aiwa

aiwa SERVICE

XR-H330MD

SERVICE MANUAL

MD/CD STEREO SYSTEM

- BASIC TAPE MECHANISM : 2ZM-3MK2 PR4NM
- BASIC CD MECHANISM : 4ZG-1 Z3RSHMDJM
- BASIC MD MECHANISM : ZZG-3 DM
- TYPE: EZ,K

REVISION PUBLISHING

SYSTEM	CD CASSEIVER	SPEAKER	REMOTE CONTROLLER
XR-H330MD	CX-NH330MD	SX-WNH330	RC-ZAS16

- This Service Manual is the "Revision Publishing" and replaces "Simple Manual". (S/M Code No. 09-991-400-4T3)
- If requiring information about the CD mechanism, see Service Manual of 4ZG-1. (S/M Code No.09-992-325-4N2)

S/M Code No. 09-993-400-4R3

TABLE OF CONTENTS

SPECIFICATIONS

<FM Tuner section>

Tuning range	87.5 MHz to 108 MHz
Usable sensitivity(IHF)	16.8 dBf
Antenna terminal	75 ohms (unbalanced)

<MW Tuner section>

Tuning range	531 kHz to 1602 kHz (9 kHz step) 530 kHz to 1710 kHz (10 kHz step)
Usable sensitivity	350 µV/m
Antenna	Loop antenna

<LW Tuner section>

Tuning range	144 kHz to 290 kHz
Usable sensitivity	1400 µV/m
Antenna	Loop antenna

<Amplifier section>

Mid-high frequency amplifier	
Power output *	EZ: Rated: 10 W + 10 W (8 ohms, T.H.D. 1%, 200 Hz to 20 kHz/DIN 45500) Reference: 12 W + 12 W (8 ohms, T.H.D. 10 %, 200 Hz to 20 kHz/DIN 45324) DIN MUSIC POWER: 26 W + 26 W K: Rated: 10 W + 10 W (8 ohms, T.H.D. 1%, 200 Hz to 20 kHz/DIN 45500) Reference: 12 W + 12 W (8 ohms, T.H.D. 10 %, 1 kHz/DIN 45324)
Total Harmonic distortion	0.06 % (8 W, 1 kHz, 8 ohms, DIN AUDIO)
Low frequency amplifier	
Power output *	EZ: Rated: 30 W + 30 W (4 ohms, T.H.D. 1%, 50 Hz to 200 Hz/DIN 45500) Reference: 37 W + 37 W (4 ohms, T.H.D. 10 %, 50 Hz to 200 Hz/DIN 45324) DIN MUSIC POWER: 65 W + 65 W K: Rated: 30 W + 30 W (4 ohms, T.H.D. 1%, 50 Hz to 200 Hz/DIN 45500) Reference: 37 W + 37 W (4 ohms, T.H.D. 10 %, 135 Hz/DIN 45324)
Total Harmonic distortion	0.06 % (20 W, 135 Hz, 4 ohms, DIN AUDIO)

* without connecting to the SURROUND SPEAKERS

Inputs	VIDEO/AUX: 310 mV (adjustable) DIGITAL IN
Outputs	SPEAKERS: LOW FREQ: accept speakers of 4 ohms HIGH FREQ: accept speakers of 8 ohms SURROUND SPEAKERS: accept speakers of 8 to 16 ohms PHONES (stereo jack): accepts headphones of 32 ohms or more CD DIGITAL OUT (OPTICAL) jack

<Compact disc player section>

Laser	Semiconductor laser (λ =780 nm)
D-A converter	1 bit dual
Signal-to-noise ratio	85 dB (1 kHz, 0 dB)
Harmonic distortion	0.05 % (1 kHz, 0 dB)
Wow and flutter	Unmeasurable

<MD recorder section>

Scanning method	Non-contact optical scanner (Semiconductor laser application)
Recording system	Magnetic polarity modulation overwrite system
Rotation speed	Approx. 400 – 900 rpm(CLV)
Sampling frequency	44.1 kHz
No. of channels	Stereo: 2 channels Monaural: 1 channel
A-D, D-A converter	1-bit
Frequency	20 to 20000 Hz +0.5 - –1.5dB
Wow and flutter	Unmeasurable

<Cassette deck section>

Track format	4 tracks, 2 channels stereo
Frequency response	50 Hz to 15000 Hz
Recording system	AC bias
Heads	Deck 1: Playback head X 1 Deck 2: Recording/playback head X 1, erase head x 1

<General>

Power requirements	230 V AC, 50 Hz
Power consumption	160 W
Standby power consumption	1.5 W (power-economizing mode set to ON)
Dimensions of main unit (W x H x D)	260 x 329.5 x 354.5 mm
Weight of main unit	8.6 kg <EZ> 8.7 kg <K>

<Speaker system SX-WNH330>

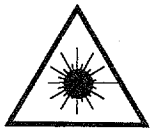
Cabinet type	3 way, built-in subwoofer (magnetic shielded type)
Speakers	Subwoofer: 160 mm cone type Full range: 100 mm cone type Super tweeter: 20 mm ceramic type
Impedance	LOW FREQ: 4 ohms HIGH FREQ: 8 ohms
Output sound pressure level	87 dB/W/m
Dimensions (W x H x D)	240 x 324 x 270 mm
Weight	4.8 kg

• 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 laserståling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

VAROITUS!
Laiteen Käyttäminen muulla kuin tässä käyttöohjeessa mainitulla tavalla saattaa altistaa käyt-täjän turvallisuusluokan 1 ylittävälle näkymättömälle lasersäteilylle.

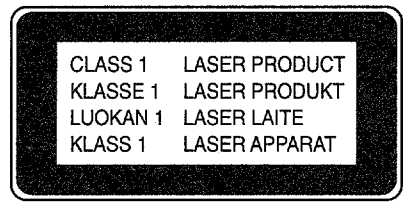
VARNING!
Om apparaten används på annat sätt än vad som specificeras i denna bruksanvising, kan användaren utsättas för osynling laserstrålning, som överskrider gränsen för laserklass 1.

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 laserståling ved åbning, når sikkerhedsafbrydereer 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.

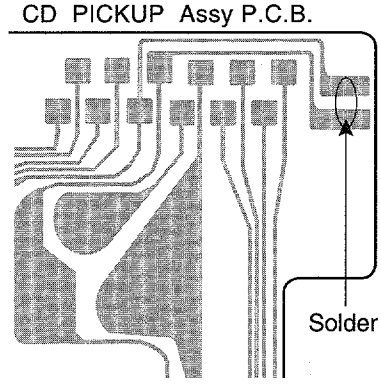


Precaution to replace Optical block

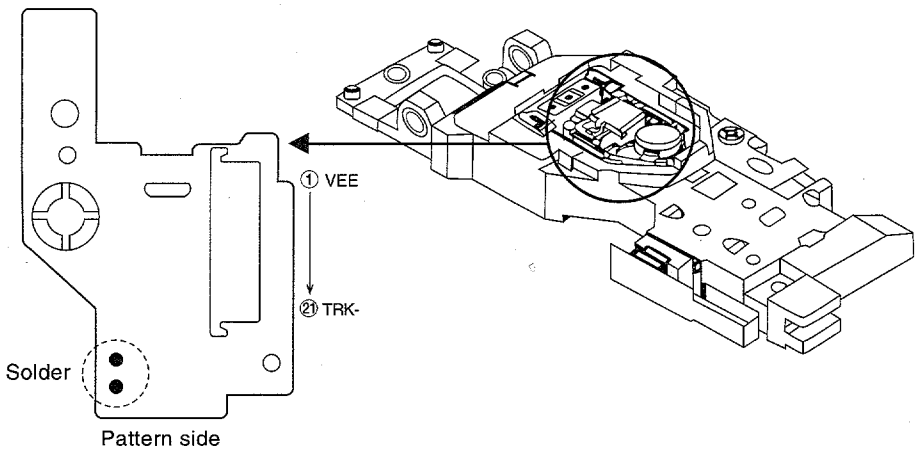
Body or clothes electrostatic potential could ruin laser diode in the optical block. Be sure ground body and workbench, and use care the clothes do not touch the diode.

1) After the connection, remove solder shown in the figures.

(KSS – 213F)
CD PICKUP Assy P.C.B.



(KMS – 260A)
MD PICKUP Assy P.C.B.



NOTE ON BEFORE STARTING REPAIR

1. Forced discharge of electrolytic capacitor of power supply block

When repair is going to be attempted in the set that uses relay circuit in the power supply block, electric potential is kept charged across the electrolytic capacitors (C101, 102) even though AC power cord is removed. If repair is attempted in this condition, the secondary defect can occur.
In order to prevent the secondary trouble, perform the following measures before starting repair work.

Discharge procedure

① Remove the AC power cord.
② Connect a discharging resistor at an end of lead wire that has clips at both ends. Connect the other end of the lead wire to metal chassis.
③ Contact the other end of the discharging resistor to the positive (+) side (+VH) of C101. (For two seconds)
④ Contact the same end of the discharging resistor as step ③ to the negative (-) side (-VH) of C102 in the same way. (For two seconds)
⑤ Check that voltage across C101 and C102 has decreased 1 V or less using a multimeter or an oscilloscope.

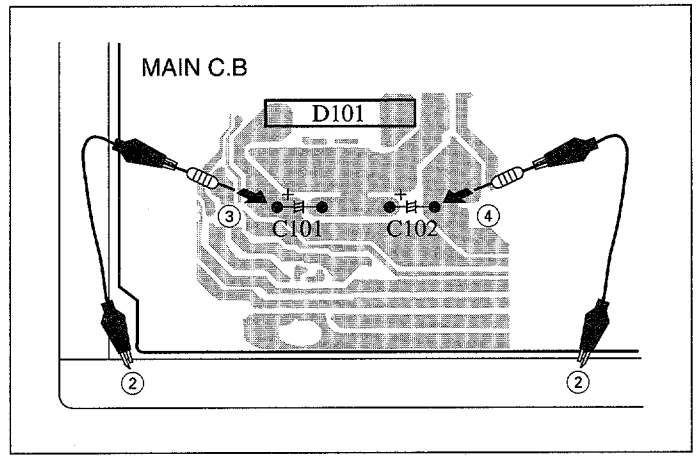


Fig-1

Select a discharging resistor referring to the following table.

Charging voltage (V) (C101, 102)	Discharging resistor (Ω)	Rated power (W)	Parts number
25-48	100	3	87-A00-247-090
49-140	220	5	87-A00-232-090

Note: The reference numbers (C101, C102) of the electrolytic capacitors can change depending on the models. Be sure to check the reference numbers of the charging capacitors on schematic diagram before starting the discharging work.

2. Check items before exchanging the MICROCOMPUTER

Be sure to check the following items before exchanging the MICROCOMPUTER. Exchange the MICROCOMPUTER after confirming that the MICROCOMPUTER is surely defective.

2-1. Regarding the HOLD terminal of the MICROCOMPUTER

When the HOLD terminal (INPUT) of the MICROCOMPUTER is "H", the MICROCOMPUTER is judged to be operating correctly. When this terminal is "L", the main power cannot be turned on. Therefore, be sure to check the terminal voltage of the HOLD terminal before exchange.
When the MICROCOMPUTER is not defective, the HOLD terminal can also go "L" when the POWER AMPLIFIER has any abnormalities that triggers the abnormality detection circuit on the MAIN C. B. that sets the HOLD terminal to "L".

- **Good or no good judgement of the MICROCOMPUTER**

① Turn on the AC main power.
② Confirm that the main power is turned on and the HOLD terminal of the MICROCOMPUTER keeps the "H" level or not.
③ When the HOLD terminal is "L" level, the abnormality detection circuit is judged to be working correctly and the MICROCOMPUTER is judged to be good.

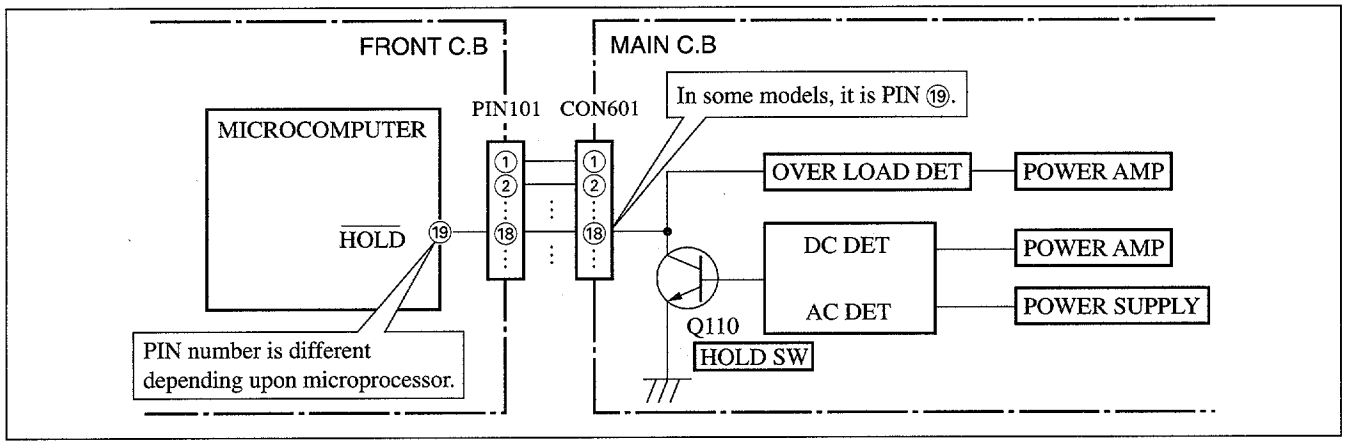


Fig-2-1

In such a case, check also if the POWER AMPLIFIER circuit or power supply circuit has any abnormalities or not.

2-2. Regarding reset

There are cases that the machine does not work correctly because the MICROCOMPUTER is not reset even though the AC power cord is re-inserted, or the software reset (pressing the STOP key + POWER key) is performed.
When the above described phenomenon occurs, it can leads to wrong judgement as if the MICROCOMPUTER is defective and to exchange the MICROCOMPUTER. In such a case, perform the forced-reset by the following procedure and check good or no good of the MICROCOMPUTER.

① Remove the AC power cord.

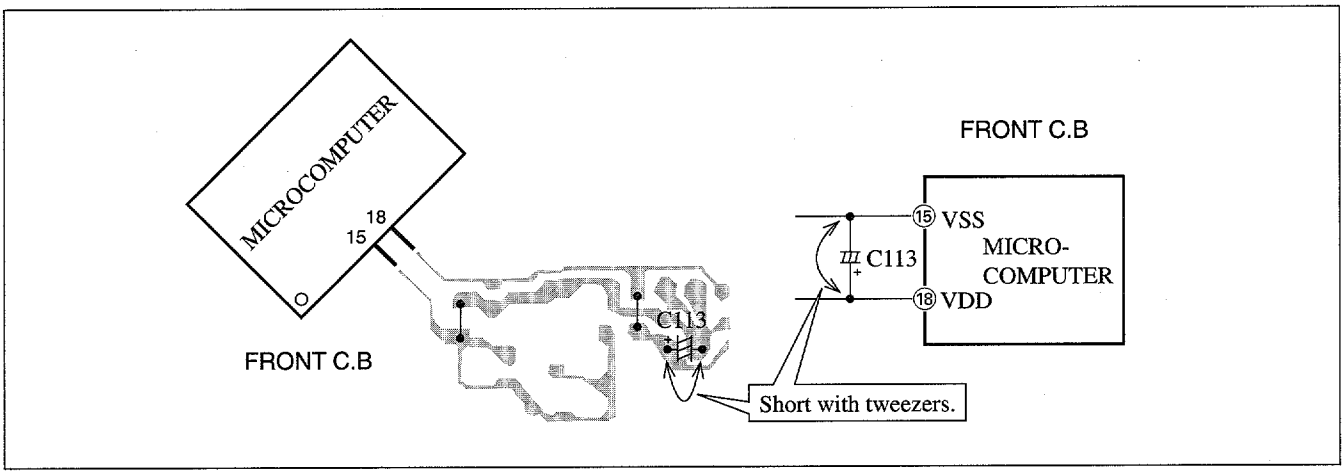


Fig-2-2

② Short both ends of the electrolytic capacitor C113 that is connected to VDD of the MICROCOMPUTER with tweezers.
③ Connect the AC power cord again. If the MICROCOMPUTER returns to the normal operation, the MICROCOMPUTER is good.

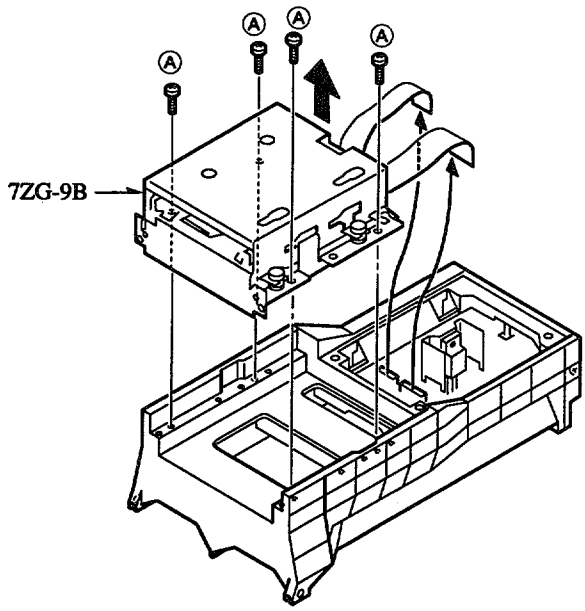
Note: The reference number or MICROCOMPUTER pin number of transistor (Q110) and electrolytic capacitor (C113) can change depending on the models. Be sure to check the reference numbers on schematic diagram before starting the discharging work.

2-3. Confirmation of soldering state of MICROCOMPUTER

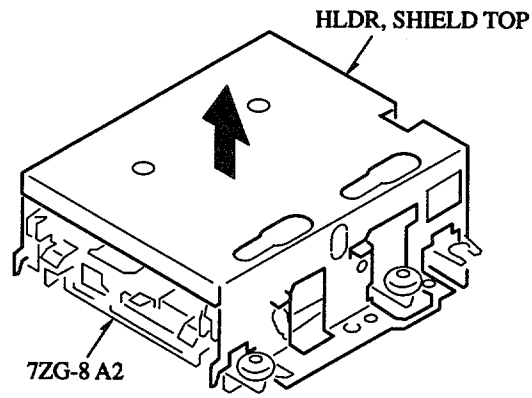
Check the soldering state of the MICROCOMPUTER in addition to the above described procedures. Be sure to exchange the MICROCOMPUTER after surely confirming that the trouble is not caused by poor soldering but the MICROCOMPUTER itself.

DISASSEMBLY INSTRUCTIONS

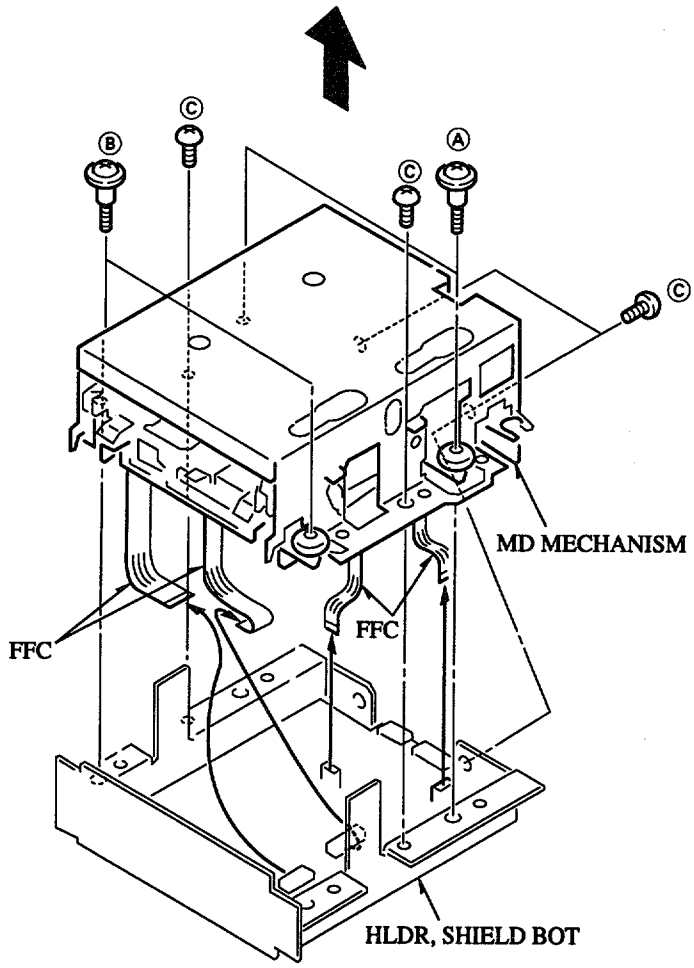
1. Remove the four screws of Ⓐ (BVT 2+3-10 W/O SLOT), and the 7ZG-9B in the direction of the arrows.



3. Remove the HLDR, SHIELD TOP.

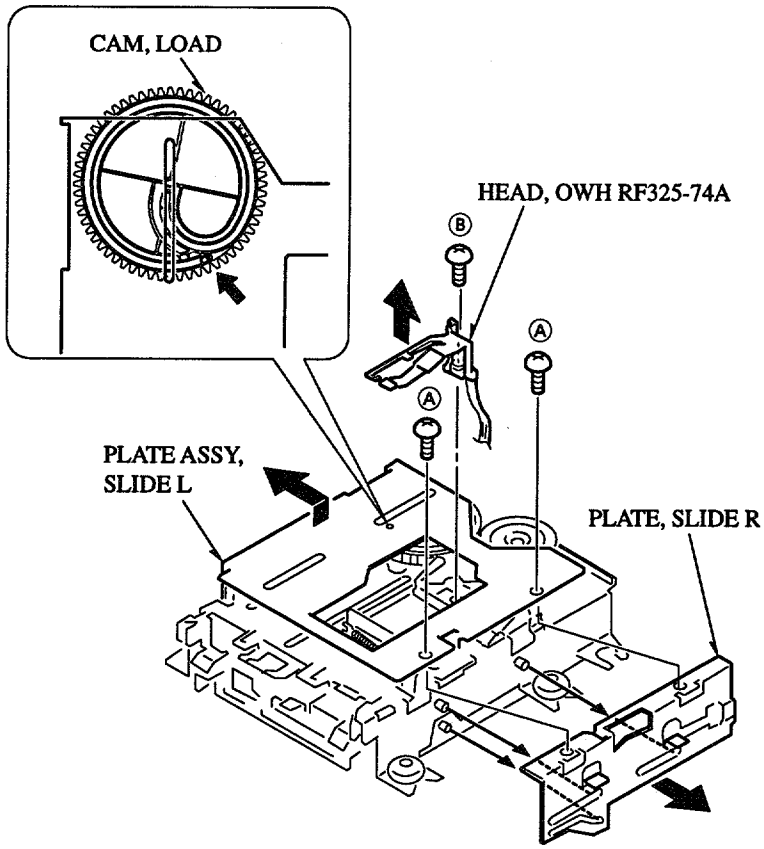


2. Remove the two screws of Ⓐ (S-SCREW, MDT).
   Remove the two screws of Ⓑ (S-SCREW, MD).
   Remove the four screws of Ⓒ (VTT+3-4).
   Remove the MD MECHANISM.

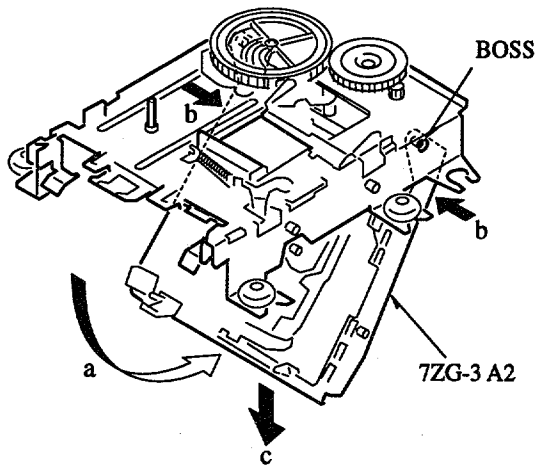


4. Remove the two screws of Ⓐ (VTT+2-4).
   Remove the PLATE ASSY, SLIDE L and PLATE, SLIDE R in the direction of the arrows.
   Remove one screw of Ⓑ (VW+1.7-5 W/O MFZN2C).
   Remove the HEAD, OWH RF325-74A.

   For assembling: Align the axes of the PLATE ASSY, SLIDE L in the direction of the arrow of the CAM, LOAD.

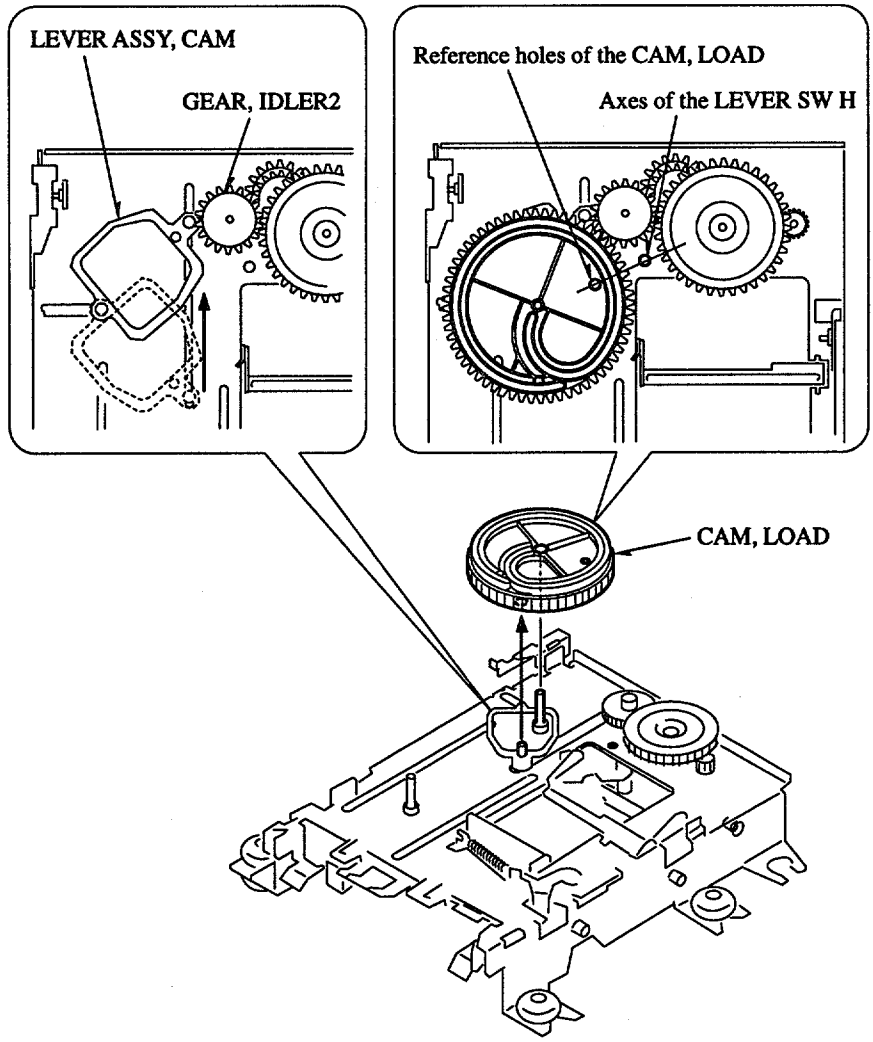


5. Move the 7ZG-3 A2 in the direction of (a).
   Remove the 7ZG-3 A2 in the direction of (c) while pushing the BOSS in the direction of (b).



6. Remove the CAM, LOAD in the direction of the arrow.

For assembling: Move the LEVER ASSY, CAM to the end of the arrow direction.
Move the CAM, LOAD so that the reference holes of the CAM, LOAD are the closest to the axes of the LEVER SW H.
Move the CAM, LOAD so that they meets the teeth of the GEAR, IDLER2.



ELECTRICAL MAIN PARTS LIST

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
IC			
	87-020-454-010		IC,DN6851
	87-A20-707-010		C-IC,CXA2523AR
	8Z-NB8-640-110		C-IC,LC876572V-5K43
	87-A20-914-010		IC,SPS-442-1-F
	87-A20-708-010		C-IC,CXD2652AR
	87-017-888-080		IC,NJM4558MD
	87-A21-021-040		C-IC,BU2099FV
	87-A20-709-040		C-IC,BD7910FV
	87-ZG9-607-010		C-IC,CXP81952M-523R
	87-A20-837-040		C-IC,NN51V4400ZJ-80
	87-A20-755-080		C-IC,AK93C45AF
	87-A20-783-040		C-IC,BA7762AFS
	87-A20-710-040		C-IC,S-8110AMP
	87-A21-023-040		C-IC,BA3835F
	87-A20-711-040		C-IC,BA5970FP
	87-A20-712-040		C-IC,BA6417F
	87-A20-870-010		IC,GP1F37R
	87-A20-971-040		C-IC,SN74LV14APW
	87-A21-031-040		C-IC,BU4551BF
	87-A21-110-040		C-IC,AK4519VF
	87-017-853-040		IC,NJM2100V
	87-A20-797-040		C-IC,NJU7221U30
	87-A21-011-040		C-IC,M62445FP-600D
	87-A20-798-040		C-IC,NJU7221U35
	87-A20-714-040		C-IC,NJM2370U33
	87-070-127-110		IC,LC72131D
	87-A20-913-010		IC,LA1837NL
	87-A21-103-040		C-IC,MM1454XFBE
	87-A20-440-040		C-IC,BU1920FS
TRANSISTOR			
	87-026-463-080		TR,2SA933SRS
	87-026-609-080		TR,KTA1266GR
	89-213-702-010		TR,2SB1370E(1.8W)
	87-026-610-080		TR,KTC3198GR
	87-A30-076-080		C-TR,2SC3052F
	87-A30-075-080		C-TR,2SA1235F
	87-A30-196-080		TR,2SC4115SRS
	89-505-434-540		C-FET,2SK543(4/5)
	87-A30-074-080		C-TR,RT1P141C
	87-A30-268-040		C-TR,2SA1514K(S)
	87-A30-087-080		C-FET,2SK2158
	87-A30-086-070		C-TR,CSD1306E
	87-026-423-080		C-TR,RN2305
	89-115-884-080		C-TR,2SA1588Y
	89-213-750-010		TR,2SB1375(25W)
	89-341-164-080		C-TR,2SC4116Y
	87-A30-159-080		C-TR,KTA1298Y
	87-A30-240-080		TR,CSA1585BC
	87-A30-190-080		TR,CC5551
	87-A30-215-010		TR,2SD2025
	87-A30-214-010		TR,2SB1344
	87-A30-106-070		C-TR,CMBT5551
	87-026-230-080		C-TR,DTA114YK
	87-A30-198-080		TR,KTC3199GR
	87-A30-119-080		C-TR,2SC3906KR
	87-026-412-080		C-TR,RN1305
	87-A30-071-080		C-TR,RT1N144C
	87-A30-142-040		C-TR,DTA123EKA
	87-A30-072-080		C-TR,RT1P144C
	89-327-143-080		C-TR,2SC2714(0.1W)
	87-026-245-080		TR,DTC114ES
	87-026-227-080		C-TR,DTA114EK
	87-026-235-080		C-TR,DTC114EK
DIODE			
	87-A40-115-060		DIODE,RS603M<EZ>
	87-017-447-010		DIODE,GBU4DL-6419<K>
	87-017-149-080		ZENER,HZS6A2L
	87-070-345-080		DIODE,IN4148
	87-070-274-080		DIODE,1N4003 SEM
	87-A40-435-080		ZENER,MTZJ30D
	87-020-465-080		DIODE,1SS133(110MA)
	87-A40-345-080		ZENER,MTZJ10C
	87-A40-270-080		C-DIODE,MC2838
	87-A40-269-080		C-DIODE,MC2836
	87-001-166-080		DIODE,1SS301
	87-A40-304-080		ZENER,DZ6.2M
	87-A40-313-080		C-DIODE,MC2840
	87-A40-246-080		DIODE,IN4148 T-72
	87-A40-488-080		DIODE,1SS244
	87-A40-509-080		ZENER,MTZJ6.8C
	87-A40-412-040		C-DIODE,SB05-05CP
	87-017-932-080		ZENER,MTZJ6.2B
	87-A40-299-080		ZENER,DZ5.1M
	87-A40-002-080		ZENER,MTZJ5.1C
	87-A40-438-080		ZENER,MTZJ4.7A
	87-A40-234-080		ZENER,MTZJ5.6A
MAIN C.B			
C1	87-012-369-080		C-CAP,S 0.047-50F
C2	87-012-369-080		C-CAP,S 0.047-50F
C3	87-012-368-080		C-CAP,S 0.1-50 F
C4	87-012-368-080		C-CAP,S 0.1-50 F
C5	87-012-368-080		C-CAP,S 0.1-50 F
C6	87-012-368-080		C-CAP,S 0.1-50 F
C9	87-016-658-090		CAP,E 4700-35 SMG
C10	87-016-658-090		CAP,E 4700-35 SMG
C21	87-010-247-080		CAP,E 100-50 M 11L SME
C22	87-010-247-080		CAP,E 100-50 M 11L SME
C23	87-010-407-080		CAP,ELECT 33-50V
C24	87-010-407-080		CAP,ELECT 33-50V
C25	87-010-430-080		CAP,ELECT 100-63
C26	87-010-263-080		CAP,ELECT 100-10V
C27	87-012-140-080		CAP,470P
C29	87-010-408-080		CAP,ELECT 47-50V
C30	87-010-112-080		CAP,ELECT 100-16V
C31	87-010-235-080		CAP,E 470-16 SME
C61	87-010-260-080		CAP,ELECT 47-25V
C62	87-010-403-080		CAP,ELECT 3.3-50V
C91	87-010-401-080		CAP,ELECT 1-50V
C92	87-010-263-080		CAP,ELECT 100-10V
C93	87-010-380-080		CAP,ELECT 47-16V
C101	87-010-178-080		CHIP CAP,1000P
C102	87-010-178-080		CHIP CAP,1000P
C103	87-010-246-080		CAP,E 47-35 M 11L SME
C104	87-010-246-080		CAP,E 47-35 M 11L SME
C107	87-010-408-080		CAP,ELECT 47-50V
C108	87-010-408-080		CAP,ELECT 47-50V
C109	87-010-322-080		C-CAP,S 100P-50 CH
C110	87-010-322-080		C-CAP,S 100P-50 CH
C111	87-010-260-080		CAP,ELECT 47-25V
C112	87-010-260-080		CAP,ELECT 47-25V
C113	87-012-156-080		C-CAP,S 220P-50 CH
C114	87-012-156-080		C-CAP,S 220P-50 CH
C117	87-A11-185-080		C-CAP,0.47-50 FZ
C118	87-A11-185-080		C-CAP,0.47-50 FZ
C121	87-010-178-080		CHIP CAP,1000P
C122	87-010-178-080		CHIP CAP,1000P
C123	87-010-176-080		C-CAP,S 680P-50 J SL<EZ>
C124	87-010-176-080		C-CAP,S 680P-50 J SL<EZ>
C125	87-012-368-080		C-CAP,S 0.1-50 F
C126	87-012-368-080		C-CAP,S 0.1-50 F
C127	87-012-368-080		C-CAP,S 0.1-50 F
C128	87-012-368-080		C-CAP,S 0.1-50 F

