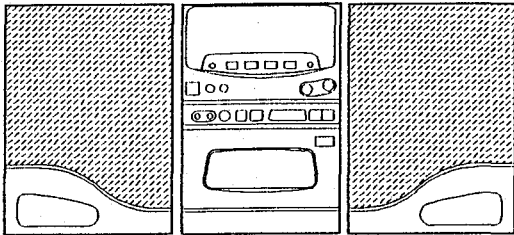


aiwa



LCX-50 LCX-AP1



COMPACT DISC STEREO SYSTEM

- BASIC TAPE MECHANISM: 2ZM1-R2N
- BASIC CD MECHANISM: KSM2101-BAM

- TYPE:U,LH,HE,HR,EZ,EEZ
- TYPE:Z(AP1)

SYSTEM	CD-CASSEIVER	SPEAKERS	REMOTE CONTROLLER
LCX-50	CX-SL50	SX-SL50	RC-L60E
LCX-AP1	CX-AP1	SX-AP1	RC-L60E

- For the portions of this Manual which do not carry the destination LCX-AP1 (Z), refer to the Service Manual of LCX-50 (EZ, EEZ).

MANUAL
SERVICE

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SPECIFICATIONS

MAIN UNIT

<FM section>

Frequency range 87.5 MHz to 108 MHz
Antenna 75 ohms (unbalanced)

<AM/MW section>

Frequency range 531 (530) kHz to 1602 (1710) kHz
 (9 kHz/10 kHz step)
Antenna Loop antenna

<SW section>(HE model)

Frequency range SW1 : 3.2 MHz to 7.3 MHz
 SW2 : 9.5 MHz to 21.85 MHz
Antenna Wire antenna

<LW section>(EEZ, EZ, AP1Z models)

Frequency range 144 kHz to 290 kHz
Antenna Loop antenna

<Amplifier section>

Power output EEZ, EZ, U, LH, AP1Z : 7 W + 7 W
 (6 ohms, T.H.D. 1% 1 kHz)
 U : FTC RULE
 7 watts per channel Min.
 RMS at 6 ohms, from 65 Hz to 15 kHz,
 with no more than 1% Total Harmonic
 Distortion
 HE, HR : 10 W + 10 W
 (6 ohms, T.H.D. 10% 1 kHz)

<Cassette deck section>

Track format 4 tracks, 2 channels stereo
Frequency response CrO2 tape : 50-16000 Hz
 Normal tape : 50-15000 Hz
Signal-to-noise ratio 50 dB
Head Recording/playback head × 1
 Erasure head × 1

<CD player section>

Disc Compact disc
Scanning method Non contact optical scanner
 (semiconductor laser application)
Laser Semiconductor laser ($\lambda = 780 \text{ nm}$)
No. of channels 2 channels
D-A conversion 1-bit linear

SPEAKER SYSTEM

(These values are for one speaker)

Cabinet type 1 way, bass reflex (Magnetism sealed type)
Speaker 100 mm (4 in.) cone type wide range
Impedance 6 ohms
Output sound pressure level 87 dB/W/m
Dimensions(W × H × D) 150 × 230 × 210 mm
 (6 × 9 1/8 × 8 3/8 in.)
Weight 2.0 kg (4 lbs. 7oz.)

GENERAL

Power requirements EEZ, EZ, AP1Z : AC 230 V, 50 Hz
 K : AC 230-240 V, 50 Hz
 U : AC 120 V, 60 Hz
 HE, HR, LH : AC 120 V/220-240 V
 50/60 Hz
Power consumption EEZ, EZ, AP1Z : 60 W
 U : 36 W
 HE, HR, LH : 45 W

Dimensions(W × H × D) Center unit :
 140 × 235.5 × 283.6 mm
 (5 5/8 × 9 3/8 × 11 1/4 in.)
 System :
 440 × 235.5 × 283.6 mm
 (17 3/8 × 9 3/8 × 11 1/4 in.)
Weight Center unit : 3.2 kg (7 lbs. 1 oz.)
 System : 7.2 kg (15 lbs. 14 oz.)

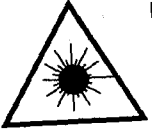
● Design and specifications are subject to change without notice.

PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs 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.



- Caution: Invisible laser radiation when open and interlocks defeated avoid exposure to beam.
- Advarsel: Usynlig laserstråling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

VAROITUS!

Laiteen Käyttäminen muulla kuin tässä käyttöohjeessa mainitulla tavalla saattaa altistaa käyttäjän turvallisuusluokan 1 ylitävälle näkymättömälle lasersäteilylle.

WARNING!

Om apparaten används på annat sätt än vad som specificeras i denna bruksanvisning, kan användaren utsättas för osynlig laserstråling, som överskrider gränsen för laserklass 1.

CAUTION

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

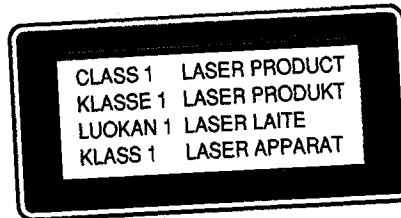
ATTENTION

L'utilisation de commandes, réglages ou procédures autres que ceux spécifiés peut entraîner une dangereuse exposition aux radiations.

ADVARSEL!

Usynlig laserstråling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

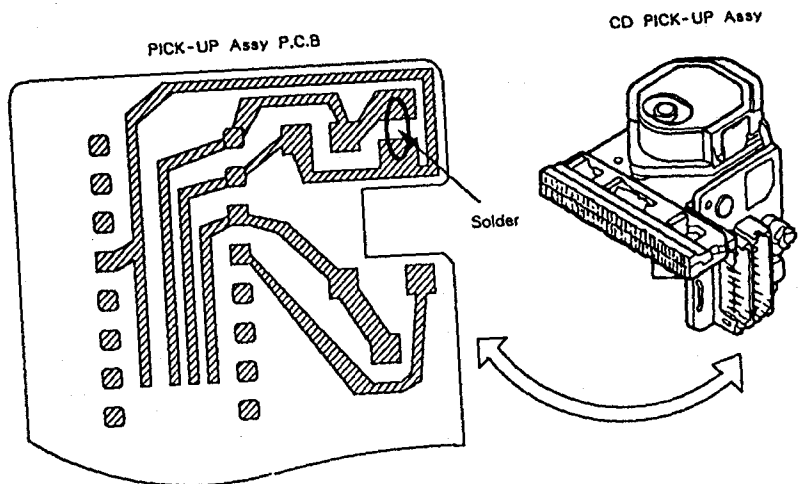
This Compact Disc player is classified as a CLASS 1 LASER product. The CLASS 1 LASER PRODUCT label is located on the rear exterior.



Precaution to replace Optical block (KSS - 210B)

Body or clothes electrostatic potential could ruin laser diode in the optical block. Be sure to ground body and workbench, and use care the clothes do not touch the diode.

- 1) After the connection, remove the solder shown in the right figure.



REF NO.	PART NO.	カンリ NO.	DESCRIPTION
LED11	87-017-928-089		LED, L-1154PGC
R92	87-025-313-089		RES 1/4W 4.7 NFR TAPG
R93	87-025-313-089		RES 1/4W 4.7 NFR TAPG
SW1	87-036-170-089		SW, TACT
SW2	87-036-170-089		SW, TACT
SW3	87-036-170-089		SW, TACT
SW4	87-036-170-089		SW, TACT
SW5	87-036-170-089		SW, TACT
SW6	87-036-170-089		SW, TACT
SW7	87-036-170-089		SW, TACT
SW8	87-036-170-089		SW, TACT
SW9	87-036-170-089		SW, TACT
SW10	87-036-170-089		SW, TACT
SW11	87-036-170-089		SW, TACT
SW12	87-036-170-089		SW, TACT
SW13	87-036-170-089		SW, TACT
SW14	87-036-170-089		SW, TACT
SW15	87-036-170-089		SW, TACT
SW16	87-036-170-089		SW, TACT
SW17	87-036-170-089		SW, TACT
X1	87-030-233-089		VIB, CER KBR 4.19MKS
MIC C.B			
C1001	87-010-197-089		C-CAP, S 0.01-25 B
C1002	87-010-178-089		C-CAP, S 1000P-50 B
C1003	87-010-544-049		CAP, E 0.1-50 SME
C1004	87-010-071-049		CAP, E 1-50 5L
C1005	87-010-178-089		C-CAP, S 1000P-50 B
C1006	87-010-545-049		CAP E 0.22-50 SME<HE, HR>
C1006	87-010-401-049		CAP, E 1-50 SME<LH, EEZ, EZ, AP1Z, U>
C1007	87-010-404-089		CAP, E 4.7-50 SME
C1008	87-010-544-049		CAP, E 0.1-50 SME<HE, HR>
C1009	87-010-182-089		C-CAP, S 2200P-50 B<HE, HR>
C1010	87-010-545-049		CAP E 0.22-50 SME<HE, HR>
C1020	87-010-198-089		C-CAP, S 0.022-25 B<HE, HR>
C1021	87-010-186-089		C-CAP, S 4700P-50 B<HE, HR>
C1022	87-010-401-049		CAP, E 1-50 SME<HE, HR>
C1023	87-010-196-089		C-CAP, S 0.1-25 F<HE, HR>
C1024	87-010-408-049		CAP-E 47-50 SME<HE, HR>
C1027	87-010-195-089		C-CAP, S 0.068-25 F<HE, HR>
C1028	87-010-182-089		C-CAP, S 2200P-50 B<HE, HR>
C1029	87-010-198-089		C-CAP, S 0.022-25 B<HE, HR>
C1030	87-010-263-049		CAP, E 100-10<HE, HR>

REF NO.	PART NO.	カンリ NO.	DESCRIPTION
C1031	87-010-176-089		C-CAP, S 680P-50 SL<HR>
C1031	87-010-177-089		C-CAP, S 820P-50 SL<HE>
C1032	87-010-176-089		C-CAP, S 680P-50 SL<HR>
C1032	87-010-177-089		C-CAP, S 820P-50 SL<HE>
C1033	87-010-196-089		C-CAP, S 0.1-25 F<HE, HR>
C1034	87-010-263-049		CAP, E 100-10<HE, HR>
C1035	87-010-545-049		CAP E 0.22-50 SME<HE, HR>
C1051	87-010-176-089		C-CAP, S 680P-50 SL<HE, HR>
C1052	87-010-180-089		C-CAP, S 1500P-50 B<HE, HR>
C1100	87-010-426-089		C-CAP, S 0.012-25 B<LH, U>
JKM5	87-009-216-019		JACK, DIA 3.5 STS
L1000	87-005-454-089		COIL, 680UH FLR50 K<HE, HR>
RVR12	87-024-618-019		VR, 10KA RK09K111

PT C.B

△	87-033-213-089	CLAMP FUSE SMK
△	82-304-743-019	TERMINAL, 1P
△F101	87-035-411-019	FUSE T1A 250V UL<LH, U>
△F101	87-035-502-019	FUSE, 1A 250V F<HE, HR>
△F101	87-035-501-019	FUSE, 400MA 250V F<EEZ, EZ, AP1Z>
△PT101	84-CE5-623-019	PT, E<EEZ, EZ, AP1Z>
△PT101	84-CE5-625-019	PT, H<LH>
△PT101	84-CE5-622-019	PT, U<U>
△PT101	84-CE5-626-019	PT, HE<HE, HR>
△SW101	87-031-780-019	SW, SLIDE 1-1-2<LH, HE, HR>

TAPE C.B

SFR1	87-024-581-010	SFR, 3, 3K DIA 6H KOA
SOL2	82-ZM1-618-310	SOL ASSY, 27
SW2	87-036-110-010	SW, PUSH SPPB 62
SW3	87-036-110-010	SW, PUSH SPPB 62
SW4	87-036-110-010	SW, PUSH SPPB 62
SW5	87-036-110-010	SW, PUSH SPPB 62
SW6	87-036-110-010	SW, PUSH SPPB 62

RELAY C.B

CON151	84-CE5-631-019	CONN ASSY, 6P RPEH
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MOTOR-1 C.B

M20	9X-262-513-210	SLED MOTOR ASSY
M21	9X-262-513-210	SLED MOTOR ASSY
PIN501	91-564-721-110	CONNCTOR 5P
SW1	91-572-085-110	LEAF SW

○チップ抵抗部品コード/CHIP RESISTOR PART CODE

チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding



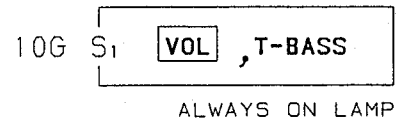
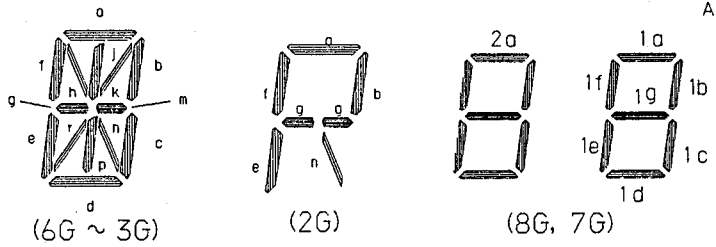
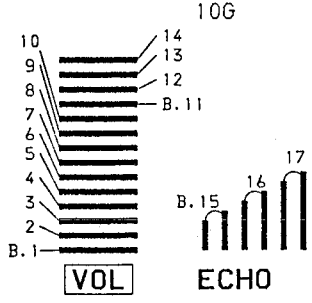
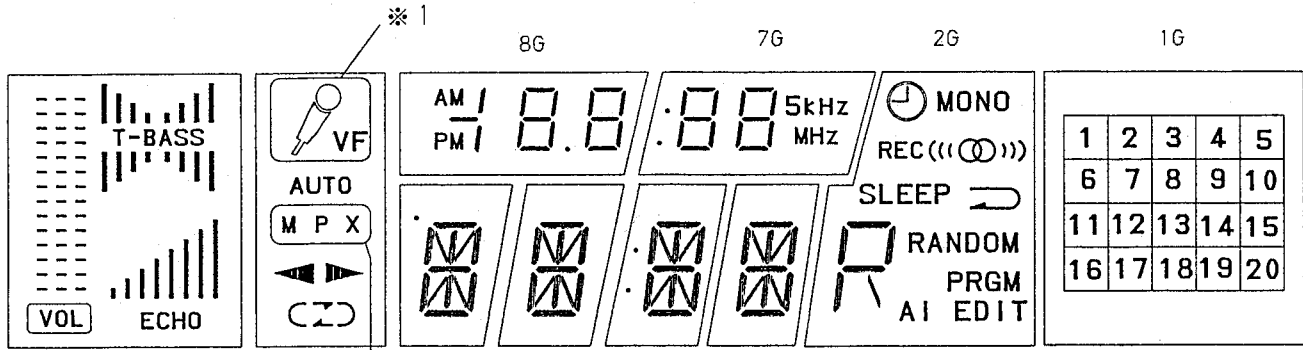
A
抵抗部品コード
Resistor Code

桁表示
Figure

抵抗値
Value of resistor

チップ抵抗
Chip resistor

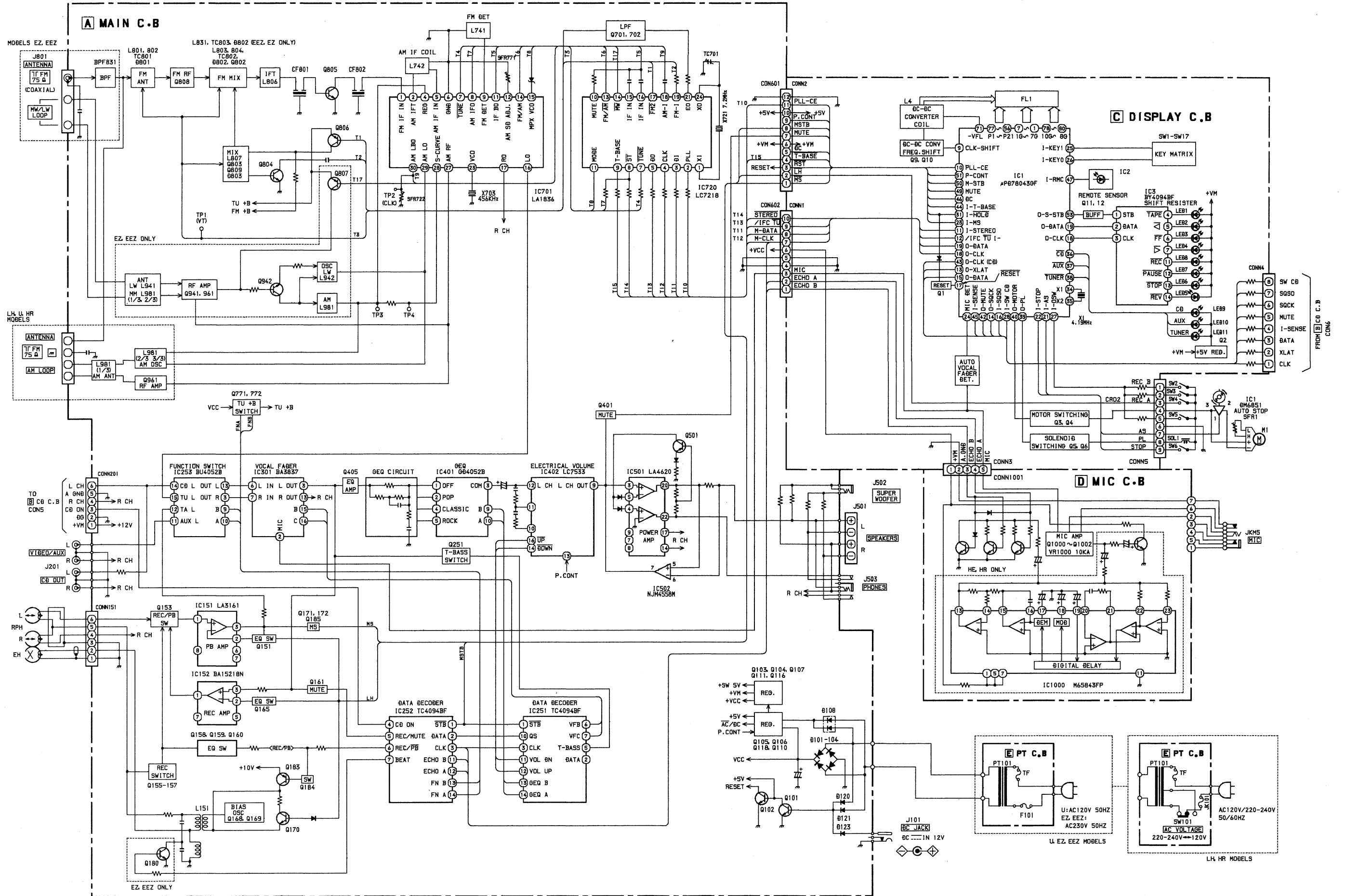
Wattage 容量	Type 種類	Tolerance 許容誤差	Symbol 記号	Dimensions/寸法 (mm)			Resistor Code : A 抵抗コード : A	
				Form/外形	L	W		t
1/32W	1608	±5%	CJ		1.6	0.8	0.35	108
1/10W	2125	±5%	CJ		2	1.25	1.45	118
1/8W	3126	±5%	CJ		3.2	1.6	0.5 ~0.7	128

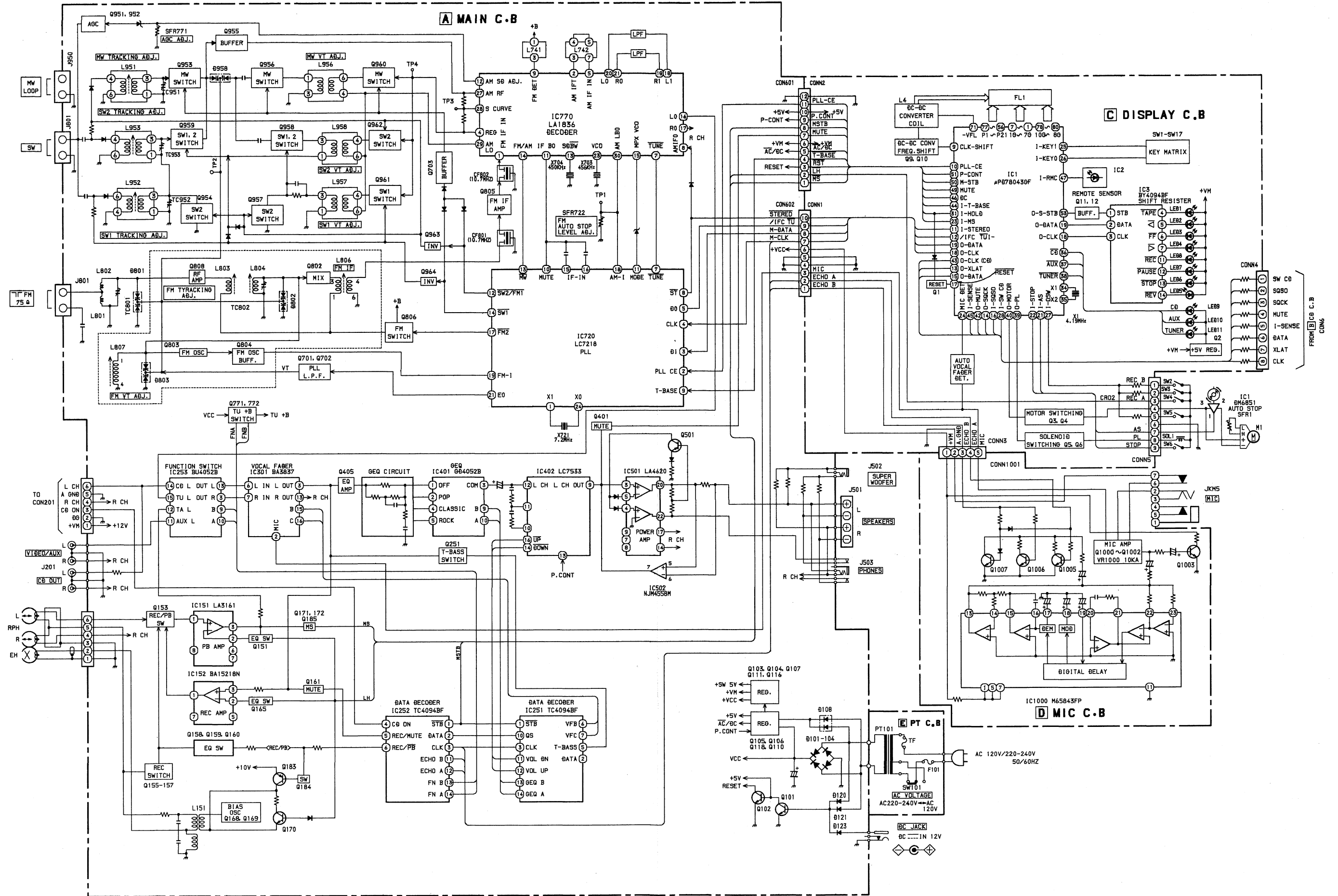


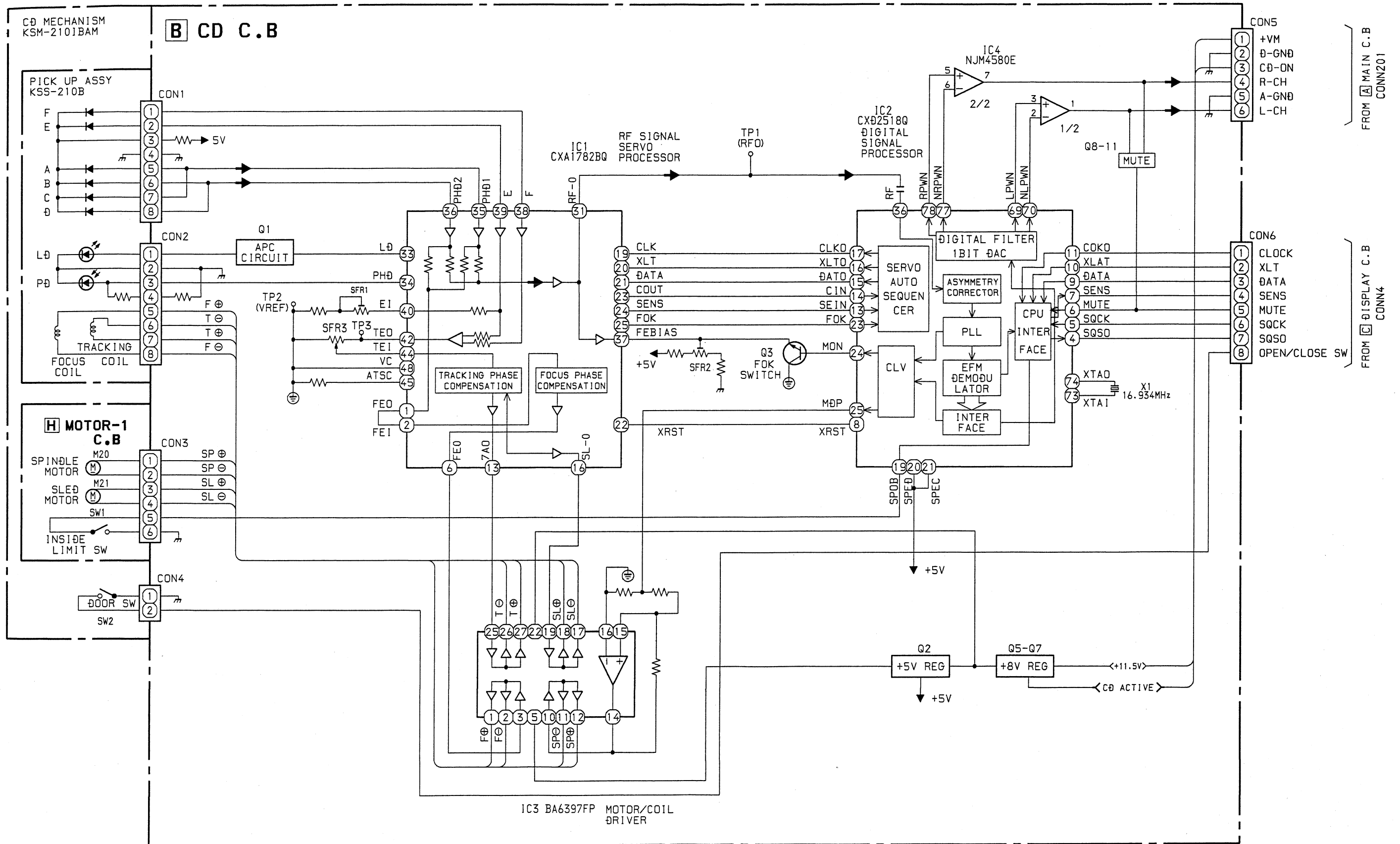
ICPIN NO. →	78	79	80	1	2	3	4	5	6	7
	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G
56	P1	B1	VF	2a	2a	-	○ (DOWN)	-	MONO	20
57	2	B2	*.1	2f	22	n	n	n	n	19
58	3	B3	AUTO	2c	2c	r	r	r	r	AI
59	4	B4	M.P.X	2d	2d	c	c	c	c	EDIT
60	5	B5	*.2	1a	1a	m	m	m	m	PRGM
61	6	B6	◁	1f	1f	b	b	b	b	15
62	7	B7	▷	1c	1c	j	j	j	j	RANDOM
63	8	B8	C	1d	1d	a	a	a	a	13
64	9	B9)	2b	2b	d	d	d	d	(((○)))
65	10	B10		2g	2g	p	p	p	p	Ⓢ
66	11	B11		2e	2e	e	e	e	e	10
67	12	B12		□	○ (UP)	g	g	g	g	9
68	13	B13		1b	1b	f	f	f	f	8
69	14	B14		1g	1g	k	k	k	k	↵
70	15	B15		1e	1e	h	h	h	h	SLEEP
72	16	ECHO		⇐	○ (DOWN)	Ⓟp		○ (UP)		REC
73	17	B15		AM	KHz					4
74	18	B16		PM	MHz					3
75	19	B17		○	5					2
76	20									1
77	21	S1								

