

ONKYO® SERVICE MANUAL

PERSONAL COMPONENT SYSTEM

MPC-501

Black model

P	230V AC, 50Hz
D	120 AC, 60Hz

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK  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.



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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
F701	5267100L60	T1A/250V, UL/CSA <P>
	5266100020	T1A/125V, UL/CSA <D>
F702	5267100L60	T1A/250V, UL/CSA <P>
	5266100020	T1A/125V, UL/CSA <D>
F705	5267315L60	T3.15A/125V, UL/CSA <P>
	5266315020	T3.15A/125V, UL/CSA <D>

NOTE : <D> : 120V model only

<P> : 230V model only

CAUTION ON REPLACEMENT OF OPTICAL PICKUP

The laser diode in the optical pick-up block is so sensitive to static electricity, surge current and etc, than 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 equipment 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 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.

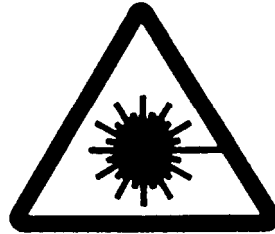
LASER WARNING LABELS

The label shown below are affixed.

CD CAUTION LABEL

CAUTION
INVISIBLE LASER RADIATION WHEN
OPEN. DO NOT STARE INTO BEAM.

ATTENTION!
RADIATION INVISIBLE DU LASER
QUAND OUVERT. NE PAS REGARDER
FIXEMENT LE RAYON.



CAUTION: DO NOT REMOVE SCREWS.
ATTENTION: N'ENLEVEZ PAS LES VIS.

CD CAUTION LABEL

CLASS 1
LASER PRODUCT

CD CAUTION LABEL

CAUTION : INVISIBLE LASER RADIATION WHEN OPEN
AND INTERLOCKS DEFEATED. AVOID EXPOSURE TO BEAM.

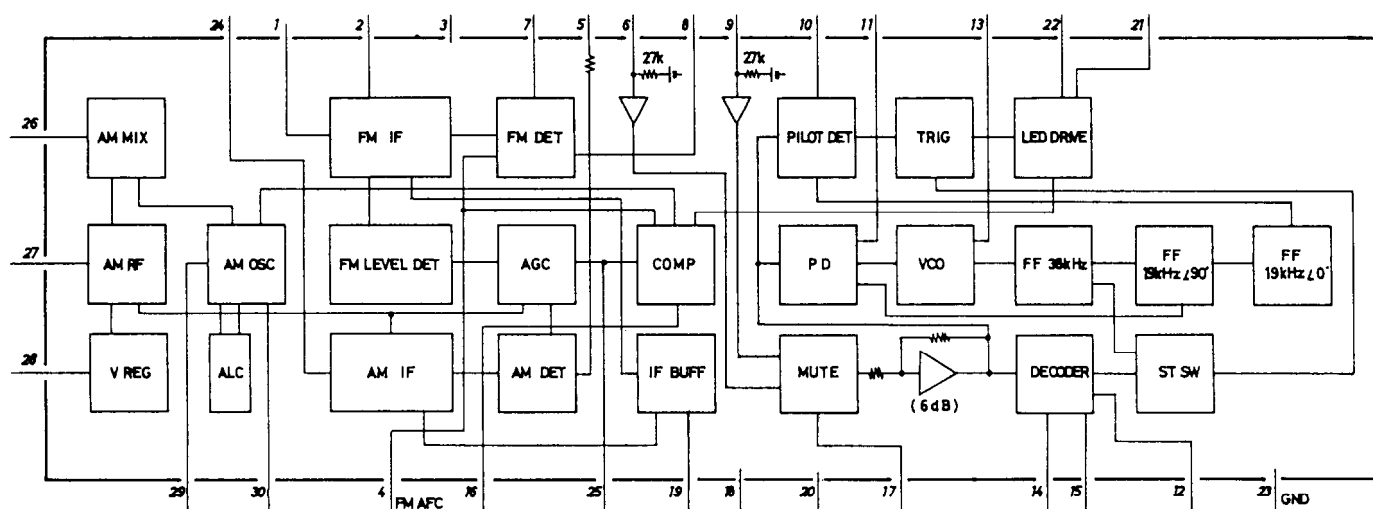
ADVARSEL : USYNLIG LASERSTRÅLING VED ÅB-
NING NÅR SIKKERHEDSafbrydere ER UDE AF FUNKTION.
UNDGÅ UDSÆTTELSE FOR STRÅLING.

VARO : AVATTAESSA JA SUOJALUKITUS OHTET
TAESSA OLE! ALITIHNA NAKYMATTOMALLE LASERSATEI-
LYLLE.
ÄLÄ KATSO SATEESEEN!

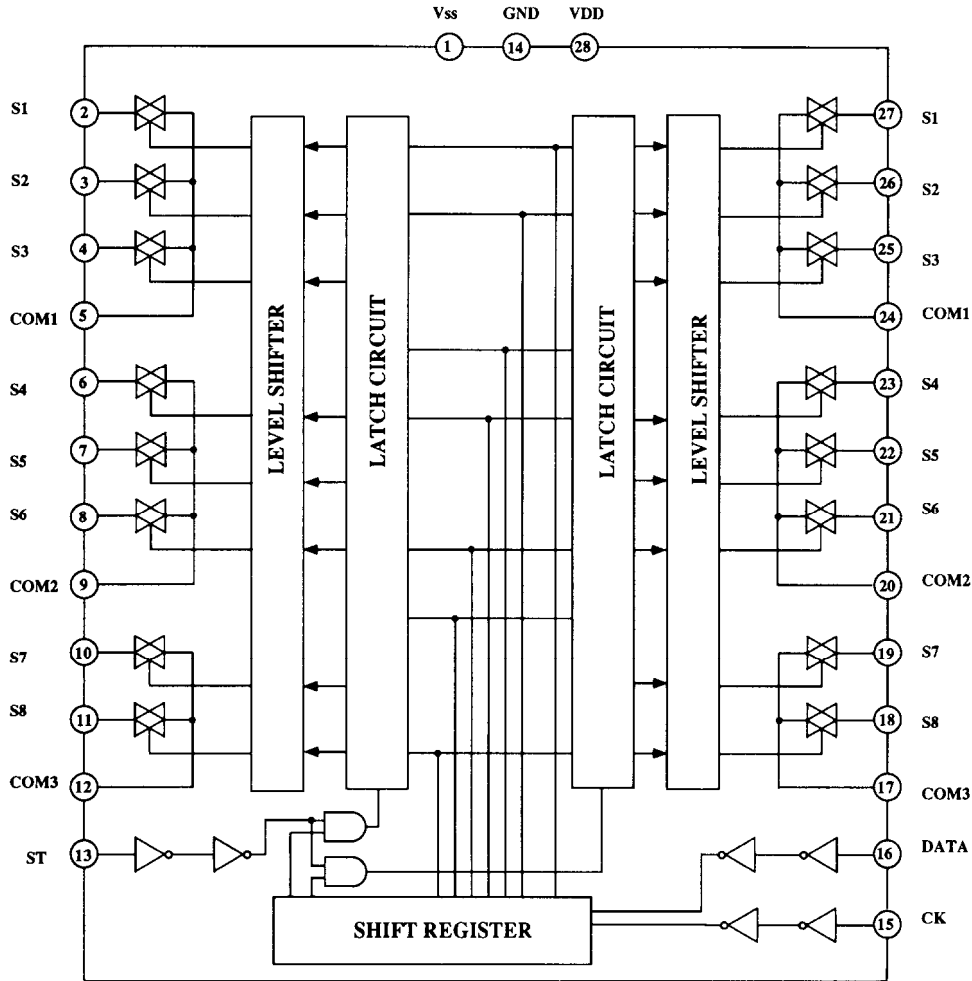
VARNING : OSYNLIG LASERSTRÅLNING NÅR DENNA
DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD.
BETRÄKTA LJUSSTRÅLEN.

IC BLOCK DIAGRAM-TUNER

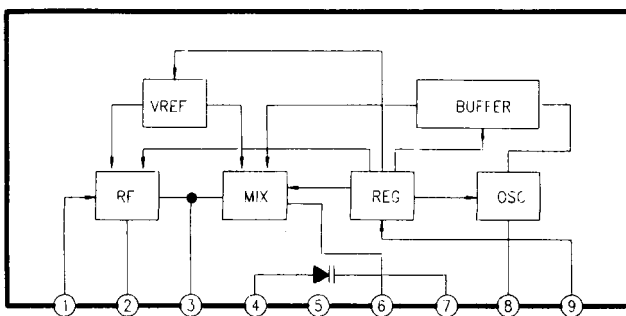
IC101 LA1851N



IC201 TC9163N

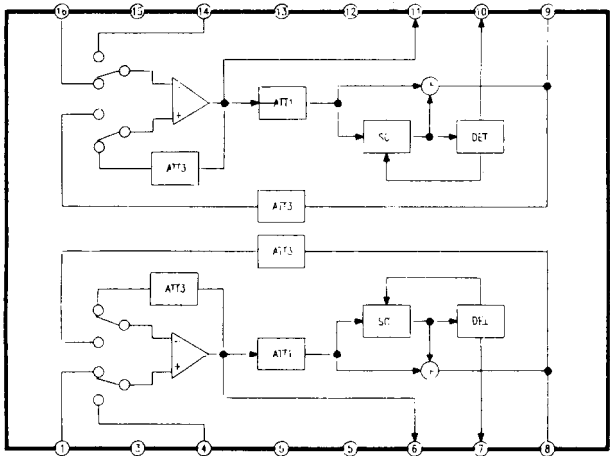


IC501 LA1186N (RF)

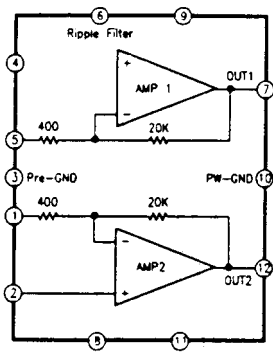


IC BLOCK DIAGRAM-CASSETTE

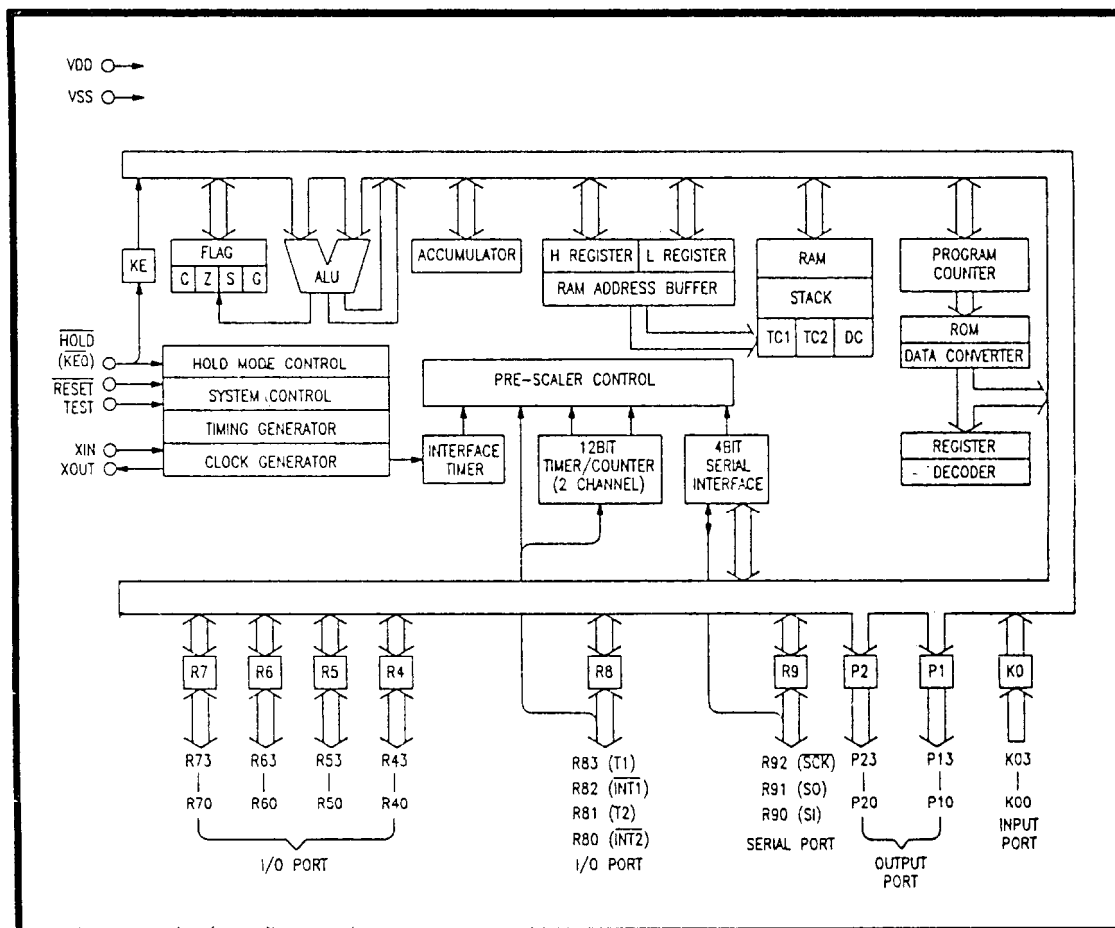
IC503 CXA1101 (DOLBY AMPLIFIER)



IC701 TA8216H

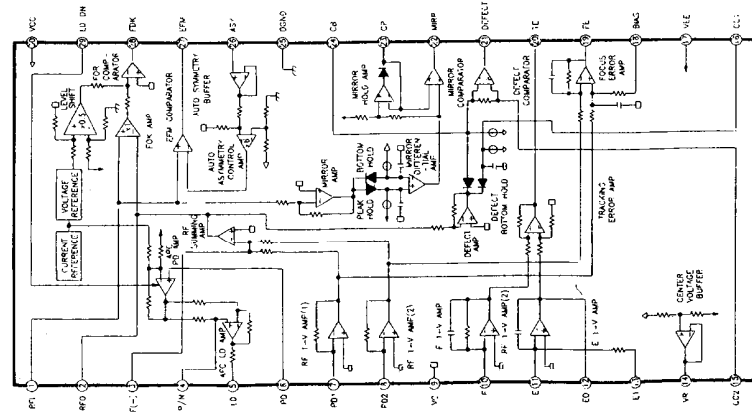


IC601 TC9206-200BN0H301 Internal Block

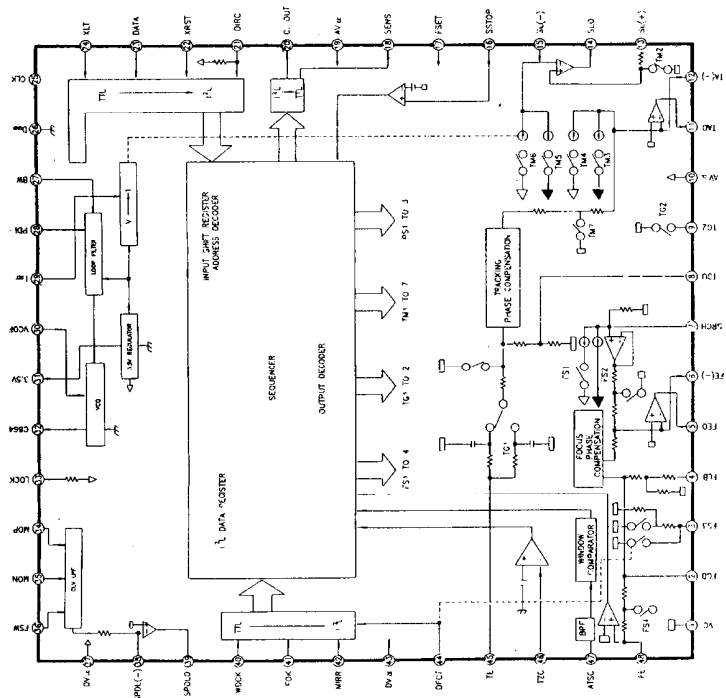


IC BLOCK DIAGRAM-CD

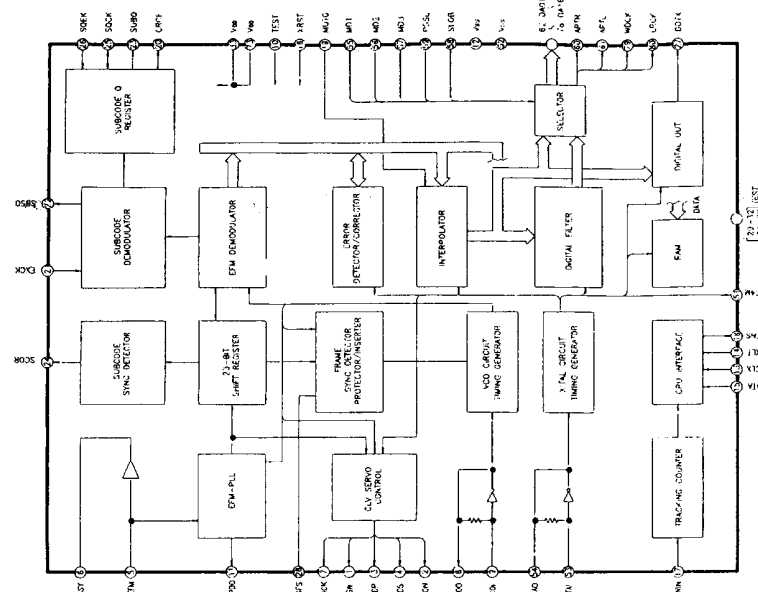
IC01 CXA1081M (RF AMP)



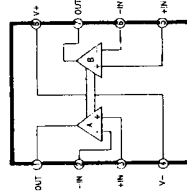
IC02 CXA1082BQ (SERVO SIGNAL PROCESSOR)



