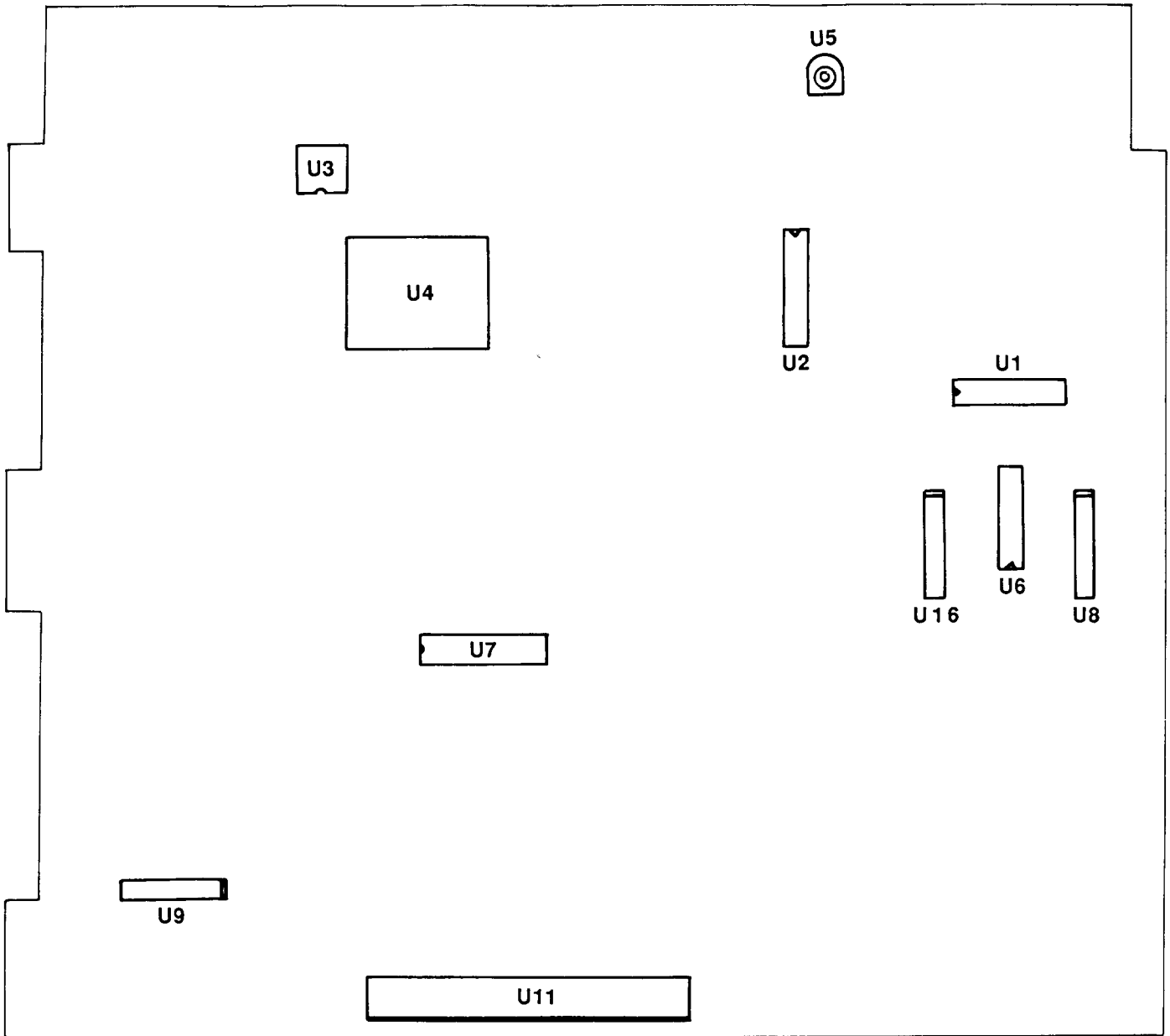
### DOLBY OUTPUT LEVEL ADJUSTMENT

1. Insert test tape MTT-150 into deck B, in play mode.
2. VTVM connect to TP7(R) & TP6(L) & TP5(GND).
3. Adjust U15(L) & U16(R), let R/L output level  $548\text{mV} \pm 1\text{dB}$ .
4. Insert test tape MTT-150 into deck A in play mode.
5. Adjust U14(L) & U17(R), let R/L output level  $548\text{mV} \pm 1\text{dB}$ .

### BIAS CURRENT ADJUSTMENT

1. VTVM connect across R40.
2. AC-224 test tape into deck B, in record and play mode.
3. Adjust U31 (R-CH), let output indicated as  $8\text{mV} \pm 0.2\text{mV}$ .
4. VTVM connect across R36.
5. Adjust U32 (L-CH), let output indicated as  $8\text{mV} \pm 0.2\text{mV}$ .

# ALIGNMENT PROCEDURE-CASSETTE



DECK CPU PC BOARD TEST POINTS

## ALIGNMENT PROCEDURE-CD

### MPX FILTER ADJUSTMENT

1.  $f=19\text{kHz}$ ; 200mV signal input from AUX in.
2. Test tape AC-224 into deck 1, i record mode.
3. Scope (mono) connect to TP7 & TP6 & TP5(GND).
4. Adjust U21 (L) & U20 (R), let the output to minimum.

### R/P LEVEL ADJUSTMENT

1. Insert test tape MTT-5521 into deck 1, in record mode.
2.  $f=1\text{kHz}$ ; 12.5kHz level =200mV input from AUX in.
3. Scope (mono) connect TP7 & TP6 & TP5(GND).
4. Deck in play mode, adjust U28(L) & U29 (R), let the output level (1 kHz)=200mV.
5. Deck in play mode, adjust U31(L) & U32 (R), let the output level (12.5kHz)=200mV.

### CAUTION

Laser beam may always active when the turntable removed.

Use of controls for adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

The compact disc should not be adjusted or repaired by anyone except preperaly qualifed service personal.

### 1. RF ADJUSTMENT

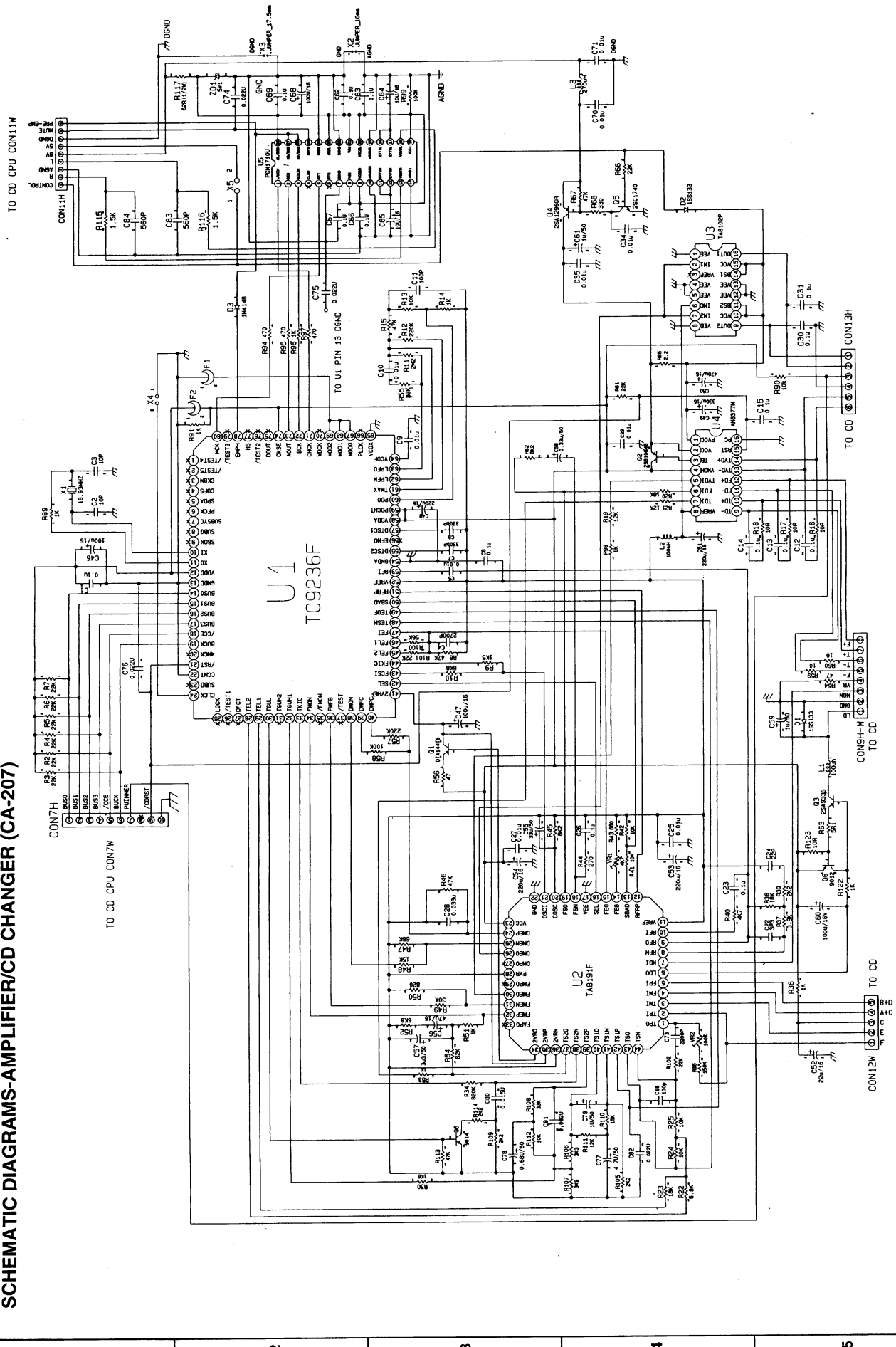
- a. CD in play mode, digital voltmeter connected to IC01 pin 19 & GND.
- b. Adjust VR1, let the meter reading as  $0 \pm 20\text{mV}$ .