ALWAYS ON LAMP

BLOCK DIAGRAM - 1 (MAIN : LH, HR, U, EZ, EEZ, AP1Z)

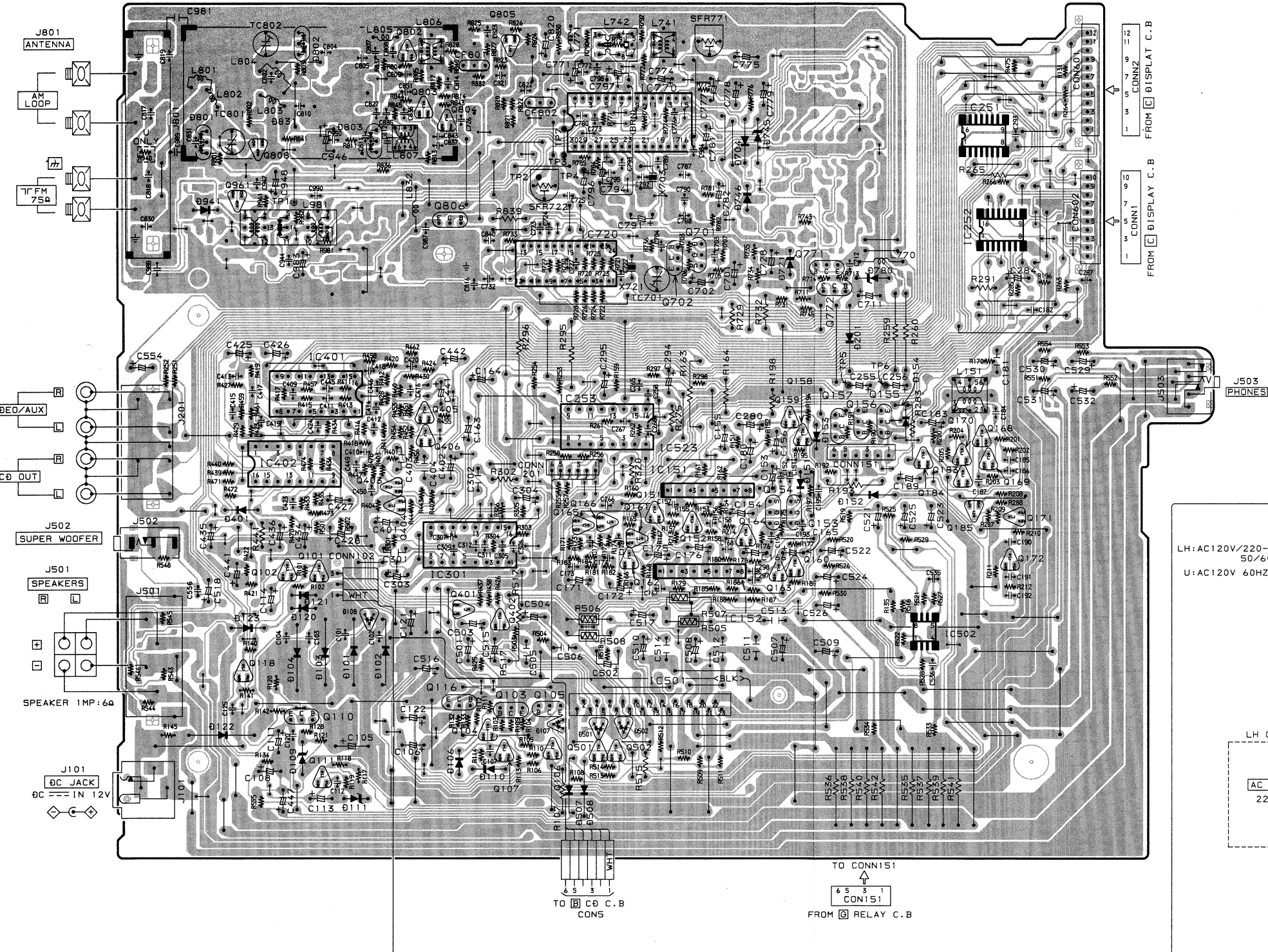




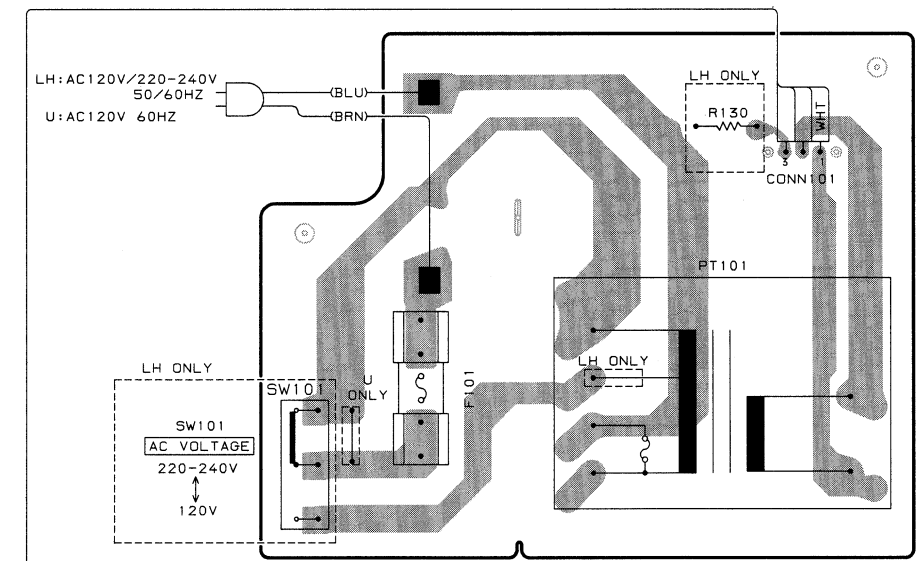


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A MAIN C.B



E PT C.B

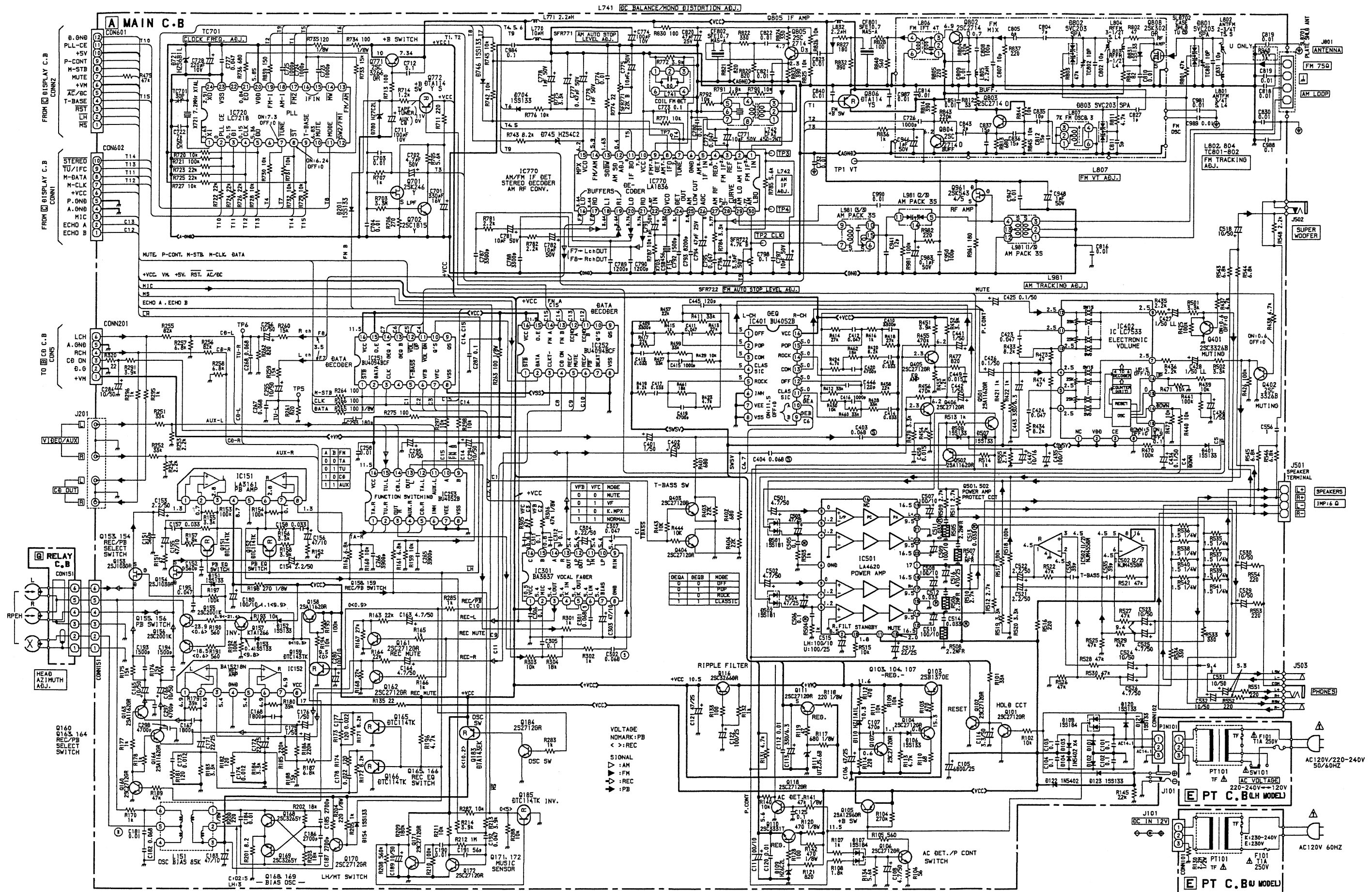


TO CONN151
↑
6 5 3 1
CONN151
FROM RELAY C.B

FROM DISPLAY C.B
CONN1
FROM DISPLAY C.B
CONN2

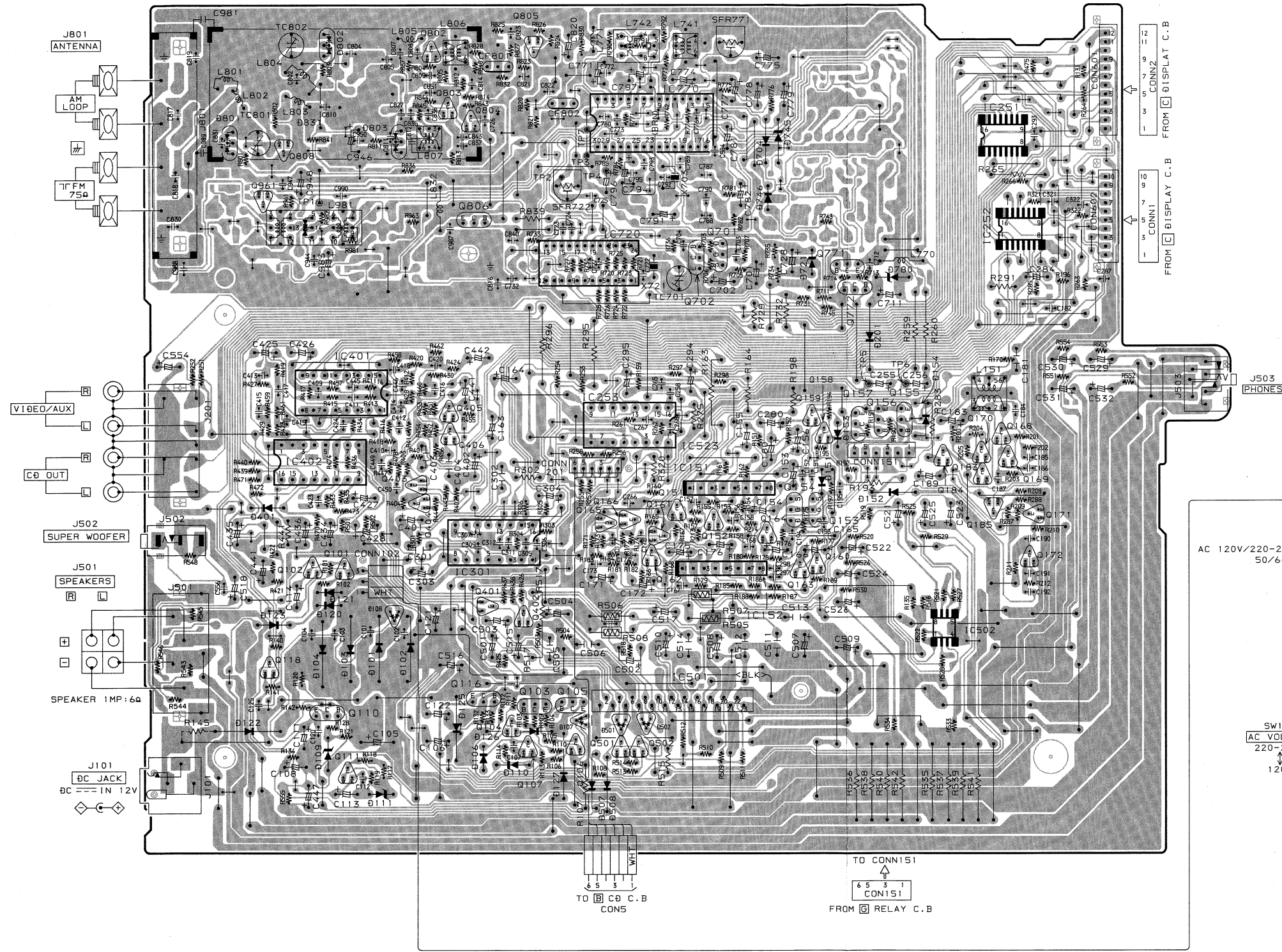
J503 PHONES

SCHMATIC DIAGRAM - 1 (MAIN : LH, U)

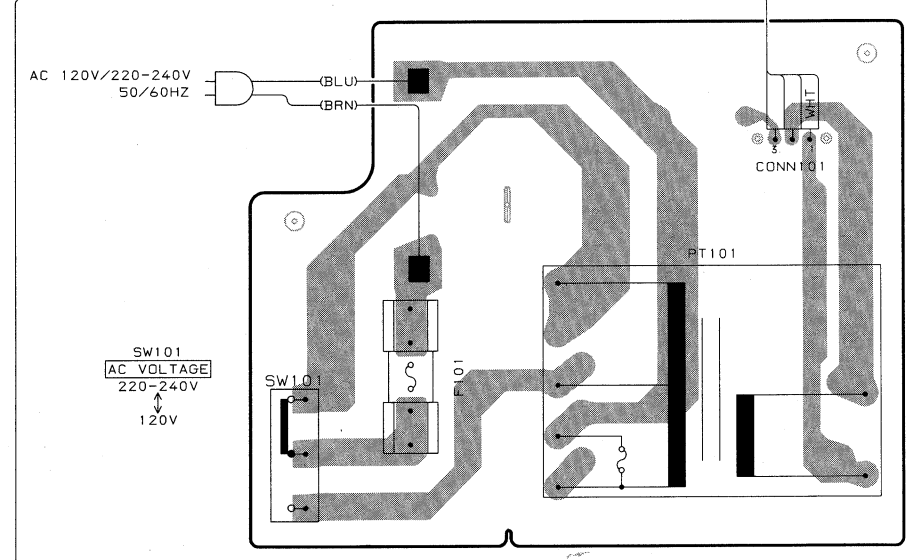


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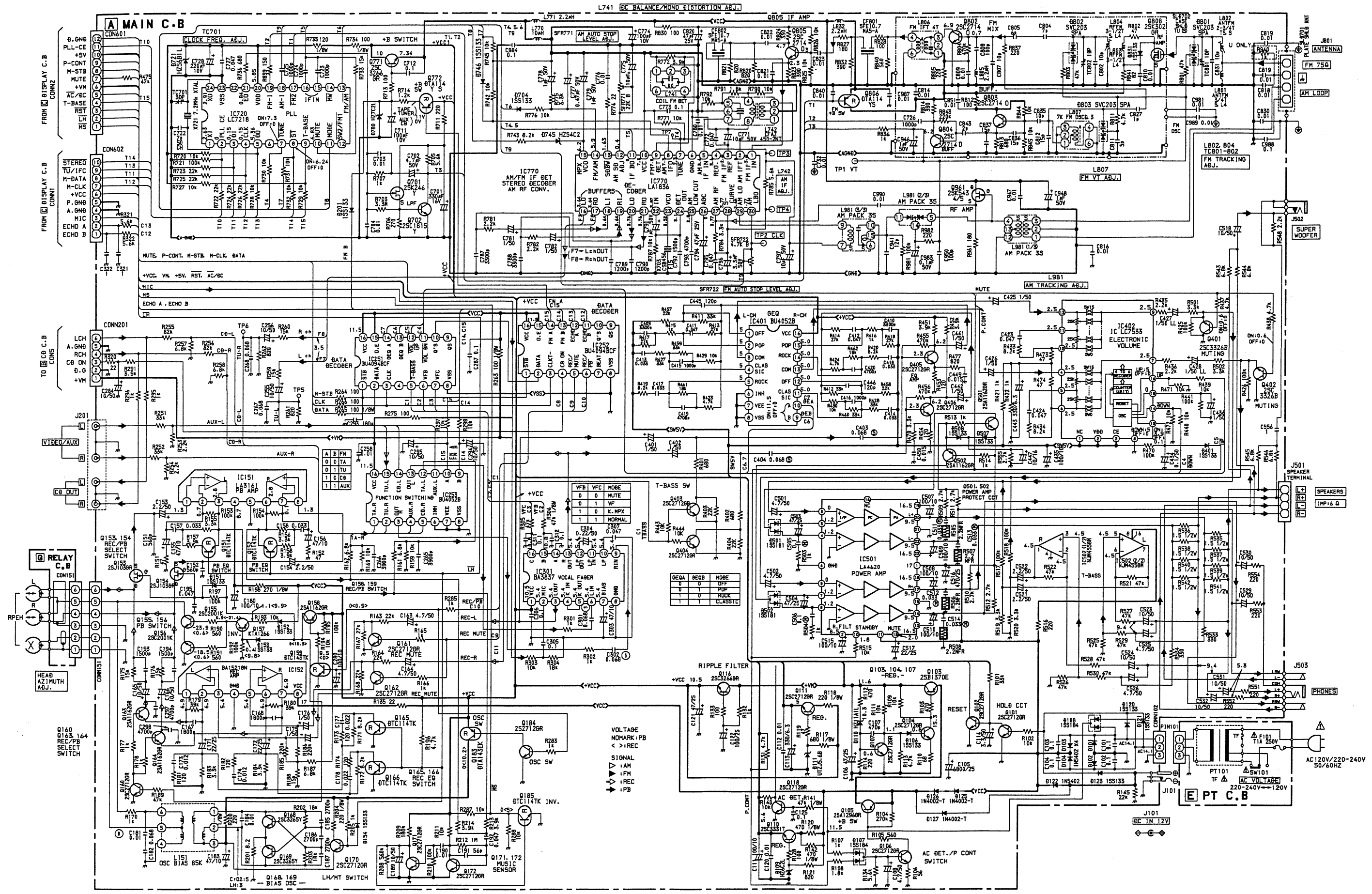
A MAIN C.B



E PT C.B

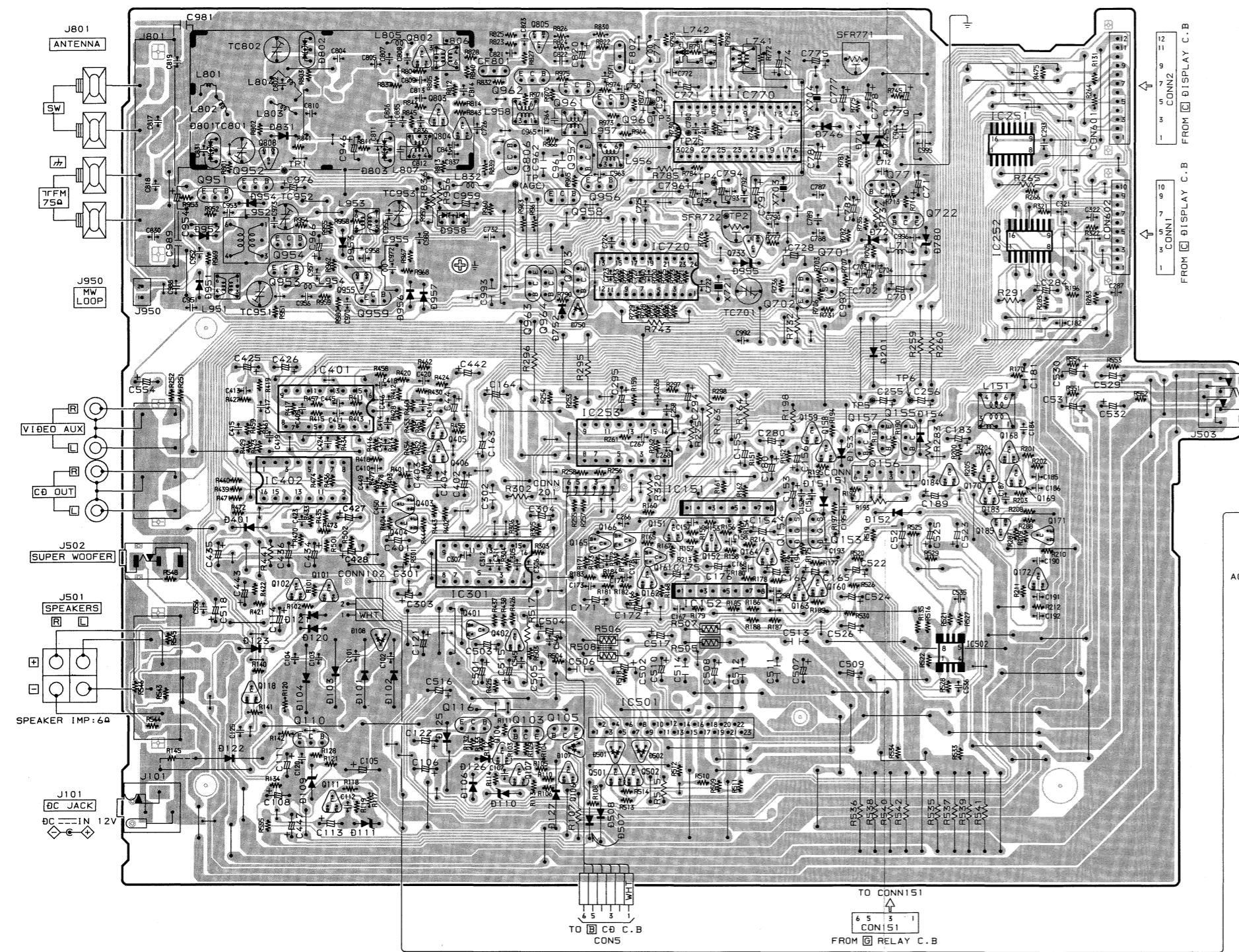


SCHEMATIC DIAGRAM - 2 (MAIN : HR)

