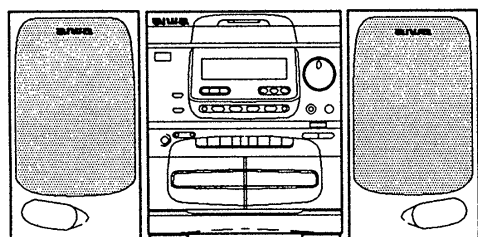


# aiwa

## NSX - 510G CX - N510G



COMPACT DISC STEREO SYSTEM

- BASIC TAPE MECHANISM : 2ZM - 3 PR1N
- BASIC CD MECHANISM : KSM - 2101ABM
- TYPE. HE,HD,HR,E,K,Z,U

### [REVISION PUBLISHING]

| SYSTEM     | CD - CASSEIVER | REMOTE CONTROLLER | SPEAKER                  |
|------------|----------------|-------------------|--------------------------|
| NSX - 510G | CX - N510G     | RC - TN500        | SX - N510G<br>SX - N3500 |

- This Service Manual has information about difference between NSX - 510G and XG - 500/NSX - 500/CX - 500.  
If requiring the other information, see Service Manual of XG - 500/NSX - 500/CX - 500.(S/M Code No.0221/1993)
- There are four types of CD block, so refer to applicable one.

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## SPECIFICATIONS

### <FM section>

|                                      |                                                                                                                                                                                                 |
|--------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Frequency range</b>               | HD: 76.0 MHz to 108 MHz<br>HE, HR, E, K, Z:<br>87.5 MHz a 108 MHz<br>HE, HR, E, K:<br>1.3 $\mu$ V (75 ohms) 13.2 dBf<br>Z: 1.9 $\mu$ V (75 ohms) 16.8 dBf<br>HD: 1.8 $\mu$ V (75 ohms) 16.2 dBf |
| <b>Usable sensitivity (IHF)</b>      | 50 dB ( $\pm$ 400 kHz)                                                                                                                                                                          |
| <b>Alternate channel selectivity</b> | STEREO: 70 dB (HE, HR, HD, E, K)<br>65 dB (Z)                                                                                                                                                   |
| <b>Signal-to-noise ratio</b>         | MONO: 76 dB (HE, HR, E, K)<br>78 dB (HD)<br>73 dB (Z)                                                                                                                                           |
| <b>Harmonic distortion</b>           | 0.3% (MONO), 1 kHz<br>0.5% (STEREO, L-R), 1 kHz<br>(HE, HR, E, K, Z)<br>0.8% (STEREO L-R), 1 kHz (HD)                                                                                           |
| <b>Frequency response</b>            | 30 Hz to 15 kHz (+0.5 dB, -3 dB)                                                                                                                                                                |
| <b>Stereo separation</b>             | HE, HR, E, K: 33 dB at 1 kHz<br>Z: 30 dB at 1 kHz<br>HD: 35dB at 1 kHz                                                                                                                          |
| <b>Antenna</b>                       | 75 ohms (unbalanced)                                                                                                                                                                            |

### <AM (MW) section>

|                              |                                                                                                                                |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| <b>Frequency range</b>       | NSX-510G HE, HR, HD, E, K, Z:<br>AM 531 (530) kHz to 1,602 (1,710) kHz<br>NSX-510G U:<br>AM 530 (531) kHz to 1,710 (1,602) kHz |
| <b>Usable sensitivity</b>    | 350 $\mu$ V/m                                                                                                                  |
| <b>Selectivity</b>           | 22 dB (9 kHz)                                                                                                                  |
| <b>Signal-to-noise ratio</b> | 53 dB (100 dB input)                                                                                                           |
| <b>Antenna</b>               | Loop antenna                                                                                                                   |

### <LW section > (E, K, Z models only)

|                        |                    |
|------------------------|--------------------|
| <b>Frequency range</b> | 144 kHz to 290 kHz |
| <b>Sensitivity</b>     | 1,400 $\mu$ V/m    |
| <b>Antenna</b>         | Loop antenna       |

### <Timer section>

|                      |                                                                 |
|----------------------|-----------------------------------------------------------------|
| <b>Program timer</b> | On-timer, capable of free setting                               |
| <b>Sleep timer</b>   | Capable of setting in 10-minute increments, 240 minutes maximum |

### <Amplifier section>

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Power output</b>        | NSX-510G HE, HR, HD:<br>40 W + 40 W<br>(6 ohms, T.H.D. 10% 1 kHz)<br>NSX-510G E, Z: 30 W + 30 W<br>(6 ohms, T.H.D. 1% 1 kHz)<br>NSX-510G K: 40 W + 40 W<br>(6 ohms, T.H.D. 10% 1 kHz)<br>30 W + 30 W (6 ohms, T.H.D. 1% 1 kHz)<br>FTC RULE (NSX-510G U)<br>30 watts per channel, Min.<br>RMS at 6 ohms, from 65 Hz to 15 kHz, with no more than 1%<br>Total Harmonic Distortion<br>0.05% (15 W, 1 kHz, 6 ohms)<br>VIDEO/AUX: 150 mV (adjustable) |
| <b>Harmonic distortion</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Input sensitivity</b>   |                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

### <Cassette deck section>

|                              |                                                                                  |
|------------------------------|----------------------------------------------------------------------------------|
| <b>Track format</b>          | 4 tracks, 2 channels                                                             |
| <b>Frequency response</b>    | CrO <sub>2</sub> tape: 50 - 16,000 Hz<br>Normal tape: 50 - 15,000 Hz             |
| <b>Signal-to-noise ratio</b> | 60 dB (DOLBY NR ON, CrO <sub>2</sub> tape peak level)<br>4.8 cm/sec. (1 7/8 ips) |
| <b>Tape speed</b>            | AC bias                                                                          |
| <b>Recording system</b>      | AC erase                                                                         |
| <b>Erase system</b>          | DC servomotor $\times$ 1                                                         |
| <b>Motor</b>                 | Playback head $\times$ 1 (deck 1)                                                |
| <b>Heads</b>                 | Recording/playback/erase head $\times$ 1 (deck 2)                                |