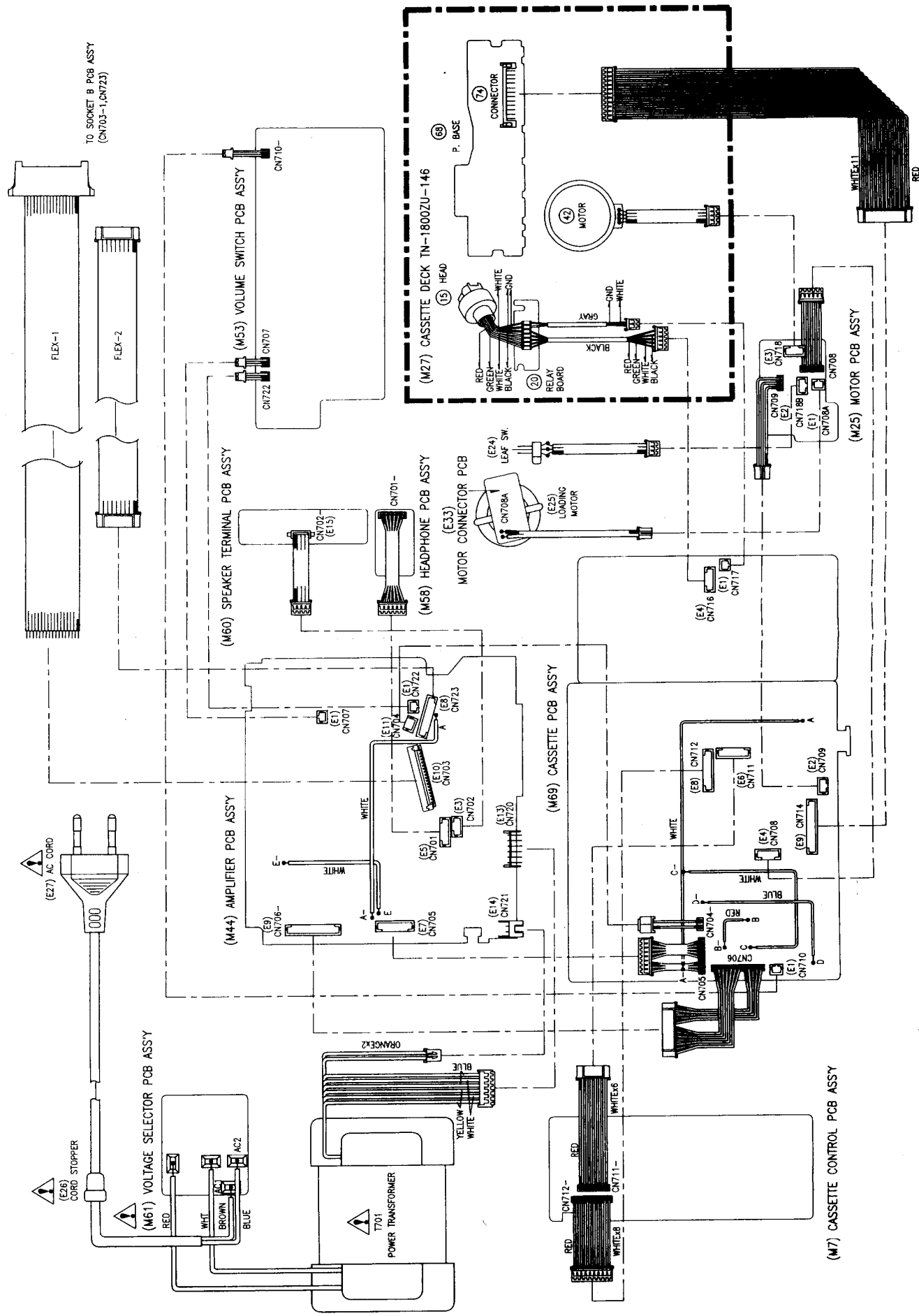
IC03 CXD1167Q (DIGITAL SIGNAL PROCESSOR)



IC06, 07 NJM4558L (BUFFER)

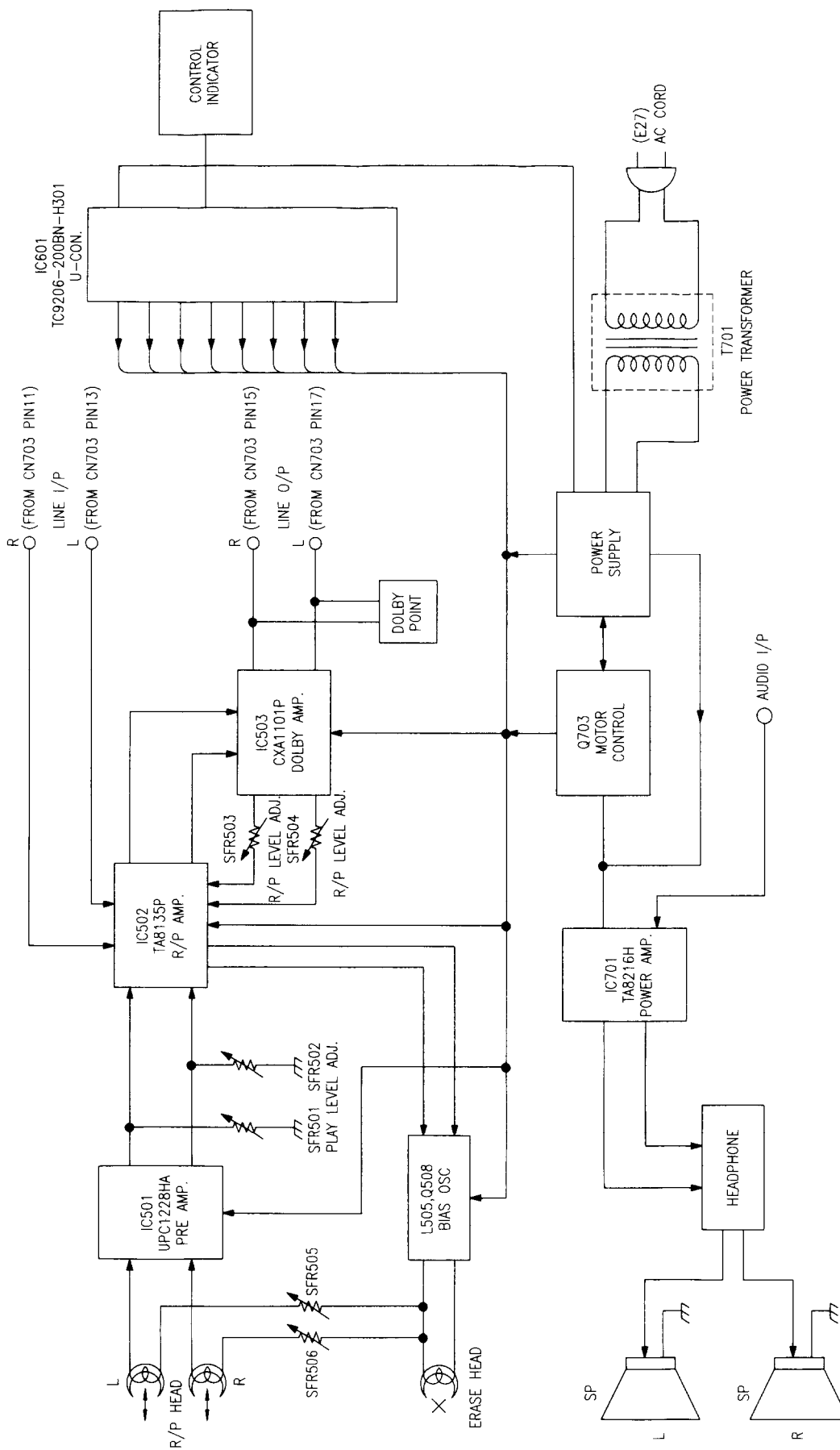


AMPLIFIER/CASSETTE WIRING DIAGRAM-COMPONENT SIDE

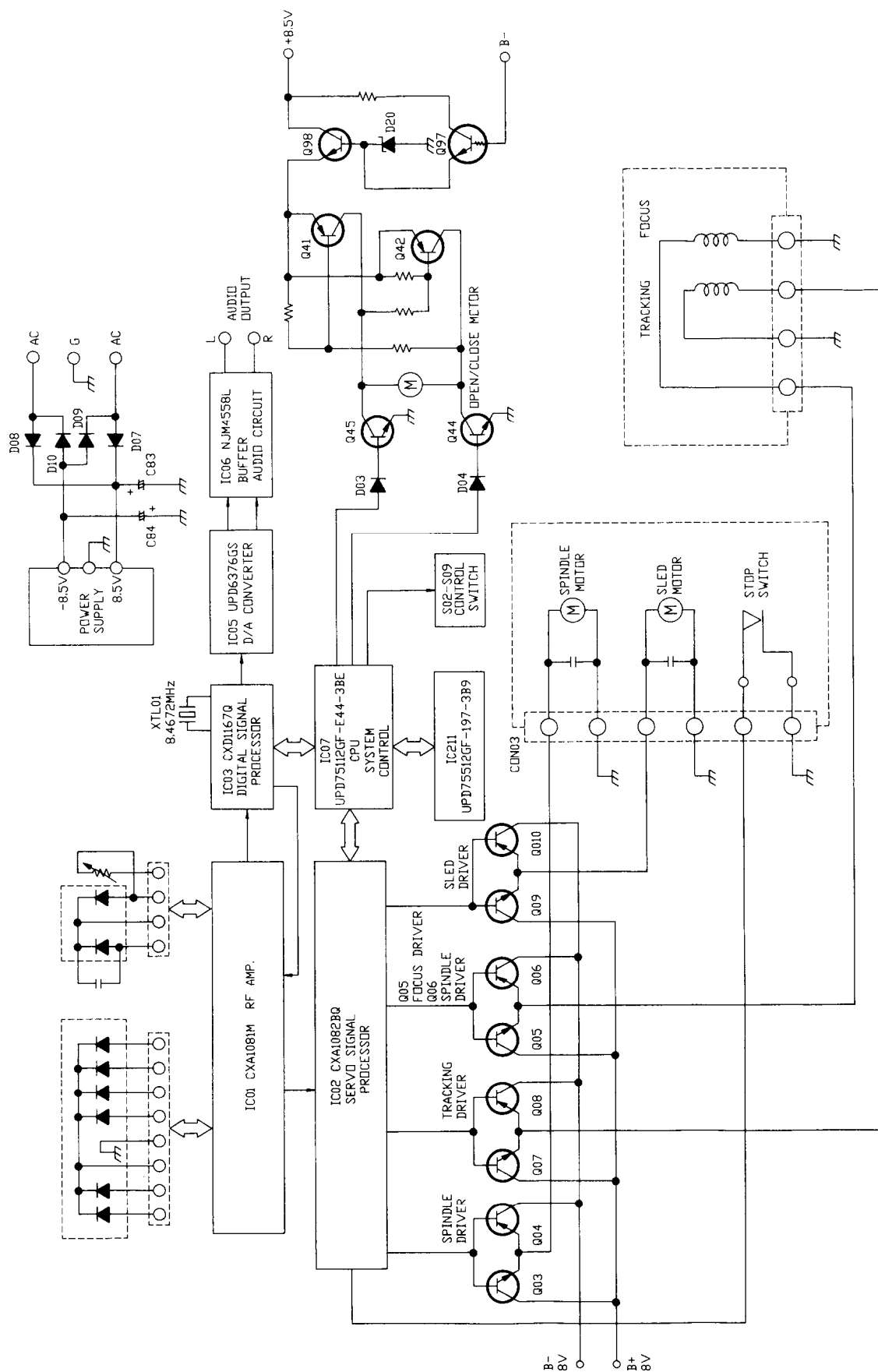




BLOCK DIAGRAM-CASSETTE/AMPLIFIER



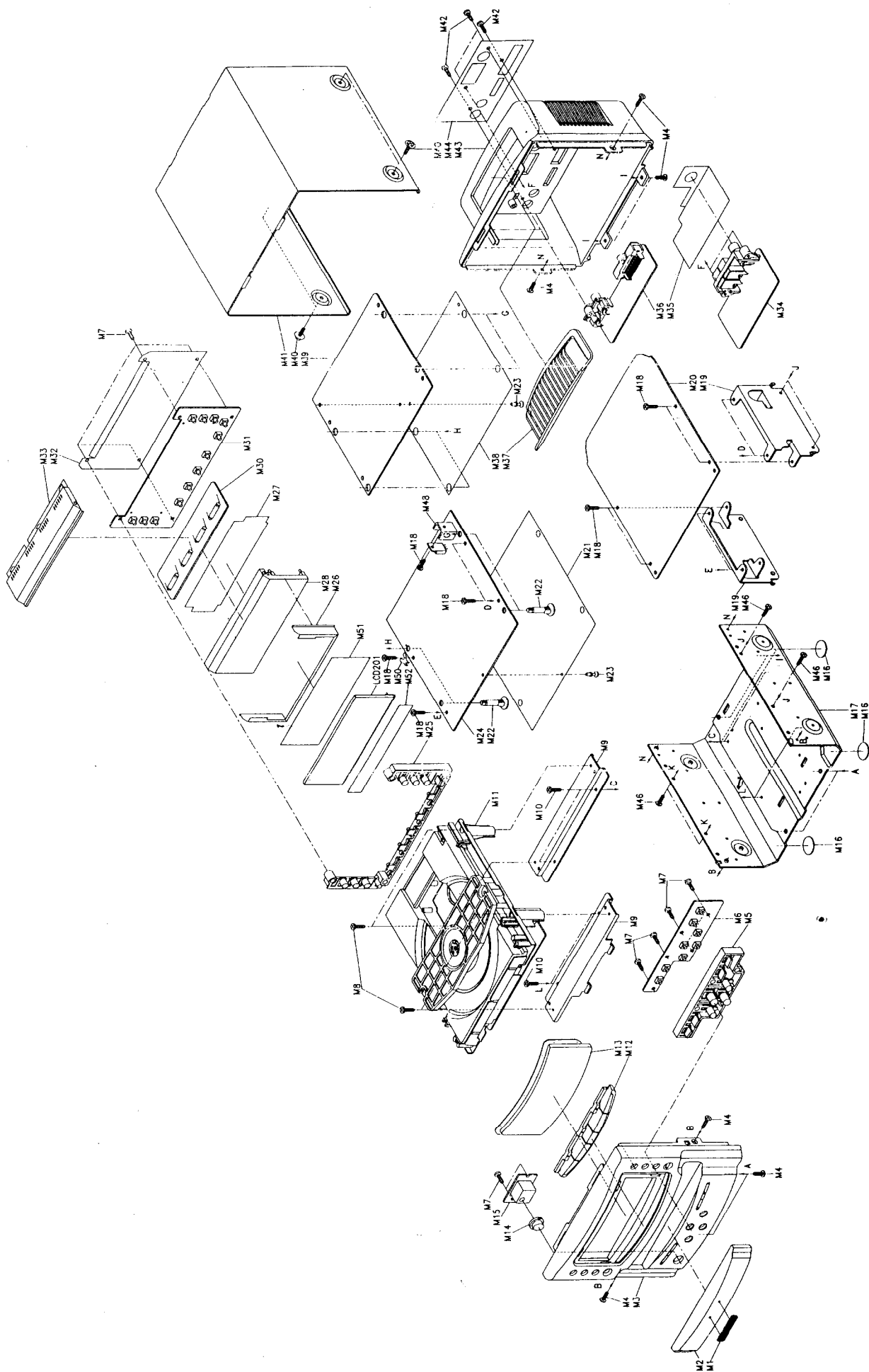
BLOCK DIAGRAM-CD DECODER



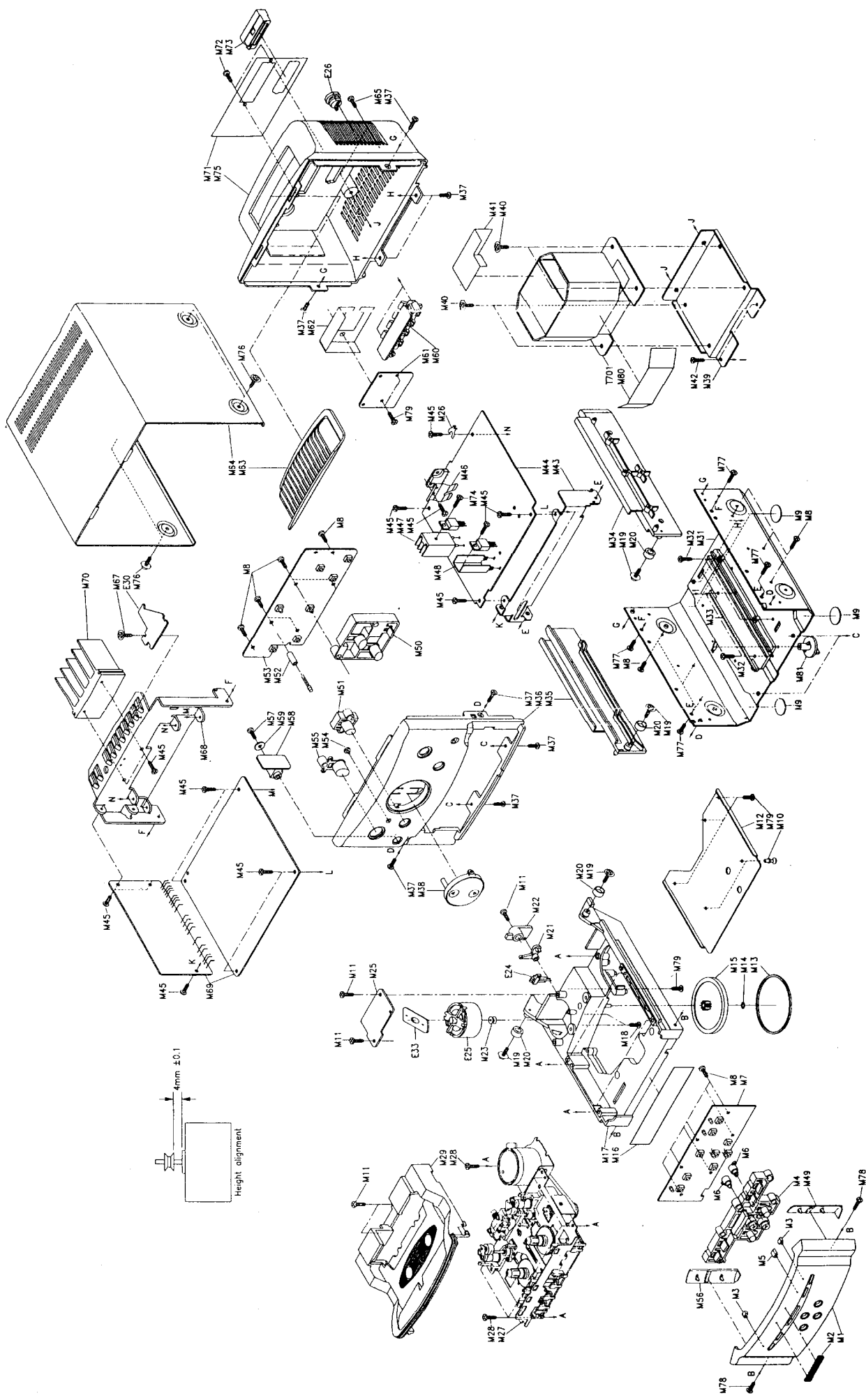
CHASSIS EXPLODED VIEW PARTS LIST-CD/TUNER (CT501)

REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
M1	101407134T	Logo Badge	M46	8931300600	FLT3006 ZN3A R5.3, Self-tapping screw 3x6 mm
M2	100206305D	Tray Panel	M48	2012185506	Heat Sink (A), IC208
M3	100106305D	Front Panel	M50	2005079551	Earth Washer
M4	8932300600	FLT3006 ZN3K R5.3, Self-tapping screw 3x6 mm	M51	200506301D	LCD Lens
M5	100706305D	CD Button Base	M52	2A1816301D	LCD Sheet
M6	C142234220	CD Control P.C. Board Ass'y	CON01	C488280856 or C488281664	8P Connector Ass'y 280 mm (H:RED)
M7	8741260800	BID2608 ZN3A, Self-tapping screw 2.6x8 mm	CON02	C488080921	8P Connector Ass'y 280mm
M9	200206301D	CD Spacer	CON03	C48E063011	6P Connector Ass'y 300 mm
M10	8641300500	BID3005 ZN3A, Self-tapping screw 3x5 mm	CON04	C48E053011	5P Connector Ass'y 300 mm
M11	C486040405	CD Mechanism KSL-2101ABM		100806305D	CD Control Button A
M12	100506305D	Tuning Button A		100906305D	CD Stop Knob
M13	100306305D	Display Window		101806305D	CD Play Knob
M14	101106305D	Sensor Lens		101006305D	Tuning Control Button
M15	C044236640	Receiver P.C. Board Ass'y		100606305D	Tuning Button B
M16	200706301D	Foot		2000000144	Bind type "A"
M17	200116301D	Main Chassis		201506301D	Insulator, F
M18	8941300600	BID3006 ZN3A, Self-tapping screw 3x6 mm		201016301D	Diffusing Film
M19	200606301D	PCB Bracket		9060010890	Rating Serial NO. Label <D>
M20	C142234210	CD Decoder P.C. Board Ass'y		9060010900	Rating Serial NO. Label <P><V>
M21	201306301D	Shield Plate, MN		9100019370	Service Label <D>
M22	201106301D	PCB Support SCC-19		9100019460	Service Label <P><V>
M23	2000000145	P-Rivet 3x4.5		9000002311	CD Caution Label (B) <D>
M24	C144236613	Main P.C. Board Ass'y <D>		9000002970	CD Caution Label (B) <P><V>
	C144236614	Main P.C. Board Ass'y <P>		8941300800	BID3008 ZN3A, Self-tapping screw 3x8 mm
	C144236611	Main P.C. Board Ass'y <V>		9000003630	CD Caution Label (B12) <P><V>
M25	100406305D	Tuning Base		2A3006305D	LCD Sheet A (60x15x0.4)
M26	200906301D	Reflection Sheet		2A3106305D	LCD Sheet B (25x15x0.4)
M27	2A1716301D	Lens Mask			
M28	2A0816301D	Lamp Holder	NOTE:	<P> : 230V model only	
M30	C044236630	Lamp P.C. Board Ass'y		<D> : American model only	
M31	C142236810	LCD P.C. Board Ass'y		<V> : Germany model only	
M32	201406301D	Shield Plate, F			
M34	C144236910	Socket B P.C. Board Ass'y <D><P>			
	C144236911	Socket B P.C. Board Ass'y <V>			
M36	C142236822	Antenna Jack P.C. Board Ass'y <D>			
	C142236821	Antenna Jack P.C. Board Ass'y <P>			
	C144236921	Antenna Jack P.C. Board Ass'y <V>			
M37	101306301D	Fin			
M38	201206301D	Shield Plate, T			
M39	C144236623	Tuner P.C. Board Ass'y <D>			
	C144236620	Tuner P.C. Board Ass'y <P>			
	C144236624	Tuner P.C. Board Ass'y <V>			
M40	8962300600	CUP3006 ZN3K, Self-tapping screw 3x6 mm			
M41	100406301D	Top Cover			
M42	8742301000	BID3010 ZN3K, Self-tapping screw 3x10 mm			
M43	101606305D	Rear Cover			
M44	101206305D	Back Plate <D>			
	101406305D	Back Plate <P><V>			

EXPLODED VIEW-CD/TUNER (CT-501)



EXPLODED VIEW-AMPLIFIER/CASSETTE DECK (KA-501)



CHASSIS EXPLODED VIEW PARTS LIST-AMPLIFIER/CASSETTE DECK (KA-501)

REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION
M1	100204305A	CASSETTE PANEL	M65	8642300800	6BID3008 ZN3K, SCREW
M3	101104301A	LED LENS A	M68	200604301A	FIXTURE
M4	100404305A	CASSETTE CONTROL BUTTON	M69	C142236110	CASSETTE PC BOARD ASS'Y
M4	100804305A	CASSETTE PLAY BUTTON	M70	200714301A	HEAT SINK
M4	100904305A	CASSETTE STOP BUTTON	M71	101204305A	BACK PLATE
M5	101004301A	LED LENS B	M72	8742301000	7BID3010 ZN3K, SCREW
M6	101504305A	DIRECTION LENS	M73	3021210011	W.FLAT-A-11-MS-ZN3A
M7	C142236120	CASSETTE CONTROL PC BOARD ASS'Y	M74	8662300800	6CUP3008 ZN3K, SCREW
M8	8741260800	7BID2604 ZN3A, SCREW	M75	1A0314301A	REAR PANEL
M9	200706301D	FOOT	M76	8662300600	6CUP3006 ZN3K, SCREW
M10	2000000145	P-RIVET, 3X4.5	M77	8631300600	6FLT3008 ZN3A R5.3, SCREW
M11	8741301000	7BID3010 ZN3A, SCREW	M78	8732300800	7FLT3008 ZN3K, SCREW
M12	201804301A	TRAY BOTTOM PLATE	M79	8741300800	7BID3008 ZN3A, SCREW
M13	201104301A	LOADING BELT 51mm	M81	203104301A	TRAY LOCK
M15	200507131J	MOTOR PULLY		9000001420	CAUTION LABEL <D>
M16	202704301A	INSULATE PLT CASSETTE		9000001700	CAUTION LABEL <D>
M17	000304301A	TRAY BASE ASS'Y		9000003650	CAUTION LABEL <D>
M18	8141260400	1BID2604 ZN3A, SCREW"	E24	4400000121	LSC-1223-31, LEAF SWITCH
M19	8761260608	7CUP2606 ZN3A 8D, SCREW	E25	4029125001	RF-500TB-12560, MOTOR
M20	2A2817131J	PULLEY (SIDE)	E26	4580500006	SR4K-6(BLK), CORD STOPPER
M25	C145236320	MOTOR PC BOARD ASS'Y		463137L071	UL/CSA 7FT BLK SPT2, AC CORD
M27	4380404800	CASSETTE DECK TN-1800ZU-146	F701,F702	5267100L60	UL/CSA T1A/250V, FUSE <P>
M28	8742300800	7BID3008 ZN3K, SCREW		5266100020	UL/CSA T1A/125V, FUSE <D>
M29	101404301A	CASSETTE COVER	F705	5267315L60	UL/CSA T3.15A/125V, FUSE <P>
M31	200116301D	MAIN CHASSIS		5266315020	UL/CSA T3.15A/125V, FUSE <D>
M32	8641260500	6BID2605 ZN3A, SCREW	T701	420C662123	EI-66(E), POWER TRANSFORMER
M33	200404301A	LOADING GEAR			
M34	200304301A	TRAY GUIDE R	NOTE:	<P> : 230V model only	
M35	2A0214301A	TRAY GUIDE L		<D>: American model only	
M36	100104305A	FRONT PANEL	NOTE:	THE COMPONENTS IDENTIFIED BY	
M37	8632300600	6FLT3006 ZN3K, SCREW		MARK  ARE CRITICAL FOR RISK OF	
M38	100504305A	VOLUME KNOB		FIRE AND ELECTRIC SHOCK.	
M39	200804301A	X'FORMER BRACKET		REPLACE ONLY WITH PART NUMBER	
M40	8661400600	6CUP4006 ZN3A, SCREW		SPECIFIED.	
M42	8641300500	6BID3005 ZN3A, SCREW			
M43	200904301A	PCB BRACKET			
M44	C141236202	AMP PC BOARD ASS'Y			
M45	8641300800	6BID3008 ZN3A, SCREW			
M46	2012076076	SPRING TRANSISTOR (B)			
M47	202204301A	HEAT SINK AUX			
M49	101804301A	TRAY STRIP R			
M50	101004305A	CASSETTE WINDOW BUTTON			
M50	100304305A	FUNCTION BUTTON			
M51	100704305A	B.BOOST BUTTON			
M53	C145236350	VOLUME SWITCH PC BOARD ASS'Y			
M54	101304301A	STAND BY LENS			
M55	100604305A	POWER KNOB			
M56	101704301A	TRAY STRIP L			
M57	8732260800	7FLT2608 ZN3K, SCREW			
M58	C145236330	HEADPHONE PC BOARD ASS'Y			
M60	C145236310	SPEAKER TERMINAL PC BOARD ASS'Y			
M61	C042237212	VOLTAGE SELECT PC BOARD ASS'Y			
M63	101604301A	FIN			
M64	100704301A	TOP COVER			

TUNER ADJUSTMENT

TUNER PC BOARD ADJUSTMENT LOCATION

TUNER PCB

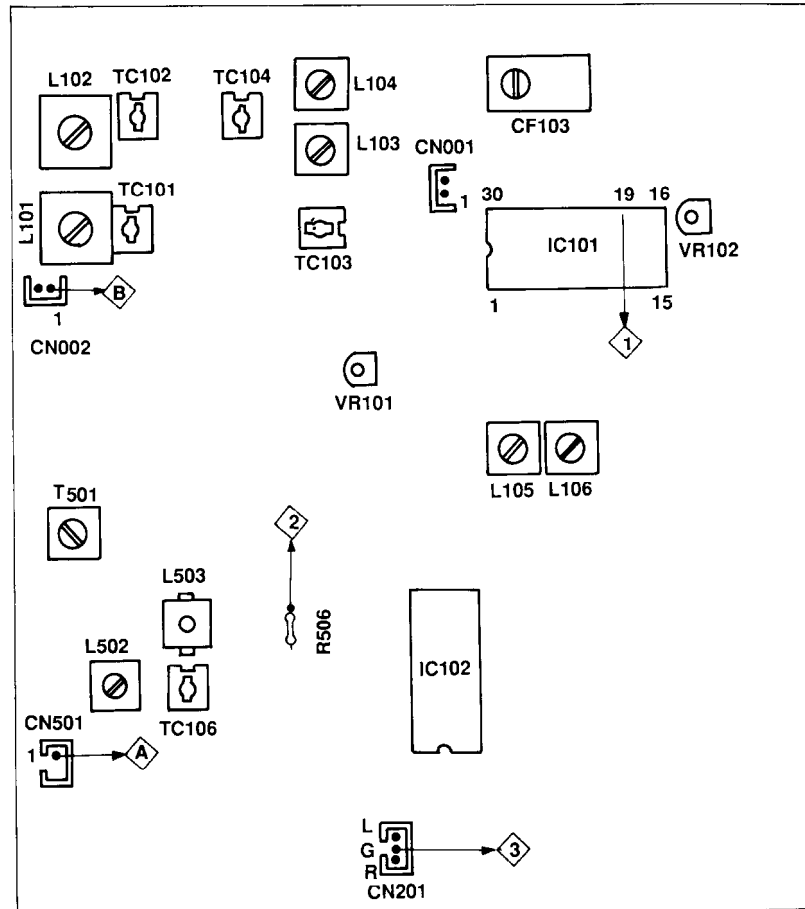


Figure 1

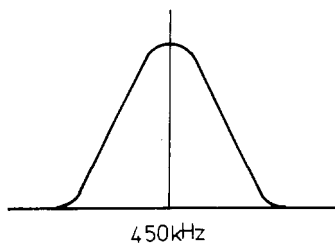


Figure 2

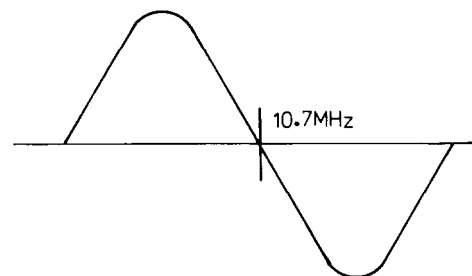


Figure 3

TUNER ADJUSTMENTS

Equipment required:

1. AM signal generator
2. FM signal generator
3. VTVM
4. DC voltmeter

Notes:

1. Signal input must be as low as possible to avoid overload and clipping. (Use highest sensitivity of output indicator.)
2. Volume control at maximum.
3. Standard modulation is 400Hz at 30% amplitude for AM, 1000Hz at 22.5kHz deviation for FM (Mono).
4. Connect 8 ohm load across speaker jack.

MW IF Adjustment

Signal Source	Signal Generator Frequency	Output	Frequency Setting	Adjustment	Remarks
MW IF sweep generator connected to CN002 pin 1 & GND. ⓑ	Sweep centered 450kHz	Oscilloscope connected to IC101 pin 19 & GND. ⓓ	Tuning to 1000kHz	CF103 (See Fig. 1)	Adjust for maximum & symmetrical curve. (See Fig. 2)

MW RF adjustment

Signal Source	Signal Generator Frequency		Output	Frequency Setting		Adjustment	Remarks
MW signal generator connected to CN002 pin 1 & GND. ⓑ	MW	531kHz	DC meter across R506 & GND. Ⓐ	Lowest freq.		L103 (See Fig. 1)	DC meter 1V ± 0.05V
	MW	1602kHz		Highest freq.		TC103 (See Fig. 1)	DC meter 8V ± 0.05V
	Repeat adjustments until the DC values are achieved.						
	MW	603kHz	VTVM connected to CN211 pin 1 & pin 3. Ⓒ	MW	603kHz	L101 (See Fig. 1)	Adjust for maximum output
	MW	1404kHz		MW	1404kHz	TC101 (See Fig. 1)	
	Repeat adjustments as necessary to minimise tracking error.						

FM IF Adjustment

Signal Source	Signal Generator Frequency	Output	Frequency Setting	Adjustment	Remarks
FM IF sweep generator connected to CN501 Ⓐ	Sweep centered 10.7MHz	Oscilloscope connected to IC101 pin 19 & GND. ①	Tuning to 98MHz	T501 (See Fig. 1)	Adjust for maximum & symmetrical curve. (See Fig. 3)

FM RF Adjustment

Signal Source	Signal Generator Frequency	Output	Frequency Setting	Adjustment	Remarks
FM signal generator connected to CN501 Ⓐ	87.5MHz	DC meter across ② & GND.	87.5MHz	L503 (See Fig. 1)	DC meter to indicate $1.2V \pm 0.05V$
	108MHz		108MHz	-	DC meter to indicate $7.5V \pm 0.5V$
	Repeat adjustments until the DC values are achieved.				
	90MHz	VTVM connected to CN201-1 (L) & (R). ③	90MHz	L502 (See Fig. 1)	Adjust for maximum output
	106MHz		106MHz	TC106 (See Fig. 1)	
	Repeat adjustment as necessary to minimise tracking error.				

FM IF Offset Adjustment

Signal Source	Signal Generator Frequency	Output	Frequency Setting	Adjustment	Remarks
FM signal generator connected to CN501 Ⓐ	98MHz Mod. 22.5kHz 1mV	DC Voltmeter connected across CN001	98MHz	L105 (See Fig. 1)	$0V \pm 30mV$

FM Auto Tuning Adjustment

Signal Source	Signal Generator Frequency	Output	Frequency Setting	Adjustment	Remarks
FM signal generator connected to CN501 Ⓐ	98MHz Mod. 22.5kHz 8.9 μ V	Display (LCD201)	98MHz	VR101 (See Fig. 1)	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 CN002 Ⓑ	1000kHz 1mV	Display (LCD201)	1000kHz	VR102 (See Fig. 1)	Adjust until "TUNED" appear in the display.