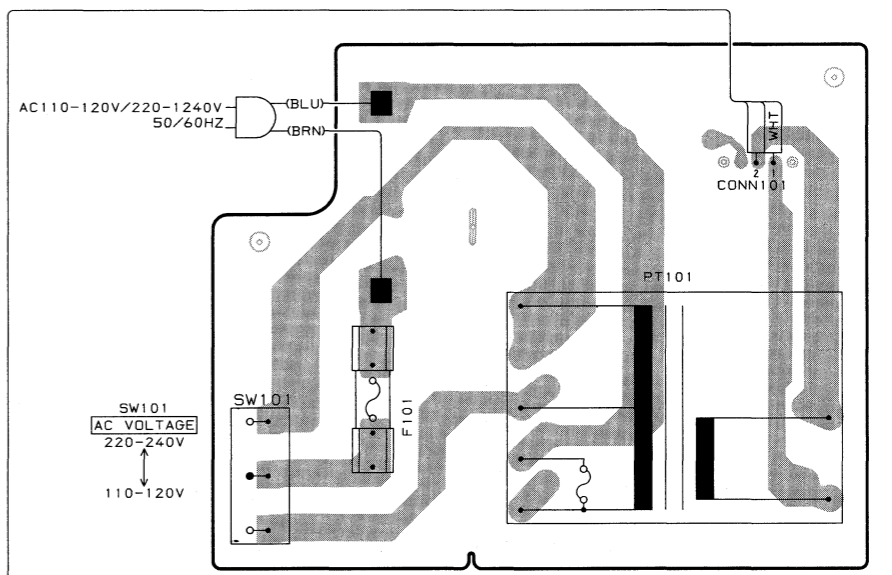


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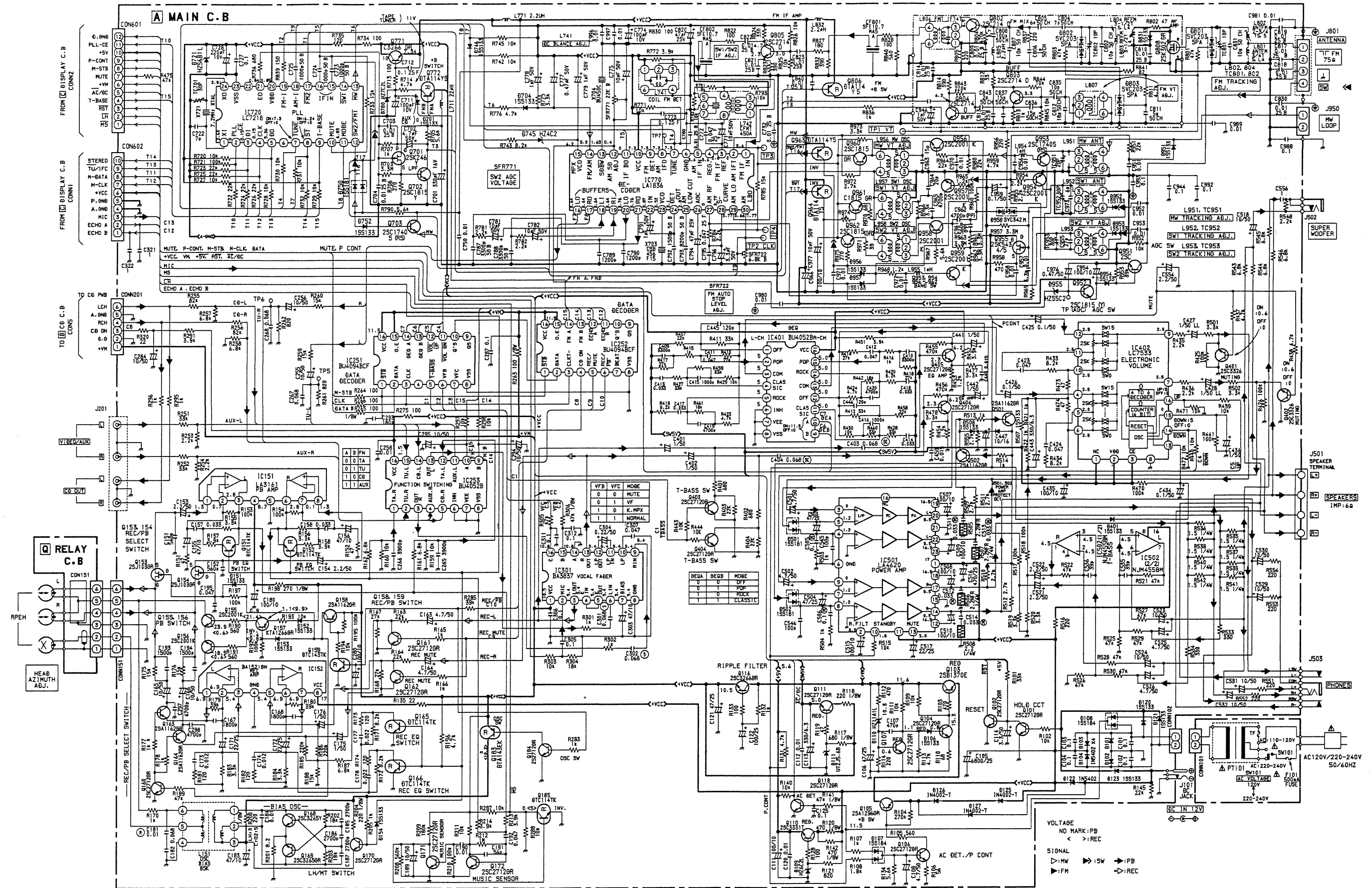
A MAIN C.B

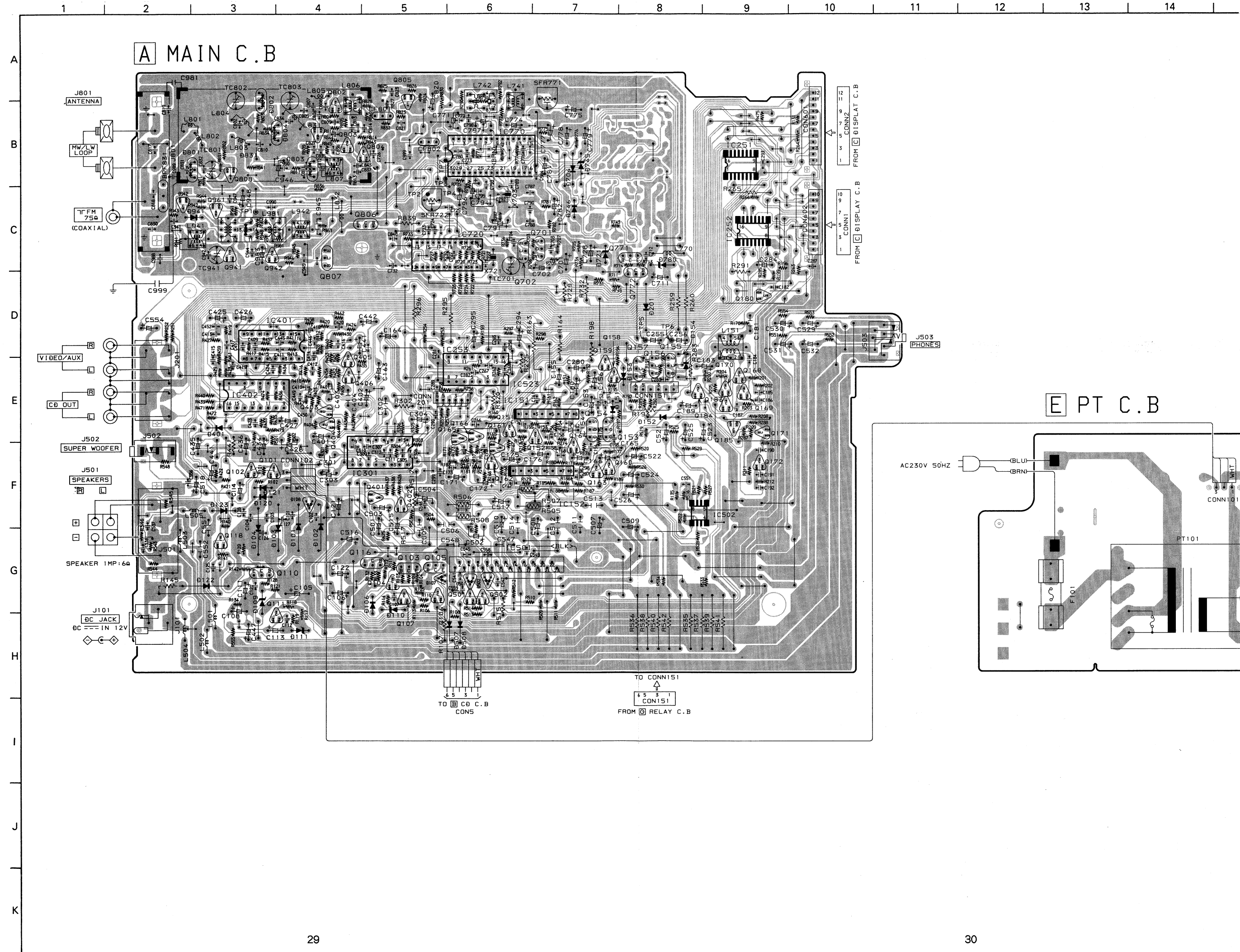


E PT C.B

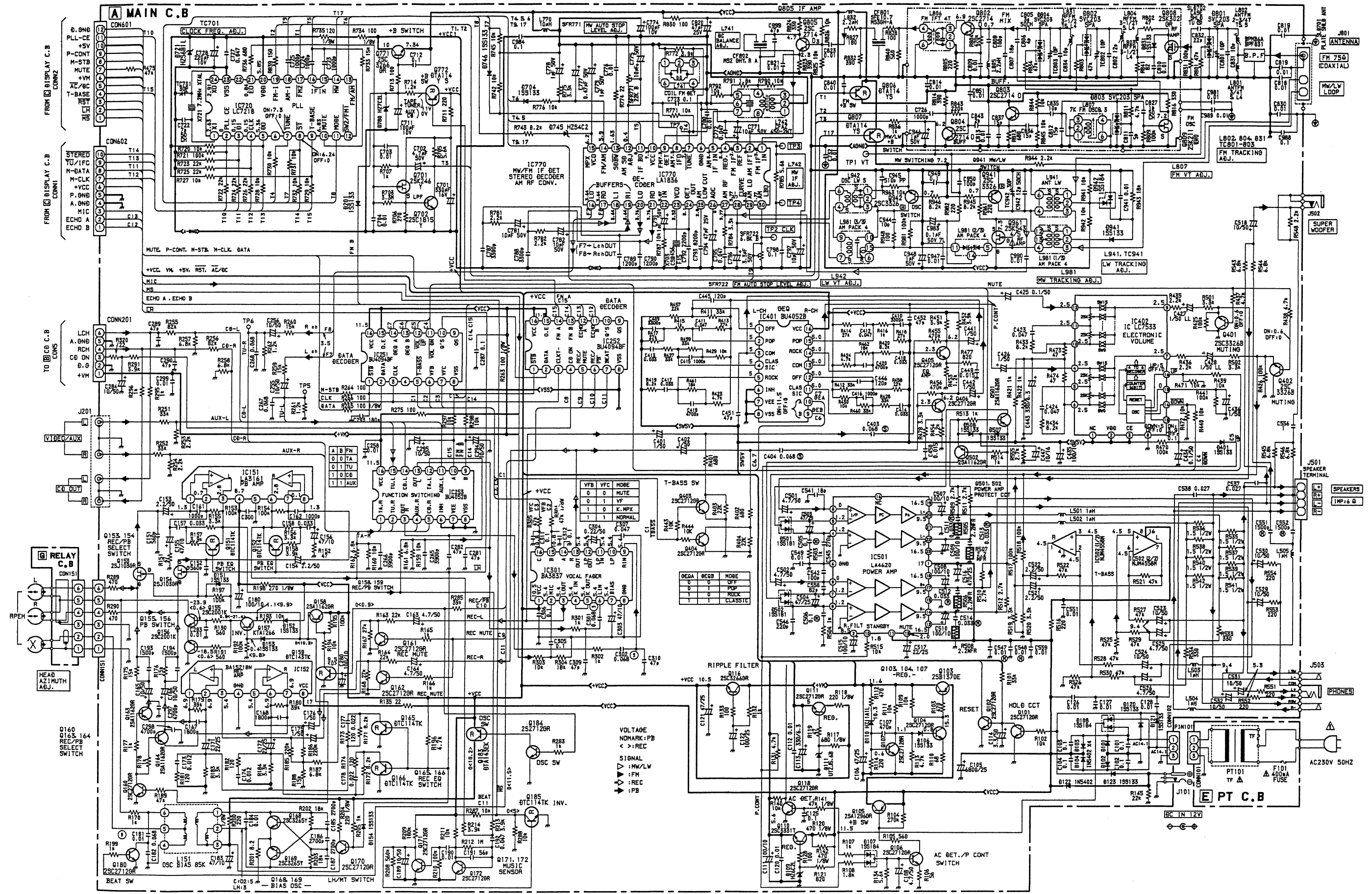


SCHEMATIC DIAGRAM - 3 (MAIN : HE)



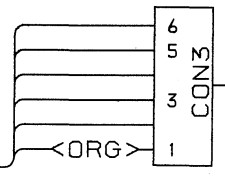
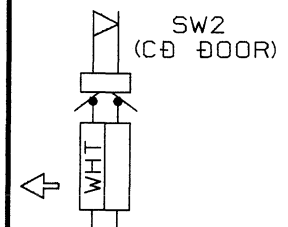
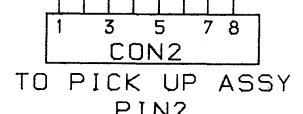
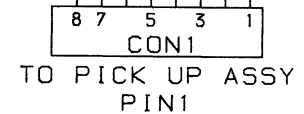
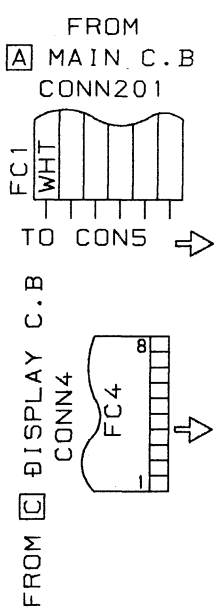
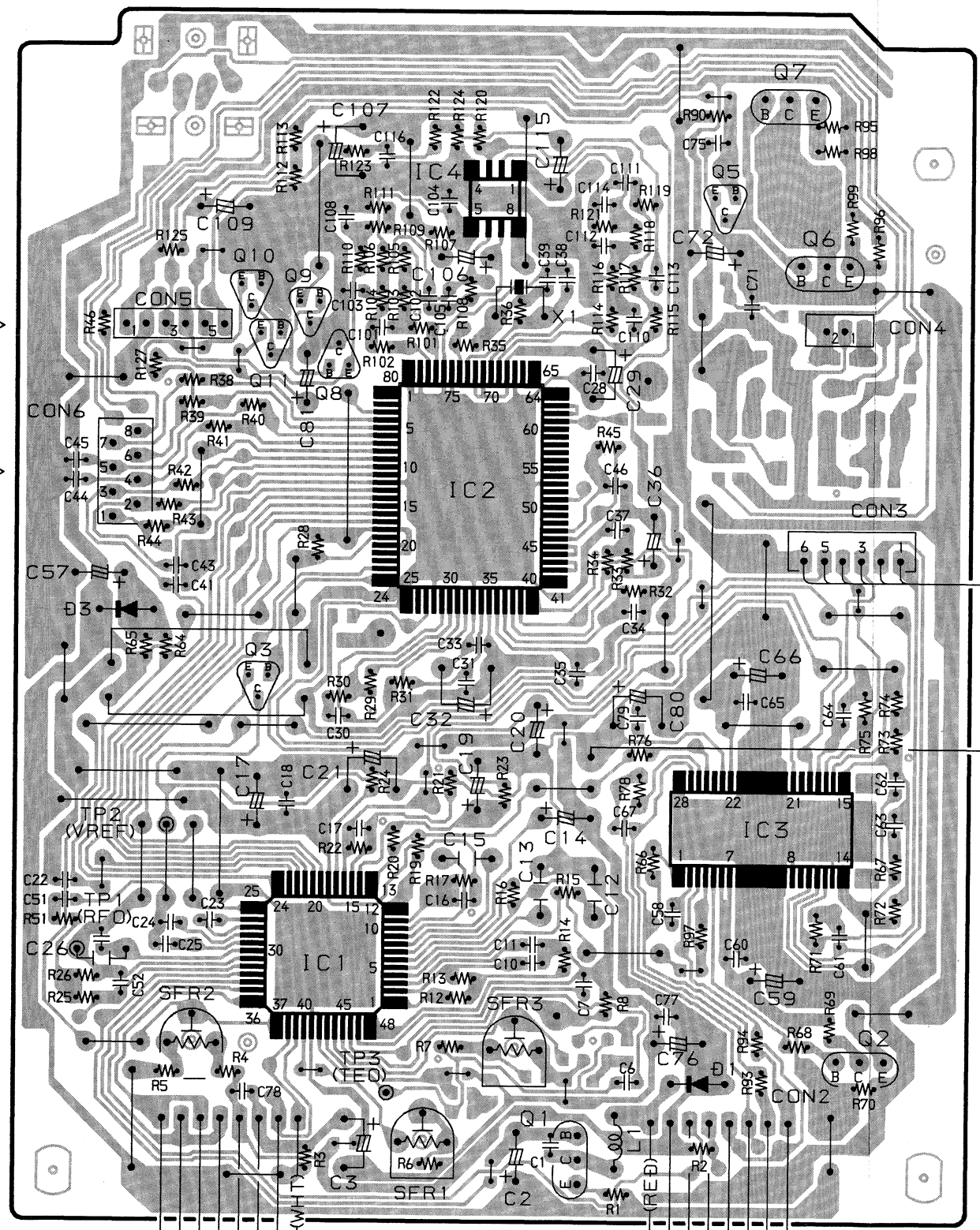


SCHEMATIC DIAGRAM - 4 (MAIN : EZ, EEZ, AP1Z)

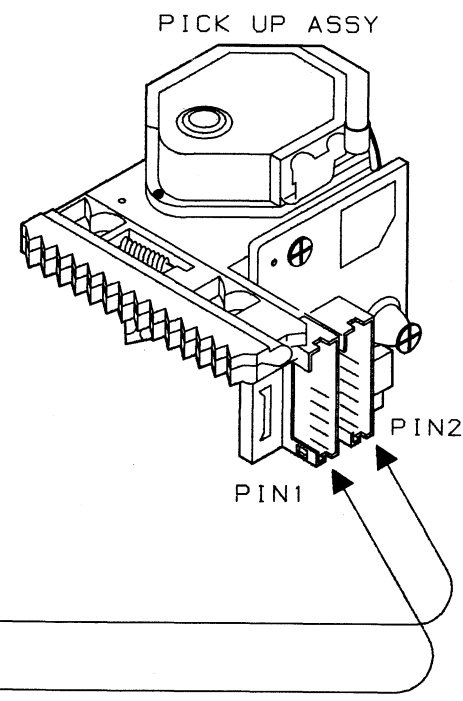
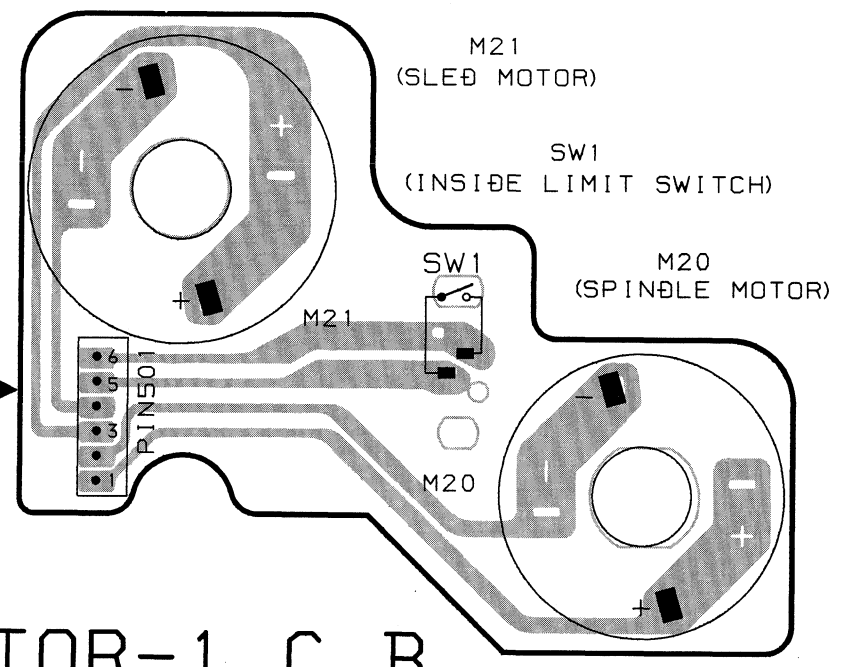


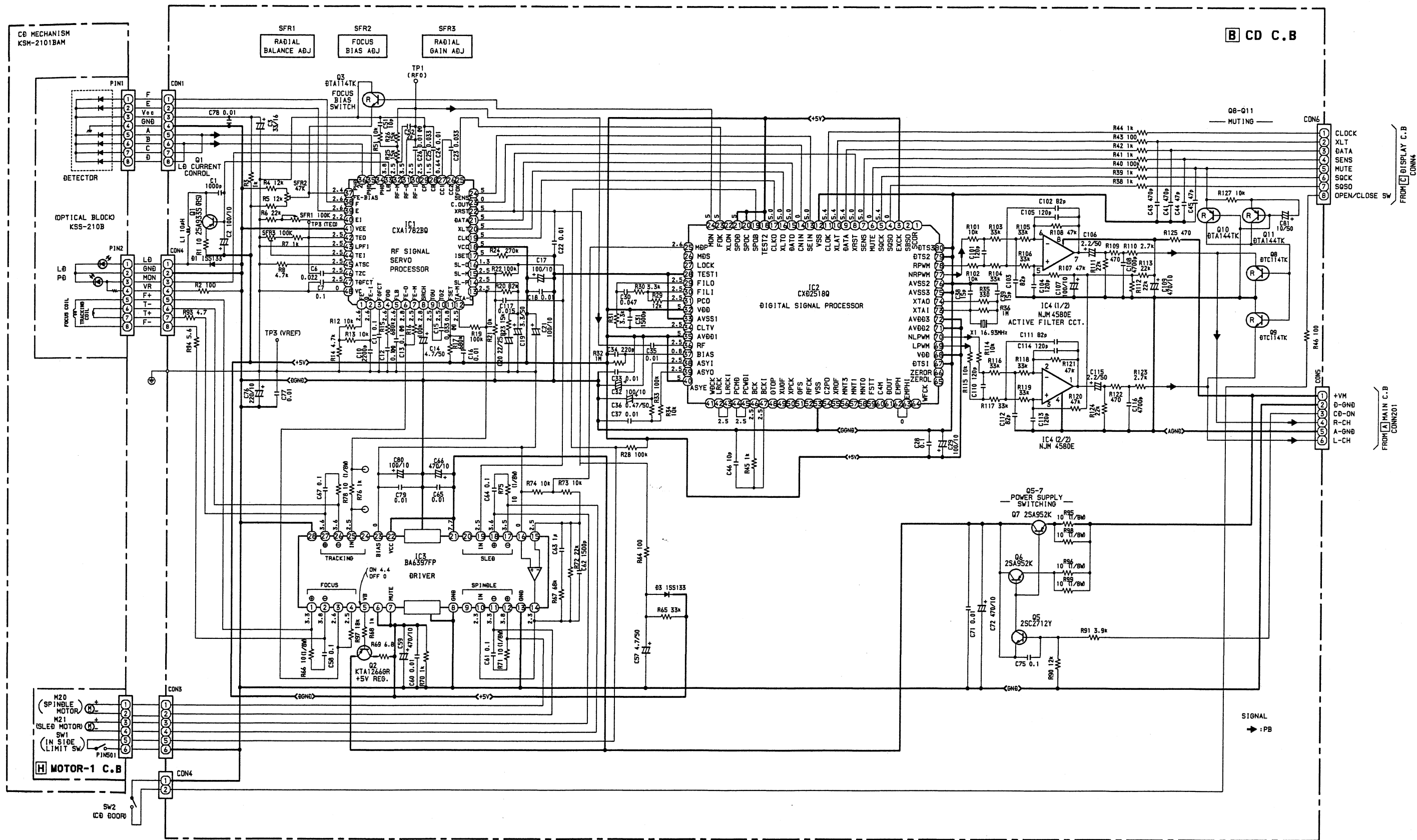
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B C D C.B