### <CD player section>

|                              |                                                               |
|------------------------------|---------------------------------------------------------------|
| <b>Disc</b>                  | Compact disc                                                  |
| <b>Scanning method</b>       | Non contact optical scanner (semiconductor laser application) |
| <b>Laser</b>                 | Semiconductor laser ( $\lambda$ = 780 nm)                     |
| <b>Rotation speed</b>        | Approx. 500 rpm - 200 rpm (CLV)                               |
| <b>Error correction</b>      | Cross Interleave, Reed Solomon code                           |
| <b>No. of channels</b>       | 2 channels                                                    |
| <b>D-A conversion</b>        | 16-bit linear                                                 |
| <b>Wow/flutter</b>           | Unmeasurable                                                  |
| <b>Signal-to-noise ratio</b> | 90 dB (1 kHz, 0 dB)                                           |
| <b>Harmonic distortion</b>   | 0.05% (1 kHz, 0 dB)                                           |
| <b>Video signal</b>          | NTSC/PAL                                                      |
| <b>Video output</b>          | Phono jack 1 Vp-p, 75 $\Omega$ unbalanced                     |

### <Speaker SX-N510G>

|                                                                   |                                                                                                                        |
|-------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| <b>Cabinet type</b>                                               | 3way, bass reflex (Magnetism sealed type)                                                                              |
| <b>Speaker</b>                                                    | 130 mm (5 1/8 in.) cone type woofer<br>50 mm (2 in.) cone type tweeter<br>20 mm (13/16 in.) ceramic type super tweeter |
| <b>Impedance</b>                                                  | 6 ohms                                                                                                                 |
| <b>Music power</b>                                                | 40 W                                                                                                                   |
| <b>Output sound pressure level</b>                                | 87 dB/W/m                                                                                                              |
| <b>Dimensions (W <math>\times</math> H <math>\times</math> D)</b> | 180 $\times$ 302.5 $\times$ 220 mm<br>(7 1/8 $\times$ 12 $\times$ 8 3/4 in.)                                           |
| <b>Weight</b>                                                     | 2.8 kg (6.2 lbs.)                                                                                                      |

### <General>

|                                                                   |                                                                                                                                                                                                                                                                                                                                                   |
|-------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Power requirements</b>                                         | NSX-510G HE, HR:<br>AC 120 V/220 V/240 V, switchable 50/60 Hz<br>NSX-510G HD:<br>AC 100-120 V/200-240 V, switchable 50/60 Hz<br>NSX-510G U:<br>AC 120 V, 50/60 Hz<br>NSX-510G E, Z: AC 230 V, 50 Hz<br>NSX-510G K: AC 240 V, 50 Hz<br>NSX-510G HE: 90 W<br>NSX-510G HR: 120 W<br>NSX-510G HD: 85 W<br>NSX-510G U: 80 W<br>NSX-510G E, K, Z: 210 W |
| <b>Power consumption</b>                                          | Center unit:<br>260 $\times$ 302.5 $\times$ 335.5 mm<br>(10 1/4 $\times$ 12 $\times$ 13 1/4 in.)<br>System:<br>620 $\times$ 302.5 $\times$ 335.5 mm<br>(24 1/2 $\times$ 12 $\times$ 13 1/4 in.)<br>Center unit: 7.4 kg (16.3 lbs.)<br>System: 13.0 kg (28.6 lbs.)                                                                                 |
| <b>Dimensions (W <math>\times</math> H <math>\times</math> D)</b> |                                                                                                                                                                                                                                                                                                                                                   |
| <b>Weight</b>                                                     |                                                                                                                                                                                                                                                                                                                                                   |

- Design and specifications are subject to change without notice.
- Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.  
"DOLBY" and the double-D symbol  are trademarks of Dolby Laboratories Licensing Corporation.
- 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 mainituilla tavalla saattaa altistaa käyt-täjän turvallisuusluokan 1 ylit-tävälle näkymättömälle lasersäteilylle.

### WARNING!

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

### CAUTION

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

### ATTENTION

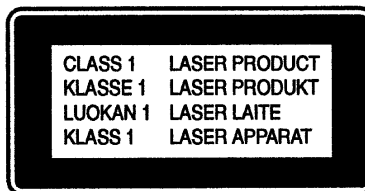
L'utilisation de commandes, réglages ou procédures autres que ceux spécifiés peut entraîner une dangereuse exposition aux radiations.

### ADVARSEL!

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

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

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

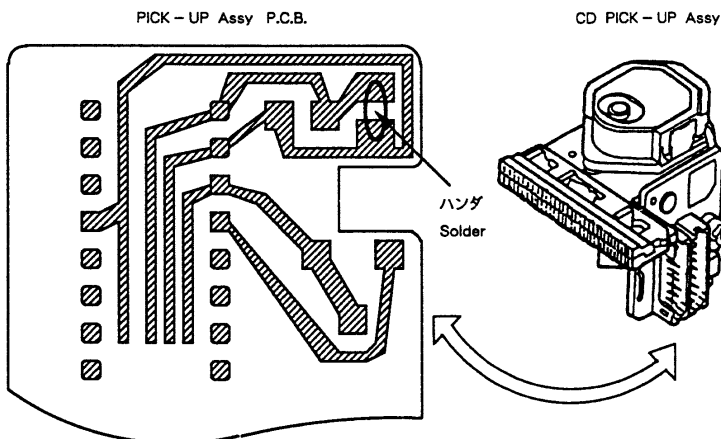


## Precaution to replace Optical block

### (KSS – 210A)

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 right figure.