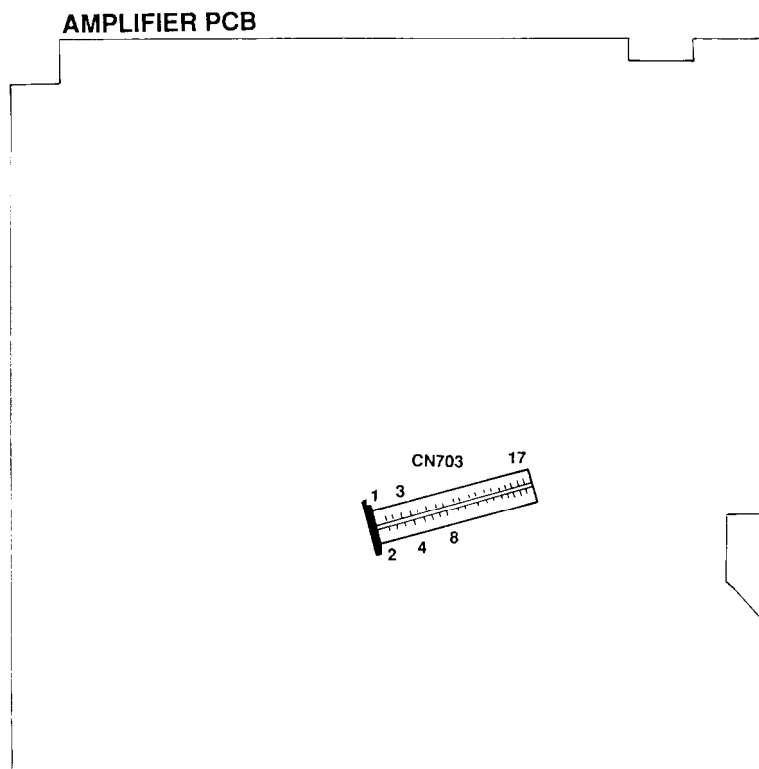


Figure 4

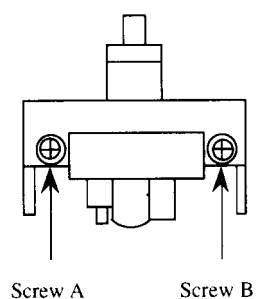


Figure 5

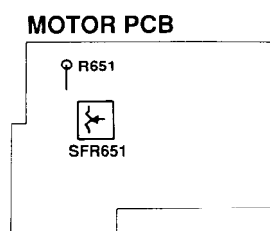


Figure 6

CASSETTE PCB

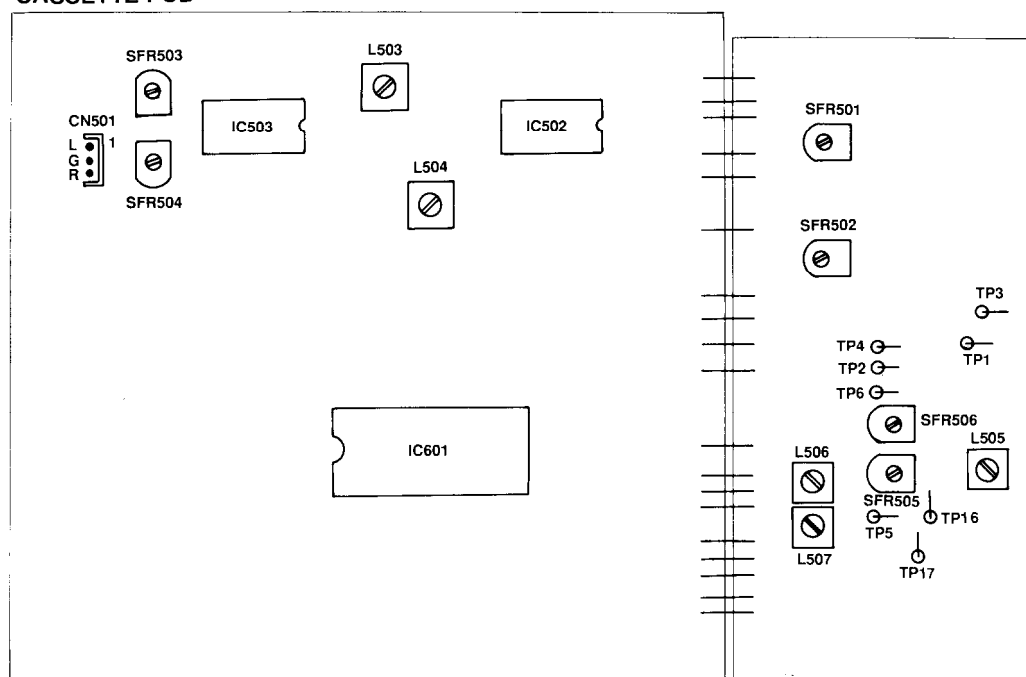


Figure 7

TAPE ADJUSTMENTS

ADJUSTMENT	CASSETTE	SK...	TAPE DECK POSITION	READ ON	MESURE ON	ADJUST WITH	ADJUST TO
Azimuth	10kHz TCC-153	Tape	Play fwd	VTVM	CN501	Screw A	MAX L=R
			Play rev	VTVM	CN501	Screw B	
Motor speed (normal)	3000Hz MTT-111N	Tape	Play fwd	Frequency counter	CN501	SFR651	3000Hz **
			Play rev				

** The maximum permissible speed deviation is +3%/-2% moreover, the wow and flutter value can be read.
This value should not exceed 0.3%.

Remark : Using short wire connect between 0 ohm resistor (R651) on motor PCB and GND (chassis),
and let cassette deck tray remain outward during adjustment procedures.

ADJUSTMENT	CASSETTE	INPUT	SK...	ADJUST WITH	READ ON	ADJUST TO
Play level	MTT-150		Play fwd	SFR502 (R) SFR501 (L)	VTVM *1	548mV ± 1dB
			Play rev			
19kHz filter	SBC420	19kHz/100mV CN703 Pin 4 & Pin 8	Record	L504 (R) L503 (L)	VTVM *1	Minimum output for both channels < 10mV
OSC. frequency	SBC420		Record	L505	Frequency counter *2	105kHz ± 3kHz
Bias leakage	SBC420		Record	L506 (R) L507 (L)	Scope *3 Scope *4	Minimum output for both channels < 150mV
Bias current	SBC420		Record	SFR506 (R) SFR505 (L)	VTVM *5 VTVM *6	4.2mV
R/P level	SBC420	400Hz/25mV CN703 Pin 4 & Pin 8	Record	SFR504 (R) SFR503 (L)	VTVM *1	200mV ± 1dB

*1 Connected to CN501 (Dolby Output)

*2 Connected across TP16 & TP17 (GND).

*3 Connected across TP6 & TP17. (R-Channel)

*4 Connected across TP5 & TP17. (L-Channel)

*5 Connected across TP2 & TP4. (R-Channel)

*6 Connected across TP1 & TP3. (L-Channel)

CD ADJUSTMENTS

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 player should not be adjusted or repaired by anyone except properly qualified service personnel.

1. VCO Adjustment

- CD test disc SBC426A (Test disc 5A) into CD tray.
- Power ON & CD ON, CD in stop mode.
- Base 3 pin 2 & pin 3 short, digital counter connected to base 3 pin 1 & GND. (See Fig.8)
- Adjust SFR03 for a counter reading of $4.233\text{MHz} \pm 10\text{kHz}$. (See Fig.8)

2. RF Bias Adjustment

- DC voltmeter connected to base 4. (See Fig. 8)
- CD in stop mode.
- Adjust SFR02 for a meter reading of $-50\text{mV} \pm 5\text{mV}$. (See Fig. 8)

3. EF Balance Adjustment

- Base 2 pin 2 & pin 3 short, oscilloscope connected to base 2 pin 1 & GND. (See Fig.8)
- CD in play mode.
- Adjust SFR01, let the waveform shown as A=B. (See Fig. 9)

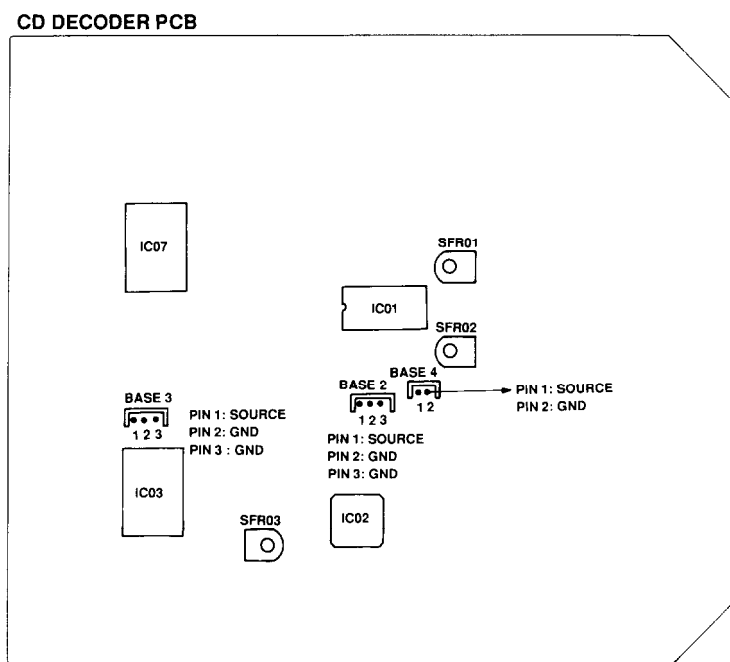


Figure 8

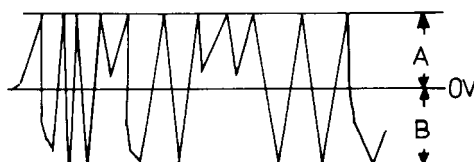


Figure 9

PC BOARD PARTS LIST-AMPLIFIER/CASSETTE DECK (KA-501)

CIRCUIT NO. PART NO. DESCRIPTION CASSETTE PC BOARD ASS'Y (C142236110)

	ICS	
IC501	222905	UPC1228HA
IC502	415308135P	TA8135P
IC503	22240086	CXA1101P
IC601	41539206H1	TC9206-200BN-H301
IC602	222780053	UPC78L05J

TRANSISTORS

Q501,Q502	2213060	DTC124ES
Q503-Q506	2210353	2SC945-P
Q507	2210184	2SA733-Q
Q508	2211771	2SC2001-K
Q509	2212714	2SA934-R
Q510,Q511	221299	DTC114TS
Q510A	2210184	2SA733-Q
Q512,Q513	2210184	2SA733-Q
Q514-Q517	2210353	2SC945-P
Q518,Q608	2210184	2SA733-Q
Q519,Q520	221299	DTC114TS
Q601,Q602	410500952L	2SA952L
Q603	2211771	2SC2001-K
Q604,Q605	2212714	2SA934-R
Q606,Q612	410522060R	2SC2060R
Q611	2210353	2SC945-P
Q613,Q614	221299	DTC114TS
Q615	2213090	DTA114YS

DIODES

D501-D509,D511	4121901760	1SS176
D512	4121901760	1SS176
D601,D602	4121141480	1N4148
D603	4138104002	1N4002L
D604,D605	4121141480	1N4148
D606	2239452	RD5.1E-B2
D607,D608,D622	4121141480	1N4148
D609-D612	4121901760	1SS176
D620,D621	4121901760	1SS176
D623-D625	4121901760	1SS176

CAPACITOR

C601	3000076	5R5T104
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COILS

L503,L504	4360400720	TWS-358-682, MPX TRAP
L505	4330801190	TWS-358-693, BIAS
L506,L507	4360900520	TWS-358-533, BIAS TRAP
L601	4327247181	CHOKE COIL

RESONATOR

X601	41609419MG	CST4.19MGW
------	------------	------------

RESISTORS

SFR501,SFR502	5226103177	10KX, TRIM
SFR503,SFR504	5226203177	20KX, TRIM
SFR505,SFR506	5226503177	50KX, TRIM

CIRCUIT NO. PART NO. DESCRIPTION CONNECTORS

CN501	4490301002	EH 3P(2.5), MALE
CN708,CN716	4490501004	PH 5P, MALE
CN709	4490301004	PH 3P, MALE
CN710,CN717	4490201004	PH 2P(2.0), MALE
CN711	4490701004	PH 7P, MALE
CN712	4490901004	PH 9P, MALE
CN714	4491201004	PH 12P(2.0), MALE

CIRCUIT NO. PART NO. DESCRIPTION CASSETTE CONTROL PC BOARD ASS'Y (C142236120)

DIODES

D615,D619	41206264GT	3Q 264GT, LED
D616,D617	41216264GI	264GT-TR2-11, LED
D618	41206264IT	3Q 264IT, LED

SWITCHES

TC601-TC609	4400000156	SKHVBE3520-CP, TACT
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CIRCUIT NO. PART NO. DESCRIPTION SPEAKER TERMINAL PC BOARD ASS'Y (C145236310)

HOLDER

N702	4490400261	4P20, WIRE HOLDER
------	------------	-------------------

TERMINAL

JK702	4560004045	HSP-114V
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CIRCUIT NO. PART NO. DESCRIPTION MOTOR PC BOARD ASS'Y (C145236320)

RESISTOR

SFR651	5226222146	2.2KB, TRIM
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CONNECTORS

CN708A	4490201004	PH 2P(2.0), MALE
CN718	4490401004	PH 4P, MALE
CN718B	4490301004	PH 3P, MALE

CIRCUIT NO. PART NO. DESCRIPTION HEADPHONE PC BOARD ASS'Y (C145236330)

JACK

JK701	4500100257	LGS507-0202(S.M.K)
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CIRCUIT NO. PART NO. DESCRIPTION VOLUME SWITCH PC BOARD ASS'Y (C145236350)

DIODE

D801	4120602042	3Q EL204IT, LED
------	------------	-----------------

SWITCHES

S801-S803	4400000156	SKHVBE3520-CP
S804,S805	4400000160	SKHVBL3720CPT
S806,S807	4400000156	SKHVBE3520-CP

HOLDER

202104301A	LED HOLDER 12
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CIRCUIT NO. PART NO. DESCRIPTION VOLTAGE SELECT PC BOARD ASS'Y (C042237212)

TERMINAL

000000843	TERMINAL L
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CIRCUIT NO. PART NO. DESCRIPTION
RESET PC BOARD ASS'Y (C141240000)

	TRANSISTOR	
Q719	221299	DTC114TS
	DIODE	
D726,D727	4121901760	1SS176
	JOINT	
CN719	4490300140	3P

NOTE: <P> : 230V model only
 <D> : American model only

NOTE: THE COMPONENTS IDENTIFIED BY MARK ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PART NUMBER SPECIFIED.

CIRCUIT NO. PART NO. DESCRIPTION
AMP PC BOARD ASS'Y (C141236202)

	ICS	
IC701	415308216H	TA8216H
IC703	222780052	L78M05
	TRANSISTORS	
Q703,Q718	410030313D or	2SD313D or
	410030313E	2SD313E
Q705,Q712,	41500733P or	2SA733P or
Q713,Q715	41500733Q	2SA733Q
Q706	410010826R	2SB826R
Q707	410523244D	2SC3244D
Q708,Q716	41520945P or	2SC945P or
	41520945Q	2SC945Q
Q709-Q711,Q714	221299	DTC114TS
	DIODES	
D701-704	4138104002	1N4002L
D705	223965	RD13E-B
D706	4121901760	1SS176
D708,711-D714	4138104002	1N4002L
D710	4121141480	1N4148
D715	4138150015	GP15B-5009L
D716	4138104002	1N4002L
D718,D721,D722A	4121141480	1N4148
D717,D719,D720	4121901760	1SS176
D722	224452202	MTZ22B
D725	4121901760	1SS176
	CONNECTORS	
CN701	4490601003	PH 6P, MALE
CN702	4490401004	PH 4P, MALE
CN703	4491700290	FTW 17P(1.5), MALE
CN704	4490201002	EH 2P(2.5), MALE
CN705	4490801004	PH 8P, MALE
CN706	4491201004	PH 12P, MALE
CN707,CN722	4490201004	PH 2P(2.0), MALE
CN720	4490601004	EH 6P, MALE
CN721	4490201001	XH 2P, MALE
CN723	4490901004	PH 9P, MALE
	FUSE HOLDERS	
F701,F702,F705	4692000034	PFC5000-0202T
	FUSE LABELS	
	9030006790	1A/125V, F701 <D>
	9030006820	1A/125V, F702 <D>
	9030006810	3.15A/125V, F705 <D>
	RESISTOR	
△4181010957		R.1W 10HM, FUSE

PC BOARD PARTS LIST-CD/TUNER (CT-501)

CIRCUIT NO.	PART NO.	DESCRIPTION	CIRCUIT NO.	PART NO.	DESCRIPTION
LCD P.C. BOARD ASS'Y			IC210	415978L05A or 4157780053	NJM78L05A or MC78L05CT
IC212	ICs 4151164301	μPD16430AGF	IC211	4151755121	μPD75512GF-205-3B9
			IC213	415G00520D	PST520D
LCD 201	LCD 4110440215	HLC-8388-012410	Q201L/R,Q204 Q205	Transistors 410920114T 41092114YS	DTC114TS DTC114YS
S201-S213	Switches 4400000160	SKHVBL3720CPT, Tact		Diodes	
	Connectors		D201,D203, D260	4121141480	1N4148
CN208-1	C48D111612	11P PH 160 mm	D202A,D206, D210,D212, D213,D215, D217, D261	4121901760	1SS176
CN209-1	C48D071612	7P PH 160 mm		X'tal	
CN214	C48D022012	2P PH 200 mm	X201	4100941940	4.194304M AT-49
CIRCUIT NO. PART NO. DESCRIPTION				Resistors	
ANTENNA JACK P.C. BOARD ASS'Y			AR3	408Y04J472	RYLS04J472, R. Array 4.7 k ohm x 4
FDI	Front End 7160228003	FE415-G11B, FM <V>	AR4	408Y08J473	RYLS08J473, R. Array 47 k ohm x 8
D001-D004	Diodes 4121901760	1SS176		Capacitors	
L001	Coil 4300400710	PC8474-1, FM Antenna <V>	C202,C204, C211,C212, C225,C226, C228, C231, C233,C236, C241,C243, C244,C262	5153101210	100μ F, 10V, Elect.
JAK1	Jack 4500800275 4560002065	CJ-9002-040, 4P Antenna <D> 2P Antenna <P><V>	C206L/R C215 C218L/R	5153479250 5153109250 5113184563	4.7μ F, 50V, Elect. 1μ F, 50V, Elect. 0.18μ F, 63V, Metalized Polyester
CN002	Connectors C488020833 C488051652	2P 160 mm <D><P> 5P 180 mm <V>	C251 C253 C254 C265	5153220216 5153100225 5153470216 2000001014	22μ F, 16V, Elect. 10μ F, 25V, Elect. 47μ F, 16V, Elect. 0.1F, 5.5V, Supper Elect.
CN004-1, CN005-1	C488041651	4P 180 mm <V>		Connectors	
CN501	C488021609	2P Black 160 mm <D><P>	CN203	4490501004	PH 5P, Male
CIRCUIT NO. PART NO. DESCRIPTION			CN205	4490301002	EH 3P(2.5), Male
MAIN P.C. BOARD ASS'Y			CN208	4491101005	PH 11P, Male
IC201	ICs 22240399	TC9163N	CN209	4490701005	PH 7P, Male
IC202,IC204, IC206	415904558M	NJM4558M	CN210	4490901004	PH 9P, Male
IC203	415309184P	TC9184P	CN211	4490601005	PH 6P, Male
IC205	4152075350	LC7535	CN220	4490301004	PH 3P, Male
IC207	415903830F	BA3830F	CON05	4491001005	PH 10P, Male
IC208	415978M08A or 415778M083	NJM78M08A or M78M08CT	CON06	4490501005	PH 5P, Male
IC209	222790082JRC or 415779M083	NJM79M08A or MC79M08CT	CON10	4490301005	PH 3P, Male