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
C131	87-010-197-080		CAP,CHIP 0.01 DM
C132	87-010-197-080		CAP,CHIP 0.01 DM
C133	87-010-197-080		CAP,CHIP 0.01 DM
C135	87-010-394-080		CAP,ELECT 220-35V
C203	87-010-177-080		C-CAP,S 820P-50 SL
C204	87-010-177-080		C-CAP,S 820P-50 SL
C209	87-010-403-080		CAP,E 3.3-50 M 11L SME
C210	87-010-403-080		CAP,E 3.3-50 M 11L SME
C211	87-010-181-080		CAP,CHIP S 1800P
C212	87-010-181-080		CAP,CHIP S 1800P
C213	87-010-403-080		CAP,E 3.3-50 M 11L SME
C214	87-010-403-080		CAP,E 3.3-50 M 11L SME
C215	87-010-322-080		C-CAP,S 100P-50 CH
C216	87-010-322-080		C-CAP,S 100P-50 CH
C217	87-010-401-080		CAP,ELECT 1-50V
C218	87-010-401-080		CAP,ELECT 1-50V
C219	87-012-145-080		CAP,CHIP S 270P CH
C220	87-012-145-080		CAP,CHIP S 270P CH
C225	87-012-368-080		C-CAP,S 0.1-50 F
C226	87-012-368-080		C-CAP,S 0.1-50 F
C227	87-010-186-080		CAP,CHIP 4700P
C228	87-010-186-080		CAP,CHIP 4700P
C229	87-010-993-080		C-CAP,S 0.056-25 B
C230	87-010-993-080		C-CAP,S 0.056-25 B
C231	87-010-196-080		CHIP CAPACITOR,0.1-25
C232	87-010-196-080		CHIP CAPACITOR,0.1-25
C233	87-010-197-080		CAP,CHIP 0.01 DM
C234	87-010-197-080		CAP,CHIP 0.01 DM
C235	87-016-285-080		CAP,E 47-100SME
C236	87-016-285-080		CAP,E 47-100SME
C239	87-010-196-080		CHIP CAPACITOR,0.1-25
C240	87-010-246-080		CAP,E 47-35 M 11L SME
C301	87-010-318-080		C-CAP,S 47P-50 CH
C302	87-010-318-080		C-CAP,S 47P-50 CH
C303	87-012-157-080		C-CAP,S 330P-50 CH
C304	87-012-157-080		C-CAP,S 330P-50 CH
C305	87-012-145-080		CAP,CHIP S 270P CH
C306	87-012-145-080		CAP,CHIP S 270P CH
C307	87-010-196-080		CHIP CAPACITOR,0.1-25
C309	87-010-196-080		CHIP CAPACITOR,0.1-25
C310	87-010-196-080		CHIP CAPACITOR,0.1-25
C311	87-010-198-080		CAP,CHIP 0.022
C312	87-010-198-080		CAP,CHIP 0.022
C313	87-010-178-080		CHIP CAP,1000P
C314	87-010-178-080		CHIP CAP,1000P
C315	87-010-178-080		CHIP CAP,1000P
C316	87-010-178-080		CHIP CAP,1000P
C321	87-016-492-080		C-CAP,S 0.33-16 FZ
C322	87-016-492-080		C-CAP,S 0.33-16 FZ
C324	87-010-260-080		CAP,ELECT 47-25V
C325	87-010-370-080		CAP,E 330-6.3 SME
C327	87-010-404-080		CAP,ELECT 4.7-50V
C328	87-010-404-080		CAP,ELECT 4.7-50V
C332	87-010-196-080		CHIP CAPACITOR,0.1-25
C335	87-010-401-080		CAP,ELECT 1-50V
C336	87-010-401-080		CAP,ELECT 1-50V
C337	87-010-196-080		CHIP CAPACITOR,0.1-25
C339	87-010-196-080		CHIP CAPACITOR,0.1-25
C340	87-010-196-080		CHIP CAPACITOR,0.1-25
C351	87-012-140-080		CAP,470P
C352	87-012-140-080		CAP,470P
C354	87-010-175-080		CAP,560P
C355	87-012-349-080		C-CAP,S 1000P-50 CH
C356	87-010-260-080		CAP,ELECT 47-25V
C357	87-010-197-080		CAP,CHIP 0.01 DM
C358	87-010-183-080		C-CAP,S 2700P-50 B
C359	87-010-183-080		C-CAP,S 2700P-50 B
C360	87-010-183-080		C-CAP,S 2700P-50 B
C370	87-010-196-080		CHIP CAPACITOR,0.1-25
C373	87-016-083-080		C-CAP,S 0.15-16 RK
C374	87-016-083-080		C-CAP,S 0.15-16 RK
C378	87-010-196-080		CHIP CAPACITOR,0.1-25
C379	87-010-406-080		CAP,ELECT 22-50
C380	87-010-406-080		CAP,ELECT 22-50
C386	87-010-196-080		CHIP CAPACITOR,0.1-25
C388	87-012-156-080		C-CAP,S 220P-50 CH
C391	87-010-319-080		C-CAP,S 56P-50 CH
C392	87-010-319-080		C-CAP,S 56P-50 CH
C393	87-010-319-080		C-CAP,S 56P-50 CH
C394	87-010-319-080		C-CAP,S 56P-50 CH
C451	87-010-401-080		CAP,ELECT 1-50V
C452	87-010-401-080		CAP,ELECT 1-50V
C457	87-010-196-080		CHIP CAPACITOR,0.1-25
C458	87-010-196-080		CHIP CAPACITOR,0.1-25
C461	87-010-544-080		CAP,ELECT 0.1-50V
C601	87-010-180-080		C-CAP,CER 1500P
C602	87-010-180-080		C-CAP,CER 1500P
C605	87-010-318-080		C-CAP,S 47P-50 CH
C606	87-010-318-080		C-CAP,S 47P-50 CH
C607	87-010-318-080		C-CAP,S 47P-50 CH
C608	87-010-318-080		C-CAP,S 47P-50 CH
C613	87-016-081-080		C-CAP,S 0.1-16 RK
C614	87-016-081-080		C-CAP,S 0.1-16 RK
C619	87-010-185-080		C-CAP,S 3900P-50 B
C620	87-010-185-080		C-CAP,S 3900P-50 B
C621	87-010-401-080		CAP,ELECT 1-50V
C622	87-010-401-080		CAP,ELECT 1-50V
C625	87-010-405-080		CAP,ELECT 10-50V
C626	87-010-405-080		CAP,ELECT 10-50V
C627	87-010-196-080		CHIP CAPACITOR,0.1-25
C629	87-010-405-080		CAP,ELECT 10-50V
C630	87-010-213-080		C-CAP,S 0.015-50 B
C631	87-010-992-080		C-CAP,S 0.047-25 B
C632	87-010-263-080		CAP,ELECT 100-10V
C633	87-010-263-080		CAP,ELECT 100-10V
C634	87-010-196-080		CHIP CAPACITOR,0.1-25
C635	87-010-196-080		CHIP CAPACITOR,0.1-25
C640	87-010-314-080		C-CAP,S 22P-50 J CH GRM
C641	87-010-196-080		CHIP CAPACITOR,0.1-25
C653	87-010-322-080		C-CAP,S 100P-50 CH
C654	87-010-322-080		C-CAP,S 100P-50 CH
C677	87-010-196-080		CHIP CAPACITOR,0.1-25
CN91	87-009-030-010		CONNECTOR,2P PH M
CN92	87-009-030-010		CONNECTOR,2P PH M
CN301	87-099-827-010		CONN,3P S2M-3W
CN351	87-099-832-010		CONN,8P S2M-8W
CN601	87-099-719-010		CONN,30P TYK-B(X)
CN603	87-A60-139-010		CONN,14P V FE
CN605	87-A60-189-010		CONN,16P V TUC-P16P-B1
CN901	87-099-566-010		CONN,7P TUC-P7P-B1
CNA1	8Z-NB8-604-110		CONN ASSY,7P VH
FC603	88-914-161-110		FF-CABLE,14P 1.25
J201	87-A60-483-010		JACK,DIA6.3 BLK ST W/S KM
J203	87-033-240-010		TERMINAL,SP 4P32SV1-05
J204	87-A60-750-010		JACK,PIN 4P R/W BLUE
J602	87-A60-425-010		JACK,PIN 2P YKC21-3838
L101	87-003-383-010		COIL,1UH-S
L102	87-003-383-010		COIL,1UH-S
L201	87-003-383-010		COIL,1UH-S
L202	87-003-383-010		COIL,1UH-S
L301	87-A50-049-010		COIL,TRAP 85K(COI)
L302	87-A50-049-010		COIL,TRAP 85K(COI)
L351	87-007-342-010		COIL,OSC 85K BIAS
R129	87-A00-258-080		RES,M/F 0.22-1W J
R130	87-A00-258-080		RES,M/F 0.22-1W J
R131	87-A00-258-080		RES,M/F 0.22-1W J
R132	87-A00-258-080		RES,M/F 0.22-1W J
R143	87-A00-440-050		RES,220-1/2W J RP
R144	87-A00-440-050		RES,220-1/2W J RP
R145	87-A00-440-050		RES,220-1/2W J RP

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
R146	87-A00-440-050		RES,220-1/2W J RP
R165	87-A00-258-080		RES,M/F 0.22-1W J
R166	87-A00-258-080		RES,M/F 0.22-1W J
R177	87-029-023-090		RES,FUSE 47-1/4W J
R231	87-A00-258-080		RES,M/F 0.22-1W J
R232	87-A00-258-080		RES,M/F 0.22-1W J
R233	87-A00-258-080		RES,M/F 0.22-1W J
R234	87-A00-258-080		RES,M/F 0.22-1W J
R265	87-A00-258-080		RES,M/F 0.22-1W J
R266	87-A00-258-080		RES,M/F 0.22-1W J
SFR351	87-024-436-080		SFR,47K RH063EC
SFR352	87-024-436-080		SFR,47K RH063EC
TH101	87-A90-221-080		C-THMS,100K.K
TH102	87-A90-221-080		C-THMS,100K.K
TH201	87-A90-221-080		C-THMS,100K.K
TH202	87-A90-221-080		C-THMS,100K.K
WH1	87-A90-510-010		HLDR,WIRE 2.5-9P

FRONT C.B

C1	87-012-156-080		C-CAP,S 220P-50 CH
C2	87-012-156-080		C-CAP,S 220P-50 CH
C3	87-012-156-080		C-CAP,S 220P-50 CH
C4	87-012-156-080		C-CAP,S 220P-50 CH
C5	87-012-156-080		C-CAP,S 220P-50 CH
C6	87-012-156-080		C-CAP,S 220P-50 CH
C7	87-012-156-080		C-CAP,S 220P-50 CH
C8	87-012-156-080		C-CAP,S 220P-50 CH
C9	87-012-156-080		C-CAP,S 220P-50 CH
C10	87-012-156-080		C-CAP,S 220P-50 CH
C11	87-012-156-080		C-CAP,S 220P-50 CH
C12	87-012-349-080		C-CAP,S 1000P-50 CH
C13	87-012-156-080		C-CAP,S 220P-50 CH
C103	87-010-197-080		CAP,CHIP 0.01 DM
C104	87-012-156-080		C-CAP,S 220P-50 CH
C105	87-012-156-080		C-CAP,S 220P-50 CH
C107	87-012-157-080		C-CAP,S 330P-50 CH
C108	87-010-075-040		CAP,E 10-16 5L
C112	87-010-196-080		CHIP CAPACITOR,0.1-25
C113	87-016-459-040		CAP,E 470-10 M SMG
C114	87-010-196-080		CHIP CAPACITOR,0.1-25
C116	87-015-694-040		CAP,E 0.47-50
C117	87-010-264-040		CAP,E 100-10 5L
C118	87-010-194-080		CAP,CHIP 0.047
C119	87-A11-071-040		CAP,E 47-50 SRG
C120	87-015-698-040		CAP,E 4.7-50 7L
C121	87-010-421-040		CAP,E 4.7-50 5L
C122	87-010-194-080		CAP,CHIP 0.047
C123	87-010-196-080		CHIP CAPACITOR,0.1-25
C124	87-010-196-080		CHIP CAPACITOR,0.1-25
C125	87-010-196-080		CHIP CAPACITOR,0.1-25
C126	87-012-155-080		C-CAP,180P-50CH
C127	87-010-196-080		CHIP CAPACITOR,0.1-25
C128	87-010-178-080		CHIP CAP,1000P
C130	87-010-312-080		C-CAP,S 15P-50 CH
C131	87-010-322-080		C-CAP,S 100P-50 CH
C140	87-015-819-080		C-CAP,0.01-50 KB C3216
C195	87-010-194-080		CAP,CHIP 0.047
C196	87-010-498-040		CAP,E 10-16 GAS
C197	87-010-196-080		CHIP CAPACITOR,0.1-25
C223	87-010-405-040		CAP,E 10-50
C224	87-010-196-080		CHIP CAPACITOR,0.1-25
C251	87-010-322-080		C-CAP,S 100P-50 CH
C252	87-010-322-080		C-CAP,S 100P-50 CH
C253	87-010-322-080		C-CAP,S 100P-50 CH
C254	87-010-322-080		C-CAP,S 100P-50 CH
C255	87-010-322-080		C-CAP,S 100P-50 CH
C256	87-010-322-080		C-CAP,S 100P-50 CH
C271	87-010-322-080		C-CAP,S 100P-50 CH
C272	87-010-322-080		C-CAP,S 100P-50 CH
C273	87-010-322-080		C-CAP,S 100P-50 CH
C351	87-012-158-080		C-CAP,S 390P-50 CH
C352	87-010-196-080		CHIP CAPACITOR,0.1-25
C353	87-010-196-080		CHIP CAPACITOR,0.1-25
C354	87-010-196-080		CHIP CAPACITOR,0.1-25
C355	87-010-196-080		CHIP CAPACITOR,0.1-25
C356	87-010-196-080		CHIP CAPACITOR,0.1-25
C357	87-010-196-080		CHIP CAPACITOR,0.1-25
C421	87-015-686-040		CAP,E 22-25 M 7L SRA
CON101	87-099-720-010		CONN,30P TYK-B(P)
CON102	87-099-015-010		CONN,13P 6216V
CON104	87-099-017-010		CONN,15P 6216 V
CON502	87-099-195-010		CONN,7P 6216 V
FC102	88-913-271-110		FF-CABLE,13P 1.25
FC104	88-915-091-110		FF-CABLE,15P 1.25
FC502	88-907-251-110		FF-CABLE,7P 1.25
FL101	8Z-NB8-601-010		FL,BJ661GK
L331	87-A50-333-010		COIL,OSC 9.43MHZ
LED201	87-A40-452-080		LED,SEL6210S-TP7 RED
LED202	87-A40-452-080		LED,SEL6210S-TP7 RED
LED203	87-A40-452-080		LED,SEL6210S-TP7 RED
LED204	87-A40-452-080		LED,SEL6210S-TP7 RED
LED205	87-A40-452-080		LED,SEL6210S-TP7 RED
LED206	87-A40-451-080		LED,SEL6510C-TP7 GRN
LED207	87-A40-451-080		LED,SEL6510C-TP7 GRN
LED208	87-A40-451-080		LED,SEL6510C-TP7 GRN
LED209	87-A40-451-080		LED,SEL6510C-TP7 GRN
LED217	87-A40-619-080		LED,SLR-56PT-TE7-W GRN
LED218	87-A40-619-080		LED,SLR-56PT-TE7-W GRN
LED219	87-A40-619-080		LED,SLR-56PT-TE7-W GRN
LED220	87-A40-619-080		LED,SLR-56PT-TE7-W GRN
LED221	87-A40-619-080		LED,SLR-56PT-TE7-W GRN
LED222	87-A40-619-080		LED,SLR-56PT-TE7-W GRN
LED371	87-A40-589-040		LED,SLR-56VCT31 RED
LED601	87-A40-619-040		LED,SLR-56PT-T31-W GRN
LED602	87-A40-619-040		LED,SLR-56PT-T31-W GRN
LED603	87-A40-619-040		LED,SLR-56PT-T31-W GRN
LED604	87-A40-619-040		LED,SLR-56PT-T31-W GRN
LED605	87-A40-619-040		LED,SLR-56PT-T31-W GRN
LED606	87-A40-619-040		LED,SLR-56PT-T31-W GRN
LED607	87-A40-619-040		LED,SLR-56PT-T31-W GRN
LED608	87-A40-619-040		LED,SLR-56PT-T31-W GRN
LED650	87-A40-451-080		LED,SEL6510C-TP7-W GRN
S301	87-A90-095-080		SW,TACT EVQ11G04M
S302	87-A90-095-080		SW,TACT EVQ11G04M
S303	87-A90-095-080		SW,TACT EVQ11G04M
S304	87-A90-095-080		SW,TACT EVQ11G04M
S305	87-A90-095-080		SW,TACT EVQ11G04M
S306	87-A90-095-080		SW,TACT EVQ11G04M
S307	87-A90-095-080		SW,TACT EVQ11G04M
S308	87-A90-095-080		SW,TACT EVQ11G04M
S309	87-A90-095-080		SW,TACT EVQ11G04M
S310	87-A90-095-080		SW,TACT EVQ11G04M
S311	87-A90-095-080		SW,TACT EVQ11G04M
S312	87-A90-095-080		SW,TACT EVQ11G04M
S313	87-A90-095-080		SW,TACT EVQ11G04M
S314	87-A90-095-080		SW,TACT EVQ11G04M
S315	87-A90-095-080		SW,TACT EVQ11G04M
S316	87-A90-095-080		SW,TACT EVQ11G04M
S317	87-A90-095-080		SW,TACT EVQ11G04M
S318	87-A90-095-080		SW,TACT EVQ11G04M
S319	87-A90-095-080		SW,TACT EVQ11G04M
S320	87-A90-095-080		SW,TACT EVQ11G04M
S321	87-A90-095-080		SW,TACT EVQ11G04M
S322	87-A90-095-080		SW,TACT EVQ11G04M
S323	87-A90-095-080		SW,TACT EVQ11G04M
S324	87-A90-095-080		SW,TACT EVQ11G04M
S325	87-A90-095-080		SW,TACT EVQ11G04M
S326	87-A90-095-080		SW,TACT EVQ11G04M
S327	87-A90-095-080		SW,TACT EVQ11G04M

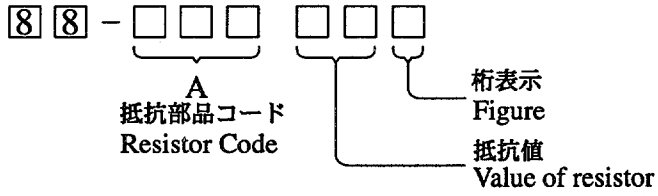
REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
S328	87-A90-095-080		SW,TACT EVQ11G04M
S329	87-A90-095-080		SW,TACT EVQ11G04M
S330	87-A90-095-080		SW,TACT EVQ11G04M
S331	87-A90-095-080		SW,TACT EVQ11G04M
S332	87-A90-095-080		SW,TACT EVQ11G04M
S333	87-A90-095-080		SW,TACT EVQ11G04M
S334	87-A90-095-080		SW,TACT EVQ11G04M
S335	87-A90-095-080		SW,TACT EVQ11G04M
S336	87-A90-095-080		SW,TACT EVQ11G04M
S337	87-A90-095-080		SW,TACT EVQ11G04M
SW101	87-A90-535-010		SW,RTRY EC16B24304W0-20 NON
SW102	87-A90-950-010		SW,RTRY EC12E12504 ENCORDER
TUNER C.B			
C701	87-010-381-080		CAP,ELECT 330-16V
C702	87-010-404-080		CAP,ELECT 4.7-50V
C703	87-012-286-080		CAP,U 0.01-25
C704	87-012-286-080		CAP,U 0.01-25
C709	87-012-195-080		C-CAP,U 100P-50CH
C711	87-010-260-080		CAP,ELECT 47-25V
C712	87-010-831-080		C-CAP,U,0.1-16F
C713	87-012-286-080		CAP,U 0.01-25
C714	87-012-286-080		CAP,U 0.01-25
C715	87-012-195-080		C-CAP,U 100P-50CH
C717	87-012-286-080		CAP,U 0.01-25
C719	87-012-286-080		CAP,U 0.01-25
C720	87-012-195-080		C-CAP,U 100P-50CH
C721	87-012-176-080		CAP,15P
C722	87-012-176-080		CAP,15P
C723	87-012-274-080		CHIP CAP,U 1000P-50B
C725	87-018-131-080		CAP,TC U 1000P-50 KB
C727	87-010-196-080		CHIP CAPACITOR,0.1-25
C728	87-010-248-080		CAP,ELECT 220-10V
C729	87-012-274-080		CHIP CAP,U 1000P-50B
C731	87-012-286-080		CAP,U 0.01-25
C733	87-012-280-080		C-CAP,U 3300P-50 KB
C734	87-012-280-080		C-CAP,U 3300P-50 KB
C752	87-012-282-080		C-CAP,U 4700P-50 KB
C753	87-012-195-080		C-CAP,U 100P-50 J CH
C755	87-012-286-080		CAP,U 0.01-25
C756	87-012-286-080		CAP,U 0.01-25
C757	87-012-188-080		C-CAP,U 47P-50 CH
C758	87-012-167-080		C-CAP,U 5P-50 CH
C761	87-010-196-080		C-CAP,S 0.1-25 ZF
C762	87-012-286-080		CAP,U 0.01-25
C763	87-010-829-080		CAP,U 0.047-16
C765	87-012-286-080		CAP,U 0.01-25
C766	87-010-197-080		C-CAP,S 0.01-25 KB
C768	87-012-286-080		CAP,U 0.01-25
C769	87-010-260-080		CAP,ELECT 47-25V
C770	87-010-829-080		CAP,U 0.047-16
C771	87-010-383-080		CAP,ELECT 33-25V
C772	87-010-829-080		CAP,U 0.047-16
C773	87-010-196-080		CHIP CAPACITOR,0.1-25
C774	87-010-263-080		CAP,ELECT 100-10V
C775	87-010-404-080		CAP,ELECT 4.7-50V
C776	87-012-286-080		CAP,U 0.01-25
C777	87-010-493-080		CAP,E 0.47-50 M 5L SRE
C778	87-010-401-080		CAP,ELECT 1-50V
C779	87-010-401-080		CAP,ELECT 1-50V
C780	87-010-196-080		CHIP CAPACITOR,0.1-25
C781	87-010-405-080		CAP,ELECT 10-50V
C782	87-010-405-080		CAP,ELECT 10-50V
C783	87-012-286-080		CAP,U 0.01-25
C784	87-012-286-080		CAP,U 0.01-25
C785	87-010-401-080		CAP,ELECT 1-50V
C786	87-010-401-080		CAP,ELECT 1-50V
C787	87-012-275-080		C-CAP,U 1200P-50 B
C788	87-012-275-080		C-CAP,U 1200P-50 B
C789	87-012-275-080		C-CAP,U 1200P-50 B
C790	87-012-275-080		C-CAP,U 1200P-50 B
C791	87-010-405-080		CAP,ELECT 10-50V
C793	87-012-273-080		C-CAP,U 820P-50 B
C794	87-010-406-080		CAP,ELECT 22-50
C795	87-010-596-080		CAP,S 0.047-16
C796	87-010-403-080		CAP,ELECT 3.3-50V
C797	87-012-276-080		C-CAP,U 1500P-50 KB
C798	87-012-276-080		C-CAP,U 1500P-50 KB
C799	87-010-829-080		CAP,U 0.047-16
C812	87-012-286-080		CAP,U 0.01-25
C814	87-012-286-080		CAP,U 0.01-25
C820	87-010-260-080		CAP,ELECT 47-25V
C821	87-012-286-080		CAP,U 0.01-25
C822	87-012-286-080		CAP,U 0.01-25
C823	87-012-286-080		CAP,U 0.01-25
C828	87-010-196-080		CHIP CAPACITOR,0.1-25
C829	87-010-196-080		CHIP CAPACITOR,0.1-25
C859	87-012-286-080		C-CAP,U 0.01-25 KB
C861	87-012-199-080		C-CAP,U 220P-50 J CH
C862	87-012-199-080		C-CAP,U 220P-50 J CH
C863	87-012-270-080		C-CAP,U 470P-50 KB
C864	87-010-405-080		CAP,E 10-50 M 11L SME
C865	87-010-196-080		C-CAP,S 0.1-25 ZF
C866	87-010-405-080		CAP,E 10-50 M 11L SME
C867	87-012-286-080		C-CAP,U 0.01-25 KB
C868	87-012-184-080		C-CAP,U 33P-50 J CH
C869	87-012-180-080		C-CAP,U 22P-50 J CH
C940	87-012-286-080		C-CAP,U 0.01-25 KB
C942	87-012-172-080		C-CAP,U 10P-50 D CH
C947	87-012-286-080		C-CAP,U 0.01-25 KB
C949	87-A10-039-080		C-CAP,U 470P-50 J CH
C952	87-012-286-080		C-CAP,U 0.01-25 KB
C958	87-010-197-080		C-CAP,S 0.01-25 KB
C959	87-010-831-080		C-CAP,U 0.1-16 ZF
C960	87-010-196-080		CHIP CAPACITOR,0.1-25
C962	87-010-401-080		CAP,E 1-50 M 11L SME
CF801	87-008-423-010		FLTR,CF SFE10.7MS3G-A
CF802	82-785-747-010		CF,MS2 GHY R
CN701	87-A60-650-010		CONN,16P H GRY TUC-P16X-C1
FFE801	A8-6ZA-191-130		6ZA-1 FEENM
J801	87-033-241-010		TERMINAL,ANT 2P AJ-2039
L771	87-A50-266-010		COIL,FM DET-2N(TOK)
L772	87-A90-733-010		FLTR,PCFAZH-450(TOK)
L781	87-005-847-010		COIL,2.2UH K CECS
L791	87-A50-027-010		COIL,1 POLE MPX(TOK)
L792	87-A50-027-010		COIL,1 POLE MPX(TOK)
L832	87-005-847-080		COIL,2.2UH K CECS
L851	87-005-847-080		COIL,2.2UH K CECS
L941	87-A50-020-010		COIL,ANT LW(COI)252KHZ
L942	87-A50-019-010		COIL,OSC LW(COI) 856KHZ
L981	87-NF4-651-110		COIL,AM PACK 2N(TOM)
TC942	87-011-164-010		TRIMMER,CER 30P 4.5X3.9 VCT31
X721	87-A70-061-010		VIB,XTAL 4.500MHZ CSA-309
X851	87-A70-091-010		VIB,XTAL 4.332MHZ CSA-309
Q-SURR C.B			
C952	87-010-112-080		CAP,ELECT 100-16V
C953	87-010-260-080		CAP,ELECT 47-25V
C954	87-010-197-080		CAP,CHIP 0.01 DM
C955	87-010-197-080		CAP,CHIP 0.01 DM
C957	87-010-405-080		CAP,ELECT 10-50V
C971	87-010-402-080		CAP,ELECT 2.2-50V
C972	87-010-405-080		CAP,ELECT 10-50V
C973	87-010-401-080		CAP,ELECT 1-50V
C974	87-010-401-080		CAP,ELECT 1-50V
C975	87-010-322-080		C-CAP,S 100P-50 CH
CN951	87-A60-689-010		CONN,7P H GRY TUC-P07X-C1

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
LED C.B			
LED252	87-A40-496-040		LED,SLR-342PCT31 GRN
LED254	87-017-730-080		LED,SEL6214S-TP5 RED
LED255	87-017-730-080		LED,SEL6214S-TP5 RED
PT C.B			
C1	87-010-387-080		CAP,E 470-25 M 11L SME
C3	87-010-403-080		CAP,E 3.3-50 M 11L SME
⚠ C6	87-A10-479-090		CAP,CER 2200P-250 M E KH
CN3	87-A60-850-010		CONN,7P V VH
⚠ FB1	87-003-317-010		F-BEAD,15-25-15 E2515MRT
⚠ PT1	8Z-NB8-608-010		PT,ZNB-8 E<EZ>
⚠ PT1	8Z-NB8-609-010		PT,ZNB-8 K<K>
⚠ PT2	8Z-NF8-662-010		PT,SUB ZNF-8(E)
⚠ RY1	87-A90-977-010		RELAY,AC12V DG12D1-O(M)
⚠ T1	87-A60-317-010		TERMINAL,1P MSC
⚠ T2	87-A60-317-010		TERMINAL,1P MSC
DECK C.B			
CON105	87-099-756-010		CONN,15P H 9604
SFR1	87-024-581-010		SFR,3.3K H KVSF637A
SOL1	82-ZM1-618-410		SOL ASSY,27
SOL2	82-ZM1-618-410		SOL ASSY,27
SW1	87-A90-248-010		SW,MICRO ESE11SH2CXQ
SW2	87-A90-248-010		SW,MICRO ESE11SH2CXQ
SW3	87-A90-248-010		SW,MICRO ESE11SH2CXQ
SW4	87-036-110-010		SW,MICRO SPPB62
SW5	87-036-110-010		SW,MICRO SPPB62
SW6	87-036-110-010		SW,MICRO SPPB62
SW8	87-A90-248-010		SW,MICRO ESE11SH2CXQ
SW9	87-A90-248-010		SW,MICRO ESE11SH2CXQ
W1	82-ZM3-601-010		RBN-CORD,4P-75
HEAD-1 C.B			
	85-ZM3-602-010		PWB,FLEX A
HEAD-2 C.B			
	85-ZM3-602-010		PWB,FLEX B
CON351	87-NF6-616-010		CONN ASSY,8P RPB
MD MAIN C.B			
C100	87-016-296-080		C-CAP,TN 22-4SV(A)
C101	87-016-296-080		C-CAP,TN 22-4SV(A)
C102	87-012-286-080		CAP,U 0.01-25
C103	87-010-787-080		CAP,U 0.022-25
C104	87-010-662-080		C-CAP,E 22-6.3
C105	87-010-831-080		C-CAP,U 0.1-16F
C106	87-016-462-080		C-CAP,S 1-16 F
C107	87-012-195-080		C-CAP,U 100P-50CH
C108	87-012-274-080		CHIP CAP,U 1000P-50B
C109	87-016-436-080		C-CAP,TN 47-4(B2)
C111	87-016-296-080		C-CAP,TN 22-4SV(A)
C112	87-012-286-080		CAP,U 0.01-25
C113	87-012-284-080		CAP,U 6800P-50
C114	87-010-828-080		CHIP CAPACITOR,U 0.033-25F
C115	87-A10-369-080		C-CAP,S 0.47-16 K B
C116	87-012-282-080		CAP,U 4700P-50
C117	87-016-462-080		C-CAP,S 1-16 F
C118	87-012-282-080		CAP,U 4700P-50
C119	87-016-491-080		C-CAP,S 0.22-16 FZ
C120	87-010-787-080		CAP,U 0.022-25
C121	87-012-286-080		CAP,U 0.01-25
C122	87-010-829-080		CAP,U 0.047-16
C123	87-012-286-080		CAP,U 0.01-25
C124	87-010-662-080		C-CAP,E 22-6.3
C125	87-010-662-080		C-CAP,E 22-6.3
C126	87-010-831-080		C-CAP,U 0.1-16F
C201	87-010-831-080		C-CAP,U 0.1-16F
C202	87-010-831-080		C-CAP,U 0.1-16F
C203	87-010-785-080		C-CAP,U 0.015-25BK
C204	87-016-461-080		C-CAP,S 0.47-16F
C205	87-010-831-080		C-CAP,U 0.1-16F
C206	87-012-270-080		CAP,U 470P-50
C207	87-016-461-080		C-CAP,S 0.47-16F
C208	87-012-286-080		CAP,U 0.01-25
C209	87-010-831-080		C-CAP,U 0.1-16F
C210	87-012-172-080		CAPACITOR,CHIP U 10P CH
C211	87-012-172-080		CAPACITOR,CHIP U 10P CH
C212	87-012-195-080		C-CAP,U 100P-50CH
C213	87-010-662-080		C-CAP,E 22-6.3
C214	87-012-274-080		CHIP CAP,U 1000P-50B
C217	87-012-188-080		C-CAP,U 47P-50 CH
C218	87-012-172-080		CAPACITOR,CHIP U 10P CH
C219	87-016-296-080		C-CAP,TN 22-4SV(A)
C220	87-010-662-080		C-CAP,E 22-6.3
C221	87-010-831-080		C-CAP,U,0.1-16F
C222	87-016-444-080		C-CAP,TN 47-10 F95E
C223	87-010-831-080		C-CAP,U 0.1-16F
C224	87-A10-685-080		C-CAP,S 470P-100 J CH
C225	87-010-831-080		C-CAP,U 0.1-16F
C226	87-010-831-080		C-CAP,U 0.1-16F
C227	87-012-274-080		CHIP CAP,U 1000P-50B
C228	87-012-274-080		CHIP CAP,U 1000P-50B
C229	87-012-274-080		CHIP CAP,U 1000P-50B
C232	87-012-274-080		CHIP CAP,U 1000P-50B
C233	87-012-274-080		CHIP CAP,U 1000P-50B
C236	87-010-831-080		C-CAP,U 0.1-16F
C300	87-010-831-080		C-CAP,U 0.1-16F
C301	87-010-831-080		C-CAP,U 0.1-16F
C302	87-010-831-080		C-CAP,U 0.1-16F
C305	87-016-462-080		C-CAP,S 1-16 F
C307	87-010-831-080		C-CAP,U 0.1-16F
C308	87-010-831-080		C-CAP,U 0.1-16F
C311	87-010-662-080		C-CAP,E 22-6.3
C312	87-012-195-080		C-CAP,U 100P-50CH
C321	87-012-274-080		CHIP CAP,U 1000P-50B
C322	87-012-274-080		CHIP CAP,U 1000P-50B
C323	87-012-274-080		CHIP CAP,U 1000P-50B
C324	87-012-274-080		CHIP CAP,U 1000P-50B
C325	87-012-274-080		CHIP CAP,U 1000P-50B
C400	87-010-831-080		C-CAP,U 0.1-16F
C401	87-010-831-080		C-CAP,U 0.1-16F
C402	87-010-831-080		C-CAP,U 0.1-16F
C403	87-010-831-080		C-CAP,U 0.1-16F
C404	87-010-831-080		C-CAP,U 0.1-16F
C405	87-010-661-080		C-CAP,E 10-16
C406	87-010-779-080		C-CAP,E 100-6.3
C407	87-012-197-080		C-CAP,U 150P-50 CH
C408	87-012-197-080		C-CAP,U 150P-50 CH
C411	87-012-271-080		CAP,U 560P-50
C412	87-012-271-080		CAP,U 560P-50
C413	87-012-197-080		C-CAP,U 150P-50 CH
C414	87-012-197-080		C-CAP,U 150P-50 CH
C417	87-012-268-080		C-CAP,U 330P-50 B
C418	87-012-268-080		C-CAP,U 330P-50 B
C423	87-012-286-080		CAP,U 0.01-25
C424	87-012-286-080		CAP,U 0.01-25
C429	87-012-286-080		CAP,U 0.01-25
C430	87-012-286-080		CAP,U 0.01-25
C431	87-010-779-080		C-CAP,E 100-6.3
C434	87-010-831-080		C-CAP,U 0.1-16F
C501	87-010-831-080		C-CAP,U 0.1-16F
C502	87-010-831-080		C-CAP,U 0.1-16F
C503	87-010-662-080		C-CAP,E 22-6.3

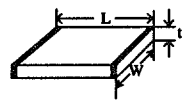
REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
C504	87-010-831-080		C-CAP,U 0.1-16F
C505	87-010-662-080		C-CAP,E 22-6.3
C506	87-010-831-080		C-CAP,U 0.1-16F
C507	87-010-661-080		C-CAP,E 10-16
C508	87-010-831-080		C-CAP,U 0.1-16F
C509	87-010-662-080		C-CAP,E 22-6.3
C510	87-010-831-080		C-CAP,U 0.1-16F
C511	87-010-661-080		C-CAP,E 10-16
C513	87-010-661-080		C-CAP,E 10-16
C514	87-010-661-080		C-CAP,E 10-16
C515	87-012-337-080		C-CAP,U 56P-50 CH
C516	87-012-337-080		C-CAP,U 56P-50 CH
C517	87-012-278-080		C-CAP,U 2200P-50 B
C518	87-012-278-080		C-CAP,U 2200P-50 B
C519	87-010-831-080		C-CAP,U 0.1-16F
C520	87-010-661-080		C-CAP,E 10-16
C521	87-010-831-080		C-CAP,U 0.1-16F
C522	87-010-661-080		C-CAP,E 10-16
C523	87-010-662-080		C-CAP,E 22-6.3
C524	87-010-662-080		C-CAP,E 22-6.3
C525	87-012-274-080		CHIP CAP,U 1000P-50B
C526	87-012-274-080		CHIP CAP,U 1000P-50B
C527	87-010-661-080		C-CAP,E 10-16
C528	87-010-661-080		C-CAP,E 10-16
C530	87-010-831-080		C-CAP,U 0.1-16F
C531	87-010-831-080		C-CAP,U 0.1-16F
C600	87-010-662-080		C-CAP,E 22-6.3
C601	87-010-779-080		C-CAP,E 100-6.3
C602	87-010-779-080		C-CAP,E 100-6.3
C603	87-010-662-080		C-CAP,E 22-6.3
C604	87-010-779-080		C-CAP,E 100-6.3
C605	87-012-286-080		CAP,U 0.01-25
C607	87-010-831-080		C-CAP,U 0.1-16F
C608	87-010-831-080		C-CAP,U 0.1-16F
CN401	87-A60-062-010		CONN,5P V 9604S-05C
FB501	87-A90-828-080		C-F-BEAD BK1608LM182
FC100	87-ZG9-602-010		FF-CABLE,21P 0.5 90MM
FC300	87-ZGA-611-010		FF-CABLE,8P 1.0 100MM
FC600	87-ZGA-612-010		FF-CABLE,14P 1.0 100MM
L100	87-A50-117-080		C-COIL,10UHLQH3C
L101	87-A50-012-080		C-COIL,100UH LQH3C
L102	87-A50-117-080		C-COIL,10UH LQH3C
L103	87-A50-117-080		C-COIL,10UH LQH3C
L201	87-A50-117-080		C-COIL,10UH LQH3C
L202	87-A50-117-080		C-COIL,10UH LQH3C
L203	87-A50-116-080		C-COIL,4.7UH LQH3C
L301	87-A50-117-080		C-COIL,10UH LQH3C
L501	87-A50-116-080		C-COIL,4.7UH LQH3C
L502	87-A50-116-080		C-COIL,4.7UH LQH3C
L503	87-A50-116-080		C-COIL,4.7UH LQH3C
L504	87-005-774-080		C-COIL,4BLH
L505	87-005-774-080		C-COIL,4BLH
L611	87-A50-163-080		C-COIL,ZBFS5101-PT
L612	87-005-512-080		C-COIL,BLM21A05
L613	87-005-512-080		C-COIL,BLM21A05
L614	87-A50-163-080		C-COIL,ZBFS5101-PT
L615	87-A90-034-080		C-FLTR,EMI BLM41P750S
L616	87-A50-163-080		C-COIL,ZBFS5101-PT
R423	87-025-564-080		C-RES,U M/F 47K D
R424	87-025-564-080		C-RES,U M/F 47K D
R425	87-022-583-080		C-RES,U M/F 12K D
R426	87-022-583-080		C-RES,U M/F 12K D
X200	87-A70-105-080		C-VIB,XTAL 22.5792MHZ SMD-49
X301	87-A70-100-080		C-VIB,CER 12.0MHZ PBRC-BR-A
INTERFACE C.B			
C101	87-010-196-080		CHIP CAPACITOR,0.1-25
C102	87-010-101-080		CAP,ELECT 220-16
C104	87-010-370-040		CAP,E 330-6.3 SME
C105	87-010-380-080		CAP,ELECT 47-16V
C106	87-010-101-080		CAP,ELECT 220-16
C121	87-016-462-080		C-CAP,S 1-16 ZF
C201	87-010-402-080		CAP,ELECT 2.2-50V
C202	87-010-402-080		CAP,ELECT 2.2-50V
C203	87-012-156-080		C-CAP,S 220P-50 CH
C204	87-012-156-080		C-CAP,S 220P-50 CH
C205	87-010-180-080		C-CAP,CER 1500P
C206	87-010-180-080		C-CAP,CER 1500P
C207	87-010-404-080		CAP,ELECT 4.7-50V
C208	87-010-404-080		CAP,ELECT 4.7-50V
C251	87-010-408-080		CAP,ELECT 47-50V
C252	87-010-196-080		CHIP CAPACITOR,0.1-25
C401	87-010-178-080		CHIP CAP,1000P
C402	87-010-178-080		CHIP CAP,1000P
C403	87-010-196-080		CHIP CAPACITOR,0.1-25
C404	87-010-196-080		CHIP CAPACITOR,0.1-25
C411	87-012-140-080		CAP,470P
C421	87-010-196-080		CHIP CAPACITOR,0.1-25
CON901	87-A60-139-010		CONN,14P V FE
CON902	87-A60-060-010		CONN,7P V 9604S-07C
CON903	87-009-030-010		CONN,2P PH M
CON904	87-A60-061-010		CONN,6P V 9604S-06C
CON905	87-A60-423-010		CONN,14P V TOC-B
CON906	87-A60-422-010		CONN,8P V TOC-B
FB401	87-A50-189-080		C-COIL,S BLM21B272S
FC906	88-906-171-110		FF-CABLE,6P 1.25
LOAD C.B			
FC451	87-ZG9-604-010		FF-CABLE,5P 1.25 100MM
M450	87-A90-672-010		MOT,M25E-4
SW451	87-A90-673-010		SW,MICRO ESE11SH1C
SW452	87-A90-117-010		SW,PUSH 1-1-1 MPU10371MLB0
MECHA C.B			
FC400	87-ZG9-603-010		FF-CABLE,8P 1.0 120MM
M400	87-A90-413-010		MOT,FF-110PH 9
M401	87-A90-616-010		MOT,FF-N30VA
SW400	87-A90-611-010		SW,PUSH 3-2-2 MPU20300MLB0
SW401	87-A90-612-010		SW,PUSH 2-1-1 MPU10371MLB1