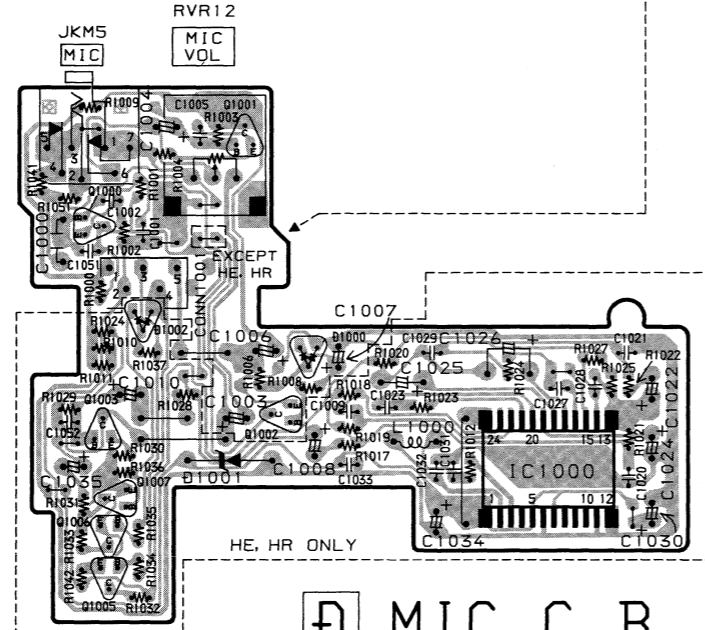
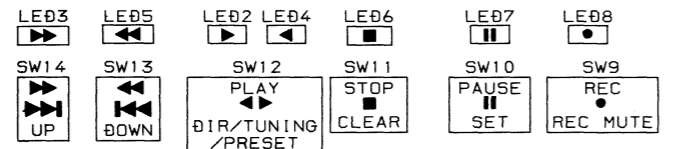
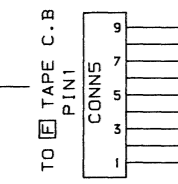
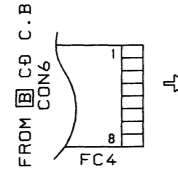
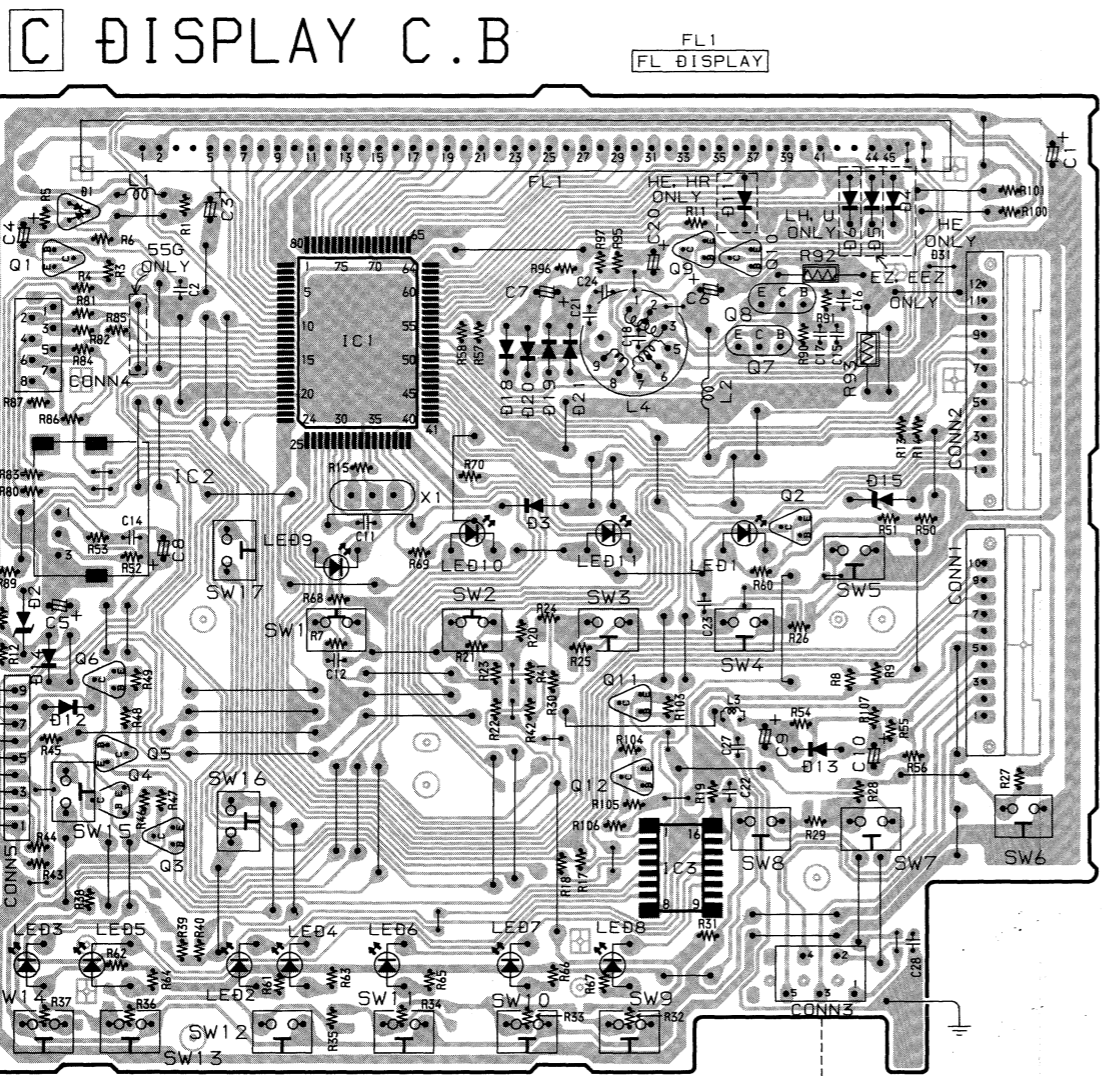


H MOTOR-1 C.B

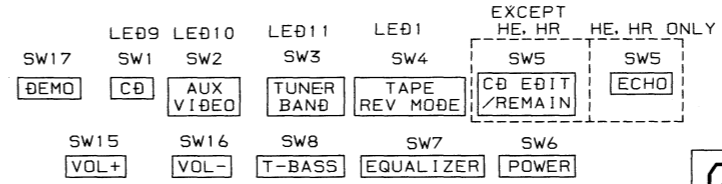
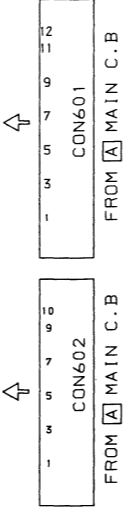
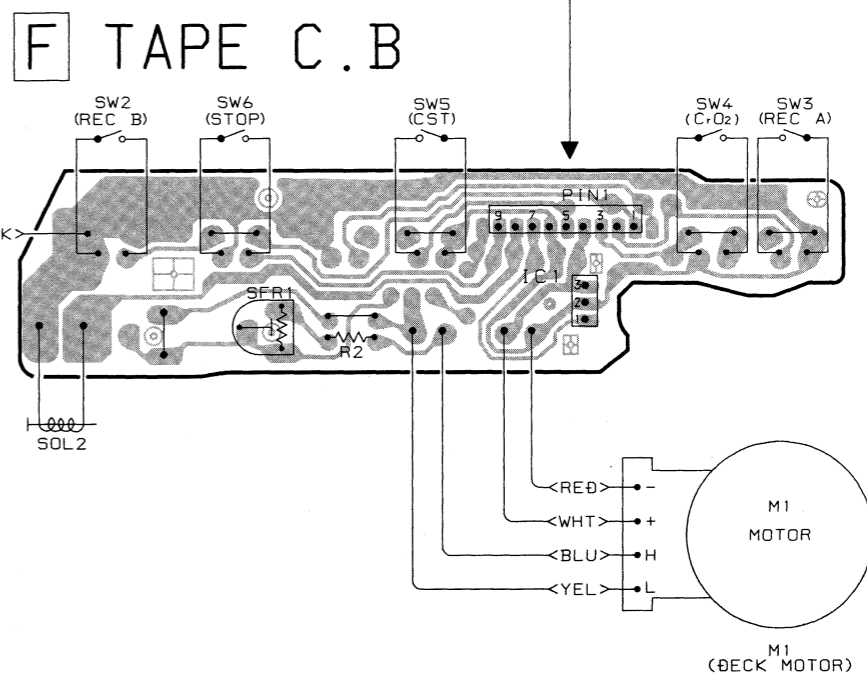




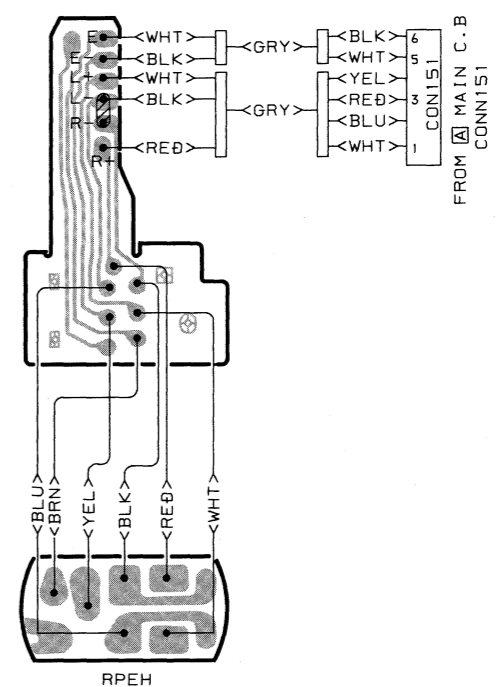
A
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K

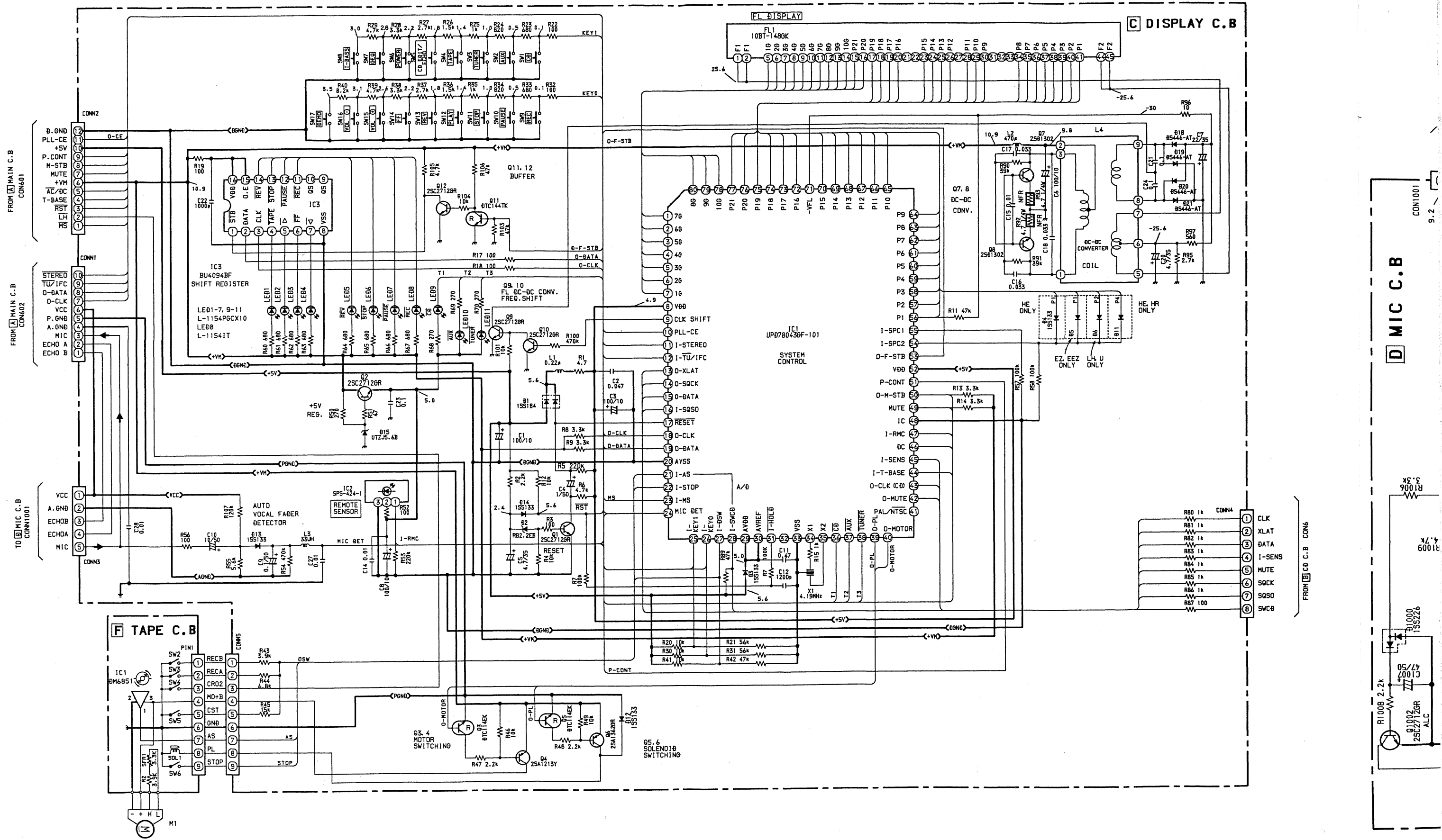


Ø MIC C.B

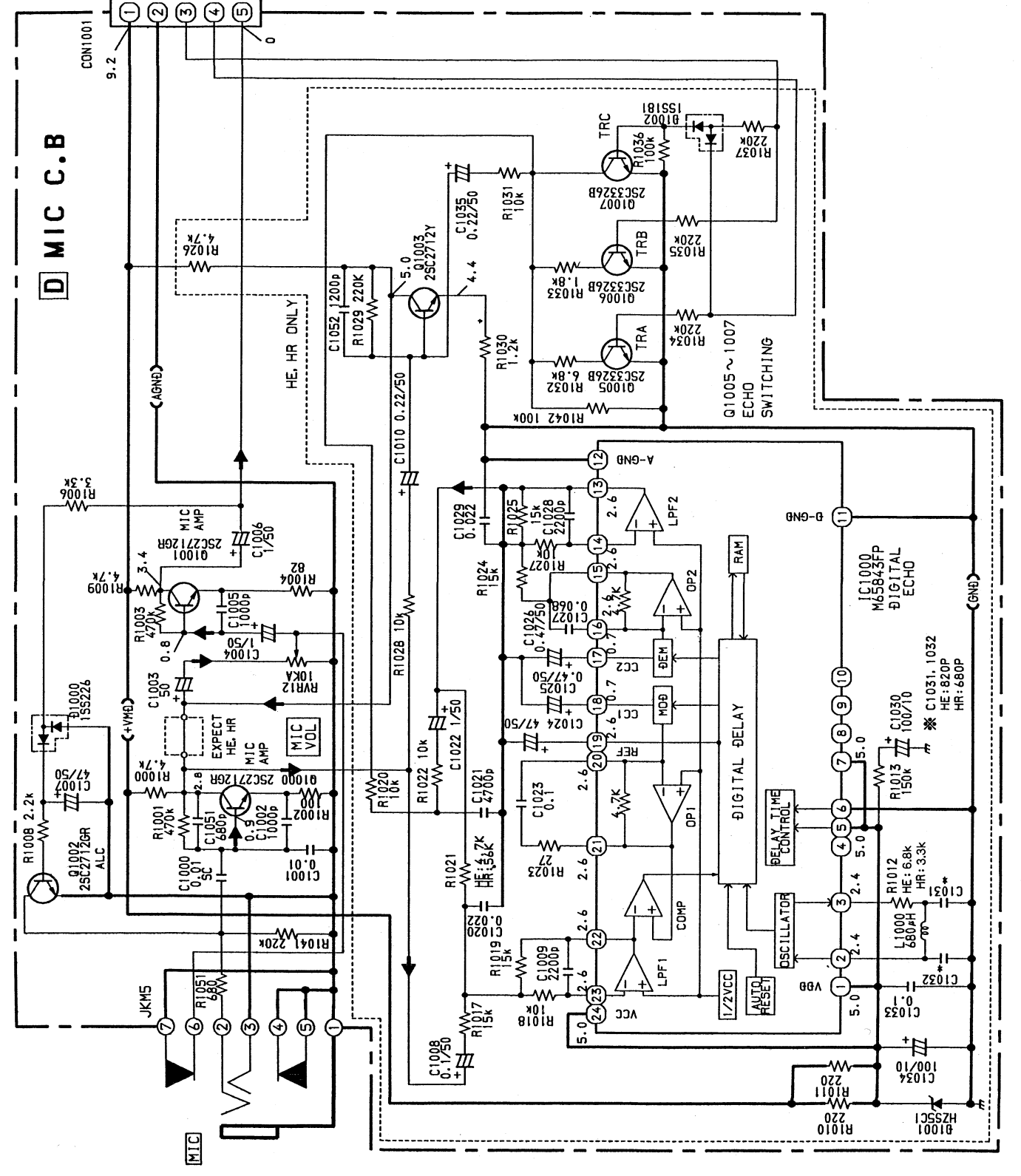
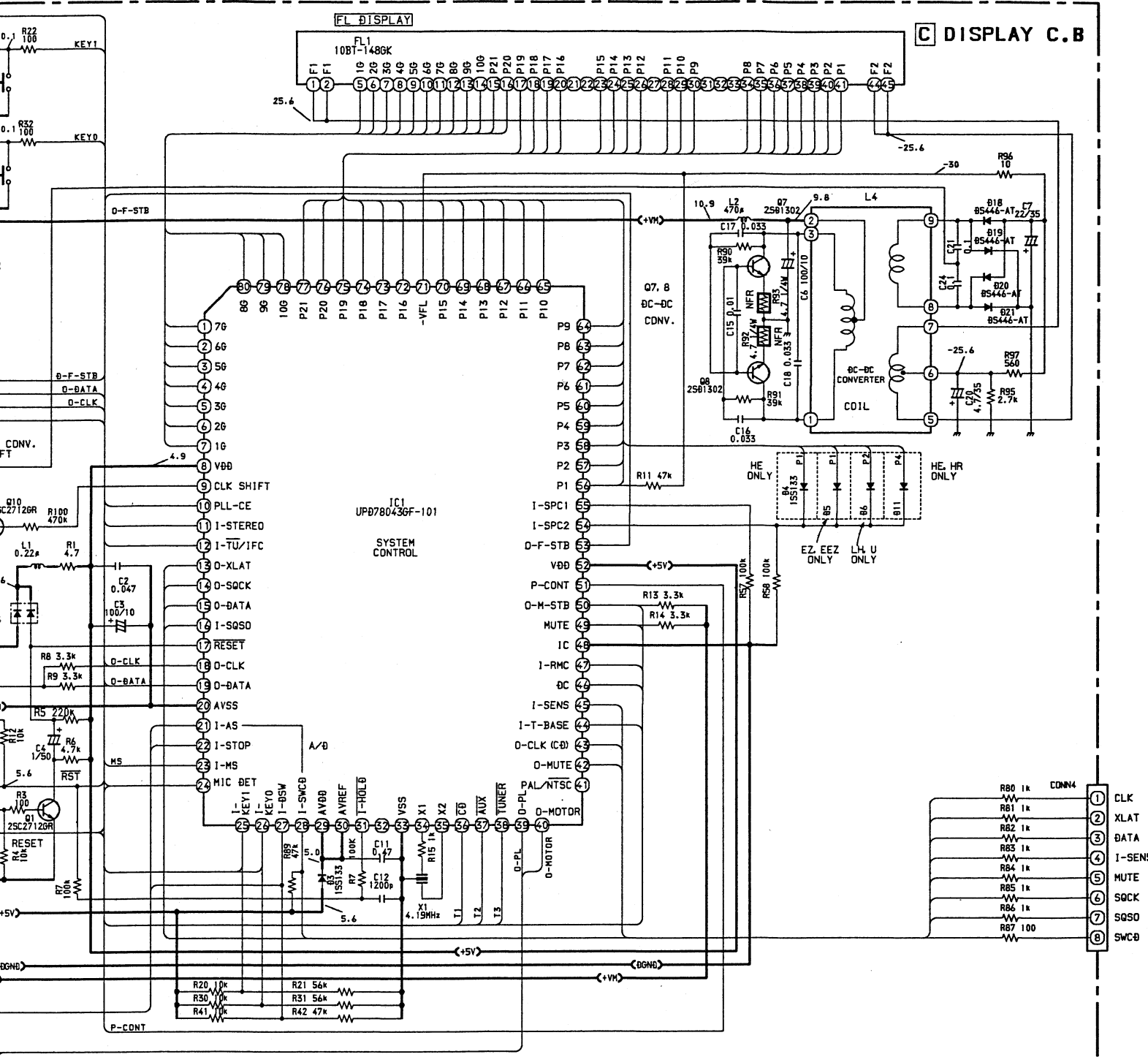


G RELAY C.B



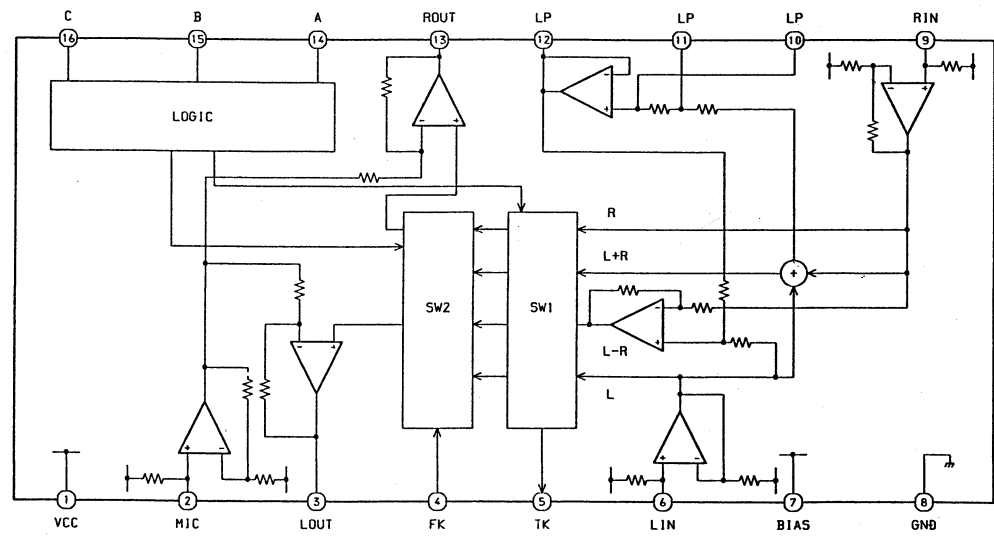


SCHMATIC DIAGRAM - 7 (MIC)