CIRCUIT NO.	PART NO.	DESCRIPTION	CIRCUIT NO.	PART NO.	DESCRIPTION
TUNER P.C. BOARD ASS'Y			Resistors		
			R162	4270247955	4.7 ohm, 1/2W, Metal
	ICs		VR101	5226503177	50KX EVNDXAA03B54, 50k ohm,Semi-fixed
IC101	415201851N	LA1851N			
IC102	4152070000	LM7000	VR102	5226203177	20KX, 20k ohm, Semi-fixed
IC103	415907812A or 4157078123	NJM7812A or MC7812CT		Capacitors	
IC501	415201186N	LA1186N <D><P>	C107	5153109250	1µ F, 50V, Elect. <V>
	Transistors		C103,C119, C134,C135	5153470216	47µ F, 16V, Elect.
Q101,Q110	410521675KL	2SC1675K,L	C112	5091471513	470pF, 100V, Polypropylene
Q102	4109201245	DTC124ES	C121	5153688250	0.68µ F, 50V, Elect.
Q103	41065192AY	2SK192AY	C127	5153100225	10µ F, 25V, Elect. <D><P>
Q108,Q109	41091114YS	DTA114YS	C129,C138, C144	5153101216	100µ F, 16V, Elect.
Q109	41092114YS	DTC114YS			
Q114,Q115	4109101145	DTA114ES	C131	5153220216	22µ F, 16V, Elect.
Q116	4109201145	DTC114ES	C132,C153L/R, C159	5153100225	10µ F, 25V, Elect.
Q118,Q119	410520945PQ	2SC945P,Q			
Q501	410521674L	2SC1674L <D><P>	C148	5165339250	3.3µ F, 50V, Non Elect.
	Diodes		C150,C152	5153109250	1µ F, 50V, Elect.
D101,D102	412020149B	1SV149B	C151	5153338250	0.33µ F, 50V, Elect.
D104,D106	4121901760	ISS176	C504A	5153109250	1µ F, 50V, Elect. <D><P>
D107,D108	4138104002	1N4002L	C512	5153470216	47µ F, 16V, Elect. <D><P>
D501,D502	4120400550	1SV55 <D><P>	TC101,TC103	5010300045	30P VCT51F537A, Trimmer
D503	412150056B	MTZ5.6B, Zener <D><P>	TC106	5010200045	20P, Trimmer <D><P>
D504	4121901760	ISS176 <D><P>		Connectors	
	X'tal		CN001,CN002	4490201002	EH 2P(2.5), Male <D><P>
X101	4100903240	7.200MHz (UNI)	CN002	4490501004	PH 5P, Male <V>
	Coils		CN004,CN005	4490201002	EH 2P, Male <V>
L101	4300103111	TWS-358-744, MW antenna	CN201-I	4490301004	PH 3P, Male
L103	4330101830	TWS-358-673, MW Osc.	CN204-I	4491001004	PH 10P (2.0), Male
L105	4340201430	TWS-358-675, FM Detector	CN212-I, CN213-I, CN222-I	4490201004	PH 2P (2.0), Male
L106	4160228205	FTZ Filter <V>			
L108	4328247186	470µ H "K", Motor Choke	CN501	4490201002	EH 2P(2.5), Male <D><P>
L501	4300400720	TWS 358 599, FM antenna <D>		Miscellaneous	
			TP1	2000000478	Terminal Pin "K" <V>
	4300400710	PC-8474-1, FM antenna <P>			
L502	4310400850	PC8867, FM RF <D><P>	CIRCUIT NO.	PART NO.	DESCRIPTION
L503	4330400820	R22-F036X ORG, FM Osc. <D><P>	LAMP P.C. BOARD ASS'Y		
L504	4325022093	220K, Peaking <D><P>		Lamp	
	Transformer		PL101-PL104	4703120027	12V/100mA 4Q, Fuse Lamp
T501	4340200920	TWS-358-412, FM IFT <D><P>	CIRCUIT NO.	PART NO.	DESCRIPTION
	Ceramic Filter		RECEIVER P.C. BOARD ASS'Y		
CF101, CF102	4160200003	SFE10.7MA5 RED <D><P>		Remote Receiver	
	4160200194	SFE10.7MS3GH-A RED<V>	RC101	7140090524	LTM-9052-4
CF103	4160500199	TWS-358-679		Connector	
	Resonator		CN205-I	C488031646	3P 300 mm
CF104	4160500203	CSB456F15			

CIRCUIT NO.	PART NO.	DESCRIPTION
SOCKET B P.C. BOARD ASS'Y		
Q291L/R	Transistors	
	410520945PQ	2SC945P,Q
JACK2	Jack	
	4500800350	RJ-1031-010, 2P RCA
CN703-1	Socket	
	4570901250	CFG1117-01ZZ, 17P
CN723	Connector	
	4490901005	PH S9B-PH-K-S, Male
CN09	Wire Holders	
	4490500261	5P20
CN201-1	4490300261	3P20
	Miscellaneous	
	7306510215	UP05B102K-HT <V>
	7306527115	UP05B271K-HT <V>

CIRCUIT NO.	PART NO.	DESCRIPTION
CD DECORDER P.C. BOARD ASS'Y		
IC01 IC02 IC03 IC05 IC06 IC07	ICs	
	22240029	CXA1081M
	22240223	CXA1082BQ
	415C01167Q	CXD1167Q
	4151063767	μPD6376GS
	415904558L	NJM4558L
	4151751121	μPD75112GF-E69-3BE
	Transistors	
Q01,Q44,Q45, Q51-Q54, Q80,Q81, Q82,Q99	410520945PQ	2SC945P,Q
Q02,Q04,Q06, Q08,Q10,Q41, Q42,Q85	410500952L	2SA952L
Q03,Q05,Q07, Q9,Q98	2211772	2SC2001L
Q83,Q88,Q89 Q84 Q87 Q97	410500733PQ	2SA733P,Q
	410030313DE	2SD313D,E
	4105522603EF	2SC2603E,F
	410920114T	DTC114TS
D02-D04, D14-D19	Diodes	
	332414830	1N4148
D07-D10 D11,D12 D13,D20	4138104002	1N4002L
	224470562	MTZJ5.6B, Zener
	224470512	MTZJ5.1B, Zener

CIRCUIT NO.	PART NO.	DESCRIPTION
X'tals		
XTL01	410098467M	8.4672MHz
XTL02	4100941940	4.194304M AT-49
L01	Coil	
	4325010093	100K, Peaking
SFR01	Resistors	
	5226203177 or	20KX, Semi-fixed
SFR02	5226203137	20KX (D8AA03), Semi-fixed
	5226103177 or	10KX EVNDXAA03B13,
SFR03	5226103137	Semi-fixed
	5226202177 or	10KX (D8AA03), Semi-fixed
	5226202137	2KX EVNDXAA03,
		Semi-fixed
	5226202137	2KX (D8AA03), Semi-fixed
	Capacitors	
	5153470210	47μ F, 10V, Elect.
C02,C03,C07, C08,C20,C21, C25,C32, C36-C38,C91, C92		
C04,C29,C99	5153478250	0.47μ F, 50V, Elect.
C13	5091471513	470pF, 100V, Polypropylene
C16	5153339250	3.3μ F, 50V, Elect.
C18	5153220225	22μ F, 25V, Elect.
C19,C95	5153109250	1μ F, 50V, Elect.
C24	5153479250	4.7μ F, 50V, Elect.
C51,C52,C61, C62,C94	5153100225	10μ F, 25V, Elect.
C83,C84	5154222218	2200μ F, 16V, Elect.
C85-C88	5153221210	220μ F, 10V, Elect.

Connectors		
CON01	4492801004	PH 8P RED, Male
CON02	4490801004	PH 8P, Male
CON03	4490601004	PH 6P, Male
CON04,CON09	4490501004	PH 5P, Male
CON06	C48D051811	5P 180 mm
CON07	4490701004	PH 7P, Male
CON08	4490201004	PH 2P(2.0), Male
CON10	C488031541	3P 100 mm
BASE 2,BASE 3	4490301002	EH 3P(2.5), Male
BASE 4	4490201002	EH 2P(2.5), Male

CON10	Wire Holder	
44900300261		3P20
CIRCUIT NO. PART NO. DESCRIPTION		
CD DECORDER P.C. BOARD ASS'Y		
S02-S09	Switches	
	4400000156	SKHVB3520-CP, Tact
CON07	Connector	
	C48D072512	7P 250 mm

PACKING LIST

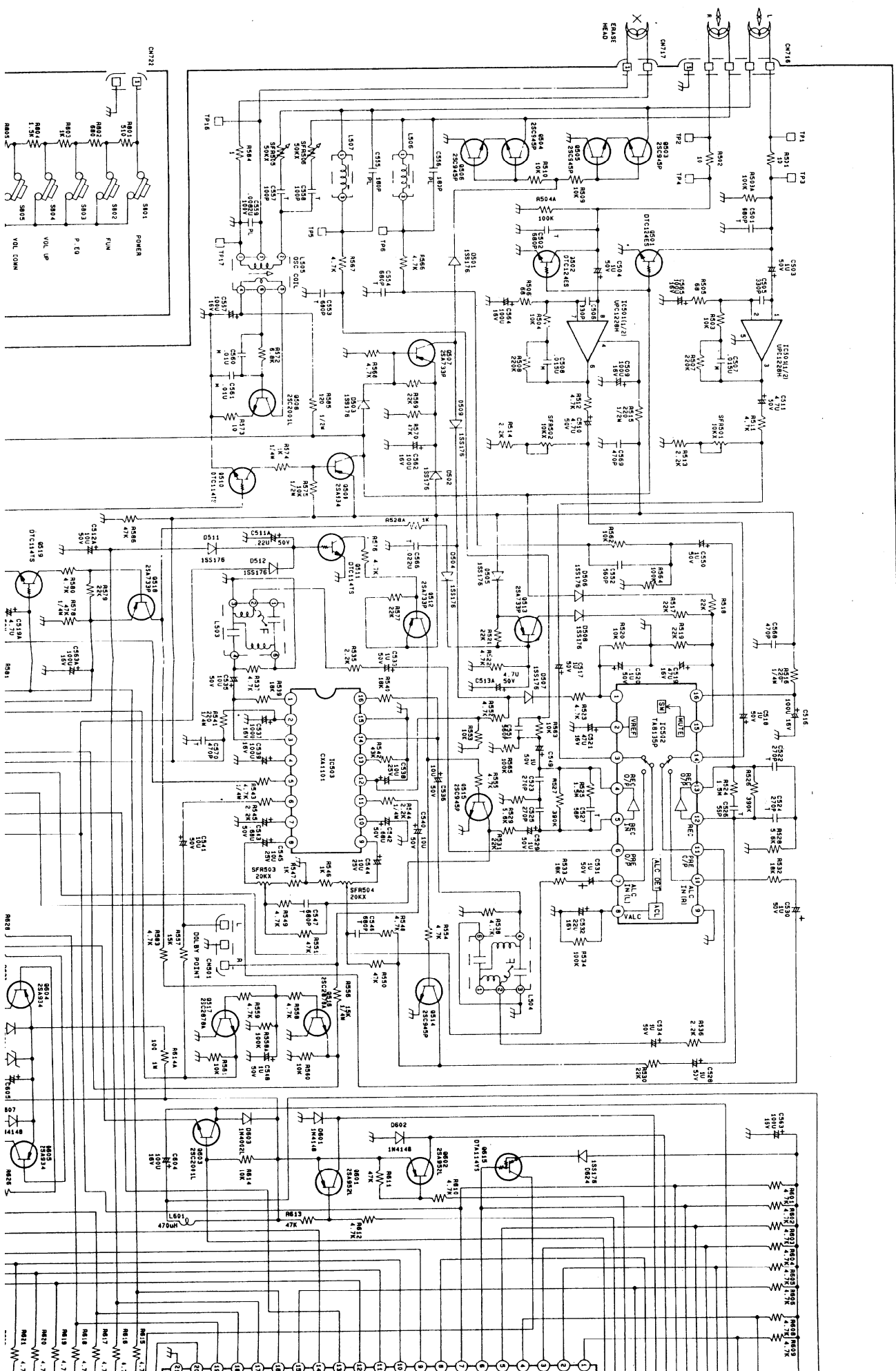
PACKING PARTS LIST (KA-501)

REF.NO.	PART NO.	DESCRIPTION
	900306305D	CARTON
	9A0104305A	SNOW BOX L
	9A0204305A	SNOW BOX R
	9902304041	POLY BAG 23 × 40(I/B)
	900406301D	SOFT SHEET(58 × 58)
	9010007470	SERIAL NO.LABEL(34 × 6)
	901104301A	SOFT SHEET(18 × 30)
	9060010860	RATING SERIAL NO.LABEL
	9100018130	SERVICE LABEL
	9100018720	CASSETTE LOCK LABEL
	9100019320	BAR CODE LABEL
	9100019500	SHIPPING LABEL
	<ACCESSARY BAG ASS'Y>	
	9080021480	INSTRUCTION BOOK(3L)
	9120004500	I/B SHEET (CASSETTE LOCK)
	9120004750	SERVICE SHEET
	C488171373	17P PLUG ASS'Y
	4300103441	AM LOOP ANTENA ASS'Y
	715305D0C1	REMOTE TRANSMITTER ASS'Y
	9030006750	WARRANTY CARD

PACKING PARTS LIST (CT-501)

CIRCUIT NO.	PART NO.	DESCRIPTION
	9A0104305A	Snow Box L
	9A0204305A	Snow Box R
	900406301D	Soft Sheet (58 × 58)
	201906301D	Sheet Cushion

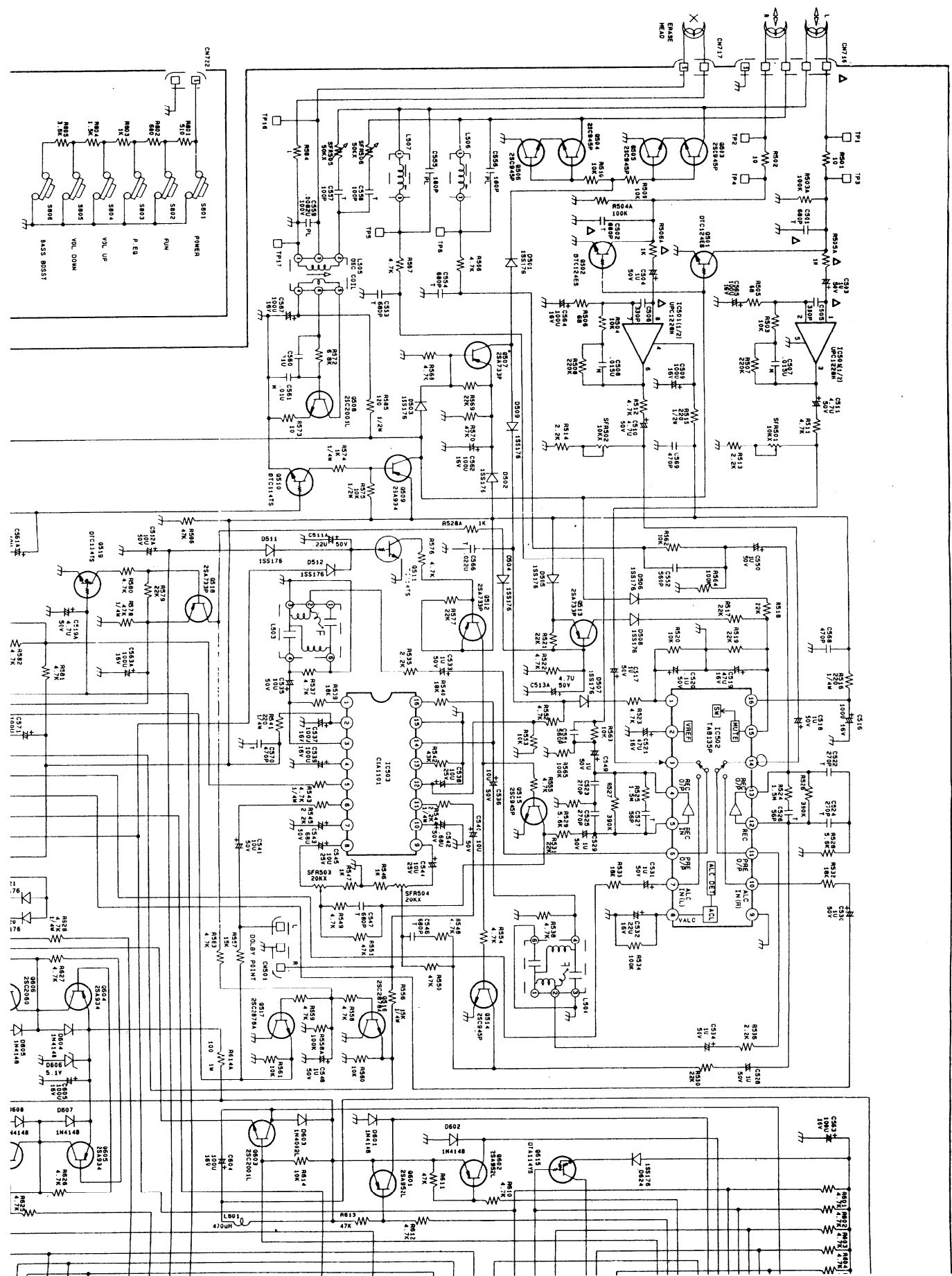
SCHEMATIC DIAGRAM-CASSETTE/AMPLIFIER (120V model)

