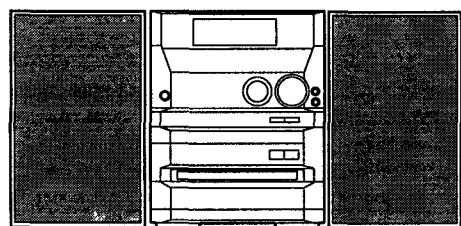


aiwa



XR-H66MD



MD/CD STEREO SYSTEM

- BASIC CD MECHANISM : 4ZG-1 Z3MD
- BASIC MD MECHANISM : 7ZG-5 U

• TYPE: U

SYSTEM	CD CASSEIVER	SPEAKER	REMOTE CONTROLLER
XR-H66MD	CX-NH66MD	SX-NH66	RC-7AS15

- If requiring information about the CD mechanism, see Service Manual of 4ZG-1.
(S/M Code No. 09-978-221-20T)

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SPECIFICATIONS

<FM Tuner section>

Tuning range	87.5 MHz to 108 MHz
Usable sensitivity (IHF)	13.2 dBf
Antenna terminals	75 ohms (unbalanced)

<AM Tuner section>

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

<Amplifier section>

Power output *	60 watts per channel, Min. RMS at 6 ohms, from 50 Hz to 20 kHz, with no more than 1 % Total Harmonic Distortion
-----------------------	--

* without connecting to the SURROUND SPEAKERS

Total harmonic distortion	0.1 % (20 W, 1 kHz, 6 ohms, DIN AUDIO)
----------------------------------	---

Inputs	AUX: 400 mV TAPE PLAY: 400 mV MIC: 1.8 mV/10 kohms DIGITAL IN
---------------	--

Outputs	SUPER WOOFER: 1.9 V SPEAKERS: accept speakers of 6 ohms or more SURROUND SPEAKERS: accept speakers of 16 ohms or more PHONES (stereo jack): accepts headphones of 32 ohms or more CD DIGITAL OUT TAPE REC OUT
----------------	---

<Compact disc player section>

Laser	Semiconductor laser ($\lambda = 780$ 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 – 20000 Hz ± 0.5 – -1.5 dB
Wow and flutter	Unmeasurable

<General>

Power requirements	120 V AC, 60 Hz
Power consumption	100 W
Dimensions of main unit (W x H x D)	260 x 338 x 344 mm (10 ¹ / ₄ x 13 ³ / ₈ x 13 ⁵ / ₈ in.)
Weight of main unit	9.5 kg (20 lb 15 oz.)

<Speaker system SX-NH66>

Cabinet type	3 way, bass reflex (magnetic shielded type)
---------------------	--

Speakers	Woofer: 160 mm (6 ³ / ₈ in.) cone type Tweeter: 60 mm (2 ³ / ₈ in.) cone type Super tweeter: 20 mm (1 ³ / ₁₆ in.) ceramic type
-----------------	---

Impedance	6 ohms
Output sound pressure level	87 dB/W/m
Dimensions (W x H x D)	236 x 388 x 260 mm (9 ³ / ₈ x 13 ³ / ₈ x 10 ¹ / ₄ in.)
Weight	3.4 kg (7 lb 8 oz.)

- Design and specifications are subject to change without notice.
- The word "BBE" and the "BBE symbol" are trademarks of BBE Sound, Inc.
Under license from BBE Sound, Inc.

PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

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

WARNING!!

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



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

VAROITUS!

Laiteen Käyttäminen muulla kuin tässä käyttöohjeessa mainitulla tavalla saattaa altistaa käyt-täjän turvallisuusluokan 1 ylit-tävälle näkymättömälle lasersäteilylle.

VARNING!

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

CAUTION

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

ATTENTION

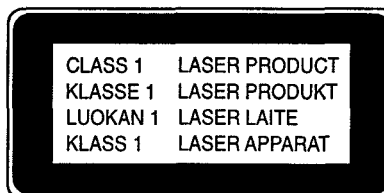
L'utilisation de commandes, réglages ou procédures autres que ceux spécifiés peut entraîner une dangereuse exposition aux radiations.

ADVARSEL!

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

This Compact Disc player is classified as a CLASS 1 LASER product.

The CLASS 1 LASER PRODUCT label is located on the rear exterior.



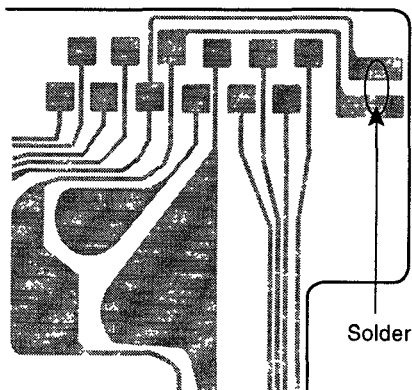
Precaution to replace Optical block

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 right figure.

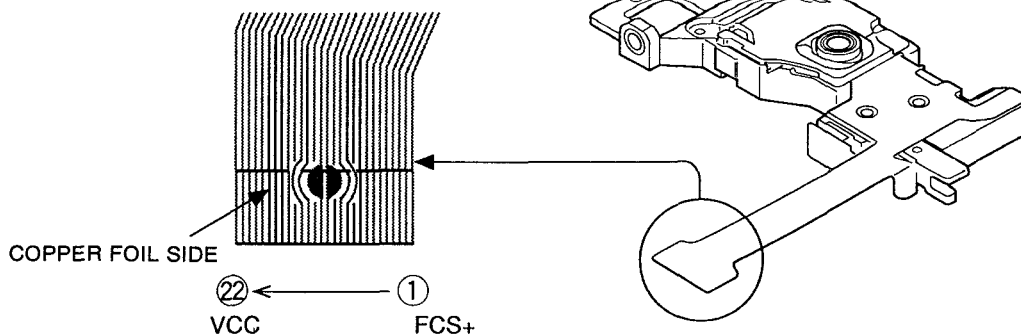
(KSS – 213B)

PICK-UP Assy P.C.B



(KMS – 251A)

PICK-UP Assy P.C.B



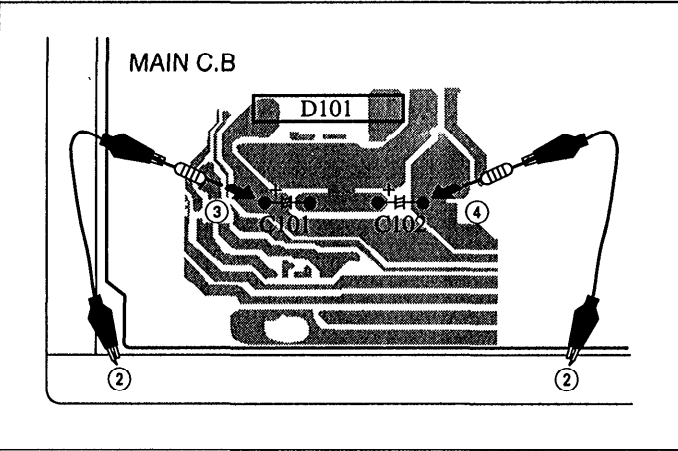
NOTE ON BEFORE STARTING REPAIR

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. Connector 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.



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 capacitor 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 judgment 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.

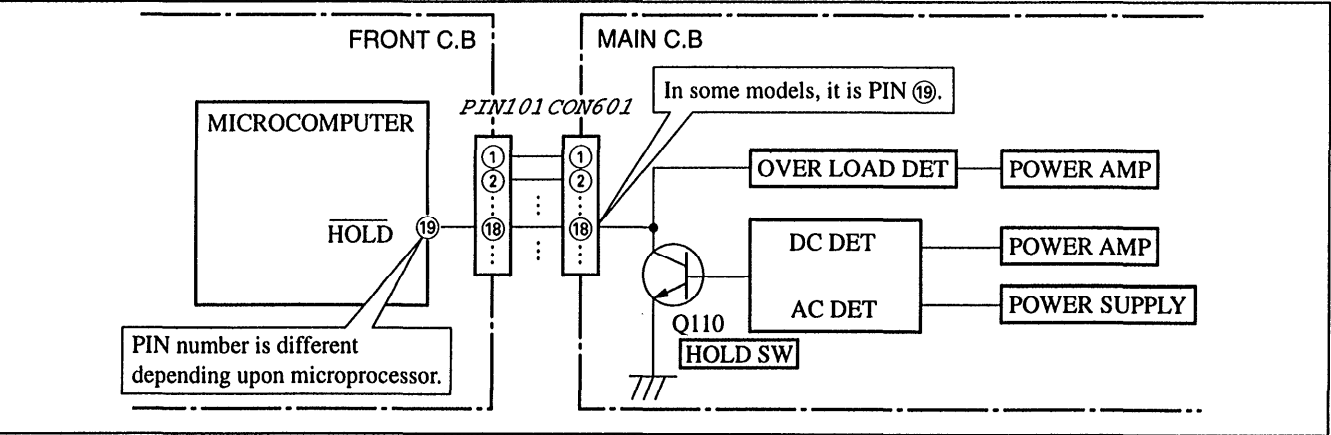


Fig-2-1

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 judgment 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.

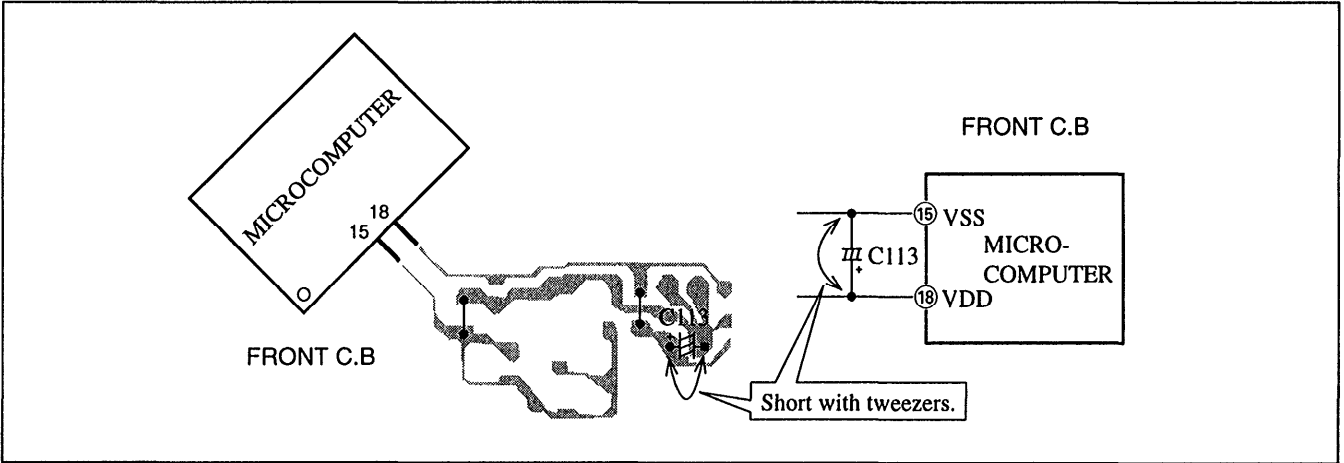


Fig-2-2

- ② Short the 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

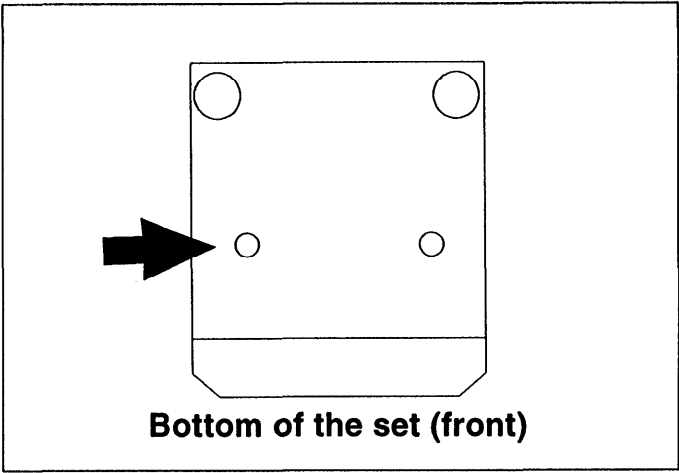
Check the soldering state of the MICROCOMPUTER in addition to the above described procedures. Be sure to exchange the MICROCOMPUTER after surely confirming that the trouble is not caused by poor soldering but the MICROCOMPUTER itself.

DISASSEMBLY INSTRUCTIONS

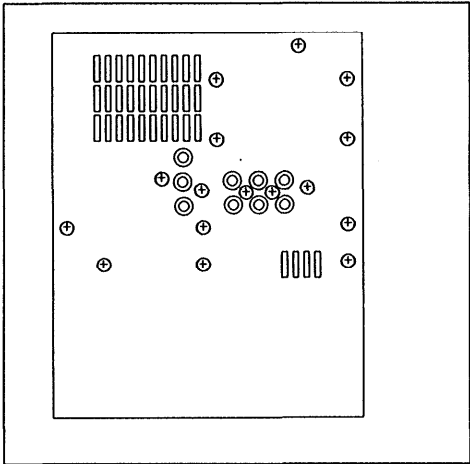
1. MD block removal.

- 1) Remove the CABI, STEEL.
- 2) Remove the PANEL, TRAY MD.

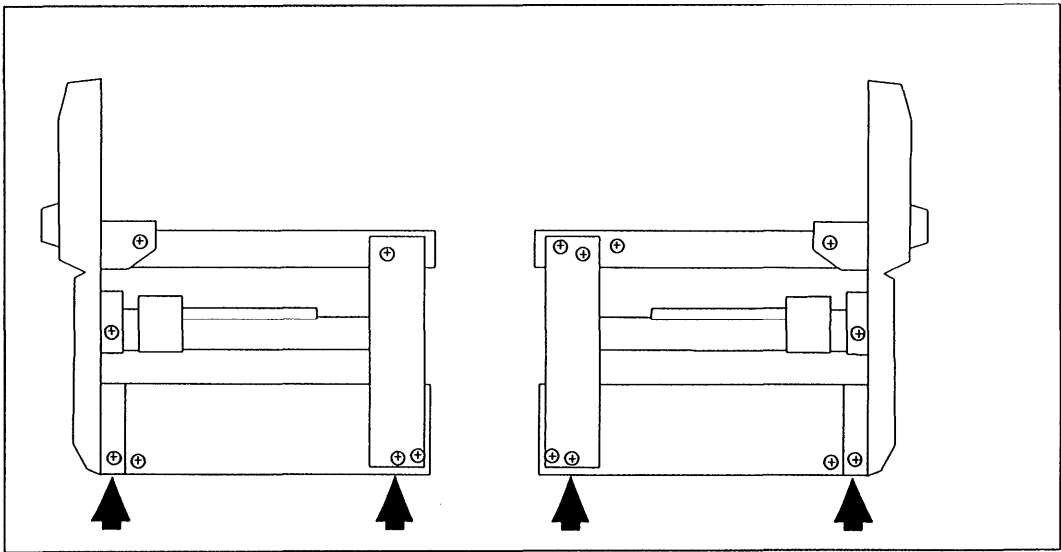
Note: If EJECT function does not work with the OPEN / CLOSE button due to a mechanical failure, insert the minus screwdriver to the hole on the bottom of the set, and turn it to clockwise direction fully. Pull and eject the tray manually.



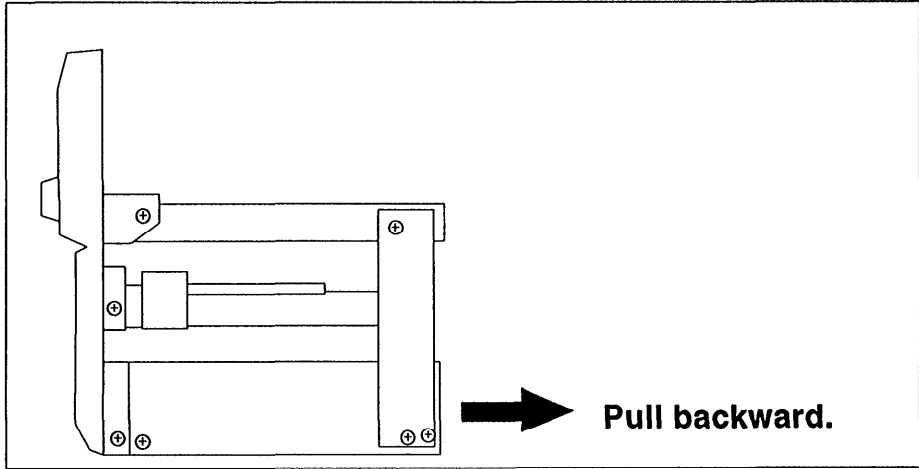
3) Remove the 16 screws and PANEL, REAR.



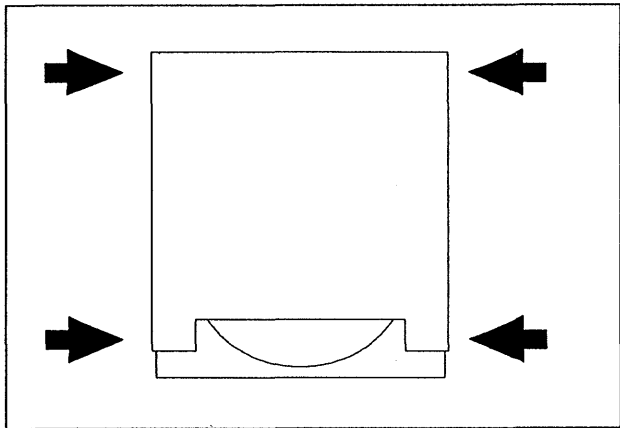
- 4) Disconnect the FFC 22P cable and FFC 13P cable from the MD MAIN C. B, and CN 704 from the MD DIGITAL C. B.
- 5) Remove the 4 screws on the side panel.



6) Pull the MD block to backward.



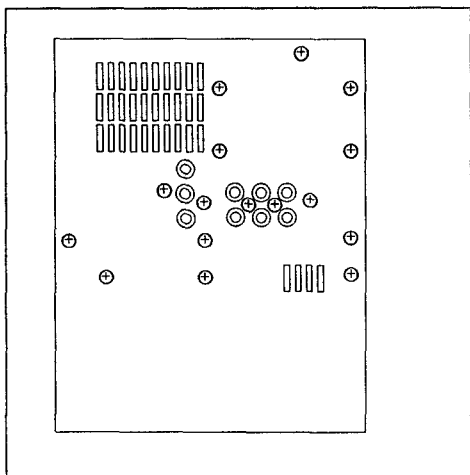
7) Remove the 4 screws on the side panel of the MD block.



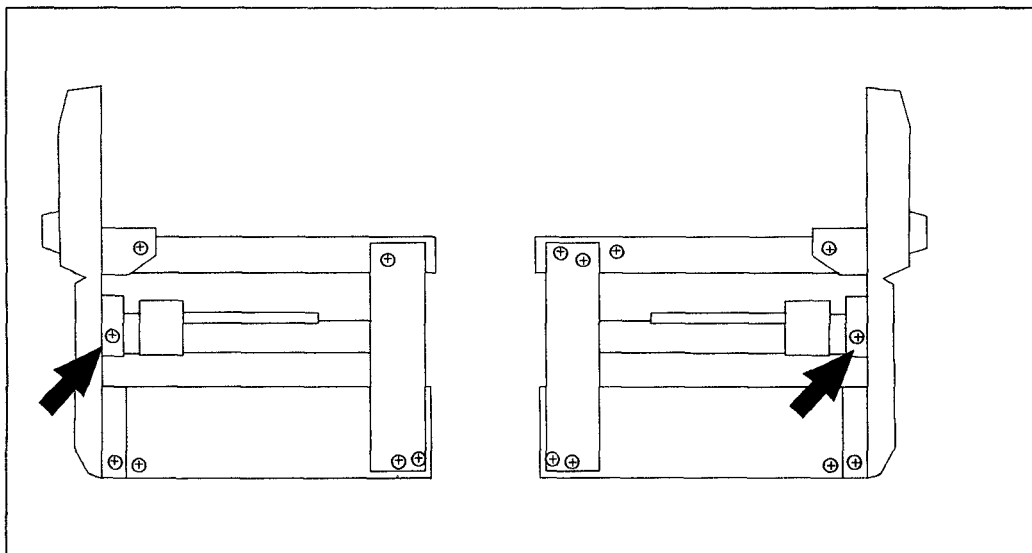
8) For an operational check of MD block, connect FFC 22P and FFC 13P directly to MD MAIN C. B without putting on chassis.

2. CD block removal

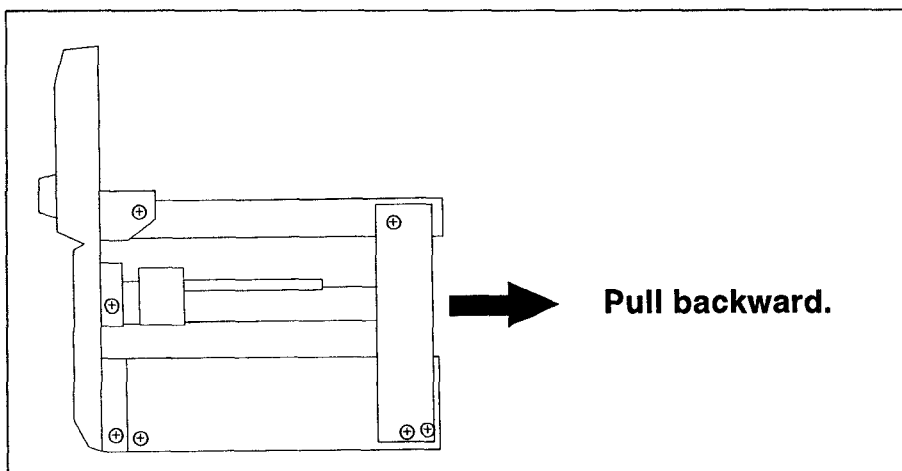
- 1) Remove the CABI, STEEL.
- 2) Remove the PANEL, TRAY CD.
- 3) Remove the 16 screws and PANEL, REAR.



- 4) Disconnect FFC 13P and FFC 6P cables from the CD block, to MD MAIN C. B.
- 5) Remove the 2 screws on the side panel.



- 6) Pull the CD block to backward.