## ELECTRICAL MAIN PARTS LIST

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

| REF. NO              | PART NO.       | カンリ<br>NO. | DESCRIPTION         | REF. NO | PART NO.       | カンリ<br>NO. | DESCRIPTION                   |
|----------------------|----------------|------------|---------------------|---------|----------------|------------|-------------------------------|
| IC                   |                |            |                     | C53     | 87-010-318-080 |            | C-CAP, S 47P-50 CH            |
|                      | 87-017-429-080 |            | IC, TDA 1311 A (T)  | C54     | 87-010-318-080 |            | C-CAP, S 47P-50 CH            |
|                      | 87-017-492-110 |            | IC, LC7870E         | C55     | 87-010-318-080 |            | C-CAP, S 47P-50 CH            |
|                      | 87-002-412-080 |            | IC, SN74HC00NS      | C56     | 87-010-196-080 |            | C-CAP, S 0.1-25 F             |
|                      | 87-017-198-080 |            | IC, CXA1145M        | C57     | 87-010-197-080 |            | C-CAP, S 0.01-25 B            |
|                      | 87-017-199-010 |            | IC, MN41464AZ       | C61     | 87-010-197-080 |            | C-CAP, S 0.01-25 B            |
|                      | 87-001-668-080 |            | IC, TC74HC4053AF    | C62     | 87-010-248-080 |            | CAP, E 220-10 SME             |
|                      | 87-017-008-080 |            | IC, TC74HC123AF     | C65     | 87-010-402-080 |            | CAP, E 2.2-50 SME             |
|                      | 87-017-197-010 |            | IC, YVZ152          | C66     | 87-010-402-080 |            | CAP, E 2.2-50 SME             |
|                      | 87-020-881-080 |            | IC, NJM78L05A       | C69     | 87-010-178-080 |            | C-CAP, S 1000P-50 B           |
|                      | 87-017-561-080 |            | IC, TC74HC193AF     | C70     | 87-010-178-080 |            | C-CAP, S 1000P-50 B           |
|                      | 87-017-560-080 |            | IC, TC74HC393AF     | C80     | 87-010-196-080 |            | C-CAP, S 0.1-25 F             |
|                      | 87-017-559-080 |            | IC, TC74HC30AF      | C81     | 87-010-221-080 |            | CAP, E 470-10                 |
|                      | 87-017-562-080 |            | IC, TC74HC4040AF    | C82     | 87-010-197-080 |            | C-CAP, S 0.01-25 B            |
|                      | 87-001-795-080 |            | IC, TC74HC74AF      | C83     | 87-010-196-080 |            | C-CAP, S 0.1-25 F             |
|                      | 87-001-550-080 |            | IC, TC7S04F         | C84     | 87-010-196-080 |            | C-CAP, S 0.1-25 F             |
|                      | 82-NF5-710-010 |            | IC, UPD78044GF-026  | C85     | 87-010-196-080 |            | C-CAP, S 0.1-25 F             |
| DIODE                |                |            |                     | C86     | 87-010-248-080 |            | CAP, E 220-10 SME             |
|                      | 87-017-464-080 |            | DIODE, 1A3-F AX     | C87     | 87-010-197-080 |            | C-CAP, S 0.01-25 B            |
|                      | 87-020-465-080 |            | DIODE, 1SS133 T-72  | C88     | 87-010-221-080 |            | CAP, E 470-10                 |
| FRONT C. B           |                |            |                     | C89     | 87-010-197-080 |            | C-CAP, S 0.01-25 B            |
| C607                 | 87-010-178-080 |            | C-CAP, S 1000P-50 B | C90     | 87-010-404-080 |            | CAP, E 4.7-50 SME             |
| C610                 | 87-012-145-080 |            | C-CAP, S 270P-50 CH | C100    | 87-010-260-080 |            | CAP, E 47-25 SME              |
| CD C. B (G1 VERSION) |                |            |                     | C101    | 87-010-196-080 |            | C-CAP, S 0.1-25 F             |
|                      | 82-NF5-652-010 |            | CABLE FFC, 7P-1.25  | C104    | 87-010-197-080 |            | C-CAP, S 0.01-25 B            |
| C2                   | 87-010-146-080 |            | C-CAP, S 2P-50 CH   | C105    | 87-010-196-080 |            | C-CAP, S 0.1-25 F             |
| C3                   | 87-010-150-080 |            | C-CAP, S 6P-50 CH   | C109    | 87-010-197-080 |            | C-CAP, S 0.01-25 B            |
| C4                   | 87-010-263-080 |            | CAP, E 100-10       | C110    | 87-010-197-080 |            | C-CAP, S 0.01-25 B            |
| C5                   | 87-010-178-080 |            | C-CAP, S 1000P-50 B | C111    | 87-010-197-080 |            | C-CAP, S 0.01-25 B            |
| C6                   | 87-010-382-080 |            | CAP, E 22-25 SME    | C112    | 87-010-384-080 |            | CAP, E 100-25 SME             |
| C7                   | 87-010-197-080 |            | C-CAP, S 0.01-25 B  | C113    | 87-010-322-080 |            | C-CAP, S 100P-50 CH           |
| C8                   | 87-010-248-080 |            | CAP, E 220-10 SME   | C114    | 87-010-322-080 |            | C-CAP, S 100P-50 CH           |
| C9                   | 87-015-834-080 |            | C-CAP, 0.033-25 B K | C115    | 87-010-318-080 |            | C-CAP, S 47P-50 CH            |
| C10                  | 87-010-188-080 |            | C-CAP, S 6800P-50 B | C116    | 87-012-156-080 |            | C-CAP, S 220P-50 CH           |
| C11                  | 87-010-188-080 |            | C-CAP, S 6800P-50 B | C121    | 87-010-196-080 |            | C-CAP, S 0.1-25 F             |
| C12                  | 87-010-193-080 |            | C-CAP, S 0.033-25 F | C131    | 87-010-404-080 |            | CAP, E 4.7-50 SME             |
| C13                  | 87-010-193-080 |            | C-CAP, S 0.033-25 F | C132    | 87-010-197-080 |            | C-CAP, S 0.01-25 B            |
| C14                  | 87-010-197-080 |            | C-CAP, S 0.01-25 B  | C151    | 87-010-318-080 |            | C-CAP, S 47P-50 CH            |
| C15                  | 87-010-263-080 |            | CAP, E 100-10       | C152    | 87-010-314-080 |            | C-CAP, S 22P-50 CH            |
| C16                  | 87-010-197-080 |            | C-CAP, S 0.01-25 B  | C153    | 87-010-091-080 |            | C-CAP, 22P-50 CH              |
| C17                  | 87-010-248-080 |            | CAP, E 220-10 SME   | C154    | 87-010-318-080 |            | C-CAP, S 47P-50 CH            |
| C18                  | 87-010-400-080 |            | CAP, E 0.47-50 SME  | C155    | 87-010-197-080 |            | C-CAP, S 0.01-25 B            |
| C19                  | 87-010-197-080 |            | C-CAP, S 0.01-25 B  | C156    | 87-010-197-080 |            | C-CAP, S 0.01-25 B            |
| C20                  | 87-010-197-080 |            | C-CAP, S 0.01-25 B  | C157    | 87-010-322-080 |            | C-CAP, S 100P-50 CH           |
| C21                  | 87-010-182-080 |            | C-CAP, S 2200P-50 B | C158    | 87-010-318-080 |            | C-CAP, S 47P-50 CH            |
| C22                  | 87-010-197-080 |            | C-CAP, S 0.01-25 B  | C159    | 87-010-314-080 |            | C-CAP, S 22P-50 CH            |
| C25                  | 87-010-404-080 |            | CAP, E 4.7-50 SME   | C160    | 87-010-154-080 |            | C-CAP, S 10P-50 CH            |
| C27                  | 87-010-382-080 |            | CAP, E 22-25 SME    | C161    | 87-010-150-080 |            | C-CAP, S 6P-50 CH             |
| C28                  | 87-010-265-080 |            | CAP, E 33-16 SME    | C162    | 87-010-314-080 |            | C-CAP, S 22P-50 CH            |
| C29                  | 87-010-404-080 |            | CAP, E 4.7-50 SME   | C163    | 87-010-313-080 |            | C-CAP, S 18P-50 CH            |
| C33                  | 87-010-400-080 |            | CAP, E 0.47-50 SME  | C164    | 87-010-196-080 |            | C-CAP, S 0.1-25 F             |
| C35                  | 87-010-178-080 |            | C-CAP, S 1000P-50 B | C165    | 87-010-248-080 |            | CAP, E 220-10 SME             |
| C36                  | 87-010-260-080 |            | CAP, E 47-25 SME    | C166    | 87-010-405-080 |            | CAP, E 10-50 SME              |
| C37                  | 87-010-401-080 |            | CAP, E 1-50 SME     | C167    | 87-010-197-080 |            | C-CAP, S 0.01-25 B            |
| C38                  | 87-010-186-080 |            | C-CAP, S 4700P-50 B | C168    | 87-010-196-080 |            | C-CAP, S 0.1-25 F             |
| C39                  | 87-010-401-080 |            | CAP, E 1-50 SME     | C169    | 87-010-196-080 |            | C-CAP, S 0.1-25 F             |
| C40                  | 87-010-197-080 |            | C-CAP, S 0.01-25 B  | C169    | 87-010-405-080 |            | CAP, E 10-50 SME              |
| C42                  | 87-010-318-080 |            | C-CAP, S 47P-50 CH  | C170    | 87-015-819-080 |            | C-CAP, 0.01-50 B K            |
| C43                  | 87-010-318-080 |            | C-CAP, S 47P-50 CH  | C171    | 87-015-819-080 |            | C-CAP, 0.01-50 B K            |
| C44                  | 87-010-314-080 |            | C-CAP, S 22P-50 CH  | C172    | 87-010-263-080 |            | CAP, E 100-10                 |
| C45                  | 87-010-315-080 |            | C-CAP, S 27P-50 CH  | C173    | 87-010-405-080 |            | CAP, E 10-50 SME              |
| C51                  | 87-010-197-080 |            | C-CAP, S 0.01-25 B  | C174    | 87-010-405-080 |            | CAP, E 10-50 SME              |
| C52                  | 87-010-263-080 |            | CAP, E 100-10       | C175    | 87-010-260-080 |            | CAP, E 47-25 SME              |
|                      |                |            |                     | C176    | 87-010-197-080 |            | C-CAP, S 0.01-25 B (EXCEPT Z) |
|                      |                |            |                     | C176    | 87-018-214-080 |            | CAP, TC-U 0.1-50F (Z)         |
|                      |                |            |                     | C177    | 87-010-197-080 |            | C-CAP, S 0.01-25 B            |
|                      |                |            |                     | C179    | 87-015-785-080 |            | C-CAP, 0.1-25 F               |
|                      |                |            |                     | C180    | 87-010-196-080 |            | C-CAP, S 0.1-25 F             |
|                      |                |            |                     | C181    | 87-010-196-080 |            | C-CAP, S 0.1-25 F             |
|                      |                |            |                     | C182    | 87-012-156-080 |            | C-CAP, S 220P-50 CH           |