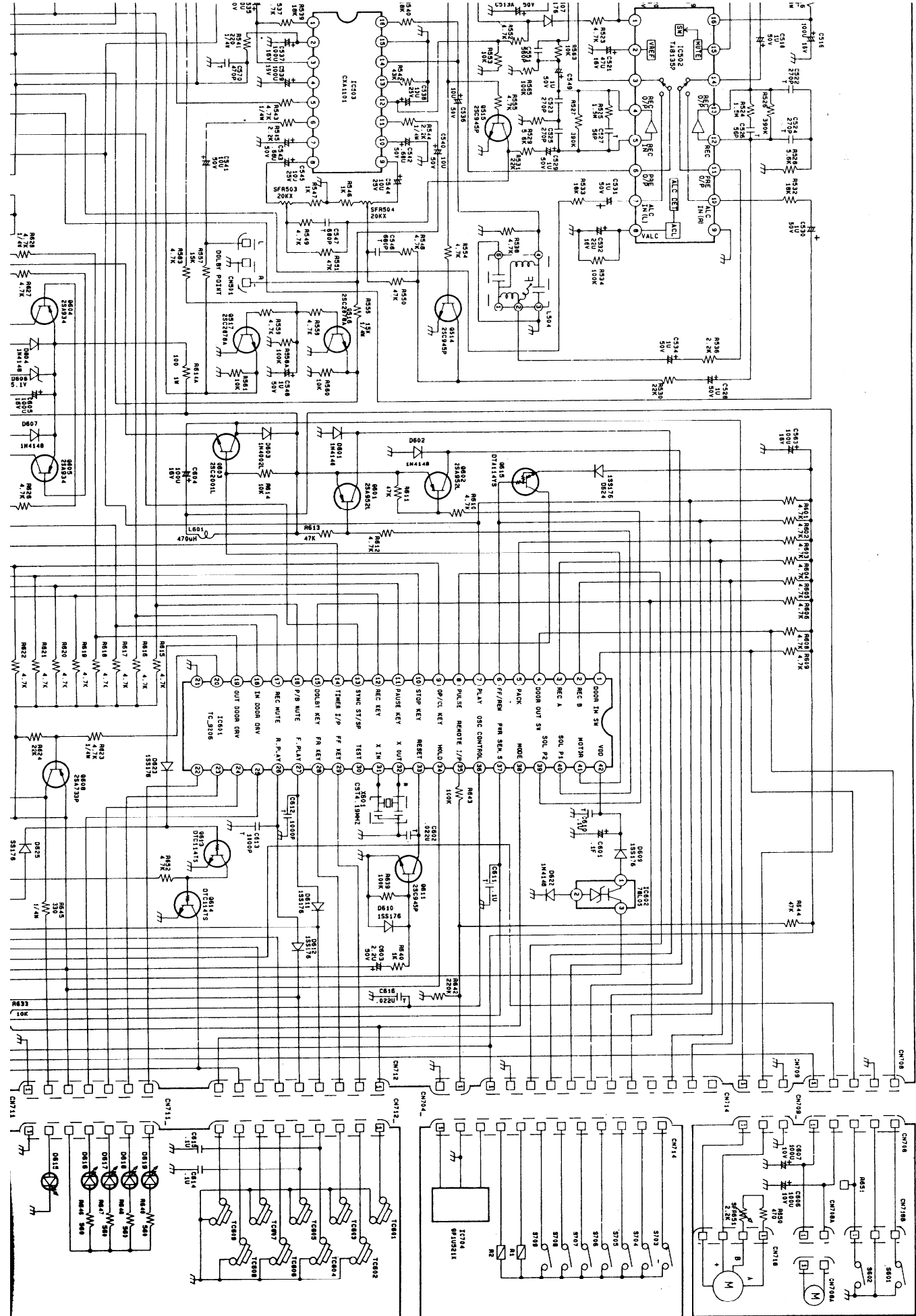


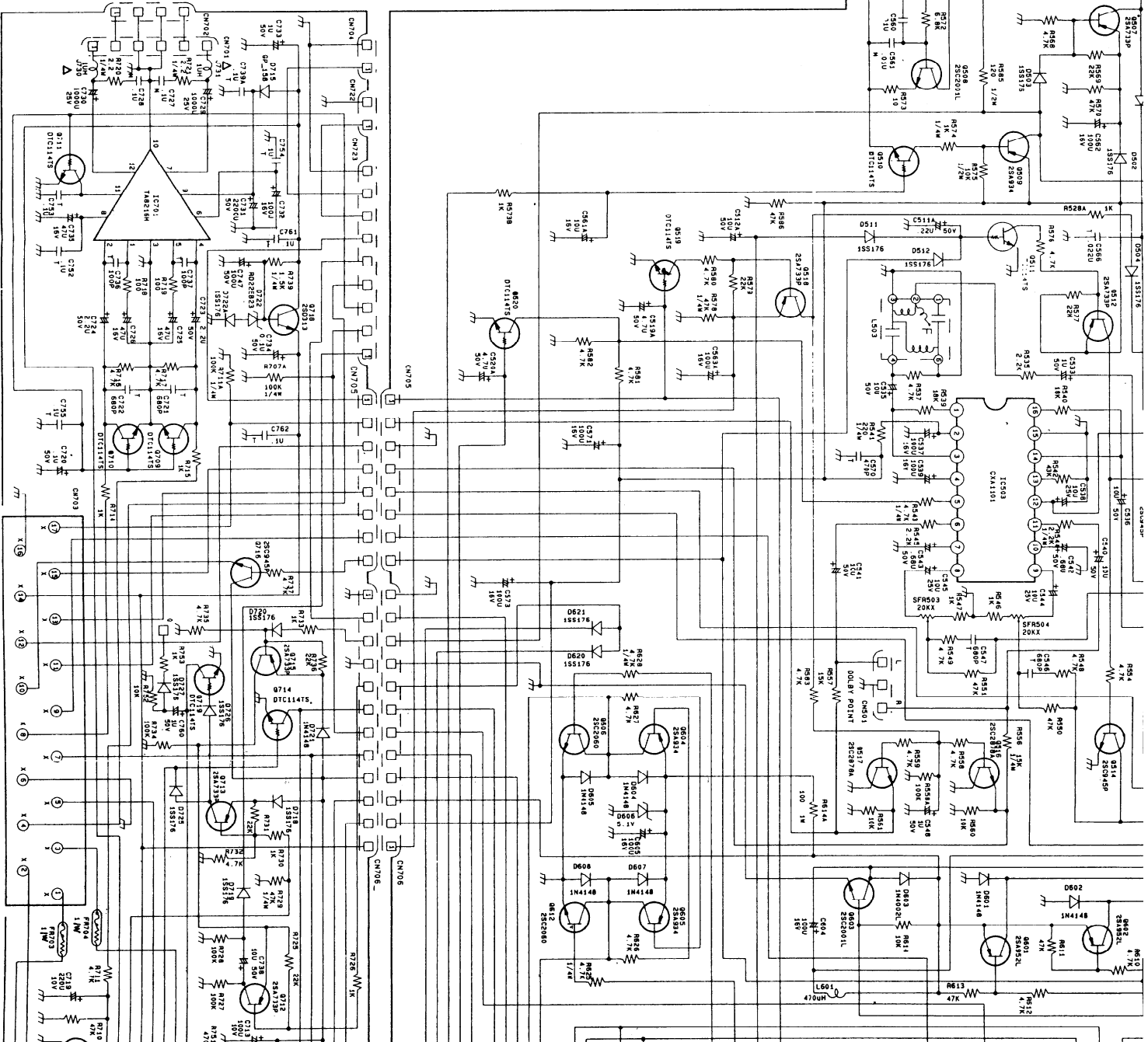


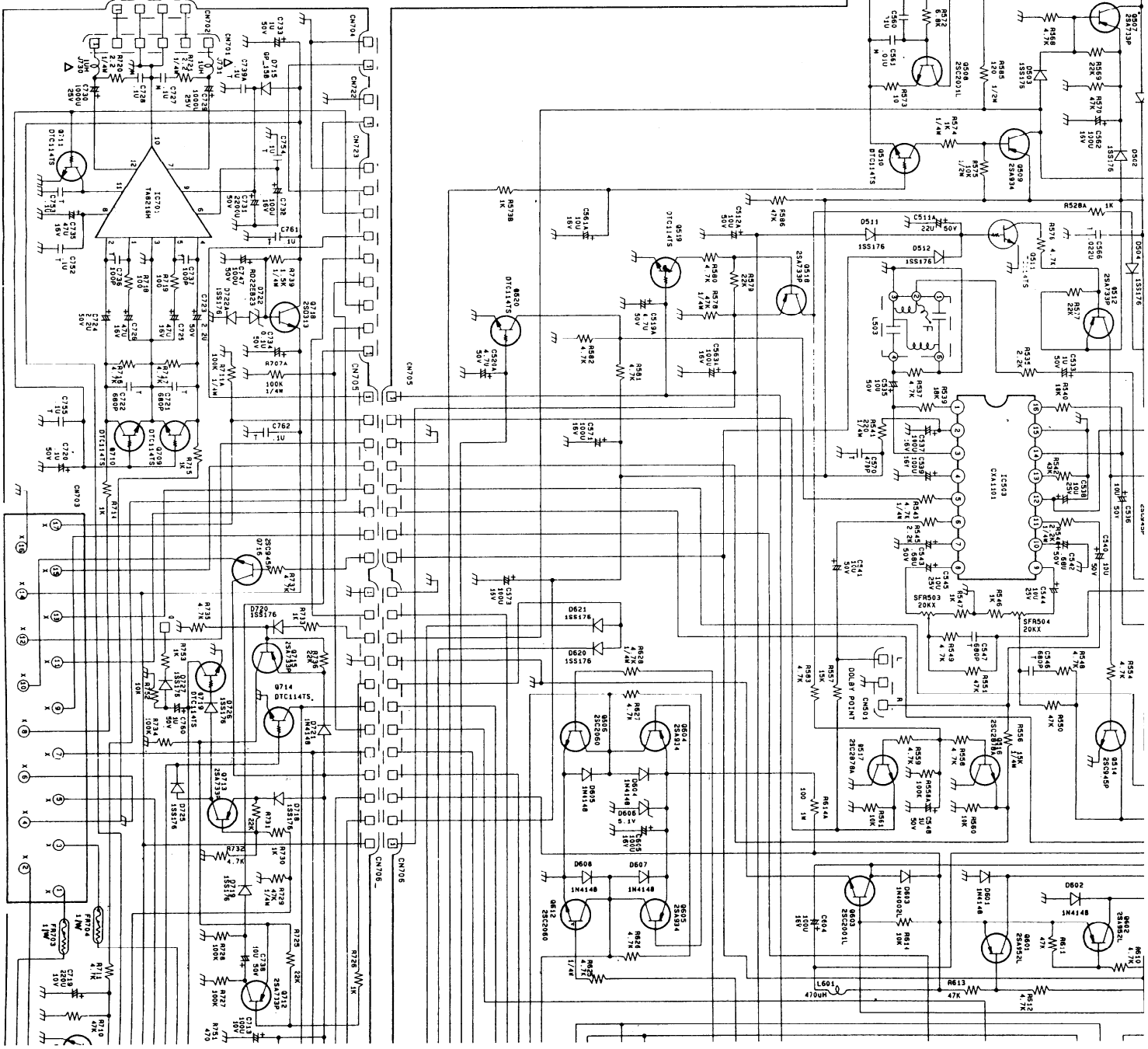


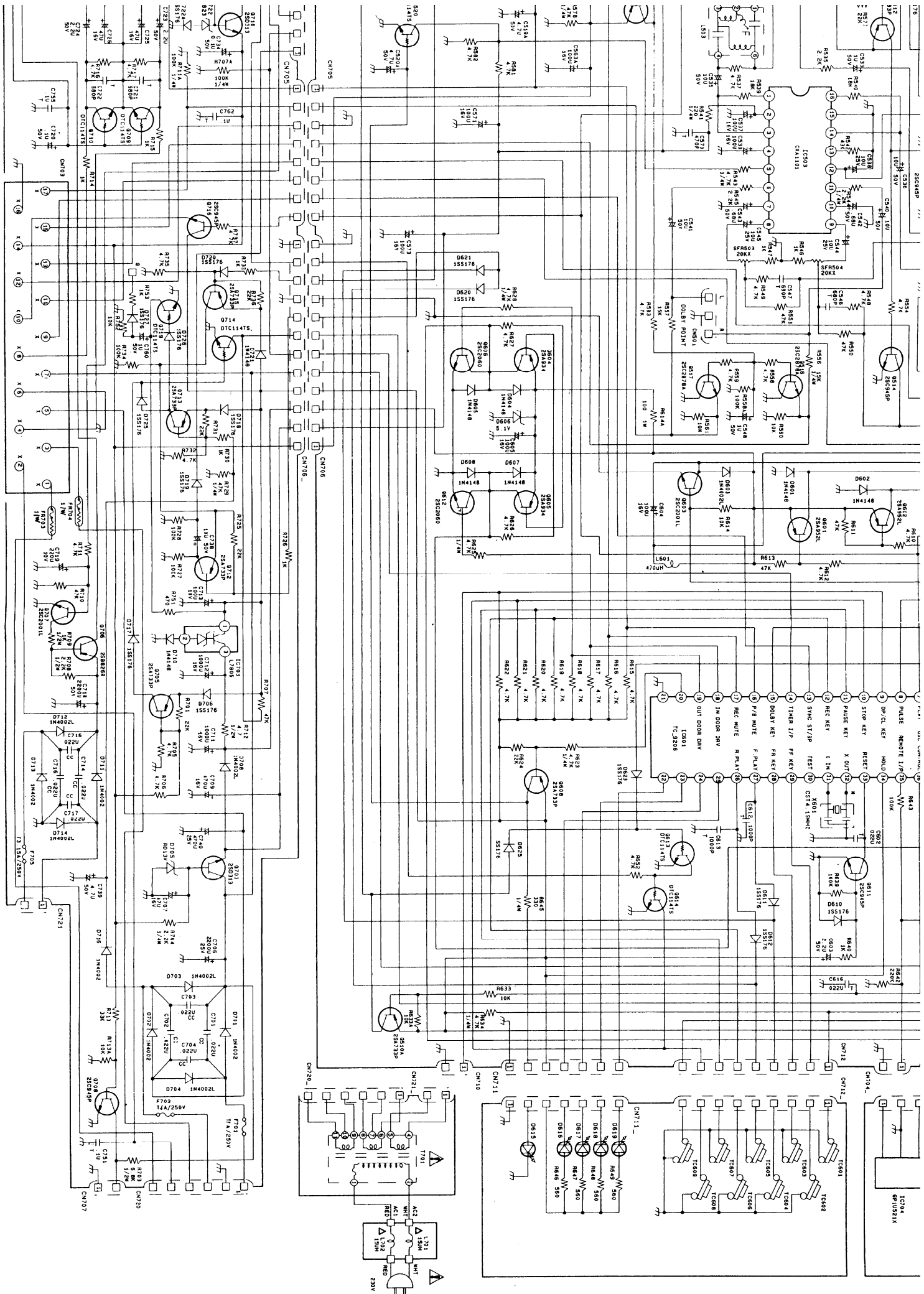
7





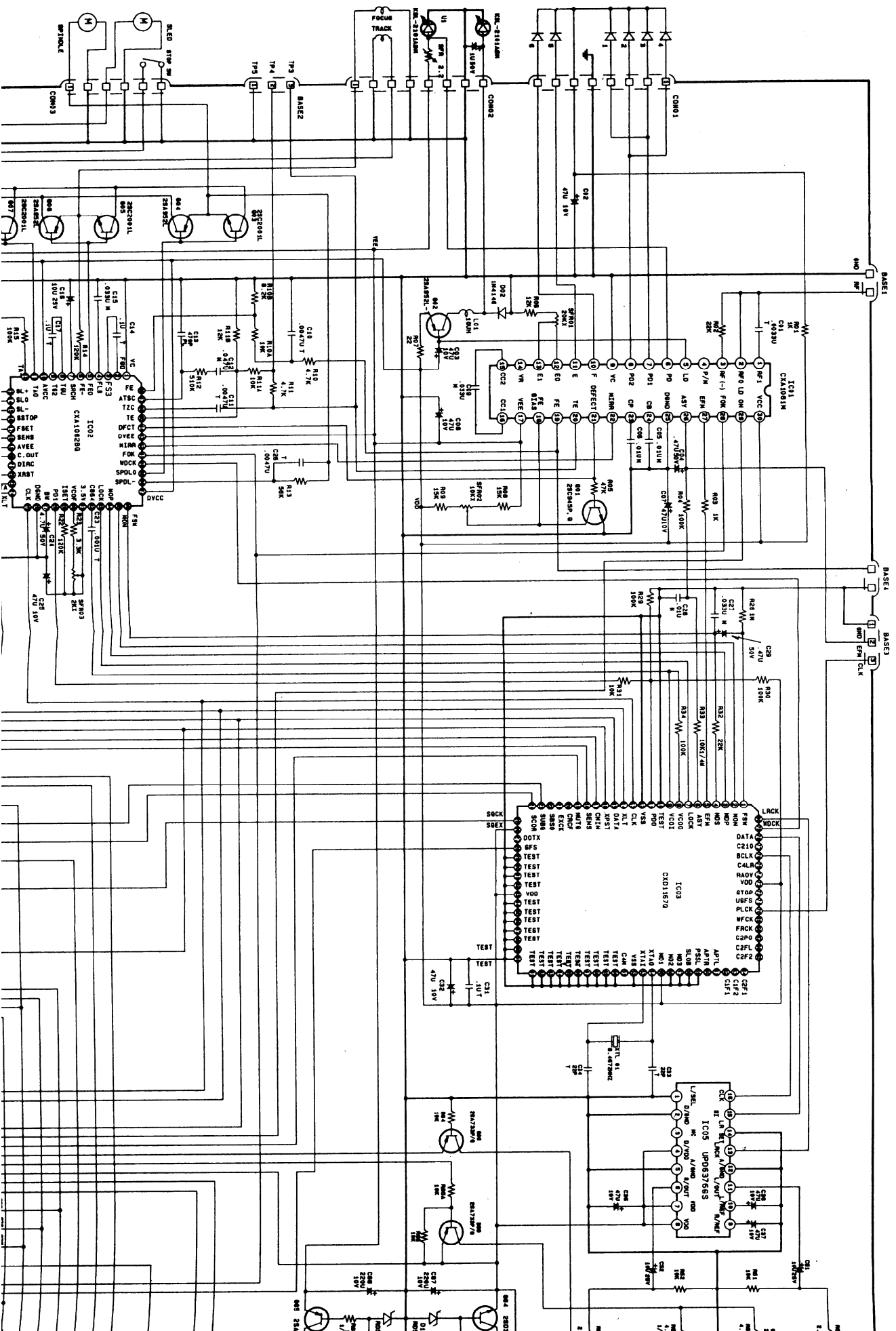


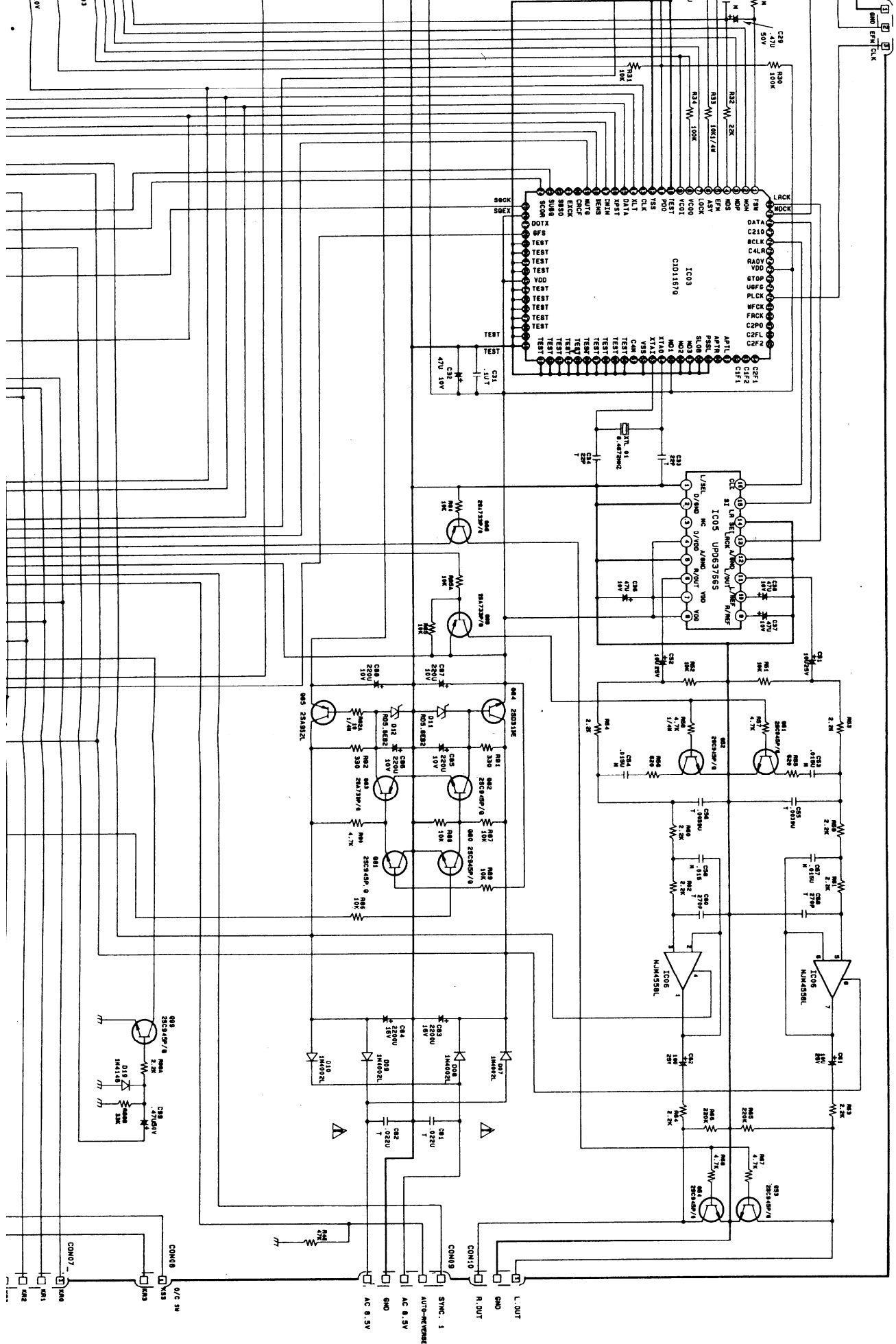


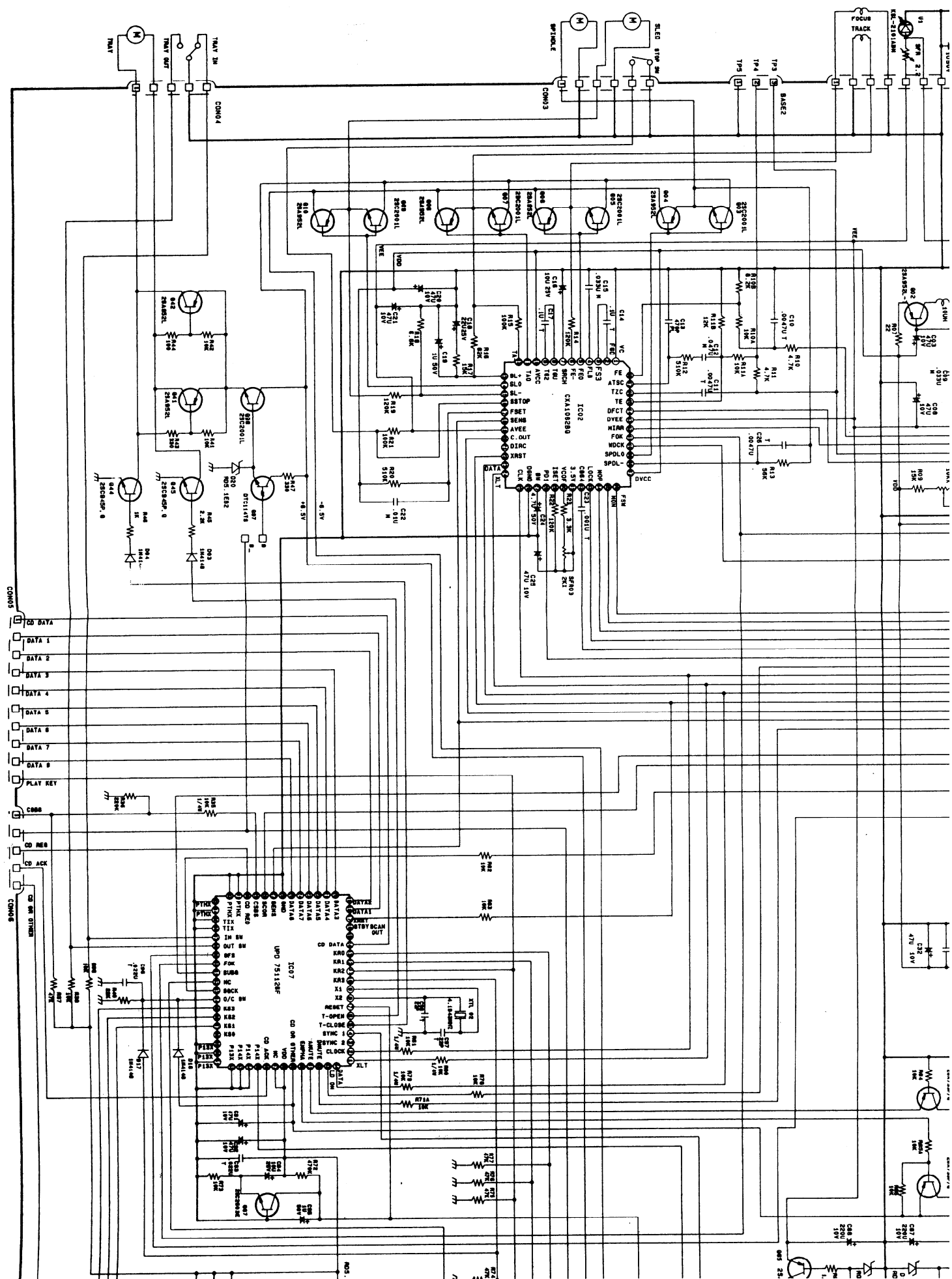


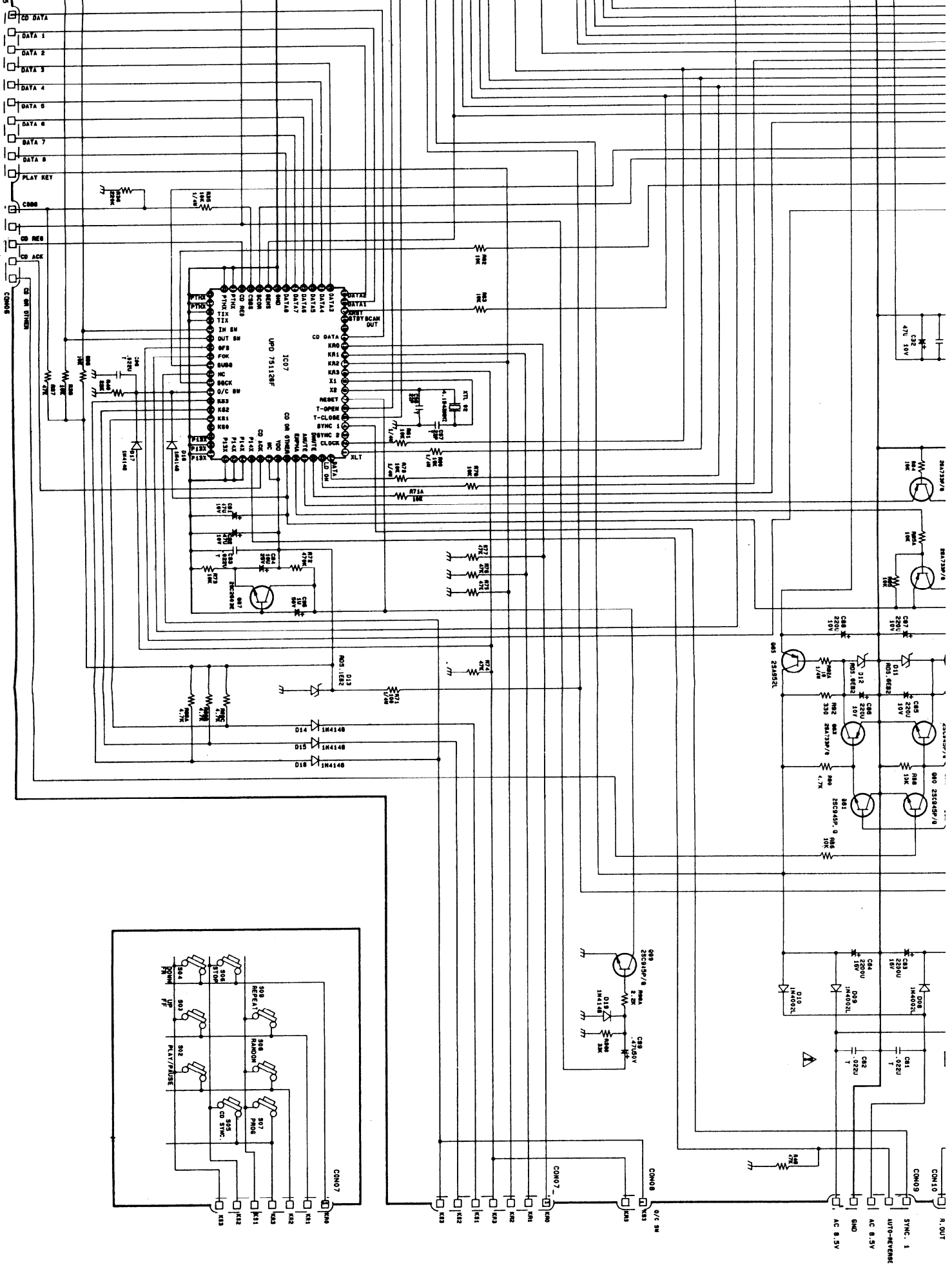
SCHEMATIC DIAGRAM-CD DECODER

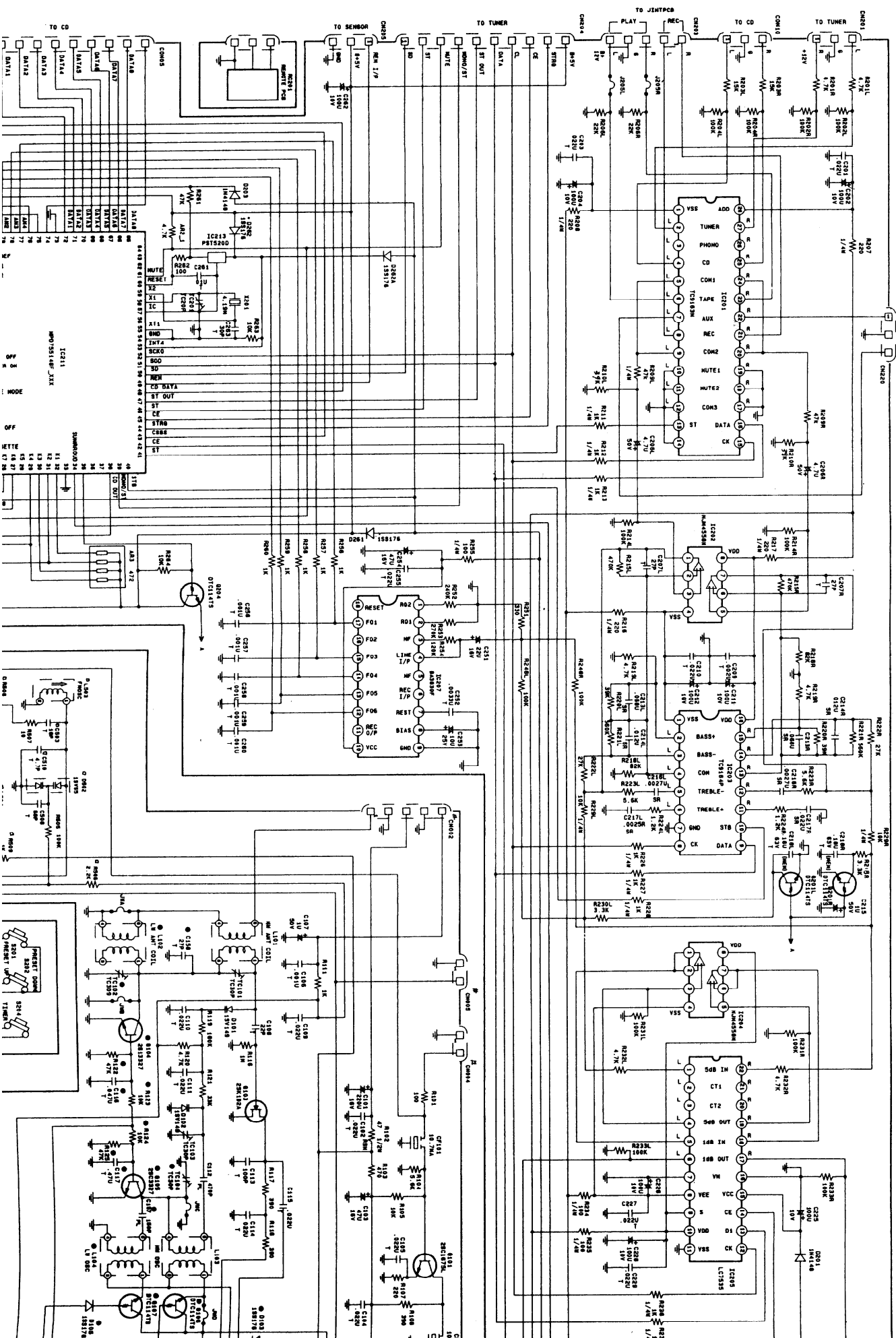
A B C D E F G

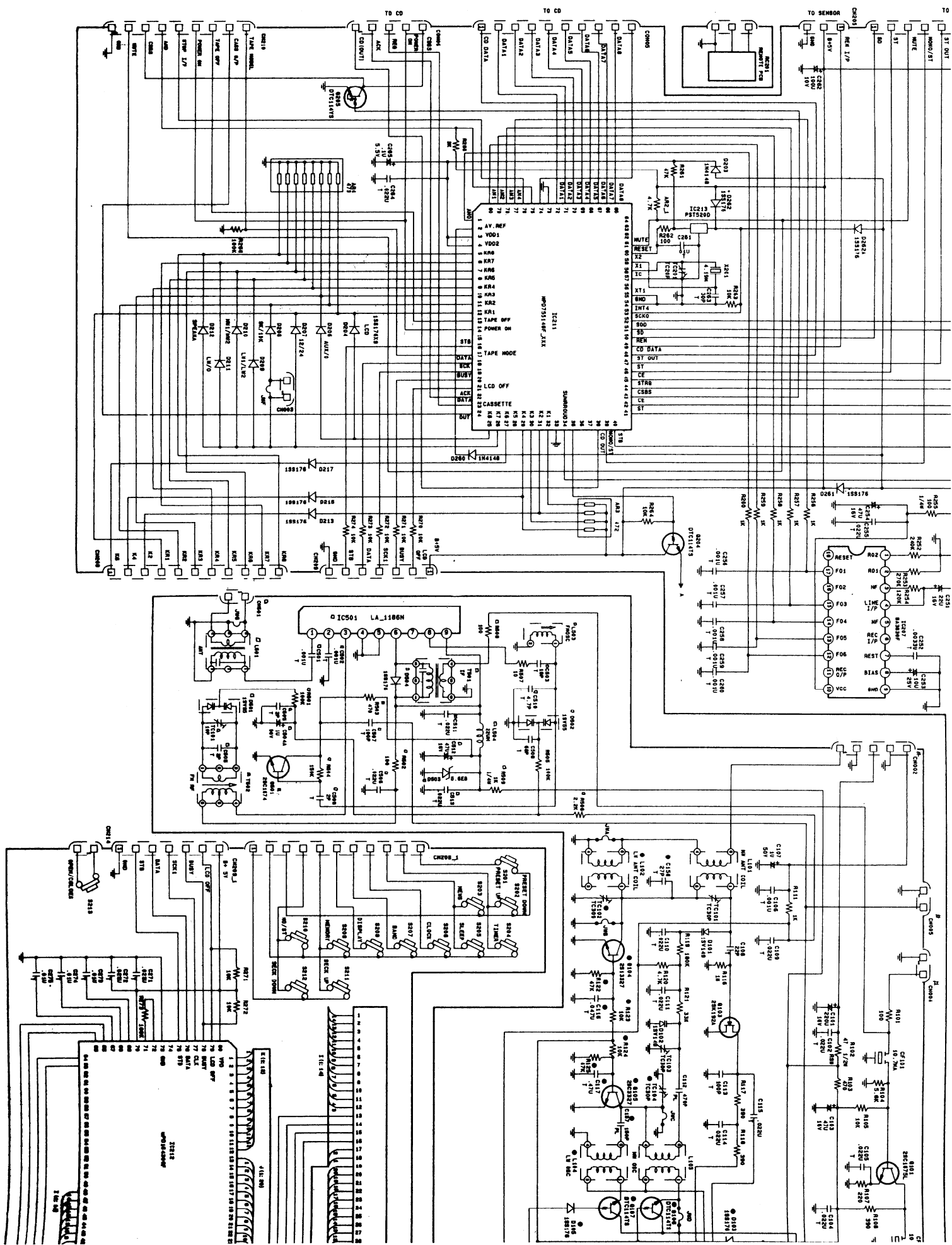


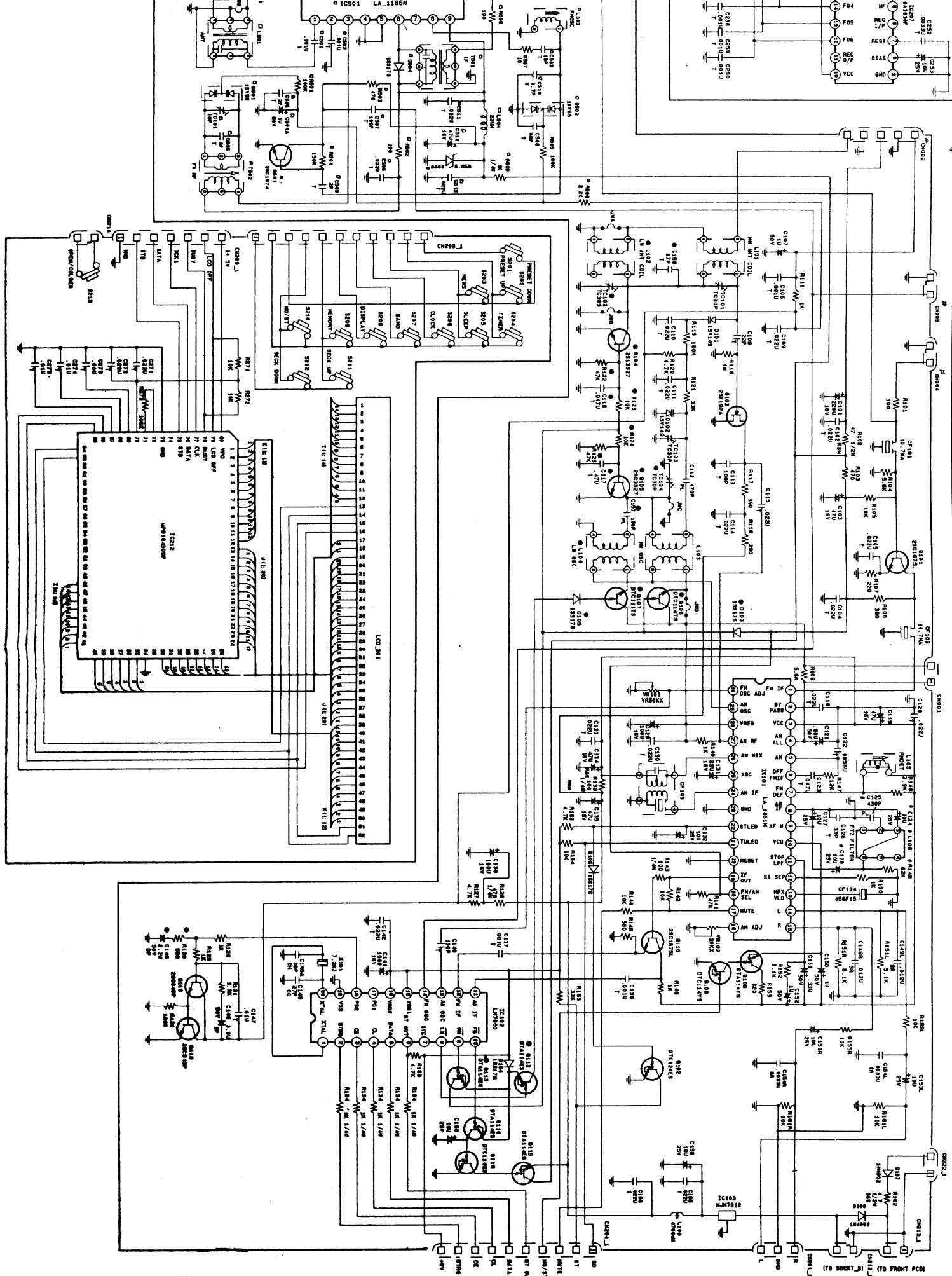




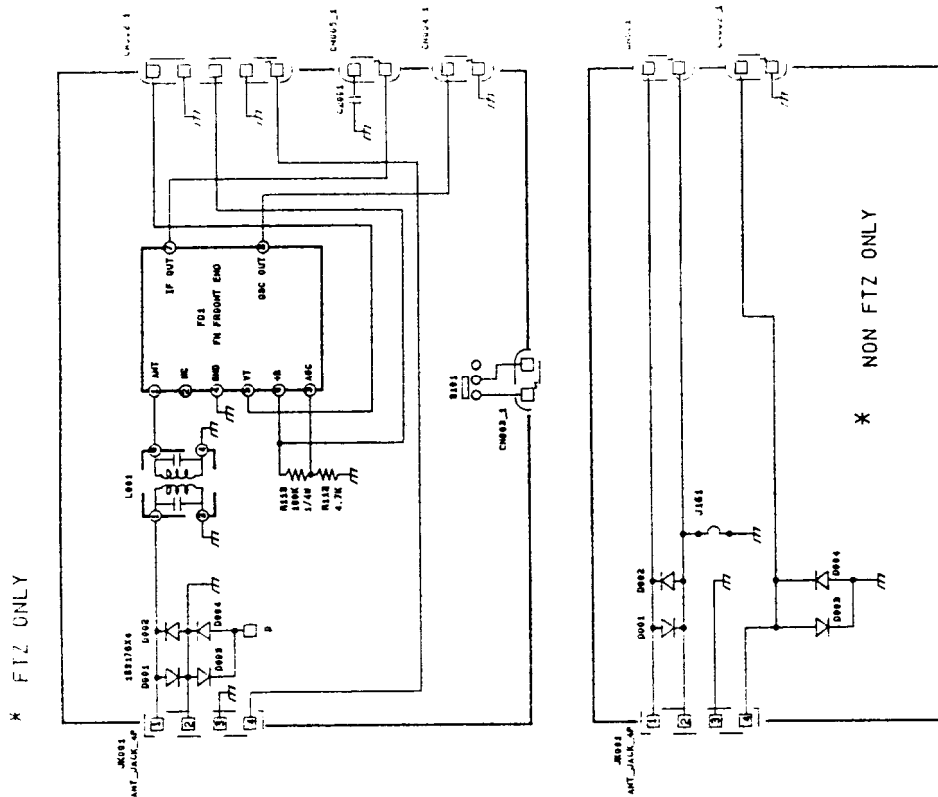




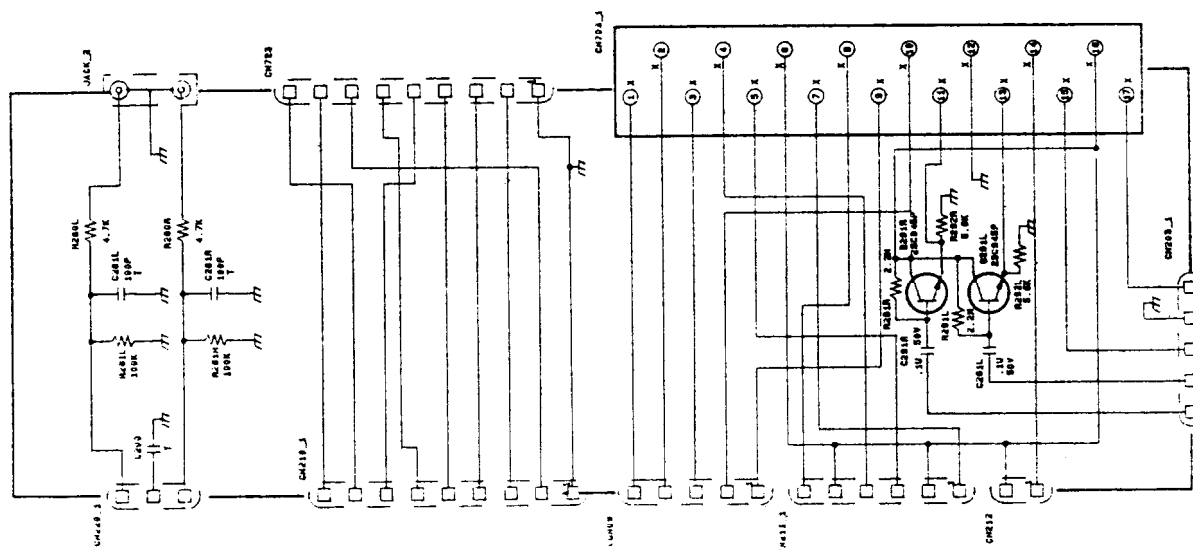




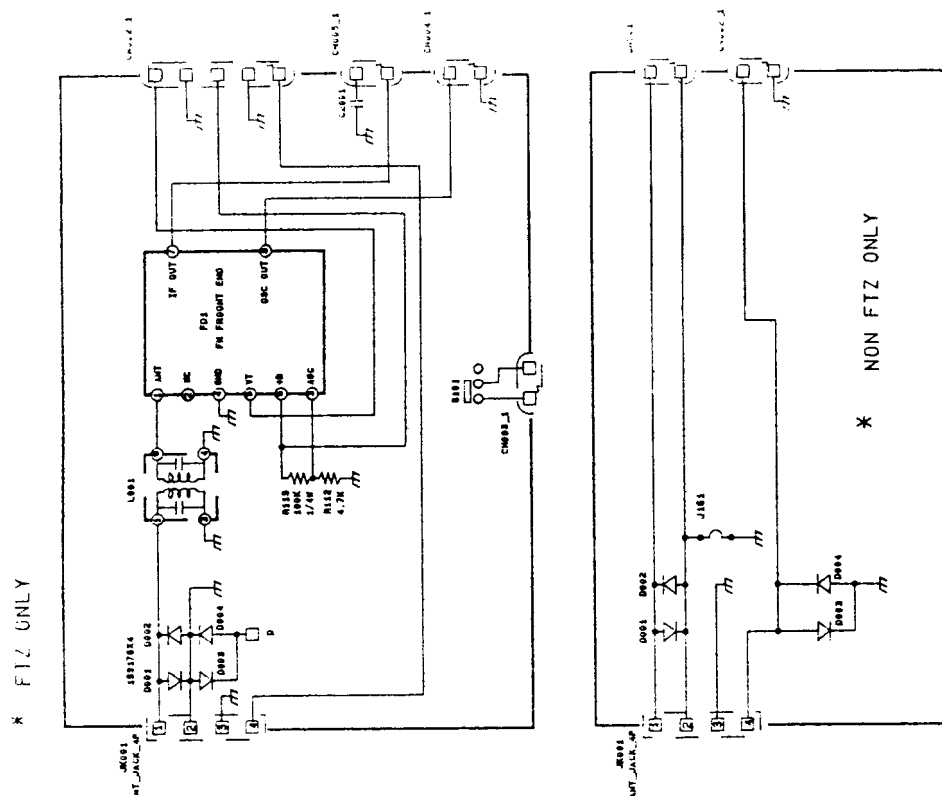
SCHEMATIC DIAGRAM-SOCKET



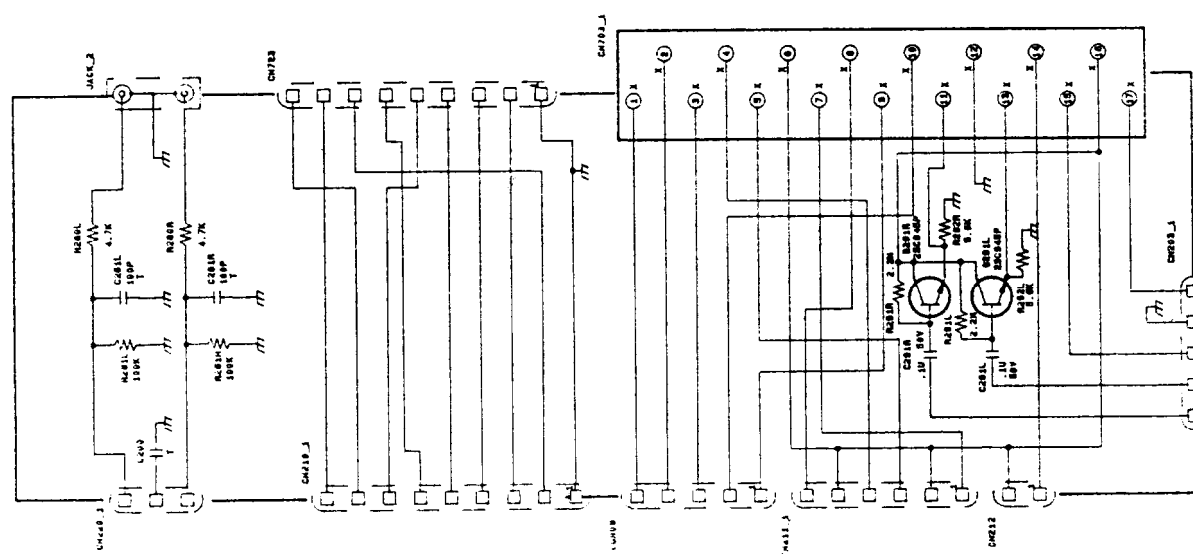
		CAPETRONIC MODEL	CUSTOMER MODEL
FTZ		305D_L6	MPC_501 UPV
NON FTZ		305D_L1/L4	* 
J161	NO J23 R	305D_L1	MPC_501 UD
	YES MPC	305D_L4	MPC_501 UP



SCHEMATIC DIAGRAM-SOCKET



		CAPETRONIC MODEL	CUSTOMER MODEL
FTZ		3050_L6	MPC_501 UPV
NON FTZ		3050_L1/L4	* Q
J161	NO 225 A	3050_L1	MPC_501 UD
	YES	3050_L4	MPC_501 UP



SPECIFICATIONS

AMPLIFIER/CASSETTE DECK (KA-501)