ELECTRICAL MAIN PARTS LIST

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

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION	REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
IC				87-A40-246-080			DIODE, IN4148 T-72
	87-A20-707-010		C-IC, CXA2523AR	87-070-274-080			DIODE, IN4003 SEM
	87-NB5-601-110		C-IC, LC866560W-5H42	87-017-932-080			ZENER, MTJ6.2B
	87-A20-593-010		IC, SPS-442-1-A	87-A40-341-080			ZENER, MTZJ36A
	87-A20-708-010		C-IC, CXD2652AR	87-070-334-080			ZENER, MTZJ10B
	87-017-915-080		IC, BU4094BCF				
	87-A20-709-040		C-IC, BD7910FV	87-A40-412-040			C-DIODE, SB05-05CP
	87-070-289-040		IC, BU2092F	87-070-136-080			ZENER, MTZJ5.1B
	87-ZG5-621-010		C-IC, CXP81952-7NB5	87-A40-184-090			DIODE, RF34
	87-017-920-040		IC, HM51W4400BS/BLS78	87-017-931-080			ZENER, MTZJ5.6B
	87-A20-755-080		C-IC, AK93C45AF	87-A40-180-040			C-DIODE, SB07-015C
	87-A20-710-040		C-IC, S-8110AMP				
	87-A20-083-010		IC, BA3835S	87-A40-003-080			ZENER, MTZJ4.3A
	87-A20-711-040		C-IC, BA5970FP	87-A40-313-080			C-DIODE, MC2840
	87-A20-712-040		C-IC, BA6417F	87-A40-234-080			ZENER, MTZJ5.6A
	87-A20-450-040		C-IC, BH3864F	87-020-583-080			CHIP ZENER, 02CZ5.1Y
	87-A20-056-010		IC, BA3880S	MAIN C.B			
	87-001-982-010		IC, TA7291S	C101	87-016-043-090		CAP, E 3300-50 VR
	87-A20-698-080		C-IC, AK4512VF	C102	87-016-043-090		CAP, E 3300-50 VR
	87-A20-613-040		C-IC, BU9262AFS	C103	87-010-928-090		CAP, E 4700-25 SMG
	86-NFZ-676-080		C-IC, NJM4558MD	C104	87-010-928-090		CAP, E 4700-25 SMG
	87-A20-797-040		C-IC, NJU7221U30	C105	87-012-368-080		C-CAP, S 0.1-50 F
	87-A20-456-040		C-IC, BH3810FS	C106	87-012-368-080		C-CAP, S 0.1-50 F
	87-A20-798-040		C-IC, NJU7221U35	C107	87-012-368-080		C-CAP, S 0.1-50 F
	87-017-888-080		IC, NJM4558MD	C108	87-012-368-080		C-CAP, S 0.1-50 F
	87-A20-714-040		C-IC, NJM2370U33	C109	87-010-196-080		CHIP CAPACITOR, 0.1-25
	87-A20-602-040		C-IC, M5291FP	C110	87-010-196-080		CHIP CAPACITOR, 0.1-25
	87-002-528-080		IC, TC7W04F	C111	87-010-196-080		CHIP CAPACITOR, 0.1-25
	86-NFZ-655-010		IC, LC72131D(Z)	C112	87-010-196-080		CHIP CAPACITOR, 0.1-25
	87-A20-438-010		IC, LA1837	C113	87-010-407-080		CAP, ELECT 33-50V
	87-A20-971-040		C-IC, SN74LV14APW	C116	87-010-407-080		CAP, ELECT 33-50V
	87-A20-870-010		IC, GP1F37R	C117	87-016-285-080		CAP, E 47-100SME
TRANSISTOR				C118	87-010-263-080		CAP, ELECT 100-10V
	87-026-263-080		C-TR, RN1410	C119	87-010-260-080		CAP, ELECT 47-25V
	87-026-423-080		C-TR, RN2305	C120	87-010-403-080		CAP, ELECT 3.3-50V
	89-213-750-010		TR, 2SB1375 (25W)	C121	87-012-140-080		CAP, 470P
	87-A30-076-080		C-TR, 2SC3052F	C122	87-010-263-080		CAP, ELECT 100-10V
	89-115-884-080		CHIP TRANSISTOR, 2SA1588Y	C123	87-010-384-080		CAP, ELECT 100-25V
	87-A30-075-080		C-TR, 2SA1235F	C124	87-010-112-080		CAP, ELECT 100-16V
	89-341-164-080		CHIP TRANSISTOR, 2SC4116Y	C125	87-010-235-080		CAP, E 470-16 SME
	87-026-610-080		TR, KTC3198GR	C201	87-010-400-080		CAP, ELECT 0.47-50V
	87-A30-196-080		TR, 2SC4115SRS	C202	87-010-400-080		CAP, ELECT 0.47-50V
	87-A30-071-080		C-TR, RT1N144C	C205	87-010-180-080		C-CER, 1500P
	87-A30-072-080		C-TR, RT1P144C	C206	87-010-180-080		C-CER, 1500P
	87-026-609-080		TR, KTA1266GR	C207	87-010-404-080		CAP, ELECT 4.7-50V
	87-A30-086-070		C-TR, CSD1306E	C208	87-010-404-080		CAP, ELECT 4.7-50V
	87-A30-106-070		C-TR, CMBT5551	C209	87-010-404-080		CAP, ELECT 4.7-50V
	87-A30-111-080		TR, C2N5401	C210	87-010-404-080		CAP, ELECT 4.7-50V
	87-A30-137-010		TR, 2SD2494	C211	87-010-186-080		CAP, CHIP 4700P
	87-A30-138-010		TR, 2SB1625	C212	87-010-186-080		CAP, CHIP 4700P
	87-A30-162-010		FET, 2SK2937	C213	87-010-260-080		CAP, ELECT 47-25V
	87-A30-073-080		C-TR, RT1N141C	C214	87-010-260-080		CAP, ELECT 47-25V
	87-A30-087-080		C-FET, 2SK2158	C215	87-010-196-080		CHIP CAPACITOR, 0.1-25
	89-327-143-080		TR, 2SC2714 (0.1W)	C219	87-010-196-080		CHIP CAPACITOR, 0.1-25
	87-026-412-080		C-TR, RN1305	C220	87-010-196-080		CHIP CAPACITOR, 0.1-25
	87-A30-117-010		TR, 2SA1357	C221	87-010-196-080		CHIP CAPACITOR, 0.1-25
	87-A30-185-010		TR, 2SD1381FQR	C222	87-010-196-080		CHIP CAPACITOR, 0.1-25
	87-A30-074-080		C-TR, RT1P141C	C223	87-010-194-080		CAP, CHIP 0.047
	89-109-521-080		TR, 2SA952 (0.6W)	C225	87-A10-516-080		C-CAP, S 100P-200 J CH
DIODE				C226	87-A10-516-080		C-CAP, S 100P-200 J CH
	87-001-166-080		DIODE, 1SS301	C229	87-012-358-080		C-CAP, S 0.47-10 F Z
	87-017-447-010		DIODE, GBU4DL	C230	87-012-358-080		C-CAP, S 0.47-10 F Z
	87-A40-270-080		C-DIODE, MC2838	C242	87-010-408-080		CAP, ELECT 47-50V
	87-A40-291-080		DIODE, IN4148M (CPT)	C243	87-010-197-080		CAP, CHIP 0.01 DM
	87-A40-269-080		C-DIODE, MC2836	C244	87-010-408-080		CAP, ELECT 47-50V
				C401	87-010-187-080		CAP CHIP, S 5600P
				C402	87-010-187-080		CAP CHIP, S 5600P
				C403	87-010-405-080		CAP, ELECT 10-50V
				C404	87-010-405-080		CAP, ELECT 10-50V
				C405	87-010-260-080		CAP, ELECT 47-25V

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION	REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
C406	87-010-101-080		CAP,ELECT 220-16	C776	87-010-197-080		CAP,CHIP 0.01 DM
C407	87-010-188-080		CAP CHIP,6800P	C777	87-010-400-080		CAP,ELECT 0.47-50V
C408	87-010-188-080		CAP CHIP,6800P	C778	87-010-401-080		CAP,ELECT 1-50V
C409	87-012-140-080		CAP,470P	C779	87-010-401-080		CAP,ELECT 1-50V
C410	87-012-140-080		CAP,470P	C780	87-010-196-080		CHIP CAPACITOR,0.1-25
C411	87-010-197-080		CAP,CHIP 0.01 DM	C781	87-010-405-080		CAP,ELECT 10-50V
C412	87-010-197-080		CAP,CHIP 0.01 DM	C782	87-010-405-080		CAP,ELECT 10-50V
C413	87-010-195-080		C-CAP,S 0.068-25 F	C783	87-015-819-080		CAPACITOR,0.01
C414	87-010-195-080		C-CAP,S 0.068-25 F	C784	87-015-819-080		CAPACITOR,0.01
C415	87-010-404-080		CAP,ELECT 4.7-50V	C785	87-010-400-080		CAP,ELECT 0.47-50V
C416	87-010-404-080		CAP,ELECT 4.7-50V	C786	87-010-400-080		CAP,ELECT 0.47-50V
C417	87-010-404-080		CAP,ELECT 4.7-50V	C787	87-010-184-080		CHIP CAPACITOR,3300P(K)
C418	87-010-404-080		CAP,ELECT 4.7-50V	C788	87-010-184-080		CHIP CAPACITOR,3300P(K)
C421	87-010-402-080		CAP,ELECT 2.2-50V	C789	87-010-179-080		CAP,CHIP S B1200P
C422	87-010-402-080		CAP,ELECT 2.2-50V	C790	87-010-179-080		CAP,CHIP S B1200P
C516	87-010-196-080		CHIP CAPACITOR,0.1-25	C791	87-010-405-080		CAP,ELECT 10-50V
C611	87-016-081-080		C-CAP,S 0.1-16 RK	C793	87-010-178-080		CHIP CAP,1000P
C613	87-010-404-080		CAP,ELECT 4.7-50V	C794	87-010-406-080		CAP,ELECT 22-50
C614	87-010-404-080		CAP,ELECT 4.7-50V	C795	87-010-596-080		CAP,S 0.047-16
C615	87-010-183-080		C-CAP,S 2700P-50 B	C796	87-010-403-080		CAP,ELECT 3.3-50V
C619	87-010-263-080		CAP,ELECT 100-10V	C797	87-010-182-080		C-CAP,S 2200P-50 B
C620	87-010-196-080		CHIP CAPACITOR,0.1-25	C798	87-010-182-080		C-CAP,S 2200P-50 B
C621	87-010-263-080		CAP,ELECT 100-10V	C799	87-010-194-080		CAP,CHIP 0.047
C622	87-010-196-080		CHIP CAPACITOR,0.1-25	C812	87-010-197-080		CAP,CHIP 0.01 DM
C623	87-010-194-080		CAP,CHIP 0.047	C813	87-010-197-080		CAP,CHIP 0.01 DM
C629	87-010-196-080		CHIP CAPACITOR,0.1-25	C814	87-010-197-080		CAP,CHIP 0.01 DM
C639	87-010-322-080		C-CAP,S 100P-50 CH	C815	87-010-197-080		CAP,CHIP 0.01 DM
C640	87-010-322-080		C-CAP,S 100P-50 CH	C816	87-010-197-080		CAP,CHIP 0.01 DM
C641	87-010-322-080		C-CAP,S 100P-50 CH	C819	87-010-197-080		CAP,CHIP 0.01 DM
C642	87-010-322-080		C-CAP,S 100P-50 CH	C820	87-010-408-080		CAP,ELECT 47-50V
C646	87-010-322-080		C-CAP,S 100P-50 CH	C821	87-010-197-080		CAP,CHIP 0.01 DM
C647	87-010-322-080		C-CAP,S 100P-50 CH	C822	87-010-197-080		CAP,CHIP 0.01 DM
C651	87-010-322-080		C-CAP,S 100P-50 CH	C823	87-010-197-080		CAP,CHIP 0.01 DM
C652	87-010-322-080		C-CAP,S 100P-50 CH	C828	87-010-196-080		CHIP CAPACITOR,0.1-25
C663	87-010-178-080		CHIP CAP,1000P	C829	87-010-196-080		CHIP CAPACITOR,0.1-25
C692	87-010-197-080		CAP,CHIP 0.01 DM	C959	87-010-196-080		CHIP CAPACITOR,0.1-25
C696	87-010-197-080		CAP,CHIP 0.01 DM	C960	87-010-196-080		CHIP CAPACITOR,0.1-25
C697	87-010-197-080		CAP,CHIP 0.01 DM	C961	87-010-152-080		C-CAP,S 8P-50 CH
C701	87-010-381-080		CAP,ELECT 330-16V	CF801	87-008-261-010		FILTER,SFE10.7MA5-A
C702	87-010-404-080		CAP,ELECT 4.7-50V	CF802	87-008-261-010		FILTER,SFE10.7MA5-A
C703	87-010-197-080		CAP,CHIP 0.01 DM	CON602	87-099-194-010		CONN,6P 6216V
C704	87-010-197-080		CAP,CHIP 0.01 DM	FC602	88-906-481-110		FF-CABLE,6P 1.25 480MM
C711	87-010-263-080		CAP,ELECT 100-10V	FFE801	A8-62A-19B-070		62A-1 YFEUNC
C712	87-010-196-080		CHIP CAPACITOR,0.1-25	J252	87-A60-024-010		JACK 6.3BLK W/S WKM
C713	87-010-197-080		CAP,CHIP 0.01 DM	J253	87-A60-568-010		JACK,PIN 3P B/W/R HSP-243V19
C714	87-010-197-080		CAP,CHIP 0.01 DM	J254	87-A60-238-010		TERMINAL,SP 4P(MSC)
C721	87-010-312-080		C-CAP,S 15P-50 CH	J601	87-A60-664-010		JACK,PIN 6P W/R HSP-246V6E
C722	87-010-312-080		C-CAP,S 15P-50 CH	J801	87-A60-202-010		TERMINAL,ANT 4P MSP-154V-02
C723	87-010-178-080		CHIP CAP,1000P	L201	87-003-383-010		COIL,1UH-S
C725	87-010-178-080		CHIP CAP,1000P	L202	87-003-383-010		COIL,1UH-S
C727	87-010-196-080		CHIP CAPACITOR,0.1-25	L601	87-003-231-080		C-COIL,1UH
C728	87-010-248-080		CAP,ELECT 220-10V	L616	87-A50-267-010		COIL,33UHRCR-875D
C755	87-010-197-080		CAP,CHIP 0.01 DM	L770	87-005-849-080		COIL,10UH(CECS)
C756	87-010-197-080		CAP,CHIP 0.01 DM	L771	87-A50-165-010		COIL,FM DET-N(TOK)
C757	87-010-318-080		C-CAP,S 47P-50 CH	L772	87-A90-245-010		FLTR,CFAZH-450(TOK)
C758	87-010-149-080		C-CAP,S 5P-50 CH	L832	87-005-847-080		COIL,2.2UH(CECS)
C761	87-010-196-080		CHIP CAPACITOR,0.1-25	L981	87-NF4-650-010		COIL,AM PACK 4N(TOK)
C762	87-010-197-080		CAP,CHIP 0.01 DM	△ PR201	87-026-691-080		FUSE,10A 125V 251
C763	87-010-194-080		CAP,CHIP 0.047	△ PR202	87-026-691-080		FUSE,10A 125V 251
C765	87-010-197-080		CAP,CHIP 0.01 DM	R123	87-022-200-080		RES,M/F 0.56-1W J
C766	87-010-197-080		CAP,CHIP 0.01 DM	R229	87-A00-257-080		RES,M/F 0.15-1W J
C767	87-010-405-080		CAP,ELECT 10-50V	R230	87-A00-257-080		RES,M/F 0.15-1W J
C768	87-010-197-080		CAP,CHIP 0.01 DM	RY101	87-045-389-010		RELAY,OSA-SS-212DM5
C769	87-010-408-080		CAP,ELECT 47-50V	RY201	87-045-382-010		RELAY,OUAZ-SH-112L
C770	87-015-821-080		C-CAP,0.047	W1	85-NF5-628-010		F-CABLE,7P-2.5
C771	87-010-407-080		CAP,ELECT 33-50V	X721	87-A70-061-010		VIB,XTAL 4.500MHZ CSA-309
C772	87-010-194-080		CAP,CHIP 0.047				
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				

FRONT C.B

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION	REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
C1	87-012-145-080		CAP,CHIP S 270P CH	C502	87-010-319-080		C-CAP,S 56P-50 CH
C2	87-012-145-080		CAP,CHIP S 270P CH	C503	87-012-393-080		C-CAP,S 0.22-16 R K
C3	87-012-145-080		CAP,CHIP S 270P CH	C504	87-010-197-080		CAP,CHIP 0.01 DM
C4	87-012-145-080		CAP,CHIP S 270P CH	C505	87-010-180-080		C-CER,1500P
C5	87-012-145-080		CAP,CHIP S 270P CH	C506	87-010-213-080		C-CAP,S 0.015-50 B
C6	87-012-145-080		CAP,CHIP S 270P CH	C507	87-010-213-080		C-CAP,S 0.015-50 B
C7	87-012-158-080		C-CAP,S 390P-50 CH	C508	87-010-197-080		CAP,CHIP 0.01 DM
C8	87-012-145-080		CAP,CHIP S 270P CH	C509	87-010-181-080		CAP,CHIP S 1800P
C9	87-012-145-080		CAP,CHIP S 270P CH	C510	87-010-196-080		CHIP CAPACITOR,0.1-25
C10	87-012-145-080		CAP,CHIP S 270P CH	C511	87-018-209-080		CAP,CER 0.1-50V
C11	87-012-145-080		CAP,CHIP S 270P CH	C512	87-010-553-040		CAP,E 47-16 GAS
C12	87-012-158-080		C-CAP,S 390P-50 CH	C513	87-010-494-040		CAP,E 1-50 GAS
C13	87-012-145-080		CAP,CHIP S 270P CH	C514	87-010-494-040		CAP,E 1-50 GAS
C102	87-018-123-080		CAP,CER 220P-50V	C515	87-010-183-080		C-CAP,S 2700P-50 B
C103	87-010-197-080		CAP,CHIP 0.01 DM	C516	87-010-183-080		C-CAP,S 2700P-50 B
C104	87-010-198-080		CAP,CHIP 0.022	C517	87-012-141-080		CHIP CAPACITOR,0.22-16F
C105	87-010-198-080		CAP,CHIP 0.022	C518	87-010-196-080		CHIP CAPACITOR,0.1-25
C107	87-012-157-080		C-CAP,S 330P-50 CH	C519	87-010-263-040		CAP,E 100-10
C108	87-010-391-040		CAP,E 10-35 SME	C520	87-010-322-080		C-CAP,S 100P-50 CH
C112	87-010-196-080		CHIP CAPACITOR,0.1-25	C521	87-010-322-080		C-CAP,S 100P-50 CH
C113	87-A10-189-040		CAP,E 220-10	C522	87-010-322-080		C-CAP,S 100P-50 CH
C114	87-010-196-080		CHIP CAPACITOR,0.1-25	C556	87-010-196-080		CHIP CAPACITOR,0.1-25
C116	87-010-494-040		CAP,E 1-50 GAS	C601	87-010-498-040		CAP,E 10-16 GAS
C117	87-010-555-040		CAP,E 100-10 GAS	C602	87-010-186-080		CAP,CHIP 4700P
C118	87-010-194-080		CAP,CHIP 0.047	C603	87-010-405-040		CAP,E 10-50
C119	87-010-408-040		CAP,E 47-50 SME	C604	87-010-382-040		CAP,E 22-25 SME
C120	87-010-404-040		CAP,E 4.7-50 SME	C605	87-010-196-080		CHIP CAPACITOR,0.1-25
C121	87-010-404-040		CAP,E 4.7-50 SME	C606	87-010-322-080		C-CAP,S 100P-50 CH
C122	87-018-208-080		CAP,0.047-50F	C607	87-010-321-080		CHIP CAPACITOR,82P(J)
C123	87-010-196-080		CHIP CAPACITOR,0.1-25	C608	87-010-196-080		CHIP CAPACITOR,0.1-25
C124	87-010-196-080		CHIP CAPACITOR,0.1-25	C609	87-010-545-040		CAP,E 0.22-50 SME
C125	87-010-196-080		CHIP CAPACITOR,0.1-25	C610	87-010-322-080		C-CAP,S 100P-50 CH
C126	87-010-312-080		C-CAP,S 15P-50 CH	C611	87-010-177-080		C-CAP,S 820P-50 SL
C127	87-010-196-080		CHIP CAPACITOR,0.1-25	C612	87-010-176-080		C-CAP,S 680P-50 SL
C128	87-010-178-080		CHIP CAP,1000P	C614	87-010-248-040		CAP,E 220-10 SME
C130	87-010-320-080		CHIP CAP,68P	C670	87-010-196-080		CHIP CAPACITOR,0.1-25
C131	87-010-316-080		C-CAP,S 33P-50 CH	C720	87-010-196-080		CHIP CAPACITOR,0.1-25
C132	87-010-178-080		CHIP CAP,1000P	C723	87-010-154-080		CAP CHIP,10P
C225	87-010-196-080		CHIP CAPACITOR,0.1-25	C725	87-010-196-080		CHIP CAPACITOR,0.1-25
C226	87-010-196-080		CHIP CAPACITOR,0.1-25	C726	87-010-196-080		CHIP CAPACITOR,0.1-25
C261	87-010-322-080		C-CAP,S 100P-50 CH	CON103	87-099-015-010		CONN,13P 6216V
C262	87-010-322-080		C-CAP,S 100P-50 CH	CON104	87-099-197-010		CONN,9P 6216 V
C263	87-010-322-080		C-CAP,S 100P-50 CH	FB601	87-008-372-080		FILTER,EMI BL OIRNI
C264	87-010-322-080		C-CAP,S 100P-50 CH	FC202	87-NB5-634-010		FF-CABLE,25P 1.00 170MM
C265	87-010-322-080		C-CAP,S 100P-50 CH	FC301	88-913-151-110		FF-CABLE,13P 1.25
C266	87-010-322-080		C-CAP,S 100P-50 CH	FC800	88-909-261-110		FF-CABLE,9P 1.25
C351	87-012-158-080		C-CAP,S 390P-50 CH	FL101	87-NB5-603-010		FL,BJ592GK
C352	87-010-196-080		CHIP CAPACITOR,0.1-25	J601	87-A60-284-010		JACK,3.5MO(MSC)
C353	87-010-196-080		CHIP CAPACITOR,0.1-25	J602	87-A60-284-010		JACK,3.5MO(MSC)
C354	87-010-196-080		CHIP CAPACITOR,0.1-25	L501	87-005-448-080		COIL,220UH K
C355	87-010-196-080		CHIP CAPACITOR,0.1-25	LED201	87-070-201-080		LED,SLP9118C-51-S-T1
C356	87-010-196-080		CHIP CAPACITOR,0.1-25	LED202	87-070-201-080		LED,SLP9118C-51-S-T1
C357	87-010-196-080		CHIP CAPACITOR,0.1-25	LED203	87-070-201-080		LED,SLP9118C-51-S-T1
C403	87-010-992-080		C-CAP,S 0.047-25 B	LED204	87-070-201-080		LED,SLP9118C-51-S-T1
C404	87-010-992-080		C-CAP,S 0.047-25 B	LED205	87-070-201-080		LED,SLP9118C-51-S-T1
C405	87-010-494-040		CAP,E 1-50 GAS	LED206	87-A40-380-080		LED,SEL6510C-TP5 GRN
C406	87-010-494-040		CAP,E 1-50 GAS	LED207	87-A40-380-080		LED,SEL6510C-TP5 GRN
C407	87-010-184-080		CHIP CAPACITOR,3300P(K)	LED208	87-A40-380-080		LED,SEL6510C-TP5 GRN
C408	87-010-184-080		CHIP CAPACITOR,3300P(K)	LED209	87-A40-380-080		LED,SEL6510C-TP5 GRN
C409	87-010-198-080		CAP,CHIP 0.022	LED210	87-A40-380-080		LED,SEL6510C-TP5 GRN
C410	87-010-198-080		CAP,CHIP 0.022	LED211	87-A40-380-080		LED,SEL6510C-TP5 GRN
C411	87-A10-201-080		C-CAP,S 0.33-16 KB	LED212	87-A40-380-080		LED,SEL6510C-TP5 GRN
C412	87-A10-201-080		C-CAP,S 0.33-16 KB	LED213	87-A40-380-080		LED,SEL6510C-TP5 GRN
C413	87-010-196-080		CHIP CAPACITOR,0.1-25	LED214	87-A40-380-080		LED,SEL6510C-TP5 GRN
C414	87-010-374-040		CAP,E 47-10	LED215	87-A40-380-080		LED,SEL6510C-TP5 GRN
C415	87-010-549-040		CAP,E 47-6.3 GAS	LED217	87-070-281-080		LED,SLZ736A-25-S-T1
C416	87-010-196-080		CHIP CAPACITOR,0.1-25	LED218	87-070-281-080		LED,SLZ736A-25-S-T1
C417	87-016-081-080		C-CAP,S 0.1-16 RK	LED219	87-070-281-080		LED,SLZ736A-25-S-T1
C418	87-010-560-040		CAP,E 10-50 GAS	LED220	87-070-281-080		LED,SLZ736A-25-S-T1
C501	87-010-319-080		C-CAP,S 56P-50 CH	LED221	87-070-281-080		LED,SLZ736A-25-S-T1