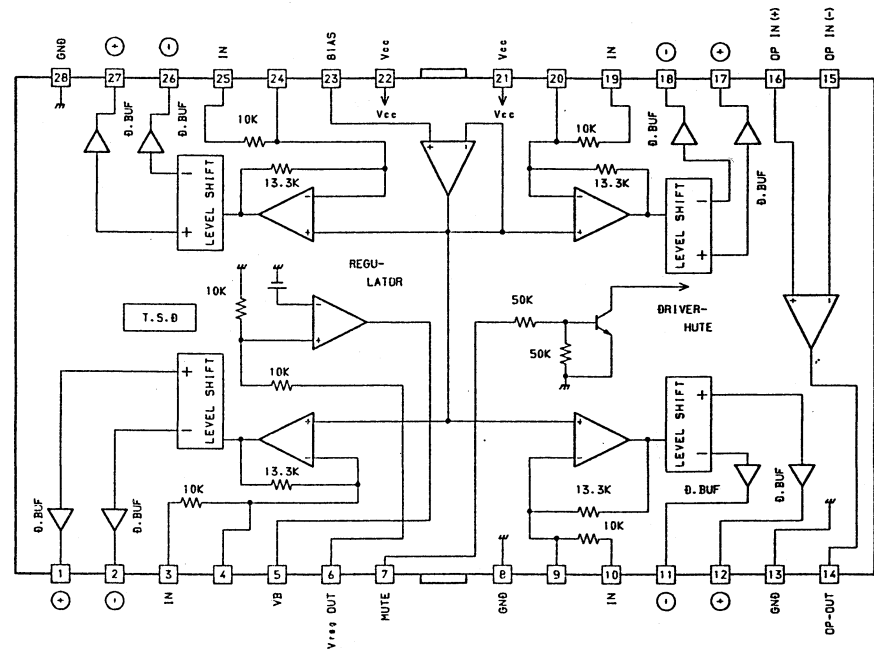


IC BLOCK DIAGRAM

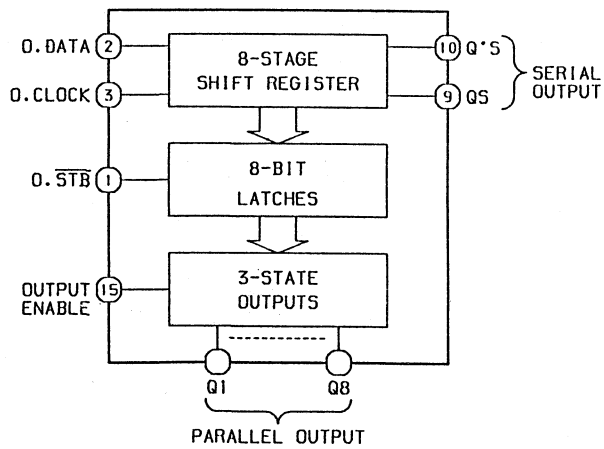
IC,BA3837



IC,BA6397



IC,BU4094BF/BCF



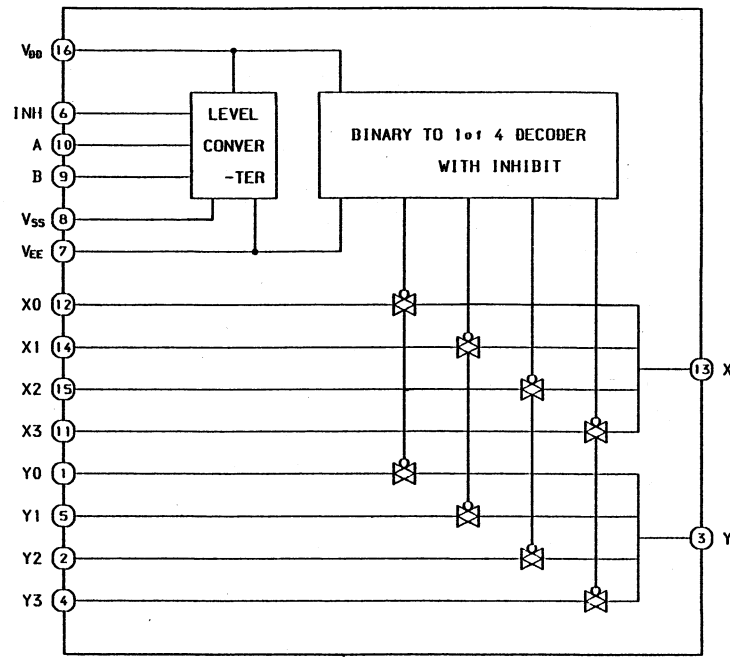
- Q1: 0. DOLBY ON
- Q2: 0. DOLBY C
- Q3: 0. EXT. REC
- Q4: 0. INT. REC
- Q5: 0. PLAY
- Q6: 0. PB2
- Q7: 0. LED
- Q8: 0. RMT

TRUTH TABLE

CLOCK	OUTPUT ENABLE	STROBE	DATA	PARALLEL OUTPUTS	SERIAL OUTPUTS
L	L	x	x	Q1	Q5
L	L	x	x	Z	Q7
L	L	x	x	Z	Q7
L	H	L	x	NO CHG.	Q7
L	H	H	L	Qn-1	Q7
L	H	H	H	Qn-1	Q7
L	H	x	x	NO CHG.	Q5

Z = HIGH IMPEDANCE
x = DON'T CARE

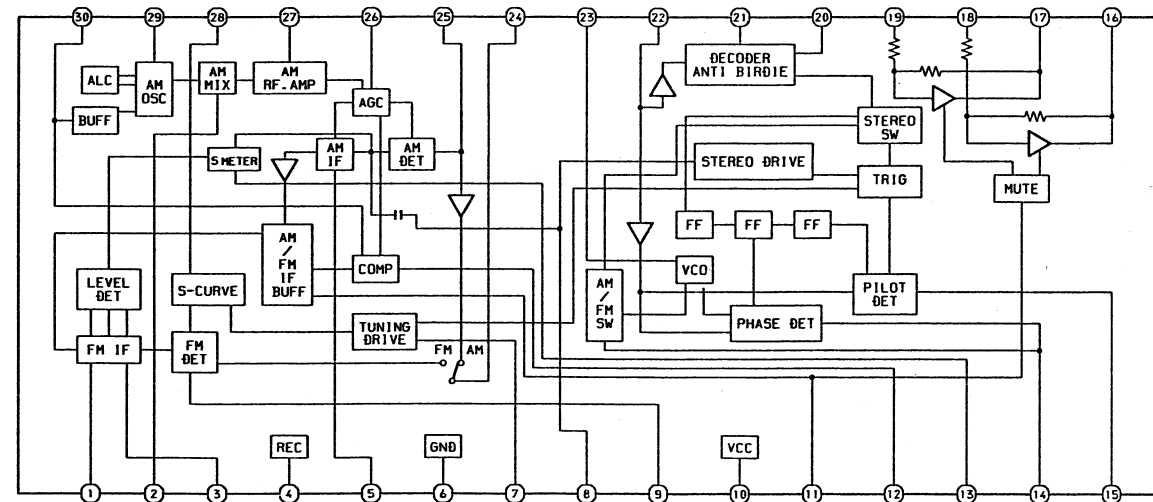
IC,BU4052B



INHIBIT	A	B	ON SWITCH
L	L	L	X0, Y0
L	H	L	X1, Y1
L	L	H	X2, Y2
L	H	H	X3, Y3
H	X	X	NONE

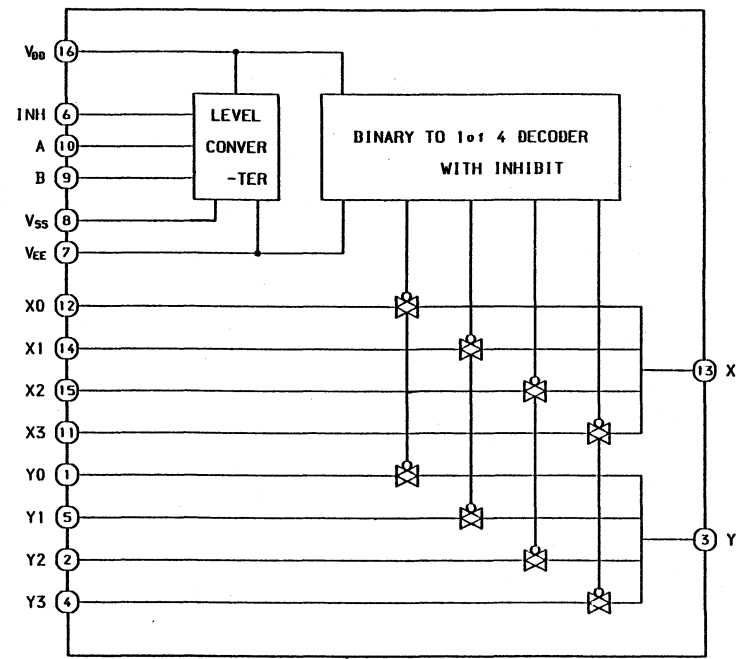
X=Don't Care

IC,LA1836



IC,M65843FP

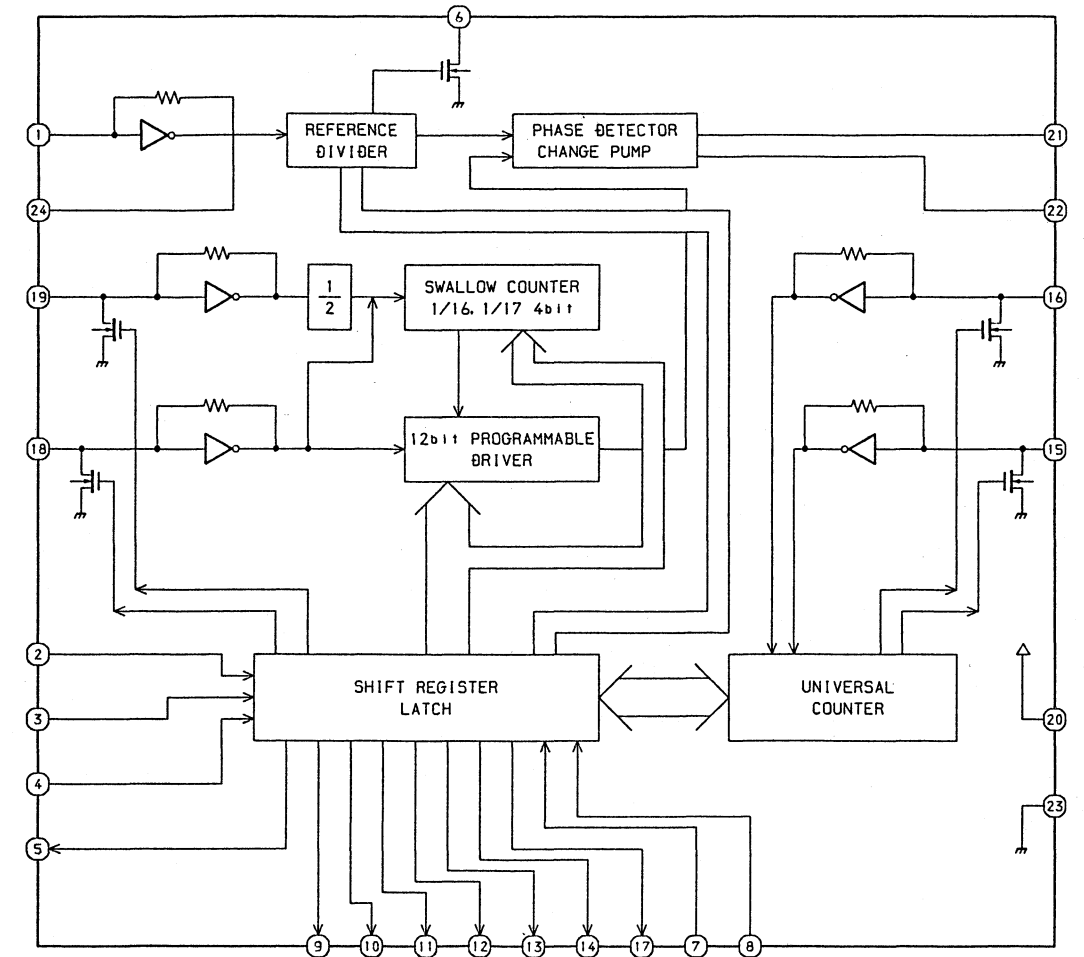
IC, BU4052B



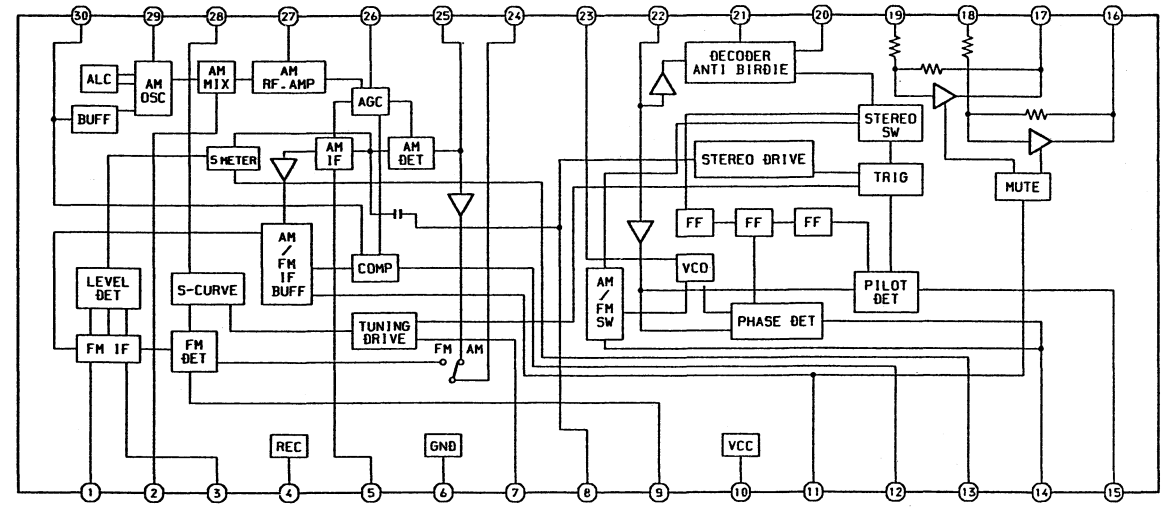
INHIBIT	A	B	ON SWITCH
L	L	L	X0, Y0
L	H	L	X1, Y1
L	L	H	X2, Y2
L	H	H	X3, Y3
H	X	X	NONE

X = Don't Care

IC, LC7218

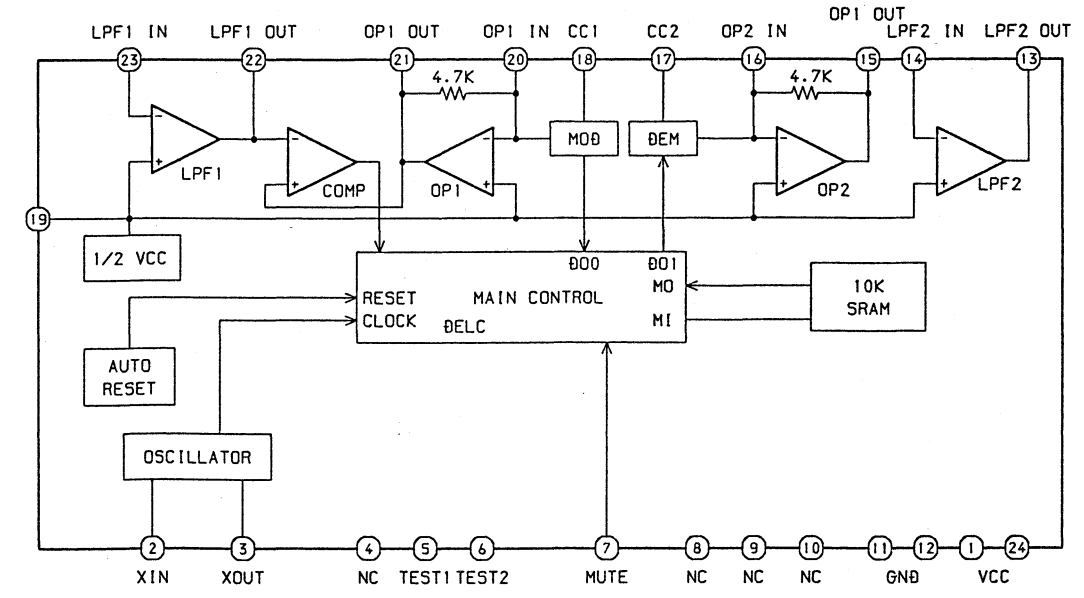


IC, LA1836



OUTPUTS
Q'S
NO CHG.
QS
NO CHG.
NO CHG.
NO CHG.
QS

IC, M65843FP



IC DESCRIPTION

IC, μ PD78043GF

Pin No.	Pin Name	I/O	Description
1~7	7G~1G	O	FL display digit output.
8	VDD	—	Power supply.
9	CLK SHIFT	O	CLK SHIFT output for Tuner.
10	PLL-CE	O	Chip enable output for tuner PLL IC.
11	I-STEREO	I	Tuner MONO/ST LED input.
12	I-TU/IFC	I	Tuner IFC input.
13	O-XLAT	O	Latch output for DSP IC.
14	O-SQCK	O	SQSO (DSP IC) read-out clock output.
15	O-DATA	O	Serial data output for DSP IC.
16	I-SQSO	I	Sub Q 80-bit serial data input.
17	RESET	I	Reset input. Reset at L.
18	O-CLK	O	Serial data clock output for shift register IC PLL IC.
19	O-DATA	O	Serial data output for shift register IC PLL IC.
20	AVSS	—	GND.
21	I-AS	I	DECK reel table rotation detect pulse input.
22	I-STOP	I	DECK STOP status detect switch input.
23	I-MS	I	Music sensor signal input
24	MIC DET	I	Mic signal detect.
25	I-KEY1	I	Key input.
26	I-KEY0	I	Key input.
27	I-DSW	I	DECK detect switch input (CST, RECA, RECB).
28	I-SWCD	I	CD lid OPEN/CLOSE detect SW signal input.
29	AVDD	—	A/D converter analog power supply.
30	AVREF	I	A/D converter reference voltage input.
31	I-HOLD	I	CPU hold signal input. Hold mode at L.
32	XT2	—	Sub clock generator.
33	VSS ₂	—	Connected to GND.
34	X1	—	4.19 MHz oscillation circuit.
35	X2	—	
36	CD	O	Function LED driver output.
37	AUX		
38	TUNER		
39	O-PL	O	DECK plunger output. ON at H.
40	O-MOTOR	O	DECK motor output. ON at H.
41	PAL/NTSC	O	PAL/NTSC select output.
42	O-MUTE	O	MUTE signal for DSP IC. Muted at H.
43	O-CLK (CD)	O	Serial data transfer clock output for DSP IC.
44	I-T-BASE	I	Time base input for clock (8 Hz).
45	I-SENS	I	SENS data input from DSP IC.
46	DC	I	DC detect.
47	I-RMC	I	Remote control signal input.

Pin No.	Pin Name	I/O	Description
48	IC	—	Connected to GND.
49	MUTE	O	Mute output for tuner.
50	O-M-STB	O	Shift register IC strobe signal.
51	P-CONT	O	POWER AMP control signal. POWER AMP is on at L.
52	VDD	—	Power supply.
53	O-F-STB	O	Shift register IC strobe signal.
54	I-SPC2	I	Tuner area code, BBE, VF matrix data input.
55	I-SPC1	I	
56~70	P1~P15	O	FL plate driver.
71	-VFL	—	Power for the FL display.
72~77	P16~P21	O	FL plate driver.
78~80	10G~8G	O	FL display digit output.

IC,CXD2518Q

Pin No.	Pin Name	I/O	Description
1	SCOR	O	1H when the subcode sync S0 or S1 is detected.
2	SBSO	O	SUB P~W serial output.
3	EXCK	I	Clock input for SBSO read out.
4	SQSO	O	SUBQ 80-bit serial output.
5	SQCK	I	Clock input for SQSO read out.
6	MUTE	I	H to mute. L to cancel.
7	SENS	O	SENS signal output to CPU.
8	XRST	I	System reset. L to reset.
9	DATA	I	Serial data input from CPU.
10	XLAT	I	Latch input from CPU. Latching serial data at fall down.
11	CLOK	I	Clock input from CPU to transfer serial data.
12	VSS	—	GND.
13	SEIN	I	SENS input from SSP.
14	CNIN	I	Numbers of track jump are counted and input.
15	DATO	O	Serial data output to SSP.
16	XLTO	O	Serial data latched output to SSP. Latched at fall down edge.
17	CLKO	O	Clock input from SSP to transfer serial data.
18	TEST2	I	TEST.
19~21	SPOB~D	I	Input from INSIDE LIMIT switch.
22	XLON	O	Mute control output.
23	FOK	I	Focus OK input pin. Used for SENS output and servo auto sequencer.
24	MON	O	Spindle motor ON/OFF control output.
25	MDP	O	Spindle motor servo control output.
26	MDS	O	Spindle motor servo control output.
27	LOCK	O	GFS is sampled by 460Hz. H output when GFS is H. L output when GFS is L for 8 consecutive times.
28	TEST1	I	TEST.
29	FILO	O	Filter output to master PLL. (slave=digital PLL)
30	FILI	I	Filter input to master PLL.
31	PCO	O	Charge-pump output to master PLL.
32	VDD	—	Power supply input.
33	AVSS1	—	GND.
34	CLTV	I	VCO control voltage input to master PLL.
35	AVDD1	—	Power supply input.
36	RF	I	EFM signal input.
37	BIAS	I	Constant current input to asymmetry correction circuit.
38	ASYI	I	Compare voltage input to asymmetry correction circuit.
39	ASYO	O	EFM full swing output. (L=VSS, H=VDD)
40	ASYE	I	L: asymmetry correction OFF. H: asymmetry correction ON
41	WDCK	O	D/A interface, word clock (2Fs) for 48-bit slot.
42	LRCK	O	D/A interface, LR clock (Fs) for 48-bit slot.

Pin No.	Pin Name	I/O	Description
43	LRCKI	I	LR clock input to DAC. (48-bit slot)
44	PCMD	O	D/A interface, serial data. (2's complement, MSB first)
45	PCMDI	I	Audio data input to DAC. (48-bit slot)
46	BCK	O	D/A interface, bit clock.
47	BCKI	I	Bit clock input to DAC. (48-bit slot)
48	GTOP	O	GTOP output.
49	XUGF	O	XUFG output.
50	XPCK	O	XPLCK output.
51	GFS	O	GFS output.
52	RFCK	O	RFCK output.
53	VSS	—	GND.
54	C2PO	O	C2PO output.
55	XROF	O	XRAOF output.
56	MNT3	O	MNT3 output.
57	MNT1	O	MNT1 output.
58	MNT0	O	MNT0 output.
59	FSTT	O	Pins-73 and -74 divided-by 2/3 output.
60	C4M	O	4.2336MHz output.
61	DOUT	O	Digital Out connector output signal.
62	EMPH	O	H when the playback disc has emphasis. L when it does not.
63	EMPHI	I	DAC emphasis ON/OFF. H when ON. L when OFF
64	WFCK	O	WFCK (WRITE FRAME CLOCK) output.
65	ZEROL	O	No sound data detection output. H (L-ch) when no sound data is detected.
66	ZEROR	O	No sound data detection output. H (R-ch) when no sound data is detected.
67	DTSI	I	TEST for DAC.
68	VDD	—	Power supply input.
69	LPWM	O	L-ch PWM output. (normal polarity)
70	NLPWM	O	L-ch PWM output. (reversed polarity)
71	AVDD2	—	Power supply input to L-ch PWM driver.
72	AVDD3	—	Power supply input to X'tal.
73	XTAI	I	X'tal input to 33.8688MHz oscillator circuit.
74	XTAO	O	33.8688MHz X'tal oscillator circuit output.
75	AVSS3	—	Power supply input to X'tal.
76	AVSS2	—	Power supply input to PWM driver.
77	NRPWM	O	R-ch PWM output. (reversed phase)
78	RPWM	O	R-ch PWM output. (normal phase)
79	DTS2	I	TEST-2 for DAC.
80	DTS3	I	TEST-3 for DAC.

IC,CXA1782BQ

Pin No.	Pin Name	I/O	Description
1	FEO	O	Focus error amplifier output pin. This pin is connected to the FZC comparator input internally.
2	FEI	I	Focus error input pin.
3	FDFCT	I	Capacitor connection pin for time constant used when there is defect.
4	FGD	I	Corrects the focus servo high frequency gain.
5	FLB	I	This is a pin where the time constant is externally connected to raise the low frequency gain of the focus servo.
6	FEO	O	Focus drive output.
7	FEM	I	Focus amplifier inverted input pin.
8	SRCH	I	This is a pin where the time constant is externally connected to generate the focus search waveform.
9	TGU	I	This is a pin where the selection time constant is externally connected to set the tracking servo the high frequency gain.
10	TG2	I	This is a pin where the selection time constant is externally connected to set the tracking high frequency gain.
11	FSET	I	Pin for setting peak of the phase compensator of the focus tracking.
12	TAM	I	Tracking amplifier inverted input pin.
13	TAO	O	Tracking drive output.
14	SLP	I	Sled amplifier non-inverted input pin.
15	SLM	I	Sled amplifier inverted input pin.
16	SLO	O	Sled drive output.
17	ISET	I	The current which determines height of the focus search, track jump and sled kick is input.
18	VCC	—	+ 5 V power supply pin.
19	CLK	I	Serial data transfer clock input from CPU.
20	XLT	I	Latch input from CPU.
21	DATA	I	Serial data input from CPU.
22	XRST	I	Reset input pin. Reset at L.
23	COUT	O	Signal output to count the number of tracks.
24	SENS	O	FZC, DFCT, TZC, Gain or BAL is output depending on the command from CPU.
25	FOK	O	Output pin of the focus OK comparator.
26	CC2	O	Input pin where the DEFECT bottom hold output is capacitance coupled.
27	CC1	I	DEFECT bottom hold output pin.
28	CB	I	This is a pin where the DEFECT bottom hold capacitor is connected.
29	CP	I	This is a pin where the MIRR hold capacitor is connected and MIRR comparator non-inverted signal is input.
30	RFI	I	Input pin where the RF summing amplifier output is capacitance coupled.
31	RFO	O	RF summing amplifier output pin.
32	RFM	I	RF summing amplifier inverted input pin. Gain of RF amplifier is determined by the resistor connected between RFO and this pin.
33	LD	O	APC amplifier output pin.
34	PHD	I	APC amplifier input pin.