O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



チップ抵抗
Chip resistor

容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法／Dimensions (mm) 外形／Form	L	W	t	抵抗コード : A Resistor Code : A
1/16W	1005	±5%	CJ		1.0	0.5	0.35	104
1/16W	1608	±5%	CJ		1.6	0.8	0.45	108
1/10W	2125	±5%	CJ		2	1.25	0.45	118
1/8W	3216	±5%	CJ		3.2	1.6	0.55	128

TRANSISTOR ILLUSTRATION

E C B

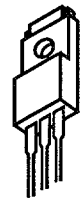
CSA1585
CC5551
KTA1266
KTC3198

E C B

2SA933
2SC4115
DTC114ES
KTC3199

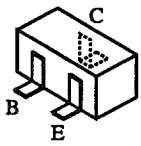
B C E

2SB1370
2SB1375



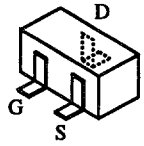
B C E

2SB1344
2SD2025

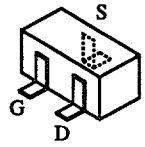


2SA1235
2SA1514
2SA1588
2SC2714
2SC3052
2SC3906
2SC4116
CMBT5551
CSD1306

DTA114EK
DTA114YK
DTA123EKA
DTC114EK
KTA1298
RN1305
RN2305
RT1N144C
RT1P141C
RT1P144C

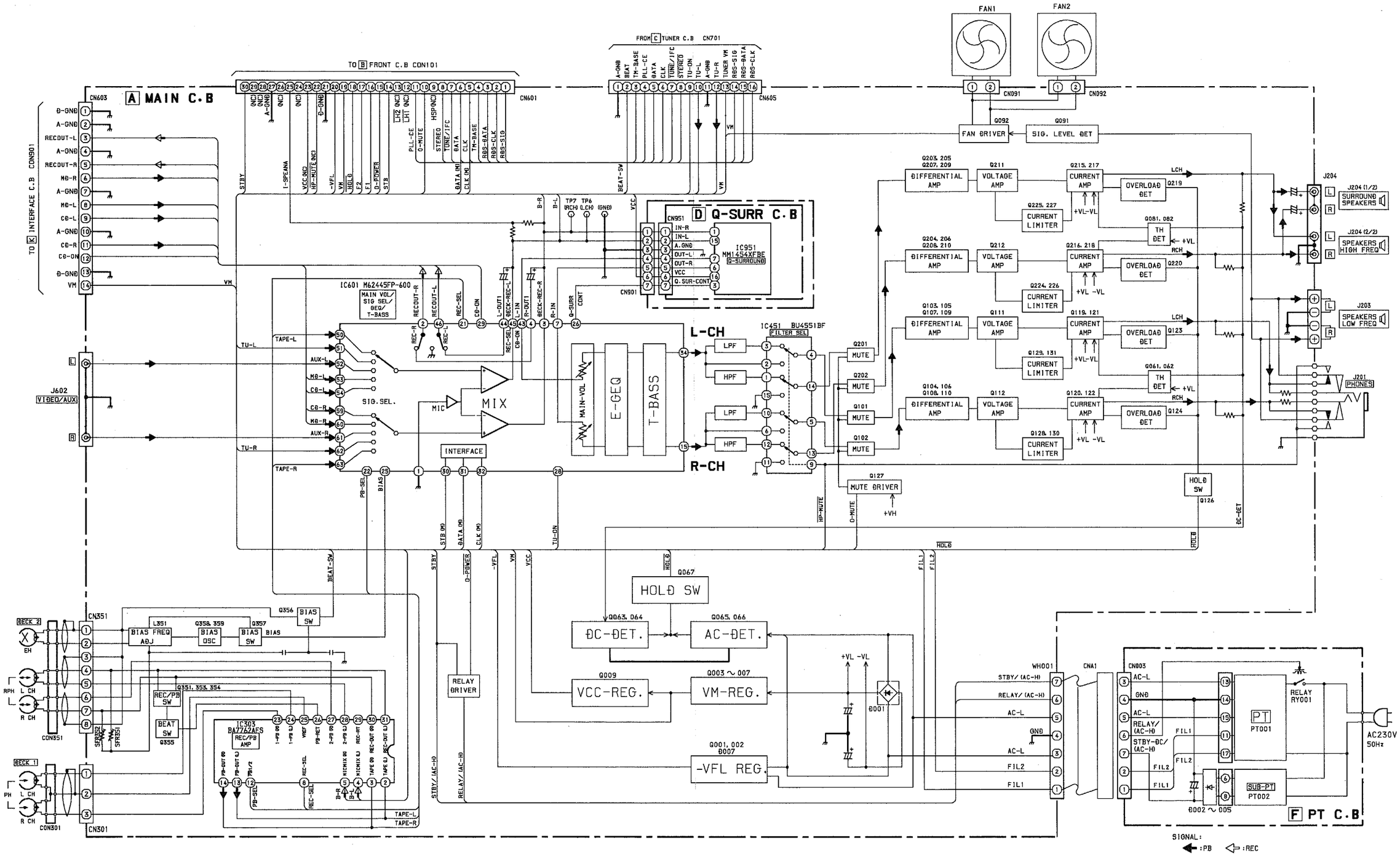


2SK2158

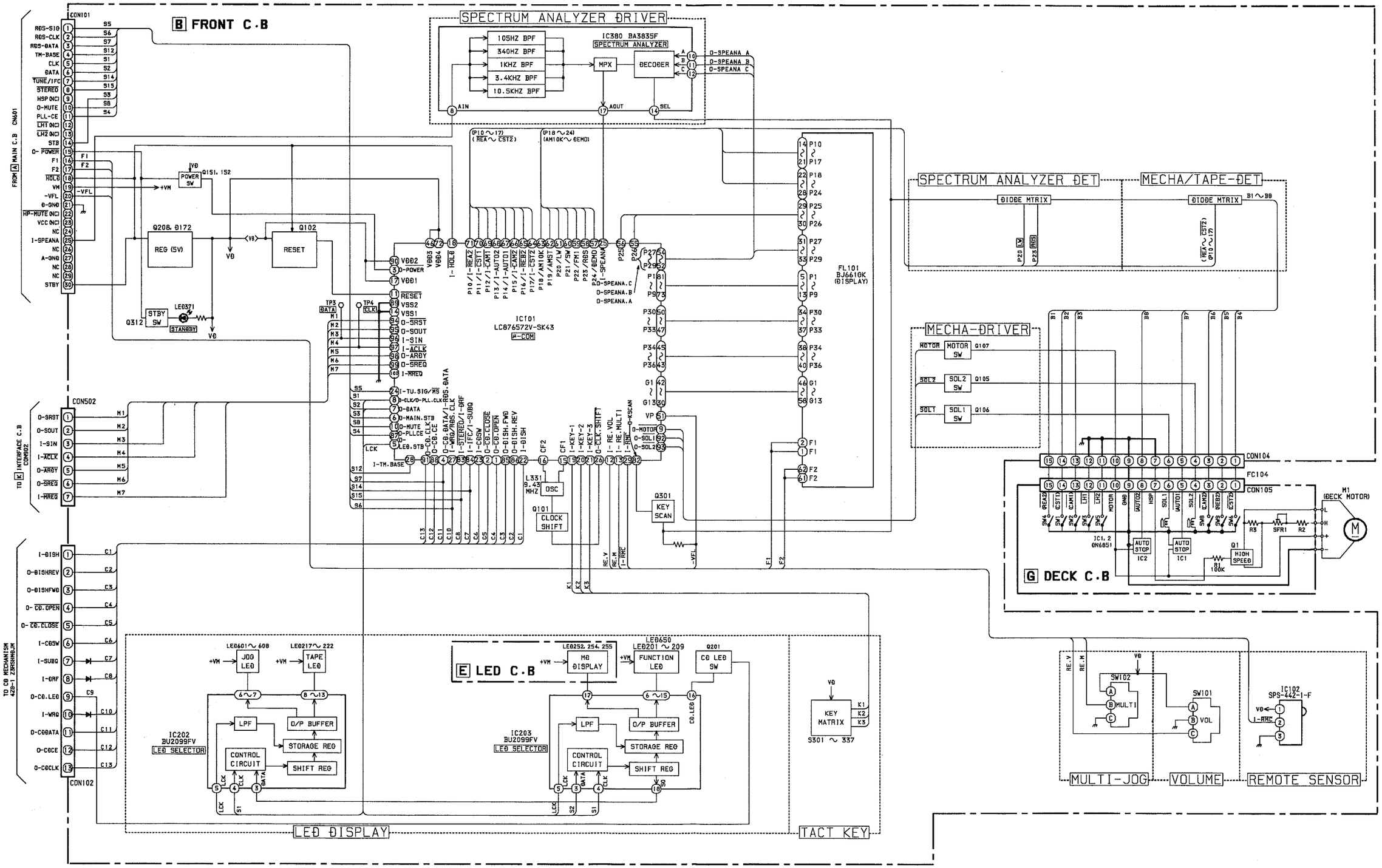


2SK543

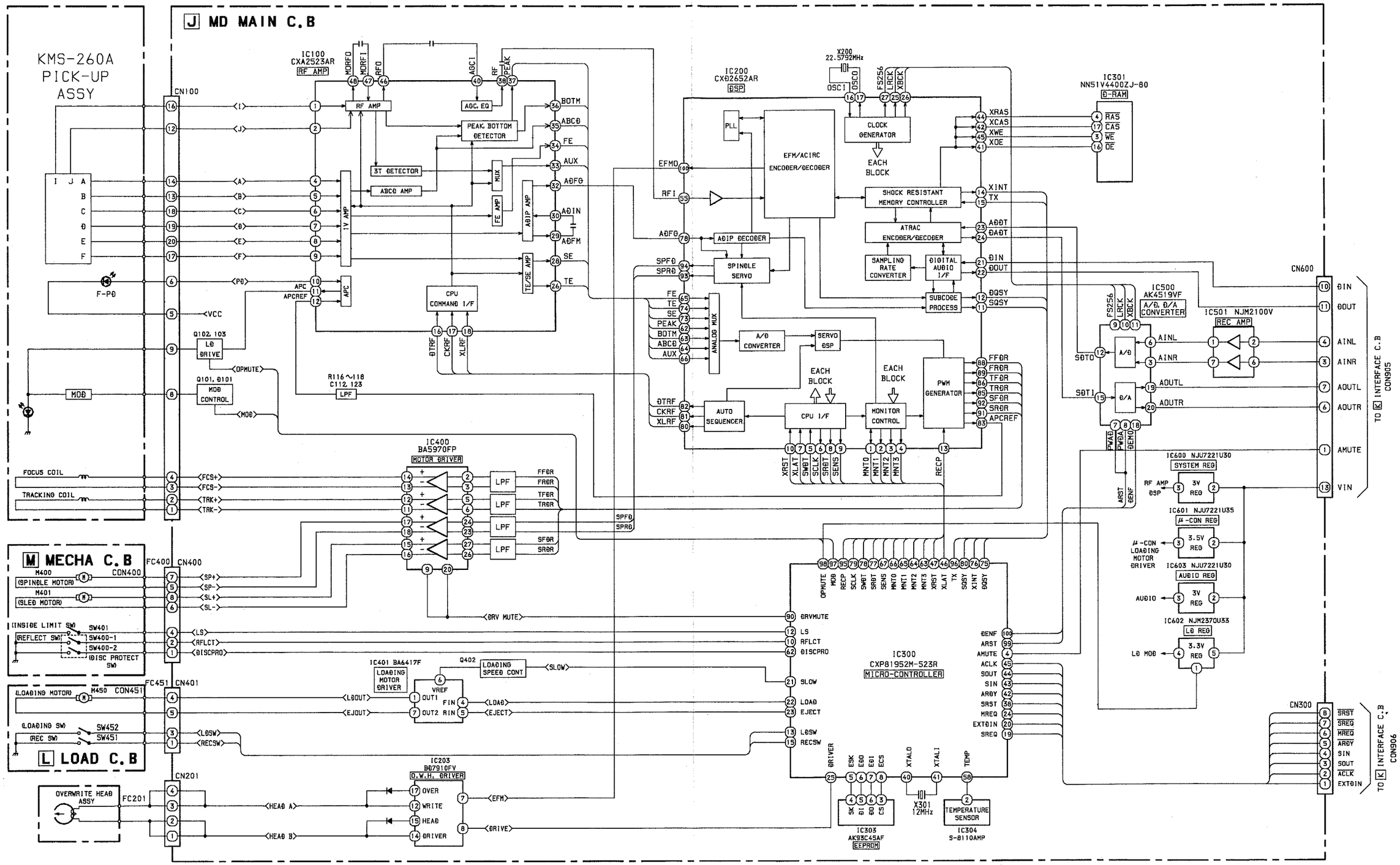
BLOCK DIAGRAM – 1 (MAIN / Q-SURR / PT)



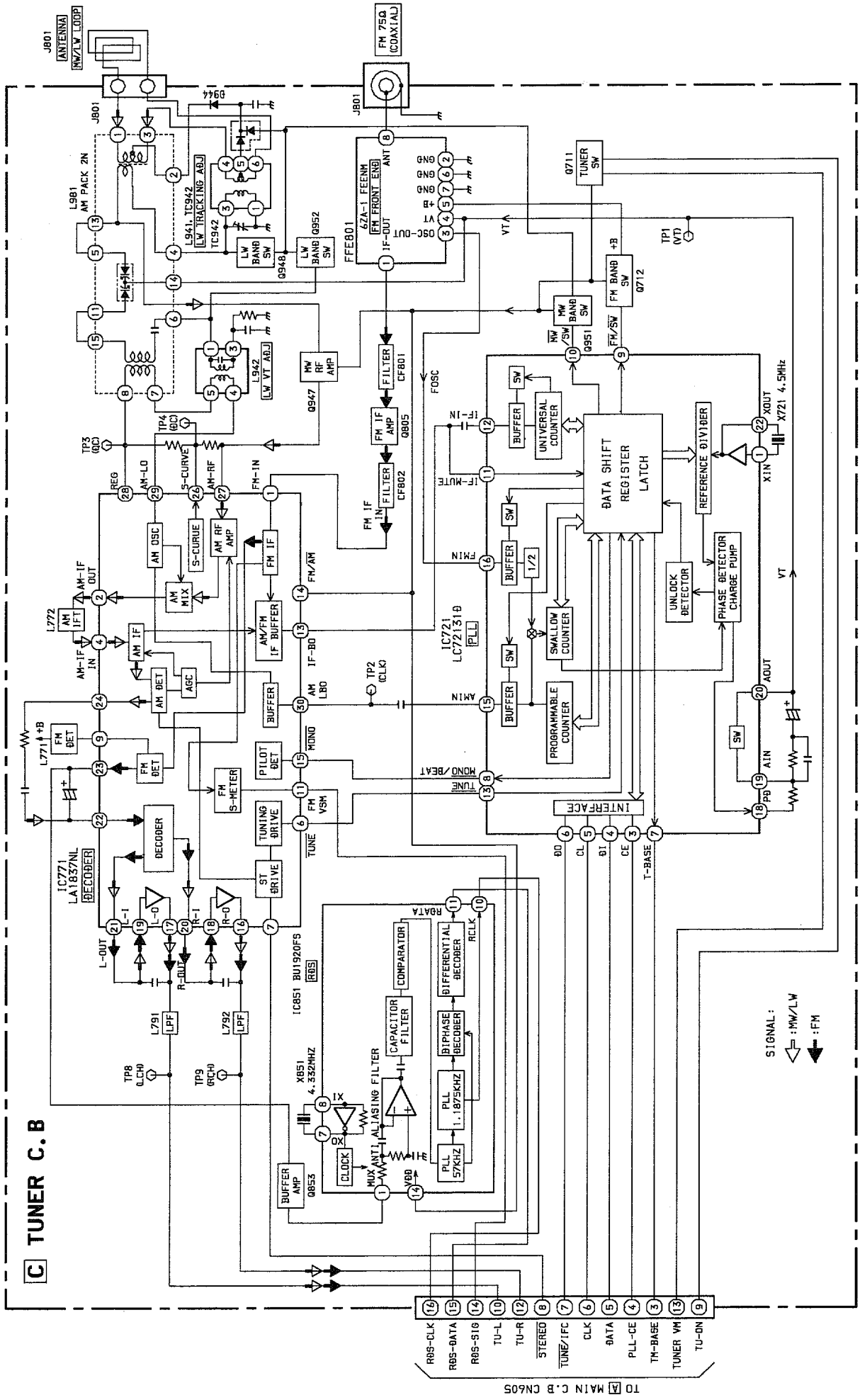
BLOCK DIAGRAM – 2 (FRONT / LED / DECK)



BLOCK DIAGRAM – 3 (MD MAIN / LOAD / MECHA)

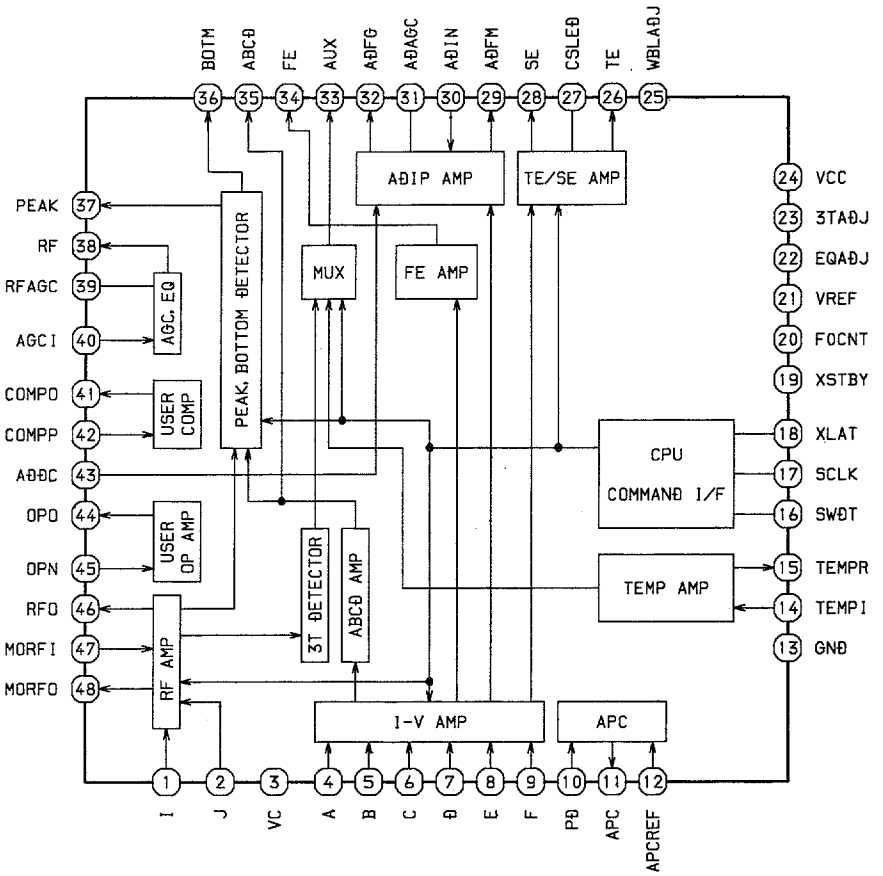


BLOCK DIAGRAM – 4 (TUNER)

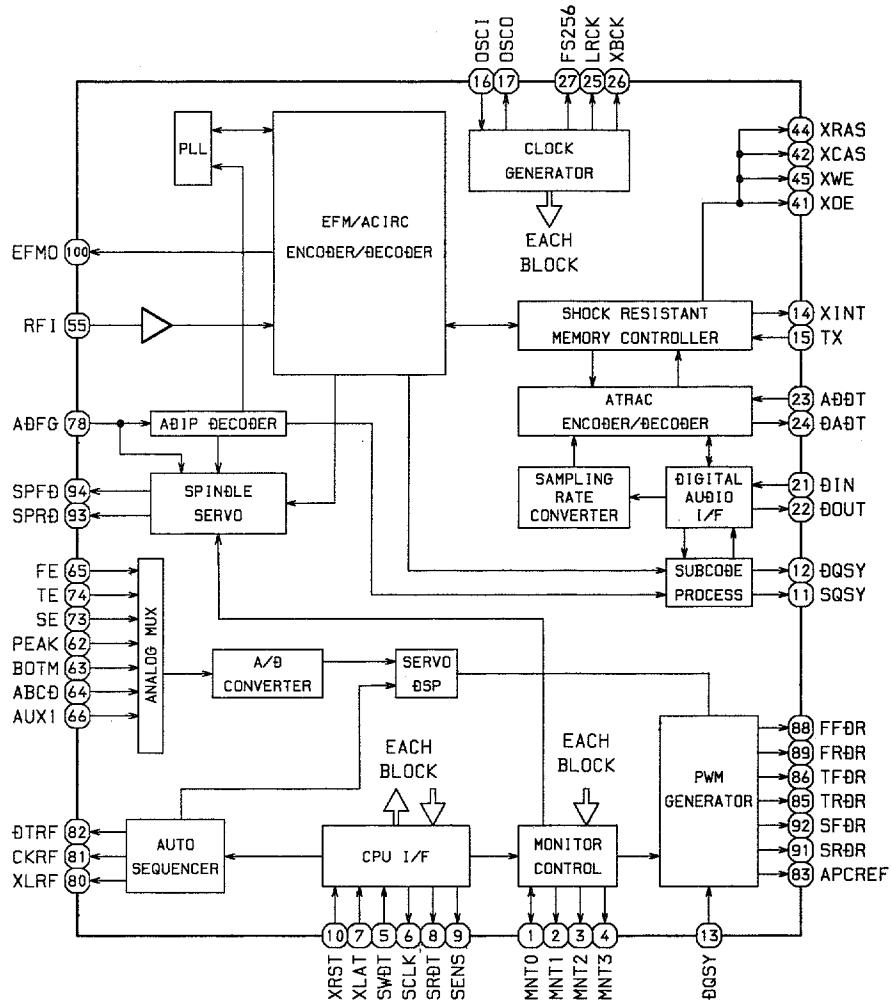


IC BLOCK DIAGRAM – 1

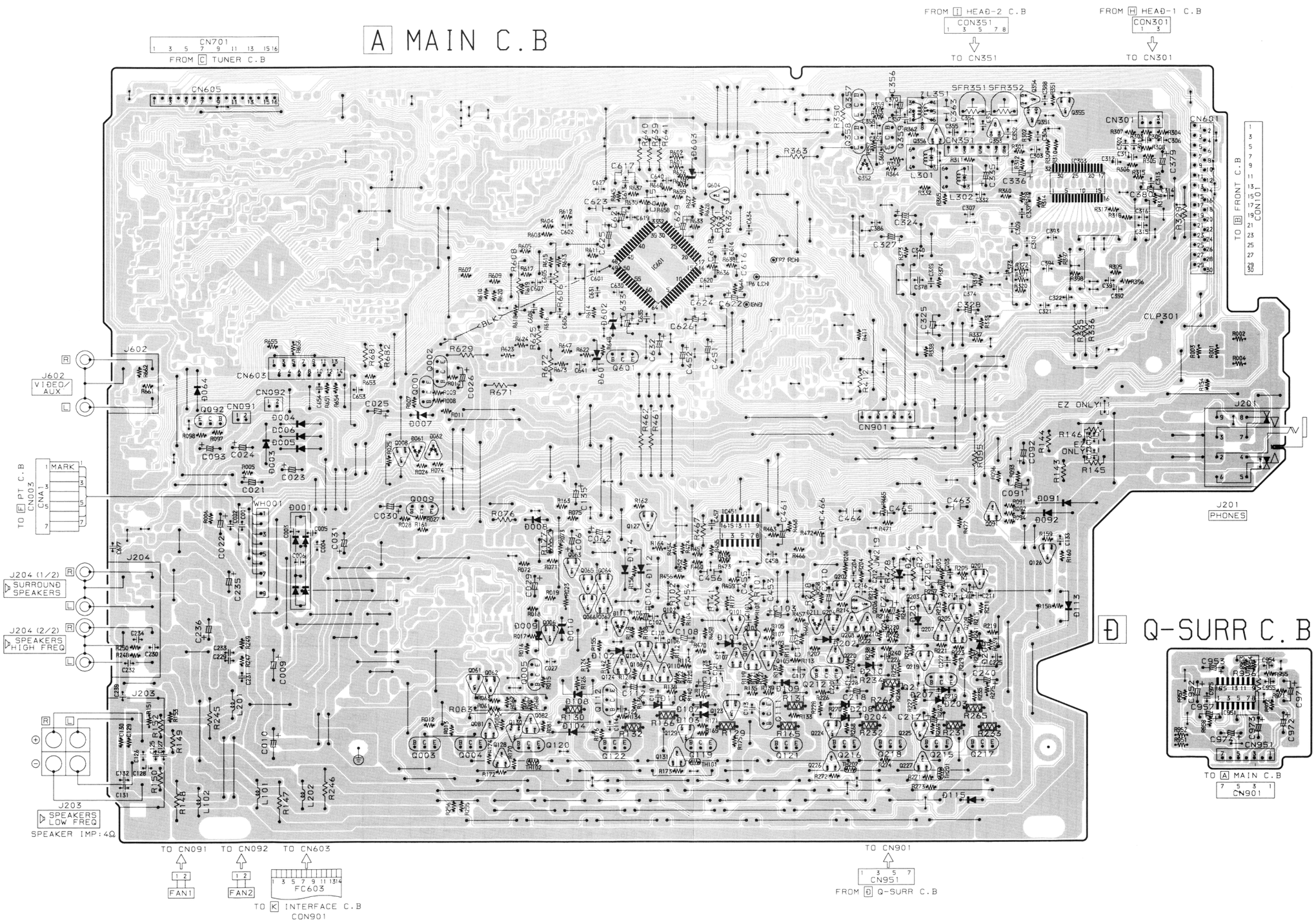
IC, CXA2523AR



IC, CXD2652AR

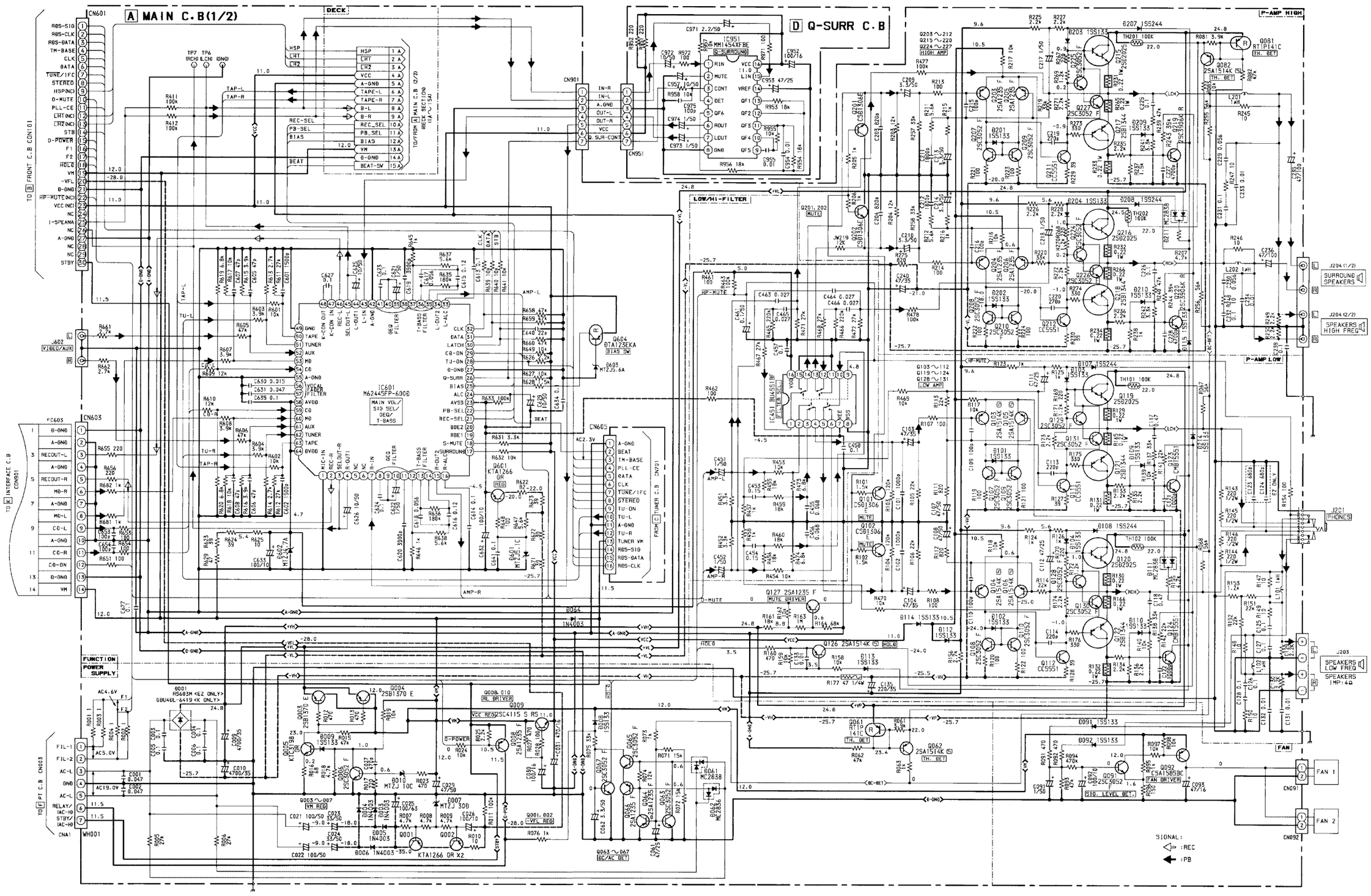


A MAIN C.B



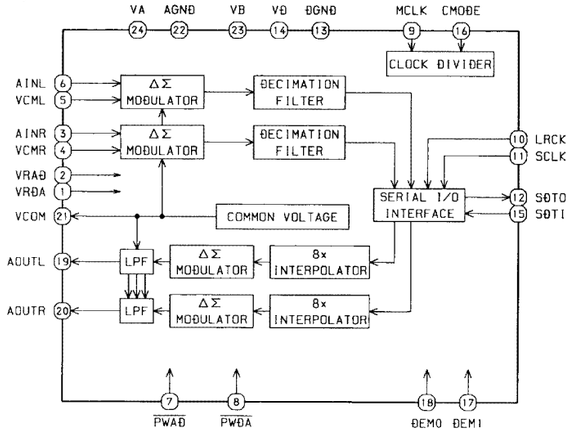
D Q-SURR C.B

SCHEMATIC DIAGRAM – 1 (MAIN : 1 / 2 / Q–SURR)