### 2. TRACK OFF SET ADJUSTMENT

- a. Track off set test pin connected to CN08.
- b. Adjust VR2, let the waveform shown as  $A1=A2$ .

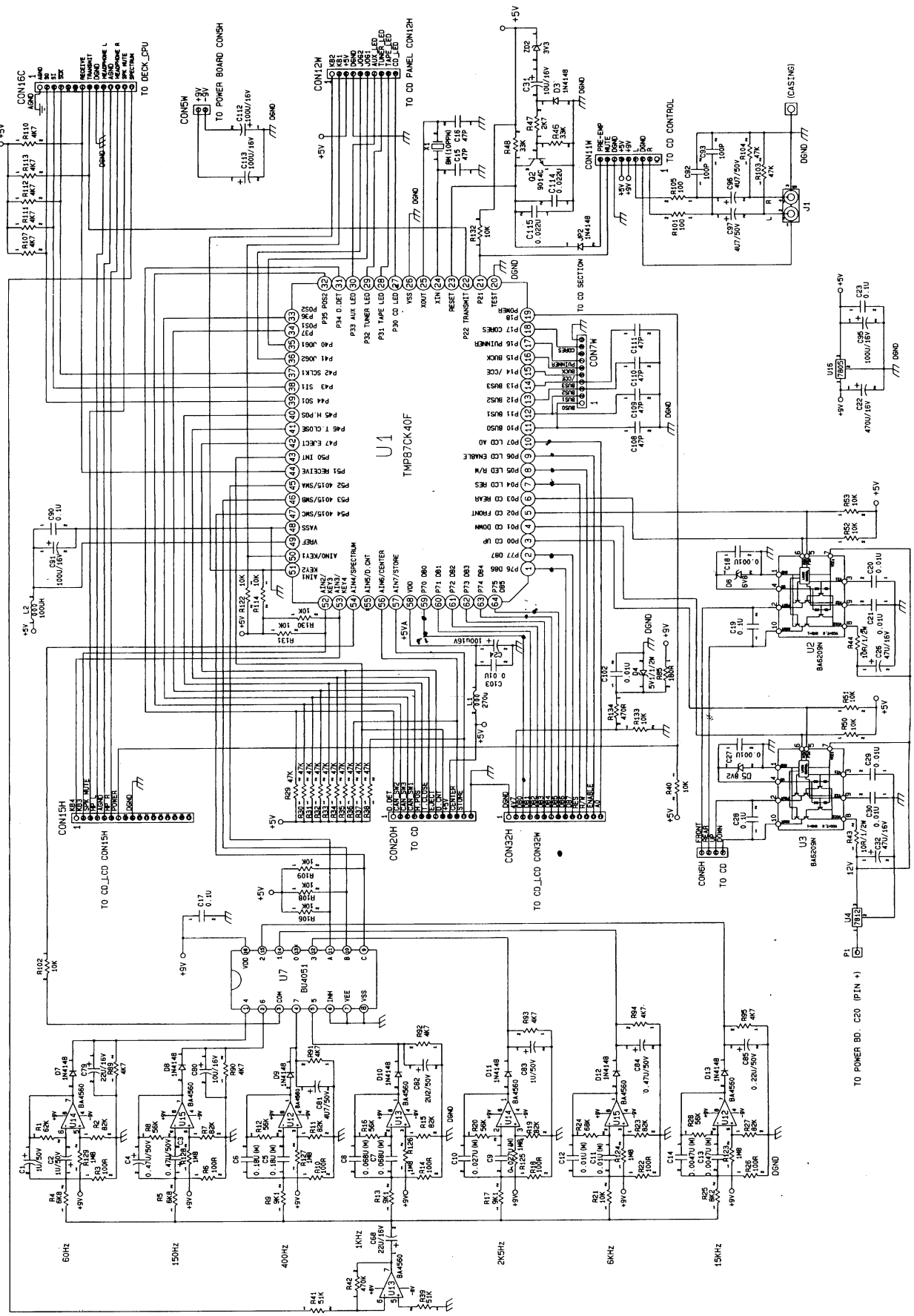
A B C D E F G

SCHEMATIC DIAGRAMS-AMPLIFIER/CD CHANGER (CA-207)



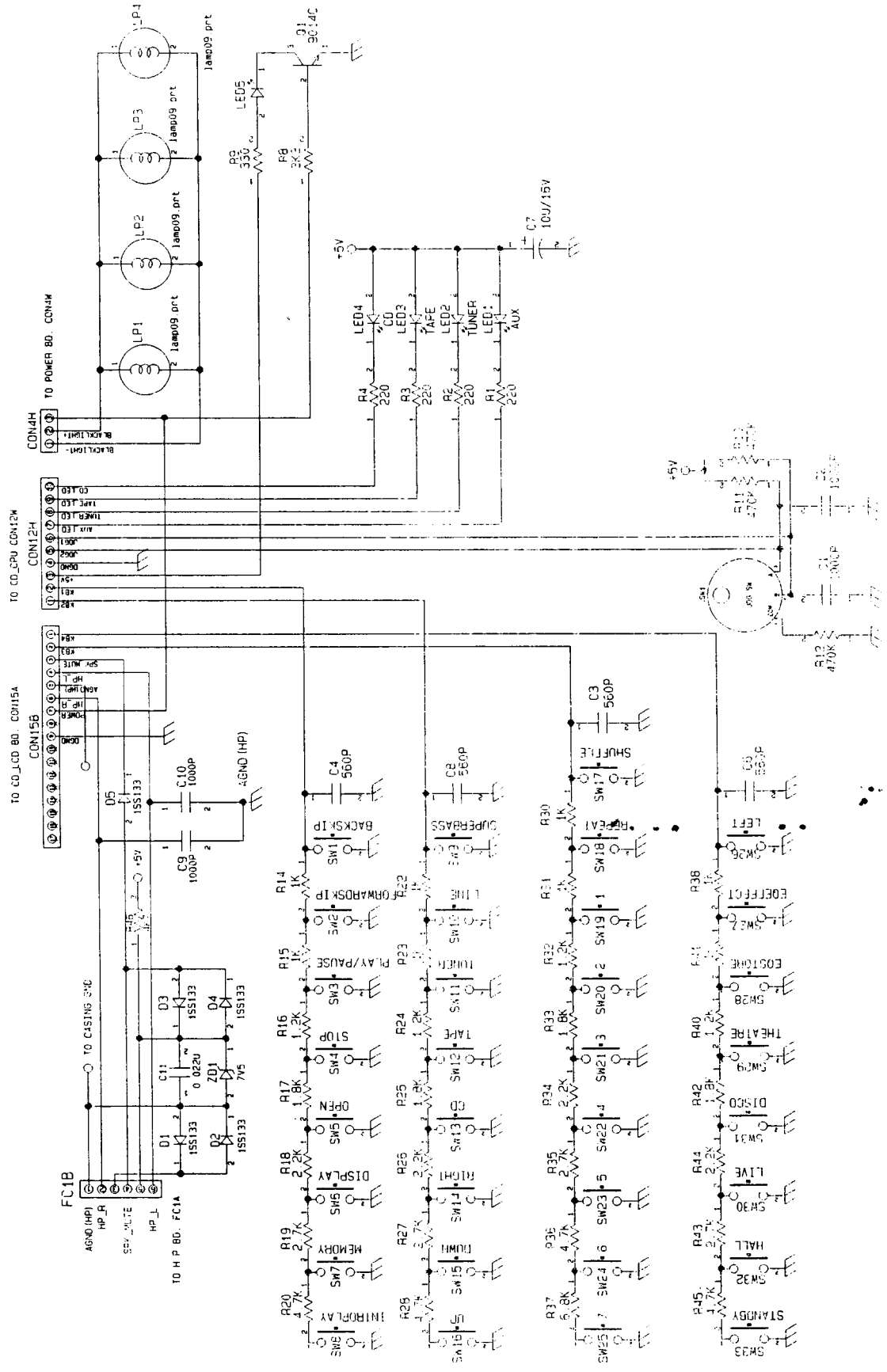
A B C D E F G

SCHEMATIC DIAGRAMS-AMPLIFIER/CD CHANGER (CA-207)