Unit Size : 162(W) x 141(H) x 273(D) mm
 6-3/8" x 5-9/16" x 10-3/4"

AMPLIFIER SECTION

Power Output : 2 x 10 watts (10% THD 1kHz 8 ohms)
 Equalizers : 4 Preset EQ curve (5 Bands Spect.)
 FLAT, POP, JAZZ, CLASSIC
 2 User Presetable EQ curve
 ORIGINAL 1, 2

Input Selector : CD, TUNER, TAPE, AUX
 Headphones : 3.5 mm (SPEAKERS Switch)
 Display : LCD Display

Tone Controls
 Bass : ± 8.0 dB at 100 Hz
 Treble : ± 8.0 dB at 10 kHz

Super Bass : 8.0 dB at 100 Hz
 S/N Ratio : 67 dB (IHF-A)

Power Source : 120V, 60Hz (US Type)
 230V, 50Hz (European Type)

CASSETTE DECK SECTION

Deck : Rec./Play Auto Revers (Normal)
 Play Mode : DECK $\rightleftarrows$ $\rightarrow$, Revers Mode Play
 Dubbing : CD Synchro, Edit Recording
 FF/REW Time : 110 sec.(C-60)
 Noise Reduction : DOLBY B NR
 Wow Flutter : 0.15% (WRMS)
 Loading : Horizontal Slide Drawer
 Input Volume : ALC

SPEAKER SYSTEM (PS-501)

Unit Size : 160(W) x 282(H) x 216(D) mm
 6-5/16" x 11-1/8" x 8-1/2"

Type : 2 Way Bass Reflex

Speakers

Woofer : 12.5 cm Corn Type
 Squawker : 5.0 cm Corn Type
 Impedance : 8 ohm

CD PLAYER /TUNER (CT-501)