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION	REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
LED234	87-A40-446-080		LED,SLP-7131F-81H-S-T1 P-GRN	FR-MD C.B			
LED235	87-A40-446-080		LED,SLP-7131F-81H-S-T1 P-GRN				
LED236	87-A40-446-080		LED,SLP-7131F-81H-S-T1 P-GRN	FR-CD C.B			
S301	87-A90-095-080		SW,TACT EVQ11G04M				
S302	87-A90-095-080		SW,TACT EVQ11G04M	CON310	87-099-015-010		CONN,13P 6216V
				CON311	87-099-015-010		CONN,13P 6216V
S303	87-A90-095-080		SW,TACT EVQ11G04M	FC311	88-913-321-110		FF-CABLE,13P 1.25 320MM
S304	87-A90-095-080		SW,TACT EVQ11G04M				
S305	87-A90-095-080		SW,TACT EVQ11G04M	MD MAIN C.B			
S321	87-A90-095-080		SW,TACT EVQ11G04M				
S322	87-A90-095-080		SW,TACT EVQ11G04M	C100	87-016-112-080		C-CAP,E 22-6.3(B6)
				C101	87-016-112-080		C-CAP,E 22-6.3(B6)
S323	87-A90-095-080		SW,TACT EVQ11G04M	C102	87-012-286-080		CAP,U 0.01-25
S324	87-A90-095-080		SW,TACT EVQ11G04M	C103	87-010-787-080		CAP,U 0.022-25
S325	87-A90-095-080		SW,TACT EVQ11G04M	C104	87-016-112-080		C-CAP,E 22-6.3(B6)
S326	87-A90-095-080		SW,TACT EVQ11G04M				
S327	87-A90-095-080		SW,TACT EVQ11G04M	C105	87-010-831-080		C-CAP,U 0.1-16F
				C106	87-A10-249-080		C-CAP,U 1-10 ZF
S328	87-A90-095-080		SW,TACT EVQ11G04M	C107	87-012-195-080		C-CAP,U 100P-50CH
S329	87-A90-095-080		SW,TACT EVQ11G04M	C108	87-012-274-080		CHIP CAP,U 1000P-50B
S341	87-A90-095-080		SW,TACT EVQ11G04M	C109	87-010-880-080		C-CAP,E 47-6.3 MF
S342	87-A90-095-080		SW,TACT EVQ11G04M				
S343	87-A90-095-080		SW,TACT EVQ11G04M	C111	87-016-112-080		C-CAP,E 22-6.3(B6)
				C112	87-012-286-080		CAP,U 0.01-25
S344	87-A90-095-080		SW,TACT EVQ11G04M	C113	87-012-284-080		CAP,U 6800P-50
S345	87-A90-095-080		SW,TACT EVQ11G04M	C114	87-016-369-080		C-CAP,S 0.033-25 B K
S346	87-A90-095-080		SW,TACT EVQ11G04M	C115	87-A10-369-080		C-CAP,S 0.47-16 K B
S347	87-A90-095-080		SW,TACT EVQ11G04M				
S348	87-A90-095-080		SW,TACT EVQ11G04M	C116	87-012-282-080		CAP,U 4700P-50
				C117	87-A10-484-080		C-CAP,S 1.0U-10 K B
S361	87-A90-095-080		SW,TACT EVQ11G04M	C118	87-012-282-080		CAP,U 4700P-50
S362	87-A90-095-080		SW,TACT EVQ11G04M	C119	87-016-460-080		C-CAP,S 0.22-16 B
S363	87-A90-095-080		SW,TACT EVQ11G04M	C120	87-010-787-080		CAP,U 0.022-25
S364	87-A90-095-080		SW,TACT EVQ11G04M				
S365	87-A90-095-080		SW,TACT EVQ11G04M	C121	87-012-286-080		CAP,U 0.01-25
				C122	87-010-992-080		C-CAP,S 0.047-25 B
S366	87-A90-095-080		SW,TACT EVQ11G04M	C123	87-012-286-080		CAP,U 0.01-25
S367	87-A90-095-080		SW,TACT EVQ11G04M	C124	87-016-112-080		C-CAP,E 22-6.3(B6)
S368	87-A90-095-080		SW,TACT EVQ11G04M	C125	87-016-112-080		C-CAP,E 22-6.3(B6)
S369	87-A90-095-080		SW,TACT EVQ11G04M				
S370	87-A90-095-080		SW,TACT EVQ11G04M	C201	87-010-831-080		C-CAP,U 0.1-16F
				C202	87-010-831-080		C-CAP,U 0.1-16F
S371	87-A90-095-080		SW,TACT EVQ11G04M	C203	87-010-785-080		C-CAP,U 0.015-25BK
SW101	87-A90-535-010		SW,RTRY EC16B24304	C204	87-A10-369-080		C-CAP,S 0.47-16 K B
SW102	87-A90-085-010		SW,RTRY EC16B24204	C205	87-010-831-080		C-CAP,U 0.1-16F
X202	87-A70-070-080		VIB,CER 5.76MHZ CRHF				
				C206	87-012-270-080		CAP,U 470P-50
MD KEY C.B				C207	87-A10-369-080		C-CAP,S 0.47-16 K B
				C208	87-012-286-080		CAP,U 0.01-25
C865	87-010-196-080		CHIP CAPACITOR,0.1-25	C209	87-010-831-080		C-CAP,U 0.1-16F
C866	87-010-322-080		C-CAP,S 100P-50 CH	C210	87-012-172-080		CAPACITOR CHIP,U 10P CH
C867	87-010-322-080		C-CAP,S 100P-50 CH				
C868	87-010-322-080		C-CAP,S 100P-50 CH	C211	87-012-172-080		CAPACITOR CHIP,U 10P CH
CON800	87-099-197-010		CONN,9P 6216 V	C213	87-016-112-080		C-CAP,E 22-6.3(B6)
				C214	87-012-274-080		CHIP CAP,U 1000P-50B
LED801	87-A40-452-080		LED,SEL6210S-TP7 RED	C217	87-012-188-080		C-CAP,U 47P-50 CH
LED802	87-A40-452-080		LED,SEL6210S-TP7 RED	C218	87-012-188-080		C-CAP,U 47P-50 CH
LED803	87-A40-452-080		LED,SEL6210S-TP7 RED				
LED804	87-A40-452-080		LED,SEL6210S-TP7 RED	C219	87-016-112-080		C-CAP,E 22-6.3(B6)
LED805	87-A40-452-080		LED,SEL6210S-TP7 RED	C220	87-016-112-080		C-CAP,E 22-6.3(B6)
				C221	87-010-831-080		C-CAP,U 0.1-16F
LED808	87-A40-451-080		LED,SEL6510C-TP7 GRN	C222	87-016-112-080		C-CAP,E 22-6.3(B6)
LED809	87-A40-451-080		LED,SEL6510C-TP7 GRN	C223	87-010-831-080		C-CAP,U 0.1-16F
LED810	87-A40-451-080		LED,SEL6510C-TP7 GRN				
LED811	87-A40-451-080		LED,SEL6510C-TP7 GRN	C224	87-A10-685-080		C-CAP,S 470P-100 J CH
LED812	87-A40-451-080		LED,SEL6510C-TP7 GRN	C225	87-010-831-080		C-CAP,U 0.1-16F
				C226	87-010-831-080		C-CAP,U 0.1-16F
△ PR101	87-A90-246-080		PROTECTOR,0.25A 60V	C227	87-012-274-080		CHIP CAP,U 1000P-50B
S806	87-A90-095-080		SW,TACT EVQ11G04M	C228	87-012-274-080		CHIP CAP,U 1000P-50B
S807	87-A90-095-080		SW,TACT EVQ11G04M				
S808	87-A90-095-080		SW,TACT EVQ11G04M	C229	87-012-274-080		CHIP CAP,U 1000P-50B
S809	87-A90-095-080		SW,TACT EVQ11G04M	C230	87-010-831-080		C-CAP,U 0.1-16F
				C241	87-012-274-080		CHIP CAP,U 1000P-50B
S810	87-A90-095-080		SW,TACT EVQ11G04M	C242	87-012-274-080		CHIP CAP,U 1000P-50B
S811	87-A90-095-080		SW,TACT EVQ11G04M	C251	87-010-831-080		C-CAP,U 0.1-16F
S812	87-A90-095-080		SW,TACT EVQ11G04M				
				C291	87-018-134-080		CAP,TC U 0.01-16
MD KK C.B				C300	87-010-831-080		C-CAP,U 0.1-16F
				C301	87-010-831-080		C-CAP,U 0.1-16F
PL802	87-A90-847-080		LAMP,BQ137-30311B-ST CAP ASA	C302	87-010-831-080		C-CAP,U 0.1-16F
PL803	87-A90-847-080		LAMP,BQ137-30311B-ST CAP ASA	C305	87-A10-249-080		C-CAP,U 1-10 ZF

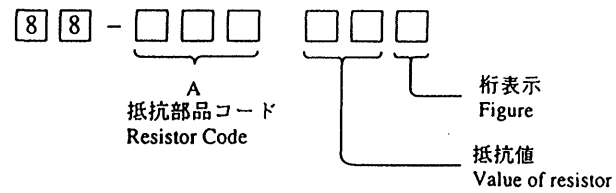
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C307	87-010-831-080		C-CAP,U 0.1-16F	C607	87-010-196-080		CHIP CAPACITOR,0.1-25
C308	87-010-831-080		C-CAP,U 0.1-16F	C608	87-010-221-080		CAP,ELECT 470-10V
C311	87-016-112-080		C-CAP,E 22-6.3(B6)	C611	87-010-385-080		CAP,ELECT 220-25V
C312	87-012-195-080		C-CAP,U 100P-50CH	C613	87-010-178-080		CHIP CAP 1000P
C341	87-010-831-080		C-CAP,U 0.1-16 F	C614	87-A10-771-010		CAP,E 470-10 LXV
C342	87-010-831-080		C-CAP,U 0.1-16 F	C615	87-010-322-080		C-CAP,S 100P-50CH
C343	87-010-831-080		C-CAP,U 0.1-16 F	C621	87-010-666-080		C-CAP,E 47-16
C344	87-010-831-080		C-CAP,U 0.1-16 F	C731	87-010-831-080		C-CAP,U 0.1-16F
C400	87-010-196-080		CHIP CAPACITOR,0.1-25	C741	87-010-196-080		CHIP CAPACITOR,0.1-25
C401	87-010-831-080		C-CAP,U 0.1-16F	C851	87-010-831-080		C-CAP,U 0.1-16F
C402	87-010-831-080		C-CAP,U 0.1-16F	CN100	87-A60-088-080		C-CONN,22P CFP55
C403	87-010-831-080		C-CAP,U 0.1-16F	FB1	87-A90-762-010		F-BEAD,3407MFT
C404	87-010-831-080		C-CAP,U 0.1-16F	FB2	87-A90-762-010		F-BEAD,3407MFT
C405	87-010-661-080		C-CAP,E 10-16	FB3	87-A90-762-010		F-BEAD,3407MFT
C406	87-010-779-080		C-CAP,E 100-6.3	FC300	87-NB5-635-110		FF-CABLE,23P 1.00 750MM
C407	87-012-197-080		C-CAP,U 150P-50 CH	FC600	87-NB5-636-110		FF-CABLE,12P 1.00 900MM
C408	87-012-197-080		C-CAP,U 150P-50 CH	L100	87-A50-117-080		C-COIL,10UHLQH3C
C411	87-012-271-080		CAP,U 560P-50	L101	87-A50-012-080		C-COIL,100UH LQH3C
C412	87-012-271-080		CAP,U 560P-50	L102	87-A50-117-080		C-COIL,10UHLQH3C
C413	87-012-271-080		CAP,U 560P-50	L103	87-A50-117-080		C-COIL,10UHLQH3C
C414	87-012-271-080		CAP,U 560P-50	L201	87-A50-117-080		C-COIL,10UHLQH3C
C417	87-012-268-080		C-CAP,U 330P-50 B	L202	87-A50-117-080		C-COIL,10UHLQH3C
C418	87-012-268-080		C-CAP,U 330P-50 B	L203	87-A50-116-080		C-COIL,4.7UHLQH3C
C423	87-012-286-080		CAP,U 0.01-25	L204	87-A50-116-080		C-COIL,4.7UHLQH3C
C424	87-012-286-080		CAP,U 0.01-25	L301	87-A50-117-080		C-COIL,10UHLQH3C
C429	87-012-286-080		CAP,U 0.01-25	L501	87-A50-116-080		C-COIL,4.7UHLQH3C
C430	87-012-286-080		CAP,U 0.01-25	L502	87-A50-116-080		C-COIL,4.7UHLQH3C
C431	87-010-666-080		C-CAP,E 47-16	L504	87-005-774-080		C-COIL,4BLH
C451	87-010-666-080		C-CAP,E 47-16	L505	87-005-774-080		C-COIL,4BLH
C452	87-010-196-080		CHIP CAPACITOR,0.1-25	L601	87-A50-095-010		COIL,68UH RCR875D
C453	87-010-196-080		CHIP CAPACITOR,0.1-25	L602	87-A50-267-010		COIL,33UHRRCR-875D
C454	87-010-196-080		CHIP CAPACITOR,0.1-25	L603	87-A50-163-080		C-COIL,ZBFS5101-PT
C501	87-010-831-080		C-CAP,U 0.1-16F	L604	87-A50-163-080		C-COIL,ZBFS5101-PT
C502	87-010-831-080		C-CAP,U 0.1-16F	M401	87-045-305-010		MOTOR,RF-500TB DC-5V(2MA)
C503	87-010-662-080		C-CAP,E 22-6.3	M402	87-045-305-010		MOTOR,RF-500TB DC-5V(2MA)
C504	87-010-831-080		C-CAP,U 0.1-16F	R403	87-022-247-080		C-RES,U 22K-1/16W F
C505	87-010-662-080		C-CAP,E 22-6.3	R404	87-022-247-080		C-RES,U 22K-1/16W F
C506	87-010-831-080		C-CAP,U 0.1-16F	R407	87-022-243-080		C-RES,U 15K-1/16W F
C507	87-010-661-080		C-CAP,E 10-16	R408	87-022-243-080		C-RES,U 15K-1/16W F
C508	87-010-831-080		C-CAP,U 0.1-16F	R409	87-022-241-080		C-RES,U 12K-1/16W F
C509	87-010-662-080		C-CAP,E 22-6.3	R410	87-022-241-080		C-RES,U 12K-1/16W F
C510	87-010-831-080		C-CAP,U 0.1-16F	R411	87-022-247-080		C-RES,U 22K-1/16W F
C511	87-010-661-080		C-CAP,E 10-16	R412	87-022-247-080		C-RES,U 22K-1/16W F
C517	87-012-198-080		CAP,180P	R415	87-022-231-080		C-RES,U 4.7K-1/16W F
C518	87-012-198-080		CAP,180P	R416	87-022-231-080		C-RES,U 4.7K-1/16W F
C523	87-010-662-080		C-CAP,E 22-6.3	R417	87-022-241-080		C-RES,U 12K-1/16W F
C524	87-010-662-080		C-CAP,E 22-6.3	R418	87-022-241-080		C-RES,U 12K-1/16W F
C525	87-012-274-080		CHIP CAP,U 1000P-50B	R423	87-025-564-080		C-RES,U M/F 47K D
C526	87-012-274-080		CHIP CAP,U 1000P-50B	R424	87-025-564-080		C-RES,U M/F 47K D
C527	87-010-661-080		C-CAP,E 10-16	R425	87-022-583-080		C-RES,U M/F 12K D
C528	87-010-661-080		C-CAP,E 10-16	R426	87-022-583-080		C-RES,U M/F 12K D
C529	87-012-276-080		CAP,CHIP SS 1500 PBK	S701	87-A90-788-080		C-SW,MICRO SPPB64
C530	87-012-276-080		CAP,CHIP SS 1500 PBK	S702	87-036-110-010		PUSH,SWITCH
C531	87-012-199-080		CAP,220P	S703	87-036-110-010		PUSH,SWITCH
C532	87-012-199-080		CAP,220P	X200	87-A70-105-080		C-VIB,XTAL 22.5792MHZ SMD-49
C533	87-010-661-080		C-CAP,E 10-16	X301	87-030-369-080		C-VIB,CER FBRC12.00B
C534	87-010-661-080		C-CAP,E 10-16				
C535	87-010-387-080		CAP,E 470-25 SME				
C536	87-010-196-080		CHIP CAPACITOR,0.1-25				
C537	87-010-666-080		C-CAP,E 47-16				
C538	87-010-196-080		CHIP CAPACITOR,0.1-25	C901	87-010-196-080		CHIP CAPACITOR,0.1-25
C539	87-010-846-080		C-CAP,E 4.7-35V	C902	87-010-178-080		CHIP CAP,1000P
C540	87-010-846-080		C-CAP,E 4.7-35V	C903	87-010-178-080		CHIP CAP,1000P
C600	87-010-779-080		C-CAP,E 100-6.3	C904	87-010-196-080		CHIP CAPACITOR,0.1-25
C601	87-010-779-080		C-CAP,E 100-6.3	FC205	87-ZG5-634-010		CABLE,FFC 4P-1.00
C602	87-010-779-080		C-CAP,E 100-6.3				
C603	87-A10-711-080		C-CAP,E 100-6.3 M MF				
C604	87-010-779-080		C-CAP,E 100-6.3				
C605	87-012-286-080		CAP,U 0.01-25	FC903	87-ZG5-633-010		CABLE,FFC 8P-0.50-135
C606	87-010-831-080		C-CAP,U 0.1-16F	S901	87-036-366-080		C-SW,PUSH SPPW9-5.45
				S902	87-036-350-080		C-SW,PUSH SPPW9-4.8

TRANSISTOR ILLUSTRATION

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
S903	87-036-269-080		SW,PUSH ESE102MH1
MD DISH SENS C.B			
PS901	87-026-573-010		IC,GP1853V
MD O-L HEAD C.B			
AC1 C.B			
△ F101	87-035-416-010		FUSE,3A 250V T 239UL
△ FB1	87-003-317-010		F-BEAD,F0H2515-LG7
△ FC1	87-A90-505-080		FUSE CLAMP,TP00351-51
△ FC2	87-A90-505-080		FUSE CLAMP,TP00351-51
△ FT101	87-NB5-607-010		PT,7NB-5 U
△ T1	87-A60-317-010		TERMINAL,1P MSC
△ T2	87-A60-317-010		TERMINAL,1P MSC
AC2 C.B			
△ PR1	87-026-691-080		FUSE,10A 125V 251
△ PR2	87-026-691-080		FUSE,10A 125V 251
△ PR5	87-026-691-080		FUSE,10A 125V 251
△ PR6	87-026-691-080		FUSE,10A 125V 251

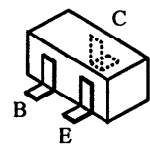
○ チップ抵抗部品コード／CHIP RESISTOR PART CODE

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

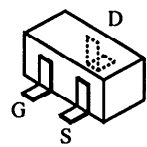


チップ抵抗
Chip resistor

容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法／Dimensions (mm)				抵抗コード : A Resistor Code: A
				外形／Form	L	W	t	
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



2SA1235 RN1305
2SA1588 RN1410
2SC2714 RN2305
2SC3052 RT1N141C
2SC4116 RT1N144C
CMBT5551 RT1P141C
CSD1306E RT1P144C



2SK2158



KTA1266
KTC3198



C2N5401



2SA952



2SC4115



2SB1625
2SD2494
2SB1375

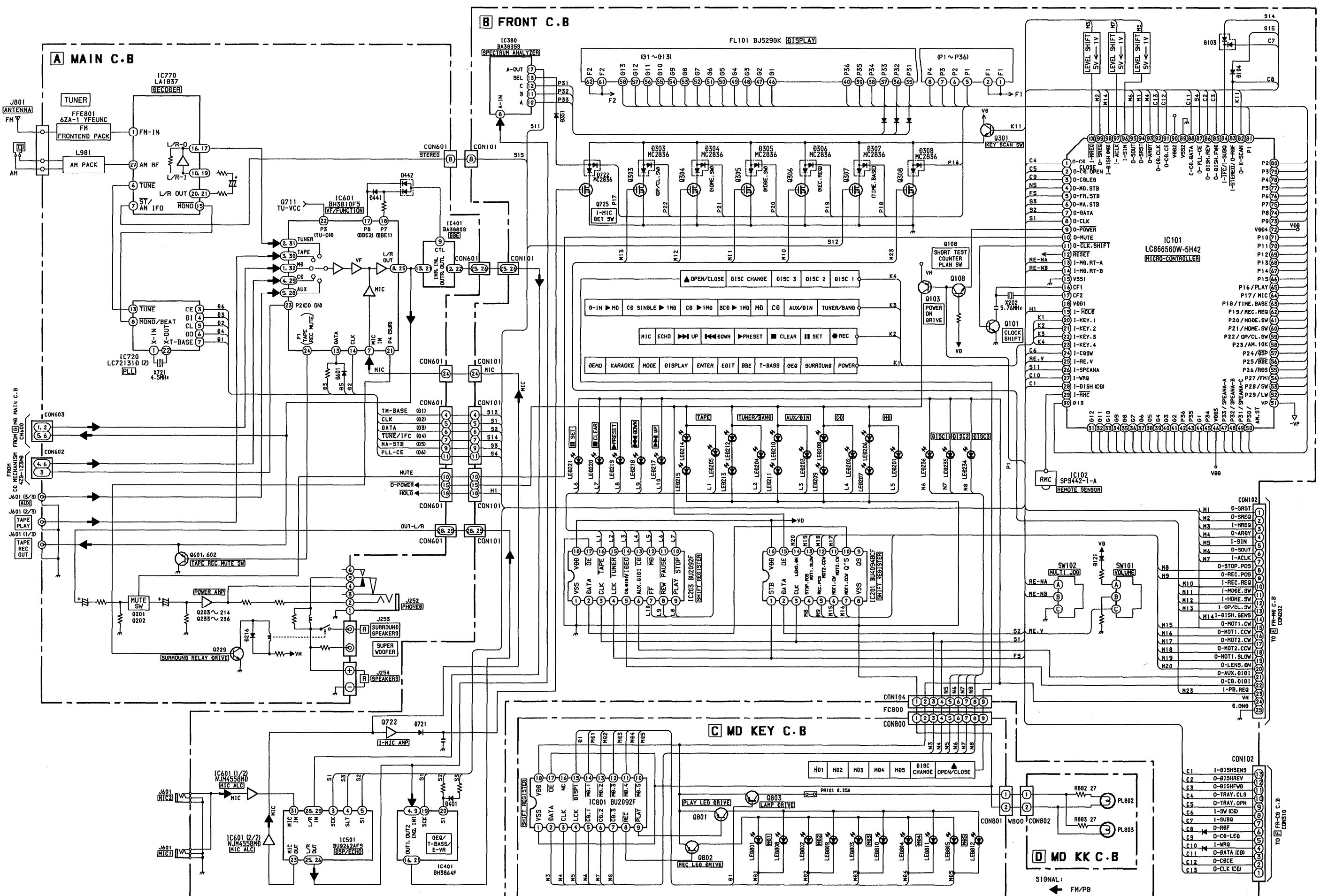


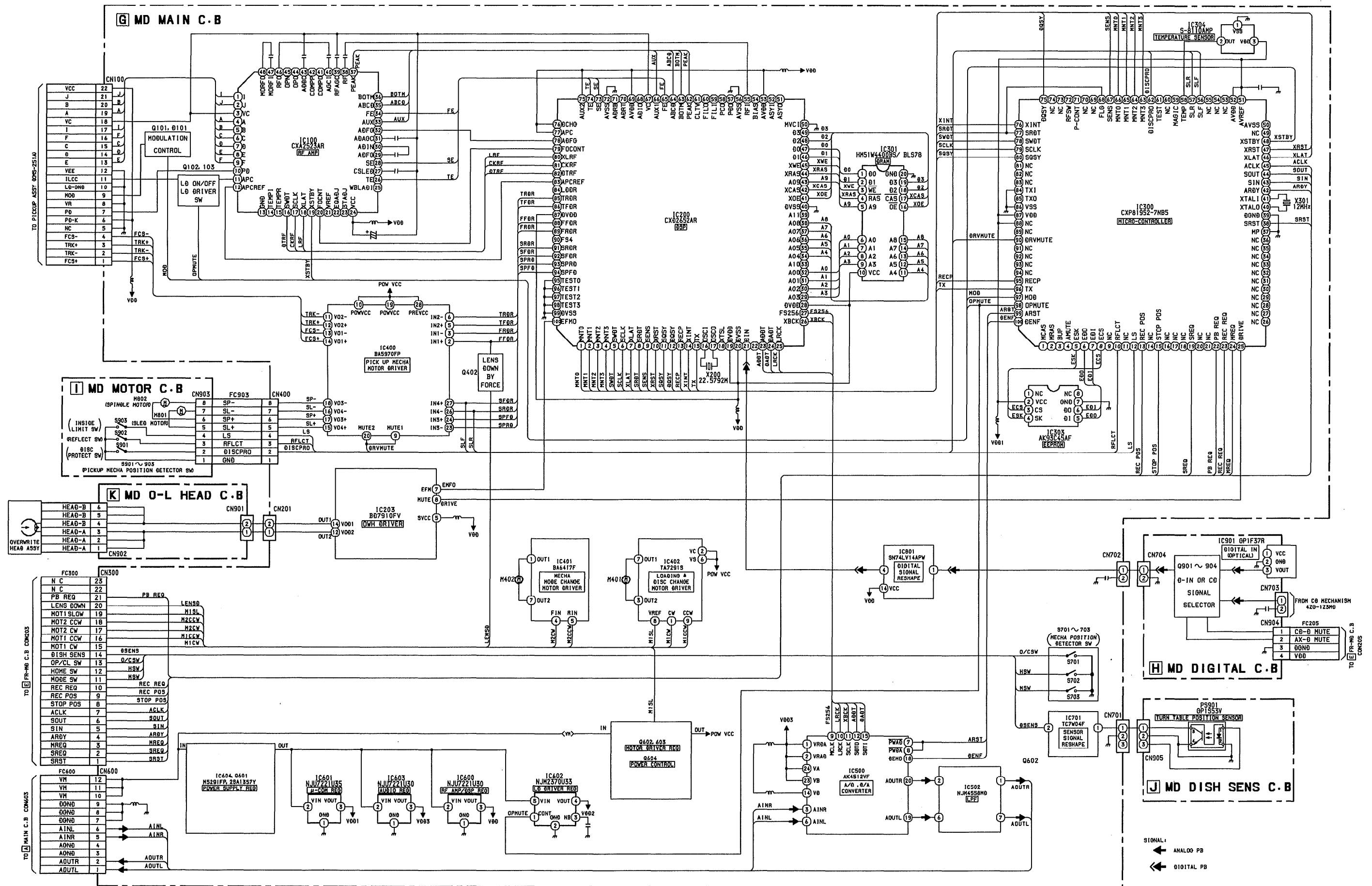
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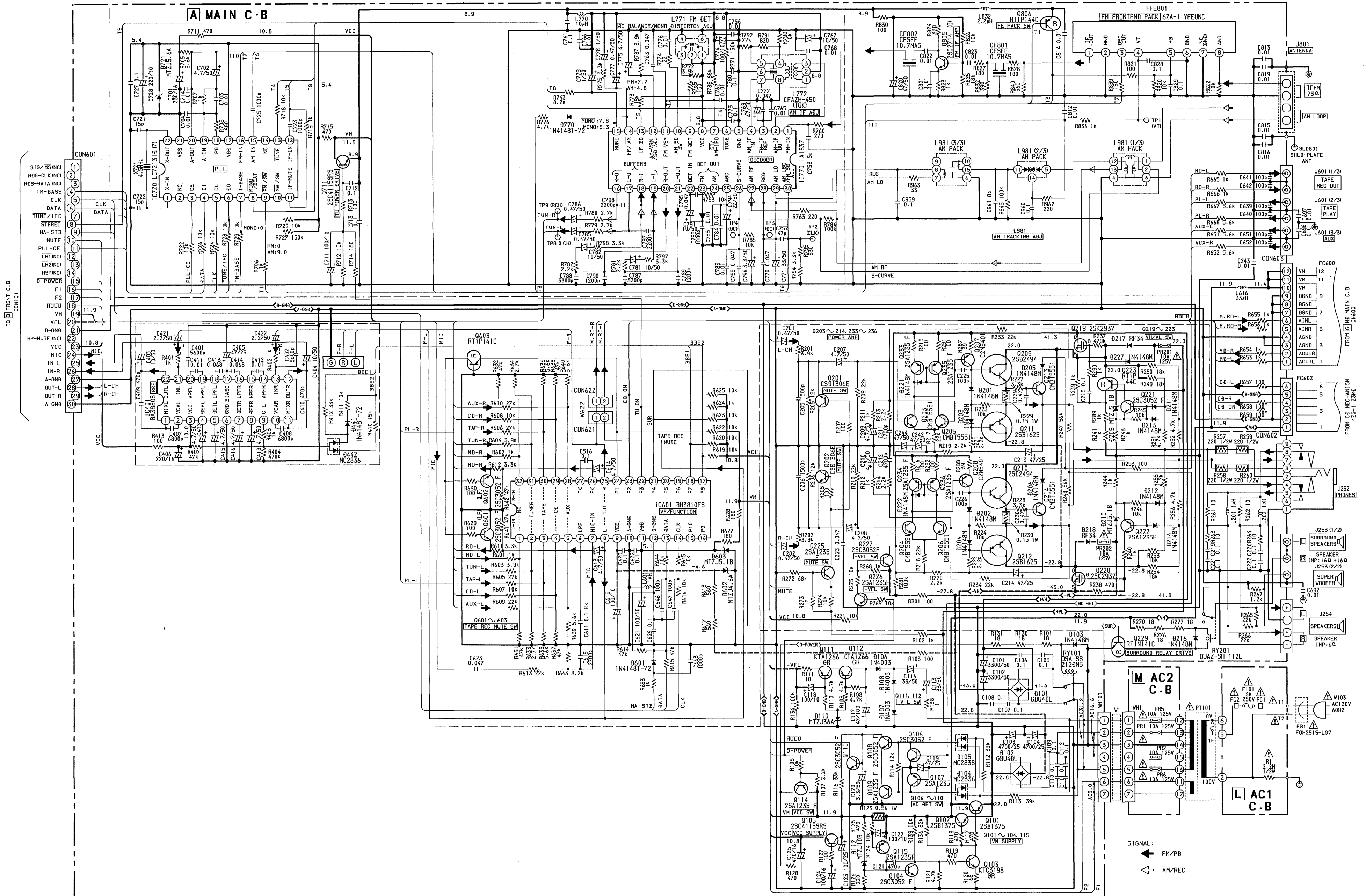