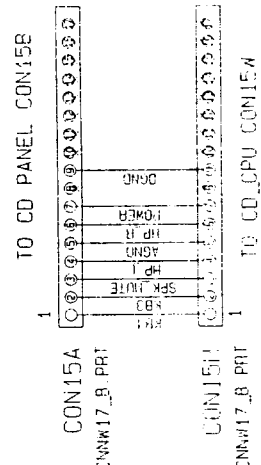
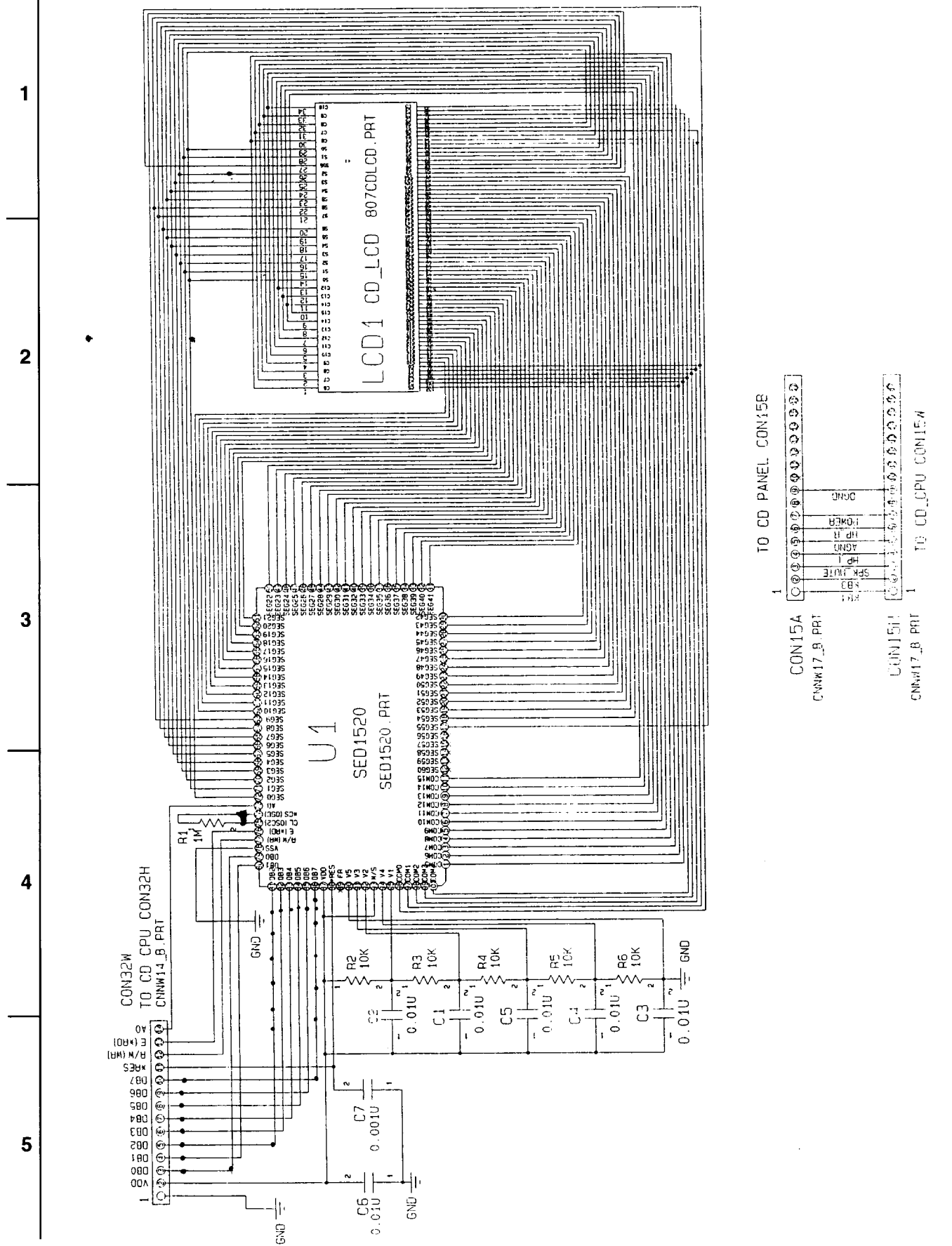


# SCHEMATIC DIAGRAMS-AMPLIFIER/CD CHANGER (CA-207)

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# SCHEMATIC DIAGRAMS-AMPLIFIER/CD CHANGER (CA-207)