Unit Size : 162(W) x 141(H) x 263(D) mm
 6-3/8" x 5-9/16" x 10-3/8"

CD PLAYER SECTION

Reading Rotation : About 200-500 r.p.m.(CLV)
 D/A Conveter : 2 x Over Sampling
 Freq. Response : 40Hz - 20kHz (+2/-3dB)
 Program : 20 Tracks Memory
 Tray : Single Drawer For a Disc
 Repeat Mode : REPEAT, 1, ALL, SHUFFLE, SCAN
 Scanning Method : Non-contact Optical Scanner
 Error Correction : Cross Interleave, Reedsolomon Code
 Channel : 2 Channel

TUNER SECTION

FM Tuning Range : 87.5 - 108.0 MHz (50 kHz step)
 AM Tuning Range : 531 - 1602 kHz (9 kHz step)
 US Type : FM 100 kHz step, AM 10 kHz step
 Preset Station : FM + AM 30 Station Memories
 Timer Function : Sleep, Wake-Up, News, Snooze

REMOTE CONTROL (With 36 Key)(RC-275S)

Control Distance : 15 Feet
 Control Angle : ± 30 Degree

POWER, SOURCE, SLEEP, SNOOZE, PROGRAM,
 CLEAR, DISPLAY, TEN KEY, 1 ~ 9, 0, +10, BAND,
 SCAN, CD PLAY/ PAUSE, STOP, EDIT, SKIP F(FF),
 SKIP B(REW), F/PLAY, R/PLAY, STOP, BASS BOOST,
 EQ MODE, BASS UP, DOWN, TREBLE UP, DOWN,
 VOLUME UP, DOWN

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