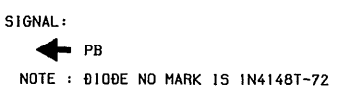
2SA1357
2SD1381

BLOCK DIAGRAM – 1 (MAIN / FRONT)

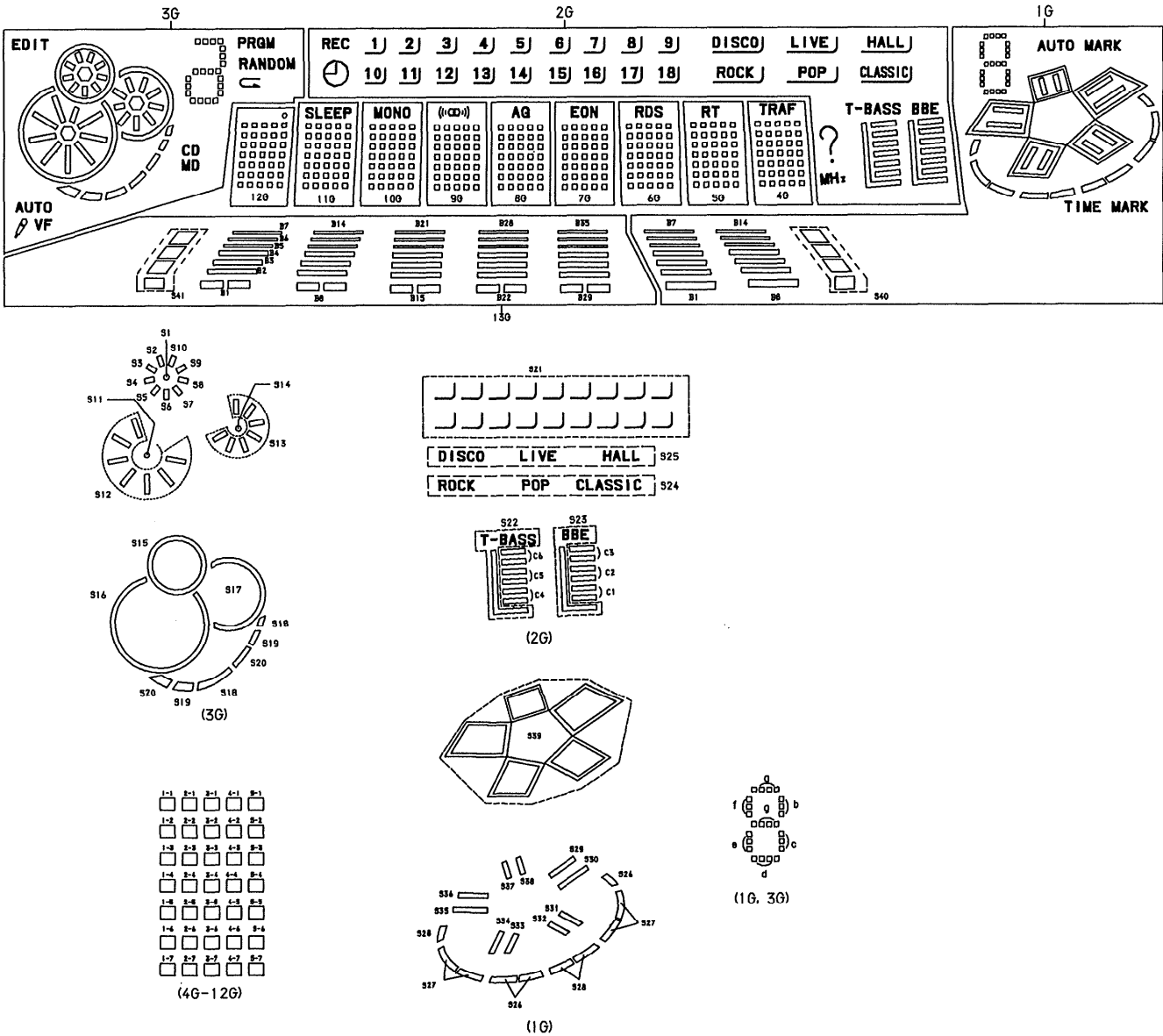








GRID ASSIGNMENT

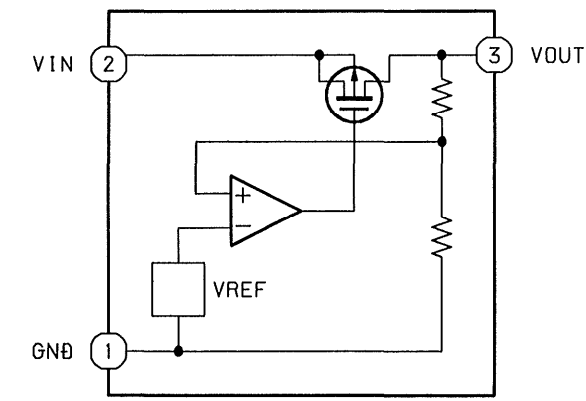


ANODE CONNECTION

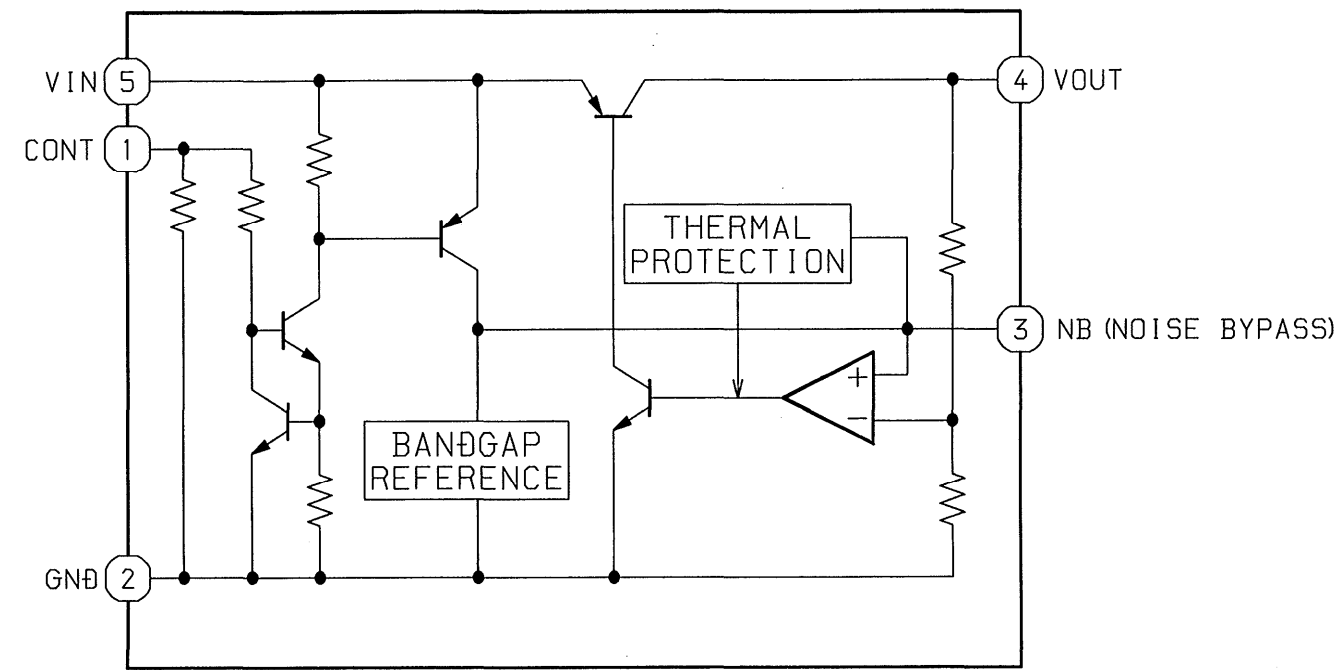
	13G	12G	11G	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G
P1	S41	○	SLEEP	MONO	((∞))	AG	EON	RDS	RT	TRAF	PRGM	(DISC)	B1
P2	B1	1-1	1-1	1-1	1-1	1-1	1-1	1-1	1-1	1-1	RANDOM	(LIVE)	B8
P3	B8	2-1	2-1	2-1	2-1	2-1	2-1	2-1	2-1	2-1	↶	(HALL)	B2
P4	B15	3-1	3-1	3-1	3-1	3-1	3-1	3-1	3-1	3-1	a	(ROCK)	B9
P5	B22	4-1	4-1	4-1	4-1	4-1	4-1	4-1	4-1	4-1	b	(POP)	B3
P6	B29	5-1	5-1	5-1	5-1	5-1	5-1	5-1	5-1	5-1	c	(CLASSIC)	B10
P7	B2	1-2	1-2	1-2	1-2	1-2	1-2	1-2	1-2	1-2	d	C3	B4
P8	B9	2-2	2-2	2-2	2-2	2-2	2-2	2-2	2-2	2-2	g	C2	B11
P9	B16	3-2	3-2	3-2	3-2	3-2	3-2	3-2	3-2	3-2	e	🕒	B5
P10	B23	4-2	4-2	4-2	4-2	4-2	4-2	4-2	4-2	4-2	EDIT	REC	B12
P11	B30	5-2	5-2	5-2	5-2	5-2	5-2	5-2	5-2	5-2	S2	C6	B6
P12	B3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	S3	C5	B13
P13	B10	2-3	2-3	2-3	2-3	2-3	2-3	2-3	2-3	2-3	S10	S21	B7
P14	B17	3-3	3-3	3-3	3-3	3-3	3-3	3-3	3-3	3-3	S4	1	B14
P15	B24	4-3	4-3	4-3	4-3	4-3	4-3	4-3	4-3	4-3	S1	2	AUTO MARK
P16	B31	5-3	5-3	5-3	5-3	5-3	5-3	5-3	5-3	5-3	S9	3	TIME MARK
P17	B4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	S5	4	S26
P18	B11	2-4	2-4	2-4	2-4	2-4	2-4	2-4	2-4	2-4	S8	5	S27
P19	B18	3-4	3-4	3-4	3-4	3-4	3-4	3-4	3-4	3-4	S6	6	S28
P20	B25	4-4	4-4	4-4	4-4	4-4	4-4	4-4	4-4	4-4	S7	7	S29
P21	B32	5-4	5-4	5-4	5-4	5-4	5-4	5-4	5-4	5-4	S15	8	S30
P22	B5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	S11	9	S31
P23	B12	2-5	2-5	2-5	2-5	2-5	2-5	2-5	2-5	2-5	S12	10	S32
P24	B19	3-5	3-5	3-5	3-5	3-5	3-5	3-5	3-5	3-5	S16	11	S33
P25	B26	4-5	4-5	4-5	4-5	4-5	4-5	4-5	4-5	4-5	S14	12	S34
P26	B33	5-5	5-5	5-5	5-5	5-5	5-5	5-5	5-5	5-5	S13	13	S35
P27	B6	1-6	1-6	1-6	1-6	1-6	1-6	1-6	1-6	1-6	S17	14	S36
P28	B13	2-6	2-6	2-6	2-6	2-6	2-6	2-6	2-6	2-6	CD	15	S37
P29	B20	3-6	3-6	3-6	3-6	3-6	3-6	3-6	3-6	3-6	MD	16	S38
P30	B27	4-6	4-6	4-6	4-6	4-6	4-6	4-6	4-6	4-6	🔪 VF	17	a, d
P31	B34	5-6	5-6	5-6	5-6	5-6	5-6	5-6	5-6	5-6	AUTO	18	b
P32	B7	1-7	1-7	1-7	1-7	1-7	1-7	1-7	1-7	1-7	S18	C4	c
P33	B14	2-7	2-7	2-7	2-7	2-7	2-7	2-7	2-7	2-7	S19	?	e
P34	B21	3-7	3-7	3-7	3-7	3-7	3-7	3-7	3-7	3-7	S20	MHz	f
P35	B28	4-7	4-7	4-7	4-7	4-7	4-7	4-7	4-7	4-7	-	C1	g
P36	B35	5-7	5-7	5-7	5-7	5-7	5-7	5-7	5-7	5-7	-	S22	S39
P37	-	-	-	-	-	-	-	-	-	-	-	-	S40
P38	-	-	-	-	-	-	-	-	-	-	-	S24	-
P39	-	-	-	-	-	-	-	-	-	-	-	S25	-
P40	-	-	-	-	-	-	-	-	-	-	-	S23	-

IC BLOCK DIAGRAM - 1

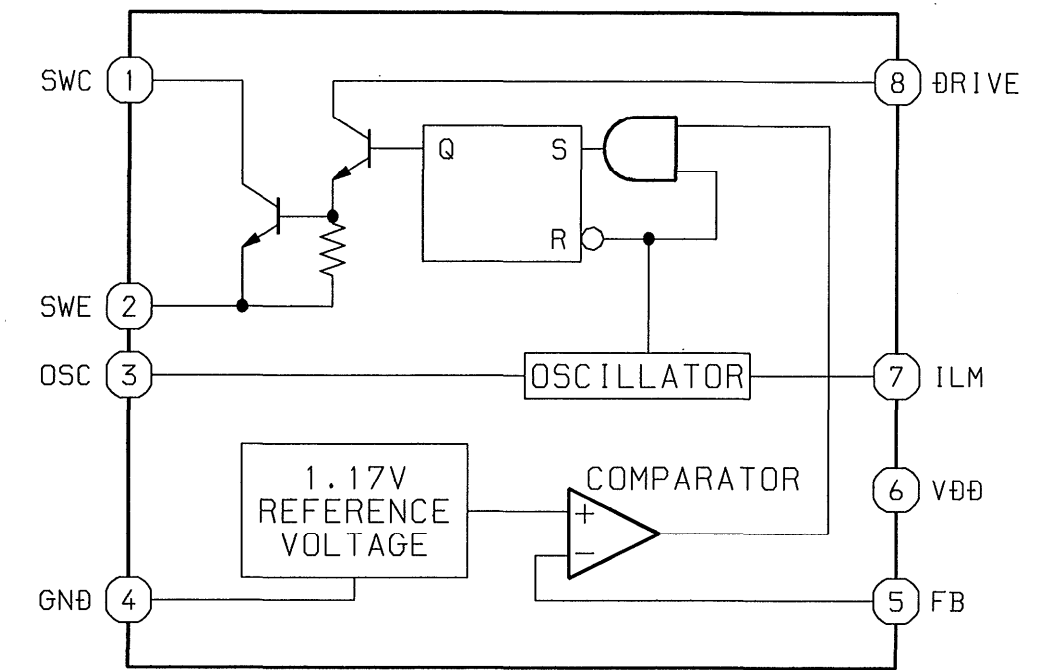
IC, NJU7221



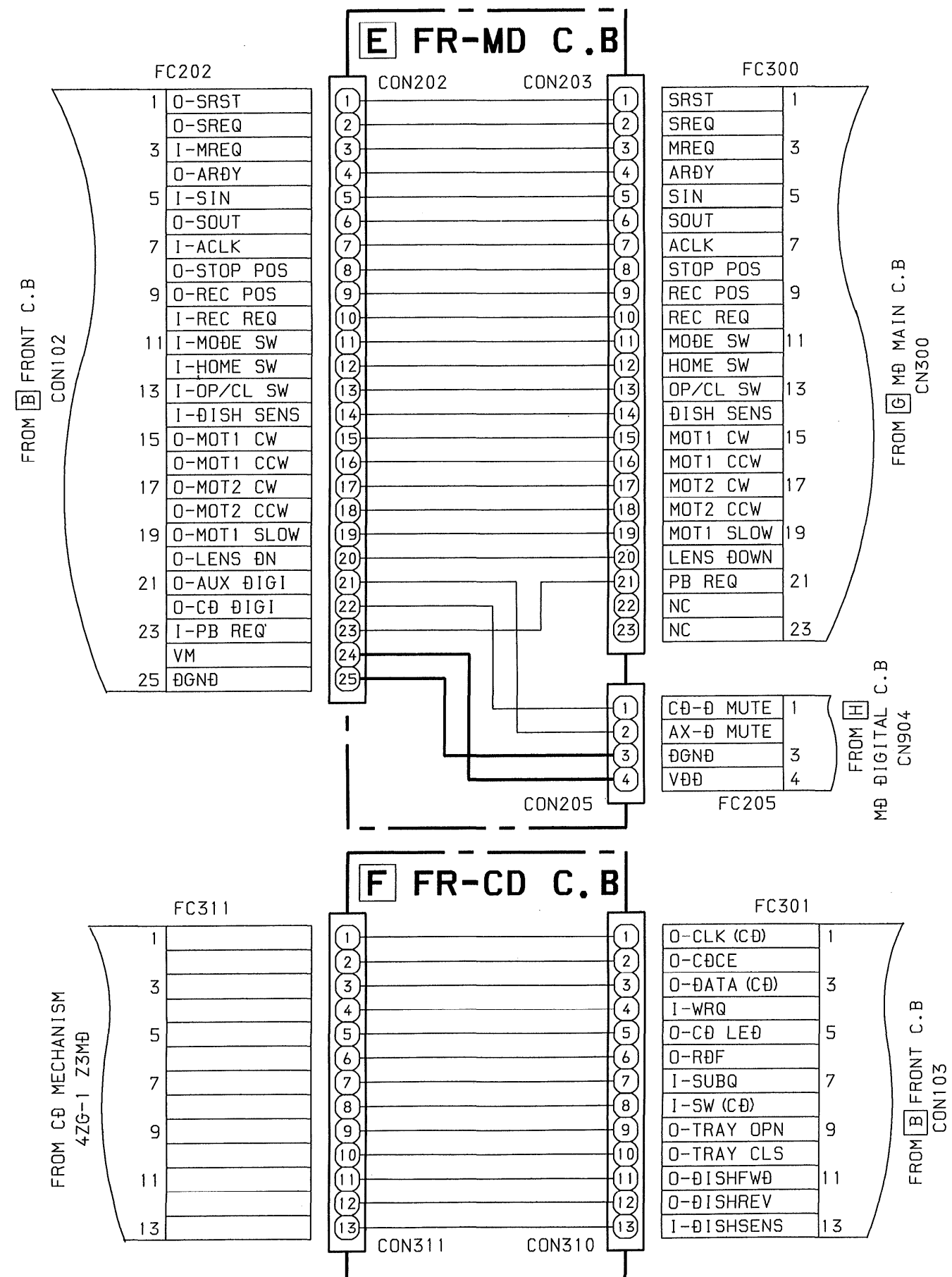
IC, NJM2370U33



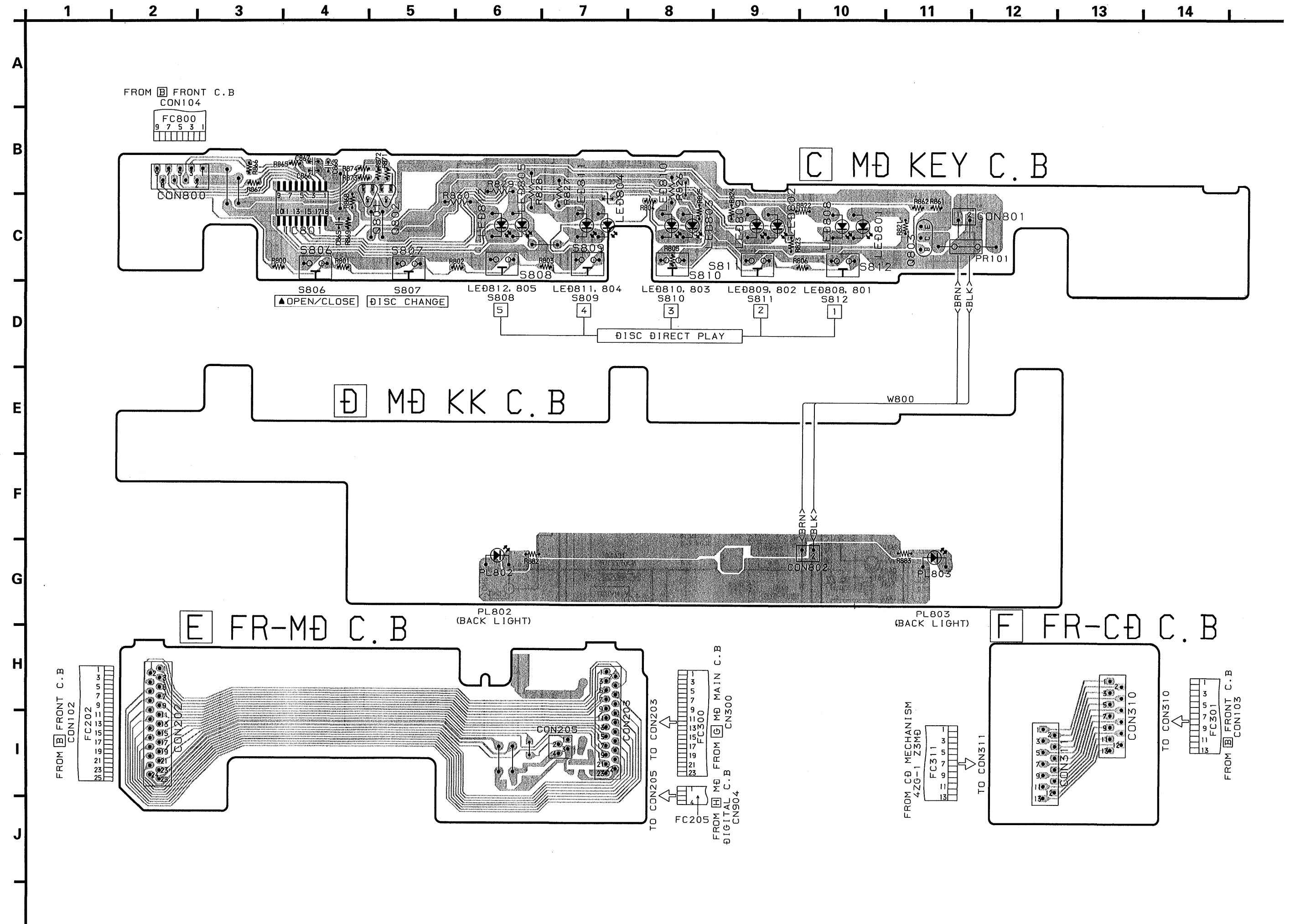
IC, M5291FP

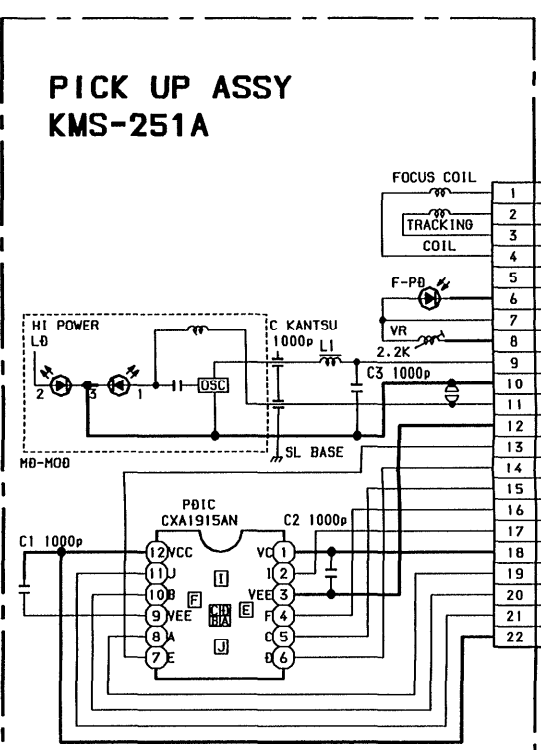


SCHEMATIC DIAGRAM - 3 (FR-MD / FR-CD)