# SCHEMATIC DIAGRAMS-AMPLIFIER/CD CHANGER (CA-207)

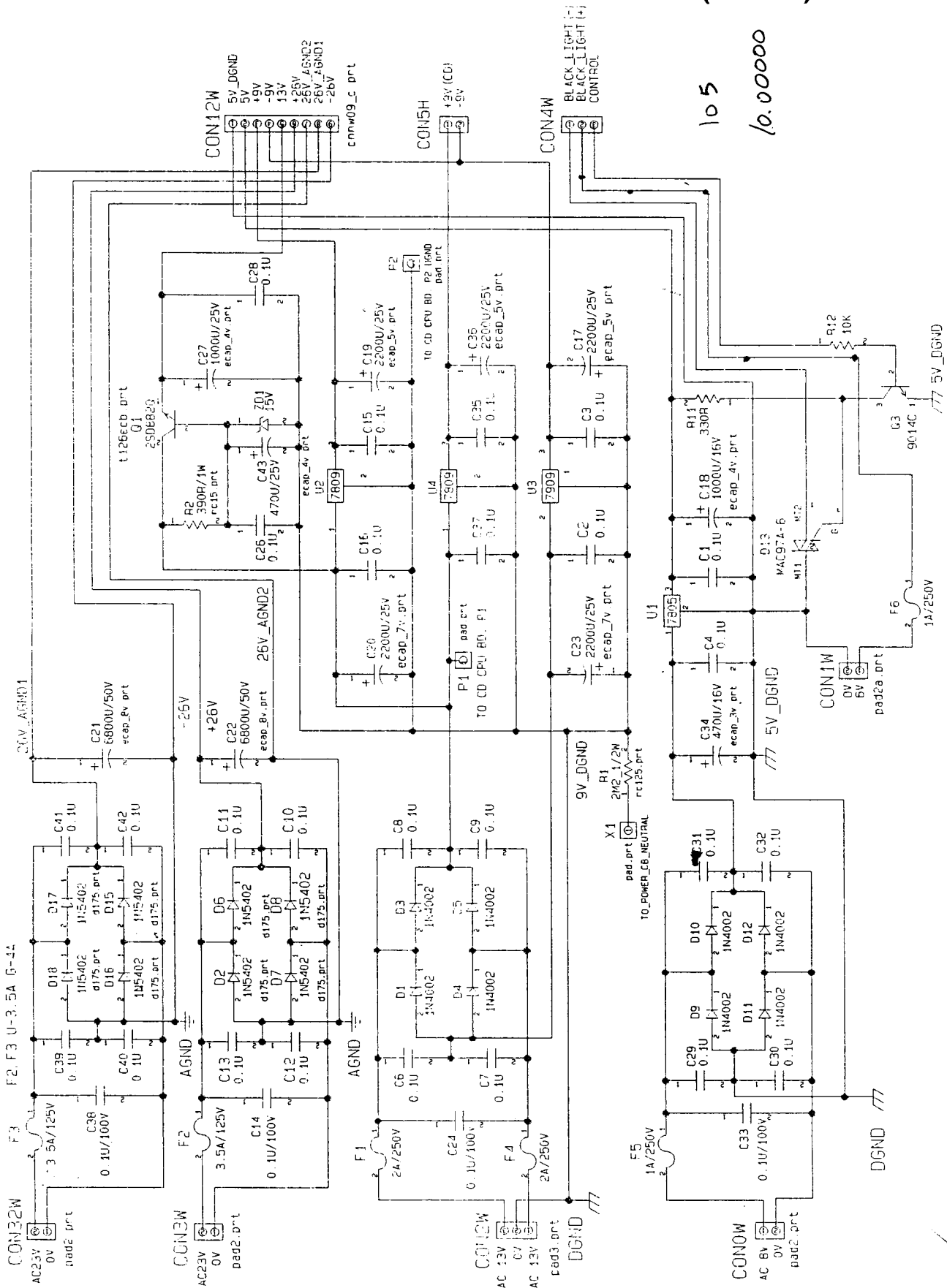
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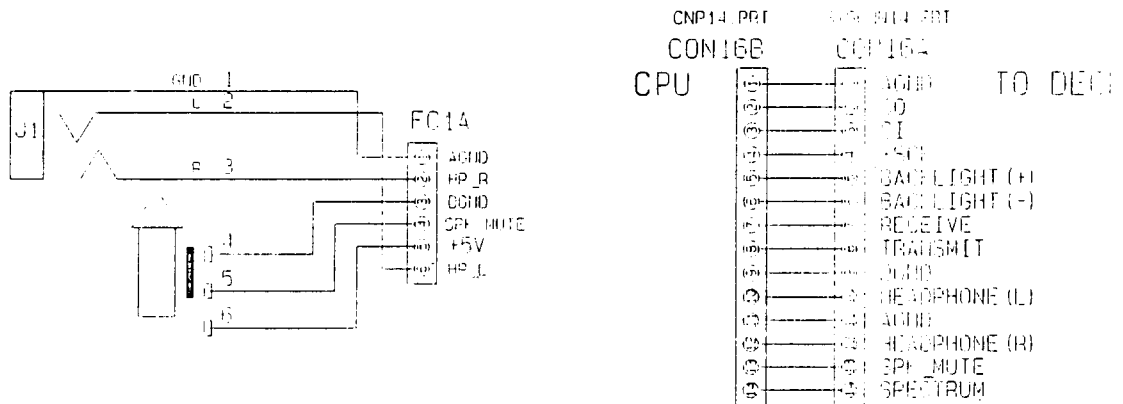
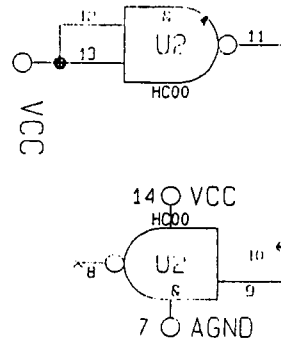
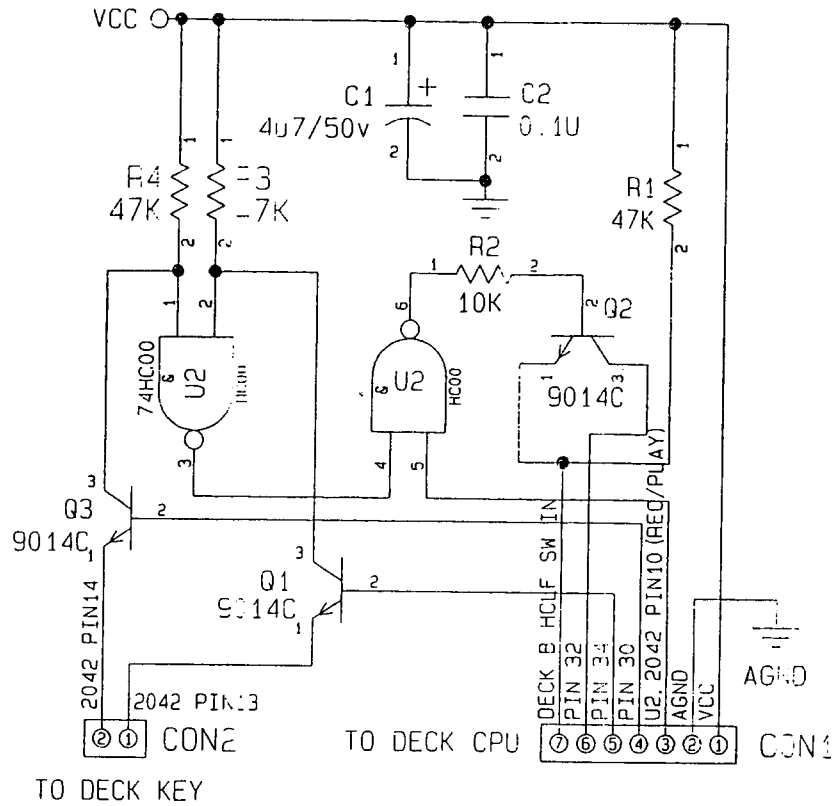
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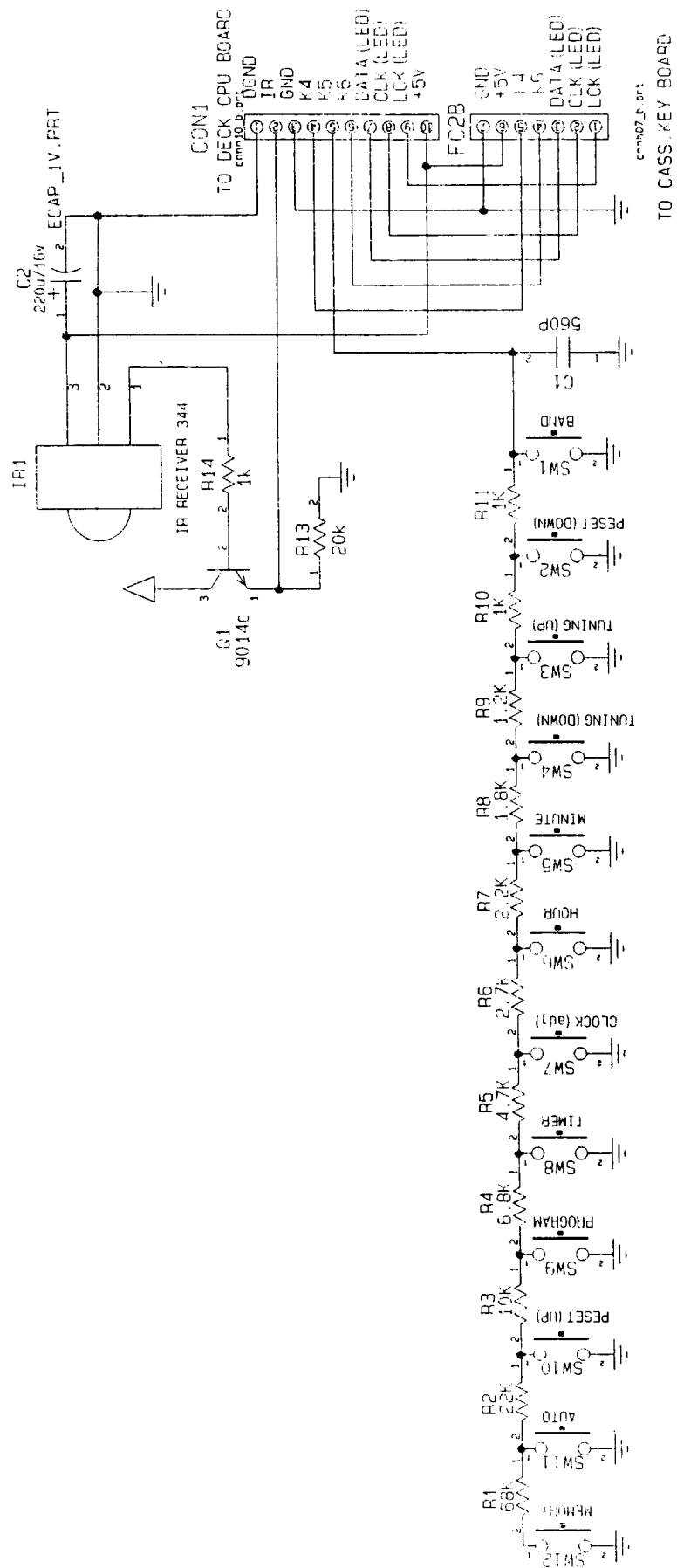
**SCHEMATIC DIAGRAMS-CASSETTE DECK/TUNER (KT-207)**