| REF. NO              | PART NO.       | カンリ<br>NO. | DESCRIPTION                  | REF. NO | PART NO.       | カンリ<br>NO. | DESCRIPTION         |
|----------------------|----------------|------------|------------------------------|---------|----------------|------------|---------------------|
| C183                 | 87-010-197-080 |            | C-CAP, S 0.01-25 B           | C29     | 87-010-404-080 |            | CAP, E 4.7-50 SME   |
| C184                 | 87-012-155-080 |            | C-CAP, S 180P-50 CH          | C33     | 87-010-400-080 |            | CAP, E 0.47-50 SME  |
| C185                 | 87-010-405-080 |            | CAP, E 10-50 SME             | C35     | 87-010-178-080 |            | C-CAP, S 1000P-50 B |
| C186                 | 87-010-196-080 |            | C-CAP, S 0.1-25 F            | C36     | 87-010-260-080 |            | CAP, E 47-25 SME    |
| C187                 | 87-010-197-080 |            | C-CAP, S 0.01-25 B           | C37     | 87-010-401-080 |            | CAP, E 1-50 SME     |
| C188                 | 87-010-405-080 |            | CAP, E 10-50 SME             | C38     | 87-010-186-080 |            | C-CAP, S 4700P-50 B |
| C189                 | 87-015-785-080 |            | C-CAP, 0.1-25 F              | C39     | 87-010-401-080 |            | CAP, E 1-50 SME     |
| C190                 | 87-010-196-080 |            | C-CAP, S 0.1-25 F (EXCEPT Z) | C40     | 87-010-197-080 |            | C-CAP, S 0.01-25 B  |
| C190                 | 87-018-214-080 |            | CAP, TC-U 0.1-50F (Z)        | C42     | 87-010-318-080 |            | C-CAP, S 47P-50 CH  |
| C191                 | 87-010-197-080 |            | C-CAP, S 0.01-25 B           | C43     | 87-010-318-080 |            | C-CAP, S 47P-50 CH  |
| C998                 | 87-018-125-080 |            | CAP, TC-U 330P-50 (Z)        | C44     | 87-010-314-080 |            | C-CAP, S 22P-50 CH  |
| C999                 | 87-018-214-080 |            | CAP, TC-U 0.1-50F (Z)        | C45     | 87-010-315-080 |            | C-CAP, S 27P-50 CH  |
| EM1                  | 87-008-474-080 |            | F-BEAD, EMI BL02RN1          | C51     | 87-010-197-080 |            | C-CAP, S 0.01-25 B  |
| EM2                  | 87-008-474-080 |            | F-BEAD, EMI BL02RN1          | C52     | 87-010-263-080 |            | CAP, E 100-10       |
| EM3                  | 87-003-223-080 |            | FERRITE BEAD BL02RN2         | C53     | 87-010-318-080 |            | C-CAP, S 47P-50 CH  |
| EM4                  | 87-003-223-080 |            | FERRITE BEAD BL02RN2         | C54     | 87-010-318-080 |            | C-CAP, S 47P-50 CH  |
| EM91                 | 87-008-372-080 |            | FLTR, EMI BL 01RN1 (Z)       | C55     | 87-010-318-080 |            | C-CAP, S 47P-50 CH  |
| EM92                 | 87-008-372-080 |            | FLTR, EMI BL 01RN1 (Z)       | C56     | 87-010-196-080 |            | C-CAP, S 0.1-25 F   |
| F1                   | 81-VM2-603-010 |            | FILTER, LPF2.00M             | C57     | 87-010-197-080 |            | C-CAP, S 0.01-25 B  |
| F2                   | 81-VM2-602-010 |            | FILTER, BPF3.58M             | C61     | 87-010-197-080 |            | C-CAP, S 0.01-25 B  |
| F3                   | 81-VM2-601-010 |            | FILTER, BPF4.43M             | C62     | 87-010-248-080 |            | CAP, E 220-10 SME   |
| J150                 | 87-009-502-010 |            | JACK, PIN 1P YEL             | C65     | 87-010-402-080 |            | CAP, E 2.2-50 SME   |
| L1                   | 87-003-149-080 |            | COIL, 47UH                   | C66     | 87-010-402-080 |            | CAP, E 2.2-50 SME   |
| L2                   | 87-003-149-080 |            | COIL, 47UH                   | C69     | 87-010-178-080 |            | C-CAP, S 1000P-50 B |
| L4                   | 87-003-149-080 |            | COIL, 47UH                   | C70     | 87-010-178-080 |            | C-CAP, S 1000P-50 B |
| L5                   | 87-003-149-080 |            | COIL, 47UH                   | C80     | 87-010-196-080 |            | C-CAP, S 0.1-25 F   |
| L6                   | 87-003-149-080 |            | COIL, 47UH                   | C81     | 87-010-221-080 |            | CAP, E 470-10       |
| L7                   | 87-003-149-080 |            | COIL, 47UH                   | C82     | 87-010-197-080 |            | C-CAP, S 0.01-25 B  |
| L91                  | 87-003-149-080 |            | COIL, 47UH (Z)               | C83     | 87-010-196-080 |            | C-CAP, S 0.1-25 F   |
| PH1                  | 87-026-573-010 |            | P-SNSR GP1S53V (*)           | C84     | 87-010-196-080 |            | C-CAP, S 0.1-25 F   |
| R28                  | 87-022-359-080 |            | C-RES, S 22K-1/10W F         | C85     | 87-010-196-080 |            | C-CAP, S 0.1-25 F   |
| R29                  | 87-022-359-080 |            | C-RES, S 22K-1/10W F         | C86     | 87-010-248-080 |            | CAP, E 220-10 SME   |
| SFR1                 | 87-024-354-080 |            | SFR, 22K DIA6 H              | C87     | 87-010-197-080 |            | C-CAP, S 0.01-25 B  |
| SFR2                 | 87-024-354-080 |            | SFR, 22K DIA6 H              | C88     | 87-010-221-080 |            | CAP, E 470-10       |