Pin No.	Pin Name	I/O	Description
35~36	PHD1~2	I	RF I-V amplifier inverted input pin. These pins are connected to the A+C and B+D pins of the optical pickup.
37	FE-BIAS	I	Bias adjustment pin of the non-inverted side of the focus error amplifier.
38~39	F~E	I	F and E IV amplifier non-inverted input pins. These pins are connected to the F and E of the optical pickup.
40	EI	—	Gain adjustment pin of the I-V amplifier E.
41	VEE	—	GND connection pin
42	TEO	O	Tracking error amplifier output pin. E-F signal is output.
43	LPFI	I	BAL adjustment comparator input pin.
44	TEI	I	Tracking error input pin.
45	ATSC	I	Window comparator input pin for detecting ATSC.
46	TZC	I	Tracking zero-cross comparator input pin.
47	TDFCT	I	Capacitor connection pin for the time constant used when there is defect.
48	VC	O	DC voltage output pin of VREF. (VDD/2)

TRANSISTOR ILLUSTRATION

The diagram shows several transistor packages with their pin configurations and associated part numbers:

- ECB** (E-C-B): 2SA933, 2SA952, 2SA1296, 2SC1815, 2SC2001, 2SC3266, 2SC3331, 2SD1302, KTA1266
- BCE** (B-C-E): 2SA1162, 2SA1362, 2SC2712, 2SC2714, 2SC3265, 2SC3326, DTA114TK
- BCE** (B-C-E): DTA114YK, DTA143EK, DTA144TK, DTC114EK, DTC114TK, DTC143TK, DTC144TK
- BCE** (B-C-E): 2SA1213, 2SB1370
- ECB** (E-C-B): 2SC1740S, DTA114YS
- DGS** (D-G-S): 2SK211, 2SK302
- SGD** (S-G-D): 2SK543, 2SJ103, 2SK246

TEST MODE

1. How to Activate CD Test Mode

- Switch on the CD cover switch. (Should remain ON during CD test mode).
- Insert the AC plug while pressing the function CD button. All FL display tubes will light up, and the test mode will be activated.

2. How to Cancel CD Test Mode

- Either one of the following operations will cancel the CD test mode.
- Press the function button.
 - Press the power switch button.
 - Disconnect the AC plug
 - Turn off the CD cover switch.

3. CD Test Mode Functions

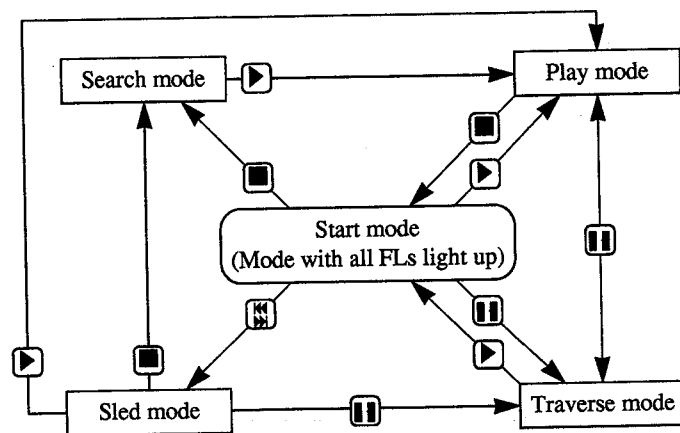
When test mode is activated, the following mode functions from No.1 to No.5 can be used by pressing the operation keys.

Mode/No.	Operation	FL display	Operation	Contents
Start mode No.1	Test mode activation	All FL light up	<ul style="list-style-type: none"> Laser diode illuminated under normal circumstances <p>(CD block power supply ON)</p>	<p>Displays the machine mode that it is a test mode.</p> <p>All FL displays light up</p> <ul style="list-style-type: none"> Laser current measurement (Across R1 resistor)
Search mode No.2	■ key		<p>Continual focus search * NOTE 1 (The pickup lens repeats the full-swing up-down motion.)</p> <p>* Avoid continual searches that last for more than 10 minutes.</p>	<p>FOCUS SERVO</p> <ul style="list-style-type: none"> Check focus search waveform Check focus error waveform <p>* FOK/FZC are not monitored in the search mode</p>
Play mode No.3	▶ key		<ul style="list-style-type: none"> Normal playback Focus search is continued if TOC cannot be read * NOTE 1 	<p>FOCUS SERVO/TRACKING SERVO</p> <p>CLV SERVO/SLED SERVO</p> <p>Check FOK/FZC</p>
Traverse mode No.4	key		<ul style="list-style-type: none"> During normal disc playback Press once; tracking servo OFF Press twice; tracking servo ON <p>* NOTE 2</p>	<p>TRACKING SERVO ON/OFF</p> <p>Tracking balance (traverse) adjustment</p>
Sled mode No.5	◀◀ key ▶▶ key	All FL light up	<ul style="list-style-type: none"> Pickup moves to the outermost track Pickup moves to the innermost track <p>* NOTE 3 (During playback, machine operates normally.)</p>	<p>SLED SERVO</p> <p>Check SLED mechanism operation</p>

- * NOTE 1: There are cases when the tracking servo cannot be locked owing to the protection circuit being operated when heat builds up in the driver IC if the focus search is operated continually for more than 10 minutes. In these cases the power supply should be switched off for 10 minutes until heat has been reduced and then re-started.
- * NOTE 2: Do not press the ◀◀ or ▶▶ keys when the machine is in the || status is active. If they are pressed, playback will not be possible after the || status has been canceled. If the ◀◀ or ▶▶ keys are pressed in the || status, press the ■ key and return to the start mode (No.1).
- * NOTE 3: When pressing the ◀◀ or ▶▶ keys, take care to avoid damage to the gears. Because the sled motor is activated when the ◀◀ or ▶▶ keys are pressed, even when the pick-up is at the outermost or innermost track.

4. Operation Outline

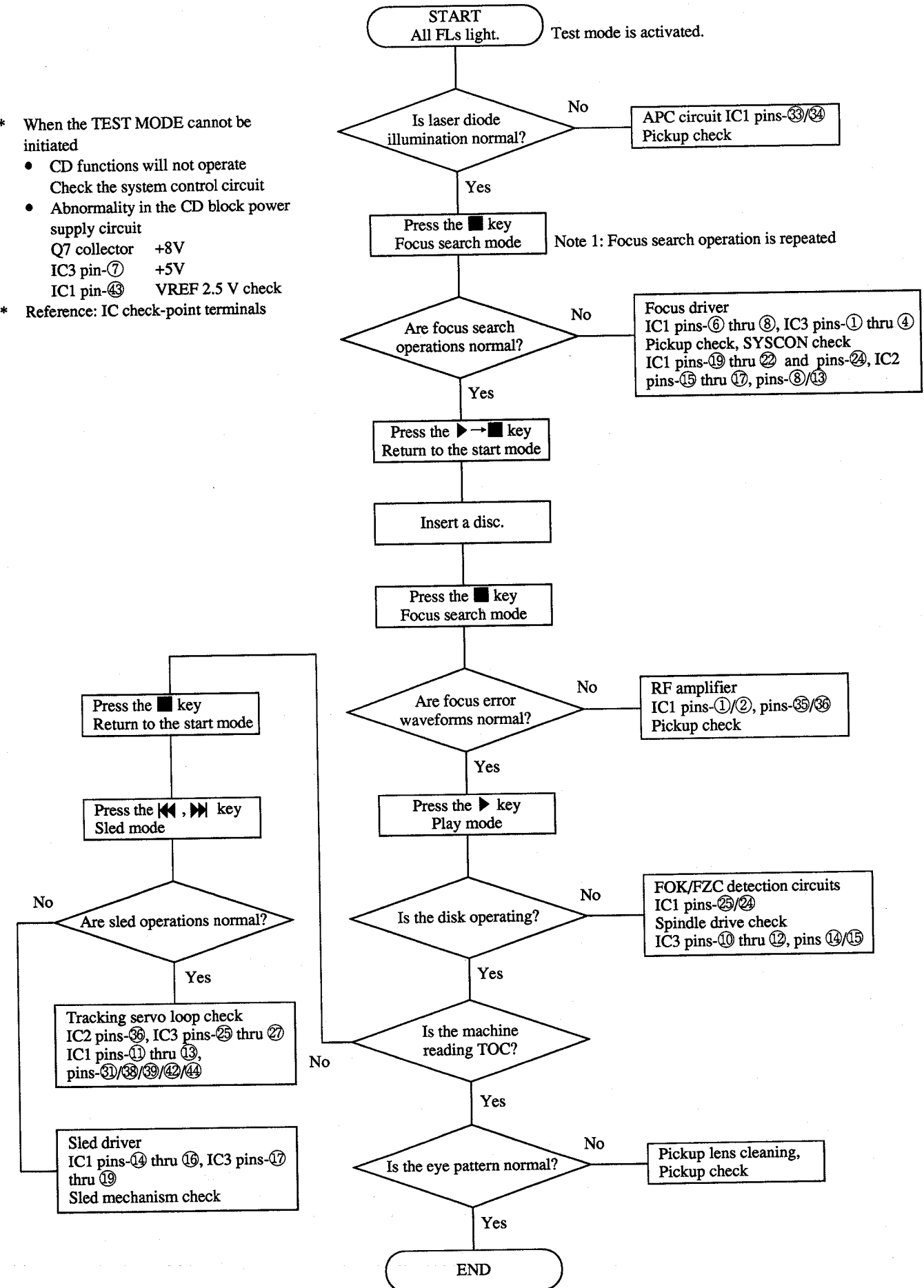
The operation of each mode is carried out in the direction of the arrows from the start mode as indicated in the following illustration.



CD Trouble-shooting

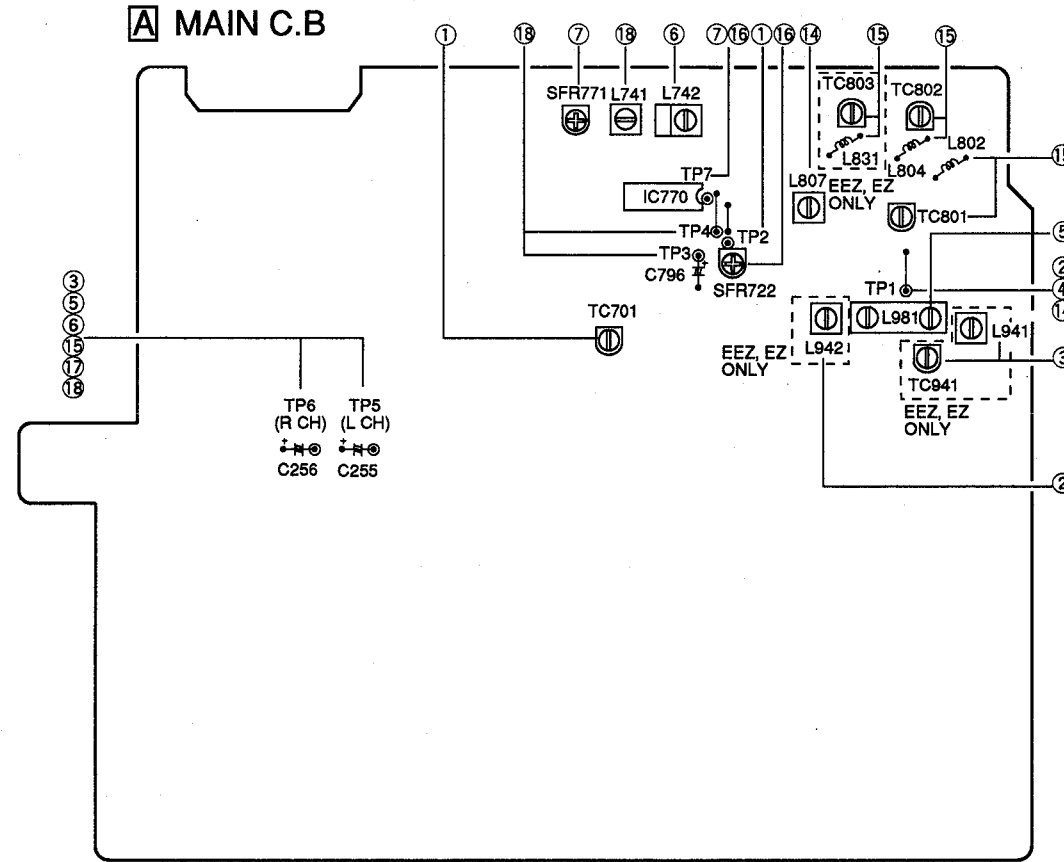
Flow Chart

- * When the TEST MODE cannot be initiated
- CD functions will not operate
 - Check the system control circuit
 - Abnormality in the CD block power supply circuit
 - Q7 collector +8V
 - IC3 pin-7 +5V
 - IC1 pin-4 VREF 2.5 V check
- * Reference: IC check-point terminals

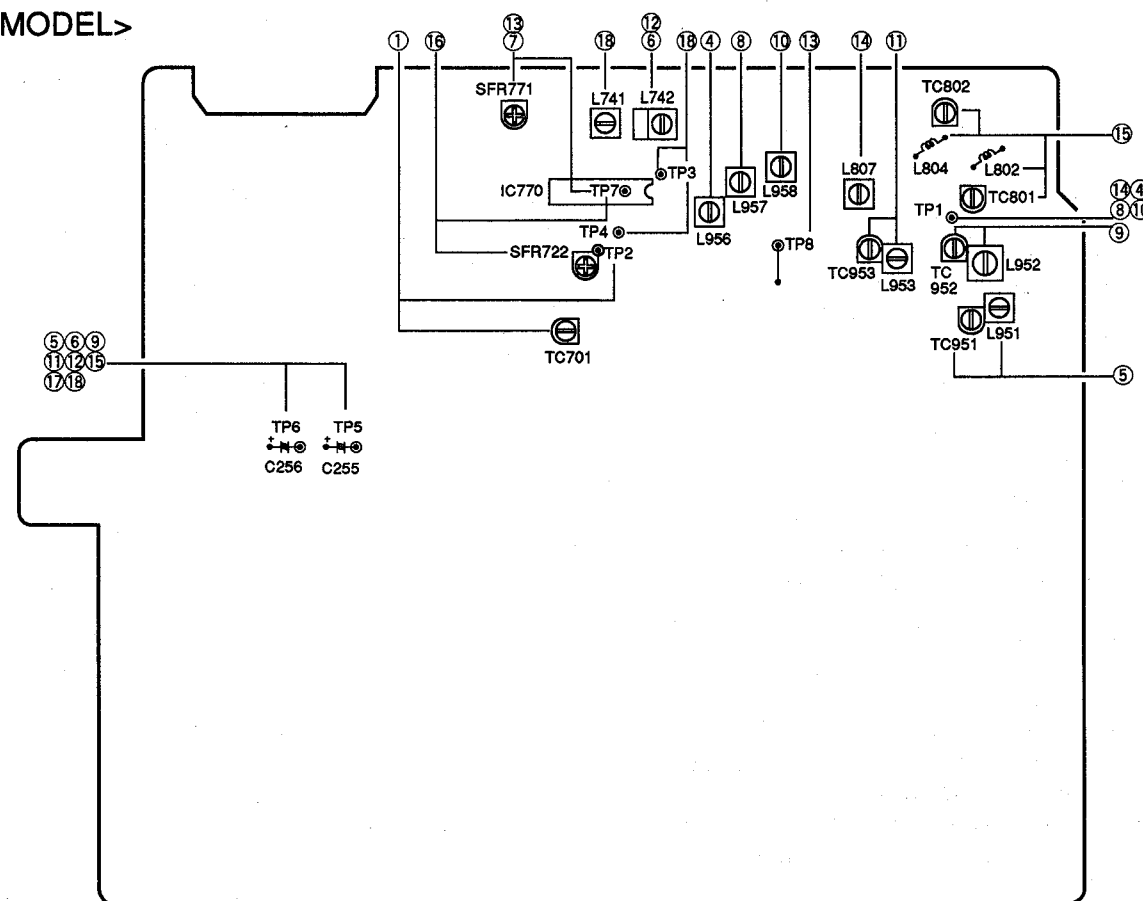


ELECTRICAL ADJUSTMENT

<EXCEPT HE>



<HE MODEL>



1. CLOCK Frequency Adjustment
 Settings: • Test point: TP2
 • Adjustment location: TC701
 Method: Set to MW 1602kHz (EEZ, EZ), 1710kHz (HE, HR, LH, U) and adjust TC701 so that the test point becomes 2052kHz ± 0.01kHz (EEZ, EZ), 2160 ± 0.01kHz (HE, HR, LH, U).
2. LW VT Adjustment (EEZ, EZ ONLY)
 Settings: • Test point: TP1
 • Adjustment location: L942
 Method: Set to LW 144kHz and adjust L942 so that the test point becomes 1.5 ± 0.05V.
3. LW Tracking Adjustment (EEZ, EZ ONLY)
 Settings: • Test point: TP5 (L CH)
 TP6 (R CH)
 • Adjustment location: L941144kHz
 TC941290kHz
 Method: Turn TC941 to its mechanical center. Adjust TC941 so that the signal level at 144 kHz is maximum. Adjust then TC941 so that the signal level at 290 kHz is maximum. Repeat adjustment at both 144 kHz and 290 kHz in turn until the signal level at both frequencies is maximum.
4. MW VT Adjustment (HE ONLY)
 Settings: • Test point: TP1 (VT)
 • Adjustment location: L956
 Method: Set to MW 1710kHz and adjust L956 so that the test point becomes 8.5 ± 0.05V.
4. MW VT Check (EXCEPT HE)
 Settings: • Test point: TP1
 Method: Set to MW 1602kHz (EEZ, EZ), 1710kHz (LH, HR, U) and check VT voltage at the test point are within 6.3 ± 1.0V (EEZ, EZ) 6.5 ± 1.0V (LH, HR, U).
5. MW Tracking Adjustment (HE ONLY)
 Settings: • Test point: TP5 (L CH)
 TP6 (R CH)
 • Adjustment location: L951600kHz
 TC9511400kHz
 Method: Set up TC951 to center before adjustment. The level at 600kHz is adjusted to MAX by L951. Then the level at 1400kHz is done by TC951.
5. MW Tracking Adjustment (EXCEPT HE)
 Settings: • Test point: TP5 (L CH)
 TP6 (R CH)
 • Adjustment location: L981
 Method: Set to MW 999kHz (EEZ, EZ), 1000kHz (LH, HR, U) and adjust L981 that the test point becomes maximum.
6. MW IF Adjustment
 Settings: • Test point: TP5 (L CH)
 TP6 (R CH)
 L742450kHz
7. MW Auto Stop Level Adjustment
 Settings: • Test point: TP7
 • Adjustment location: SFR771
 • Input level: 50dB
 Method: Set MW 999kHz (EEZ, EZ) or 1000kHz (LH, HR, U), and adjust SFR771 so that TP7 is about 0.01 V. Then decrease the input level by 2 dB and check that TP7 is about 7.0 V.
8. SW1 VT Adjustment (HE ONLY)
 Settings: • Test point: TP1 (VT)
 • Adjustment location: L957
 Method: Set to SW1 7.3MHz and adjust L957 so that the test point becomes 7.5 ± 0.05V.
9. SW1 Tracking adjustment (HE ONLY)
 Settings: • Test point: TP5 (L CH)
 TP6 (R CH)
 • Adjustment location: L9523.2MHz
 TC9527.3MHz
 Method: Set up TC952 to center before adjustment. The level at 3.2MHz is adjusted to MAX by L952. Then the level at 7.3MHz is done by TC952.
10. SW2 VT Adjustment (HE ONLY)
 Settings: • Test point: TP1 (VT)
 • Adjustment location: L958
 Method: Set to SW2 21.85MHz and adjust L958 so that the test point becomes 8.0V ± 0.05V.
11. SW2 Tracking Adjustment (HE ONLY)
 Settings: • Test point: TP5 (L CH)
 TP6 (R CH)
 • Adjustment location: L9539.5MHz
 TC95321.85MHz
 Method: Set up TC953 to center before adjustment. The level at 9.5MHz is adjusted to MAX by L953. Then the level at 21.85MHz is done by TC953.
12. SW1/SW2 IF Adjustment (HE ONLY)
 Settings: • Test point: TP5 (L CH)
 TP6 (R CH)
 L742450kHz
13. SW2 AGC Voltage Adjustment (HE ONLY)
 Settings: • Test point: TP8 (AGC)
 • Adjustment location: SFR771
 • SSG ATT level: 60dB (EMF μ)
 Method: Set to SW2 21.85MHz and adjust SFR771 so that the test point becomes 1.6V ± 0.02V.
14. FM VT Adjustment
 Settings: • Test point: TP1 (VT)
 • Adjustment location: L807
 Method: Set to FM 87.5MHz and adjust L807 so that the test point becomes 1.7V ± 0.05V.
15. FM Tracking Adjustment
 Settings: • Test point: TP5 (L CH)
 TP6 (R CH)
 L802, 80487.5MHz
 L831 (EEZ, EZ)
 TC801, 802108MHz
 TC803 (EEZ, EZ)

16. FM AUTO STOP LEVEL Adjustment

- Settings: • Test point: TP7
 • Adjustment location: SFR722
 • Input level: 23dB
- Method: Set FM 98MHz, and adjust SFR722 so that TP7 is about 0.01V. Then decrease the input level by 2dB and check that TP7 is 7.0V.

17. FM SEPARATION Check

- Settings: • Test point: TP5 (L CH)
 TP6 (R CH)
 • Input level: 54dB
- Method: Set FM 98.0MHz and check that the separation between TP5 and TP6 is 25dB or more.

18. DC Balance Adjustment

- Settings: • Test point: TP3, 4 (DC BALANCE)
 TP5, 6 (MONO DISTORTION)
 • SSG 98.0MHz, 54dB (modulation OFF)
 • Adjustment location: L741
- Method: Set to FM 98.0MHz and adjust L741 so that the voltage between TP3 and TP4 becomes $0 \pm 0.04V$.
 After that the distortion becomes less than 1.3%.

PRACTICAL SERVICE FIGURE

<FM SECTION>

HE, HR, LH, U Models	
IHF Sensitivity :	4 ± 6dB (at 87.5MHz)
(THD 3%)	2 ± 6dB (at 98.0, 108.0MHz)
S/N ratio :	More than 54dB (at 98MHz)
Distortion :	Less than 1.3% (at 98MHz)
(Input 54dB)	
Intermediate frequency :	10.7MHz
Auto stop level :	23 ± 10dB (at 98MHz)
Stereo separation :	More than 25dB (at 1kHz)

EEZ, EZ Models

IHF Sensitivity :	7 ± 6dB (at 87.5MHz)
(THD 3%)	4 ± 6dB (at 98.0, 108.0MHz)
S/N ratio :	More than 54dB (at 98MHz)
Distortion :	Less than 1.3% (at 98MHz)
(Input 54dB)	
Intermediate frequency :	10.7MHz
Auto stop level :	23 ± 10dB (at 98MHz)
Stereo separation :	More than 25dB (at 1kHz)

<MW SECTION>

HE, EEZ, EZ Models	
Sensitivity :	48 ~ 62dB (at 603kHz)
(S/N 20dB)	53 ± 6dB (at 999, 1404kHz)
S/N ratio :	More than 36dB (at 1000kHz)
Distortion :	Less than 1.5% (at 999kHz)
Intermediate frequency :	450kHz
Auto stop level :	50 ± 10dB (at 999kHz)

HR, LH, U Models

Sensitivity :	48 ~ 62dB (at 600kHz)
(S/N 20dB)	53 ± 6dB (at 1000, 1400kHz)
S/N ratio :	More than 36dB (at 1000kHz)
Distortion :	Less than 1.5% (at 1000kHz)
Intermediate frequency :	450kHz
Auto stop level :	50 ± 10dB (at 1000kHz)

<SW1 SECTION> (HE ONLY)

Sensitivity :	29 ~ 37dB (at 3.2MHz)
(S/N 20dB)	26 ~ 34dB (at 5.0MHz)
	24 ~ 32dB (at 7.3MHz)
S/N ratio :	More than 40dB (at 5.0MHz)
Distortion :	Less than 1.5% (at 5.0MHz)

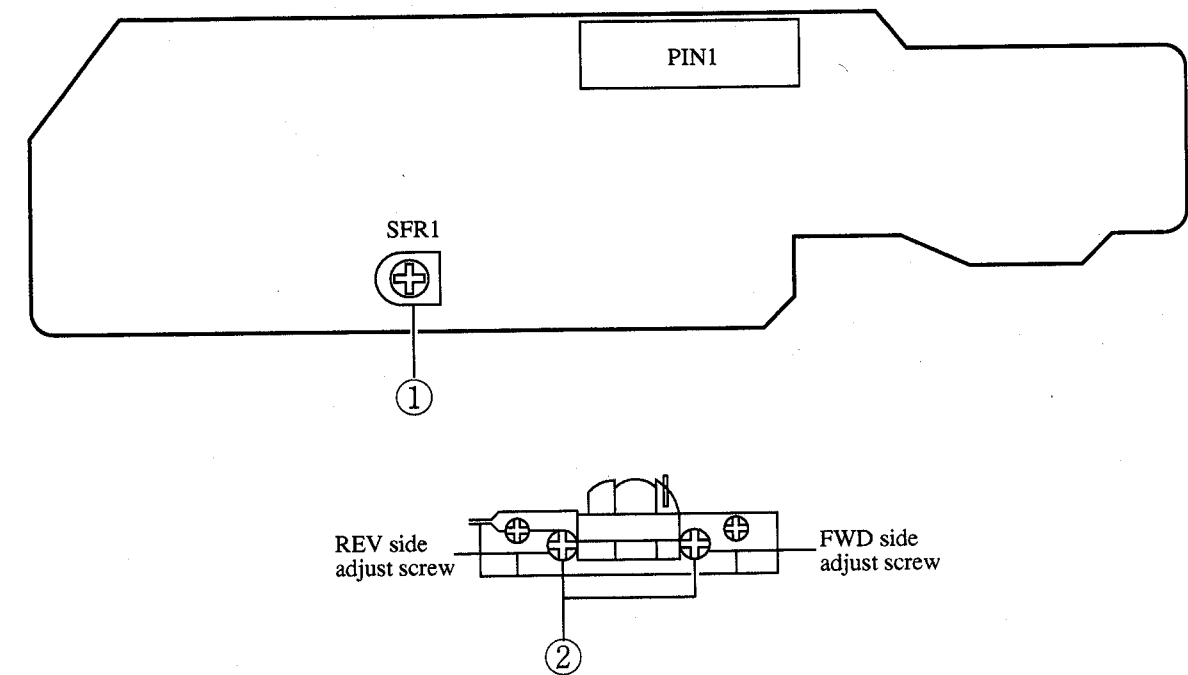
<SW2 SECTION> (HE ONLY)

Sensitivity :	45 ± 5dB (at 9.5MHz)
(S/N 20dB)	40 ± 5dB (at 15MHz)
	31 ± 5dB (at 21.85MHz)
S/N ratio :	More than 36dB (at 15MHz)
Distortion :	Less than 1.5% (at 15MHz)

<LW SECTION> (EEZ, EZ ONLY)

Sensitivity :	66 ± 5dB (at 144kHz)
(S/N 20dB)	63 ± 5dB (at 198kHz)
	62 ± 5dB (at 290kHz)
S/N ratio :	More than 32dB (at 198kHz)
Distortion :	Less than 1.5% (at 198kHz)

F TAPE C. B



1. Tape speed Check

- Settings: • Test tape: TTA-100 (TTA-111S)
 • Test point: SP OUT (MAIN C. B J501)
 • Adjustment location: SFR1

Method: Play back the test tape and check for $3000 \pm 40Hz$.