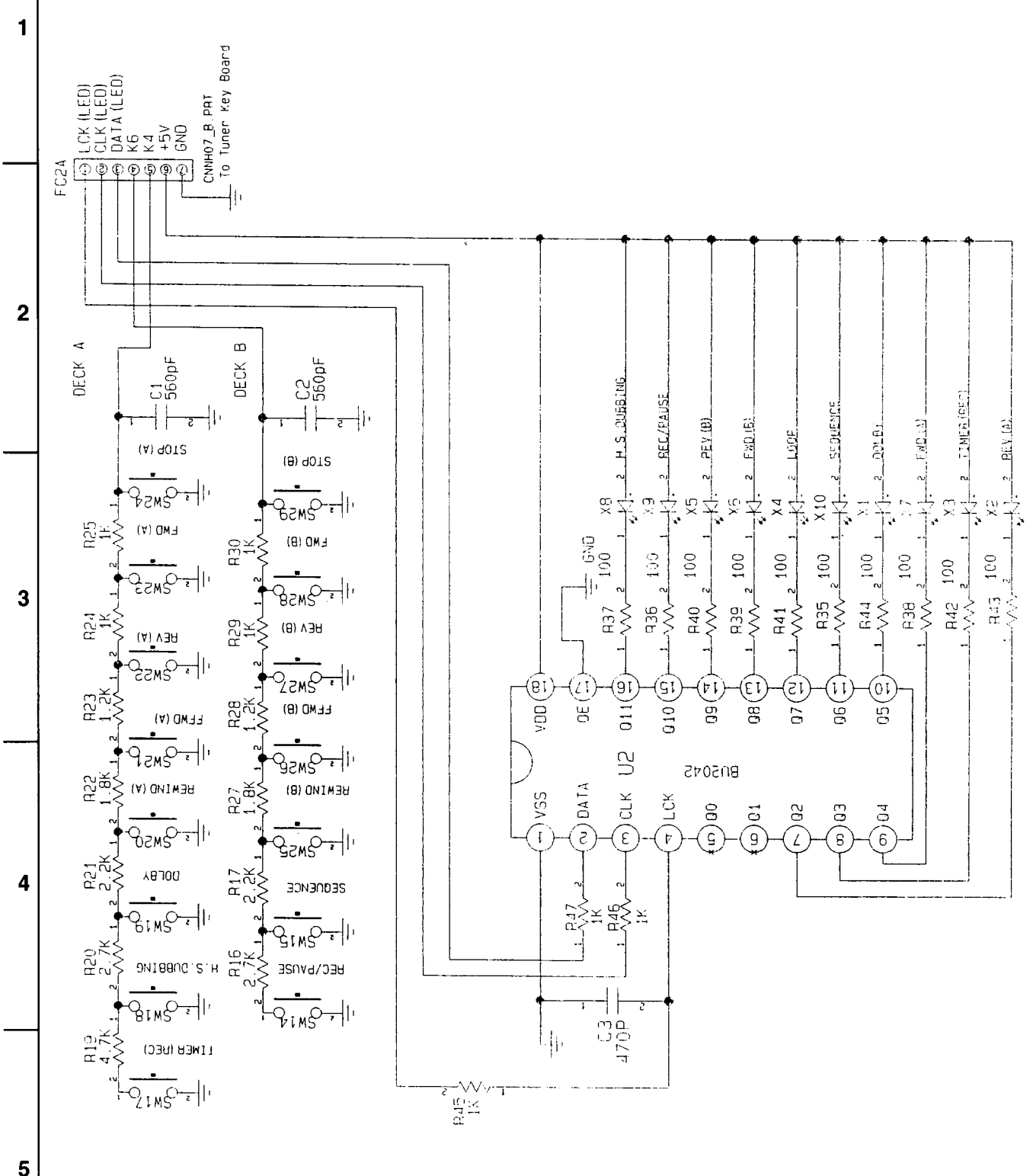
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A B C



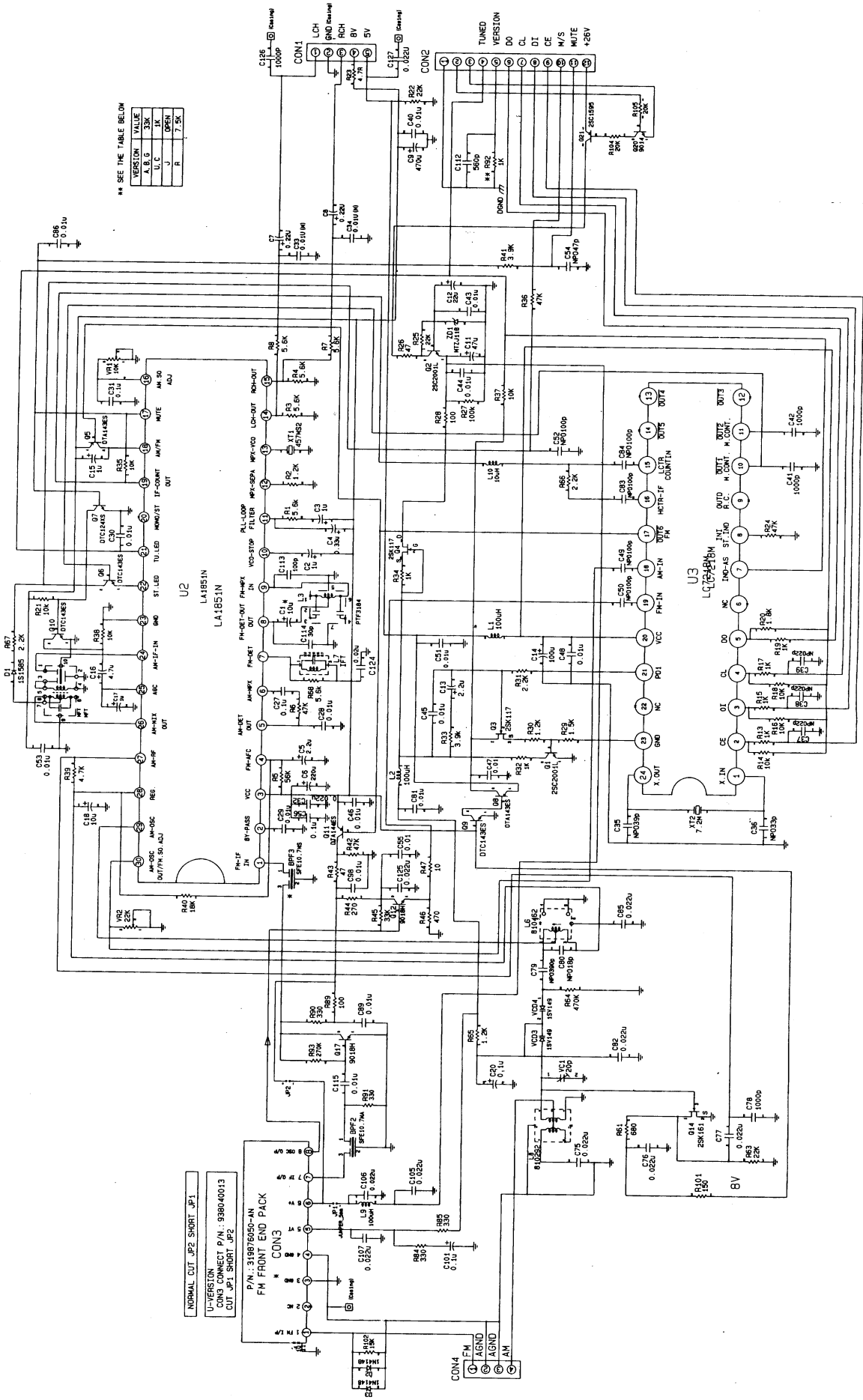
**SCHEMATIC DIAGRAMS-CASSETTE DECK/TUNER (KT-207)**



# SCHEMATIC DIAGRAMS-CASSETTE DECK/TUNER (KT-207)

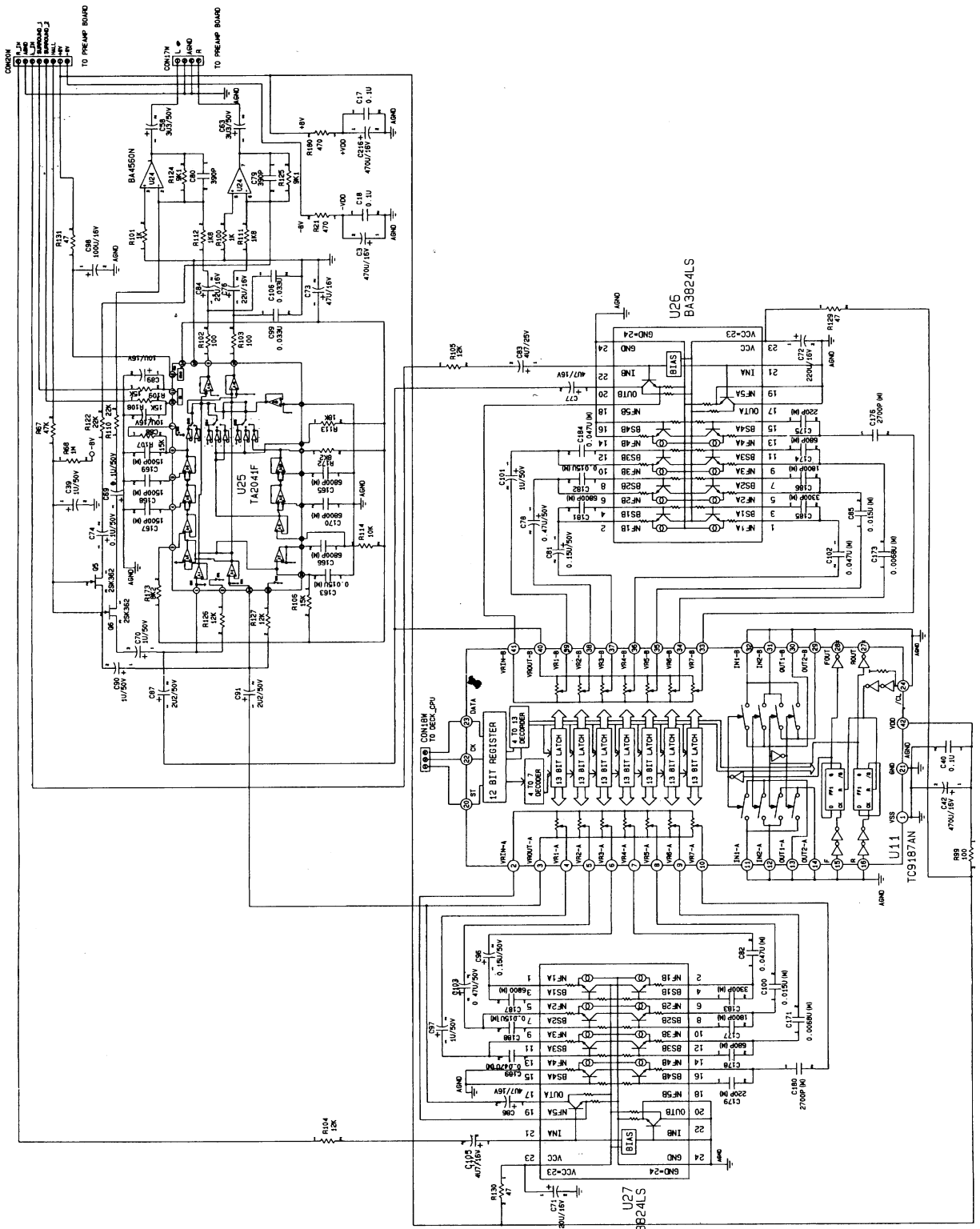
\* SEE THE TABLE BELOW

VERSION	FM FRONTEND PACK	C1	BPF3	RB4, RB5, C101, C105, C106, C107, L9	ZD1
6	USED	USED	SFE 10.7MS	USED	MTZJ13B
OTHERS	FM FRONTEND BD.	USE 10u	SFE 10.7MA	NOT USED	MTZJ11B