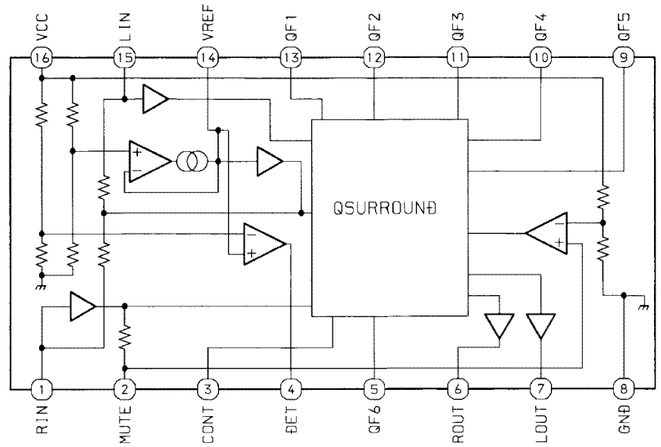


IC BLOCK DIAGRAM – 2

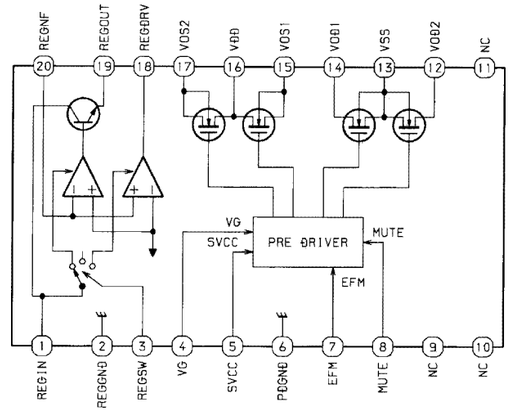
IC, AK4519VF



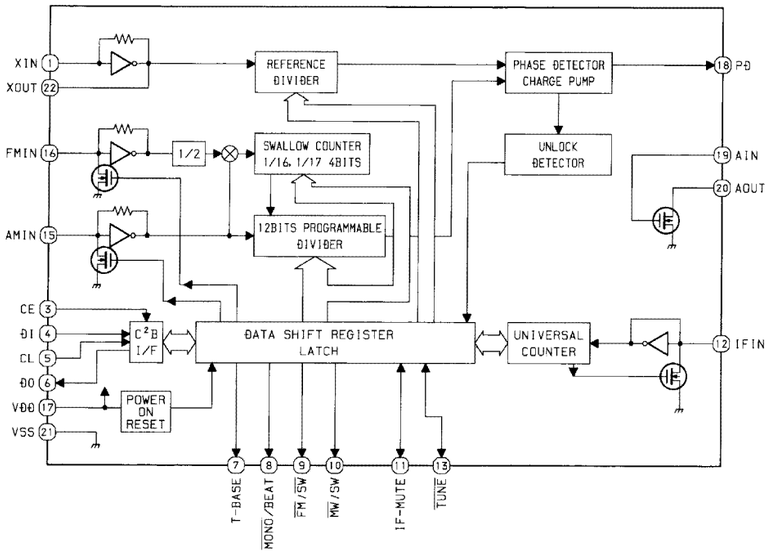
IC, MM1454XFBE



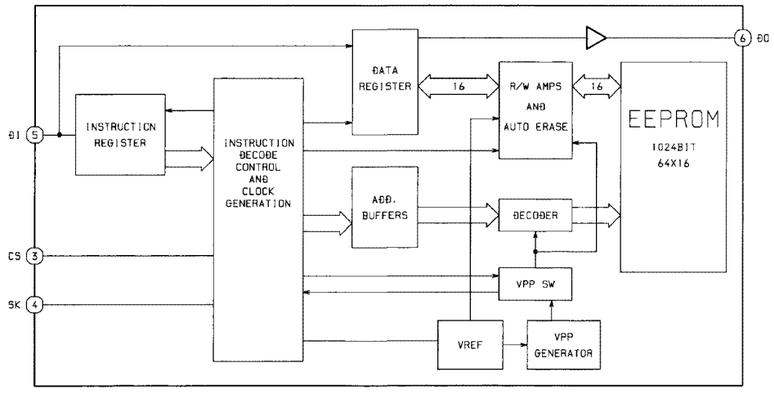
IC, BD7910FV



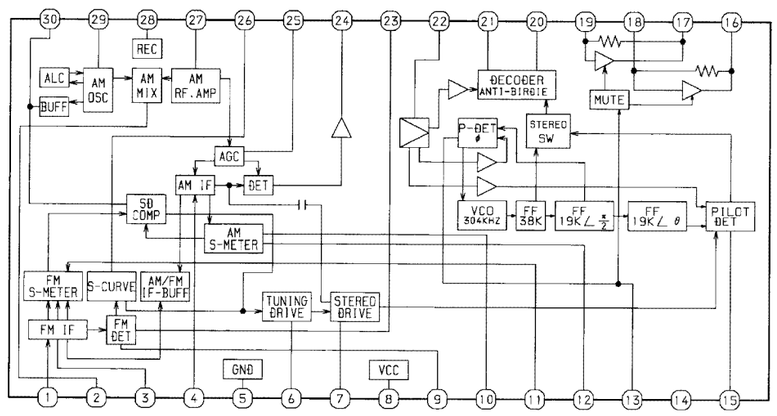
IC, LC72131D



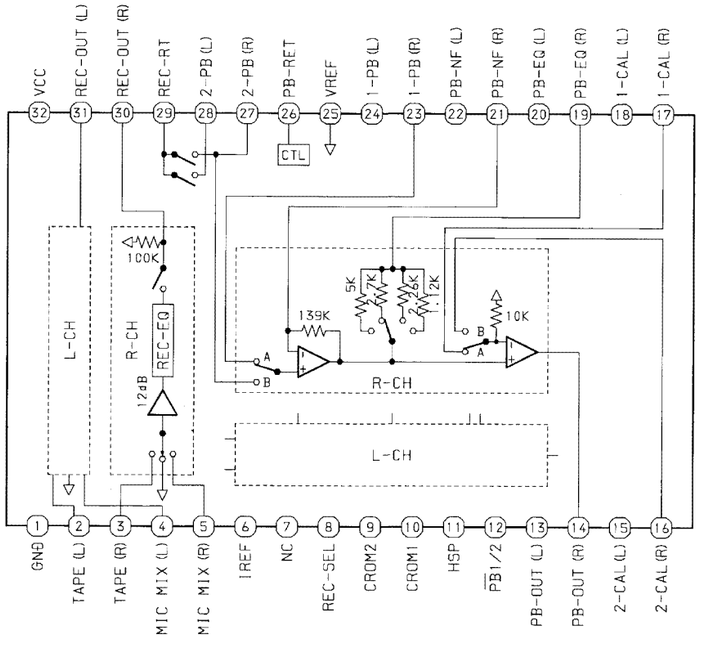
IC, AK93C45AF



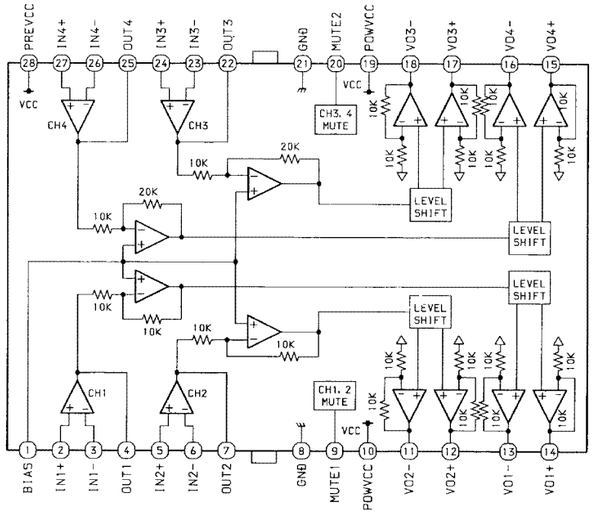
IC, LA1837NL



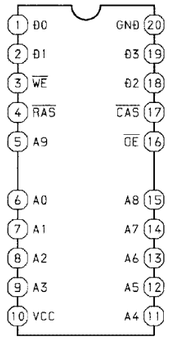
IC, BA7762AFS



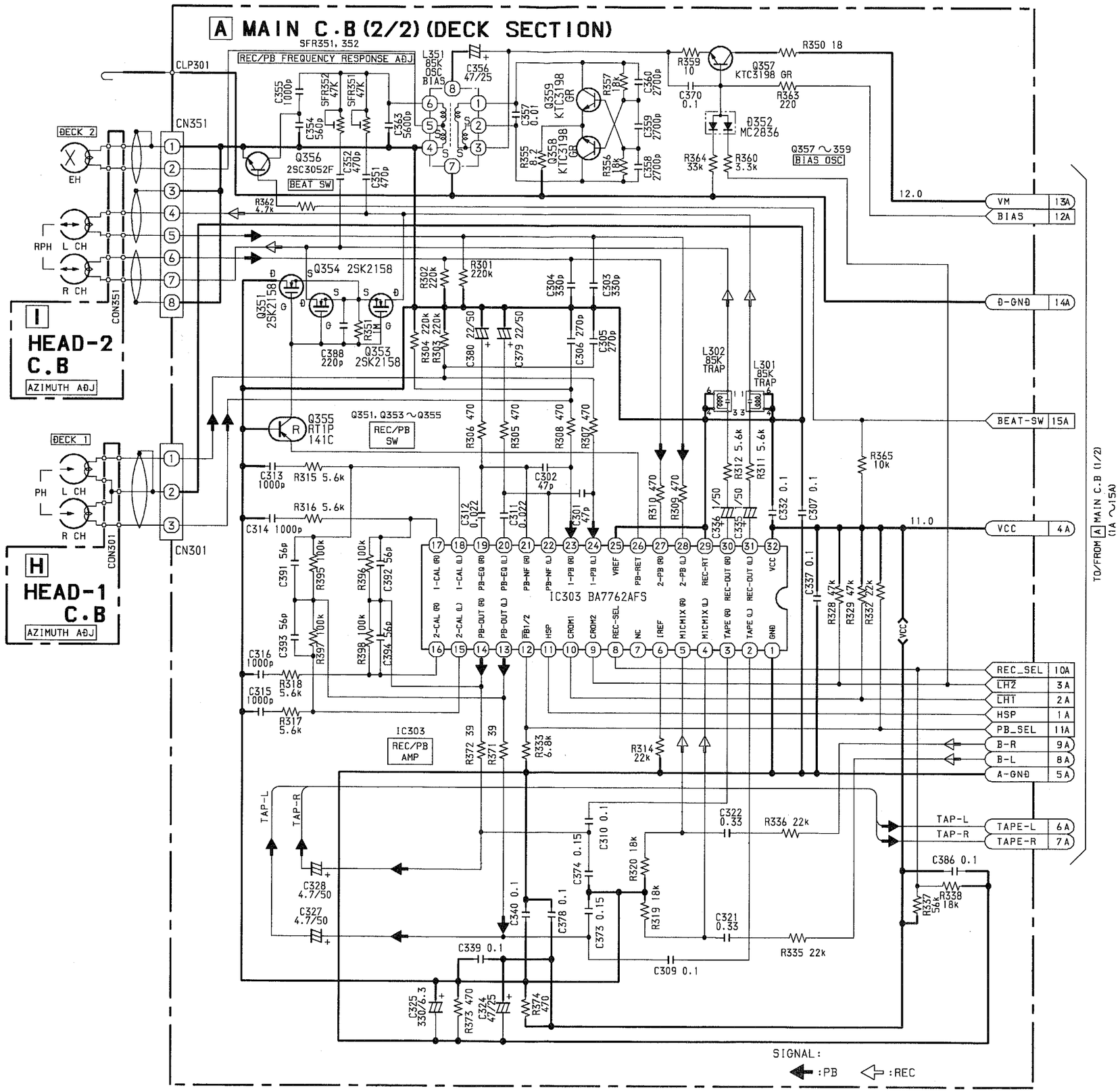
IC, BA5970FP

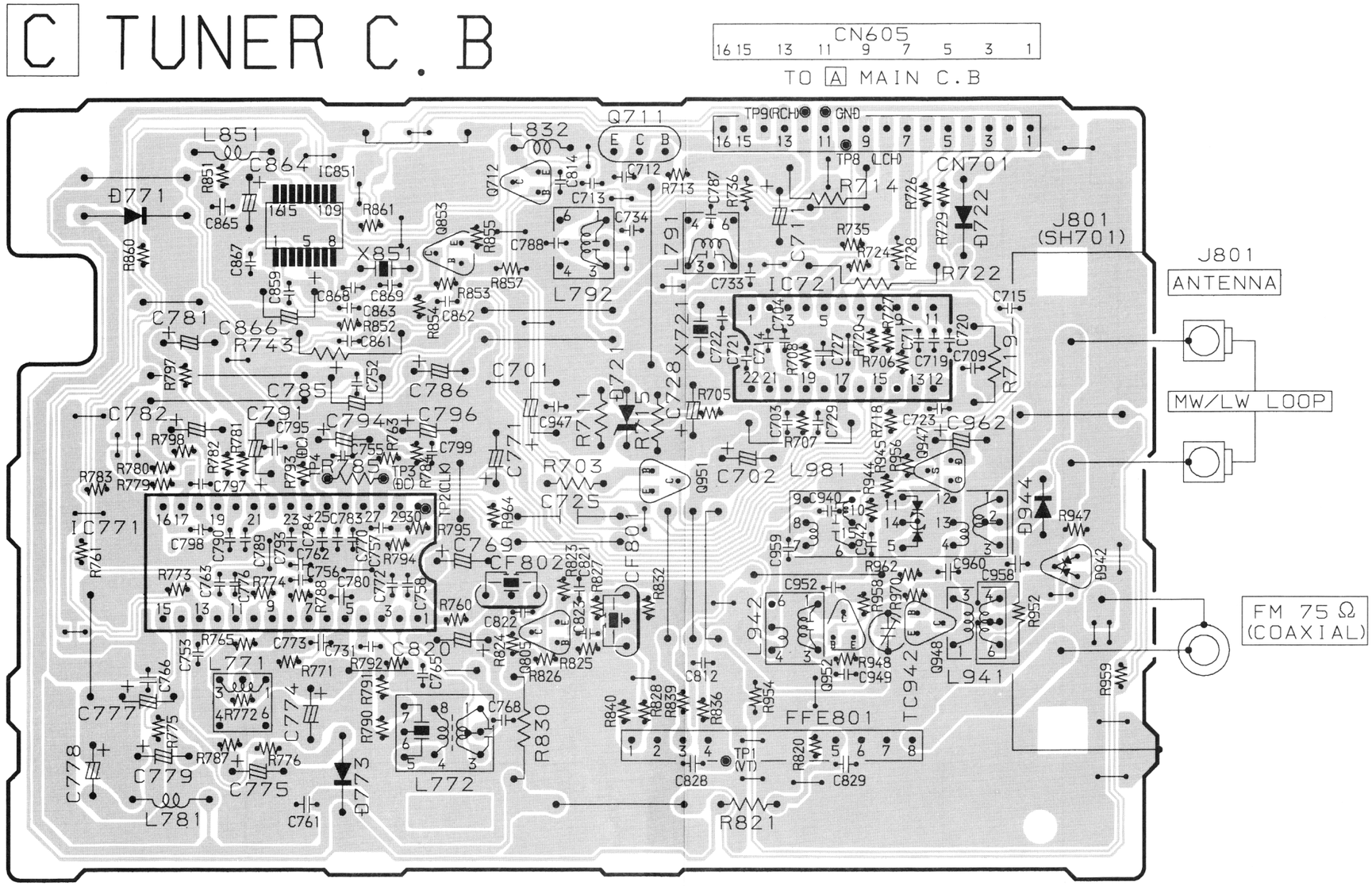


IC, NN51V4400ZJ–80

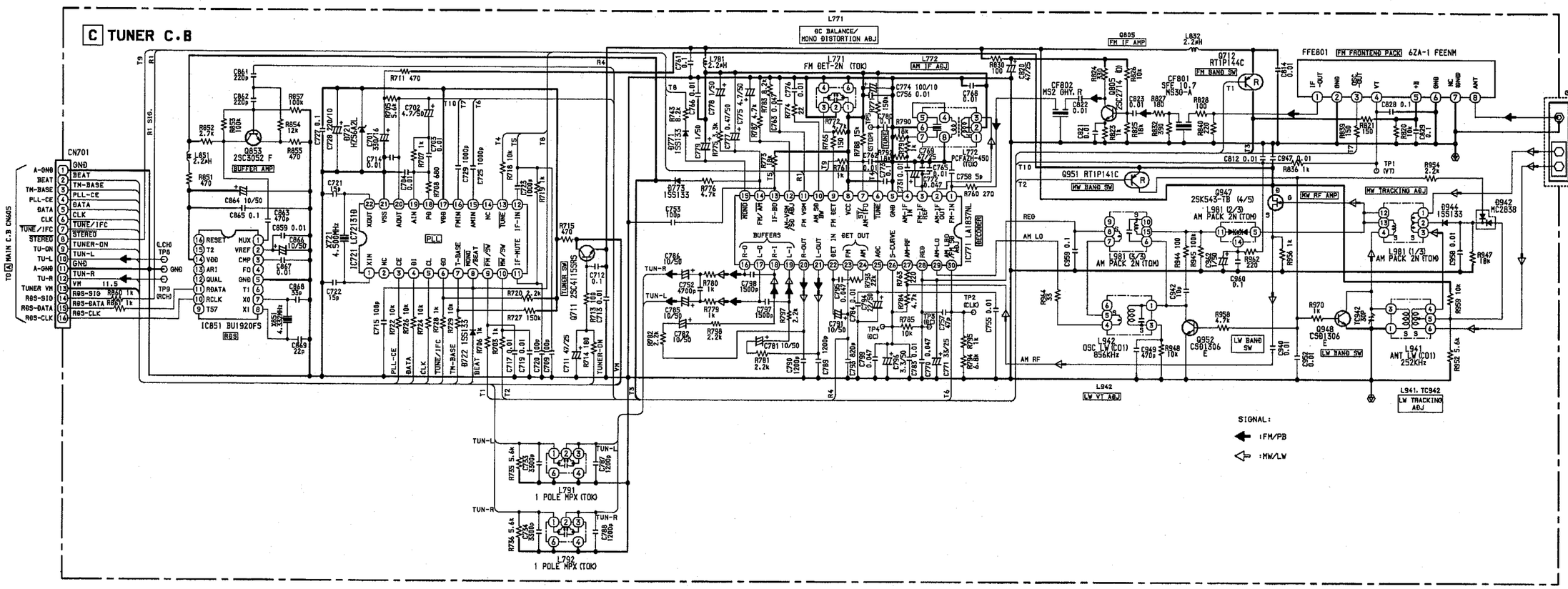


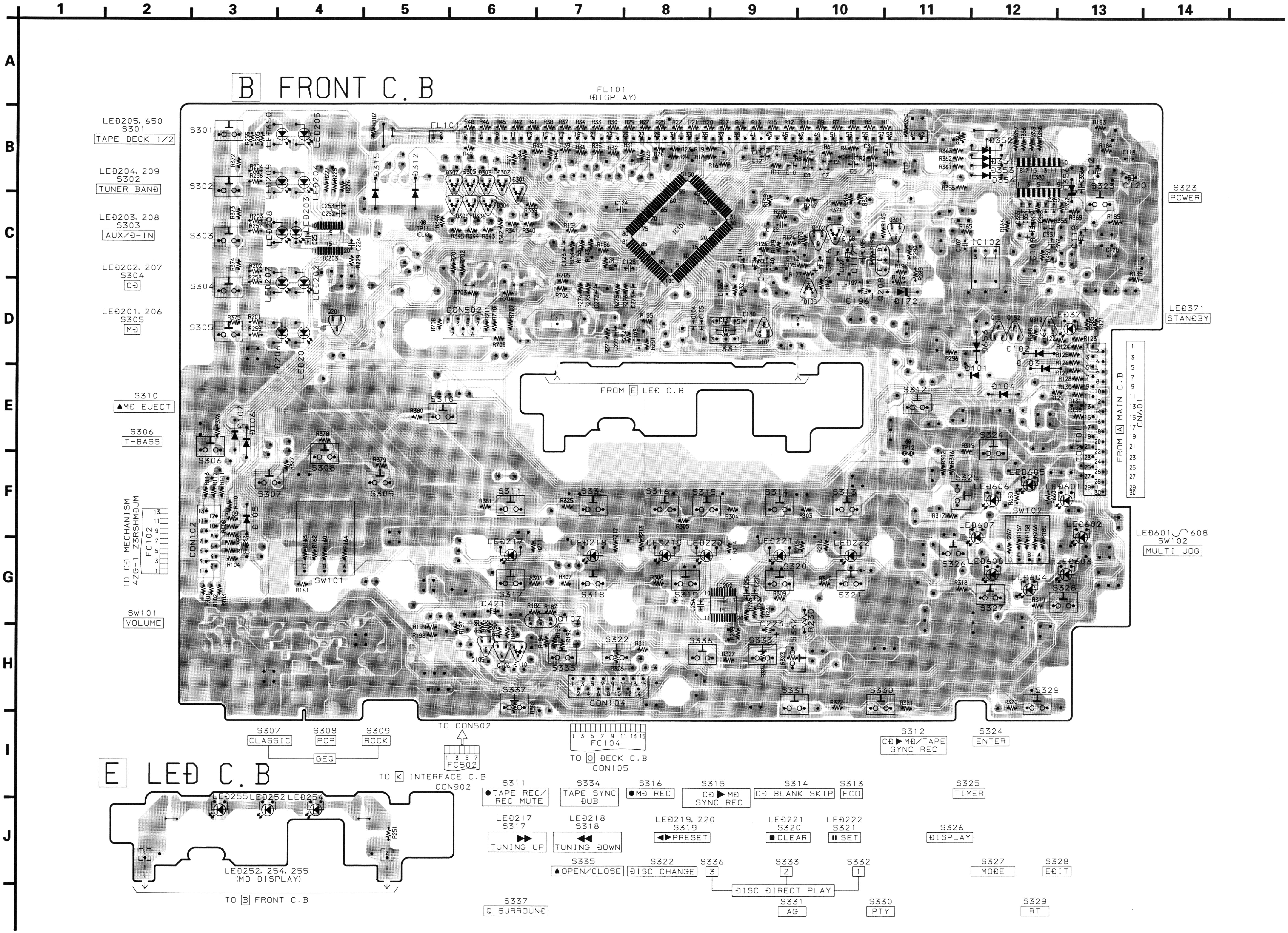
PIN NO.	SIGNAL		
	POW/CLK	1	0
1		DO	
2		D1	
3	WE		
4	RAS		
5		A9	
6		A0	
7		A1	
8		A2	
9		A3	
10	VCC		
11		A4	
12		A5	
13		A6	
14		A7	
15		A8	
16	OE		
17	CAS		
18		D2	
19		D3	
20	GND		


A MAIN C.B (2/2) (DECK SECTION)
SFR351, 352
REC/PB FREQUENCY RESPONSE ADJ
CLP301
CN351
DECK 2
EH
RPH L CH
R CH
CON351
I HEAD-2 C.B
AZIMUTH ADJ
DECK 1
PH L CH
R CH
CON301
H HEAD-1 C.B
AZIMUTH ADJ
CN301
Q356 2SC3052F
BEAT SW
Q354 2SK2158
Q351 2SK2158
Q353 2SK2158
Q355 RT1P 141C
Q351, Q353 ~ Q355
REC/PB SW
Q357 KTC3198 GR
Q359 KTC3198 GR
Q358 KTC3198 GR
D352 MC2836
Q357 ~ 359
BIAS OSC
L351 85K OSC BIAS
L302 85K TRAP
L301 85K TRAP
IC303 BA7762AFS
IC303
REC/PB AMP
1-CAL (R)
1-CAL (L)
PB-EQ (R)
PB-EQ (L)
PB-NF (R)
PB-NF (L)
1-PB (R)
1-PB (L)
VREF
PB-RET
2-PB (R)
2-PB (L)
REC-RT
REC-OUT (R)
REC-OUT (L)
VCC
2-CAL (R)
2-CAL (L)
PB-OUT (R)
PB-OUT (L)
FB1/2
HSP
CROM1
CROM2
REC-SEL
NC
IREF
MICMIX (R)
MICMIX (L)
TAPE (R)
TAPE (L)
GND
TAP-L
TAP-R
SIGNAL:
:PB
:REC
12.0
11.0
VCC
VM 13A
BIAS 12A
Θ-GNΘ 14A
BEAT-SW 15A
VCC 4A
REC_SEL 10A
LH2 3A
LHT 2A
HSP 1A
PB_SEL 11A
B-R 9A
B-L 8A
A-GNΘ 5A
TAPE-L 6A
TAPE-R 7A
TO/FROM A MAIN C.B (1/2) (1A ~ 15A)

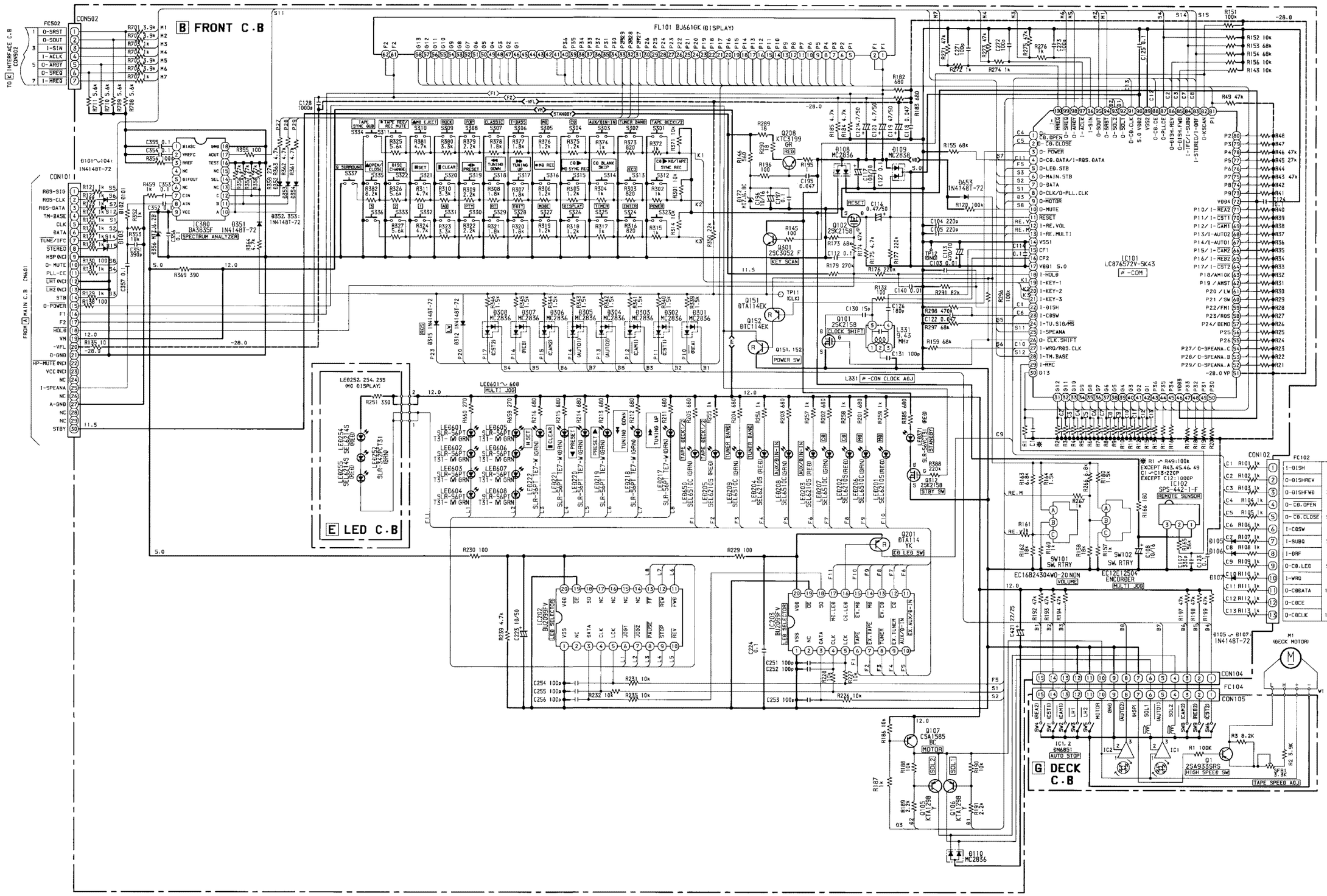

1
2
3
4
5
6
7
8
9
10
11
12
13
14
A
B
C
D
E
F
G
H
I
J
C TUNER C. B
CN605
16 15 13 11 9 7 5 3 1
TO A MAIN C.B
TP9(RCH)
GND
TP8 (LCH)
CN701
J801 (SH701)
J801 ANTENNA
MW/LW LOOP
FM 75 Ω (COAXIAL)
L851
C864
IC851
D771
R851
C865
R861
Q853
R855
C788
X851
R860
C867
C859
C868
C869
C863
R852
C861
R853
R854
C862
R857
L832
Q711
E C B
Q712
C814
C712
C713
R713
C734
L792
L791
C787
R736
R714
C711
R735
R724
R728
R726
R729
D722
R722
C733
IC721
X721
C722
C704
C727
C720
C721
R706
C719
C709
C715
R719
R705
C728
D721
C703
R707
C729
R718
C723
C962
C781
C866
R743
R797
C785
C752
C786
C701
C947
R711
R715
C771
C782
C791
C795
C794
C796
R798
R782
R781
R793
TP4(DC)
R785
C755
R763
C799
TP3(DC)
R784
TP2(CLK)
R783
R780
R779
C797
R703
C725
Q951
C702
L981
R945
R956
Q947
R944
C940
D944
R947
IC771
R761
C798
C790
C789
C793
C784
C783
C770
C762
C757
R794
R795
R964
C769
CF802
CF801
R823
C821
R827
R832
R773
C763
C776
R774
C756
R788
C780
C772
C758
R760
C822
C824
C959
C942
R962
C960
C958
D942
C952
R958
R970
L942
Q948
L941
R952
R765
C773
C731
C820
R824
Q805
R825
R826
C812
R948
C949
Q952
TC942
R959
C753
C766
L771
R771
R792
C765
R791
R772
C774
R790
C768
R830
C777
R775
R840
R828
R839
R836
R954
FFE801
C778
R787
R776
D773
L772
TP1 (VT)
R820
C828
C829
C779
C775
C761
L781
R821

SCHEMATIC DIAGRAM – 3 (TUNER)

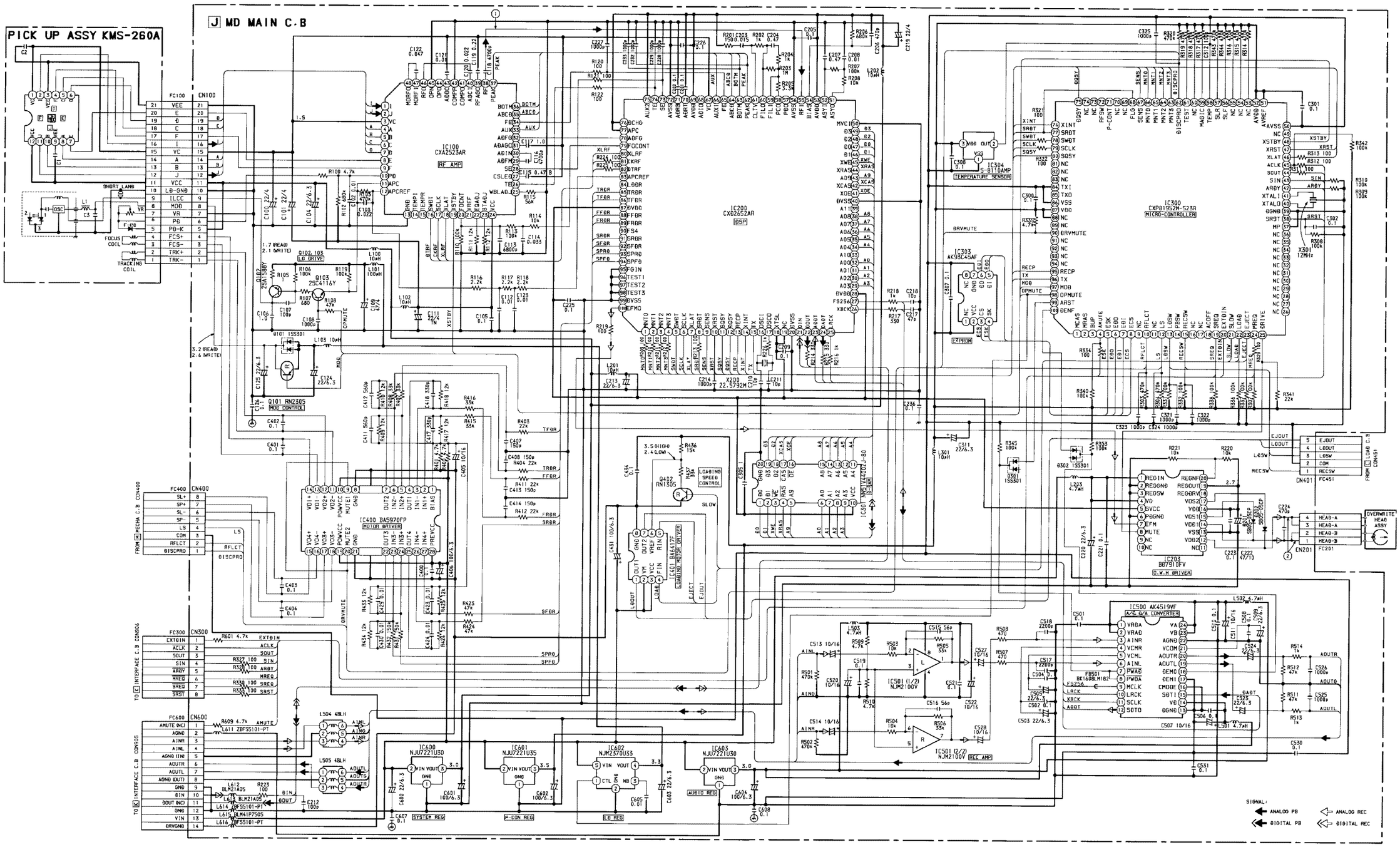



B FRONT C.B
FL101 (DISPLAY)
LED205, 650 S301 TAPE DECK 1/2
LED204, 209 S302 TUNER BAND
LED203, 208 S303 AUX/D-IN
LED202, 207 S304 CD
LED201, 206 S305 MD
S310 ▲MD EJECT
S306 T-BASS
TO CD MECHANISM 4ZG-1 Z3RSHMDJM FC102
SW101 VOLUME
S323 POWER
LED371 STANDBY
FROM A MAIN C.B CN601
LED601∼608 SW102 MULTI JOG
FROM E LED C.B
S307 CLASSIC
S308 POP
S309 ROCK
GEQ
TO CON502
FC502
TO K INTERFACE C.B CON902
FC104
TO G DECK C.B CON105
S312 CD▶MD/TAPE SYNC REC
S324 ENTER
S311 ●TAPE REC/REC MUTE
S334 TAPE SYNC DUB
S316 ●MD REC
S315 CD▶MD SYNC REC
S314 CD BLANK SKIP
S313 ECO
S325 TIMER
LED217 S317 ▶▶ TUNING UP
LED218 S318 ◀◀ TUNING DOWN
LED219, 220 S319 ◀▶PRESET
LED221 S320 ■CLEAR
LED222 S321 ⏸SET
S326 DISPLAY
S335 ▲OPEN/CLOSE
S322 DISC CHANGE
S336 3
S333 2
S332 1
DISC DIRECT PLAY
S327 MODE
S328 EDIT
S337 Q SURROUND
S331 AG
S330 PTY
S329 RT
E LED C.B
LED252, 254, 255 (MD DISPLAY)
TO B FRONT C.B

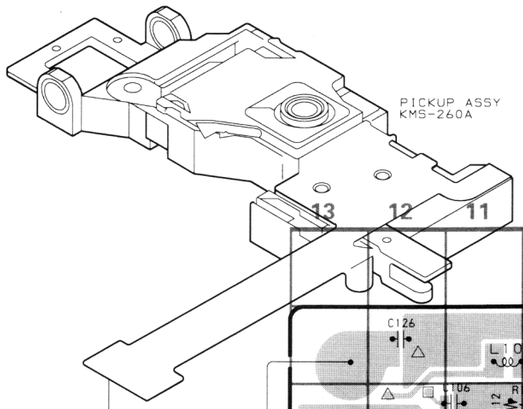
SCHEMATIC DIAGRAM – 4 (FRONT / LED / DECK)

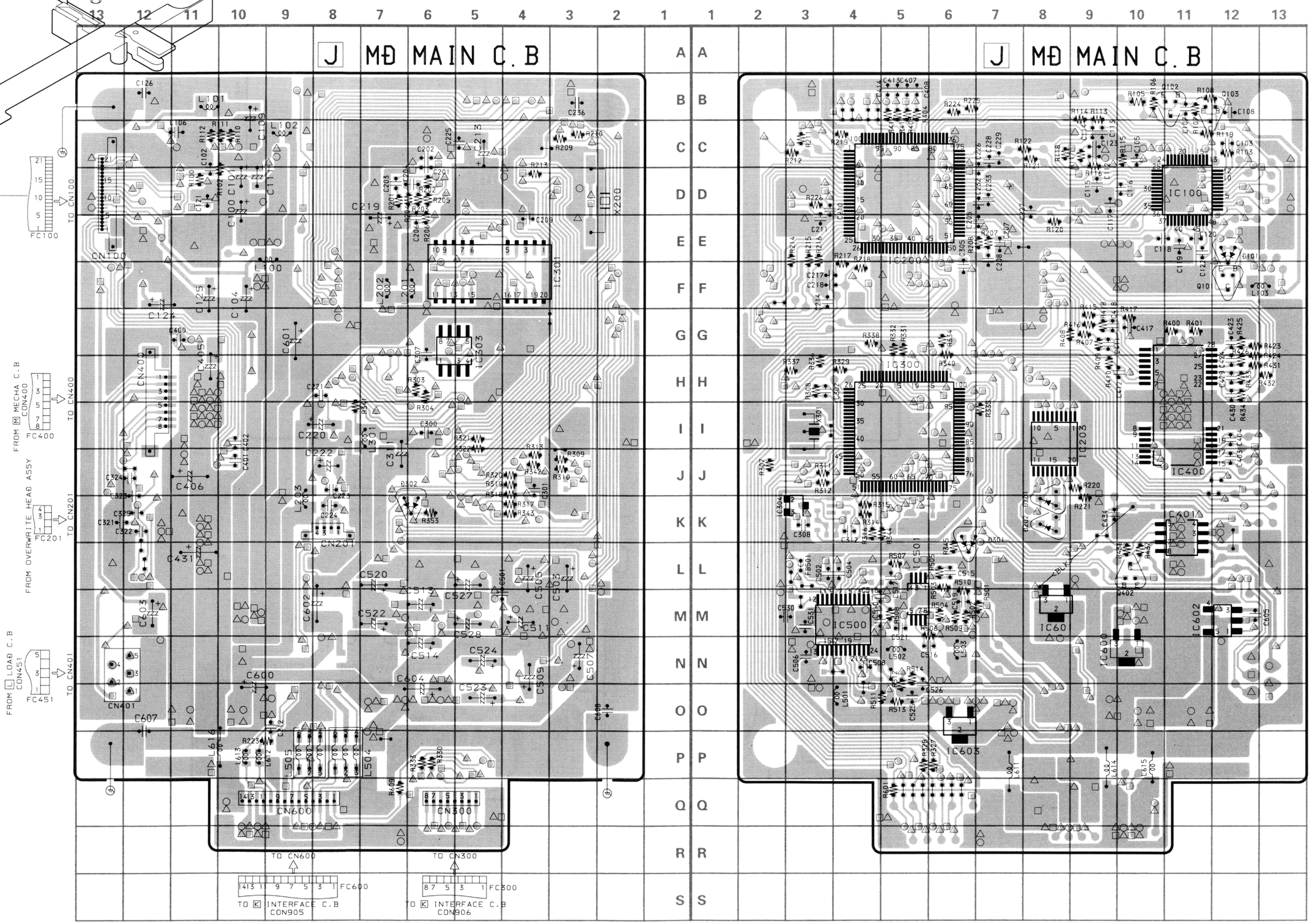


SCHEMATIC DIAGRAM – 5 (MD MAIN)

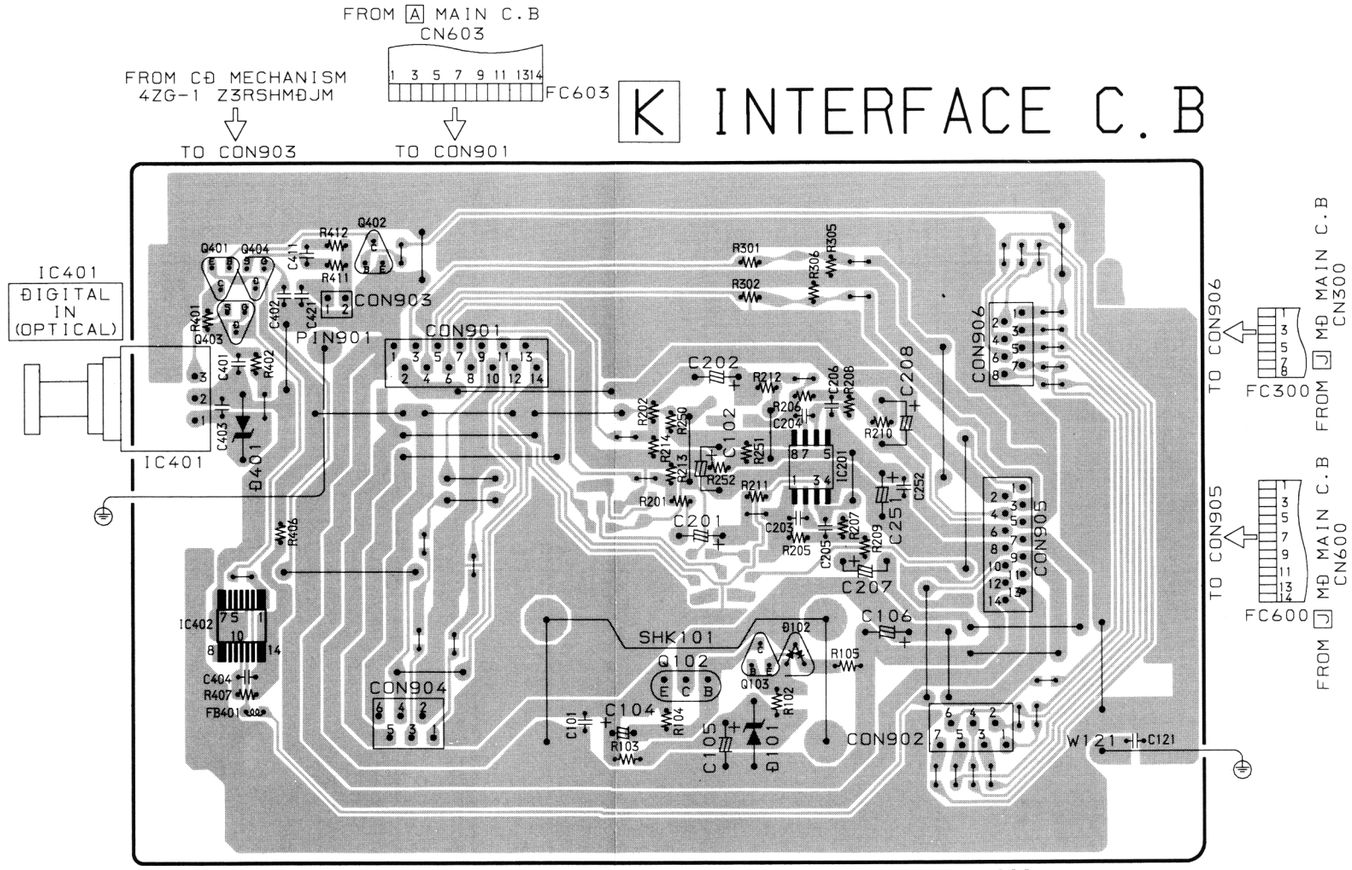


WIRING – 4 (MD MAIN)