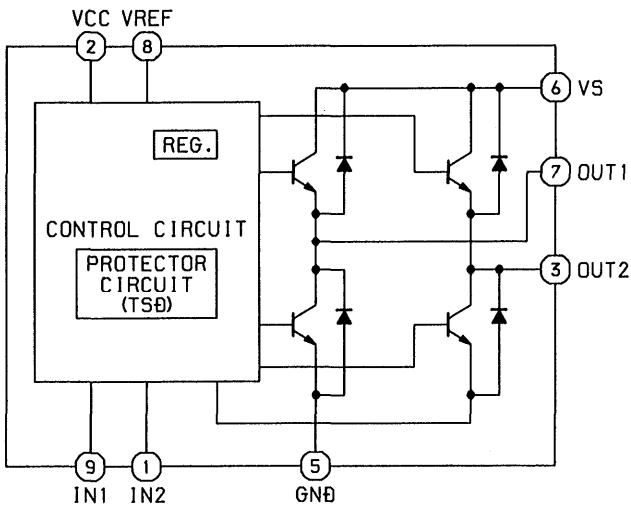
WIRING - 3 (MD KEY / MD KK / FR-MD / FR-CD)





IC BLOCK DIAGRAM – 2

IC, TA7291S

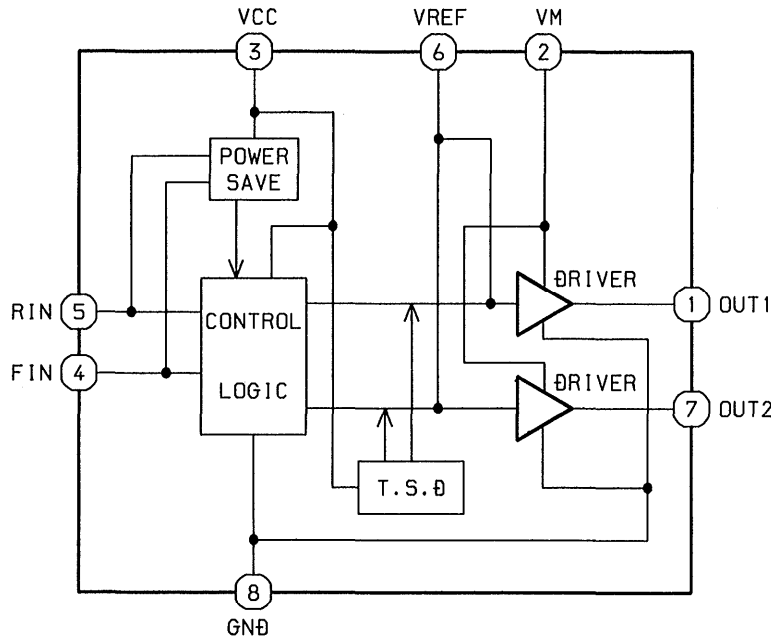


TRUTH TABLE

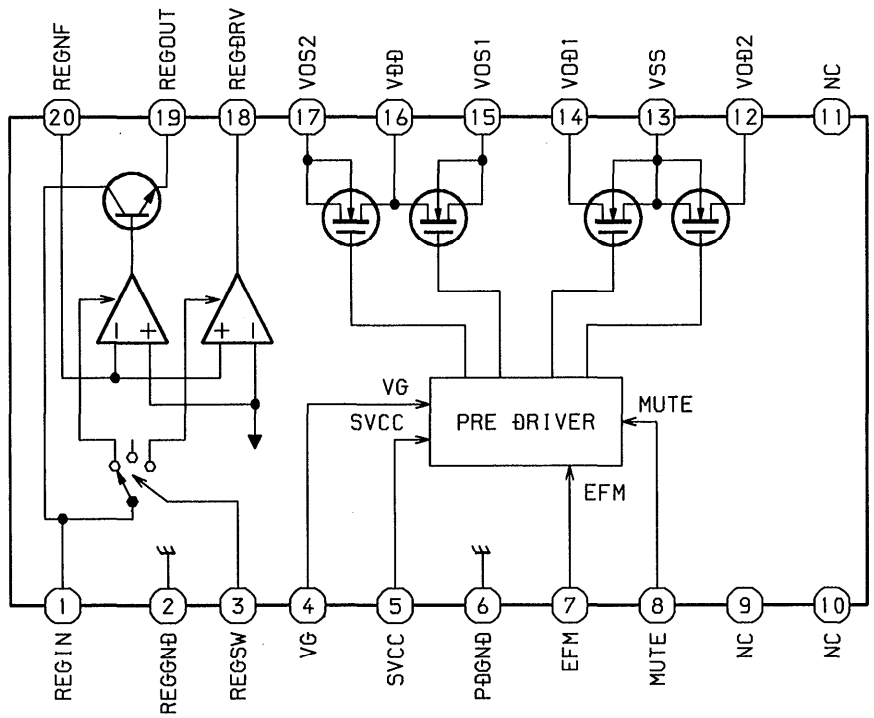
INPUT		OUTPUT		MODE
IN1	IN2	OUT1	OUT2	
0	0	∞	∞	STOP
1	0	H	L	CW/CW
0	1	L	H	CCW/CW
1	1	L	L	BRAKE

∞ : HIGH IMPEDANCE
INPUT IS "H" ACTIVE

IC, BA6417F

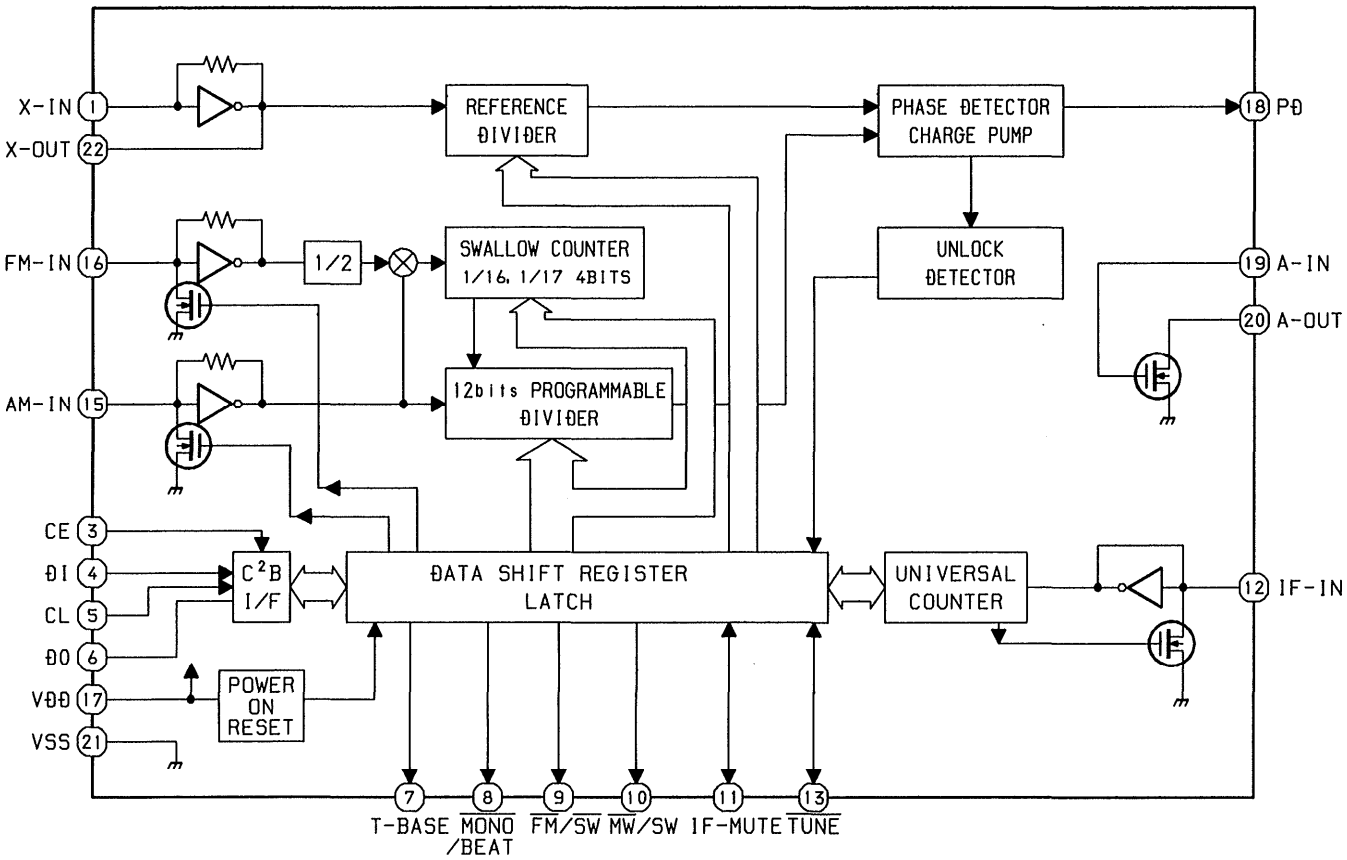


IC, BD7910FV

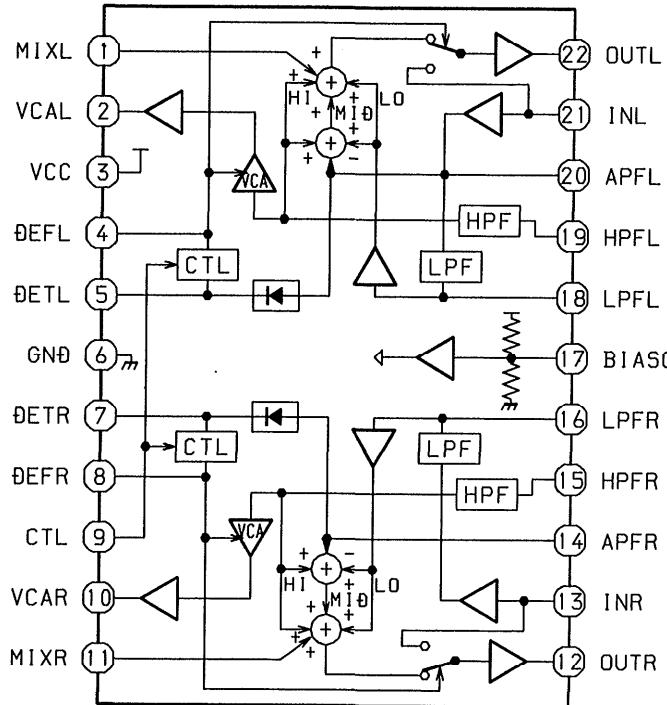


SCHEMATIC DIAGRAM – 5 (MD DIGITAL / MD MOTOR / MD DISH SENS / MD O-L HEAD)

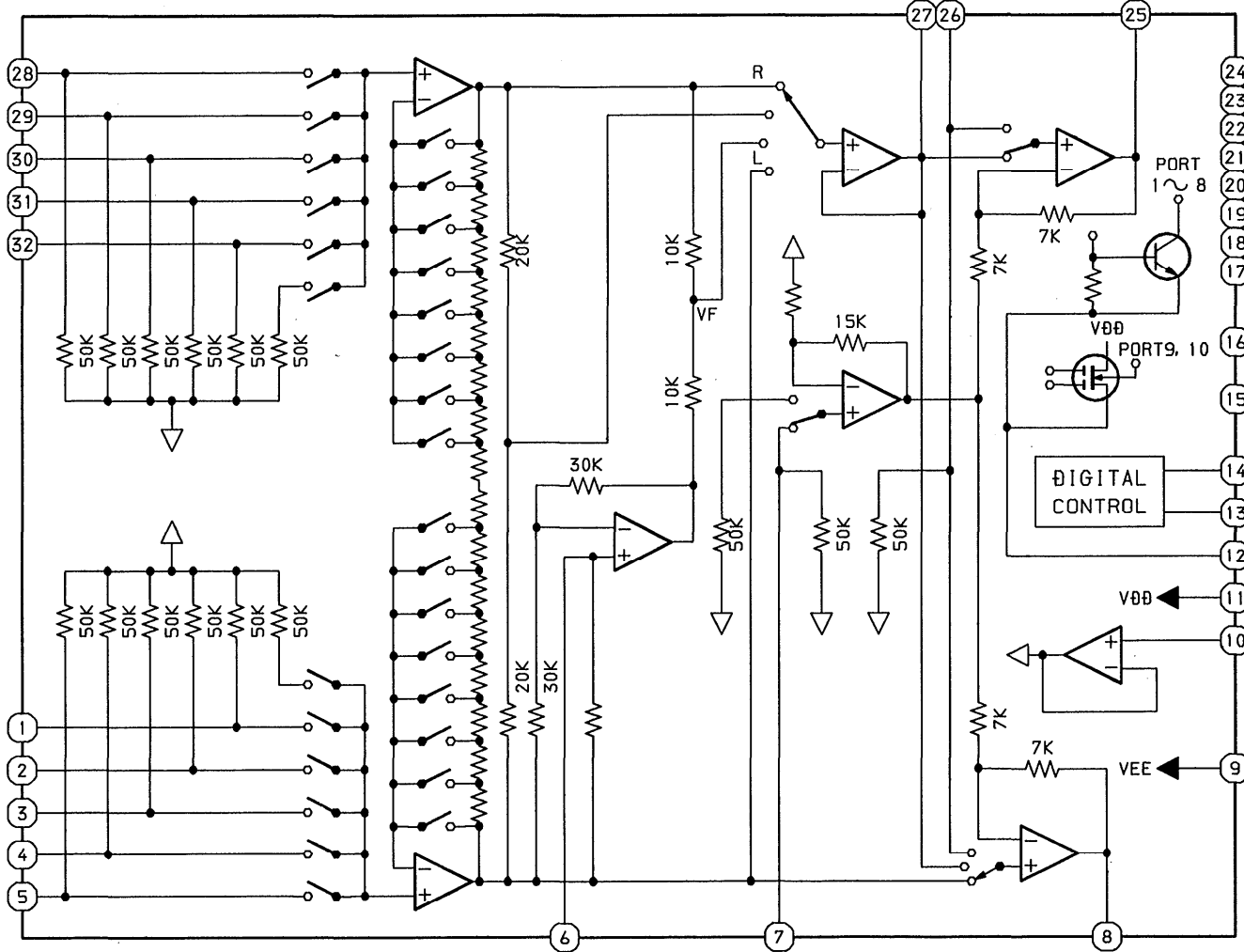
IC, LC72131D(Z)



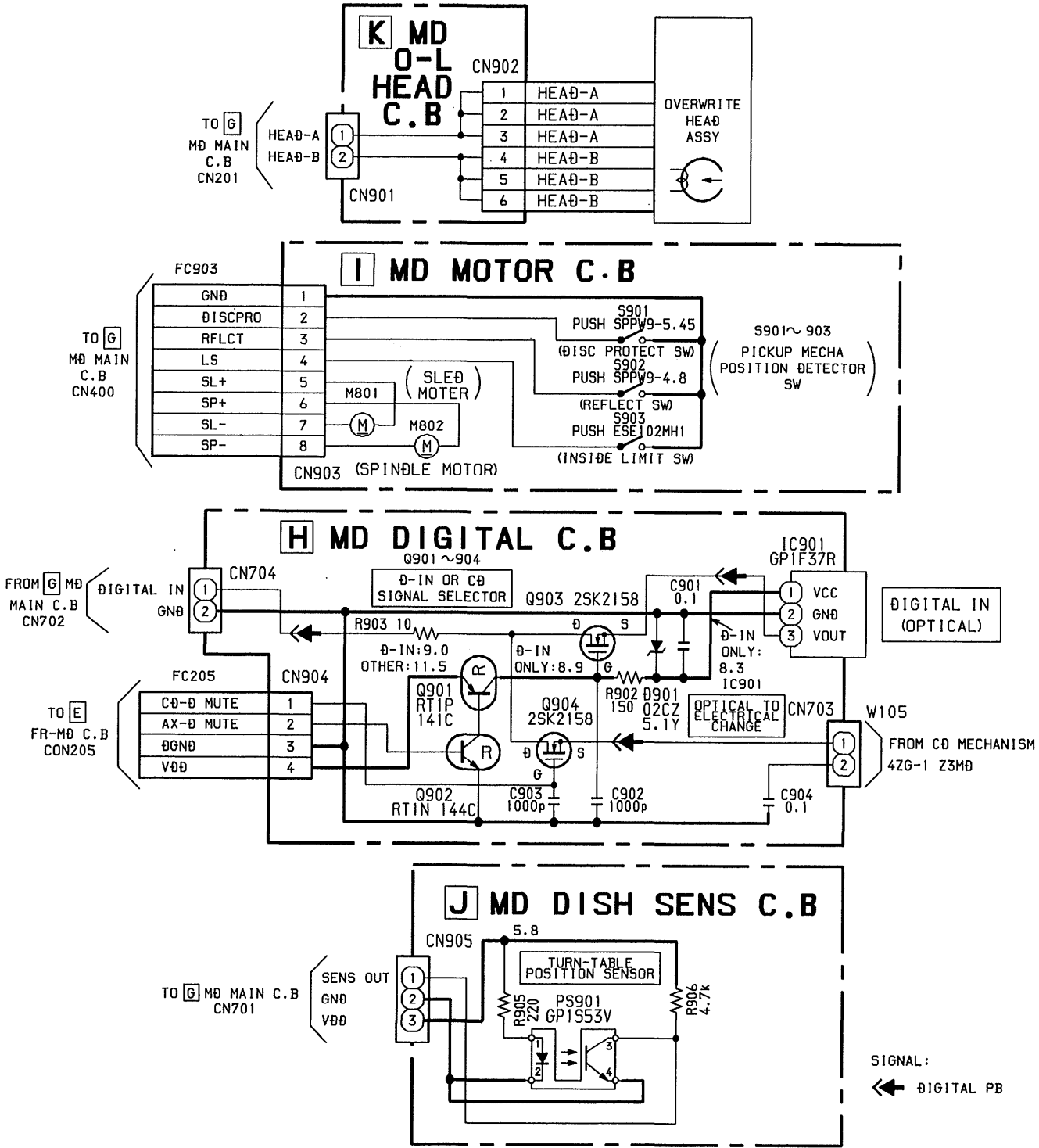
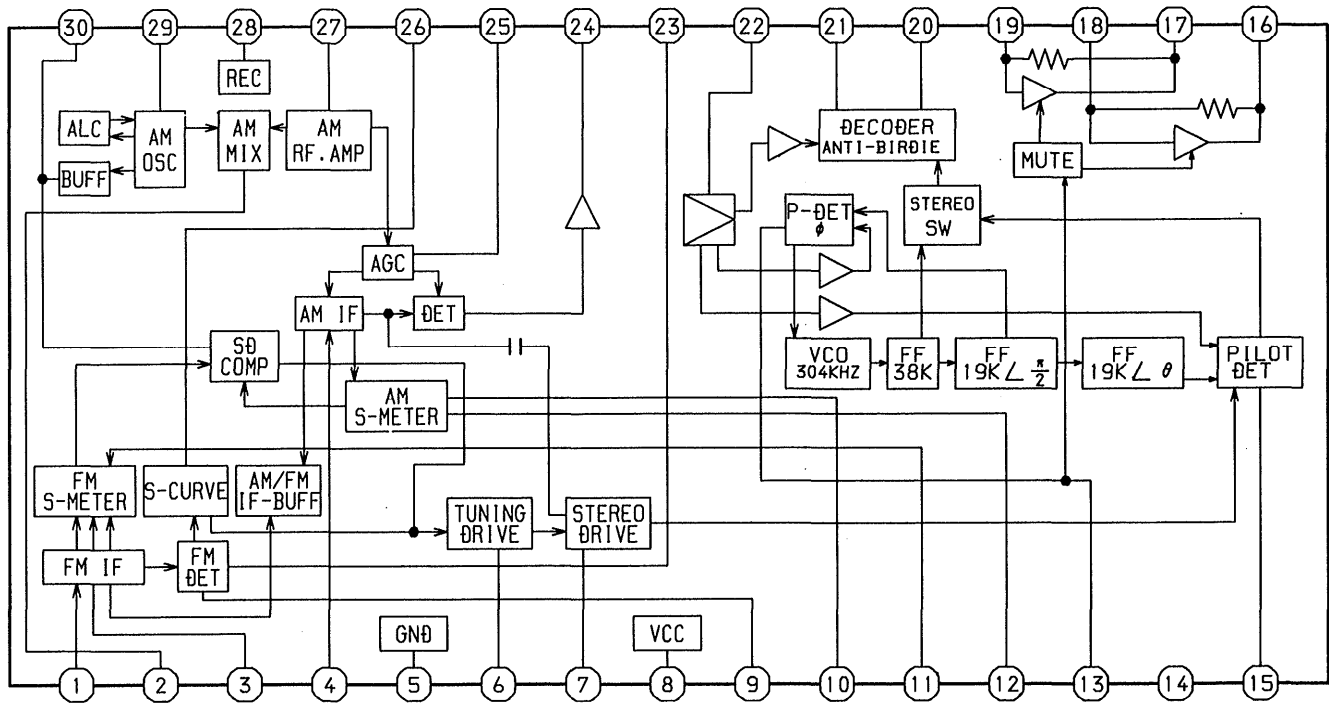
IC, BA3880S



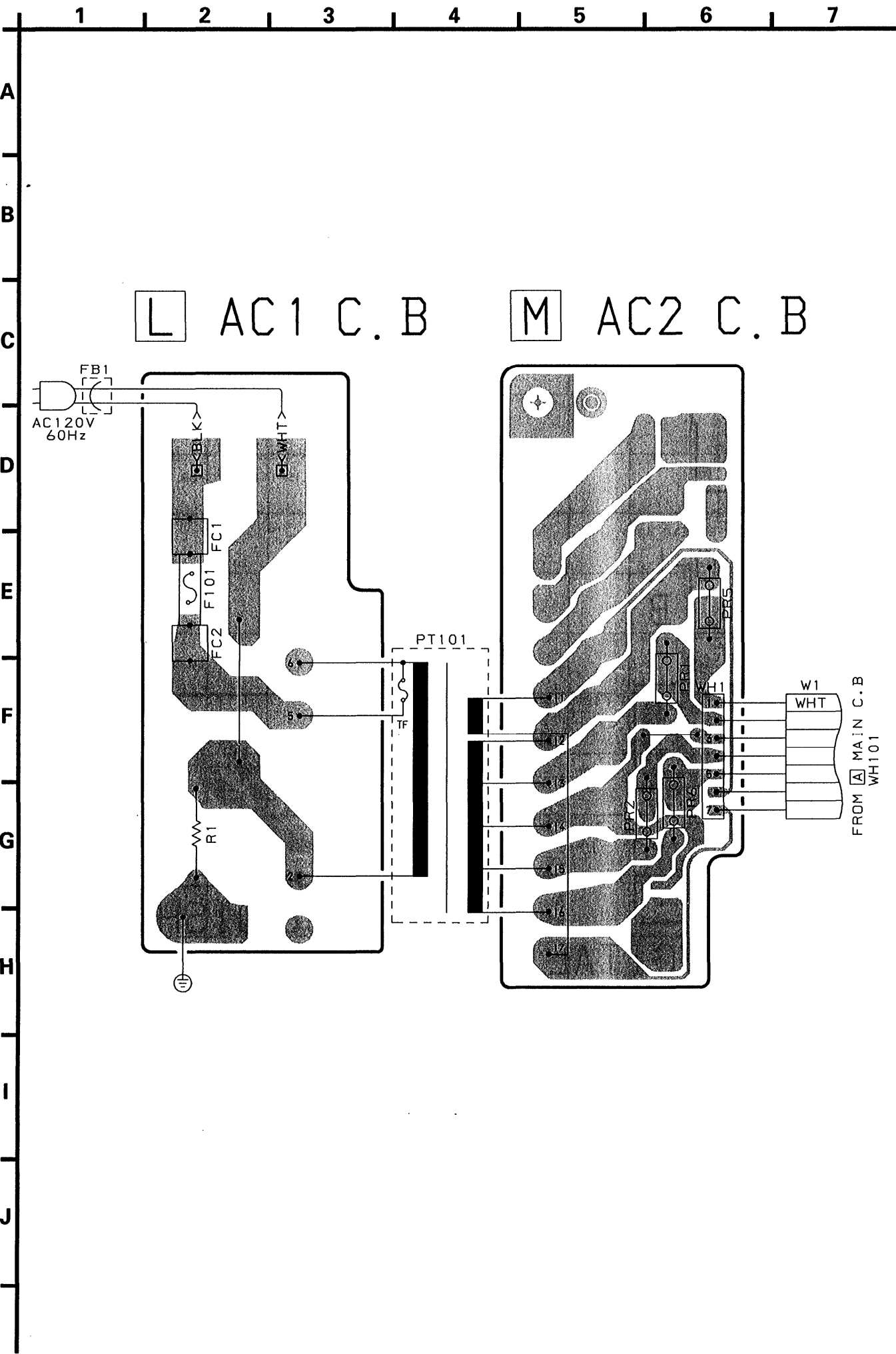
IC, BH3810FS



IC, LA1837

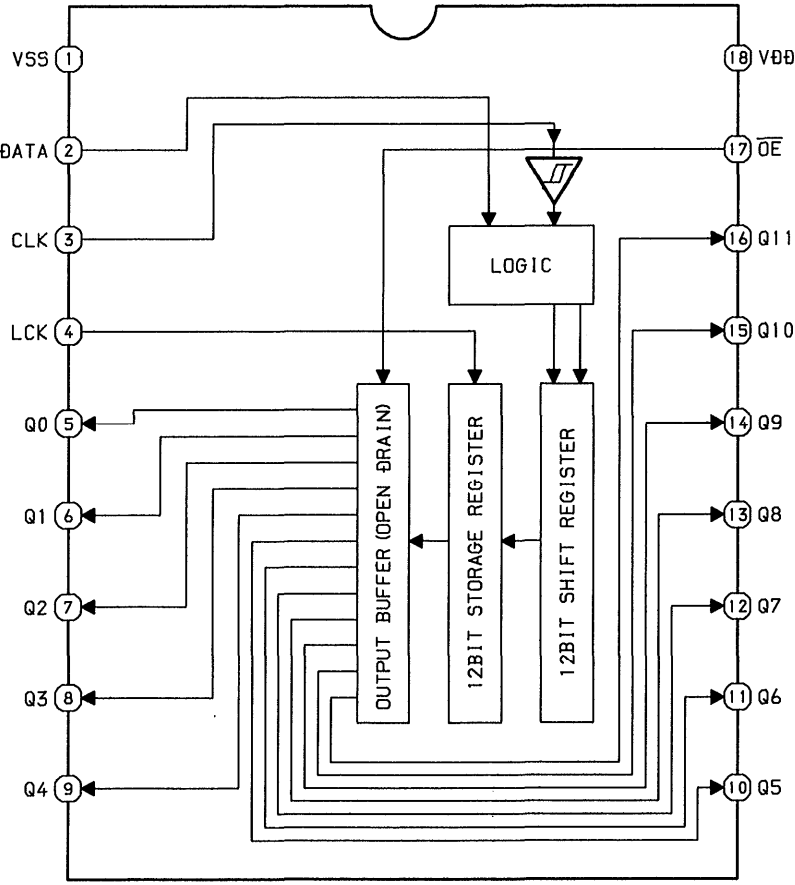


WIRING - 6 (AC1 / AC2)