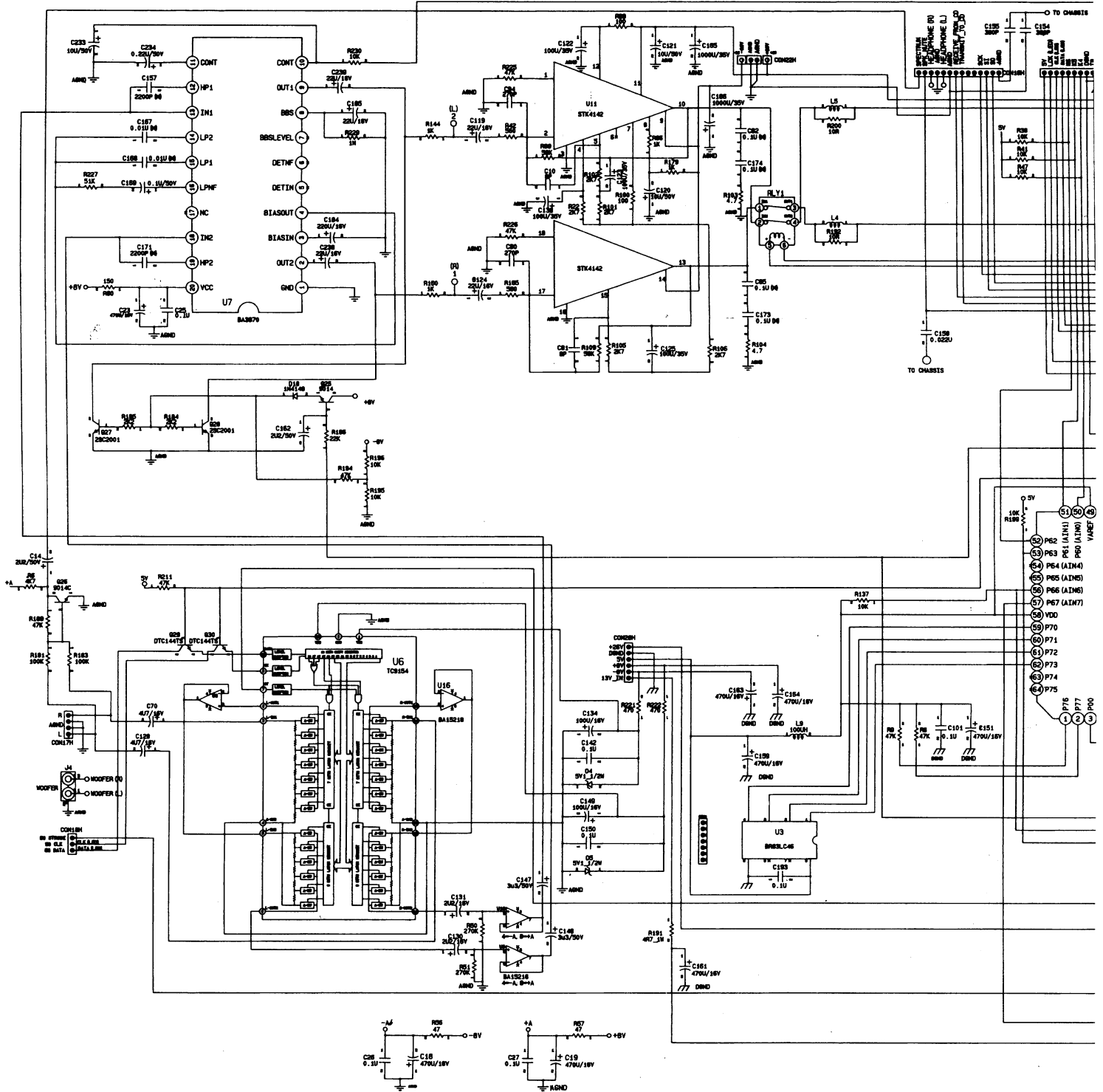
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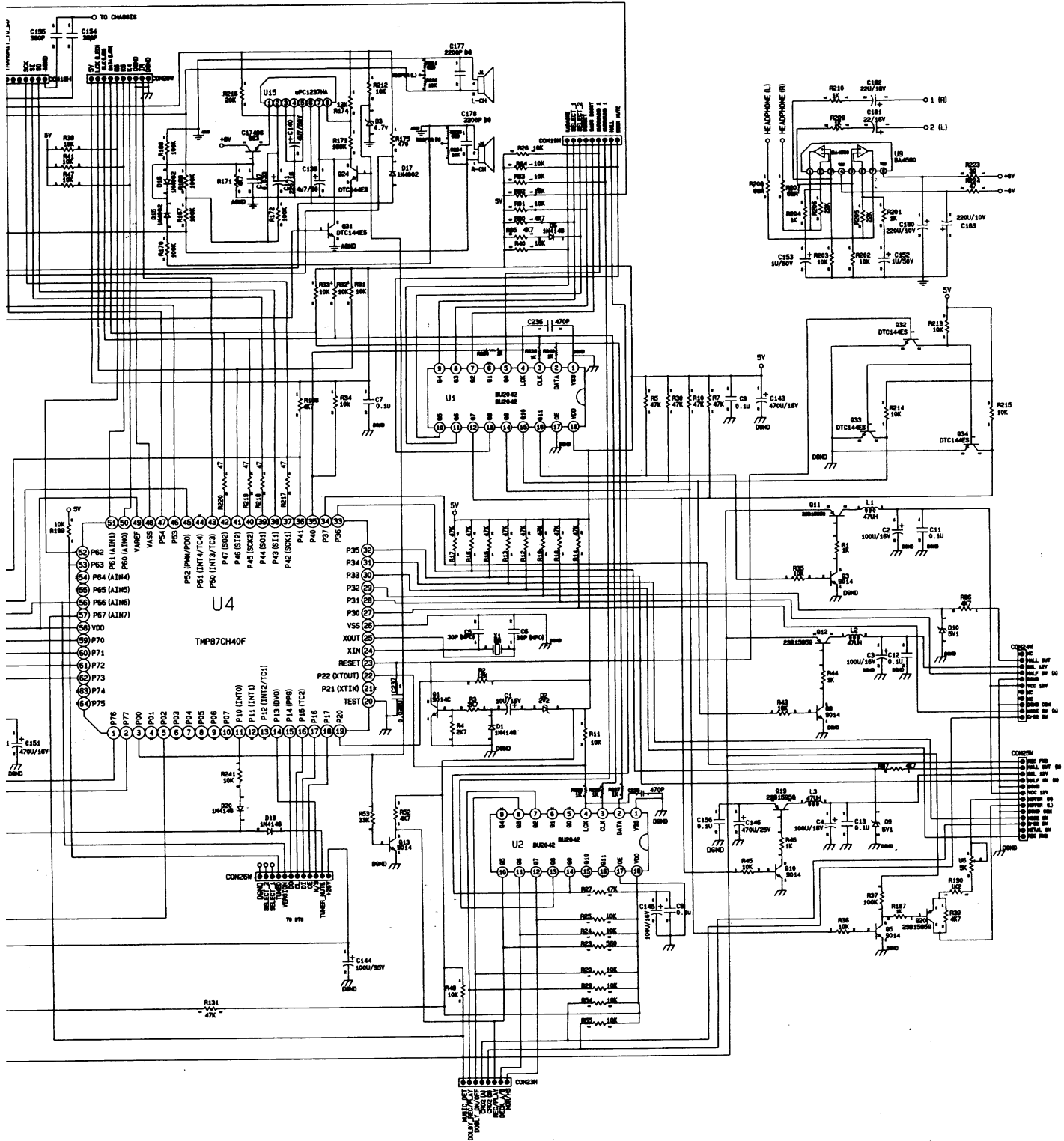
SCHEMATIC DIAGRAMS-CASSETTE DECK/TUNER (KT-207)