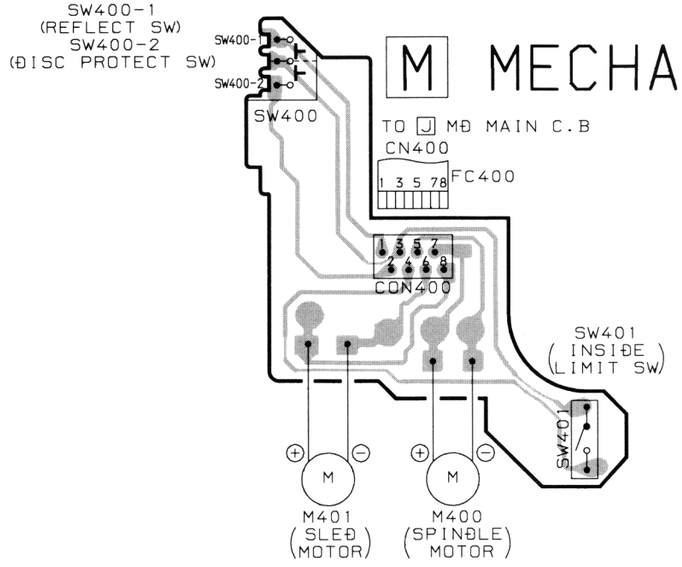




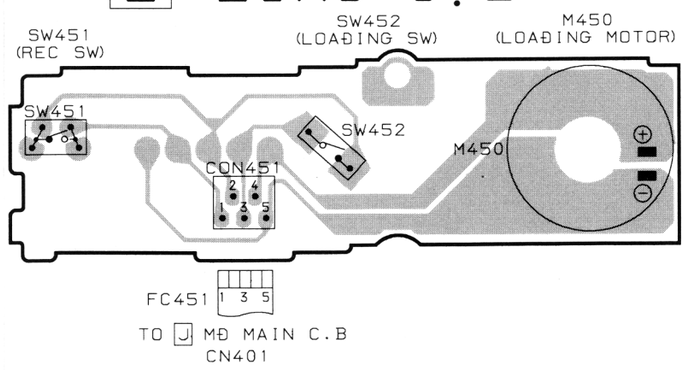
K INTERFACE C.B



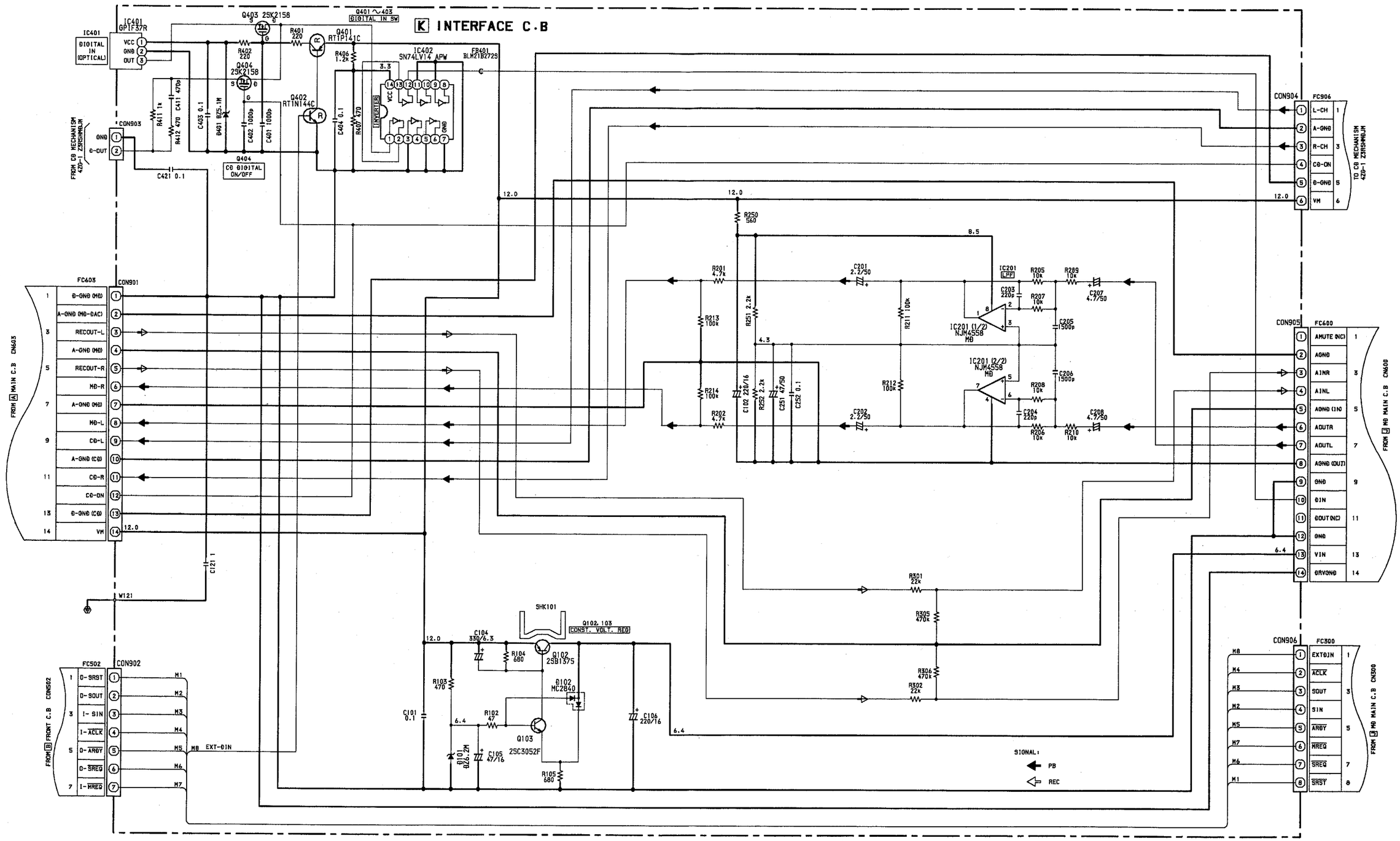
M MECHA C.B

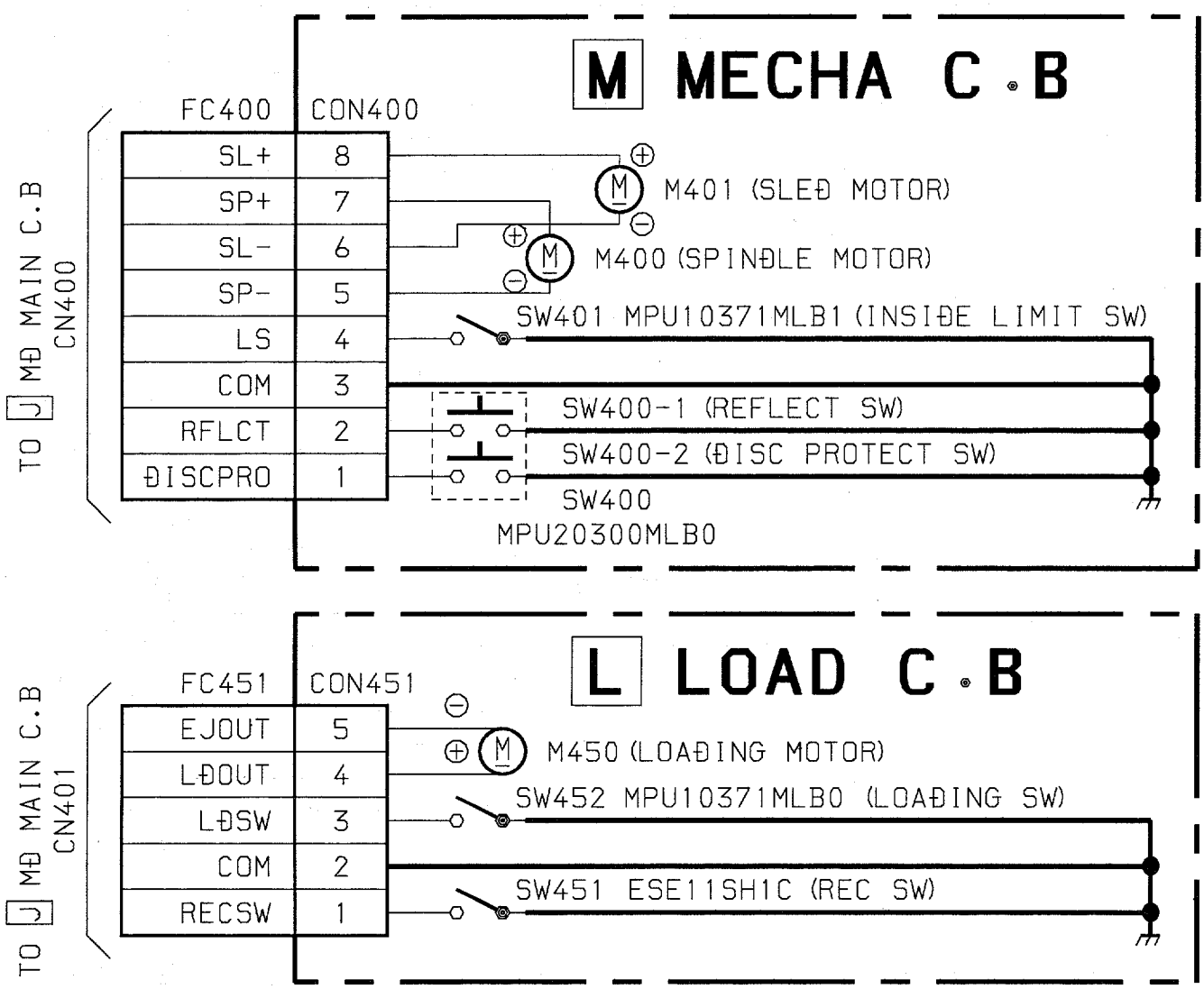


L LOAD C.B

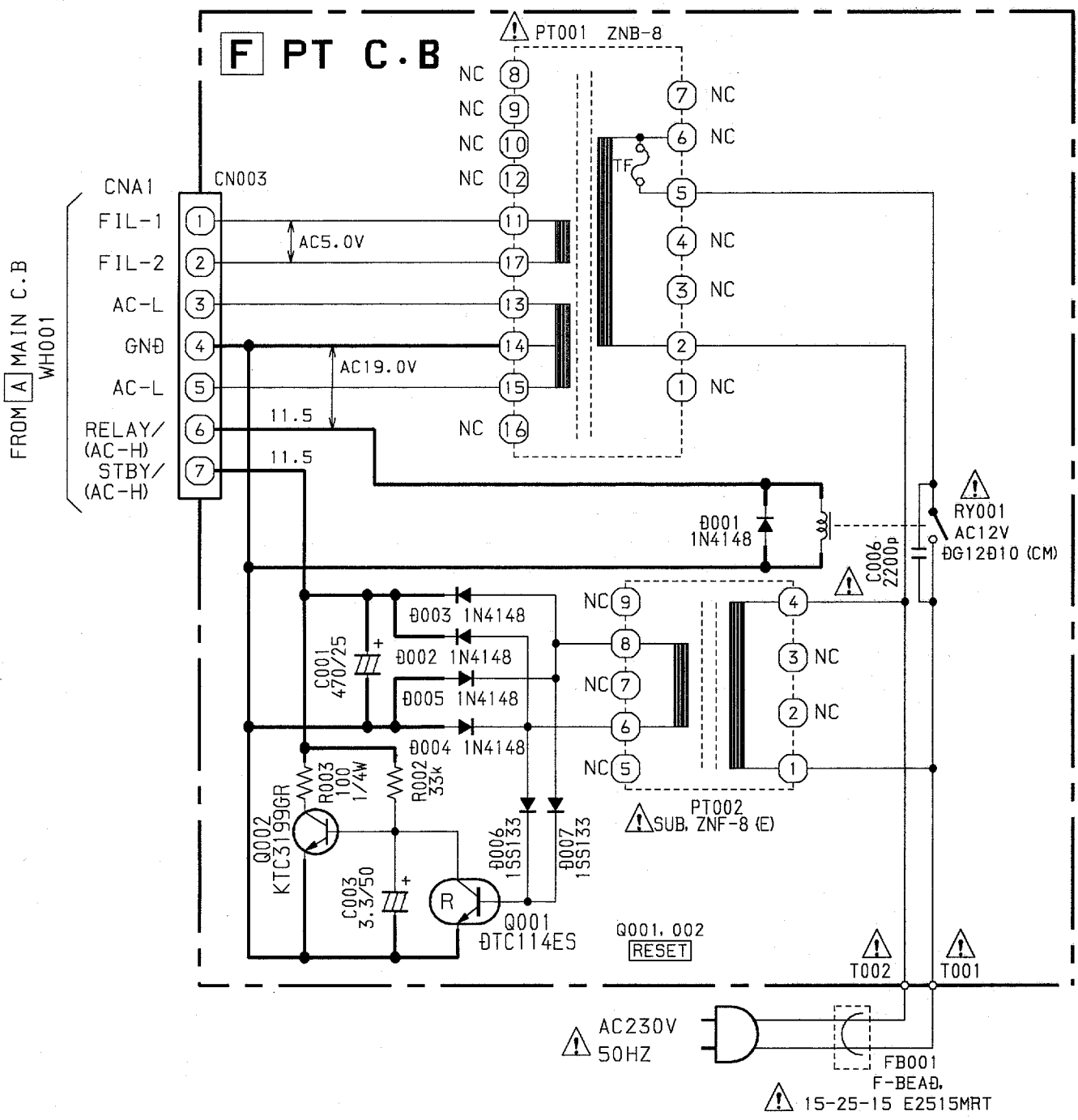


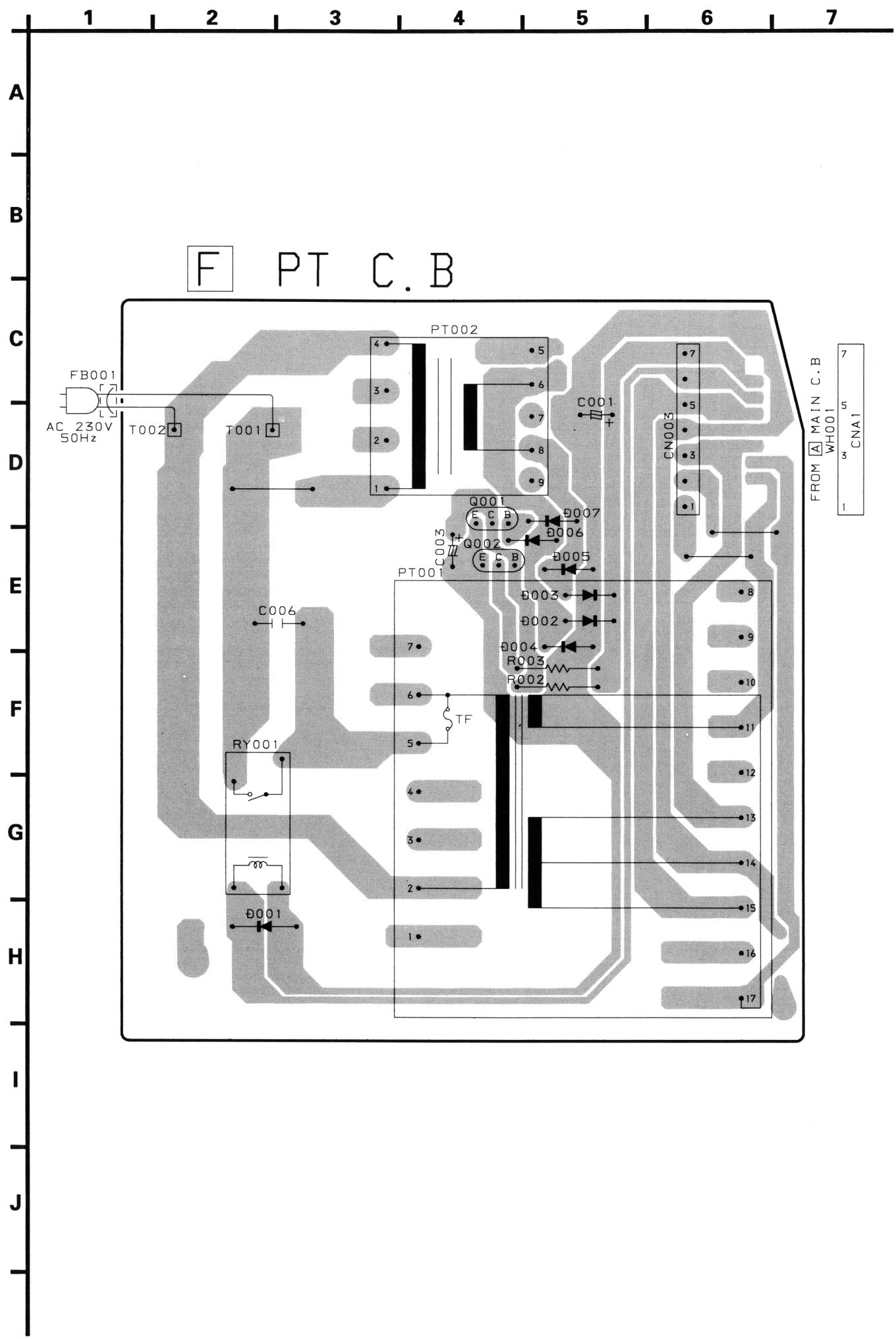
SCHEMATIC DIAGRAM – 6 (INTERFACE)

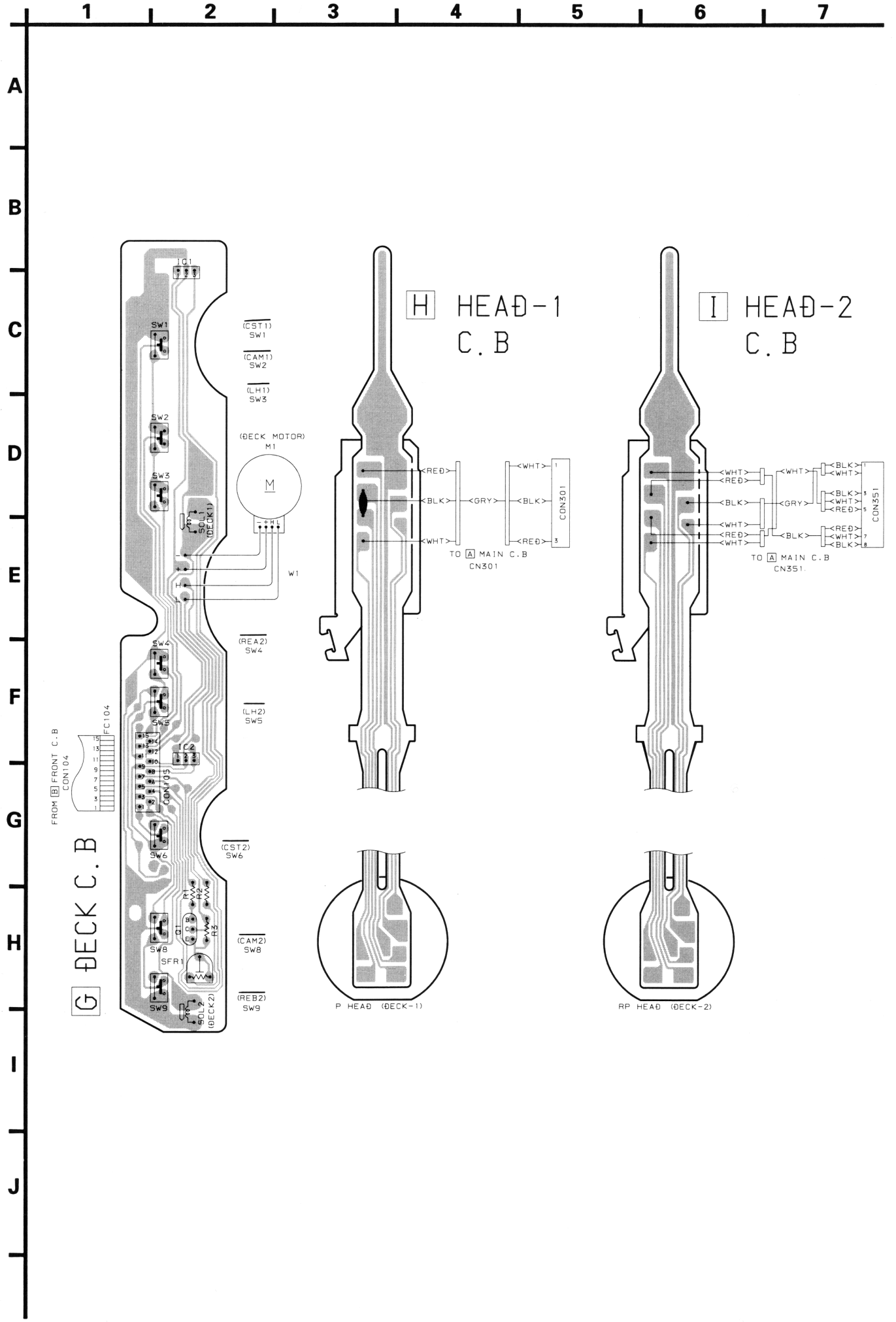



M MECHA C.B
FC400
CON400
SL+ 8
SP+ 7
SL- 6
SP- 5
LS 4
COM 3
RFLCT 2
DISCPRO 1
TO J MD MAIN C.B CN400
M401 (SLED MOTOR)
M400 (SPINDLE MOTOR)
SW401 MPU10371MLB1 (INSIDE LIMIT SW)
SW400-1 (REFLECT SW)
SW400-2 (DISC PROTECT SW)
SW400
MPU20300MLB0
L LOAD C.B
FC451
CON451
EJOUT 5
LDOUT 4
LDSW 3
COM 2
RECSW 1
TO J MD MAIN C.B CN401
M450 (LOADING MOTOR)
SW452 MPU10371MLB0 (LOADING SW)
SW451 ESE11SH1C (REC SW)

SCHEMATIC DIAGRAM – 8 (PT)

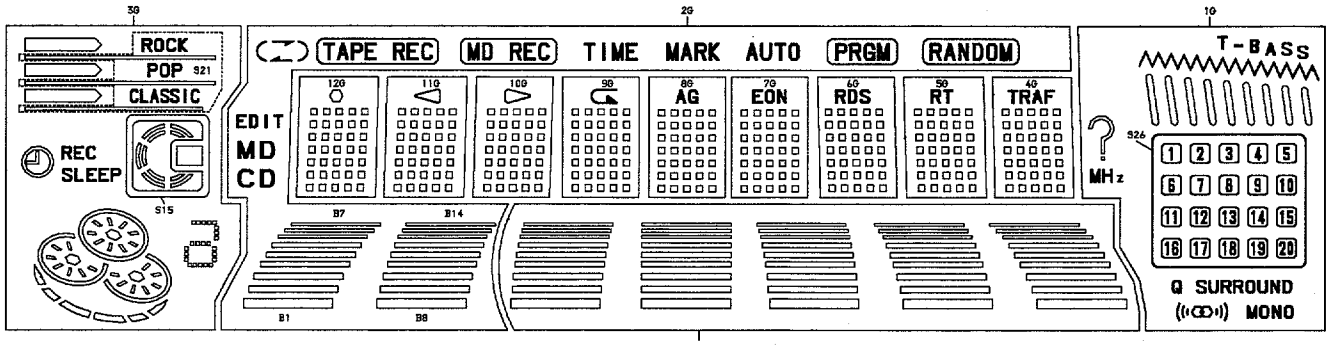


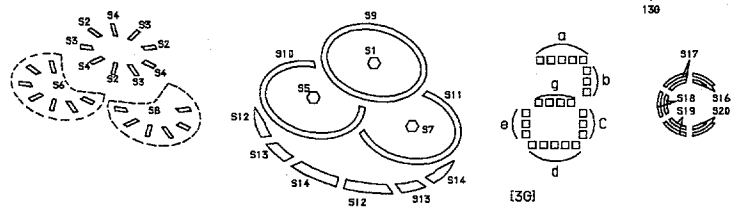

1
2
3
4
5
6
7
A
B
C
D
E
F
G
H
I
J
F PT C.B
PT002
FB001
AC 230V
50Hz
T002
T001
C001
CN003
FROM A MAIN C.B
WH001
CNA1
Q001
Q002
C003
Đ007
Đ006
Đ005
PT001
Đ003
Đ002
Đ004
R003
R002
C006
TF
RY001
Đ001

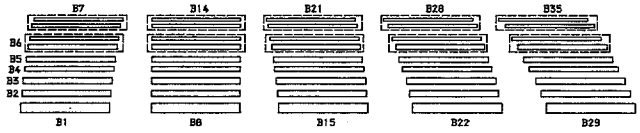

1
2
3
4
5
6
7
A
B
C
D
E
F
G
H
I
J
G DECK C.B
FROM B FRONT C.B CON104
FC104
CON103
IC1
IC2
SW1
SW2
SW3
SW4
SW5
SW6
SW8
SW9
(CST1) SW1
(CAM1) SW2
(LH1) SW3
(DECK MOTOR) M1
M
SOL1 (DECK1)
W1
(REA2) SW4
(LH2) SW5
(CST2) SW6
(CAM2) SW8
(REB2) SW9
SOL2 (DECK2)
R1
R2
R3
Q1
SFR1
H HEAD-1 C.B
RED
BLK
GRY
WHT
CON301
TO A MAIN C.B CN301
P HEAD (DECK-1)
I HEAD-2 C.B
CON351
TO A MAIN C.B CN351
RP HEAD (DECK-2)

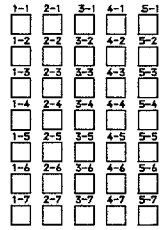
FL (BJ661GK) GRID ASSIGNMENT / ANODE CONNECTION / PIN CONNECTION

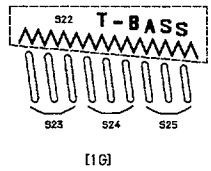
GRID ASSIGNMENT











ANODE CONNECTION

	13G	12G	11G	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G
P1	B1	○	◁	▷	◤	AG	EON	RDS	RT	TRAF	S1	B1	S22
P2	B8	1-1	1-1	1-1	1-1	1-1	1-1	1-1	1-1	1-1	S2	B8	S23
P3	B15	2-1	2-1	2-1	2-1	2-1	2-1	2-1	2-1	2-1	S3	B2	S24
P4	B22	3-1	3-1	3-1	3-1	3-1	3-1	3-1	3-1	3-1	S4	B9	S25
P5	B29	4-1	4-1	4-1	4-1	4-1	4-1	4-1	4-1	4-1	S9	B3	?
P6	B2	5-1	5-1	5-1	5-1	5-1	5-1	5-1	5-1	5-1	S5	B10	MHz
P7	B9	1-2	1-2	1-2	1-2	1-2	1-2	1-2	1-2	1-2	S6	B4	S26
P8	B16	2-2	2-2	2-2	2-2	2-2	2-2	2-2	2-2	2-2	S10	B11	1
P9	B23	3-2	3-2	3-2	3-2	3-2	3-2	3-2	3-2	3-2	S12	B5	2
P10	B30	4-2	4-2	4-2	4-2	4-2	4-2	4-2	4-2	4-2	S13	B12	3
P11	B3	5-2	5-2	5-2	5-2	5-2	5-2	5-2	5-2	5-2	S14	B6	4
P12	B10	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	S7	B13	5
P13	B17	2-3	2-3	2-3	2-3	2-3	2-3	2-3	2-3	2-3	S8	B7	6
P14	B24	3-3	3-3	3-3	3-3	3-3	3-3	3-3	3-3	3-3	S11	B14	7
P15	B31	4-3	4-3	4-3	4-3	4-3	4-3	4-3	4-3	4-3	d	–	8
P16	B4	5-3	5-3	5-3	5-3	5-3	5-3	5-3	5-3	5-3	C	–	9
P17	B11	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	b	RANDOM	10
P18	B18	2-4	2-4	2-4	2-4	2-4	2-4	2-4	2-4	2-4	a	PRGM	11
P19	B25	3-4	3-4	3-4	3-4	3-4	3-4	3-4	3-4	3-4	g	AUTO MARK	12
P20	B32	4-4	4-4	4-4	4-4	4-4	4-4	4-4	4-4	4-4	e	TIME MARK	13
P21	B5	5-4	5-4	5-4	5-4	5-4	5-4	5-4	5-4	5-4	–	MD REC	14
P22	B12	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	–	TAPE REC	15
P23	B19	2-5	2-5	2-5	2-5	2-5	2-5	2-5	2-5	2-5	–	)	16
P24	B26	3-5	3-5	3-5	3-5	3-5	3-5	3-5	3-5	3-5	S21	(	17
P25	B33	4-5	4-5	4-5	4-5	4-5	4-5	4-5	4-5	4-5	(ROCK)	◢◤	18
P26	B6	5-5	5-5	5-5	5-5	5-5	5-5	5-5	5-5	5-5	(POP)	EDIT	19
P27	B13	1-6	1-6	1-6	1-6	1-6	1-6	1-6	1-6	1-6	(CLASSIC)	MD	20
P28	B20	2-6	2-6	2-6	2-6	2-6	2-6	2-6	2-6	2-6	S16	CD	((●))
P29	B27	3-6	3-6	3-6	3-6	3-6	3-6	3-6	3-6	3-6	S17	–	MONO
P30	B34	4-6	4-6	4-6	4-6	4-6	4-6	4-6	4-6	4-6	S18	–	SURROUND
P31	B7	5-6	5-6	5-6	5-6	5-6	5-6	5-6	5-6	5-6	S19	–	Q
P32	B14	1-7	1-7	1-7	1-7	1-7	1-7	1-7	1-7	1-7	S20	–	–
P33	B21	2-7	2-7	2-7	2-7	2-7	2-7	2-7	2-7	2-7	S15	–	–
P34	B28	3-7	3-7	3-7	3-7	3-7	3-7	3-7	3-7	3-7	REC	–	–
P35	B35	4-7	4-7	4-7	4-7	4-7	4-7	4-7	4-7	4-7	SLEEP	–	–
P36	–	5-7	5-7	5-7	5-7	5-7	5-7	5-7	5-7	5-7	◴	–	–

PIN CONNECTION

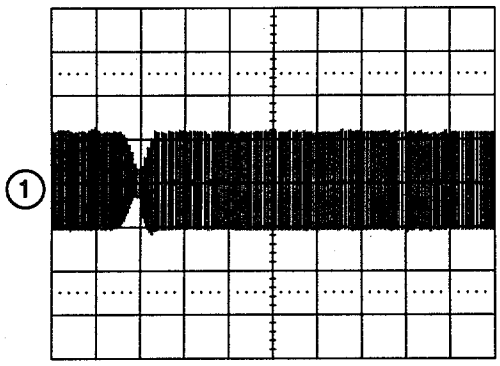
PIN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
CONNECTION	F1	F1	NP	NP	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	P14	P15	P16	P17	P18	P19	P20	P21	P22	P23	P24	P25	P26	P27

PIN	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62
CONNECTION	P28	P29	P30	P31	P32	P33	P34	P35	P36	NC	NC	NC	NC	NC	1G	2G	3G	4G	5G	6G	7G	8G	9G	10G	11G	12G	13G	NP	NP	F2	F2

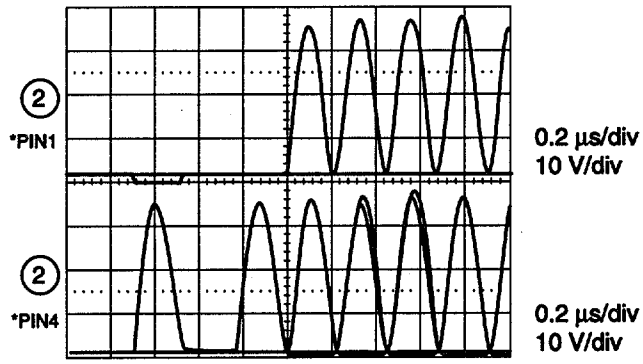
NOTE
1) F1, F2-----FILAMENT 3) NC--------NO CONNECTION 5) 1G~13G---GRID
2) NP--------NO PIN 4) DL--------DATUM LINE

WAVEFORM (MD MAIN)