| SFR3                 | 87-024-354-080 |            | SFR, 22K DIA6 H              | C89     | 87-010-197-080 |            | C-CAP, S 0.01-25 B  |
| SFR4                 | 87-024-349-080 |            | SFR, 1K DIA6 H               | C90     | 87-010-404-080 |            | CAP, E 4.7-50 SME   |
| SFR5                 | 87-024-570-080 |            | SFR, 100K RH0683H            | C100    | 87-010-260-080 |            | CAP, E 47-25 SME    |
| SW1                  | 87-036-271-010 |            | SW, LVR 1-2-2 (*)            | C101    | 87-010-196-080 |            | C-CAP, S 0.1-25 F   |
| SW2                  | 87-036-271-010 |            | SW, LVR 1-2-2 (*)            | C104    | 87-010-197-080 |            | C-CAP, S 0.01-25 B  |
| SW3                  | 87-036-109-010 |            | SW, PUSH SPPB 61             | C105    | 87-010-196-080 |            | C-CAP, S 0.1-25 F   |
| X1                   | 87-030-270-080 |            | VIB, XTAL 16.9344MHZ         | C109    | 87-010-197-080 |            | C-CAP, S 0.01-25 B  |
| X2                   | 81-VM2-623-080 |            | VIB, XTAL 4.433619M          | C110    | 87-010-197-080 |            | C-CAP, S 0.01-25 B  |
| X3                   | 80-JUC-603-080 |            | VIB, XTAL 14.31818MHZ        | C111    | 87-010-197-080 |            | C-CAP, S 0.01-25 B  |
| X4                   | 81-VM2-622-080 |            | VIB, XTAL 14.21875M          | C112    | 87-010-384-080 |            | CAP, E 100-25 SME   |
|                      |                |            |                              | C113    | 87-010-322-080 |            | C-CAP, S 100P-50 CH |
| CD C. B (G2 VERSION) |                |            |                              | C114    | 87-010-322-080 |            | C-CAP, S 100P-50 CH |
| C2                   | 87-010-146-080 |            | C-CAP, S 2P-50 CH            | C115    | 87-010-318-080 |            | C-CAP, S 47P-50 CH  |
| C3                   | 87-010-150-080 |            | C-CAP, S 6P-50 CH            | C116    | 87-012-156-080 |            | C-CAP, S 220P-50 CH |
| C4                   | 87-010-263-080 |            | CAP, E 100-10                | C12     | 87-018-209-080 |            | CAP, TC-U 0.1-50 F  |
| C5                   | 87-010-178-080 |            | C-CAP, S 1000P-50 B          | C121    | 87-010-196-080 |            | C-CAP, S 0.1-25 F   |
| C6                   | 87-010-382-080 |            | CAP, E 22-25 SME             | C131    | 87-010-404-080 |            | CAP, E 4.7-50 SME   |
| C7                   | 87-010-197-080 |            | C-CAP, S 0.01-25 B           | C132    | 87-010-197-080 |            | C-CAP, S 0.01-25 B  |
| C8                   | 87-010-248-080 |            | CAP, E 220-10 SME            | C151    | 87-010-318-080 |            | C-CAP, S 47P-50 CH  |
| C9                   | 87-015-834-080 |            | C-CAP, 0.033-25 B K          | C160    | 87-010-314-080 |            | C-CAP, S 22P-50 CH  |
| C10                  | 87-010-188-080 |            | C-CAP, S 6800P-50 B          | C161    | 87-010-311-080 |            | C-CAP, S 12P-50 CH  |
| C11                  | 87-010-188-080 |            | C-CAP, S 6800P-50 B          | C162    | 87-010-314-080 |            | C-CAP, S 22P-50 CH  |
| C13                  | 87-010-193-080 |            | C-CAP, S 0.033-25 F          | C163    | 87-010-313-080 |            | C-CAP, S 18P-50 CH  |
| C14                  | 87-010-197-080 |            | C-CAP, S 0.01-25 B           | C164    | 87-010-260-080 |            | CAP, E 47-25 SME    |
| C15                  | 87-010-263-080 |            | CAP, E 100-10                | C165    | 87-010-197-080 |            | C-CAP, S 0.01-25 B  |
| C16                  | 87-010-197-080 |            | C-CAP, S 0.01-25 B           | C166    | 87-010-260-080 |            | CAP, E 47-25 SME    |
| C17                  | 87-010-248-080 |            | CAP, E 220-10 SME            | C167    | 87-010-405-080 |            | CAP, E 10-50 SME    |
| C18                  | 87-010-400-080 |            | CAP, E 0.47-50 SME           | C169    | 87-010-405-080 |            | CAP, E 10-50 SME    |
| C19                  | 87-010-197-080 |            | C-CAP, S 0.01-25 B           | C171    | 87-010-260-080 |            | CAP, E 47-25 SME    |
| C20                  | 87-010-197-080 |            | C-CAP, S 0.01-25 B           | C172    | 87-010-197-080 |            | C-CAP, S 0.01-25 B  |
| C21                  | 87-010-182-080 |            | C-CAP, S 2200P-50 B          | C173    | 87-010-401-080 |            | CAP, E 1-50 SME     |
| C22                  | 87-010-197-080 |            | C-CAP, S 0.01-25 B           | C174    | 87-010-197-080 |            | C-CAP, S 0.01-25 B  |
| C25                  | 87-010-404-080 |            | CAP, E 4.7-50 SME            | C175    | 87-010-260-080 |            | CAP, E 47-25 SME    |
| C27                  | 87-010-382-080 |            | CAP, E 22-25 SME             | C176    | 87-010-371-080 |            | CAP, E 470-6.3      |
| C28                  | 87-010-265-080 |            | CAP, E 33-16 SME             | C178    | 87-010-260-080 |            | CAP, E 47-25 SME    |
|                      |                |            |                              | C183    | 87-010-315-080 |            | C-CAP, S 27P-50 CH  |