# SCHEMATIC DIAGRAM-CASSETTE DECK/TUNER (KT-207)

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8





**A B C D E F**

**SCHMATIC DIAGRAM-CASSETTE DECK/TUNER (KA-207)**

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2

3

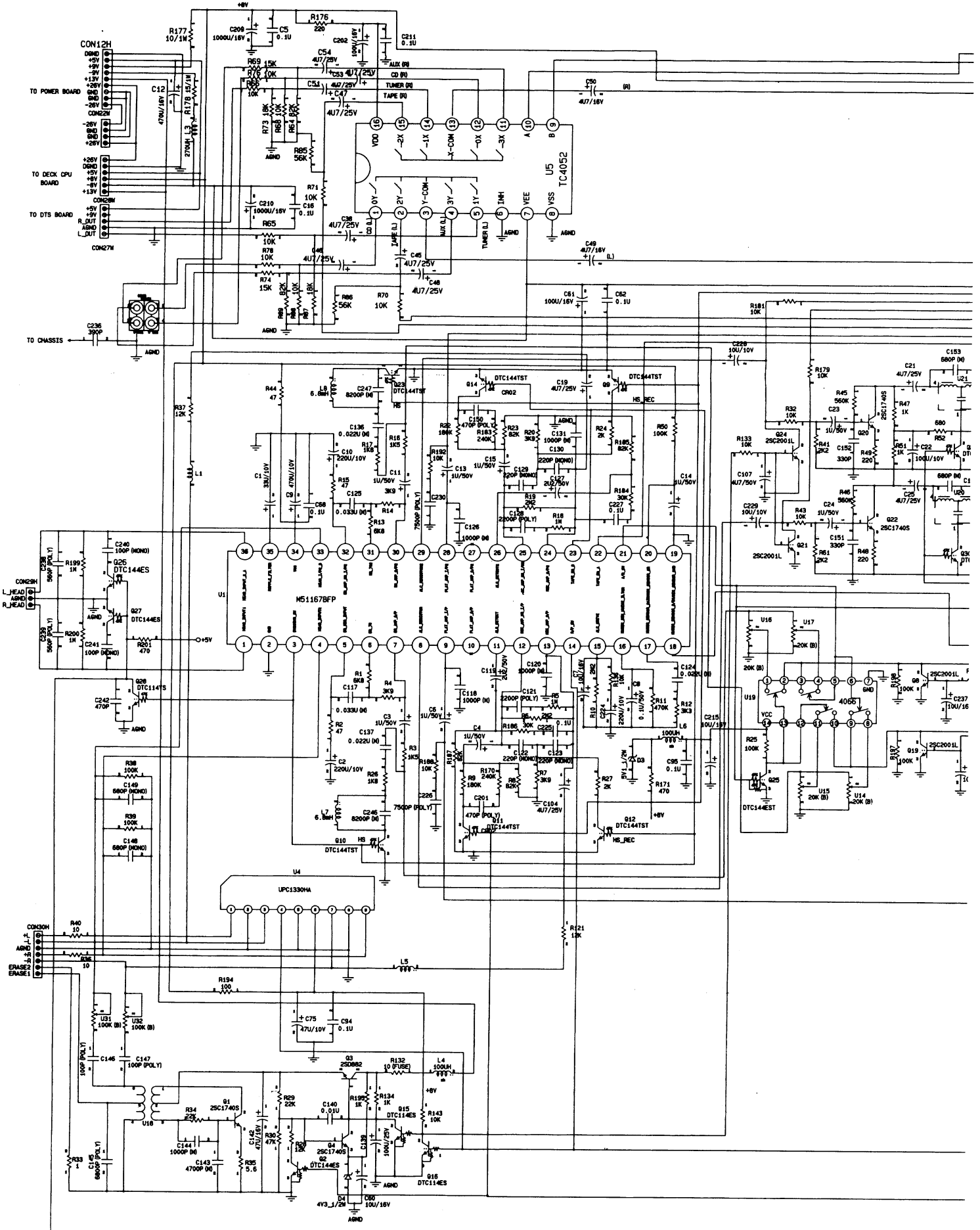
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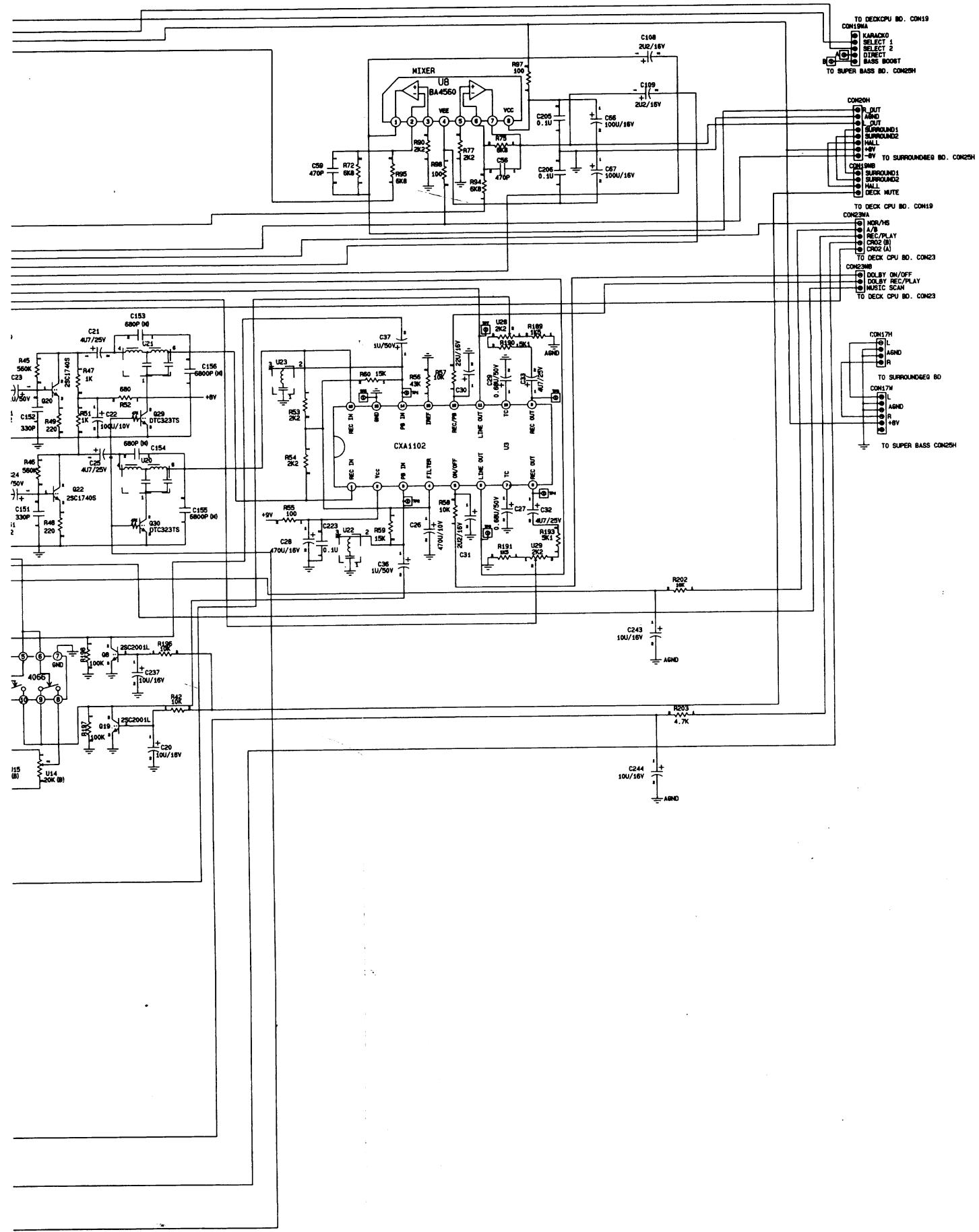
6

7

8







TO DECK CPU BD. CON19  
 CON19A  
 KARAOKE  
 SELECT 1  
 SELECT 2  
 DIRECT  
 BASS BOOST  
 TO SUPER BASS BD. CON25H

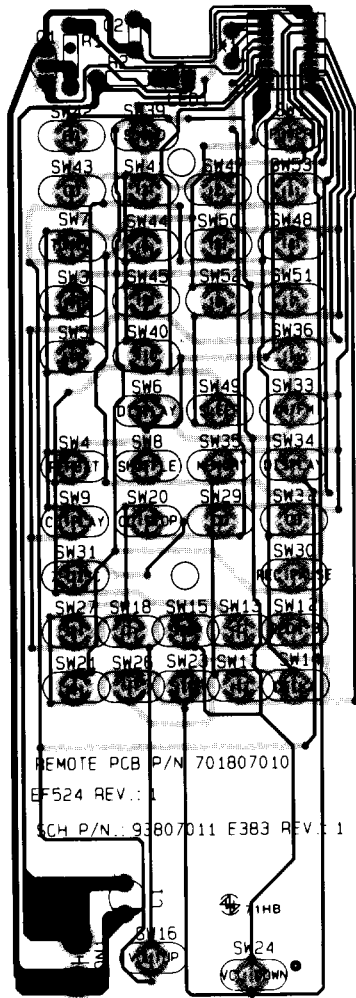
CON20H  
 L\_OUT  
 R\_OUT  
 AGND  
 SURROUND1  
 SURROUND2  
 HALL  
 +8V  
 -8V TO SURROUND9 BD. CON25H