① IC100 PIN 38

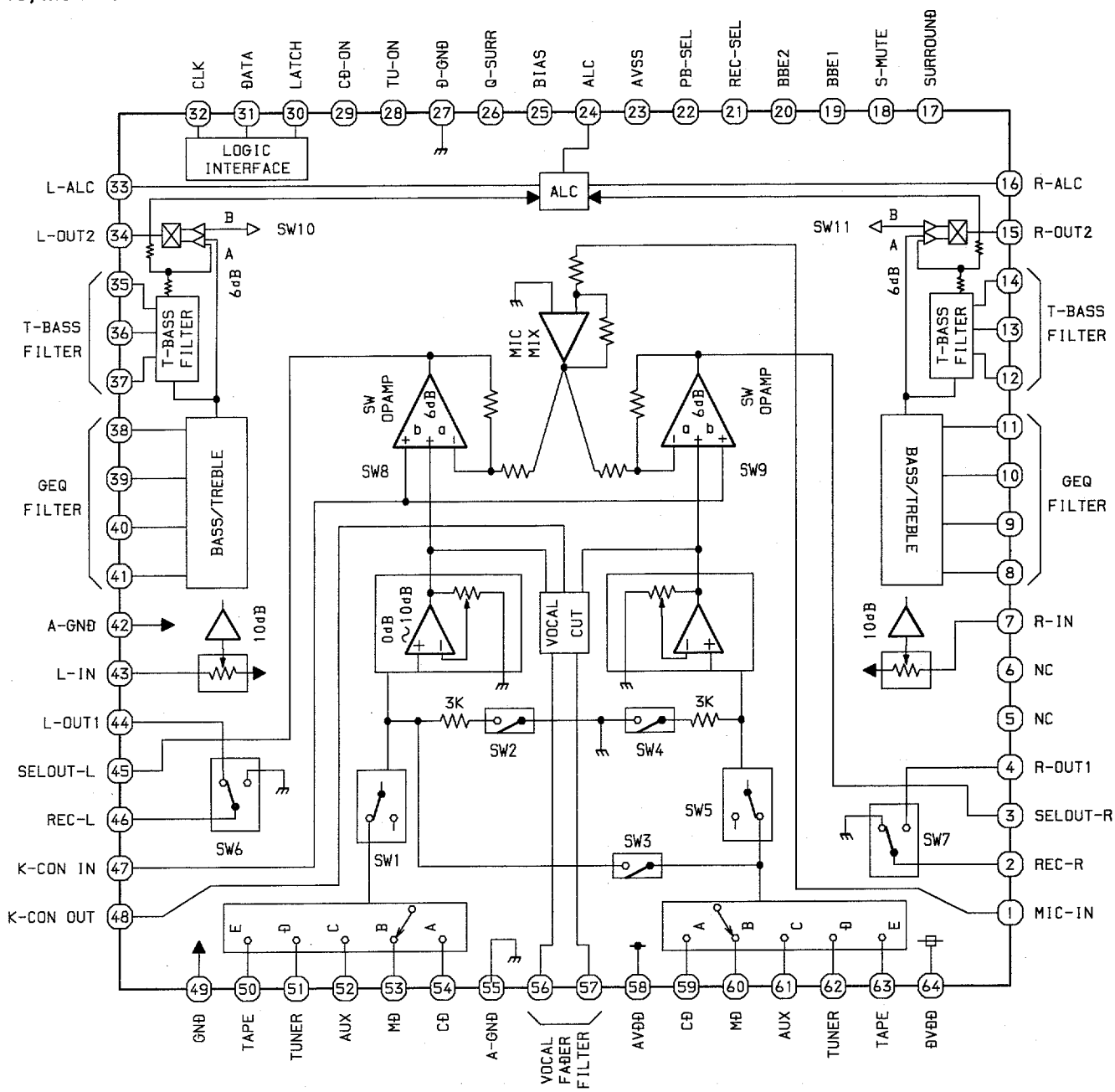


② CN201 PIN 1
CN201 PIN 4

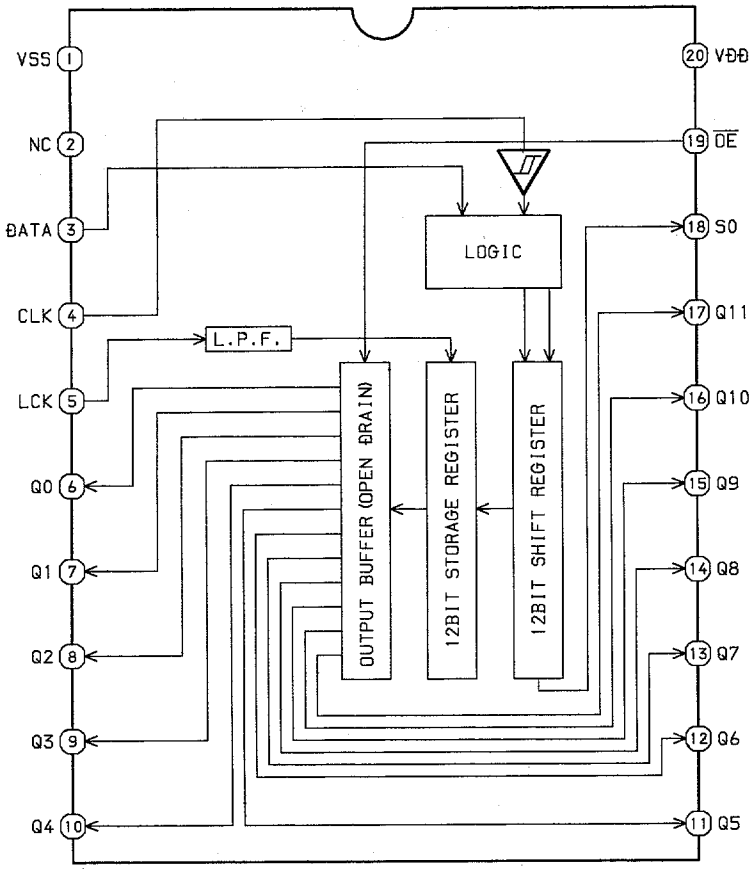


IC BLOCK DIAGRAM – 3

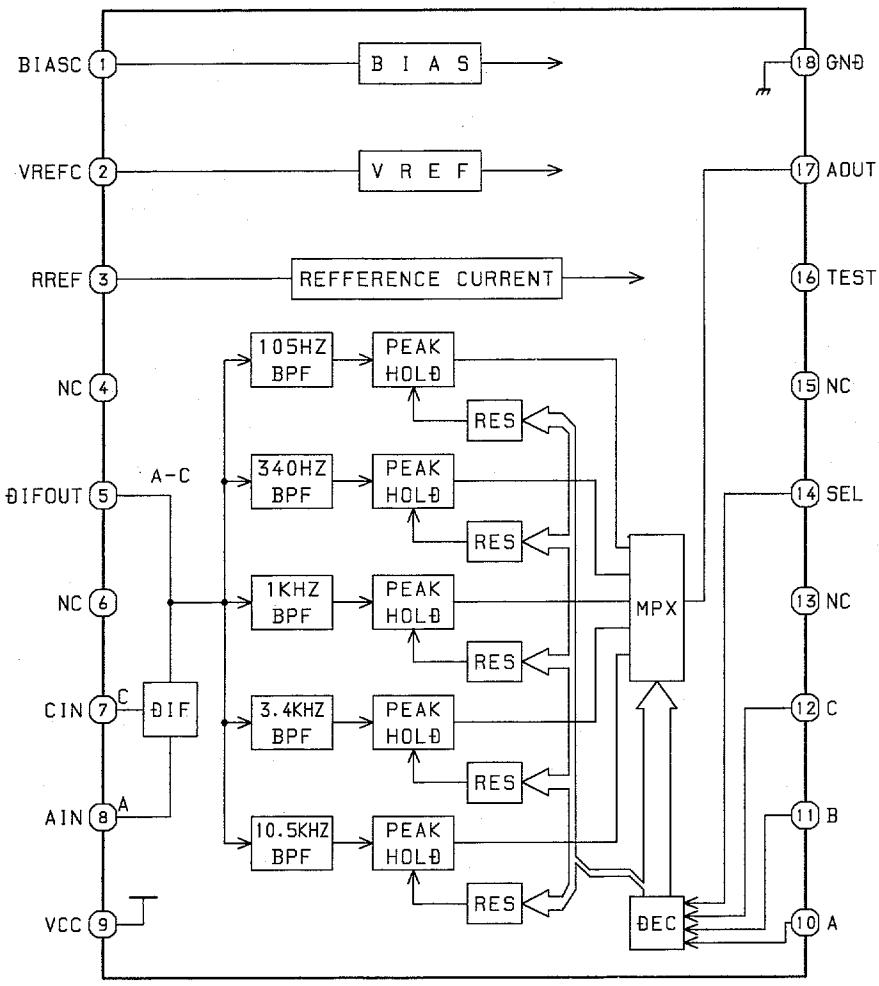
IC, M62445FP–600D



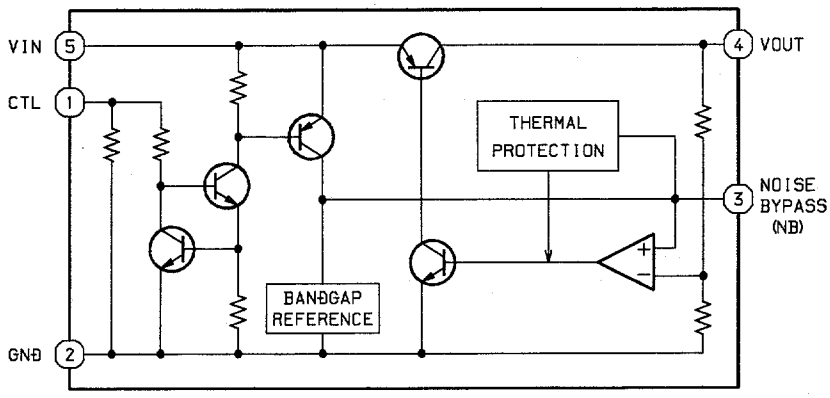
IC, BU2099FV



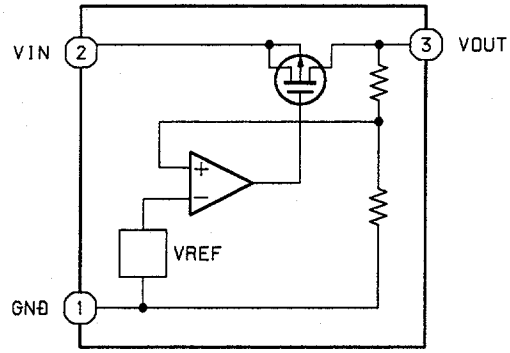
IC, BA3835F



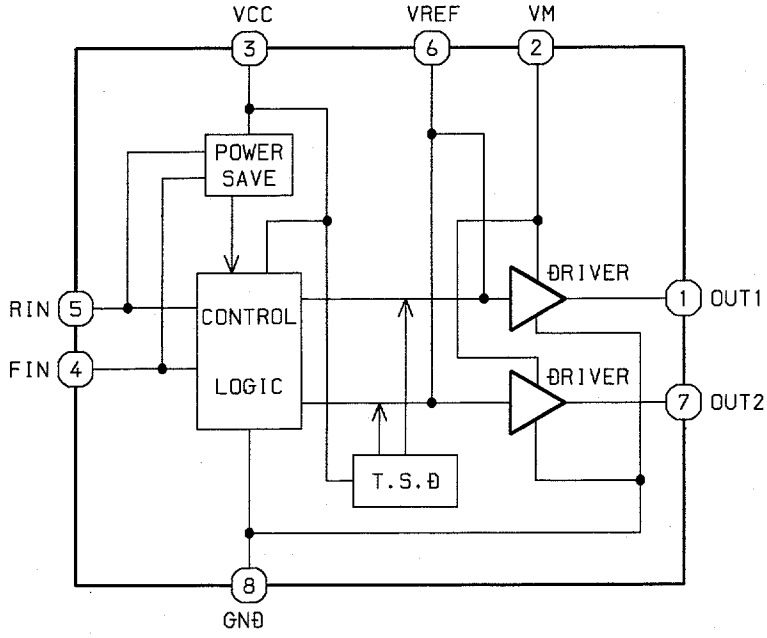
IC, NJM2370U33



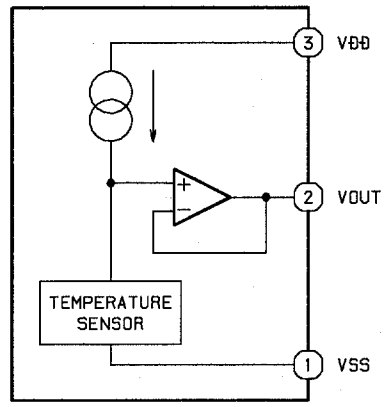
IC, NJU7221U30
IC, NJU7221U35



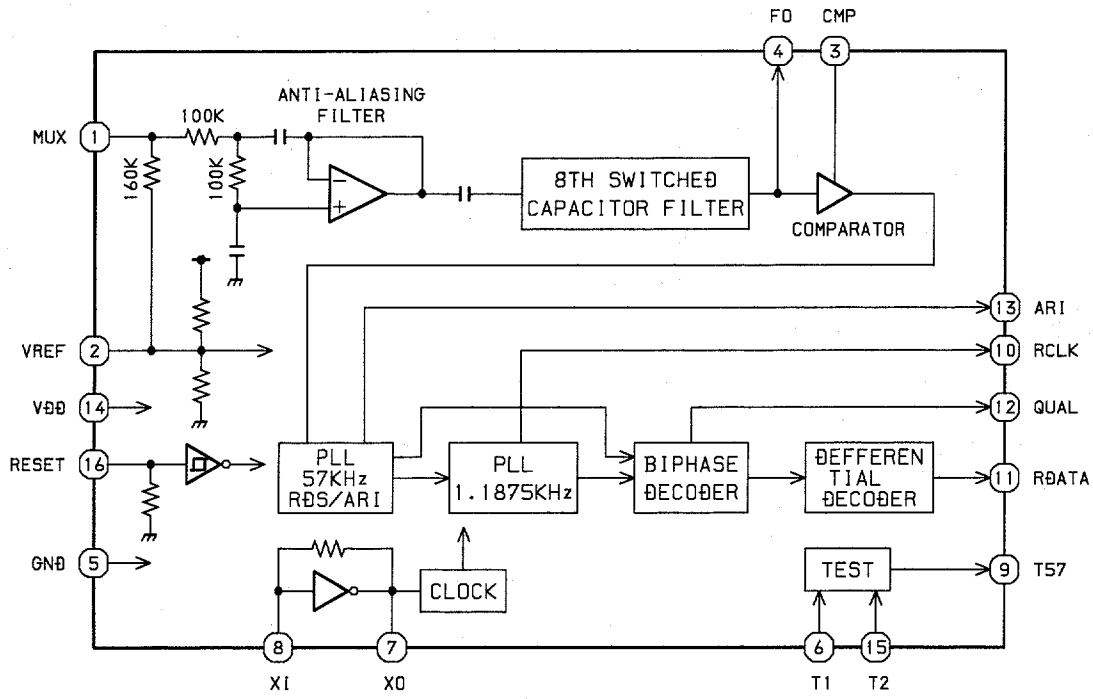
IC, BA6417F



1C, S-8110AMP



IC, BU1920FS



IC DESCRIPTION

IC, LC876572-5K43

Pin No.	Pin Name	I/O	Description
1	O-$\overline{\text{CD.OPEN}}$	O	CD tray open output.
2	O-$\overline{\text{CD.CLOSE}}$	O	CD tray close output.
3	O-$\overline{\text{POWER}}$	O	System power supply ON/$\overline{\text{OFF}}$ output pin.
4	O-CD.DATA / I-RDS.DATA	O/I	CD control data output / RDS data input.
5	O-LED.STB	O	Strobe output for shift register IC.
6	O-MAIN.STB	O	Strobe output for function IC (M62445FP).
7	O-DATA	O	Function IC (M62445FP) / TUNER PLL control data output.
8	O-CLK / O-PLL.CLK	O	Function IC (M62445FP) / TUNER PLL clock output.
9	O-$\overline{\text{MOTOR}}$	O	Tape deck motor ON/$\overline{\text{OFF}}$ output.
10	O-MUTE	O	System mute ON/$\overline{\text{OFF}}$ output pin.
11	RESET	–	Reset terminal.
12	I-RE.VOL	–	Volume JOG A/D input.
13	I-RE.MULTI	I	Multi JOG A/D input.
14	VSS1	–	Connected to GND.
15	CF1	–	9.43MHz oscillator circuit.
16	CF2		
17	VDD1	–	Connected to VDD (Backup).
18	I-$\overline{\text{HOLD}}$	I	Power-failure detection A/D input pin.
19	I-KEY-1	I	KEY-1 A/D input.
20	I-KEY-2	I	KEY-2 A/D input.
21	I-KEY-3	I	KEY-3 A/D input.
22	I-DISH	I	CD turntable rotation input.
23	I-CDSW	I	CD switch detect A/D input.
24	I-TU.SIG / $\overline{\text{MS}}$	I	RDS tuning signal / Deck music sensor input A/D input.
25	I-SPEANA	I	Spectrum analyzer level A/D input.
26	O-$\overline{\text{CLK.SHIFT}}$	O	Microcomputer clock shift output.
27	I-WRQ / RDS-CLK	I	CD control WRQ input / RDS clock input.
28	I-TM-BASE	I	TUNER time base (8Hz) input.
29	I-$\overline{\text{RMC}}$	I	System remote control input.
30	G13	O	FL grid (G13) output.
31	G12	O	FL grid (G12) output.
32	G11	O	FL grid (G11) output.
33	G10	O	FL grid (G10) output.
34	G9	O	FL grid (G9) output.
35	G8	O	FL grid (G8) output.
36	G7	O	FL grid (G7) output.
37	G6	O	FL grid (G6) output.
38	G5	O	FL grid (G5) output.
39	G4	O	FL grid (G4) output.
40	G3	O	FL grid (G3) output.

Pin No.	Pin Name	I/O	Description
41	G2	O	FL grid (G2) output.
42	G1	O	FL grid (G1) output.
43	P36	O	FL segment (P36) output.
44	P35	O	FL segment (P35) output.
45	P34	O	FL segment (P34) output.
46	VDD3	–	Connected to VDD (for FL).
47	P33	O	FL segment (P33) output.
48	P32	O	FL segment (P32) output.
49	P31	O	FL segment (P31) output.
50	P30	O	FL segment (P30) output.
51	VP	–	Connected to –VFL.
52	P29 / O-SPEANA.A	O	FL segment (P29) output / Spectrum analyzer band switch output (A).
53	P28 / O-SPEANA.B	O	FL segment (P28) output / Spectrum analyzer band switch output (B).
54	P27 / O-SPEANA.C	O	FL segment (P27) output / Spectrum analyzer band switch output (C).
55	P26	O	FL segment (P26) output.
56	P25	O	FL segment (P25) output.
57	P24 / DEMO	O/I	FL segment (P24) output / DEMO diode input.
58	P23 / RDS	O/I	FL segment (P23) output / RDS diode input.
59	P22 / FM1	O/I	FL segment (P22) output / FM1 diode input.
60	P21 / SW	O/I	FL segment (P21) output / SW diode input.
61	P20 / LW	O/I	FL segment (P20) output / LW diode input.
62	P19 / AMST	O/I	FL segment (P19) output / AM STEREO diode input.
63	P18 / AM10K	O/I	FL segment (P18) output / AM10K step initial diode input.
64	P17 / I-$\overline{\text{CST2}}$	O/I	FL segment (P17) output / DECK2 cassette $\overline{\text{EXIST}}$/NOT EXIST SW input.
65	P16 / I-$\overline{\text{REB2}}$	O/I	FL segment (P16) output / DECK2 side-B record $\overline{\text{ABLE}}$/DISABLE SW input.
66	P15 / I-$\overline{\text{CAM2}}$	O/I	FL segment (P15) output / DECK2 CAM SW $\overline{\text{ON}}$/OFF input.
67	P14 / I-AUTO1	O/I	FL segment (P14) output / DECK1 AUTO stop detect input.
68	P13 / I-AUTO2	O/I	FL segment (P13) output / DECK2 AUTO stop detect input.
69	P12 / I-$\overline{\text{CAM1}}$	O/I	FL segment (P12) output / DECK1 CAM SW $\overline{\text{ON}}$/OFF input.
70	P11 / I-$\overline{\text{CST1}}$	O/I	FL segment (P11) output / DECK1 cassette $\overline{\text{EXIST}}$/NOT EXIST SW input.
71	P10 / I-$\overline{\text{REA2}}$	O/I	FL segment (P10) output / DECK2 side-A record $\overline{\text{ABLE}}$/DISABLE SW input.
72	VDD4	–	Connected to VDD (for FL).
73	P9	O	FL segment (P9) output.
74	P8	O	FL segment (P8) output.
75	P7	O	FL segment (P7) output.
76	P6	O	FL segment (P6) output.
77	P5	O	FL segment (P5) output.
78	P4	O	FL segment (P4) output.
79	P3	O	FL segment (P3) output.
80	P2	O	FL segment (P2) output.
81	P1	O	FL segment (P1) output.

Pin No.	Pin Name	I/O	Description
82	O-KSCAN	O	Key-scan timing output.
83	I-STEREO / I-DRF	I	TUNER STEREO detection input / CD control signal DRF input.
84	I-$\overline{\text{IFC}}$ / I-SUBQ	I	TUNER TUNE, IF COUNT input / CD control signal SUBQ input.
85	O-DISH.FWD	O	CD turntable forward-rotation output.
86	O-DISH.REV	O	CD turntable reverse-rotation output.
87	O-PLLCE	O	TUNER PLL chip enable output.
88	O-CD.CE	O	CD control chip enable output.
89	VSS2	–	Connected to GND.
90	VDD2	–	Connected to VDD (Backup).
91	O-CD.CLK	O	CD control clock output.
92	O-$\overline{\text{SOL1}}$	O	DECK1 plunger $\overline{\text{ON}}$/OFF output.
93	O-$\overline{\text{SOL2}}$	O	DECK2 plunger $\overline{\text{ON}}$/OFF output.
94	O-$\overline{\text{SRST}}$	O	MD system reset signal output.
95	O-SOUT	O	MD control data output.
96	I-SIN	I	MD control data input.
97	I-$\overline{\text{ACLK}}$	I	MD control clock input.
98	O-$\overline{\text{ARDY}}$	O	MD control ready output.
99	O-$\overline{\text{SREQ}}$	O	MD control system-computer request output.
100	I-$\overline{\text{MREQ}}$	I	MD control MD microcomputer request output.

IC, CXP81952M-523R

Pin No.	Pin Name	I/O	Description
1	MCAS	–	Not used.
2	MRAS	–	Not used.
3	BUP	–	Not used.
4	AMUTE	O	Output AUDIO MUTE signal.
5	ESK	O	Serial clock output pin for EEPROM interface.
6	EDO	O	Serial data output pin for EEPROM interface.
7	EDI	I	Serial data input pin for EEPROM interface.
8	ECS	O	Output EEPROM chip select signal.
9	NC	–	Not used.
10	RFLCT	I	Input terminal for DISC reflection rate detection SW.
11	NC	–	Not used.
12	LS	I	Input pin for pickup inner-circumference detect switch.
13	LDSW	I	Loading mechanism, EJECT position detect switch input.
14	PBSW	I	Loading mechanism, PB position detect switch input. (Not used)
15	RECSW	I	Loading mechanism, REC position detect switch input.
16 ~ 17	NC	–	Not used.
18	ACOFF	–	Not used.
19	SREQ	I	Input system-computer send request signal for system-computer interface.
20	EXTDIN	O	External digital IN permit signal output.
21	SLOW	O	Loading mechanism speed control signal output.
22	LOAD	O	Loading mechanism operating-direction control signal output 1.
23	EJECT	O	Loading mechanism operating-direction control signal output 2.
24	MREQ	O	Output MD microcomputer send request signal for system-computer interface.
25	DRIVE	O	Output EFM driver ON/OFF signal.
26 ~ 36	NC	–	Not used.
37	MP	–	Connected to VSS.
38	SRST	I	Input MD microcomputer reset signal.
39	DGND	–	Connected to VSS.
40	XTALO	O	Crystal oscillator terminal 1 for system clock oscillator.
41	XTALI	I	Crystal oscillator terminal 2 for system clock oscillator.
42	ARDY	I	Input READY signal for system-computer interface.
43	SIN	I	Input serial data for system-computer interface.
44	SOUT	O	Output serial data for system-computer interface.
45	ACLK	O	Output serial clock for system-computer interface.
46	XLAT	O	Output latch signal for CXD2652AR interface.
47	XRST	O	Output reset signal for CXD2652AR.
48	XSTBY	O	Output standby signal for CXA2523AR.
49	NC	–	Not used.
50	AVSS	–	Connected to VSS.
51	AVREF	–	Connected to VDD.
52	AVDD	–	Connected to VDD.

Pin No.	Pin Name	I/O	Description
53 ~ 55	NC	–	Not used (PLL UP).
56	SLF	–	Not used (PLL UP).
57	SLR	–	Not used (PLL UP).
58	TEMP	I	S-8110AMP OUT signal input pin.
59	MAGIC	–	Not used (PLL UP).
60	NC	–	Not used (PLL UP).
61	TEST	–	Not used (PLL UP).
62	DISCPRO	I	Input pin for prevention of DISC error erase SW.
63	MNT3	I	Monitor signal input pin 3 for CXD2652AR.
64	MNT2	I	Monitor signal input pin 2 for CXD2652AR.
65	MNT1	I	Monitor signal input pin 1 for CXD2652AR.
66	MNT0	I	Monitor signal input pin 0 for CXD2652AR.
67	SENS	I	Input SENS signal for CXD2652AR.
68	FLG	I	Monitor FLAG included in SRDT of CXD2652AR interface.
69 ~ 70	NC	–	Not used.
71	P-CONT	–	Not used.
72	RFSW	–	Not used.
73 ~ 74	NC	–	Not used.
75	DQSY	I	Synchronize input pin for digital-in SUB-Q.
76	XINT	I	Status synchronize input pin for CXD2652AR.
77	SRDT	I	Serial data input pin for CXD2652AR interface.
78	SWDT	O	Serial data output pin for CXD2652AR interface.
79	SCLK	O	Serial clock output pin for CXD2652AR interface.
80	SQSY	I	SUB-Q, ADIP synchronize input.
81 ~ 83	NC	–	Not used.
84	TXI	–	Connected to VSS.
85	TXO	–	Open. (Not used)
86	VSS	–	Connected to VSS.
87	VDD	–	Connected to VDD.
88	NC	–	Connected to VDD.
89	NC	–	Not used.
90	DRVMUTE	O	Outputs MUTE signal for BA5970FP.
91 ~ 94	NC	–	Not used.
95	RECP	O	Laser power switch signal output pin.
96	TX	O	Output permission signal of record data output.
97	MOD	O	Output ON/OFF signal for high frequency modulation circuit.
98	OPMUTE	O	Laser MUTE signal output pin.
99	ARST	O	AK4516VF reset signal output pin.
100	DENF	O	De-emphasis ON/OFF signal output pin.

IC, CXD2652AR

Pin No.	Pin Name	I/O	Description
1	MNT0	O	Monitor output pin.
2	MNT1	O	Monitor output pin.
3	MNT2	O	Monitor output pin.
4	MNT3	O	Monitor output pin.
5	SWDT	I	Data input pin for micro-processor serial interface.
6	SCLK	I	Shift clock input pin for micro-processor serial interface.
7	XLAT	I	Latch input pin for micro-processor serial interface. Shut down: Latch.
8	SRDT	O	Data output pin for micro-processor serial interface.
9	SENS	O	Output internal status according to micro-processor serial interface address.
10	XRST	I	Reset input pin. "L": Reset.
11	SQSY	O	Disc sub-code Q synchronize / ADIP synchronize output.
12	DQSY	O	When source of the digital in is set to CD or MD, output sub-code Q synchronize of UbitCD or MD format.
13	RECP	I	Laser power switching input pin. "H": Record power. 'L": Playback power.
14	XINT	O	Intrusion demand output pin. "L" setting when intrusion demand status is generated.
15	TX	I	Record data output enable signal input pin. "H": Enable.
16	OSCI	I	Crystal oscillator circuit input pin.
17	OSCO	O	Crystal oscillator circuit output pin. (OSCI inverted output)
18	XTSL	I	Switch input frequency of OSCI pin. (Connected to DVDD) "H": 512Fs (22.5792MHz), "L": 1024Fs (45.158MHz).
19	NC	–	Not used. (Connected to DVDD)
20	DVSS	–	Digital GND.
21	DIN	I	Input digital audio interface signal.
22	DOUT	O	Output digital audio interface signal.
23	ADDT	I	Analog record input pin. (Connected to external A/D converter output)
24	DADT	O	REC monitor output pin / Output decode audio data.
25	LRCK	O	Output LRCK (44.1kHz) to external audio block.
26	XBCK	O	Output bit clock (2.8224MHz) to external audio block.
27	FS256	O	Output 256Fs (11.2896MHz).
28	DVDD	–	Digital power supply.
29	A03	O	Output address for external DRAM.
30	A02	O	Output address for external DRAM.
31	A01	O	Output address for external DRAM.
32	A00	O	Output address for external DRAM.
33	A10	O	Output address for external DRAM. (Not used)
34	A04	O	Output address for external DRAM.
35	A05	O	Output address for external DRAM.
36	A06	O	Output address for external DRAM.
37	A07	O	Output address for external DRAM.
38	A08	O	Output address for external DRAM.
39	A11	O	Output address for external DRAM. (Not used)

Pin No.	Pin Name	I/O	Description
40	DVSS	–	Digital GND.
41	XOE	O	Output enable pin for external DRAM.
42	XCAS	O	Output $\overline{CAS}$ for external DRAM.
43	A09	O	Output address for external DRAM.
44	XRAS	O	Output $\overline{RAS}$ for external DRAM.
45	XWE	O	Write enable for external DRAM.
46	D1	I/O	Data pass for external DRAM.
47	D0	I/O	Data pass for external DRAM.
48	D2	I/O	Data pass for external DRAM.
49	D3	I/O	Data pass for external DRAM.
50	MVCI	I	Clock input pin for external VCO (784fs). (Connected to DVSS)
51	ASYO	O	Full swing output pin for playback EFM ("L" = VSS, "H" = VDD).
52	ASY1	I	Input comparator slice voltage for playback EFM.
53	AVDD	–	Analog power supply.
54	BIAS	I	Input comparator bias current for playback EFM.
55	RFI	I	Input RF signal for playback EFM.
56	AVSS	–	Analog GND.
57	PDO	O	Output phase comparison for analog PLL of EFM decoder.
58	PCO	O	Output phase comparison for playback digital PLL, master PLL and record EFM PLL.
59	FILI	I	Input filter for playback digital PLL, master PLL and record EFM PLL.
60	FILO	O	Output filter for playback digital PLL, master PLL and record EFM PLL.
61	CLTV	I	Input internal VCO control voltage for playback digital PLL, master PLL and record EFM PLL.
62	PEAK	I	Input peak hold signal for beam spectrum.
63	BOTM	I	Input bottom hold signal for beam spectrum.
64	ABCD	I	Input beam spectrum signal.
65	FE	I	Input focus error signal.
66	AUXI	I	Backup input 1.
67	VC	I	Input midpoint voltage.
68	ADIO	O	Monitor output pin for A/D converter input signal. (Not used)
69	AVDD	–	Analog power supply.
70	ADRT	I	Input maximum voltage of A/D converter operation range.
71	ADRB	I	Input minimum voltage of A/D converter operation range.
72	AVSS	–	Analog GND.
73	SE	I	Input sled error signal.
74	TE	I	Input tracking error signal.
75	AUX2	I	Backup input 2. (Connected to AVDD)
76	DCHG	I	Connected to the power supply of low impedance. (Connected to AVDD)
77	APC	I	Input error signal for laser digital APC. (Connected to AVDD)
78	ADFG	I	Input ADIP binary data FM signal (22.05kHz ± 1kHz).
79	FOCNT	O	Current setting output pin for CXA2523AR.

Pin No.	Pin Name	I/O	Description
80	XLRF	O	Latch output pin for CXA2523AR control. Shut down: Latch.
81	CKRF	O	Shift clock output pin for CXA2523AR control.
82	DTRF	O	Data output pin for CXA2523AR control.
83	APCREF	O	Reference PWM output pin for laser APC.
84	LDDR	O	PWM output for laser digital APC. (Not used)
85	TRDR	O	Tracking servo drive PWM output (–).
86	TFDR	O	Tracking servo drive PWM output (+).
87	DVDD	–	Digital power supply.
88	FFDR	O	Focus servo drive PWM output (+).
89	FRDR	O	Focus servo drive PWM output (–).
90	FS4	O	Output 4Fs (176.4kHz). (Not used)
91	SRDR	O	Sled servo drive PWM output (–).
92	SFDR	O	Sled servo drive PWM output (+).
93	SPRD	O	Spindle servo drive PWM output. (PWM (–) or polarity)
94	SPFD	O	Spindle servo drive PWM output. (PWM (+) or PWM absolute value)
95	FGIN	I	Spindle CAV servo FG input. (Connected to DVSS)
96	TEST 1	I	Test pin. (Connected to DVSS)
97	TEST 2	I	Test pin. (Connected to DVSS)
98	TEST 3	I	Test pin. (Connected to DVSS)
99	DVSS	–	Digital GND.
100	EFMO	O	Output "L" at playback, EFM (encode data) at recording.

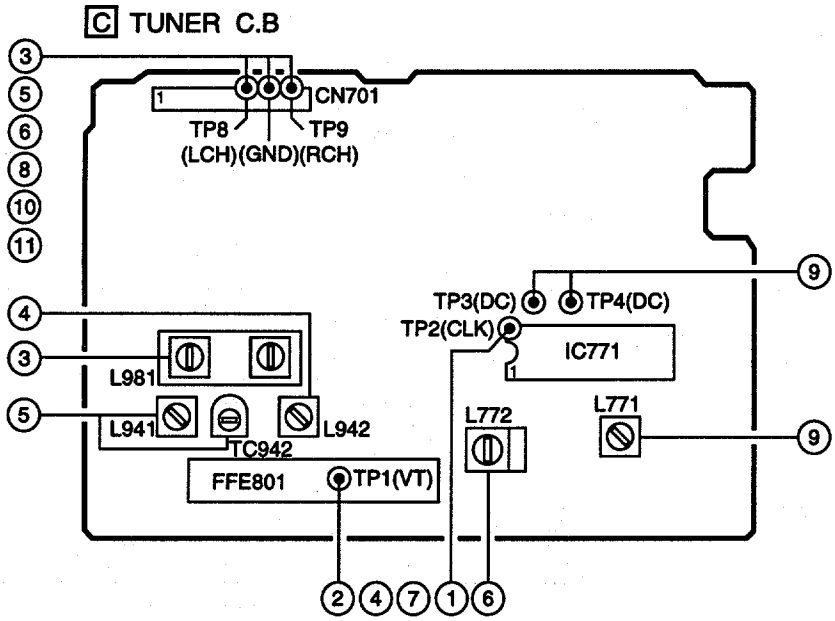
IC, CXA2523AR

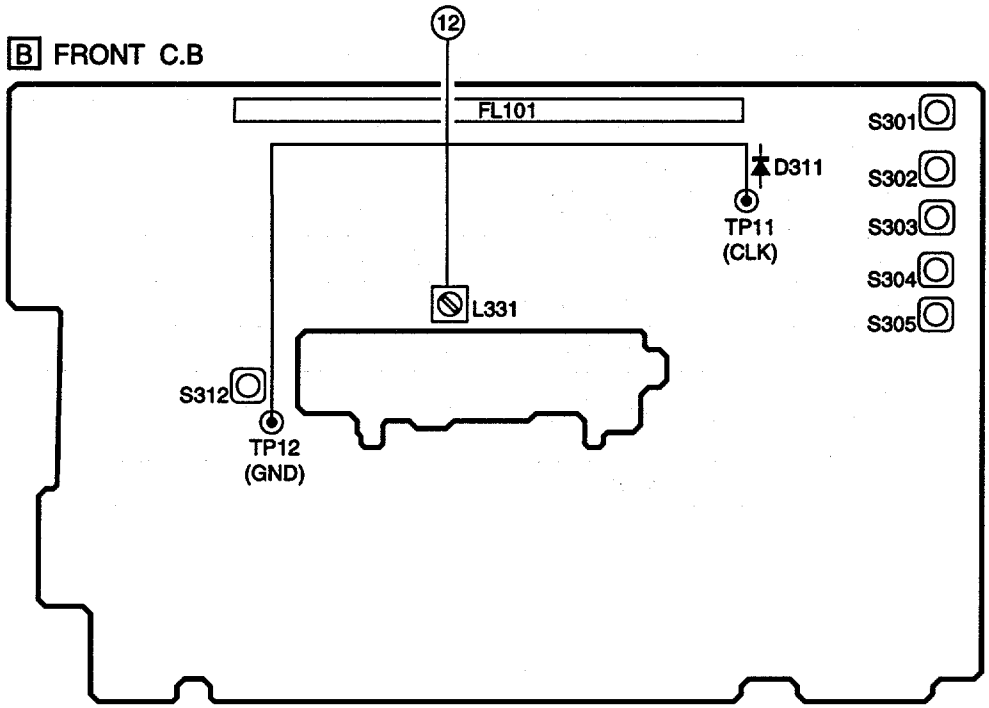
Pin No.	Pin Name	I/O	Description
1	I	I	Input "I" RF signal converted to I-V.
2	J	I	Input "J" RF signal converted to I-V.
3	VC	O	Output voltage for VCC/2.
4	A	I	Input current for main beam servo signal A.
5	B	I	Input current for main beam servo signal B.
6	C	I	Input currentt for main beam servo signal C.
7	D	I	Input current for main beam servo signal D.
8	E	I	Input current for side beam servo signal E.
9	F	I	Input current for side beam servo signal F.
10	PD	I	Input beam spectrum monitor signal.
11	APC	O	Output laser APC.
12	APCREF	I	Input reference voltage for laser power setting.
13	GND	–	GND.

Pin No.	Pin Name	I/O	Description
14	TEMPI	I	Temperature sensor connection pin. (Not used)
15	TEMPR	I	Temperature sensor connection pin. Output reference voltage. (Not used)
16	SWDT	I	Input micro-processor serial interface data.
17	SCLK	I	Input micro-processor serial interface shift clock.
18	XLAT	I	Input micro-processor serial interface latch. "L": Latch.
19	XSTBY	I	Standby setting pin. "H": Normal mode, "L": Standby.
20	FOCNT	I	Internal current setting pin.
21	VREF	O	Output reference voltage. (Not used)
22	EQADJ	I/O	EQ central frequency setting pin.
23	3TADJ	I/O	BPF3T central frequency setting pin.
24	VCC	–	Power supply pin.
25	WBLADJ	I/O	BPF22 central frequency setting pin.
26	TE	O	Output tracking error signal.
27	CSLED	–	LPF capacitor connection pin for SLED error signal.
28	SE	O	Output SLED error signal.
29	ADFM	O	Output ADIP FM signal.
30	ADIN	I	Input ADIP signal comparator.
31	ADAGC	–	ADIPAGC capacitor connection pin.
32	ADFG	O	Output ADIP2 binary data signal.
33	AUX	O	13 output / Output temperature signal. Switched by serial command.
34	FE	O	Output focus error signal.
35	ABCD	O	Output beam spectrum signal for main beam servo detector.
36	BOTM	O	Output bottom hold signal for RF/ABCD.
37	PEAK	O	Output peak hold signal for RF/ABCD.
38	RF	O	RF equalizer output pin.
39	RF AGC	–	RFAGC capacitor connection pin.
40	AGCI	I	RFAGC input pin.
41	COMPO	O	User comparator output pin. (Not used)
42	COMPP	I	User comparator non-inverted input pin. (Connected to GND)
43	ADDC	I/O	Capacitor connection pin for ADIP amplifier on return circuit.
44	OPO	O	Output pin for user operational amplifier. (Not used)
45	OPN	I	Non-inverted input pin for user operational amplifier.
46	RFO	O	RF amplifier output pin. Check point for eye pattern.
47	MORFI	I	Input pin where Groove RF signal is AC coupled.
48	MORFO	O	Output pin for Groove RF signal.

IC, LC72131D

<table>
<tr><th>Pin No.</th><th>Pin Name</th><th>I/O</th><th>Description</th></tr>
<tr><td>1</td><td>XIN</td><td>I</td><td rowspan="2">A crystal oscillator (4.5MHz) is connected between these pins.</td></tr>
<tr><td>22</td><td>XOUT</td><td>O</td></tr>
<tr><td>2</td><td>NC</td><td>–</td><td>Not used.</td></tr>
<tr><td>3</td><td>CE</td><td>I</td><td>To enable the IC. Active "H".</td></tr>
<tr><td>4</td><td>DI</td><td>I</td><td>Digital data input from CPU (LC876572V-5K43) when relevant key is operated. Active "H".</td></tr>
<tr><td>5</td><td>CL</td><td>I</td><td>To clock in the data DI.</td></tr>
<tr><td>6</td><td>DO</td><td>O</td><td>Digital data output to CPU (LC876572V-5K43).</td></tr>
<tr><td>7</td><td>T-BASE</td><td>O</td><td>Outputs a reference clock signal (8Hz) for the clock.</td></tr>
<tr><td>8</td><td>$\overline{\text{MONO}}$ / BEAT</td><td>O</td><td>Outputs "H" when MONO / BEAT is switched.</td></tr>
<tr><td>9</td><td>$\overline{\text{FM}}$ / $\overline{\text{SW}}$</td><td>O</td><td>Output "L" or "H" as follows:
<table>
<tr><th colspan="2">2 BAND</th><th colspan="3">3 BAND</th><th colspan="3">3 BAND</th></tr>
<tr><th>AM</th><th>FM</th><th>LW</th><th>MW</th><th>FM</th><th>MW</th><th>SW</th><th>FM</th></tr>
<tr><td>H</td><td>L</td><td>H</td><td>H</td><td>L</td><td>H</td><td>L</td><td>L</td></tr>
</table></td></tr>
<tr><td>10</td><td>$\overline{\text{MW}}$ / SW</td><td>O</td><td>Outputs "L" or "H" as follows:
<table>
<tr><th colspan="2">2 BAND</th><th colspan="3">3 BAND</th><th colspan="3">3 BAND</th></tr>
<tr><th>AM</th><th>FM</th><th>LW</th><th>MW</th><th>FM</th><th>MW</th><th>SW</th><th>FM</th></tr>
<tr><td>L</td><td>L</td><td>H</td><td>L</td><td>L</td><td>L</td><td>H</td><td>L</td></tr>
</table></td></tr>
<tr><td>11</td><td>IF-MUTE</td><td>O</td><td>To control internal counter.</td></tr>
<tr><td>12</td><td>IF-IN</td><td>I</td><td>General purpose counter input.</td></tr>
<tr><td>13</td><td>$\overline{\text{TUNE}}$</td><td>I</td><td>Receives "L" when station is tuned.</td></tr>
<tr><td>14</td><td>NC</td><td>–</td><td>Not used.</td></tr>
<tr><td>15</td><td>AMIN</td><td>I</td><td>Receives the AM local oscillator frequency signal.</td></tr>
<tr><td>16</td><td>FMIN</td><td>I</td><td>Receives the FM local oscillator frequency signal.</td></tr>
<tr><td>17</td><td>VDD</td><td>–</td><td>Supply power to IC (+5V).</td></tr>
<tr><td>18</td><td>PD</td><td>O</td><td>PLL charge pump output.</td></tr>
<tr><td>19</td><td>AIN</td><td>I</td><td rowspan="2">The MOS transistor for PLL active low pass filter.</td></tr>
<tr><td>20</td><td>AOUT</td><td>O</td></tr>
<tr><td>21</td><td>VSS</td><td>–</td><td>Ground.</td></tr>
</table>


C TUNER C.B
CN701
TP8
(LCH)(GND)(RCH)
TP9
TP3(DC)
TP4(DC)
TP2(CLK)
IC771
L981
L941
TC942
L942
L772
L771
FFE801
TP1(VT)


B FRONT C.B
FL101
D311
TP11
(CLK)
S301
S302
S303
S304
S305
L331
S312
TP12
(GND)

< TUNER SECTION >

1. Clock Frequency Check
   Settings : • Test point : TP2 (CLK)
   Method : Set to MW 1602kHz and check that the test point is 2052kHz ± 45Hz.

2. MW VT Check
   Settings : • Test point : TP1 (VT)
   Method : Set to MW 1602kHz and check that the test point is less than 8.0V. Then set to MW 531kHz and check that the test point is more than 0.6V.

3. MW Tracking Adjustment
   Settings : • Test point : TP8 (Lch), TP9 (Rch)
   • Adjustment location : L981 (1/3)
   Method : Set to MW 999kHz and adjust L981 (1/3) so that the test point becomes maximum.

4. LW VT Adjustment
   Settings : • Test point : TP1 (VT)
   • Adjustment location : L942
   Method : Set to LW 144kHz and adjust L942 so that the test point becomes 1.3V ± 0.05V.
   Then set to LW 290kHz and check that the test point is less than 8.0V.