2. Head Azimuth Adjustment

- Settings: • Test tape: TTA-310 (TTA-317E)
 • Test point: SP OUT (MAIN C. B J501)
 • Adjustment location: Head azimuth adjustment screw

Method: Play back the 10kHz signal of the test tape and adjust screw so that the output becomes maximum.
 Next, perform on each FWD PLAY mode and REV PLAY mode.

3. PB Frequency Response Check

- Settings: • Test tape: TTA-310 (TTA-317E)
 • Test point: SP OUT (MAIN C. B J501)

Method: Play back 63 Hz, 315 Hz and 10 kHz on the test tape and check that 63 Hz is -10 to -4 dB in comparison with 315 Hz and 10 kHz is -5 to +2 dB in comparison with 315 Hz.

4. REC/PB frequency Response Check

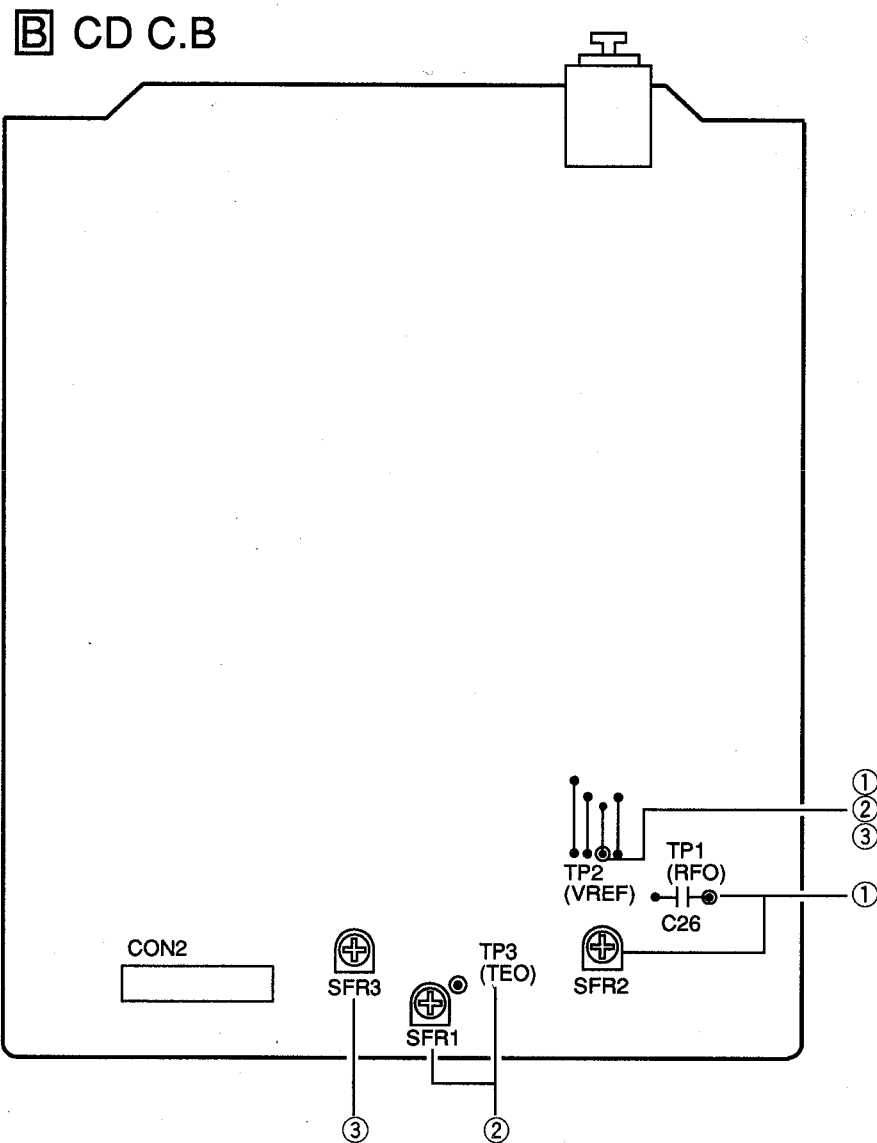
- Settings: • Test tape: TTA-602 (TTA-119K)
 • Test point: SP OUT (MAIN C. B J501)

Method: Input a -22.2 dB signal to the AUX terminal. Record 100 Hz and 10 kHz on the test tape and play back them. Check that the difference between the record level and playback level is -9 to -3 dB at 100 Hz and -6 to +2 dB at 10 kHz.

PRACTICAL SERVICE FIGURE

<TAPE RECORDER SECTION>

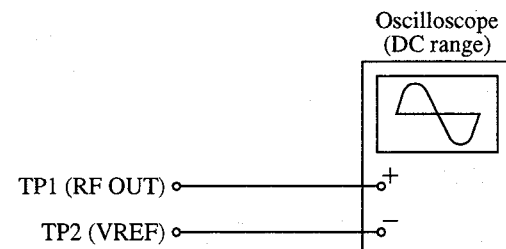
Distortion:	Less than 2.0% (PB, AC) Less than 3.0% (REC/PB, AC)
S/N ratio:	More than 40dB (PB, AC) More than 38dB (REC/PB, AC)
Noise:	Less than 100mV (PB, AC, MAX) Less than 130mV (REC/PB, AC, MAX)
Erasing ratio:	More than 60dB
Tape speed:	3000Hz ± 40Hz
Wow&flutter:	Less than 0.35% (JIS, RMS)
Take up torque:	30 ~ 55g-cm (FWD/REVERSE)
FF torque:	75 ~ 180g-cm
REW torque:	75 ~ 180g-cm
Back tension:	2 ~ 7g-cm
Test tape:	TTA-602 (TTA-119K) TTA-610 (TTA-119H) TTA-310 (TTA-317E) TTA-100 (TTA-111S)



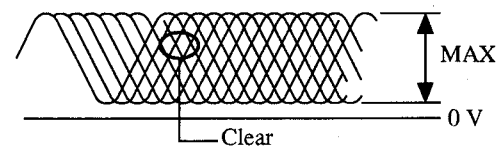
Note: Connect a probe (10: 1) of the oscilloscope or the frequency counter to a test point.

① Focus Bias Adjustment

Make the focus bias adjustment when replacing and repairing the optical block.

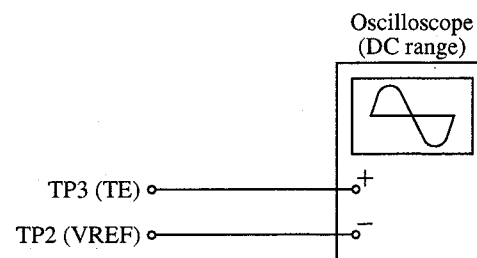


1. Connect an oscilloscope to test points TP1 (RF OUT) and TP2 (VREF).
2. Turn on the power switch.
3. Insert test disc TCD-782 (YEDS-18) and play back the second composition.
4. Adjust SFR2 so that the level of RF wave to be maximum and clear.



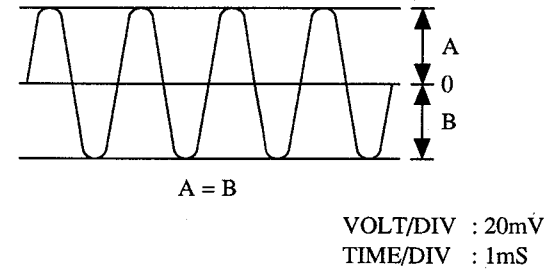
VOLT/DIV : 50mV
TIME/DIV : 0.5 μ S

② RADIAL Balance Adjustment



1. Connect an oscilloscope to test points TP3 (TE) and TP2 (VREF).
2. Turn on the power switch.

3. Insert test disc TCD-782 (YEDS-18) and press the PLAY (▶) button.
4. Connected the intermediate point of SFR3 to TP2 (VREF).
5. Adjust SFR1 so that the waveform on the oscilloscope is vertically symmetrical as shown in the figure below.



③ RADIAL Gain Adjustment

A servo analyzer is necessary in order to perform this adjustment exactly. However, this gain has a margin, so even if it is slightly off, there is no problem. Therefore, do not perform this adjustment.

Focus/tracking gain determines the pick-up follow-up (vertical and horizontal) relative to mechanical noise and mechanical shock when 2-axis device operates. However, as these gains are reciprocated, the adjustment is performed so that both gains are satisfied.

- When gain is raised, the noise increases when the 2-axis device operates.
- When gain is lowered, it is more susceptible to mechanical shock and skipping occurs more easily.

When the gain adjustment is not satisfied, the symptoms below appear.

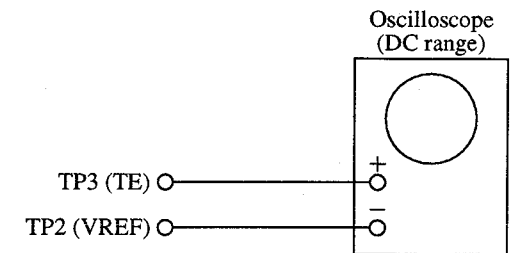
Symptoms	Gain	(Focus)	Tracking
● The time until music starts becomes longer for STOP → ▶ PLAY or automatic selection (◀▶ buttons pressed.) (Normally takes about 2 seconds.)		low	low or high
● Music does not start and disc continues to rotate for STOP → ▶ PLAY or automatic selection (◀▶ buttons pressed.)		—	low
● Disc stops to rotate shortly after STOP → ▶ PLAY.		low or high	—
● Sound is interrupted during PLAY. Or time counter display stops.		—	low
● More noises during the 2-axis device operation.		high	high

The following is simple adjustment method.

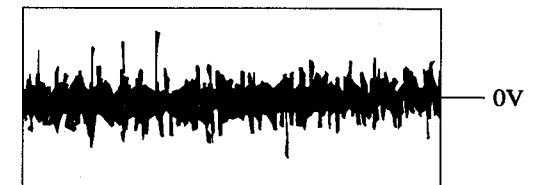
— Simple adjustment —

Note: Since the adjustment cannot be performed exactly, remember the positions of the controls before the adjustment and compare the adjusted position and the original position. If the difference is a little, return the control to the original position.

Procedure:



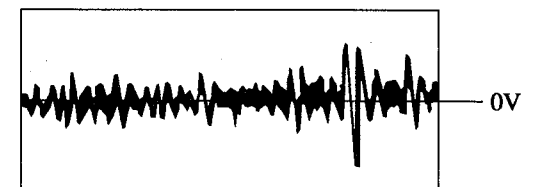
1. Keep the set horizontal. (If the set is not kept horizontally, this adjustment cannot be performed due to the gravity against the 2-axis device.)
2. Insert test disc TCD-782 (YEDS-18) and play back the second composition.
3. Connect an oscilloscope to TP3 (TE) of the main board.
4. Adjust SFR3 so that the waveform appears as shown in the figure below. (tracking gain adjustment)



VOLT/DIV : 50 mV
TIME/DIV : 1 mS

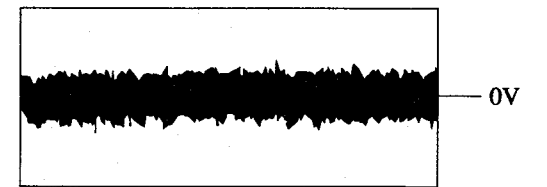
● Incorrect example

Low tracking gain
(The fundamental wave appears as compared with the waveform adjusted.)

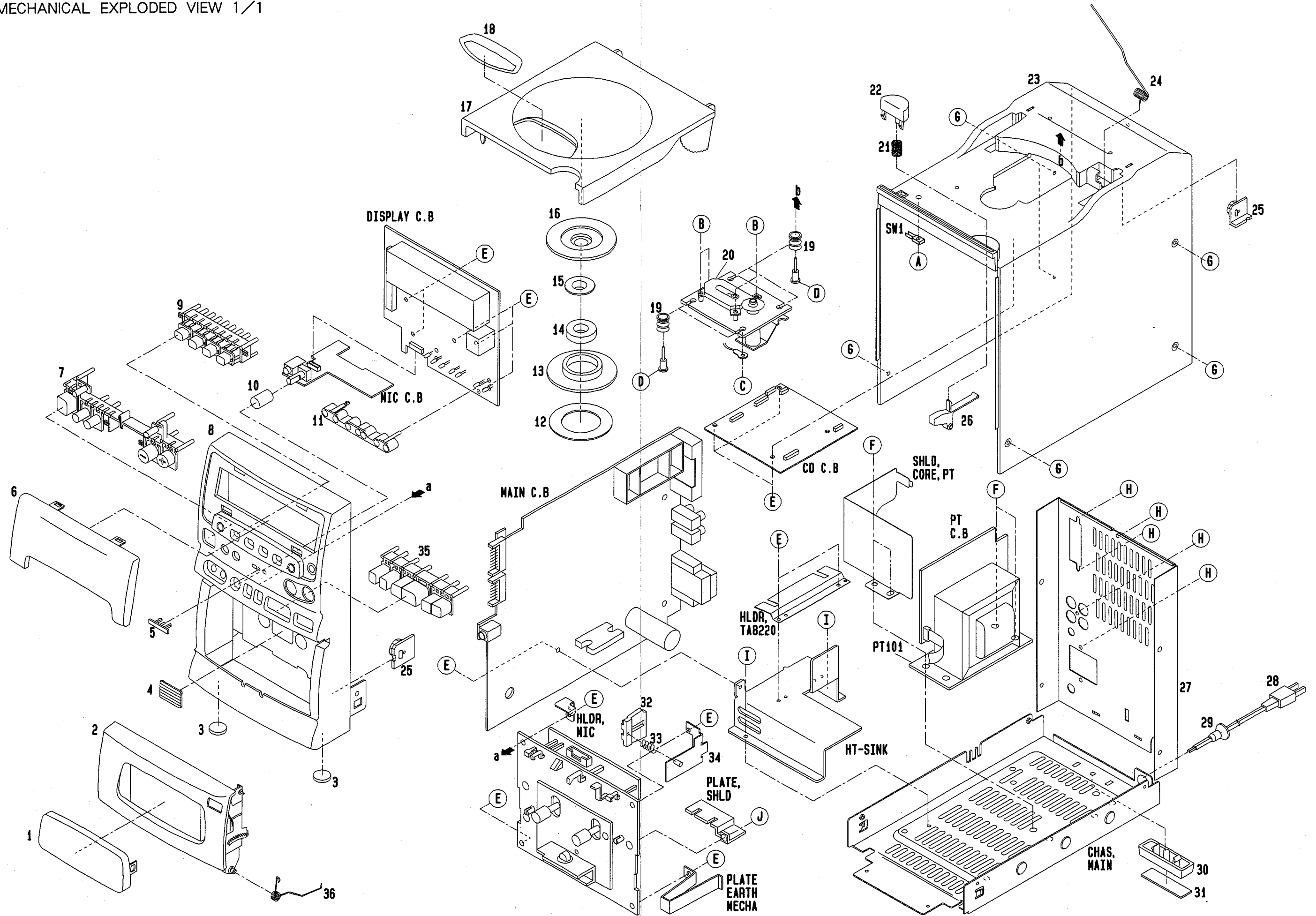


VOLT/DIV : 50 mV
TIME/DIV : 1 mS

High tracking gain
(The frequency of the fundamental wave is higher than that in low gain.)



VOLT/DIV : 50 mV
TIME/DIV : 1 mS

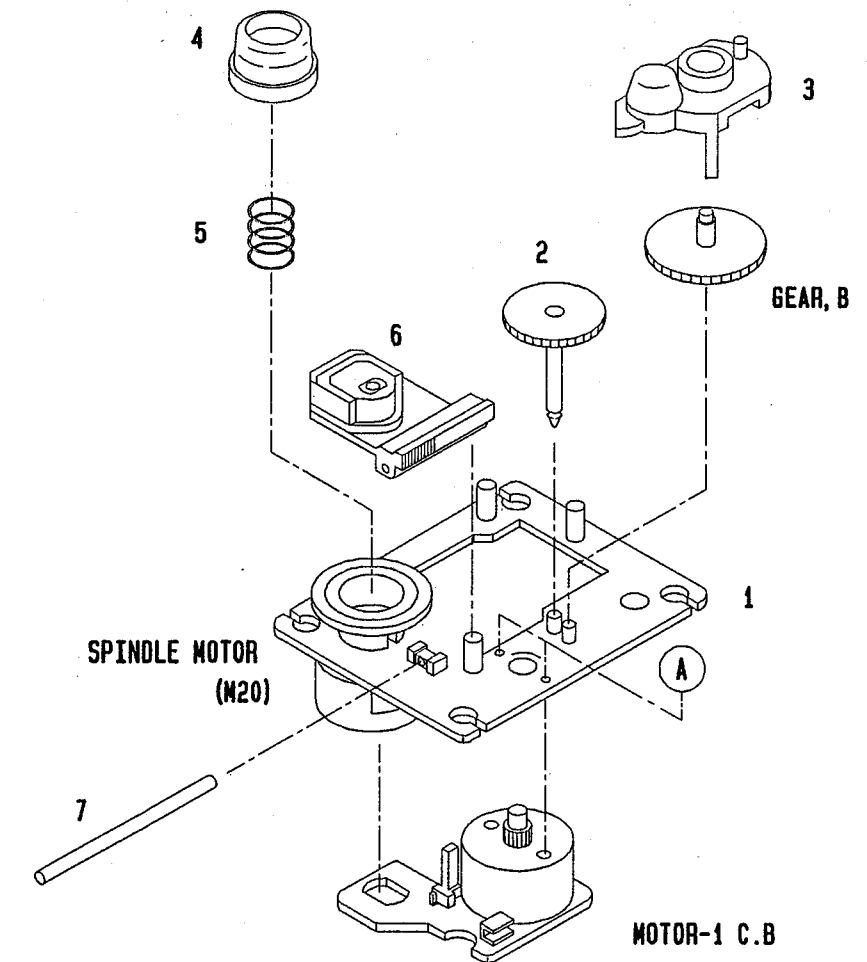


MECHANICAL PARTS LIST 1/1

DESCRIPTIONで判断できない物は“REFERENCE NAME LIST”を参照してください。
If can't understand for Description please kindly refer to “REFERENCE NAME LIST”.

REF. NO	PART NO.	カマ NO.	DESCRIPTION	REF. NO	PART NO.	カマ NO.	DESCRIPTION
1	84-CE5-004-019		WINDOW, CASS	23	84-CE5-050-019		CHAS, CD[L] (EEZ, EZ)
2	84-CE5-002-019		BOX, CASS[B]	23	84-CE5-062-119		CHAS, CD[ST] (HR)
2	84-CE5-043-019		BOX, CASS[G]	24	84-CE5-214-019		SPR-T, CD
2	84-CE5-049-019		BOX, CASS[L]	25	87-063-164-019		OIL-DMPR 80
2	84-CE5-072-019		BOX, CASS[ST]	26	84-CE5-202-019		LEVER, EJECT CD
3	84-CE5-215-019		CUSH, FOOT A	27	84-CE5-027-019		PANEL, REAR[B] (AP1Z)
4	81-532-080-019		LBL, CASS-COMPT	27	84-CE5-018-019		PANEL, REAR[B] (EEZ)
5	82-NE6-067-019		BADGE AIWA 30N	27	84-CE5-020-019		PANEL, REAR[B] (EZ) [G] (EEZ, EZ)
6	84-CE5-008-019		WINDOW, DISP				[L] (EEZ, EZ)
7	84-CE5-007-019		BTN, POWER	27	84-CE5-015-019		PANEL, REAR[B] (HE)
8	84-CE5-001-019		CAB, FR[B] (LH, EEZ, EZ)	27	84-CE5-016-019		PANEL, REAR[B, ST] (HR)
8	84-CE5-030-019		CAB, FR HEJ[B] (HE, HR)	27	84-CE5-014-019		PANEL, REAR[B] (LH)
8	84-CE5-023-019		CAB, FR U[B] (U)	27	84-CE5-021-019		PANEL, REAR[B] (U)
8	84-CE5-028-019		CAB, FR AP1Z[B] (AP1Z)	28	87-050-034-019		AC CORD ASSY, E (EXCEPT [B] LH, U)
8	84-CE5-042-019		CAB, FR EEZGN[G] (EEZ, EZ)	28	87-050-075-019		AC CORD ASSY, H[B] (LH)
8	84-CE5-048-019		CAB, FR EEZLN[L] (EEZ, EZ)	28	87-050-053-019		AC CORD ASSY, U-2[B] (U)
8	84-CE5-071-019		CAB, FR[ST] (HR)	29	87-085-184-010		BUSHING, AC CORD[B] (LH)
9	84-CE5-025-119		BTN, FUNC ASSY	29	87-085-185-010		BUSHING, AC CORD (EXCEPT [B] LH, U)
10	84-CE5-013-019		KNOB, MIC	29	87-085-189-010		BUSHING, CORD U[B] (U)
11	84-CE5-204-019		GUIDE, CONT-LED	30	84-CE5-219-019		HLDR, FOOT B
12	89-CD6-220-119		CUSHION-CHUCK	31	84-CE5-220-019		CUSH, FOOT B
13	89-CD6-206-019		CHUCK, CD B	32	82-NF5-229-019		PLATE, LOCK
14	87-036-216-019		MAGNET	33	82-NF5-228-019		SPR-C, LOCK
15	81-590-224-019		PLATE MAGNET	34	82-NF5-227-019		HLDR, LOCK 2N
16	81-CD2-225-019		CHUCK, CD A	35	84-CE5-010-019		BTN, CONT
17	84-CE5-006-019		BOX, CD[B]	36	84-CE5-213-019		SPR-T, CASS
17	84-CE5-045-019		BOX, CD EEZGN[G]	A	87-751-035-419		VT2+2-6W/O SLOT
17	84-CE5-051-019		BOX, CD EEZLN[L]	B	87-651-034-419		VT1+2-5
17	84-CE5-063-019		BOX, CD[ST]	C	87-067-520-019		VFTT +2-6 (S TIGHT)
18	84-CE5-003-019		WINDOW, CD	D	81-CD5-204-019		SCREW CD
19	80-CD3-214-019		CUSH CD A	E	87-067-703-019		BVT2+3-10 (W/O SLOT)
20	81-CD2-028-119		PANEL, CD	F	87-067-585-019		BVTT +4-6
21	84-CE5-212-019		SPR-C, CD	G	87-593-095-419		QIT +3-8 BLK
22	84-CE5-012-019		BTN, EJECT CD[B]	H	87-067-761-019		BVT2+3-10 BLK
22	84-CE5-046-019		BTN, EJECT CD[G]	I	87-067-584-019		BVT2+3-6 W/O SLOT
22	84-CE5-052-019		BTN, EJECT CD[L]	J	87-571-032-419		VIT+2-3
22	84-CE5-064-019		BTN, EJECT CD[ST]				
23	84-CE5-005-019		CHAS, CD[B] (LH, HE, HR, EEZ, EZ, AP1Z)				
23	84-CE5-024-019		CHAS, CD[B] (U)				
23	84-CE5-044-019		CHAS, CD[G] (EEZ, EZ)				