TO DECK CPU BD. CON19  
 CON23A  
 MUTE/MS  
 A/B  
 REC/PLAY  
 CROSS (B)  
 CROSS (A)  
 TO DECK CPU BD. CON23  
 CON23B  
 DOLBY ON/OFF  
 DOLBY REC/PLAY  
 MUSIC SCAN  
 TO DECK CPU BD. CON23

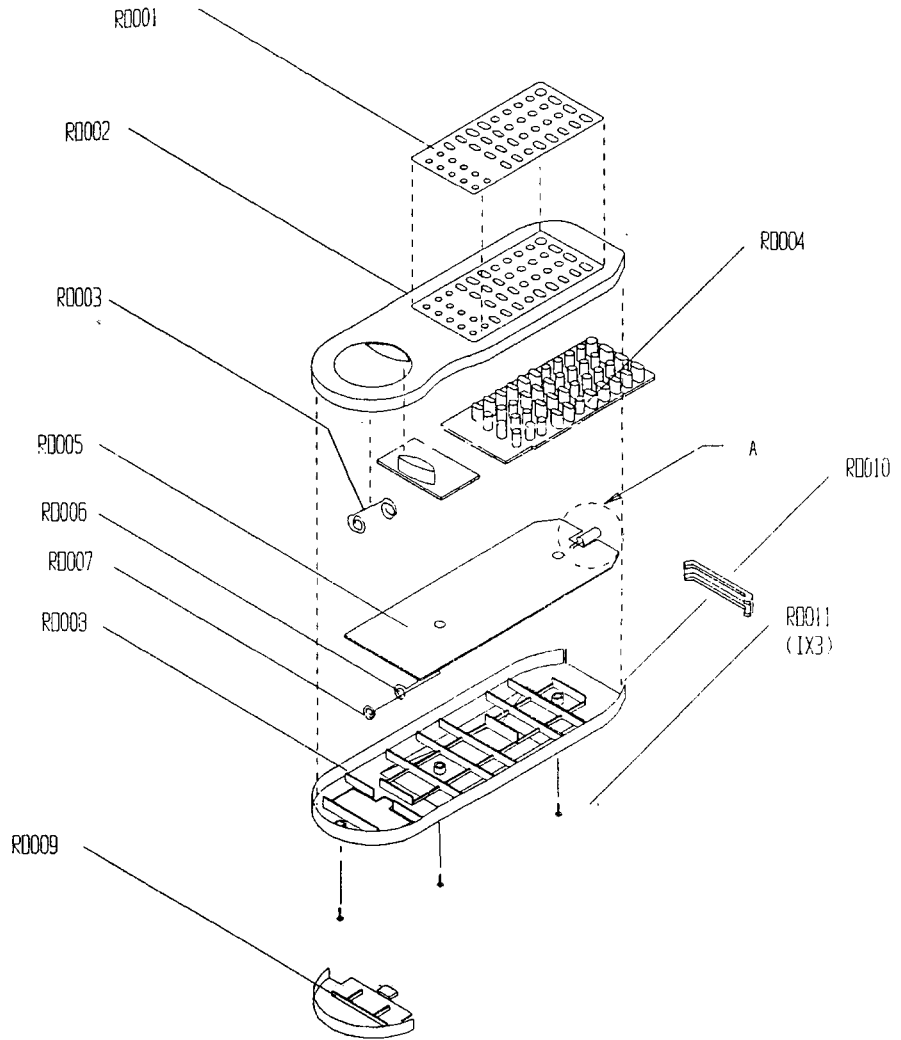
CON17H  
 L  
 R  
 AGND  
 TO SURROUND9 BD  
 CON17M  
 L  
 R  
 AGND  
 +8V  
 TO SUPER BASS BD. CON25H

# REMOTE CONTROL UNIT PC BOARD/EXPLODED VIEW (RC-281S)

## REMOTE CONTROL UNIT PC BOARD



## EXPLODED VIEW



## PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	CIRCUIT NO.	PART NO.	DESCRIPTION
			<b>REMOTE CONTROL PC BOARD (938070011)</b>		
RO001	604807001-00	Overlay, Remote		IC	
RO002	738073103-00	Remote Control Cover	IC1	300246120-AK	BU2461-27
RO003	454802203-24	Spring, Battery (+)		Transistor	
RO004	598070001-00	Rubber Keypad, Remote	Q1	321805050-AM	SS8050C
RO005	938070011	PCB Ass'y, Remote Control Board		Diode	
RO006	454802201-24	Spring, Battery (+)	LED1	339010030-AL	LED, SE1003-C
RO007	454802202-24	Spring, Battery (-)		Capacitor	
RO008	738070401-00	Remote Control Bottom	C1	244760021	47µ F, 16V, Elect.
RO009	738071001-00	Remote Control Door		Resonator	
RO010	738073004-00	Remote Control Lens	X1	552004550-BE	455kHz
RO011	419311706-00	Screw, S-tap B, 7x6 mm			



**PACKING ASS'Y**

REF. NO.	PART NO.	DESCRIPTION
PACKING ASS'Y		
	615280701-01	MASTER CARTON
	602807031-01	FDA LABEL
	602807034-00	UPC LABEL
	602807039-00	UL LABEL
	602808023-00	UD LABEL
	602808027-00	US LABEL
	602808028-00	CSA LABEL
	612080401-00	350×230, POLY BAG
	612080402-00	280×100, POLY BAG
	612581005	300×350, EPE FOAM SHEET
	612581009	200×150, POLY BAG
	613080703-00	PAD(L)
	613080704-00	PAD(R)

**ACCESSORY ASS'Y**

	520804000	AM LOOP ANTENNA
	570804001-AV	FM ANTENNA WIRE
	575000000	PIN CORD
	578014380-AV	MULTI CONNECTOR
	578309330-AV	MULTI CONNECTOR
	615280701-00	SHEET
	80350003-00	BATTERY
	918070102	REMOTE CONTROL
	603808001-00	WARRANTY CARD
	601807001-00	INSTRUCTION MANUAL (3)
	603807002-00	SS LIST
	603807009-00	NOTE
	602804006-00	CAUTION LABEL
	6128080702-00	600×450, POLY BAG

**LOUDSPEAKER ASS'Y**

	918070105	SPEAKER ASS'Y (1 PAIR)
	613080701-00	POLY BAG (TOP)
	613080702-00	POLY BAG (BOTTOM)

## SPECIFICATIONS

### Amplifier/CD player (CA-207)

Amplifier section  
 Power Output: 2 x 25 watts  
 (10% THD 1kHz 8 ohms)  
 Super Bass: 10 dB at 100 Hz  
 Signal-to-Noise Ratio : 75 dB (IHF-A)  
 Separation: 50 dB (IHF-A)

#### General

Power Supply :  
 U.S.A. and Canadian models: AC 120V, 60Hz  
 European models: AC 230V, 50Hz  
 Dimensions: 240(W) x 165(H) x 385(D) mm  
 (9-7/16" x 6-1/2" x 15-1/8")

#### CD player section

Signal readout system: Optical non-contact  
 Reading rotation: About 500 - 200 r.p.m.  
 D/A converter: 16 bit  
 Sampling frequency : 352.8 kHz  
 (8 times oversampling)  
 Frequency response : 40 Hz - 20 kHz (+2/-3dB)  
 Number of channels: 2 (stereo)

### Tuner/Cassette deck (KT-207)

#### Tuner section

FM Tuning Range: 87.5 - 108.0 MHz (50 kHz steps)  
 AM Tuning Range: 522 - 1611 kHz (9 kHz steps)  
 US type: FM 100 kHz, AM 10 kHz steps

#### General

Dimensions: 240(W) x 165(H) x 400.5(D) mm  
 (9-7/16" x 6-1/2" x 15-3/4")

#### Cassette deck section

Track System: 4-tracks, 2-channels  
 Erasing System: AC erase  
 Tape Speed: 4.8 cm/sec. (1-7/8 i.p.s.)  
 9.6 cm/sec. (3-3/4 i.p.s.) (high speed dubbing)  
 Wow and Flutter: 0.2% (WRMS)

### Speaker system (PS-207)

Type: 3-Way, Bass reflex  
 Speakers:  
 Woofer: 13 cm Cone type  
 Squawker: 5 cm Cone type  
 Super tweeter: 2 cm diameter  
 Impedance: 8 ohms

### Remote control (RC-281S)

Transmitter: Infrared  
 Signal range: Approx. 4.5 meters (15 ft.)  
 Control Angle: ± 30 degree  
 Power supply: two "AA" batteries (1.5 V x 2)

Design and specifications are subject to change without notice.

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