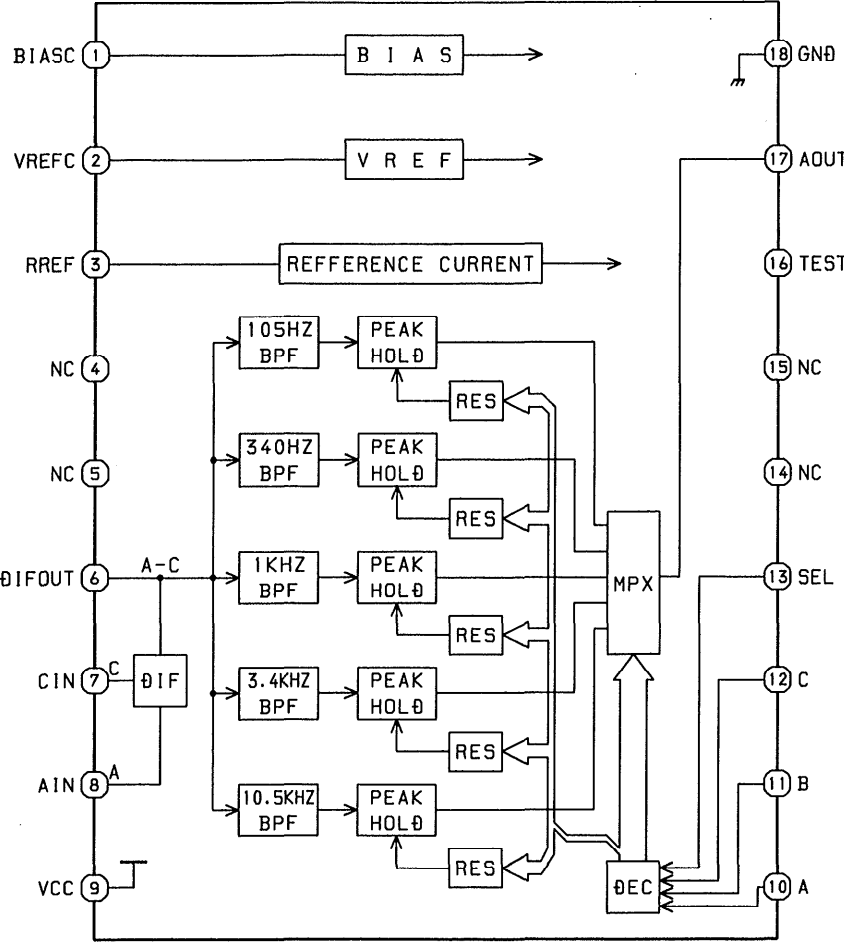


IC BLOCK DIAGRAM - 2

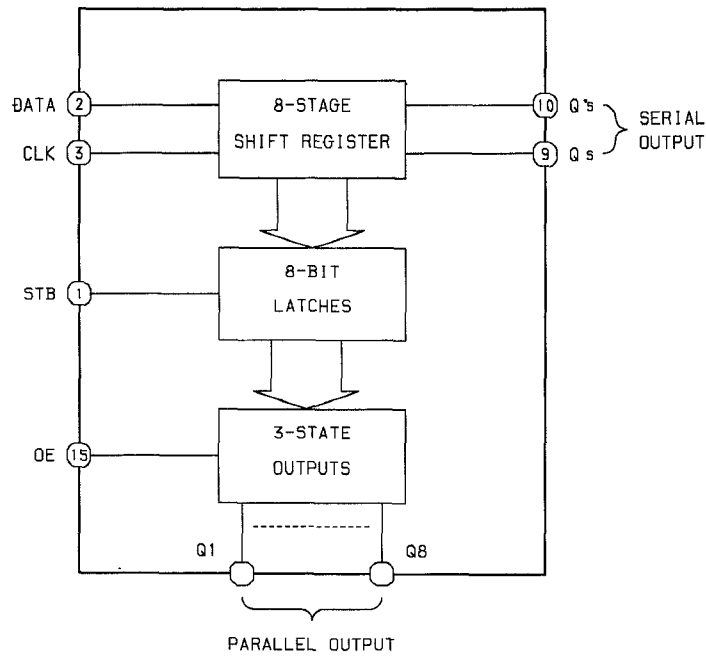
IC, BU2092F



IC, BA3835S



IC, BU4094BCF



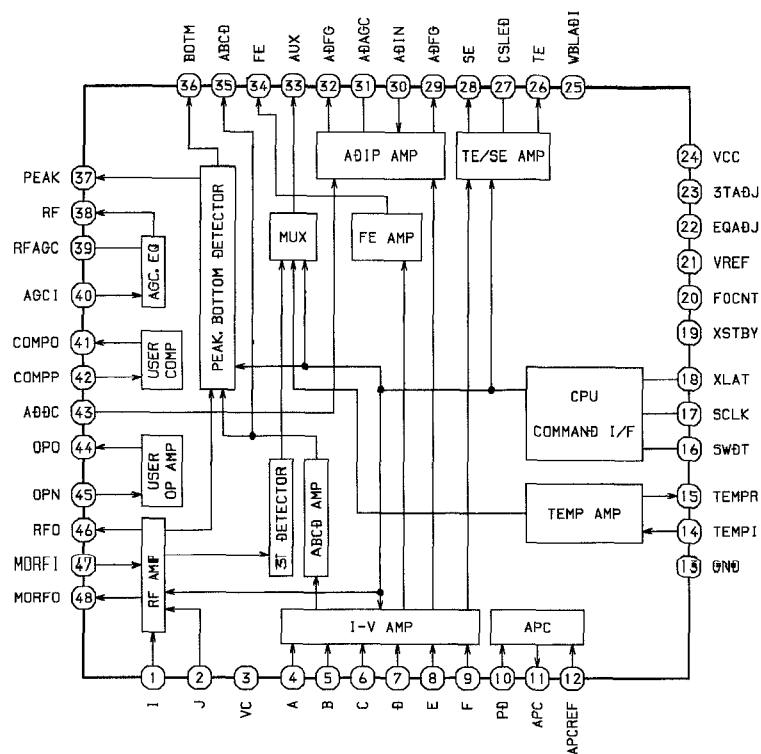
TRUTH TABLE

CLOCK	OUTPUT ENABLE	STROBE	DATA	PARALLEL OUTPUTS		SERIAL OUTPUTS	
				Q1	Qn	Qs	Q's
	L	X	X	Z	Z	Q7	NO Chg.
	L	X	X	Z	Z	No Chg.	Qs
	H	L	X	No Chg.	No Chg.	Q7	No Chg.
	H	H	L	L	Qn-1	Q7	No Chg.
	H	H	H	H	Qn-1	Q7	No Chg.
	H	X	X	No Chg.	No Chg.	No Chg.	Qs

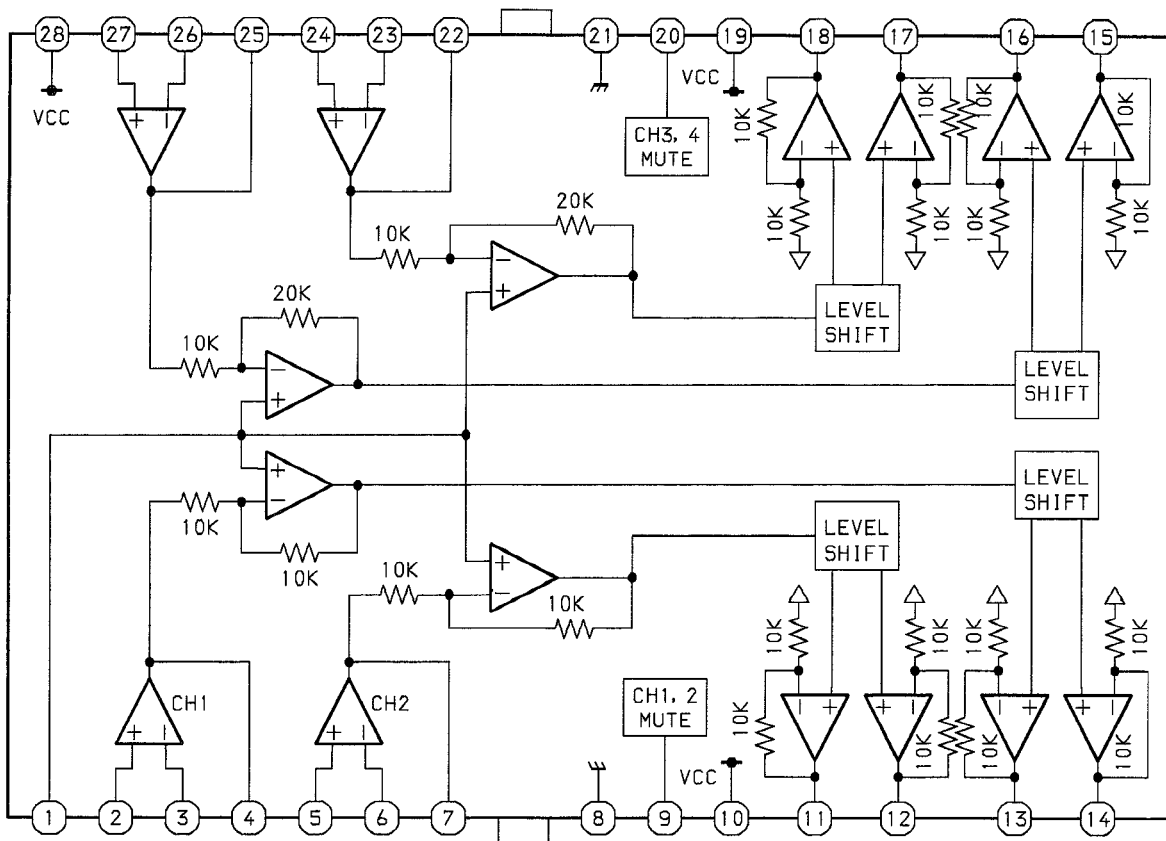
Z=High Impedance

X=Don't Care

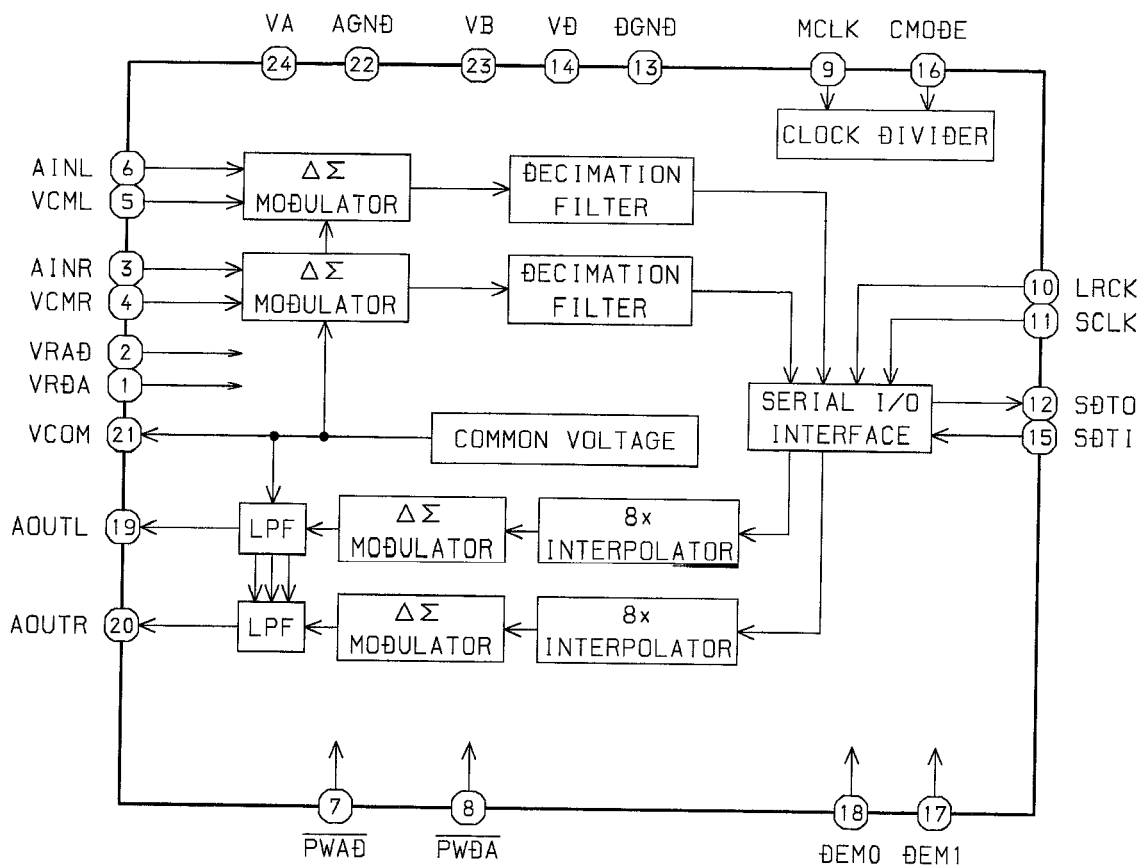
IC, CXA2523AR



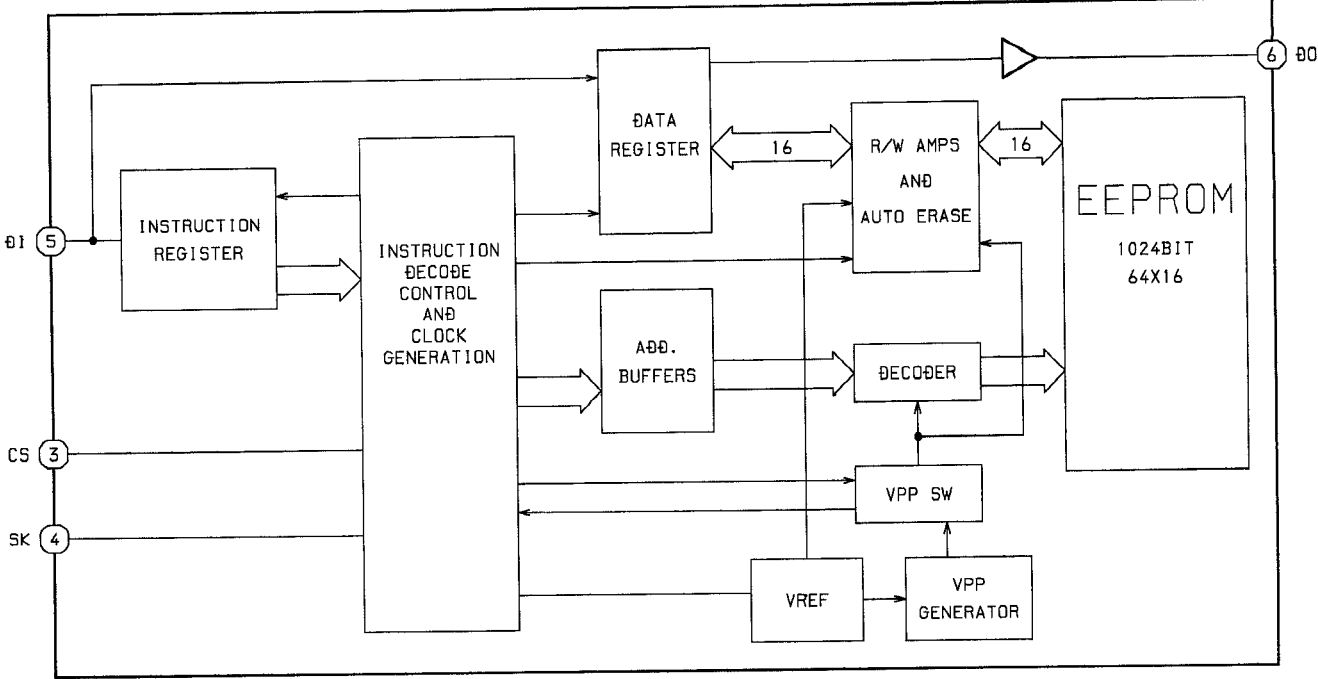
IC, BA5970FP



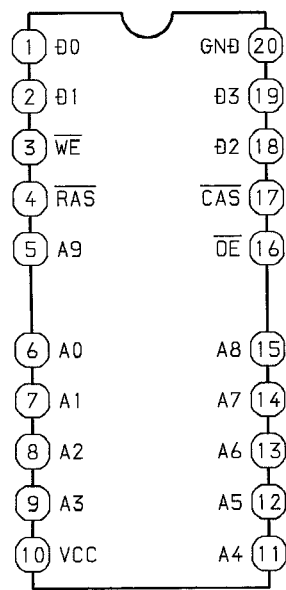
IC, AK4512VF



IC, AK93C45AF

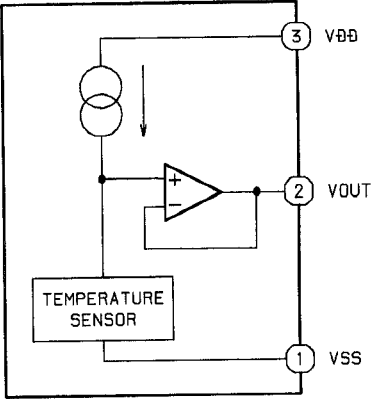


IC, HM51W4400BS



PIN NO.	SIGNAL		
	POW/CLK	1	0
1		I/O1	
2		I/O2	
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		I/O3	
19		I/O4	
20	GND		

IC, S-8110AMP



IC DESCRIPTION

IC, LC866560W-5H42

Pin No	Pin Name	I/O	Description
1	O-CD.CLOSE	O	CD tray close output.
2	O-CD.OPEN	O	CD tray open output.
3	O-CD.LED	O	LED light output pin for CD illumination.
4	O-MD.STB	O	Strobe output pin for MD, CD direct play register (IC801).
5	O-FR.STB	O	Strobe output pin for front-shift register (IC201 and 203).
6	O-MA.STB	O	Strobe output pin for main.
7	O-DATA	O	Output front and main data.
8	O-CLK	O	Output front and main clock.
9	O-POWER	O	System power supply ON/OFF output pin.
10	O-MUTE	O	System mute ON/OFF output pin.
11	O-CLK.SHIFT	O	Output micro-processor clock shift.
12	RESET	I	Reset pin. "L" SYSTEM RESET
13	I-MD.RT-A	I	Input multi jog encoder A.
14	I-MD.RT-B	I	Input multi jog encoder B.
15	VSSI	-	Connected to GND.
16	CF1	I	Micro-processor clock input pin.
17	CF2	O	Micro-processor clock output pin.
18	VDDI	-	Connected to VDD (Backup).
19	I-HOLD	I	Power-failure detection A/D input pin.
20	I-KEY-1	I	KEY-1 A/D input (*Refer to Table 1).
21	I-KEY-2	I	KEY-2 A/D input (*Refer to Table 1).
22	I-KEY-3	I	KEY-3 A/D input (*Refer to Table 1).
23	I-KEY-4	I	KEY-4 A/D input (*Refer to Table 1).
24	I-CDSW	I	CD mechanism switch input.
25	I-RE.V	I	Electrical volume encoder A/B input.
26	I-SPEANA	I	Spectrum analyzer level A/D input (*Refer to Table 2).
27	I-WRQ	I	CD WRQ input.
28	I-DISH(CD)	I	CD turntable photo sensor input.
29	I-RMC	I	System remote-control input.
30	G13	O	FL grid output (13G).
31	G12	O	FL grid output (12G).
32	G11	O	FL grid output (11G).
33	G10	O	FL grid output (10G).
34	G9	O	FL grid output (9G).
35	G8	O	FL grid output (8G).
36	G7	O	FL grid output (7G).
37	G6	O	FL grid output (6G).
38	G5	O	FL grid output (5G).
39	G4	O	FL grid output (4G).
40	G3	O	FL grid output (3G).
41	G2	O	FL grid output (2G).

Pin No	Pin Name	I/O	Description
42	P36	O	FL segment output (P36).
43	P35	O	FL segment output (P35).
44	G1	O	FL grid output (1G).
45	P34	O	FL segment output.
46	VDD3	–	Connected to VD (for FL).
47	P33/SPEANA-A	O	FL segment output (P33) / Spectrum analyzer band switch output (A).
48	P32/SPEANA-B	O	FL segment output (P32) / Spectrum analyzer band switch output (B).
49	P31/SPEANA-C	O	FL segment output (P31) / Spectrum analyzer band switch output (C).
50	P30/AM.ST	O/I	FL segment output (P30) / no AM ST diode input.
51	VP	–	Connected to-VFL.
52	P29/LW	O/I	FL segment output (P29) / LW diode input.
53	P28/SW	O/I	FL segment output (P28) / SW diode input.
54	P27/FM1	O/I	FL segment output (P27) / FM1 diode input.
55	P26/RDS	O/I	FL segment output (P26) / RDS diode input.
56	P25/BBE	O/I	FL segment output (P25) / No BBE diode input.
57	P24/DSP	O/I	FL segment output (P24) / No DSP diode input.
58	P23/AM10K	O/I	FL segment output (P23) / AM10K diode input.
59	P22/OP/CL.SW	O/I	FL segment output (P22) / MD OPEN/CLOSE switch status input, SW ON: “L”.
60	P21/HOME.SW	O/I	FL segment output (P21) / MD HOME SW status input, SW ON: “L”.
61	P20/MODE.SW	O/I	FL segment output (P20) / MD MODE SW status input, SW ON: “L”.
62	P19/REC.REQ	O/I	FL segment output (P19) / MD REC request input.
63	P18/TIME.BASE	O/I	FL segment output (P18) / Clock time base input.
64	P17/MIC	O/I	FL segment output (P17) / microphone signal input.
65	P16/PLAY	O/I	FL segment output (P16) / MD playback request input.
66	P15	O	FL segment output (P15).
67	P14	O	FL segment output (P14).
68	P13	O	FL segment output (P13).
69	P12	O	FL segment output (P12).
70	P11	O	FL segment output (P11).
71	P10	O	FL segment output (P10).
72	VDD4	–	Connected to VDD (for LF).
73	P9	O	FL segment output (P9).
74	P8	O	FL segment output (P8).
75	P7	O	FL segment output (P7).
76	P6	O	FL segment output (P6).
77	P5	O	FL segment output (P5).
78	P4	O	FL segment output (P4).
79	P3	O	FL segment output (P3).
80	P2	O	FL segment output (P2).
81	P1	O	FL segment output (P1).
82	O-K-SCAN	I	Segment input permission input.