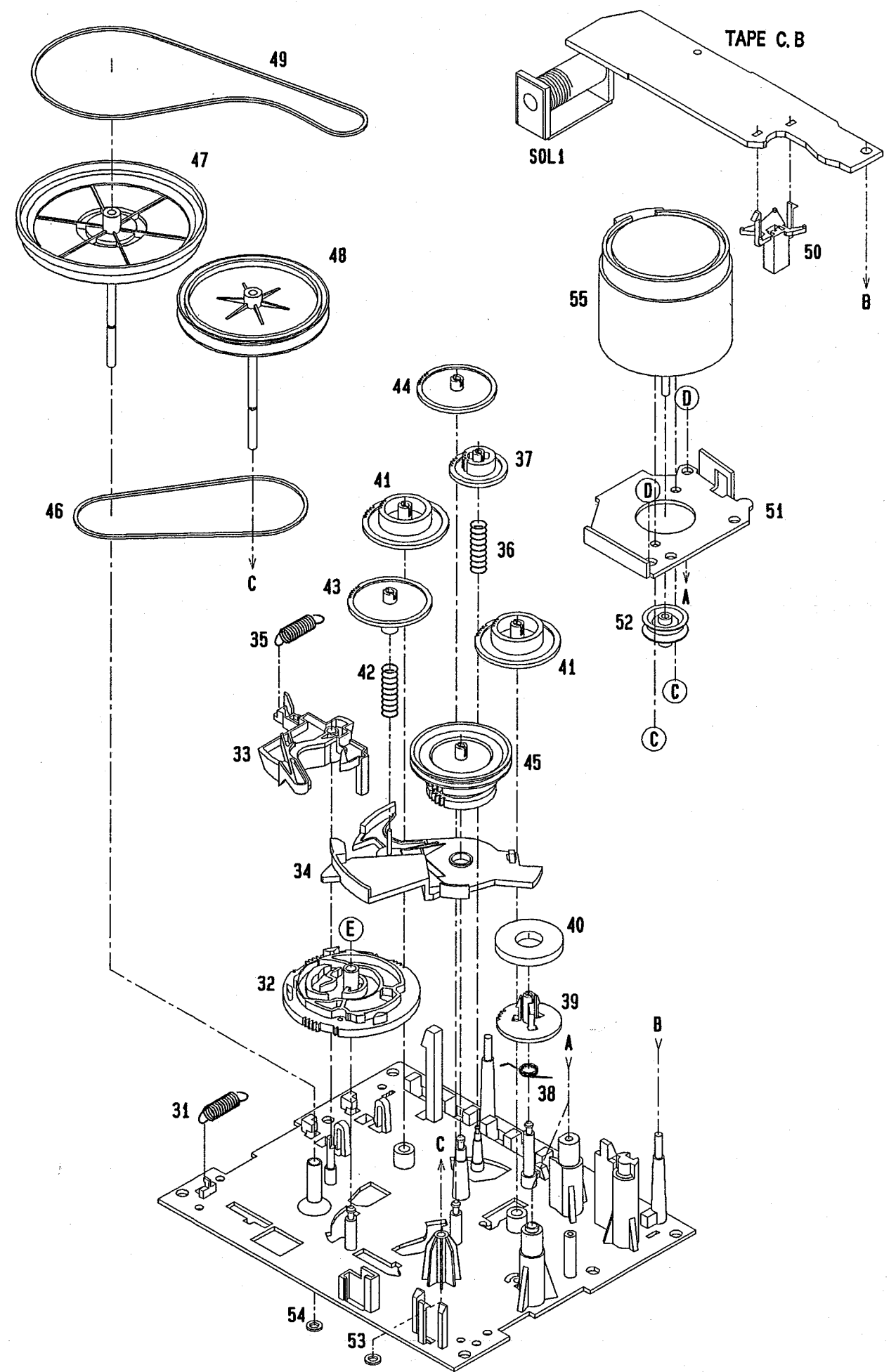
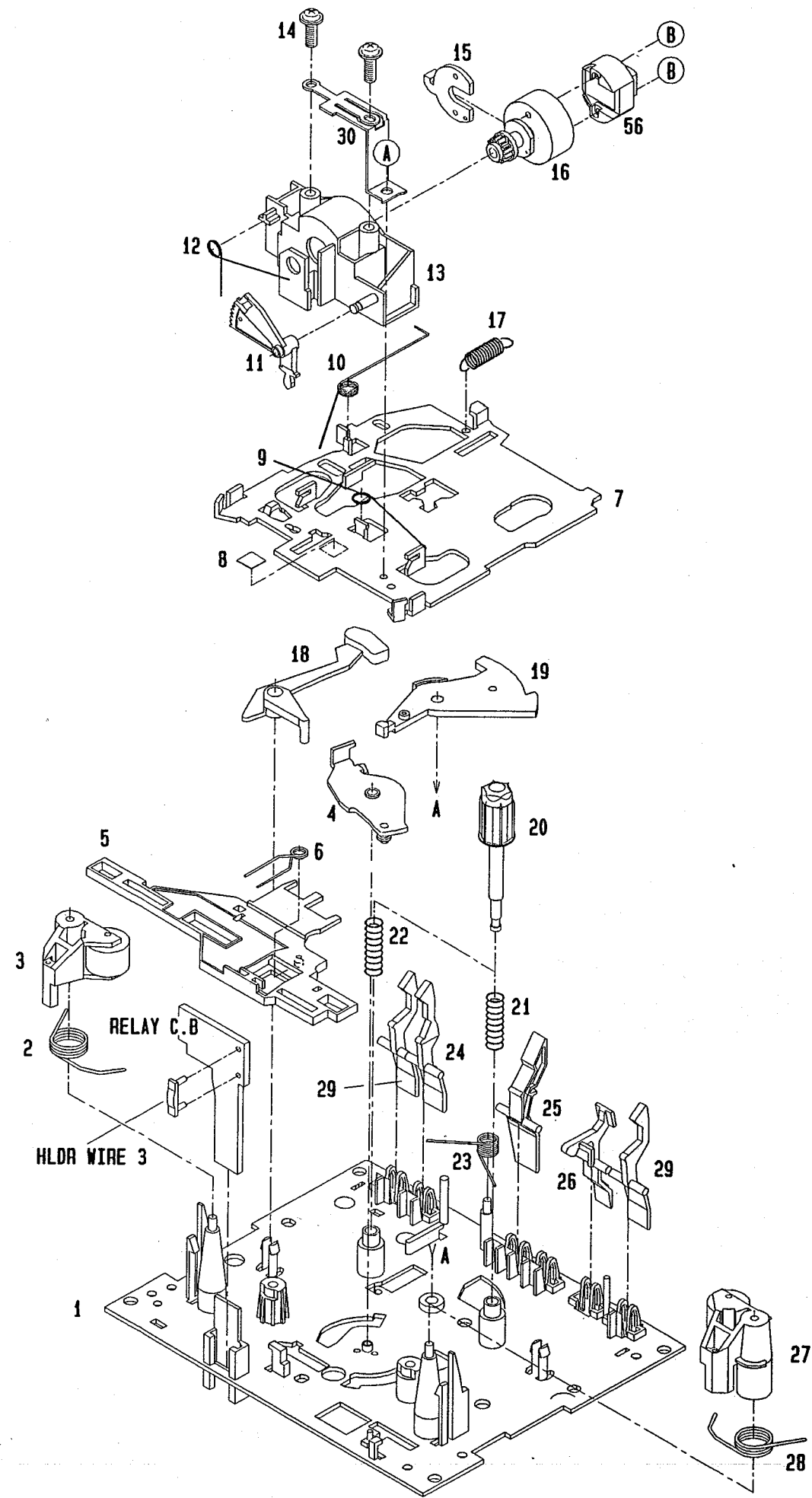
CD MECHANISM EXPLODED VIEW 1/1



CD MECHANISM PARTS LIST 1/1

REF. NO	PART NO.	カマ NO.	DESCRIPTION	REF. NO	PART NO.	カマ NO.	DESCRIPTION
1	9X-262-513-310		T. T CHASS ASSY W/MOTOR	6	98-848-137-210		OPTICAL PICK UP KSS-210B
2	92-625-188-020		GEAR (A)	7	94-917-565-010		SHAFT SLED
3	92-625-544-010		COVER	A	87-261-032-210		V+2-3
4	92-625-187-010		RING CENTER				
5	92-625-191-010		SPRING COMPRESSION				

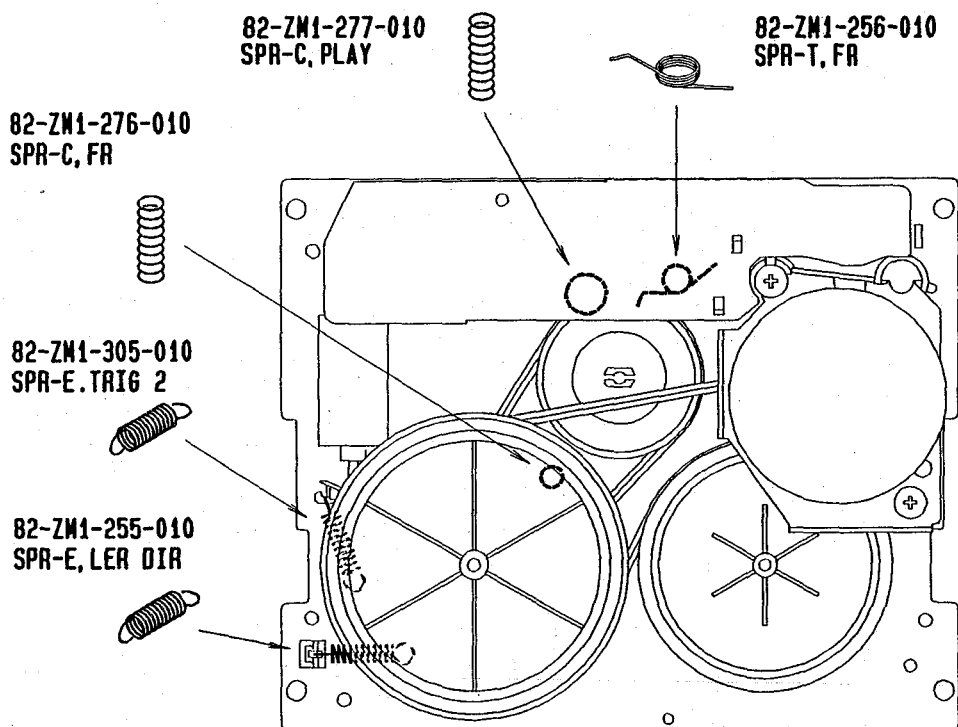
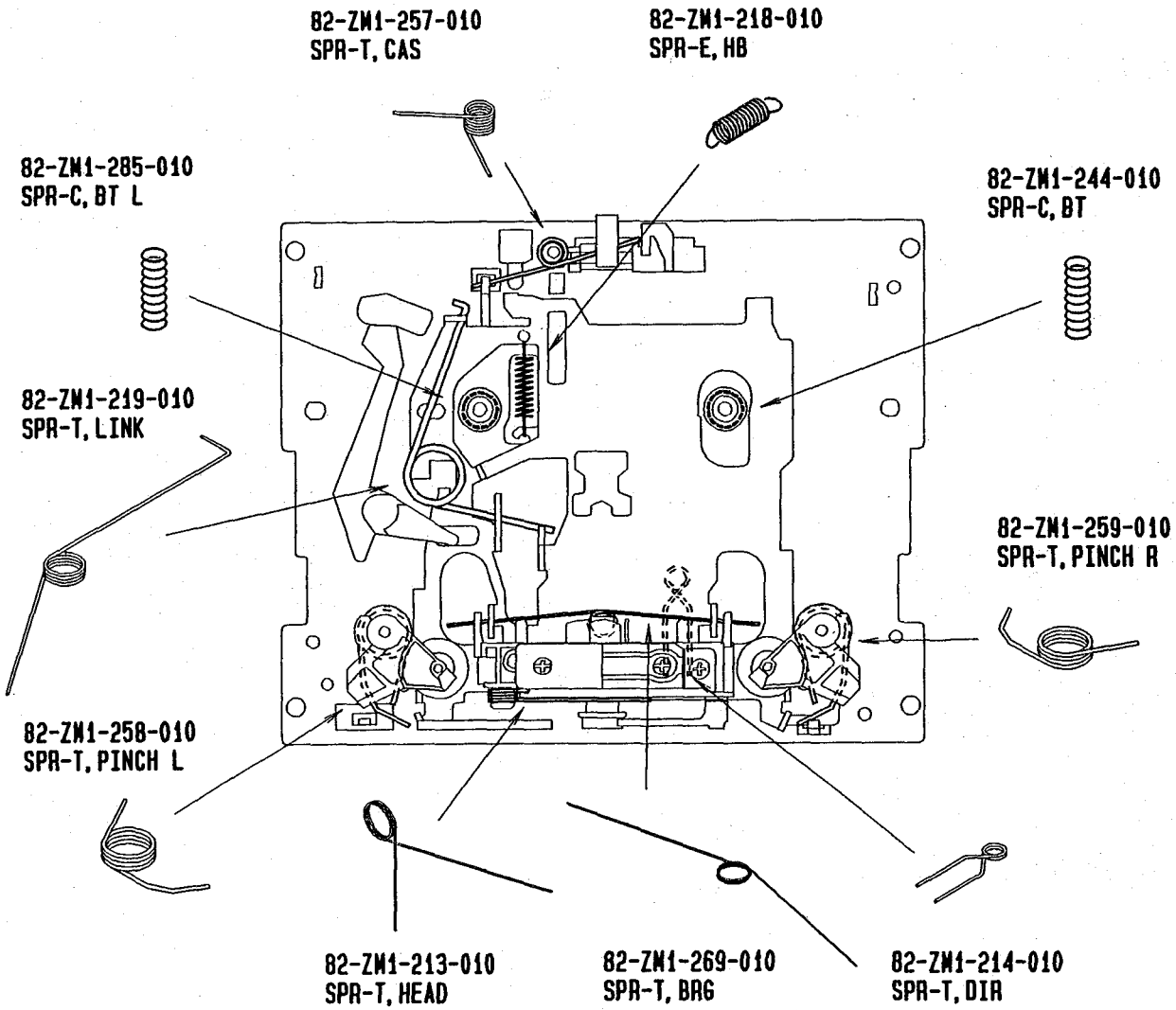
TAPE MECHANISM EXPLODED VIEW 1/1



TAPE MECHANISM PARTS LIST 1/1

REF. NO	PART NO.	カリ NO.	DESCRIPTION	REF. NO	PART NO.	カリ NO.	DESCRIPTION
1	82-ZM1-299-010		CHAS ASSY, R	36	82-ZM1-277-010		SPR-C, PLAY
2	82-ZM1-258-010		SPR-T, PINCH L	37	82-ZM1-223-010		GEAR, PLAY
3	82-ZM1-248-110		LVR ASSY, PINCH L	38	82-ZM1-256-110		SPR-T, FR
4	82-ZM1-295-210		PLATE ASSY, LINK	39	82-ZM1-220-110		GEAR, IDLER
5	82-ZM1-266-010		LVR, DIR	40	80-ZM6-217-010		RING MAGNET 2
6	82-ZM1-214-010		SPR-T, DIR	41	82-ZM1-216-210		GEAR, REEL
7	82-ZM1-206-210		CHAS, HEAD	42	82-ZM1-276-010		SPR-C, FR
8	87-078-014-010		SH, 5-5-0.05	43	82-ZM1-225-010		GEAR, FR
9	82-ZM1-269-010		SPR-T, BRG	44	82-ZM1-226-010		GEAR, REW
10	82-ZM1-219-010		SPR-T, LINK	45	82-ZM1-228-210		SLIP DISK ASSY
11	82-ZM1-210-010		GEAR, H T	46	82-ZM1-261-110		BELT, FR
12	82-ZM1-213-010		SPR-T, HEAD	47	82-ZM1-237-210		FLY-WHL ASSY, R
13	82-ZM1-207-010		GUIDE, TAPE	48	82-ZM1-234-110		FLY-WHL ASSY, L
14	82-ZM1-283-310		S-SCREW, AZIMUTH	49	82-ZM1-260-010		BELT, MAIN
15	82-ZM1-209-010		PLATE, HEAD	50	82-ZM1-245-210		HLDR, IC
16	82-ZM1-208-010		HLDR, HEAD	51	82-ZM1-246-010		HLDR, MOTOR
17	82-ZM1-218-010		SPR-E, HB	52	82-ZM1-247-010		PULLEY, MOTOR
18	82-ZM1-263-110		LVR, EJECT	53	82-ZM1-288-010		SH, 1.63-3.2-0.5 SLT
19	82-ZM1-222-010		LVR, PLAY	54	80-ZM6-243-010		SH, 1.75-3.6-0.5 SLT
20	82-ZM1-217-110		REEL TABLE	55	87-045-348-010		MOT, SHW 2L 70(M1)
21	82-ZM1-244-110		SPR-C, BT	56	87-046-399-010		HEAD, RPH YK56R-BS409(RPH)
22	82-ZM1-285-110		SPR-C, BT L	A	87-585-036-410		UIT+2-8
23	82-ZM1-257-010		SPR-T, CAS	B	80-ZM6-207-010		V+1, 6-7
24	82-ZM1-241-110		LVR, MC	C	87-251-070-410		U+2, 6-3
25	82-ZM1-242-010		LVR, CAS	D	87-741-073-410		UT2+2, 6-6 GLD
26	82-ZM1-243-010		LVR, STOP	E	87-067-932-010		PW, 2.15-6.8-0.5 SLT
27	82-ZM1-253-110		LVR ASSY, PINCH R				
28	82-ZM1-259-010		SPR-T, PINCH R				
29	82-ZM1-240-110		LVR, REC				
30	82-ZM1-298-010		SPR-P, EARTH				
31	82-ZM1-255-110		SPR-E, LVR DIR				
32	82-ZM1-221-110		GEAR, CAM				
33	82-ZM1-227-110		LVR, TRIG				
34	82-ZM1-224-110		LVR, FR				
35	82-ZM1-305-010		SPR-E, TRIG 2				

SPRING APPLICATION POSITION



■ACCESSORIES/PACKAGE LIST

DESCRIPTIONで判断できない物は“REFERENCE NAME LIST”を参照してください。
If can't understand for Description please kindly refer to “REFERENCE NAME LIST”.

REF NO.	PART NO.	カンリ NO.	DESCRIPTION
1	84-CL5-902-219		IB, E (EG1)<EEZ, EZ>
1	84-CL5-901-019		IB, E (ESC)<LH, HE, HR>
1	84-CL5-905-219		IB, U (ESF)<EEZ, EZ, U>
1	84-CL5-906-019		IB, AP1<AP1Z>
2	87-006-240-019		AM-LOOP ANT CON(K0)<HE>
2	87-006-268-019		AM-LOOP ANT NC (UN)<EXCEPT HE>
3	87-043-115-01B		ANT, FEEDER FM<LH, HE, HR, U>
3	87-043-106-019		FM, WIRE ANT (Z)<EEZ, EZ, AP1Z>
4	87-043-095-019		ANTENNA WIRE<HE>
5	87-009-724-019		PLUG, ADPTR IR39<LH>
5	87-009-725-019		PLUG, ADPTR IR40<HE, HR>
6	84-CL4-950-019		RC, RC-L60E

■SPEAKER LIST (SX-SL50)

DESCRIPTIONで判断できない物は“REFERENCE NAME LIST”を参照してください。
If can't understand for Description please kindly refer to “REFERENCE NAME LIST”.

REF NO.	PART NO.	カンリ NO.	DESCRIPTION
1	84-CP6-001-019		PANEL FR, R[B]<EXCEPT AP1Z>
1	84-CP6-019-019		PANEL FR, R[G]<EEZ, EZ>
1	84-CP6-021-019		PANEL FR, R[L]<EEZ, EZ>
1	84-CP6-023-019		PANEL FR, R[B]<AP1Z>
1	84-CP6-027-019		PANEL FR, R[ST]<HR>
2	84-CP6-002-019		PANEL FR, L[B]<EXCEPT AP1Z>
2	84-CP6-020-019		PANEL FR, R[G]<EEZ, EZ>
2	84-CP6-022-019		PANEL FR, R[L]<EEZ, EZ>
2	84-CP6-024-019		PANEL FR, R[B]<AP1Z>
2	84-CP6-028-019		PANEL FR, R[ST]<HR>
3	84-CP6-008-019		GRILL FRAME ASSY R
4	84-CP6-009-019		GRILL FRAME ASSY L
5	84-CP6-602-019		SPEAKER
6	84-CP6-610-019		SPEAKER CORD

REFERENCE NAME LIST

ELECTRICAL SECTION

DESCRIPTION	REFERENCE NAME
ANT	ANTENNAS
C-	CHIP
C-CAP	CAP, CHIP
C-CAP TN	CAP, CHIP TANTALUM
C-COIL	COIL, CHIP
C-DI	DIODE, CHIP
C-DIODE	DIODE, CHIP
C-FET	FET, CHIP
C-FOTR	FILTER, CHIP
C-JACK	JACK, CHIP
C-LED	LED, CHIP
C-RES	RES, CHIP
C-SFR	SFR, CHIP
C-SLIDE SW	SLIDE SWITCH, CHIP
C-SW	SWITCH, CHIP
C-TR	TRANSISTOR, CHIP
C-VR	VOLUME, CHIP
C-ZENER	ZENER, CHIP
CAP, CER	CAP, CERA-SOL
CAP, E	CAP, ELECT
CAP, M/F	CAP, FILM
CAP, TC	CAP, CERA-SOL
CAP, TC-U	CAP, CERA-SOL SS
CAP, TN	CAP, TANTALUM
CERA FIL	FILTER, CERAMIC
CF	FILTER, CERAMIC
DL	DELAY LINE
E/CAP	CAP, ELECT
FILT	FILTER
FLTR	FILTER
FUSE RES	RES, FUSE
MOT	MOTOR
P-DIODE	PHOTO DIODE
P-SNSR	PHOTO SENSER
P-TR	PHOTO TRANSISTOR
POLY VARI	VARIABLE CAPACITOR
PPCAP	CAP, PP
PT	POWER TRANSFORMER
PTR, RES	PTR, MELF
RC	REMOTE CONTROLLER
RES NF	RES, NON-FLAMMABLE
RESO	RESONATOR
SHLD	SHIELD
SOL	SOLENOID
SPKR	SPEAKER
SW, LVR	SWITCH, LEVER
SW, RTRY	SWITCH, ROTARY
SW, SL	SWITCH, SLIDE
TC CAP	CAP, SERA-SOL
THMS	THERMISTOR
TR	TRANSISTOR
TRIMER	CAP, TRIMMER
TUN-CAP	VARIABLE CAPACITOR
VIB, CER	RESONATOR, CERAMIC
VIB, XTAL	RESONATOR, CRYSTAL
VR	VOLUME
ZENER	DIODE, ZENER
サージサプレッサ	SERGESUPPRESSOR
セラコン	CAP, CERA

MECHANICAL SECTION

DESCRIPTION	REFERENCE NAME
ADHESHIVE	SHEET ADHESHIVE
AZ	AZIMUTH
BAR-ANT	BAR-ANTENNA
BAT	BATTERY
BATT	BATTERY
BRG	BEARING
BTN	BUTTON
CAB	CABINET
CASS	CASSETTE
CHAS	CHASSIS
CLR	COLLAR
CONT	CONTROL
CRSR	CURSOR
CU	CUSHION
CUSH	CUSHION
DIR	DIRECTION
DUBB	DUBBING
FL	FRONT LOADING
FLY-WHL	FLYWHEEL
FR	FRONT
FUN	FUNCTION
G-CU	G-CUSHION
HDL	HANDOL
HIMERON	CLOTH
HINGE, BAT	HINGE, BATTERY
HLDR	HOLDER
HT-SINK	HEAT SINK
IB	INSTRUCTION BOOKLET
IDLE	IDLER
IND, L-R	INDICATOR, L-R
KEY, CONT	KEY, CONTROL
KEY, PRGM	KEY, PROGRAM
KNOB, SL	KNOB, SLIDE
LBL	LABEL
LID, BATT	LID, BATTERY
LID, CASS	LID, CASSETTE
LVR	LEVER
P-SP	P-SPRING
PANEL, CONT	PANEL, CONTROL
PANEL, FR	PANEL, FRONT
PRGM	PROGRAM
PULLY, LOAD MO	PULLY, LOAD MOTOR
RBN	RIBBON
S-	SPECIAL
SEG	SEGMENT
SH	SHEET
SHLD-SH	SHIELD-SHEET
SL	SLIDE
SP	SPRING
SP-SCREW	SPECIAL-SCREW
SPACER, BAT	SPACER, BATTERY
SPR	SPRING
SPR-P	P-SPRING
SPR-PC-PUSH	P-SPRING, C-PUSH
T-SP	T-SPRING
TERM	TERMINAL
TRIG	TRIGGER
TUN	TUNING
VOL	VOLUME
W	WASHER
WHL	WHEEL
WORM-WHL	WORM-WHEEL
ジグアーム	ARM, SHAFT
ジグガイド	GUIDE, SHAFT
ストラップ	STRAP
トクナベ	S-SCRW
ヒンジ	HINGE
ヒンジビス	S-SCRW
ビスセレート	SCRW, SERRART

サービス技術ニュース	
番号	連絡内容
G - -	
G - -	
G - -	

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