5. LW Tracking Adjustment
   Settings : • Test point : TP8 (Lch), TP9 (Rch)
   • Adjustment location :
   L941 ..... 144kHz
   TC942 ..... 290kHz
   Method : Set up TC942 to center before adjustment. The level at 144kHz is adjusted to MAX by L941. Then the level at 290kHz is adjusted to MAX by TC942.

6. AM IF Adjustment
   Settings : • Test point : TP8 (Lch), TP9 (Rch)
   • Adjustment location :
   L772 450kHz

7. FM VT Check
   Settings : • Test point : TP1 (VT)
   Method : Set to FM 108.0MHz and check that the test point is less than 8.0V. Then set to FM 87.5MHz and check that the test point is more than 0.5V.

8. FM Tracking Check
   Settings : • Test point : TP8 (Lch), TP9 (Rch)
   Method : Set to FM 98.0MHz and check that the test point is less than 13dBμV.

9. DC Balance / Mono Distortion Adjustment
   Settings : • Test point : TP3,TP4 (DC balance)
   • Adjustment location : L771
   • Input level : 60dBμV
   Method : Set to FM 98.0MHz and adjust L771 so that the voltage between TP3 and TP4 becomes 0V ± 0.04V.
   Next, check that the distortion is less than 1.3%.

10. Output Level Check
    <MW>
    Settings : • Test point : TP8 (Lch), TP9 (Rch)
    • Input level : 74dBμV
    Method : Set to MW 999kHz and check that the test point is 130mV ± 3dB.

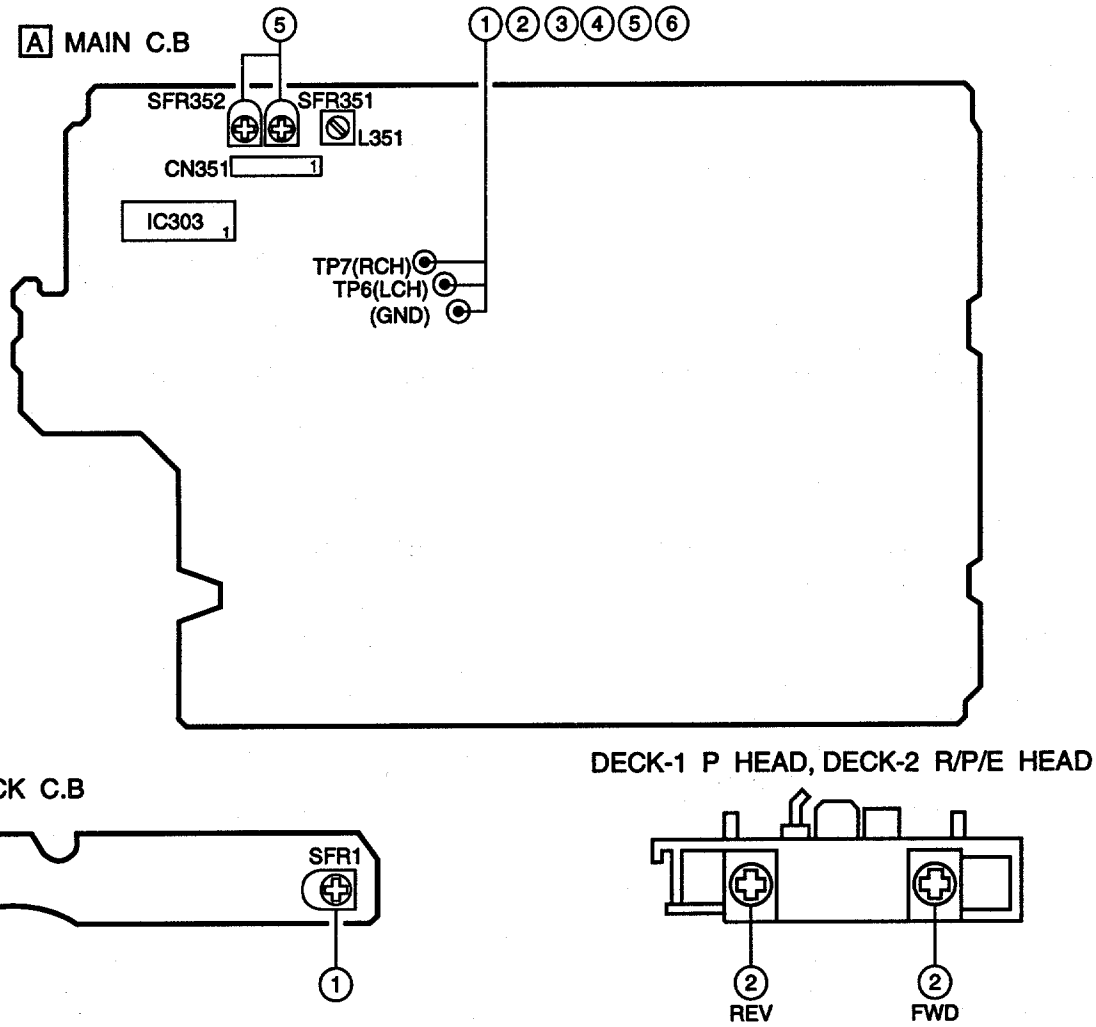
    <FM>
    Settings : • Test point : TP8 (Lch), TP9 (Rch)
    • Input level : 60dBμV
    Method : Set to FM 98.0MHz and check that the test point is 520mV ± 3dB.

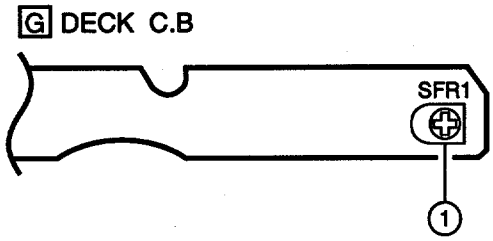
11. FM Separation Check
    Settings : • Test point : TP8 (Lch), TP9 (Rch)
    • Input level : 60dBμV
    Method : Set to FM 98.0MHz and check that the test point is more than 25dB.

< FRONT SECTION >

12. μ-con Clock Adjustment
    Settings : • Test point : TP11 (CLK)
    TP12 (GND)
    • Adjustment location : L331
    Method : Connect a frequency counter across TP11 and TP12. Then adjust L331 so that the test point becomes 209.5Hz ± 0.5Hz.

ADJUSTMENT – 2 <DECK>





< DECK SECTION >

1. Tape Speed Adjustment (DECK2)
   Settings : • Test tape : TTA–100
   • Test point : TP6 (Lch), TP7 (Rch)
   • Adjustment location : SFR1
   Method : Play back the test tape and adjust SFR1 so that the test point becomes 3000Hz ± 5Hz (FWD) and FWD SPEED ± 45Hz (REV).

2. Head Azimuth Adjustment (DECK1, DECK2)
   Settings : • Test tape : TTA–330
   • Test point : TP6 (Lch), TP7 (Rch)
   • Adjustment location : Head azimuth adjustment screw
   Method : Play back the 8kHz signal of the test tape and adjust screw so that the output becomes maximum. Next, perform on each FWD and REV PLAY mode.

3. PB Frequency Response Check (DECK1, DECK2)
   Settings : • Test tape : TTA–330
   • Test point : TP6 (Lch), TP7 (Rch)
   Method : Play back the 315Hz and 8kHz signals of the test tape and check that the output ratio of the 8kHz signal with respect to that of the 315Hz signal is 0dB ± 3dB.

4. PB Sensitivity Check (DECK1, DECK2)
   Settings : • Test tape : TTA–200
   • Test point : TP6 (Lch), TP7 (Rch)
   Method : Play back the 400Hz and check that the output level at TP6, TP7 is 280mV ± 3dB.

5. REC/PB Frequency Response Adjustment (DECK2)
   Settings : • Test tape : TTA–602
   • Test point : TP6 (Lch), TP7 (Rch)
   • Input signal : 1kHz/10kHz (–20VU)
   • Adjustment location : SFR351 (Lch) SFR352 (Rch)
   Method : Apply a 1kHz signal and REC mode. Then adjust OSC attenuator so that the output level at the TP6, TP7 becomes 20 ~ 21mV. Record and play back the 1kHz and 10kHz signals and adjust SFRs so that the output level of the 10kHz signal becomes 0dB ± 0.5dB with respect to that of the 1kHz signal.

6. REC/PB Sensitivity Check (DECK2)
   Settings : • Test tape : TTA–602
   • Test point : TP6 (Lch), TP7 (Rch)
   • Input signal : 1kHz (0VU)
   Method : Apply a 1kHz signal and REC mode. Then adjust OSC attenuator so that the output level at the TP6, TP7 becomes 200 ~ 210mV. Record and play back the 1kHz signal and check that the output is –2dB ± 3dB.

PRACTICAL SERVICE FIGURE

<TUNER SECTION>

<FM SECTION>

IHF Sensitivity :	Less than 14dBμV
(THD 3%)	[at 87.5MHz]
	Less than 13dBμV
	[at 98.0 / 108.0MHz]
S/N 50dB Quieting sensitivity :	
	Less than 38dBμV
	[at 98.0MHz]
Signal to noise ratio :	(MONO) More than 68dB
(Input 60dBμV)	(STEREO) More than 64dB
	[at 98.0MHz]
Distortion :	(MONO) Less than 1.2%
(Input 60dBμV)	(STEREO) Less than 2.0%
	[at 98.0MHz]
Auto stop level :	30dBμV ± 10dB
	[at 98.0MHz]
Stereo separation :	More than 12dB
	[at 98.0MHz]
Intermediate frequency :	10.7MHz

<MW SECTION>

Sensitivity :	Less than 62dBμV
(S/N 20 dB)	[at 603kHz]
	Less than 58dBμV
	[at 999 / 1404kHz]
Signal to noise ratio :	More than 36dB
(Input 74dBμV)	[at 999kHz]
Distortion :	Less than 1.5%
	[at 999kHz]
Auto stop level :	52dBμV +10/–15dB
	[at 999kHz]
Intermediate frequency :	450kHz

<LW SECTION>

Sensitivity :	Less than 70dBμV [at 144kHz]
(S/N 20 dB)	Less than 68dBμV [at 198kHz]
	Less than 66dBμV [at 290kHz]
Intermediate frequency :	450kHz

<DECK SECTION>

Tape speed :	3000Hz ± 45Hz
Wow & flutter :	Less than 0.21% (W.R.M.S)
Take-up torque :	30 ~ 55g-cm (FWD, REV)
F.F & REW torque :	75 ~ 160g-cm
Back tension :	2 ~ 7g-cm
Pinch roller pressure :	270 ~ 330g
PB Output level :	200mV ± 3dB (SP OUT 2V)
REC/PB Output level :	120mV ± 3dB
	(at 1kHz, 0VU, SP OUT 2V, NORMAL)
Distortion (REC/PB) :	Less than 2.0% (at 0VU, NORMAL)
Noise level (PB) :	Less than 1.0mV
	(NORMAL, FILTER DIN AUDIO)
Noise level (REC/PB) :	Less than 1.0mV
	(NORMAL, FILTER DIN AUDIO)
Erasing ratio :	More than 60dB
	(at 125Hz, +10VU, NORMAL)
Test tape :	TTA–100
	TTA–200
	TTA–602 (NORMAL)

ADJUSTMENT – 3 <MD>

All the adjustment and check of MD block are performed during TEST MODE.

1. Temperature compensation adjustment

- Test point: Check on display.
- Tools: Thermometer
- Method:
  1) After MD test mode is activated, press CLEAR key (■) to switch to the "ALL SV OFF" display.
  2) Press DISPLAY key (DISPLAY) to switch the "TEMP = $ * *" display.
  3) Press SET key (▮▮) to switch to the "T + * * C : + 00" display.
  4) Place a thermometer besides the MD mechanism to take the room temperature.
  5) Check and indicate the temperature value on the symbols, * * on the display using B. SKIP key (◀◀) and F. SKIP key (▶▶). Press ENTER key (ENTER) to memorize.
  6) After the adjustment, press CLEAR key (■) to switch to the "ALL SVoFF" display.

  Note: Do not adjust the display when the temperature is not measurable.

2. Laser power adjustment

- Test point: PICK UP laser output
- Tools: Laser power meter (with the maximum permissible level of 10mW)
- Method:
  1) At the "ALL SVoFF" display, press EDIT key (EDIT) three times to switch to the "LA WRITE" display.
  2) Press SET key (▮▮) once to switch to "LASER = $ * *" display.
  3) Measure PICK UP laser output with laser power meter, and adjust the value to the range of 6.8±0.03mW using B. SKIP key (◀◀) and F. SKIP key (▶▶). Press ENTER key (ENTER) to confirm.
  4) After the adjustment, press CLEAR key (■) to switch to the "ALL SVoFF" display.

  Note: Should a laser output value exceed 7.0mW, PICK UP could be damaged.

3. AUTO SEQUENCE ADJ (EFB/IVR/FOCUS AGC/TRACING AGC adjustment)

3-1. MO disc adjustment

- Test point: Check on the display.
- Test disc: MDW-60, TGYS-1 or equivalent
- Method:
  1) Load the disc, MDW-60.
  2) Press MODE key (MODE) to display "SEL GRV".
  3) When MD function key (MD) is pressed, the display shows "AUTO ADJ", and "DONE" appears after the adjustment. (The "FAILED" display indicates unsuccessful adjustment.)
  4) After the adjustment, press CLEAR key (■) to switch to the "ALL SV OFF" display.

3-2. MO disc: IVR, EFB, Focus/Tracking/Sled Gain check

1) Move PICK UP to the disc center using B. SKIP key (◀◀) and F. SKIP key (▶▶).
2) Press PLAY key (◀▶) to display "FOCUS ON!".
3) Press ENTER key (ENTER) to set to the "ALL SV ON" status.
4) Press CLEAR key (■), and press DISPLAY key (DISPLAY) twice.

   Check that the "I $ * * : E $ ◇◇" display indicates the values in the following range (hexadecimal).

   "* *" ... 03 ~ 07

   "◇◇" ... 09 ~ 12
5) Press DISPLAY key (display) again.

   Check that the "f * * t # # s Δ Δ" display indicates the values in the following range (hexadecimal).

   "* *" ... 20 ~ 40

   "# #" ... 15 ~ 35

   "ΔΔ" ... 15 ~ 35

3-3. PIT disc adjustment

1) Load the disc, TGYS-1.
2) Press MODE key (MODE) to display "SELECT PIT".
3) When MD function key (MD) is pressed, the display shows "AUTO ADJ", and "DONE" appears after the adjustment.
   (The "FAILED" display indicates unsuccessful adjustment.)
4) After the adjustment, press CLEAR key (■) to switch to the "ALL SVoFF" display.

3-4. PIT disc: IVR, EFB, Focus/Tracking/Sled Gain check

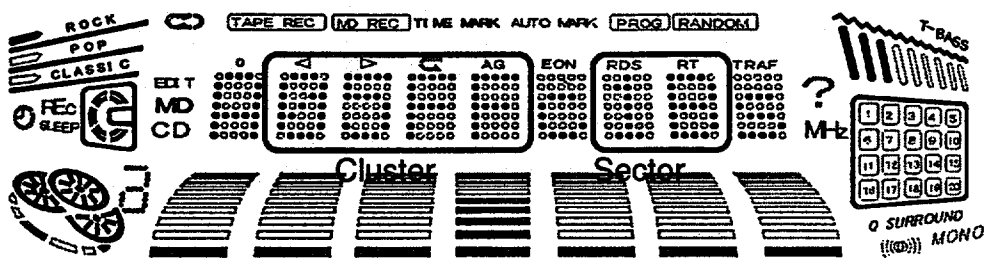
1) Move PICK UP to the disc center using B. SKIP key (◀◀) and F. SKIP key (▶▶).
2) Press PLAY key (◀▶) to display "FOCUS ON!".
3) Press ENTER key (ENTER) to set to the "ALL SV ON" status.
4) Press CLEAR key (■), and press DISPLAY key (DISPLAY) twice.
   Check that the "I $ * * : E $ ◇◇" display indicates the values in the following range (hexadecimal).
   "* * *" ... 13 ~ 17
   "◇◇" ... 09 ~ 12
5) Press DISPLAY key (display) again.
   Check that the "f * * t # # s ΔΔ" display indicates the values in the following range (hexadecimal).
   "* * *" ... 2A ~ 45
   "# #" ... 20 ~ 40
   "ΔΔ" ... 20 ~ 40

4. Focus Servo/Error Rate check (PIT DISC)

1) Load the disc, TGYS-1.
2) Move PICK UP to the disc center using B. SKIP key (◀◀) and F. SKIP key (▶▶).
3) Press MODE key (MODE) to display "SEL PIT".
4) Press PLAY key (◀▶) to display "FOCUS ON!".
5) Press ENTER key (ENTER) to display "ALL SV ON". Press DISPLAY key (DISPLAY) once to check that the transmission of address display is stable.
6) When DISPLAY key (DISPLAY) is pressed again, the display is switched to playback error rate.
   Check that the underlined figures of "A * * * * : * * * *" is less than "0030".
7) After the adjustment, press CLEAR key (■) to switch to the "ALL SV OFF" display.

5. Record/Playback Error Rate check (MO DISC)

1) Insert the disc, MDW-60.
2) Move PICK UP to the disc center using B. SKIP key (◀◀) and F. SKIP key (▶▶).
3) When CD function key (CD) is pressed, recording automatically starts from 600 cluster.
4) After 15 seconds of recording, press CLEAR key (■).
5) When AUX/D-IN key (AUX D IN) is pressed, PICK UP moves around 600 cluster to set to the "ALL SV ON" status, and press DISPLAY key (DISPLAY) after 600 cluster.
   Check that the underlined figures of "A * * * * : * * * *" is less than "0020".
6) After the adjustment, press CLEAR key (■) to switch to the "ALL SV OFF" display.



CD TEST MODE

1. How to Activate CD Test Mode

Insert the AC plug while pressing the CD function button."CD TEST" message appears on FL display 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 any function button (Except CD function button).
- Press the power switch button.
- Disconnect the AC plug.

3. CD Test Mode functions

When test mode is activated, press respective buttons described below for checking.

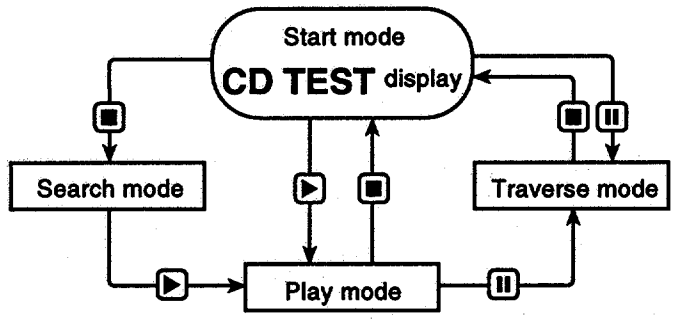
MODE	Function Button	FL display	Operation	Contents
Start mode (Sled mode)		All lights on	• Initializing	
	⏮ button	CD TEST	• Pickup moves to outer track • Pickup moves to inner track * Note 1 (Normal operation during CD PLAY)	• SLED SERVO • Check SLED operation
Search mode	■ button	CD	• LASER DIODE illuminated all the time (CD block power ON) • Continual focus search * Note 2 (The pickup lenses repeat full-swinging) • Spindle motor continual kick rotation	• Check APC circuit • Laser current measurement FOCUS SERVO • Check focus search waveform • Check focus error waveform (FOK/FZC are not monitored in the search mode.)
Play mode	► button	CD1Tr	• Normal playback • Focus search is continued if TOC READ cannot be read *Note 2 • Spindle motor continual kick rotation	• FOCUS SERVO/TRACKING SERVO • CLV SERVO/SLED SERVO • Check FOC(DRF)
Traverse mode	⏸ button	CD1Tr	• Tracking servo OFF/ON • OFF/ON is repeated by pressing the ⏸ button	· TRACKING SERVO OFF · Check tracking balance (radial balance)

* Note 1 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 outermost or innermost track.
The sled opearation is not as normal and moves outermost track with ⏮ button and innermost track with ⏭ button.

* Note 2 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 (IC501) if the focus search is operated continually for more than 10 minutes. In these case, the power supply should be switched off for 10 minutes until heat has been reduced and then re-start.

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.



MD TEST MODE

1. Starting MD TEST MODE

Insert the AC plug while pressing MD function key ([MD]).

> Note: 1) During TEST MODE, mechanical failures may be ignored. If any wrong operation is observed, unplug immediately.
> 2) During TEST MODE, normal record and playback cannot be performed.
> 3) As ECO mode is activated during TEST MODE, the power is turned off automatically when no key operation is performed for about 10 minutes.

2. Exiting MD TEST MODE

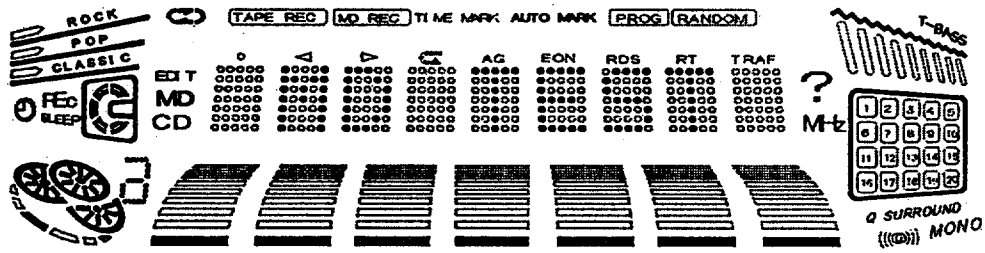
1) Press MD EJECT key ([▲]) to remove DISC.
2) Disconnect the AC plug.

* Be sure to follow the above steps when exiting MD TEST MODE, otherwise, POWER ON function may not be operated properly when restarted. In this case, disconnect the AC plug.

3. MD TEST MODE check

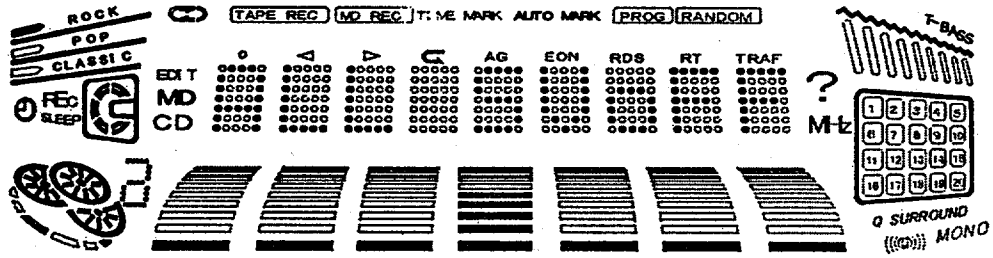
1) Display

Approximate 5 seconds after the test mode is initialized, the display turns as following diagram. This indicates that the test mode is ready.



4. Switching to servo standby mode

After the test mode is initialized, press CLEAR key ([■]) to switch to the servo standby mode. (ALL SVoFF appears on FL display.) Switch to other mode from this mode.



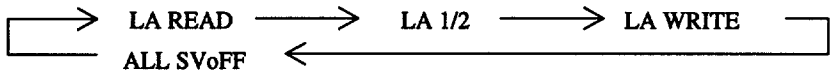
Press CLEAR key ([■]) to return to "ALL SV OFF" from each mode.

5. Checking SLED sending function

1) At "ALL SVoFF", press F. SKIP key ([▶▶]) to move PICK UP to outer track.
The display indicates "T. SLEDfwd".
2. At "ALL SV OFF", press B. SKIP key ([◀◀]) to move PICK UP to inner track.
The display indicates "T. SLEDrvs", and the arrow symbol ( ) of "CLASSIC" is lit when PICK UP reaches at the most inner track.

6. Checking laser power

1) At "ALL SV OFF", press EDIT key ([EDIT]) every time to switch laser power.
The display indicates the followings in order.



2) After checking, return to "ALL SVoFF".

7. Checking loading mechanism/OWH (Over Write Head) functions

Load MO DISC to check that EON and AG are turned off and that OWH is up.

In addition, at "ALL SVoFF", press [CD ▷MD] key and MD EJECT key ([▲]) to check the loading mechanism and OWH status.

[CD ▷MD] key ..... OWH DOWN MD EJCECT KEY ([▲]) ..... Unloading/OWH UP

※ Loading mechanism/OWH status can be monitored on the FL display.

Lights	Loading mechanism/OWH status
Only EON is lit.	Loading/OWH DOWN
AG and EON are off.	Loading/OWH UP
AG and EON are lit.	Unloading/OWH UP

※ The loading SW status is monitored from AG and the REC SW status from EON.

8. Checking servo function

8-1. Checking focus search/spindle kick No.1 (S curve confirmation)

1) At "ALL SVoFF", press REPEAT key on the remote control to start the focus search and spindle kick operations at the same time. The display indicates "FOCUS CHK". The operation is repeated regardless of loading or unloading of disc, and if a disc is loaded, S curve can be checked.
2) After checking, press CLEAR key ([■]) to switch to the "ALL SVoFF" display.

8-2. Checking focus search/spindle kick No.2

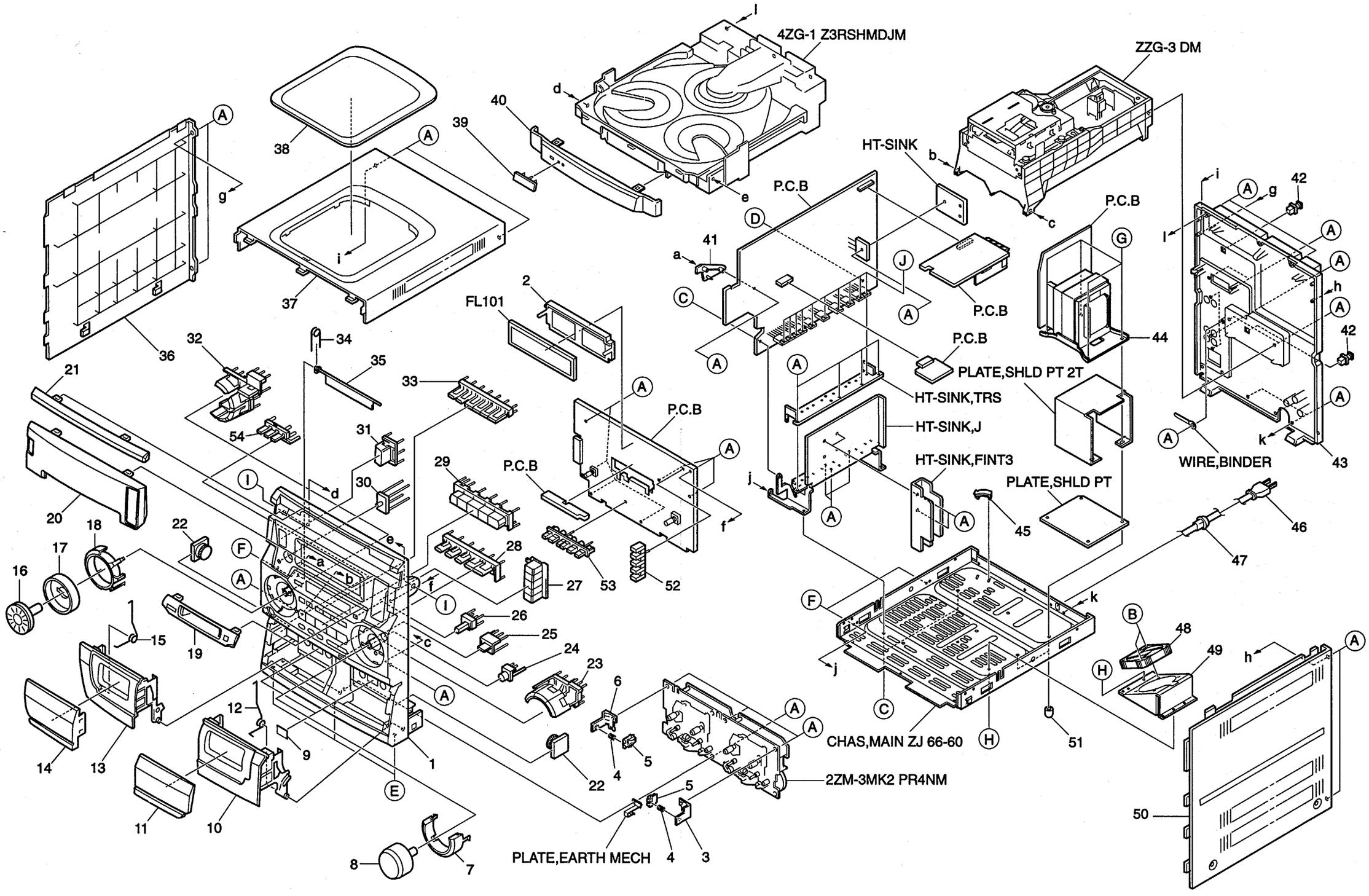
1) At "ALL SVoFF" and without disc unloaded, press PLAY key ([◀▶]) to start the search and spindle kick operations at the same time. The display indicates "FOCUS SCH".
2) After checking, press CLEAR key ([■]) to switch to the "ALL SVoFF" display.

8-3. Checking focus servo

1) Place a disc on tray.
2) Press MODE key ((MODE)) to adjust servo mode according to the loaded disc as follows.
   - MO DISC (MO) ... FL display "SEL GRV" : "TIME MARK" is lit.
   - PIT DISC (PIT) ... FL display "SEL PIT" : "AUTO MARK" is lit.
3) Press PLAY key ([◀▶]). When focus servo is properly functioning, the display indicates "FOCUS SCH" followed by "FOCUS ON!".
4) After checking, press CLEAR key ([■]) to switch to the "ALL SVoFF" display.

8-3. Checking all servo ON

1) When focus servo is ON, press ENTER button ((ENTER)) to start tracking/sled servo and other servo. All servo are functioning properly, the display indicates "ALL SV ON".
2) After checking, press CLEAR key ([■]) to switch to the "ALL SVoFF" display.


4ZG-1 Z3RSHMDJM
ZZG-3 DM
HT-SINK
P.C.B
FL101
PLATE,SHLD PT 2T
HT-SINK,TRS
HT-SINK,J
HT-SINK,FINT3
PLATE,SHLD PT
WIRE,BINDER
CHAS,MAIN ZJ 66-60
2ZM-3MK2 PR4NM
PLATE,EARTH MECH

MECHANICAL PARTS LIST 1 / 1

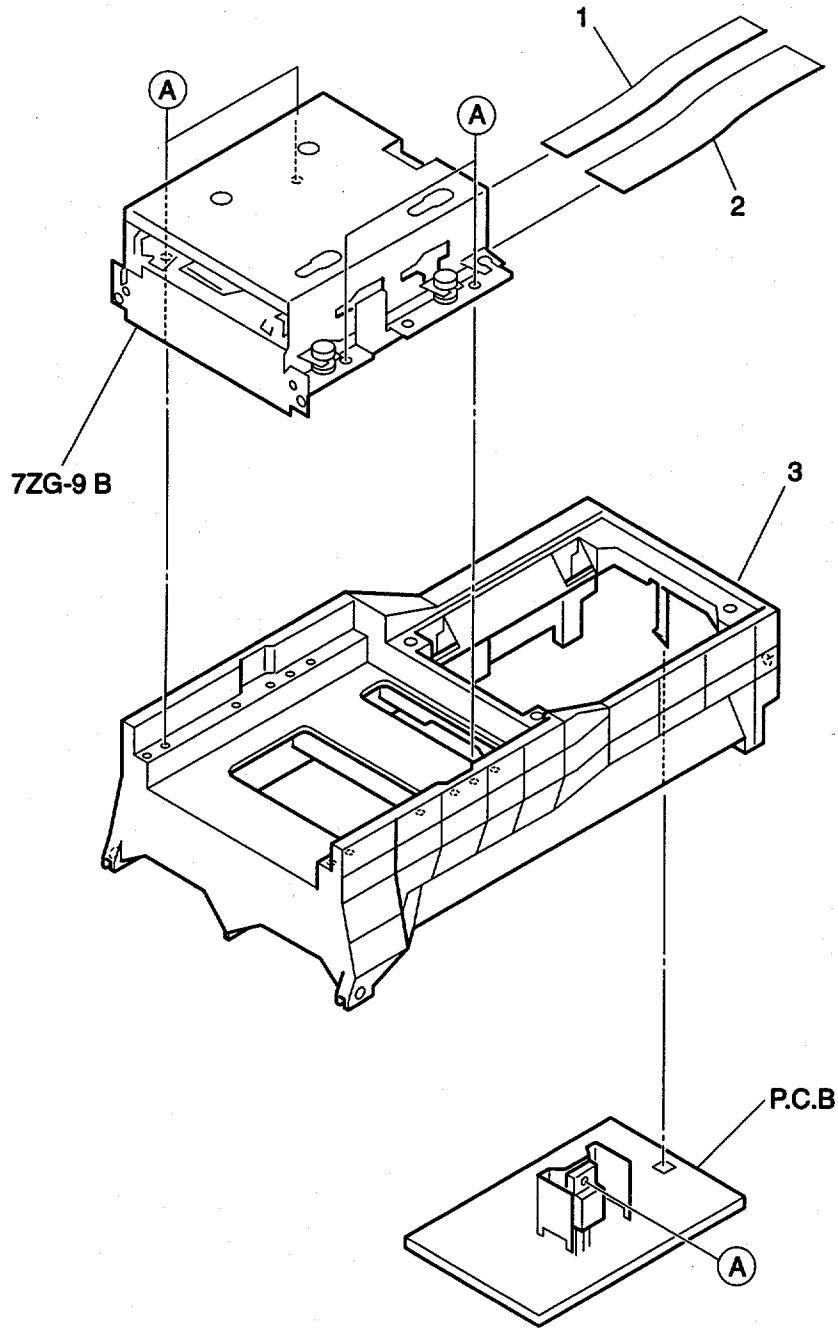
If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	8Z-NB8-042-010		CABI,FR EZ
2	87-NF5-203-010		GUIDE,FL
3	87-NF4-217-010		HLDR,LOCK 2
4	86-NF9-224-010		SPR-C,LOCK
5	82-NF5-229-010		PLATE,LOCK
6	87-NF4-216-010		HLDR,LOCK 1
7	8Z-NB8-036-010		PANEL,VOL
8	8Z-NB8-020-110		KNOB,RTRY VOL
9	81-532-080-010		LABEL, CASS. COMPT
10	8Z-NB8-040-010		BOX,CASS 2 EX
11	8Z-NB8-010-010		WINDOW,CASS 2
12	82-NF5-219-010		SPR-T,EJECT 2 (SIN)
13	8Z-NB8-039-010		BOX,CASS 1 EX
14	8Z-NB8-009-010		WINDOW,CASS 1
15	82-NF5-218-010		SPR-T,EJECT 1 (SIN)
16	8Z-NB8-019-110		KNOB,RTRY JOG
17	8Z-NB8-021-010		REFLECTOR,JOG
18	8Z-NB8-035-010		PANEL,JOG
19	8Z-NB8-006-010		PANEL,MD
20	8Z-NB8-043-010		WINDOW,DISP EZ
21	8Z-NB8-007-110		WINDOW,CD
22	87-NF8-220-010		DMPR,150
23	8Z-NB8-026-010		KEY,DISP
24	8Z-NB8-025-010		KEY,T-BASS
25	8Z-NB8-037-010		KEY,VER
26	8Z-NB8-022-010		KEY,MD EJECT
27	8Z-NB8-016-010		KEY,ASSY FUN
28	8Z-NB8-027-110		KEY,CD
29	8Z-NB8-028-010		KEY,ASSY OPE
30	8Z-NB8-033-010		REFLECTOR,ECO
31	8Z-NB8-015-010		KEY,POWER
32	8Z-NB8-045-010		KEY,MD ENTER EX
33	8Z-NB8-032-010		KEY,ECO
34	87-NBG-207-010		SPR-T,FLAP NBG
35	87-NB8-014-010		WINDOW,FLAP N
36	8Z-NB8-011-110		PANEL,LEFT V-2
37	8Z-NB8-013-010		PANEL,TOP V-2
38	86-NF6-007-010		WINDOW,TOP
39	82-NE6-067-010		BADGE,AIWA 30N
40	8Z-NB8-005-010		PANEL,TRAY
41	8Z-NB8-215-010		HLDR,PWB M
42	84-ZG1-245-210		CAP,OPTICAL
43	8Z-NB8-054-010		CABI,REAR EZS<EZ>
43	8Z-NB8-062-010		CABI,REAR KSM<K>
⚠ 44	8Z-NB8-608-010		PT,ZNB-8 E<EZ>
⚠ 44	8Z-NB8-609-010		PT,ZNB-8 K<K>
45	87-NF4-221-010		HLDR,CABLE
⚠ 46	87-A80-108-010		AC CORD ASSY,K BLK 3P<K>
⚠ 46	87-050-079-010		AC-CORD ASSY,E<EZ>
47	87-085-185-010		BUSHING, AC CORD (E)
48	87-A90-796-010		FAN,F614R-12MC-15-300MM
49	8Z-NB8-216-010		HLDR,FAN
50	8Z-NB8-012-010		PANEL,RIGHT V-2
51	8Z-NB8-240-010		COVER, PL
52	8Z-NB8-210-110		GUIDE,FUN
53	8Z-NB8-211-010		GUIDE,OPE
54	8Z-NB8-034-010		KEY,RDS
A	87-067-703-010		TAPPING SCREW, BVT2+3-10
B	87-B10-184-010		BVTT+3-20 W/O SLOT
C	87-067-579-010		TAPPING SCREW, BVT2+3-8
D	87-NF4-224-010		S-SCREW,IT3B+3-8 CU
E	87-067-688-010		BVTT+3-6
F	87-723-096-410		QT2+3-10W/O SLOT BL
G	87-078-191-010		S-SCREW,IT+4-10
H	87-067-584-010		TAPPING SCREW, BVT2+3-6
I	87-721-097-410		QT2+3-12 GLD
J	87-067-001-010		S-SCREW,BVWW ST2 2-3-12

COLOR NAME TABLE

Basic color symbol	Color	Basic color symbol	Color	Basic color symbol	Color
B	Black	C	Cream	D	Orange
G	Green	H	Gray	L	Blue
LT	Transparent Blue	N	Gold	P	Pink
R	Red	S	Silver	ST	Titan Silver
T	Brown	V	Violet	W	White
WT	Transparent White	Y	Yellow	YT	Transparent Yellow
LM	Metallic Blue	LL	Light Blue	GT	Transparent Green
LD	Dark Blue	DT	Transparent Orange		