Pin No	Pin Name	I/O	Description
83	I-STEREO/O-RDF	I/O	TUNER stereo detection input / CD RDF output.
84	I-IFC/O-SUBQ	I/O	TUNE IF count input / CD SUBQ output.
85	O-DISH FWD	O	CD turntable forward rotation output.
86	O-DISH REV	O	CD turntable reverse rotation input.
87	O-PLL-CE	O	TUNER PLL chip enable output.
88	O-CD.DATA	O	CD DATA output.
89	VSS2	–	Connected to GND.
90	VDD2	–	Connected to VDD (Backup).
91	O-CD.CE	O	CD CE output.
92	O-CD.CLK	O	CD CLK output.
93	O-ARDY	O	Permit clock output to MD micro-processor (active L).
94	O-SRST	O	Reset signal output (L → H).
95	O-SOUT	O	MD SOUT output.
96	I-SIN	I	MD SIN input.
97	I-ACLK	I	MD ACLK output (active L).
98	I-DISH (MD)	O	MD turntable photo sensor input.
99	O-SREQ	O	MD SREQ output (active L).
100	I-MREQ	I	MD MREQ input (active L).

Table 1

Key1 (Pin20) AD input	Key2 (Pin21) AD input	Key3 (Pin22) AD input	Key4 (Pin23) AD input
POWER	● REC	TAPE	DISC1 (CD)
SURROUND	⏏ SET	TUNER/BAND	DISC2 (CD)
GEQ	■ CLEAR	AUX/DIN	DISC3 (CD)
T-BASS	▶ PRESET	CD	DISC CHANGE (CD)
BBE	◀ DOWN	MD	▲ OPEN/CLOSE (CD)
EDIT (MD)	▶ UP	CD ▶ 1MD	▲ OPEN/CLOSE (MD)
ENTER	ECHO	3CD ▶ 3MD	DISC CHANGE (MD)
DISPLAY	MIC (VOL)	CD SINGLE ▶ 1MD	MD5
MODE (MD)	–	D-IN ▶ MD	MD4
KARAOKE	–	–	MD3
DEMO	–	–	MD2
–	–	–	MD1

Table 2

Spectrum analyzer display level		
Light on up to level 6	(0dB)	5.60V
Light on up to level 5	(–4.5dB)	3.34V
Light on up to level 4	(–9.0dB)	1.99V
Light on up to level 3	(–13.5dB)	1.18V
Light on up to level 2	(–18.0dB)	0.71V
Light on up to level 1	(–22.5dB)	0.42V
Light off	(–27.0dB)	0.25V

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 current 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.
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	ADFG	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	I3 output / output temperature signal. Switch by serial command.
34	FE	O	Output focus error.
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 equalize output pin.
39	RFAGC	–	RFAGC capacitor connection pin.
40	AGCI	I	RFAGC input pin.
41	COMPO	O	User comparator output pin. (Not used.)

Pin No	Pin Name	I/O	Description
42	COMPP	I	User comparator non-inverted input pin.
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 of eye pattern.
47	MORFI	I	Input pin where Groove RF signal is AC coupled.
48	MORFO	O	Output in for Groove RF signal.

IC, CXD2652AR

Pin No	Pin Name	I/O	Description
1	MNTO	O	Monitor output pin.
2	MNTI	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 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	DVDD	–	Digital power supply.
20	DVSS	–	Digital GND.
21	DIN	I	Input digital audio interface signal.
22	NC	–	Not in used.
23	ADDT	I	Analog record input pin. (Connect 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.

Pin No	Pin Name	I/O	Description
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.)
40	DVSS	–	Digital GND.
41	XOE	O	Output enable pin for external DRAM.
42	XCAS	O	Output $\overline{\text{CAS}}$ for external DRAM.
43	A09	O	Output address for external DRAM.
44	XRAS	O	Output $\overline{\text{RAS}}$ 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).
51	ASYO	O	Full swing output pin for playback EFM (“L”=V _{SS} , “H”=V _{DD}).
52	ASYI	I	Input comparator slice voltage for playback EFM.
53	AVDD	–	Analog GND.
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 master PLL of playback digital PLL and for record EFM PLL.
59	FILI	I	Input filter for master PLL of playback digital PLL and for record EFM PLL.
60	FILO	O	Output filter for master PLL of playback digital PLL and for record EFM PLL.
61	CLTV	I	Input internal VCO control voltage for master PLL of playback digital PLL and for 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.

Pin No	Pin Name	I/O	Description
66	AUX1	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 ADIP2 binary data FM signal (22.051kHz $\pm$ 1kHz).
79	FOCNT	O	Current setting output pin for CXA2523AR.
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 polar)
94	SPFD	O	Spindle servo drive PWM output. (PWM (+) or PWM absolute value)
95	TESTO	I	Test pin. Connected to GND.
96	TEST1	I	Test pin. Connected to GND.
97	TEST2	I	Test pin. Connected to GND.
98	TEST3	I	Test pin. Connected to GND.
99	DVSS	–	Digital GND.
100	EFMO	O	Output “L” at playback, EFM (encode data) at recording.

IC, CXP81952-7NB-5

Pin No	Pin Name	I/O	Description
1	MCAS	–	Not used (PULL DOWN).
2	MRAS	–	Not used (PULL DOWN).
3	BUP	–	Not used (PULL UP).
4	AMUTE	O	Output AUDIO MUTE signal. (Not used.)
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 internal circumference detection SW.
13	REC POS	I	Input mechanism REC POSITION signal.
14	NC	–	Not used.
15	STOP POS	I	Input mechanism REC POSITION signal.
16	NC	–	Not used.
17	NC	–	Not used.
18	NC	–	Not used.
19	SREQ	I	Input system computer send request signal for system computer interface.
20	NC	–	Not used.
21	NC	–	Not used.
22	PB REQ	O	Output PLAY BACK request signal.
23	REC REQ	O	Output REC request signal.
24	MREQ	O	Output MD micro-processor send request signal for system computer interface.
25	DRIVE	O	Output EFM driver ON/OFF signal.
26	NC	–	Not used.
27	NC	–	Not used.
28	NC	–	Not used.
29	NC	–	Not used.
30	NC	–	Not used.
31	NC	–	Not used.
32	NC	–	Not used.
33	NC	–	Not used.
34	NC	–	Not used.
35	NC	–	Not used.
36	NC	–	Not used.
37	MP	–	Connected to VSS.
38	SRST	I	Input MD micro-processor reset signal.
39	DGND	–	Connected to VSS.
40	XTALO	O	Connection pin 1 to crystal oscillator for system clock.
41	XTALI	I	Connection pin 2 to crystal oscillator for system clock.

Pin No	Pin Name	I/O	Description
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.
53	NC	–	Not used (PULL UP).
54	NC	–	Not used (PULL UP).
55	NC	–	Not used (PULL UP).
56	SLF	–	Not used (PULL UP).
57	SRF	–	Not used (PULL UP).
58	TEMP	–	Not used (PULL UP).
59	MAGIC	–	Not used (PULL UP).
60	NC	–	Not used (PULL UP).
61	TEST	–	Not used (PULL UP).
62	DISCPRO	I	Input pin for prevention of DISC error erase SW.
63	MINT3	I	Monitor signal input pin 3 for CXD2652AR.
64	MINT2	I	Monitor signal input pin 2 for CXD2652AR.
65	MINT1	I	Monitor signal input pin 1 for CXD2652AR.
66	MINT0	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	NC	–	Not used.
70	NC	–	Not used.
71	P-CONT	–	Not used.
72	RFSW	–	Not used.
73	NC	–	Not used.
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 sync input.
81	NC	–	Not used.
82	NC	–	Not used.

Pin No	Pin Name	I/O	Description
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	Output MUTE signal for BA5970FP.
91	NC	–	Not used.
92	NC	–	Not used.
93	NC	–	Not used.
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	AK4512 reset signal output pin.
100	DENF	O	Demphasis ON/OFF signal output pin.

IC, LC72131D (Z)

Pin No	Pin Name	I/O	Description																								
1	X-IN	I/O	Oscillator (4.5MHz) is connected to both sides of pin.																								
22	X-OUT																										
2	NC	–	Not used.																								
3	CE	I	Activate IC. “H”: Active.																								
4	DI	I	Input digital data from CPU (LC866560W) when key is operated.																								
5	CL	I	Transfer clock signal to data (DATA).																								
6	DO	O	Output digital data to CPU (LC866560W).																								
7	T-BASE	O	Output reference clock signal (8Hz) for clock time.																								
8	MONO/BEAT	O	Output “H” at MONO/BEAT SW.																								
9	FM/SW	O	Output “L” or “H” as follows: <table><tr><td colspan="2">2 BAND</td><td colspan="3">3 BAND</td><td colspan="3">3 BAND</td></tr><tr><td>AM</td><td>FM</td><td>LW</td><td>MW</td><td>FM</td><td>MW</td><td>SW</td><td>FM</td></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>	2 BAND		3 BAND			3 BAND			AM	FM	LW	MW	FM	MW	SW	FM	H	L	H	H	L	H	L	L
2 BAND		3 BAND			3 BAND																						
AM	FM	LW	MW	FM	MW	SW	FM																				
H	L	H	H	L	H	L	L																				
10	MW/SW	O	Not used.																								
11	IF-MUTE	O	Control internal counter.																								
12	IF-IN	I	Input general purpose counter.																								
13	TUNE	I	Receive “L” when tuned.																								
14	NC	–	Not used.																								
15	AM-IN	I	Receive AM local oscillation frequency signal.																								
16	FM-IN	I	Receive FM local oscillation frequency signal.																								
17	VDD	–	Supply power to IC (+5V).																								
18	PD	O	Output PLL charge pump.																								
19	A-IN	I	MOS transistor for PLL low phase filter.																								
20	A-OUT	O																									
21	VSS	–	Connected to GND.																								

CD TEST MODE

1. How to Activate CD Test Mode

Insert the AC plug while pressing the CD 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, the following mode functions can be used by pressing the operation keys.

MODE	Function Button	FL display	Operation	Contents
Start mode (Sled mode)	Activate	CD TEST	· TEST MODE is activated	· CD Test Mode
	◀▶ button		· Pickup moves to outermost track · Pickup moves to innermost track * Note 1 (Normal operation during CDPLAY)	· SLED SERVO · Check SLED mechanism 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 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 button each time *Note 3	· TRACKING SERVO OFF · Check tracking balance (radial balance)

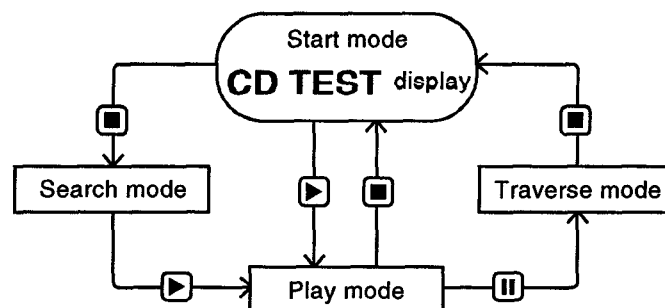
* Note 1 When pressing the ◀▶ or ▶▶ keys, take care to avoid damage to the gears. Because the sled motor is activated when the ◀▶ or ▶▶ keys are pressed, even when the pick-up is at outermost or innermost track. The sled operation is not as normal and moves outermost track with ◀▶ button and innermost 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 (IC400) 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.

* Note 3 Do not press ◀▶ or ▶▶ button when "||" button is pressed. Playback mode may not be started after "||" button is released. Press ■ button to return to start mode then pressing ◀▶ or ▶▶ button while "||" button is pressed.

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 the  (MD function) button.

Note:

- 1) During TEST MODE, a motion ignoring mechanical failures may be performed.
If any wrong operation is seen, unplug immediately.
- 2) During TEST MODE, normal record and playback cannot be performed.

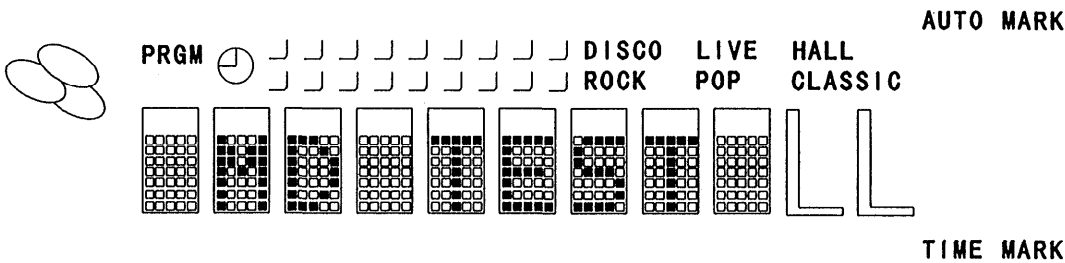
2. Exiting MD TEST MODE

- 1) Press  (OPEN/CLOSE) button 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.

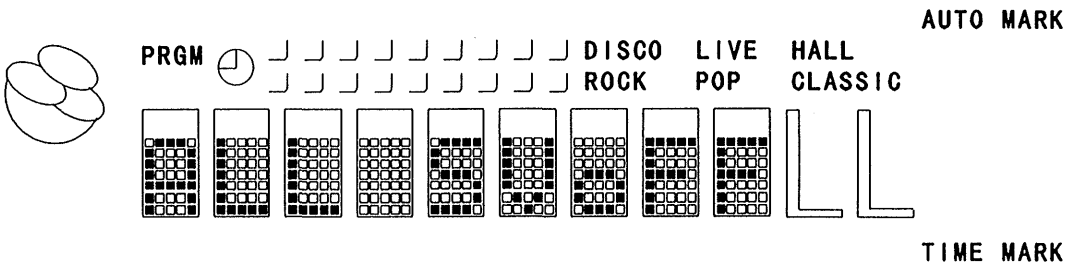
3. MD TEST MODE check

- 1) Display
Approximate 5 seconds after the test mode is activated, the following diagram appears on the display and the test mode can be started.



4. Switching to servo standby mode

- 1) After the test mode is activated, press  button to switch to the servo standby mode (ALL SVoFF appears on display). Switch to other mode from this mode.



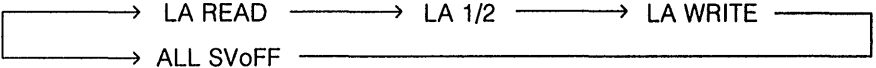
Press  button to return to "ALL SVoFF" from each mode.

5. Checking SLED sending function

- 1) Press  button at "ALL SVoFF" to move PICK UP to the outermost track.
The display shows the message, "T. SLED fwd".
- 2) Press  button at "ALL SVoFF" to move PICK UP to the innermost track.
The display shows the message, "T. SLED rvs" and the frame of CLASSIC goes on and off.

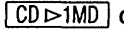
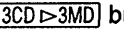
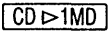
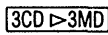
6. Checking laser power

- 1) Press  (EDIT) button at "ALL SVoFF". Switch laser power by pressing the button once.
The display shows the messages as follows:



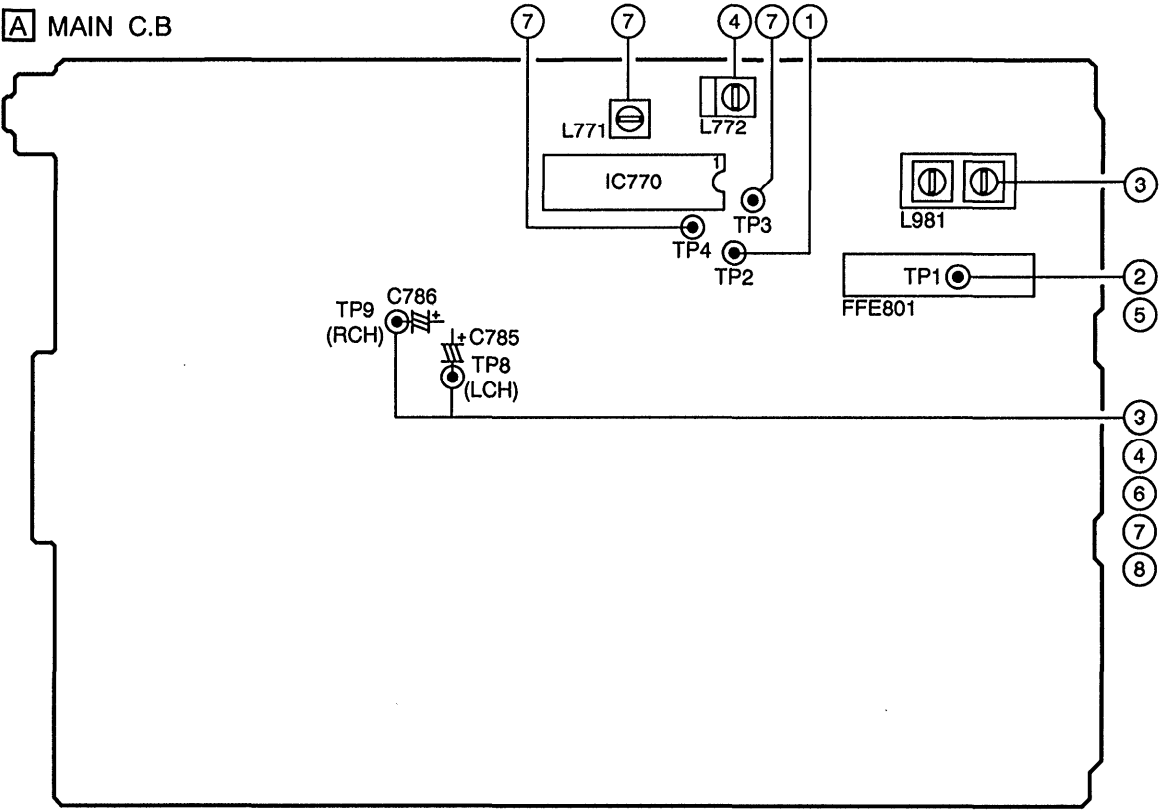
- 2) After checking, press  button to return to "ALL SVoFF".

7. Checking loading mechanism/OWH functions

- 7-1. Checking loading mechanism function
Press  (OPEN/CLOSE) button at "ALL SVoFF" to check loading mechanism function.
- 7-2. Checking OWH function
At loading status, press  or  button to operate OWH UP/DOWN.
 OWH DOWN  OWH UP

8. Checking servo function

- 8-1. Checking focus search / spindle kick
1) Be sure that no DISC is placed. Press  button at "ALL SVoFF" to perform search and spindle kick at the same time. At this time, the display shows the message, "FOCUS SCH".
2) After checking, press  button to return to "ALL SVoFF".
- 8-2. Checking focus servo
1) Place a DISC on tray 1, and press  button to load.
2) Press  (MODE) button, and adjust servo mode to the loaded DISC as follows.
· MO DISC (MO) . . . "SEL GRV" Display is "AUTO MARK".
· PIT DISK (PIT) . . . "SEL PIT" Display is "TIME MARK".
3) Press  button.
When focus servo functions properly, the display shows "FOCUS SCH" followed by "FOCUS ON!".
4) After checking, press  button to return to "ALL SVoFF".
- 8-3. Checking all servos ON
1) At focus servo ON, press  (ENTER) button so that tracking and sled servos turn to ON and all servos starts operating.
When all servos are functioning properly, the display shows the message, "ALL SV ON".
2) After checking, press  button to return to "ALL SVoFF".



< TUNER SECTION >

1. Clock Frequency Check

Settings : • Test point : TP2 (CLK)

Method : Set to AM 1710kHz and check that the test point is 2160kHz ± 45Hz.
2. AM VT Check

Settings : • Test point : TP1 (VT)

Method : Set to AM 1710kHz and check that the test point is less than 7.0V. Then set to AM 530kHz and check that the test point is more than 0.6V.
3. AM Tracking Adjustment

Settings : • Test point : TP8 (Lch), TP9 (Rch)

• Adjustment location : L981

Method : Set to AM 1000kHz and adjust L981 so that the test point becomes maximum.
4. AM IF Adjustment

Settings : • Test point : TP8 (Lch), TP9 (Rch)

• Adjustment location : L772 450kHz
5. FM VT Check

Settings : • Test point : TP1 (VT)

Method : Set to FM 108.0MHz and check that the test point is less than 7.5V. Then set to FM 87.5MHz and check that the test point is more than 1.5V.
6. 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 9dB.
7. DC Balance / Mono Distortion Adjustment

Settings : • Test point : TP3,TP4 (DC balance)

TP8,TP9 (Distortion)

• Adjustment location : L771

• Input level : 54dB

Method : Set to FM 98.0MHz and adjust L771 so that the voltage between TP3 and TP4 output becomes 0V ± 0.04V.

Next, check that the distortion is less than 1.3%.
8. Output Level Check

AM

Settings : • Test point : TP8 (Lch), TP9 (Rch)

Method : Set to AM 1000kHz and check that the test point is 150mV ± 3dB.

FM

Settings : • Test point : TP8 (Lch), TP9 (Rch)

Method : Set to FM 98.0MHz and check that the test point is 600mV ± 3dB.

PRACTICAL SERVICE FIGURE

<TUNER SECTION>

- <FM SECTION>
- IHF Sensitivity : Less than 10dB
- (THD 3%) [at 87.5MHz]
- Less than 9dB
- [at 98.0 / 108.0MHz]
- S/N 50dB Quieting sensitivity : Less than 35dB
- [at 98.0MHz]
- Signal to noise ratio : (MONO) More than 72dB
- (Input 54dB) (STEREO) More than 66dB
- [at 98.0MHz]
- Distortion : (MONO) Less than 1.2%
- (STEREO) Less than 2.0%
- [at 98.0MHz]
- Auto stop level : 25dB ± 10dB
- [at 98.0MHz]
- Stereo separation : More than 30dB
- [at 98.0MHz]
- Intermediate frequency : 10.7MHz

- <AM SECTION>
- Sensitivity : Less than 60dB
- (S/N 20 dB) [at 600kHz]
- Less than 58dB
- [at 1000 / 1400kHz]
- Signal to noise ratio : More than 36dB
- (Input 74dB) [at 1000kHz]
- Distortion : Less than 1.5%
- [at 1000kHz]
- Auto stop level : 52dB +10/-15dB
- [at 1000kHz]
- Intermediate frequency : 450kHz

ADJUSTMENT – 2 <MD>

1. Temperature compensation adjustment

- Test point: Check on the display message.
 - Jig: Thermometer
 - Method
 - 1) After MD TEST MODE is activated, press  button to show the “ALL SVoFF” message on the display.
 - 2) Press  (DISPLAY) button to switch the display to “TEMP = \$**”.
 - 3) Press  button to switch the display to “T+**C:+00”.
 - 4) Place a thermometer close to MD mechanism and measure the temperature.
 - 5) Check the temperature. Adjust the value displayed on** with  and  buttons so that the value becomes the same as the temperature. Press  (ENTER) button to confirm.
 - 6) After adjustment, press  button to return to “ALL SVoFF”.
- Note: Do not perform this adjustment, if temperature cannot be measured.

2. Checking laser power adjustment

- Test point: PICK UP laser output
 - Jig: Laser power meter
 - Method
 - 1) Press  (EDIT) button three times at “ALL SVoFF” to switch the display to “LA WRITE”.
 - 2) Press  button once to switch the display to “LASER=\$**”.
 - 3) Measure laser output of PICK UP with laser power meter, and adjust the value to $6.8 \pm 0.03\text{mW}$ with  and  buttons. Press  (ENTER) button to confirm.
 - 4) After adjustment, press  button to return to “ALL SVoFF”.
- Note: PICK UP may be damaged, if laser output exceeds 7.0mW.

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

- Test point: Check on the display message.
- Test Disc: MDW-60, TGYS-1 or equivalent
- Method
 - 1) Place MDW-60 on tray 1, press  (OPEN/CLOSE) button to load.
 - 2) Press  (MODE) button to display the message, “SEL GRV”.
 - 3) Press  (MD Function) button to display the message, “AUTO ADJ”. After the adjustment, the display shows “DONE”. (The message, “FAILED” shows that adjustment has not been performed.)
 - 4) After adjustment, press  button to return to “ALL SVoFF”.

◇ Checking IVR, EFB, focus/tracking/sled gain

- ① Move PICK UP to the middle track with  and  buttons.
- ② Press  button to display the “FOCUS ON!” message.
- ③ Press  (ENTER) button to switch to “ALL SV ON” status.
- ④ Press  button once and  (DISPLAY) button twice.

At this time, check that the display message, “I**:\$000” shows the following values.

「* *」 05~08

「◇◇」 0B~11

- ⑤ Press  (DISPLAY) button once more.

At this time, check that the display message, “G**t##S△△” show the following values.

「* *」 15~40

「##」 15~40

「△△」 15~40

- ⑥ After checking, press  button to return to “ALL SVoFF”.

- 5) Place TGYS-1 on tray 1, press  (OPEN/CLOSE) button to load.

- 6) Press  (MODE) button to display the message, “SEL PIT”.

- 7) Press  (MD function) button to display the message, “AUTO ADJ”, and after adjustment, the “DONE” message appears. (The “FAILED” message shows that no adjustment could be done.)

- 8) After the adjustment, press  button to return to “ALL SVoFF”.

◇ Checking IVR, EFB, focus/tracking/sled gain

- ① In the same steps as MO disc, compare with the following values.