| REF. NO | PART NO.       | カソリ<br>NO. | DESCRIPTION          | REF. NO | PART NO.       | カソリ<br>NO. | DESCRIPTION            |
|---------|----------------|------------|----------------------|---------|----------------|------------|------------------------|
| C185    | 87-010-197-080 |            | C-CAP, S 0.01-25 B   | SFR4    | 87-024-349-080 |            | SFR, 1K DIA6 H         |
| C189    | 87-010-196-080 |            | C-CAP, S 0.1-25 F    | X1      | 87-030-270-080 |            | VIB, XTAL 16.9344MHZ   |
| C190    | 87-010-196-080 |            | C-CAP, S 0.1-25 F    | X2      | 80-JUC-604-080 |            | VIB, XTAL 17.734475MHZ |
| EM1     | 87-008-474-080 |            | F-BEAD, EM1 BL02RN1  | X3      | 80-JUC-603-080 |            | VIB, XTAL 14.31818MHZ  |
| EM2     | 87-008-474-080 |            | F-BEAD, EM1 BL02RN1  |         |                |            |                        |
| EM3     | 87-003-223-080 |            | F-BEAD BL02RN2       |         |                |            |                        |
| EM4     | 87-003-223-080 |            | F-BEAD BL02RN2       |         |                |            |                        |
| J150    | 87-009-502-010 |            | JACK, PIN 1P Y EARTH |         |                |            |                        |
| L1      | 87-003-149-080 |            | COIL, 47UH           |         |                |            |                        |
| L2      | 87-003-149-080 |            | COIL, 47UH           |         |                |            |                        |
| L4      | 87-003-149-080 |            | COIL, 47UH           |         |                |            |                        |
| L5      | 87-003-149-080 |            | COIL, 47UH           |         |                |            |                        |
| M2      | 87-045-305-010 |            | MOTOR, RF-500TB      |         |                |            |                        |
| R29     | 87-025-426-080 |            | RES, M/F 22K-1/6W F  |         |                |            |                        |
| SFR1    | 87-024-354-080 |            | SFR, 22K DIA6 H      |         |                |            |                        |
| SFR2    | 87-024-354-080 |            | SFR, 22K DIA6 H      |         |                |            |                        |
| SFR3    | 87-024-354-080 |            | SFR, 22K DIA6 H      |         |                |            |                        |