MD MECHANISM EXPLODED VIEW 1 / 4

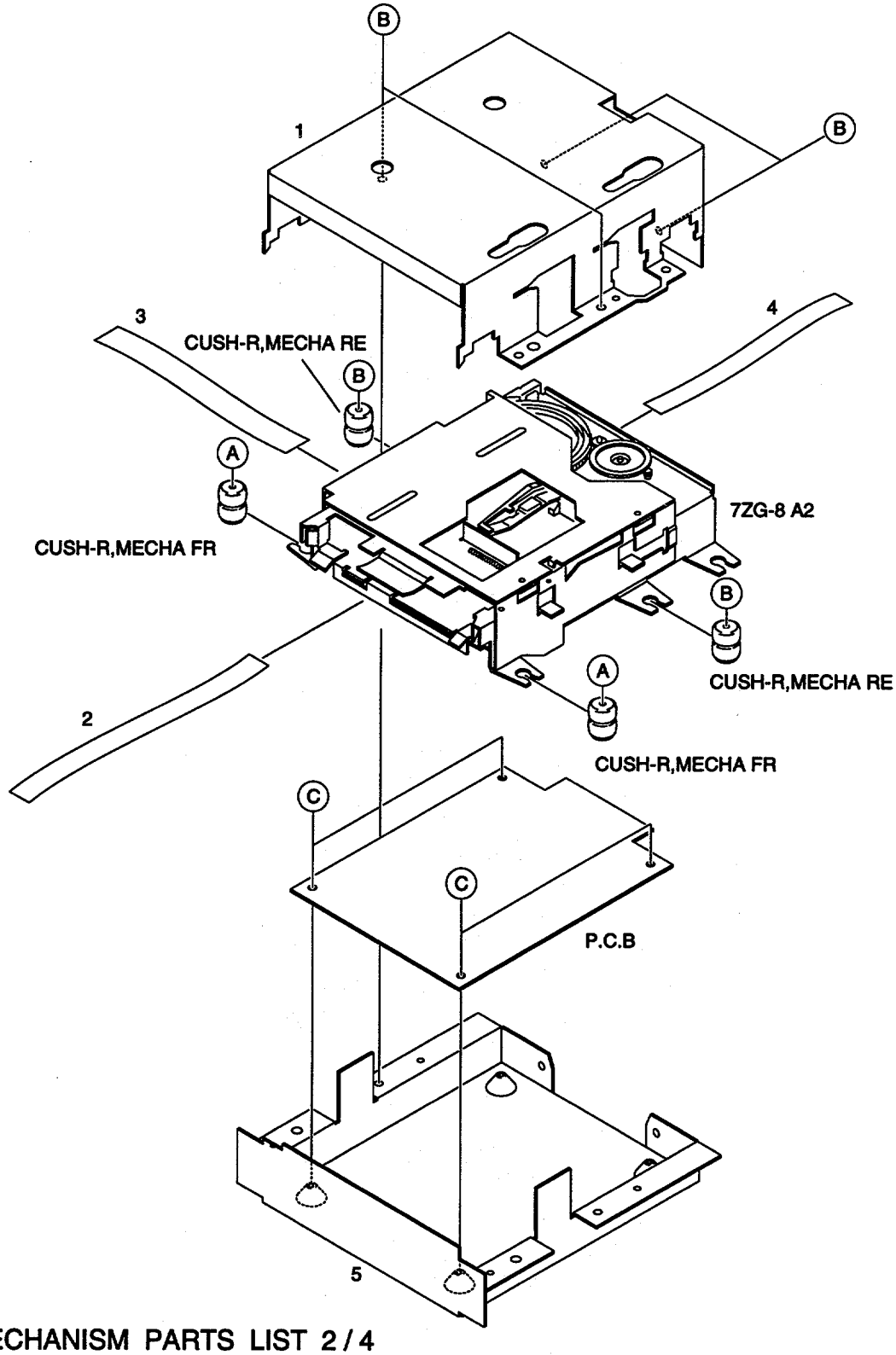


MD MECHANISM PARTS LIST 1 / 4

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	87-ZGA-611-010		FF-CABLE, 8P 1.0 100MM
2	87-ZGA-612-010		FF-CABLE, 14P 1.0 100MM
3	8Z-NB8-208-010		HLDR,MD
A	87-067-703-010		TAPPING SCREW, BVT2+3-10

MD MECHANISM EXPLODED VIEW 2 / 4

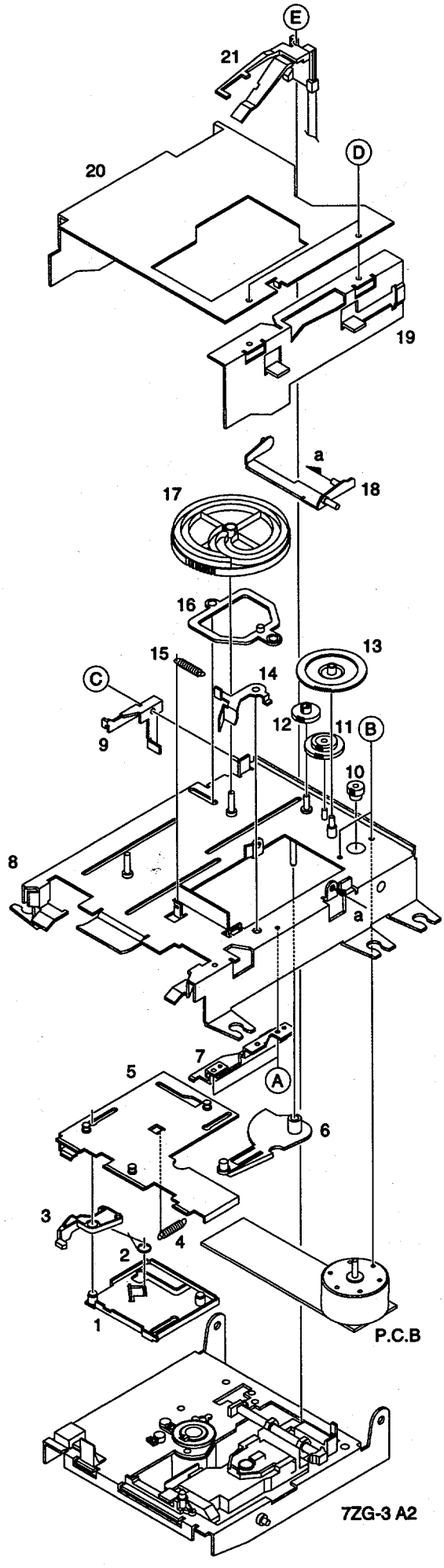


MD MECHANISM PARTS LIST 2 / 4

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	87-ZG9-202-110		HLDR,SHLD TOP
2	87-ZG9-603-010		FF-CABLE, 8P 1.0 120MM
3	87-ZG9-602-010		FF-CABLE, 21P 0.5 90MM
4	87-ZG9-604-010		FF-CABLE, 5P 1.25 100MM
5	87-ZG9-201-110		HLDR,SHLD BOT
A	87-ZG9-209-010		S-SCREW,MD TF
B	87-ZG9-208-010		S-SCREW,MD T
C	87-067-020-010		SCREW, VTT+3-4
D	87-067-421-010		VTT+2-4

MD MECHANISM EXPLODED VIEW 3 / 4

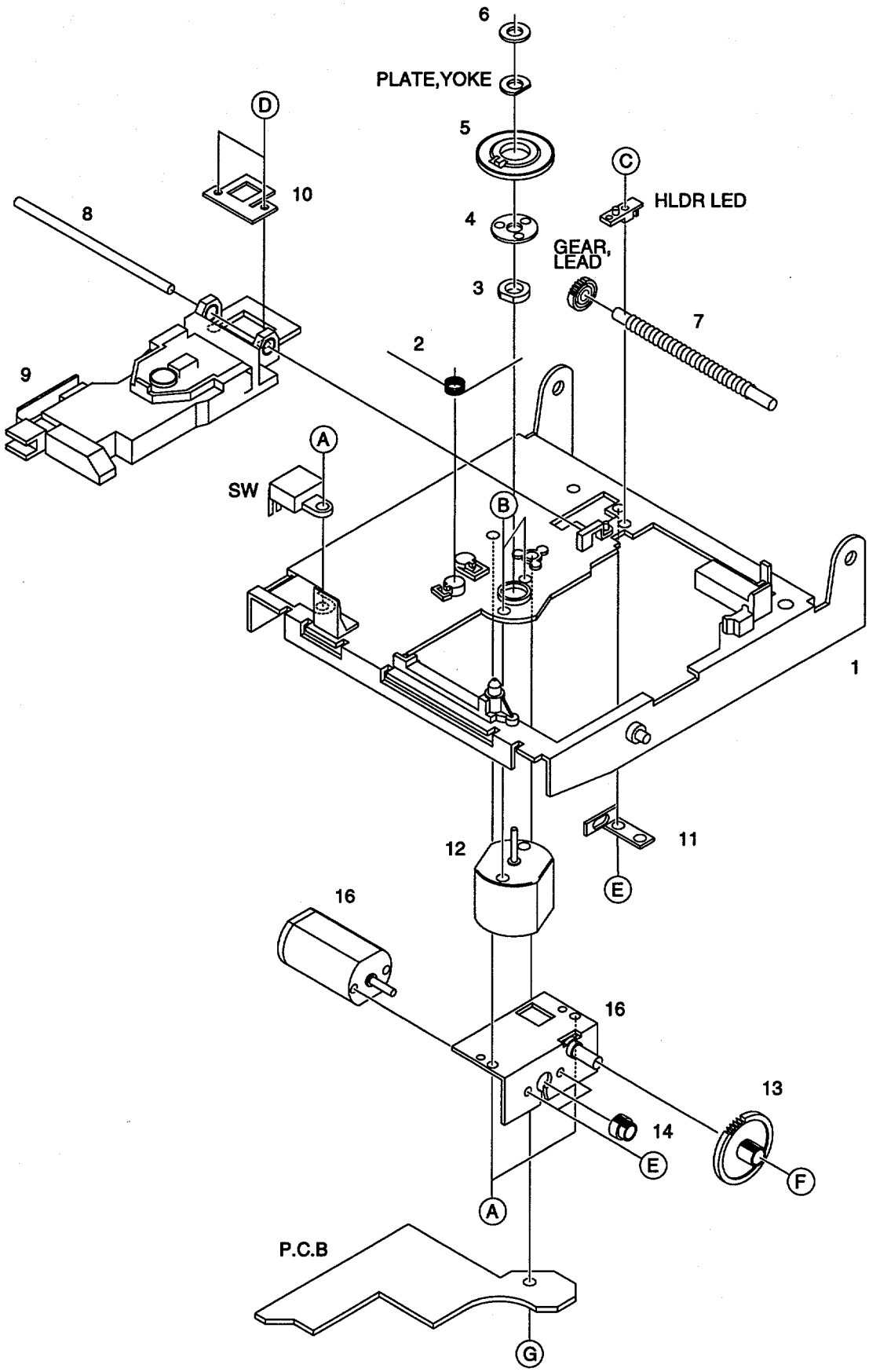


MD MECHANISM PARTS LIST 3 / 4

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	87-ZG8-220-110		PLATE ASSY,LATCH
2	87-ZG8-259-010		SPR-T,LATCH
3	87-ZG8-230-110		LEVER,LATCH
4	87-ZG8-224-110		SPR-E,LATCH
5	87-ZG8-214-110		HLDR ASSY,CARTRIGE
6	87-ZG8-233-010		LEVER,SW H
7	87-ZG8-255-110		PLATE,CARTRIGE
8	87-ZG8-201-210		CHAS ASSY,MAIN
9	87-ZG8-256-010		LEVER,SW S2
10	87-ZG8-242-010		GEAR,MOT
11	87-ZG8-253-010		GEAR,REDUCTION S3
12	87-ZG8-246-010		GEAR,IDLER 2
13	87-ZG8-252-010		GEAR,REDUCTION L3
14	87-ZG8-231-010		LEVER,SHUTTER
15	87-ZG8-232-010		SPR-E,SHUTTER
16	87-ZG8-225-110		LEVER ASSY,CAM
17	87-ZG8-239-010		CAM,LOAD
18	87-ZG8-257-110		LEVER ASSY,REC
19	87-ZG8-213-010		PLATE,SLIDE R
20	87-ZG8-209-010		PLATE ASSY,SLIDE L
21	87-A90-605-010		HEAD,OWH RF325-74A
A	87-B10-129-010		VTT+1.7-3.5 W/O MFZN2-C
B	87-B10-128-010		V+1.7-2 W/O MFZN2-C
C	87-B10-130-010		W-P,1.23-3.1-0.25 SLIT
D	87-067-421-010		VTT+2-4
E	87-B10-131-010		VW+1.7-5 W/O MFZN2C

MD MECHANISM EXPLODED VIEW 4 / 4

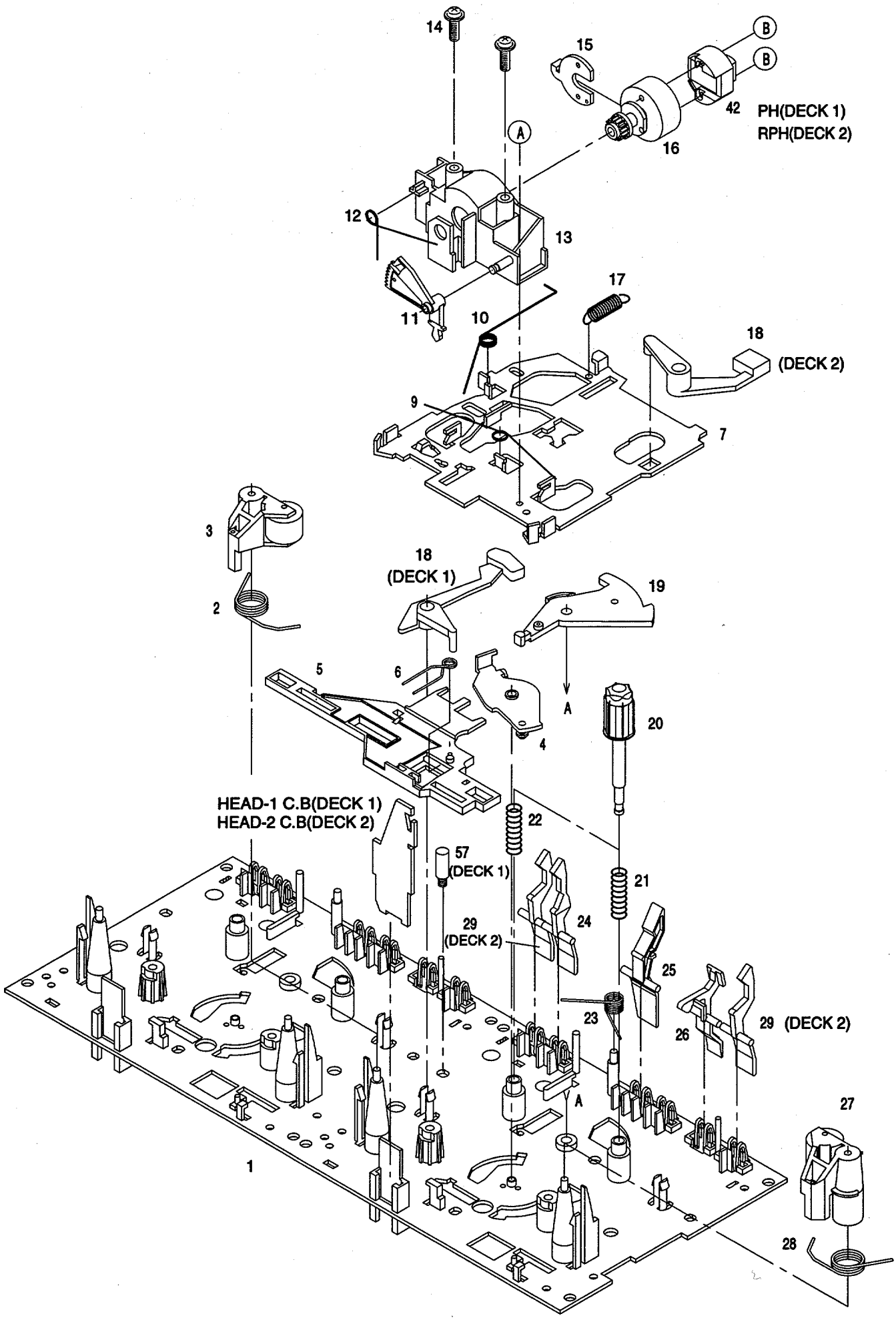


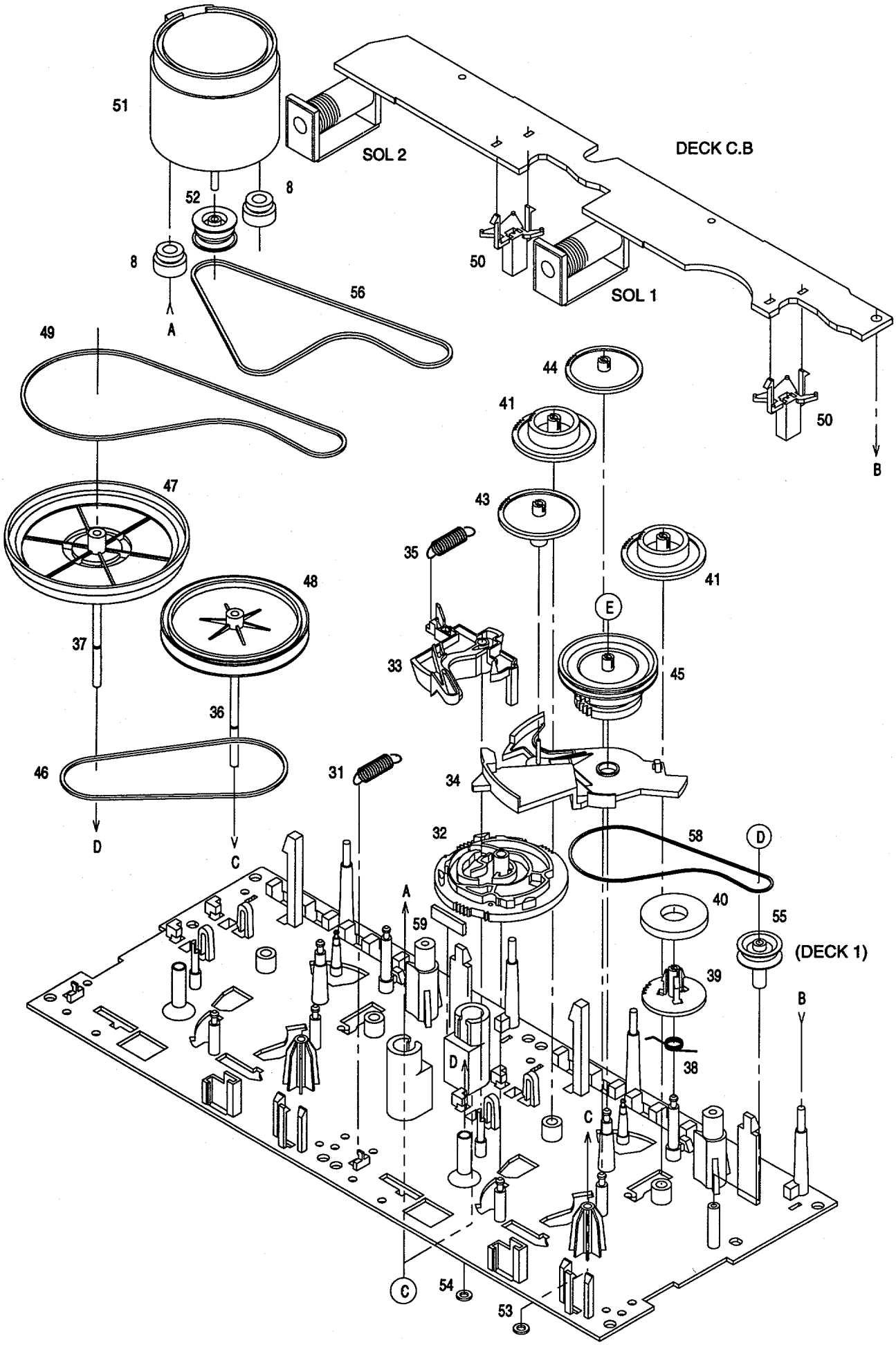
MD MECHANISM PARTS LIST 4 / 4

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	87-ZG3-202-010		CHAS ASSY,OUT-SERT
2	87-ZG3-214-010		SPR-T,SPINDLE-A
3	83-ZG5-308-010		BRG,1.5-2
4	83-ZG5-305-010		SPR-P,DISC
5	83-ZG5-302-010		TURN TABLE,MD1
6	83-ZG5-605-010		MAGNET,CHUCK
7	87-ZG3-212-010		SHAFT,LEAD
8	87-ZG3-211-010		SHAFT,GUIDE
9	87-A90-613-010		PICKUP,KMS-260A
10	87-ZG3-216-010		SPR-P,RACK
11	87-ZG3-213-010		SPR-P,LEAD
12	87-A90-413-010		MOT,FF-110PH 9
13	87-ZG3-206-010		GEAR,A
14	87-ZG3-205-010		GEAR,MOT SL
15	87-ZG3-208-010		HLDR ASSY,MOTOR
16	87-A90-616-010		MOT,FF-N30VA
A	87-261-547-310		V+2-3 BLK (1)
B	87-263-523-310		SCREW, V+1.7-2
C	87-261-509-310		SCREW, V+1.4-4
D	87-067-393-010		SCREW +1.4-1.4
E	87-261-503-310		PRECISION SCREW, V+1.4-2
F	87-078-033-010		PW 1.2-2.5-0.25 SLT
G	87-341-035-210		SCREW,UT1+2-6

TAPE MECHANISM EXPLODED VIEW 1 / 1



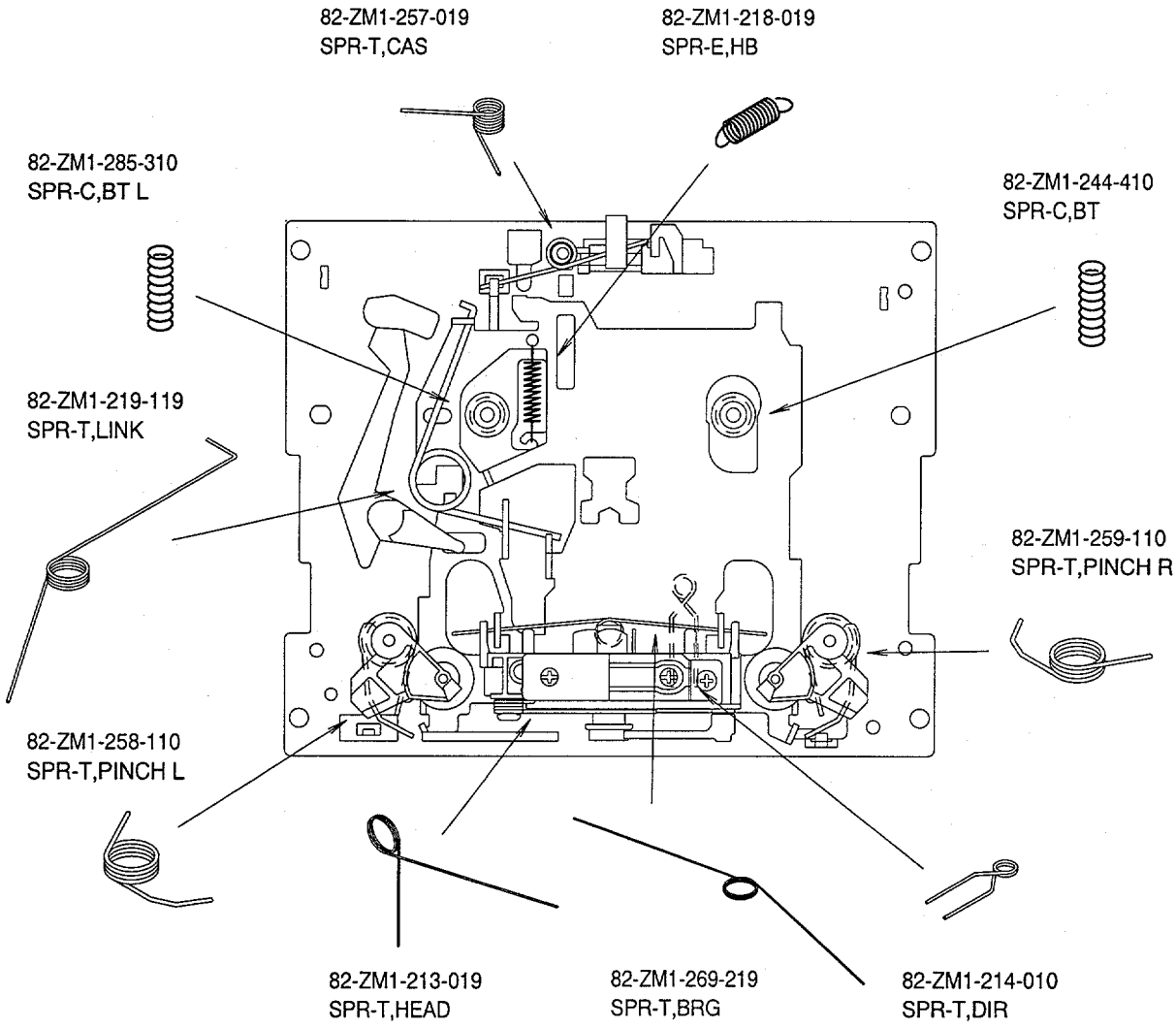

51
SOL 2
DECK C.B
52
8
8
50
SOL 1
56
A
49
44
41
50
B
47
43
35
41
48
E
37
33
45
36
46
31
34
D
C
32
58
D
A
40
55
(DECK 1)
59
39
B
38
D
C
C
54
53

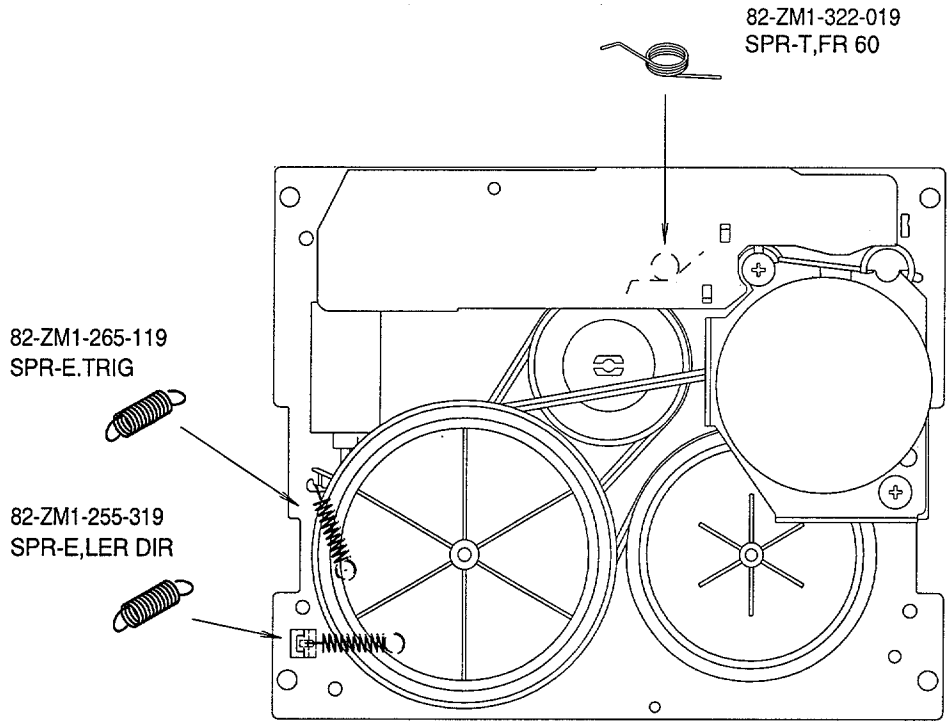
TAPE MECHANISM PARTS LIST 1 / 1

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	82-ZM3-301-519		CHAS ASSY,M2
2	82-ZM1-258-110		SPR-T,PINCH L
3	82-ZM1-341-110		LVR ASSY,PINCH L2
4	82-ZM1-333-010		PLATE,LINK 2
5	82-ZM1-266-11K		LVR,DIR
6	82-ZM1-214-010		SPR-T,DIR
7	82-ZM1-206-81K		CHAS,HEAD
8	82-ZM3-307-019		CUSH-G,DIA3.7-8-3.2
9	82-ZM1-269-219		SPR-T,BRG
10	82-ZM1-219-119		SPR-T,LINK
11	82-ZM1-210-119		GEAR,H T
12	82-ZM1-213-019		SPR-T,HEAD
13	82-ZM1-207-619		GUIDE,TAPE
14	86-ZM4-206-010		S-SCREW,AZIMUTH
15	82-ZM1-314-119		PLATE,HEAD
16	82-ZM1-208-119		HLDR,HEAD
17	82-ZM1-218-019		SPR-E,HB
18	82-ZM1-263-110		LVR,EJECT L (DECK 1)
18	82-ZM1-264-010		LVR,EJECT R (DECK 2)
19	82-ZM1-222-21K		LVR,PLAY
20	82-ZM1-217-319		REEL TABLE
21	82-ZM1-244-510		SPR-C,BT
22	82-ZM1-285-310		SPR-C,BT L
23	82-ZM1-257-019		SPR-T,CAS
24	82-ZM1-241-319		LVR,MC
25	82-ZM1-242-019		LVR,CAS
26	82-ZM1-243-019		LVR,STOP
27	82-ZM1-344-110		LVR ASSY,PINCH R2
28	82-ZM1-259-110		SPR-T,PINCH R
29	82-ZM1-240-11K		LVR,REC (DECK 2)
31	82-ZM1-255-319		SPR-E,LVR DIR
32	82-ZM3-305-01K		GEAR,CAM M2
33	82-ZM1-227-21K		LVR,TRIG
34	82-ZM3-306-11K		LVR,FR M2
35	82-ZM1-265-119		SPR-E,TRIG
36	82-ZM1-236-019		CAPSTAN N 2-41.5
37	82-ZM1-239-019		CAPSTAN N 2.2-41.7
38	82-ZM1-322-019		SPR-T,FR60
39	82-ZM1-220-219		GEAR,IDLER
40	82-ZM3-616-019		RING MAGNET 4
41	82-ZM1-216-31K		GEAR,REEL
42	87-A90-319-010		HEAD,PH HADKH2 FPC
42	87-A90-320-010		HEAD,RPH HADKH5 FPC
43	82-ZM1-225-21K		GEAR,FR
44	82-ZM1-226-019		GEAR,REW
45	82-ZM3-333-310		SLIP DISK ASSY 2
46	82-ZM1-338-010		BELT FR4
47	82-ZM1-349-110		FLY-WHL,R W(DECK 2)
47	82-ZM3-338-110		FLY-WHL,R3 W(DECK 1)
48	82-ZM1-348-010		FLY-WHL,L W(DECK 2)
48	82-ZM1-348-010		FLY-WHL,L W(DECK 1)
49	82-ZM3-329-210		BELT,SBU R2
50	82-ZM1-245-210		HLDR,IC
51	87-045-347-019		MOT,SHU2L 70(M1)
52	82-ZM3-221-010		PULLEY,MOT 2M
53	82-ZM1-288-019		SH,1.63-3.2-0.5 SLT
54	80-ZM6-243-019		SH,1.75-3.6-0.5 SLT
55	82-ZM3-335-210		PULLEY,COUPLER M3(DECK 1)
56	82-ZM3-337-010		BELT,SBU MOT 2
57	82-ZM3-339-010		SHAFT,COUPLER N3(DECK 1)
58	86-ZM1-206-010		BELT,MAIN L
59	82-ZM3-340-010		SH,BELT D2
A	85-ZM3-202-010		S-SCREW,TG
B	80-ZM6-207-019		V+1.6-7
C	82-ZM3-318-019		S-SCRW MOTOR M2
D	87-B10-043-010		W-P,0.99-4-0.25 SLT
E	82-ZM3-334-010		PW,2.16-6-0.4

SPRING APPLICATION POSITION

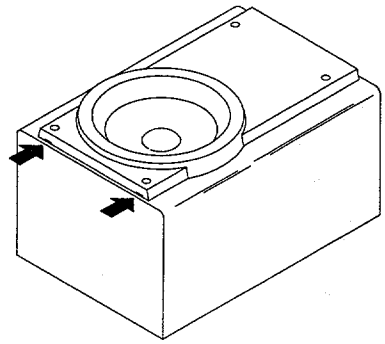




SPEAKER DISASSEMBLY INSTRUCTIONS

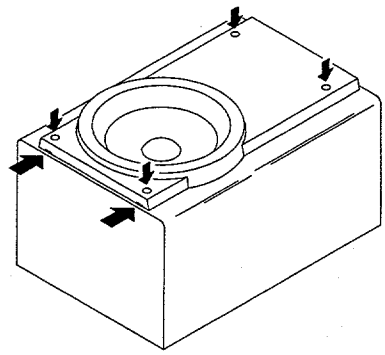
Type.1

Insert a flat-bladed screwdriver into the position indicated by the arrows and remove the panel. Remove the screws of each speaker unit and then remove the speaker units.



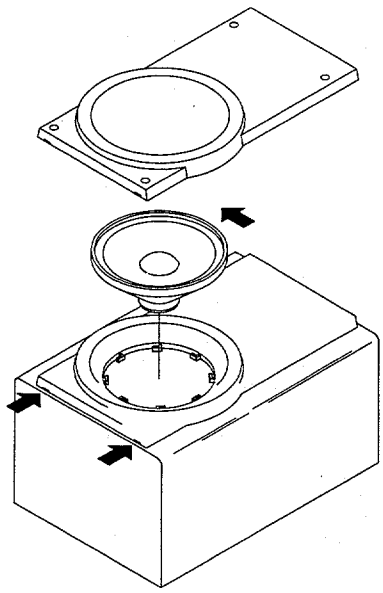
Type.2

Remove the grill frame and four pieces of rubber caps by pulling out with a flat-bladed screwdriver. Remove the screws from hole where installed rubber caps. Insert a flat-bladed screwdriver into the position indicated by the arrows and remove the panel. Remove the screws of each speaker unit and then remove the speaker units.

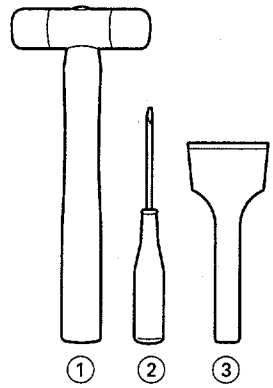


Type.3

Insert a flat-bladed screwdriver into the position indicated by the arrows and remove the panel. Turn the speaker unit to counter-clockwise direction while inserting a flat-bladed screwdriver into one of the hollows around speaker unit, and then remove the speaker unit. After replacing the speaker unit, install it turning to clockwise direction until "click" sound comes out.



Type.4



TOOLS

① Plastic head hammer
② (⊖) flat head screwdriver
③ Cut chisel

How to Remove the PANEL, FR

1. Insert the (⊖) flat head screwdriver tip into the gap between the PANEL, FR and the PANEL, SPKR. Tap the head of the (⊖) flat head screwdriver with the plastic hammer head, and create the clearance as shown in Fig-1.

2. Insert the cut chisel in the clearance, and tap the head of the cut chisel with plastic hammer as shown in Fig-2, to remove the PANEL, FR.

3. Place the speaker horizontally. Tap head of the cut chisel with plastic hammer as shown in Fig-3, and remove the PANEL, FR completely.

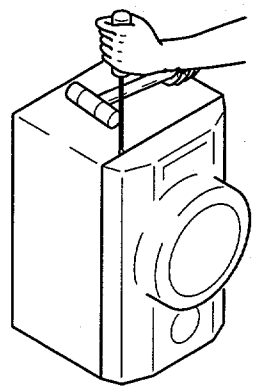


Fig-1

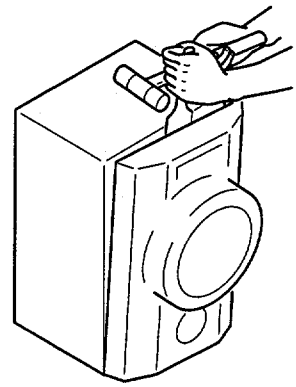


Fig-2

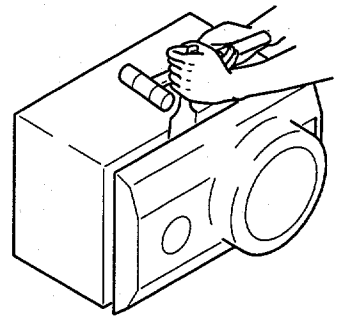


Fig-3

How to Attach the PANEL, FR

Attach the PANEL, FR to the PANEL, SPKR. Tap the four corners of the PANEL, FR with the plastic hammer to fit the PANEL, FR into the PANEL, SPKR completely.

SPEAKER PARTS LIST (SX-WNH330 <YSL>)

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	88-NS5-610-010		CORD,SPKR
2	88-NS5-611-010		CORD,SPKR B/L
3	8Z-NSY-001-010		PANEL,FR
4	8Z-NSY-004-010		PROTECTOR,TW
5	8Z-NSY-608-010		SPKR,CERAMIC ASSY
6	8Z-NSY-604-010		SPKR,M 100
7	8Z-NSY-602-010		SPKR,W 160

ACCESSORIES / PACKAGE LIST

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	87-006-225-010		AM LOOP ANT NC2
2	87-043-106-010		ANT,FM 1007AWG
3	8Z-NB8-704-010		RC UNIT,RC-ZAS16
4	8Z-NB8-916-010		IB,EZ(9L)M<EZ>
4	8Z-NB8-905-010		IB,K(E)M<K>

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, CERA-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

MECHANICAL SECTION

DESCRIPTION	REFERENCE NAME
ADHESIVE	SHEET ADHESIVE
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

サービス技術ニュース	
番号	連絡内容
G－ －	
G－ －	
G－ －	

アイワ株式会社
AIWA CO.,LTD.

9420025, 931261

Tokyo Japan

〒110-8710 東京都台東区池之端1-2-11 ☎03（3827）3111（代表）

Printed in Singapore