「IVR」..... 13 ~ 18

「EFB」..... OC ~ 11

「focus gain」..... 20 ~ 40

「tracking gain」..... 15 ~ 40

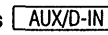
「sled gain」..... 15 ~ 40

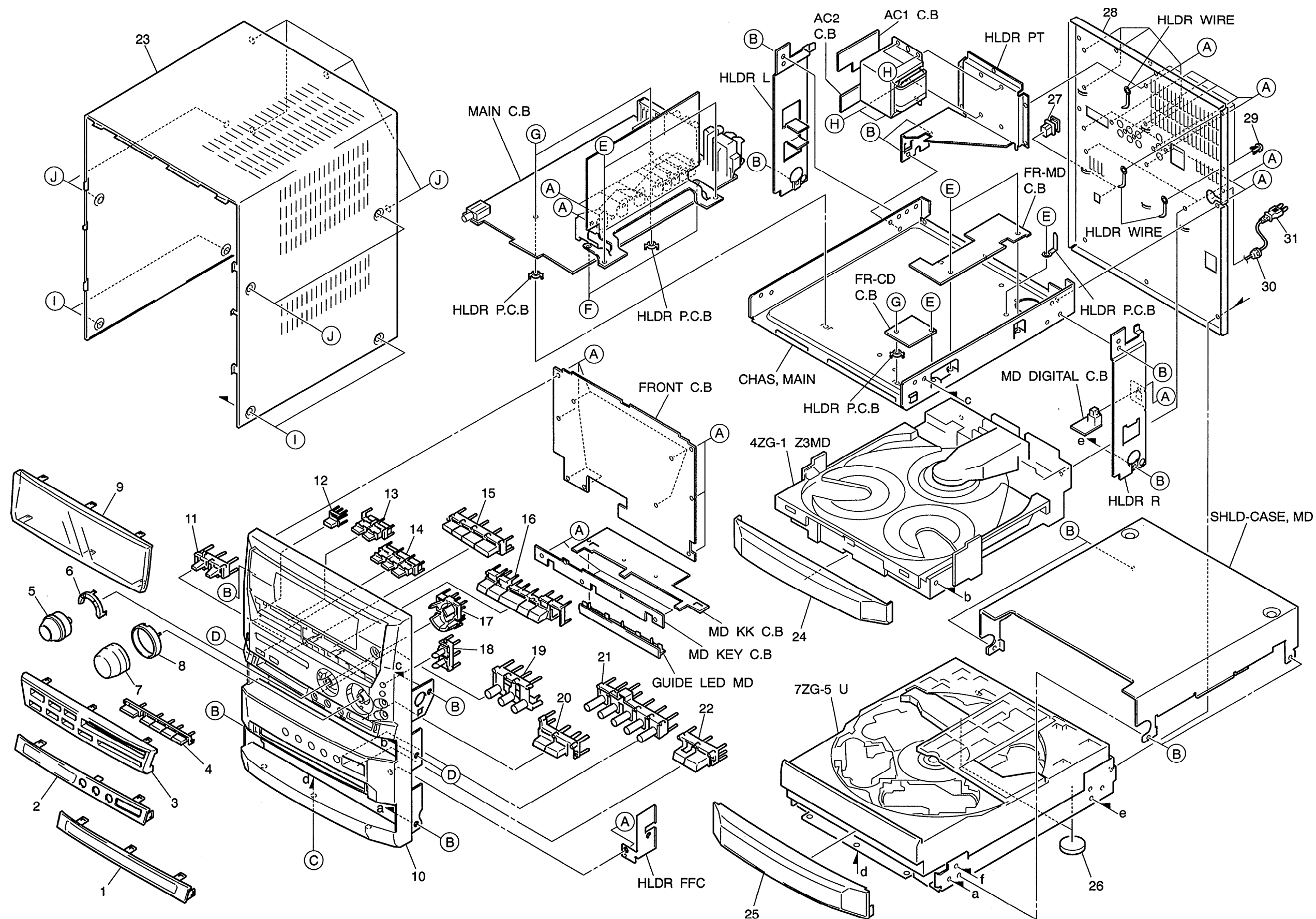
- ② After checking, press  button to return to “ALL SVoFF”.

4. Checking focus servo / error rate. (PIT DISC)

- 1) Place TGYS-1 on tray 1, press  (OPEN/CLOSE) button to load.
- 2) Move PICK UP to the middle track with  and  buttons.
- 3) Press  (MODE) button to display the message, “SET PIT”.
- 4) Press  button to display the message, “FOCUS ON!”.
- 5) Press  (ENTER) button to display the message, “ALL SV ON”, and press  (DISPLAY) button once to check that address display is successfully sent.
- 6) Press  (DISPLAY) button again to display the replay error rate.
Check that the number shown in the underlined part of [**** : ****] is less than 0030.
- 7) After adjustment, press  button to return to “ALL SVoFF”.

5. Checking the playback/record error rate

- 1) Place MDW-60 on tray 1, press  (OPEN/CLOSE) button to load.
- 2) Move PICK UP to the middle track with  and  buttons.
- 3) Press  button to start recording from 600 cluster.
- 4) Record around 15 seconds, and press  button.
- 5) Press  button to switch to “ALL SV ON”, and press  (DISPLAY) button around 600 cluster.
Check that the number shown in the underlined part of [**** : ****] is less than 0020.
- 6) After adjustment, press  button to return to “ALL SVoFF”.

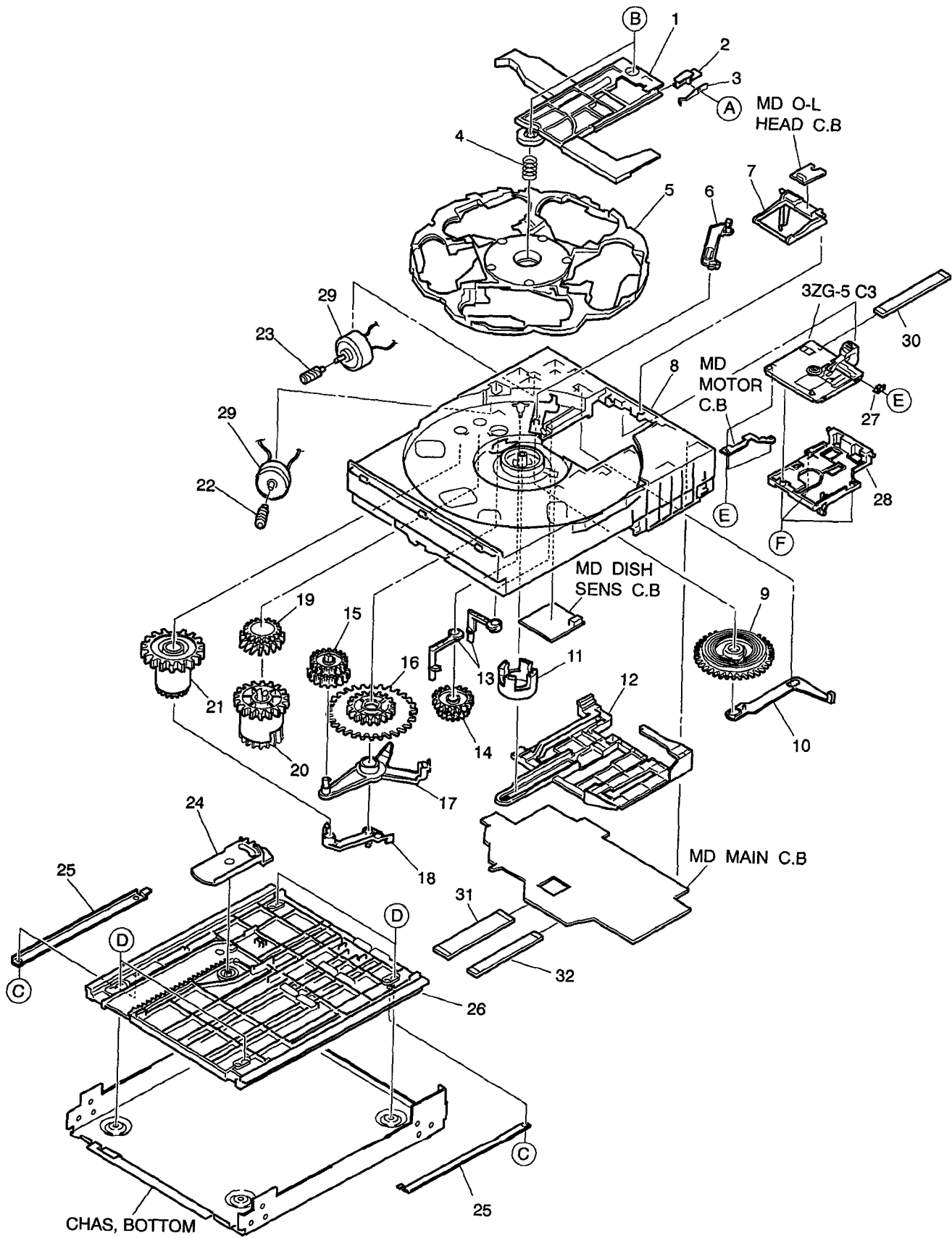


MECHANICAL PARTS LIST 1 / 1

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

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION	REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	87-NB5-005-010		WINDOW, MD	26	87-NB5-205-010		FOOT, DIA25-5
2	87-NB5-007-010		WINDOW, CD	27	84-ZG1-245-210		CAP, OPTICAL
3	87-NB5-002-010		PANEL, FR	28	87-NB5-082-010		PANEL, REAR US
4	87-NB5-031-010		KEY, REC	29	87-084-077-010		NYLON RIVET, 3.5-4.5
5	87-NB5-017-010		KNOB, RTRY JOG	30	87-085-189-010		BUSHING, CORD (U)
6	87-NB5-018-010		PANEL, JOG	△ 31	87-A80-093-010		AC CORD ASSY, U-2 2300
7	87-NB5-016-010		KNOB, RTRY VOL	A	87-067-703-010		TAPPING SCREW, BVT2+3-10
8	87-NB5-015-010		RING, VOL	B	87-591-094-410		TAPPING SCREW, QIT+3-6
9	87-NB5-006-010		WINDOW, DISP	C	87-067-689-010		TAPPING SCREW, BVT+3-8
10	87-NB5-081-010		CABI, FR U	D	87-721-097-410		QT2+3-12 GLD
11	87-NB5-035-010		KEY, VF	E	87-067-579-010		TAPPING SCREW, BVT2+3-8
12	87-NB5-027-010		KEY, POWER	F	87-NF4-224-010		S-SCREW, IT3B+3-8 CU
13	87-NB5-020-010		KEY, ASSY FUN CD	G	87-067-758-010		BVT2+3-12 W/O SLOT
14	87-NB5-021-010		KEY, ASSY FUN TUN	H	87-078-019-010		S-SCREW, IT+4-6
15	87-NB5-040-010		KEY, SURROUND	I	87-B10-150-010		UIT+3-4 W/O SLOT BLK
16	87-NB5-029-010		KEY, ASSY OPE	J	87-743-095-410		UT2+3-8 W/O SLOT BLK
17	87-NB5-033-010		KEY, EDIT				
18	87-NB5-032-010		KEY, MIC				
19	87-NB5-036-010		KEY, DISC CD				
20	87-NB5-038-010		KEY, OPEN CD				
21	87-NB5-037-010		KEY, DISC MD				
22	87-NB5-039-010		KEY, OPEN MD				
23	87-NB5-010-010		CABI, STEEL				
24	87-NB5-003-010		PANEL, TRAY CD D				
25	87-NB5-004-010		PANEL, TRAY MD D				

MD MECHANISM EXPLODED VIEW 1 / 2

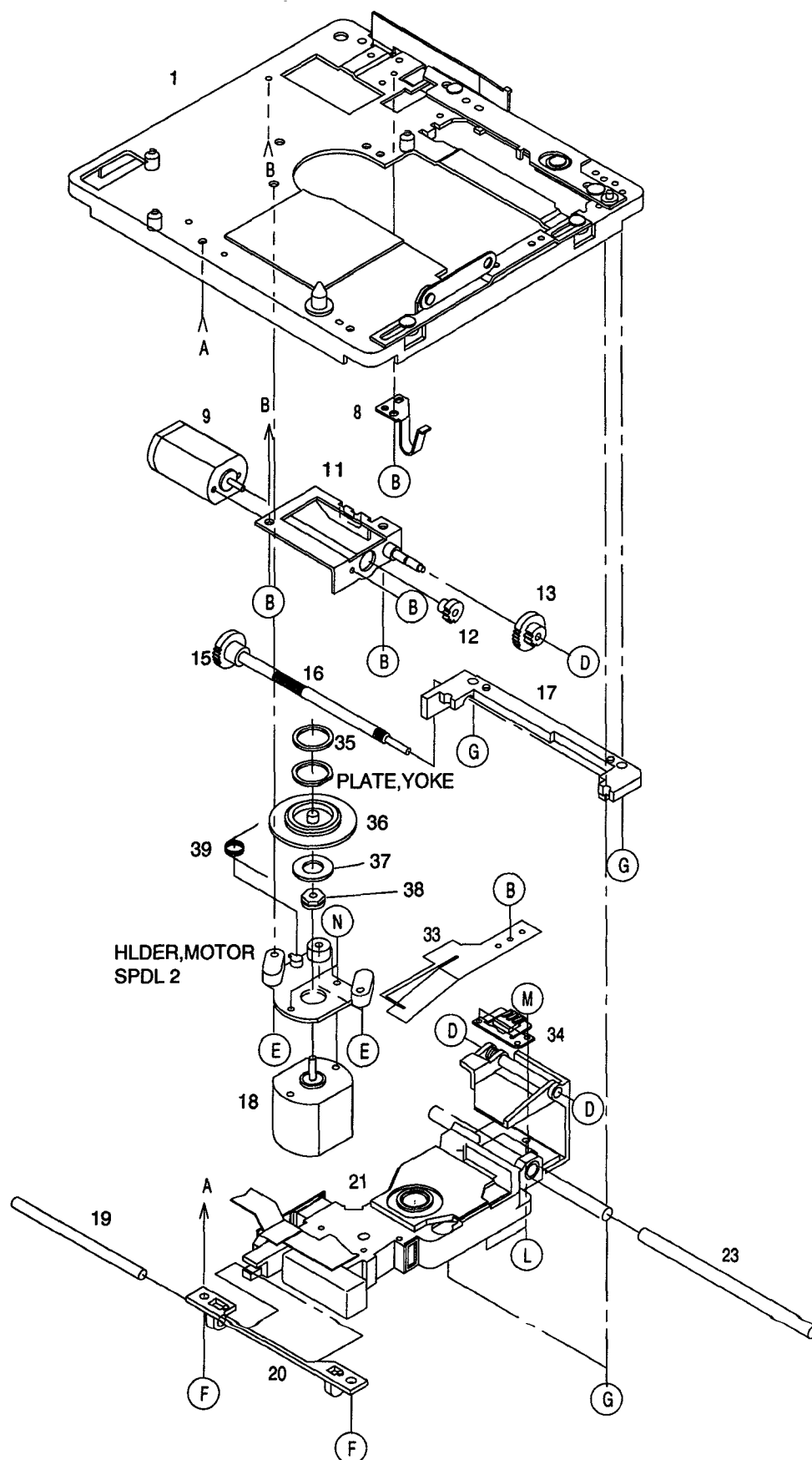


MD MECHANISM PARTS LIST 1 / 2

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

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION	REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	87-ZG5-204-010		COVER, T-T	21	87-ZG5-228-010		GEAR, 3
2	87-ZG5-210-010		SLIDER, OPEN	22	87-ZG5-224-010		GEAR, WORM-2
3	87-ZG5-236-010		SPR-P, SHUTTER	23	87-ZG5-222-010		GEAR, WORM-1
4	87-ZG5-237-010		SPR-C, T-T	24	87-ZG5-220-010		GEAR, LOCK-TRAY
5	87-ZG5-202-010		TURN TABLE, MD	25	87-ZG5-234-010		PLATE, G-TRAY
6	87-ZG5-208-010		SLIDER, LOCK T-T	26	87-ZG5-203-010		GUIDE, TRAY
7	87-ZG5-211-010		LEVER, REC	27	85-HM1-222-010		DMPR, PLATE
8	87-ZG5-201-010		TRAY, MECHA	28	87-ZG5-206-010		HLDR, MECHA
9	87-ZG5-221-010		GEAR, CAM	29	87-045-305-010		MOTOR, RF-500TB DC-5V (2MA)
10	87-ZG5-209-010		SLIDER, REC	30	87-ZG5-633-010		CABLE, FFC 8P-0.50-135
11	87-ZG5-214-010		CLR, T-T	31	87-NB5-635-110		FF-CABLE, 23P 1.00 750MM
12	87-ZG5-205-010		SLIDER, MAIN	32	87-NB5-636-110		FF-CABLE, 12P 1.00 900MM
13	87-ZG5-213-010		LEVER, SW2	A	87-357-503-310		VT2+1.4-2
14	87-ZG5-223-010		GEAR, WORM-WHL-1	B	87-763-095-410		VFT2+3-8 W/O BLK
15	87-ZG5-227-010		GEAR, 2	C	87-723-036-410		SCREW QT2+2-8 BLK
16	87-ZG5-226-010		GEAR, 1	D	87-ZG5-238-010		S-SCREW, CUSH MD
17	87-ZG5-207-010		LEVER, MODE-CHG	E	87-067-746-010		SCREW, M 1.4-2 (H0.5)
18	87-ZG5-212-010		LEVER, SW1	F	87-262-507-310		SCREW V+1.4-3
19	87-ZG5-225-010		GEAR, WORM-WHL-2				
20	87-ZG5-229-010		GEAR, 4				

MD MECHANISM EXPLODED VIEW 2 / 2



MD MECHANISM PARTS LIST 2 / 2

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

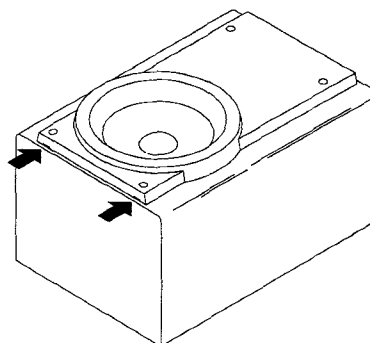
REF. NO.	PART NO.	KANRI NO.	DESCRIPTION	REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	83-ZG5-213-010		CHAS,C3 ASSY	34	83-ZG5-247-110		SPR-P,INSERT ASSY
8	83-ZG5-265-010		SPR-P,GEAR P.U.	35	83-ZG5-605-010		MAGNET,CHUCK
9	87-045-374-010		MOT,FFM20VK-7Z170	36	83-ZG5-302-010		TURN TABLE,MD1
11	83-ZG5-261-010		HLDR,MOTOR P.U.ASSY	37	83-ZG5-305-010		SPR-P,DISK
12	83-ZG5-268-010		GEAR,MOTOR P.U.	38	83-ZG5-308-010		BRG,1.5-2
13	83-ZG5-267-010		GEAR,P.U.B	39	83-ZG5-309-010		SPR-T,SPINDLE
15	83-ZG5-266-010		GEAR,P.U.A	B	87-261-500-310		V+1.4-1.4 BLK(1)
16	83-ZG5-254-110		SHAFT,PU GUIDE C	D	87-078-123-010		PW,1.1-2.5-0.3 C
17	83-ZG5-253-110		HLDR,PU GUIDE B	E	83-ZG5-313-010		S-SCREW,V+1.7-5.5
18	87-A90-413-010		MOT,FF-110PH 9	F	87-262-505-310		V+1.4-2.5 BLK(3)
19	83-ZG5-311-010		SHAFT P.U GUIDE A3	G	87-262-507-310		V+1.4-3.0 BLK
20	83-ZG5-252-110		HLDR,PU GUIDE A	L	87-262-523-310		V+1.7-2 BLK(3)
21	83-ZG5-244-010		PICK UP ASSY,C3	M	87-067-393-010		S-SCREW 1.4-1.4BLK
23	83-ZG5-251-010		SHAFT,P.U.GUIDE B	N	83-ZG5-314-010		S-SCREW,V+1.7-3
33	87-046-415-010		HEAD,RF320-74H				

SPEAKER DISASSEMBLY INSTRUCTIONS

Type.1

矢印の位置にマイナスドライバーを差し込んで、パネルを外します。各々のスピーカーユニットのビスを取り、スピーカーユニットを外してください。

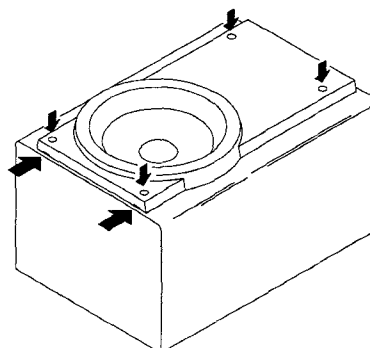
Insert a flat-bladed screwdriver into the position indicated by the arrows and remove the panel. Remove the screws of each speaker unit and then remove the speaker units.



Type.2

グリルフレームを外し、4個のゴムキャップをマイナスドライバーで端の方から持ち上げて外すと中にビスが有りますので、ビスを取り外します。矢印の位置にマイナスドライバーを差し込んで、パネルを外します。各々のスピーカーユニットのビスを取り、スピーカーユニットを外してください。

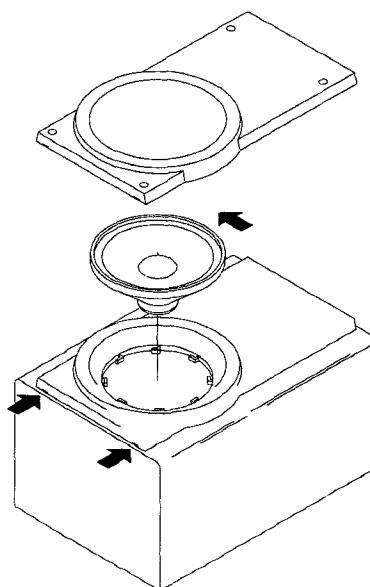
Remove the grill frame and four pieces of rubber caps by pulling out with a flat-bladed screwdriver. Remove the screws from hole where installed rubber caps. Insert a flat-bladed screwdriver into the position indicated by the arrows and remove the panel. Remove the screws of each speaker unit and then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



Type.3

矢印の位置にマイナスドライバーを差し込んで、パネルを外します。各々のスピーカーユニットの凹にマイナスドライバーを差し込んで、反時計方向に回転させスピーカーユニットを外してください。スピーカーユニット交換後は時計方向にクリック音がするまで、回転させて取り付けます。

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



SPEAKER PARTS LIST

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

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	86-NST-604-010	SPKR, T 60	
2	87-NSL-602-010	SPKR, W 160	
3	87-NSG-605-010	SPKR, CORD	
4	87-NSL-001-010	PANEL, FR	
5	87-NSL-002-010	PANEL, SPKR	
6	87-NSL-004-010	GRILLE, FRAME ASSY	

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-NB5-903-110	IB, U(ESF) I	
2	87-NB5-650-110	RC UNIT, RC-7AS15	
3	87-043-115-010	ANT, FEEDER FM	
4	87-006-225-010	AM LOOP ANT NC2	

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 SENSOR
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
ADHESHIVE	SHEET ADHESHIVE
AZ	AZIMUTH
BAR-ANT	BAR-ANTENNA
BAT	BATTERY
BATT	BATTERY
BRG	BEARING
BTN	BUTTON
CAB	CABINET
CASS	CASSETTE
CHAS	CHASSIS
CLR	COLLAR
CONT	CONTROL
CRSR	CURSOR
CU	CUSHION
CUSH	CUSHION
DIR	DIRECTION
DUBB	DUBBING
FL	FRONT LOADING
FLY-WHL	FLYWHEEL
FR	FRONT
FUN	FUNCTION
G-CU	G-CUSHION
HDL	HANDOL
HIMERON	CLOTH
HINGE, BAT	HINGE, BATTERY
HLDR	HOLDER
HT-SINK	HEAT SINK
IB	INSTRUCTION BOOKLET
IDLE	IDLER
IND, L-R	INDICATOR, L-R
KEY, CONT	KEY, CONTROL
KEY, PRGM	KEY, PROGRAM
KNOB, SL	KNOB, SLIDE
LBL	LABEL
LID, BATT	LID, BATTERY
LID, CASS	LID, CASSETTE
LVR	LEVER
P-SP	P-SPRING
PANEL, CONT	PANEL, CONTROL
PANEL, FR	PANEL, FRONT
PRGM	PROGRAM
PULLY, LOAD MO	PULLY, LOAD MOTOR
RBN	RIBBON
S-	SPECIAL
SEG	SEGMENT
SH	SHEET
SHLD-SH	SHIELD-SHEET
SL	SLIDE
SP	SPRING
SP-SCREW	SPECIAL-SCREW
SPACER, BAT	SPACER, BATTERY
SPR	SPRING
SPR-P	P-SPRING
SPR-PC-PUSH	P-SPRING, C-PUSH
T-SP	T-SPRING
TERM	TERMINAL
TRIG	TRIGGER
TUN	TUNING
VOL	VOLUME
W	WASHER
WHL	WHEEL
WORM-WHL	WORM-WHEEL

サービス技術ニュース	
番号	連絡内容
G- -	
G- -	
G- -	

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