ECHO C. B(USED FOR ALL MODELS)

L301 87-005-495-080 COIL, 680UH

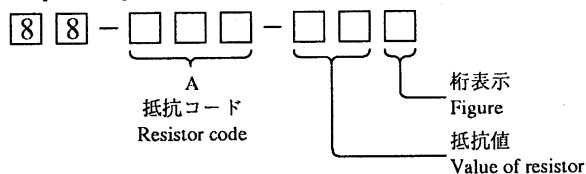
#### MISCELLANEOUS

|        |                |                      |
|--------|----------------|----------------------|
| △      | 87-050-053-010 | AC CORD ASSY, U-2(U) |
| △PT101 | 82-NF5-624-210 | PT, 2NF5 HE(HE)      |
| △PT101 | 82-NF5-628-010 | PT, 2NF5 HR(HR)      |
| △PT101 | 82-NF5-627-210 | PT, 2NF5 U(U, HD)    |

#### ○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



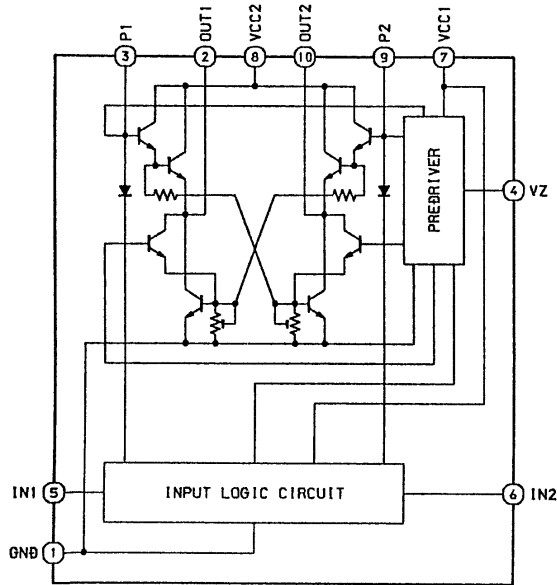
チップ抵抗

Chip resistor

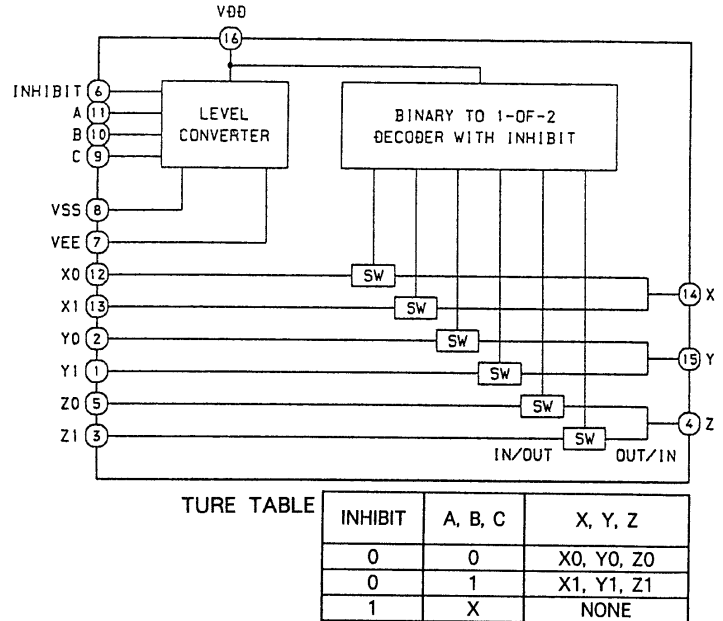
| Wattage<br>容量 | Type<br>種類 | Tolerance<br>許容誤差 | Symbol<br>記号 | Dimensions/寸法 (mm) |     |      |             | Resistor code : A<br>抵抗コード : A |
|---------------|------------|-------------------|--------------|--------------------|-----|------|-------------|--------------------------------|
|               |            |                   |              | Form/外形            | L   | W    | t           |                                |
| 1/32W         | 1608       | ±5%               | CJ           |                    | 1.6 | 0.8  | 0.35        | 108                            |
| 1/10W         | 2125       | ±5%               | CJ           |                    | 2   | 1.25 | 1.45        | 118                            |
| 1/8W          | 3216       | ±5%               | CJ           |                    | 3.2 | 1.6  | 0.5<br>~0.7 | 128                            |

## IC BLOCK DIAGRAM

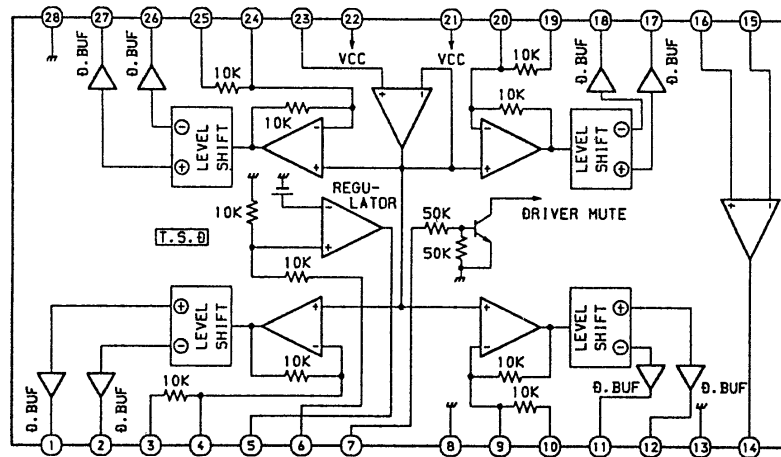
IC, LB1641



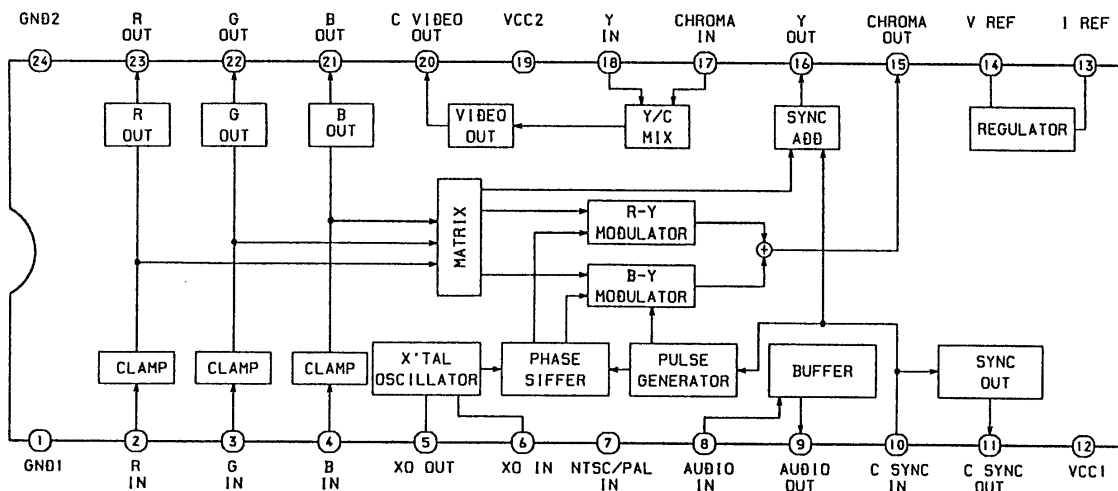
MC74HC4053N



IC, BA6296FP

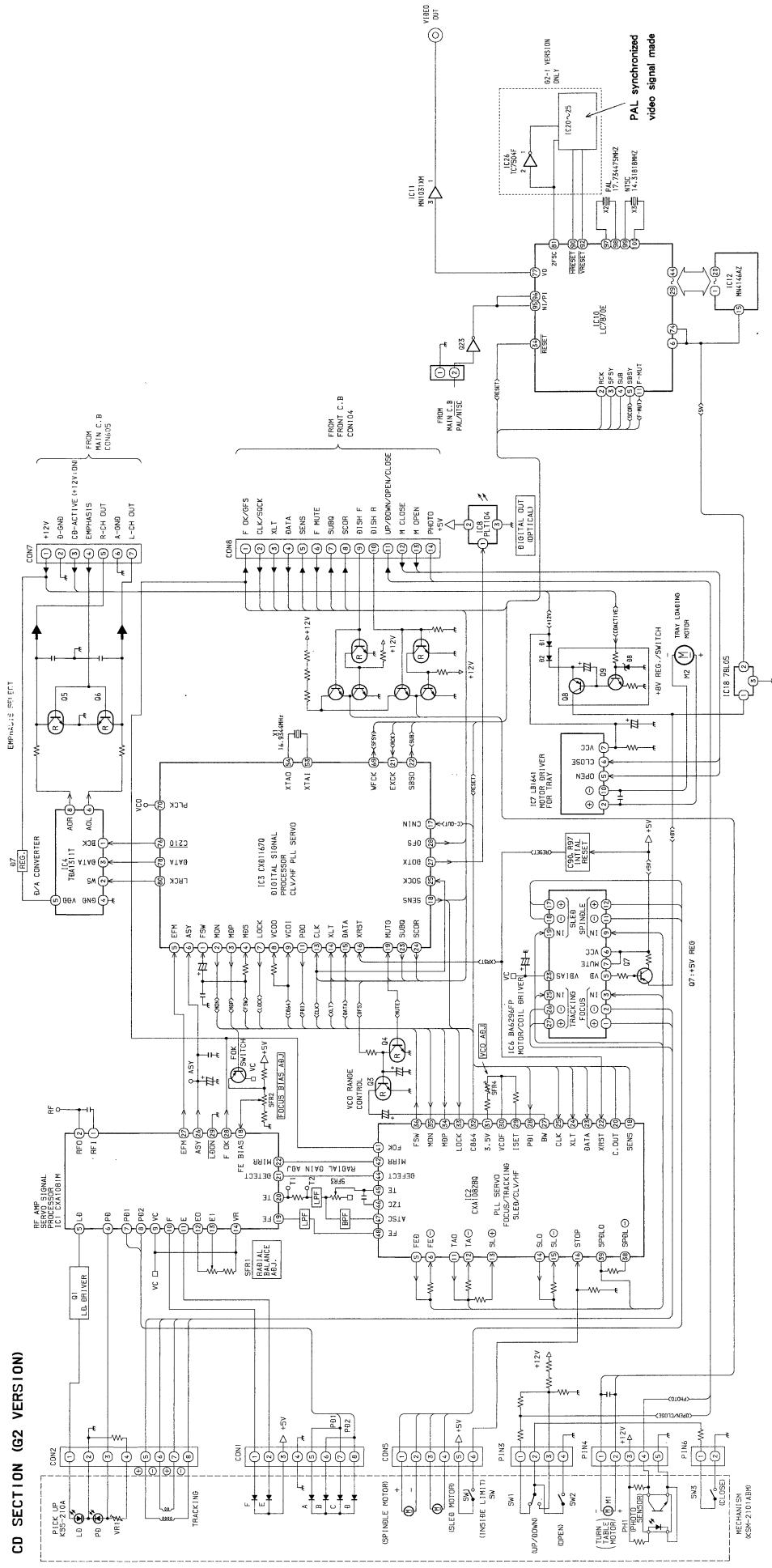


CXA1145M

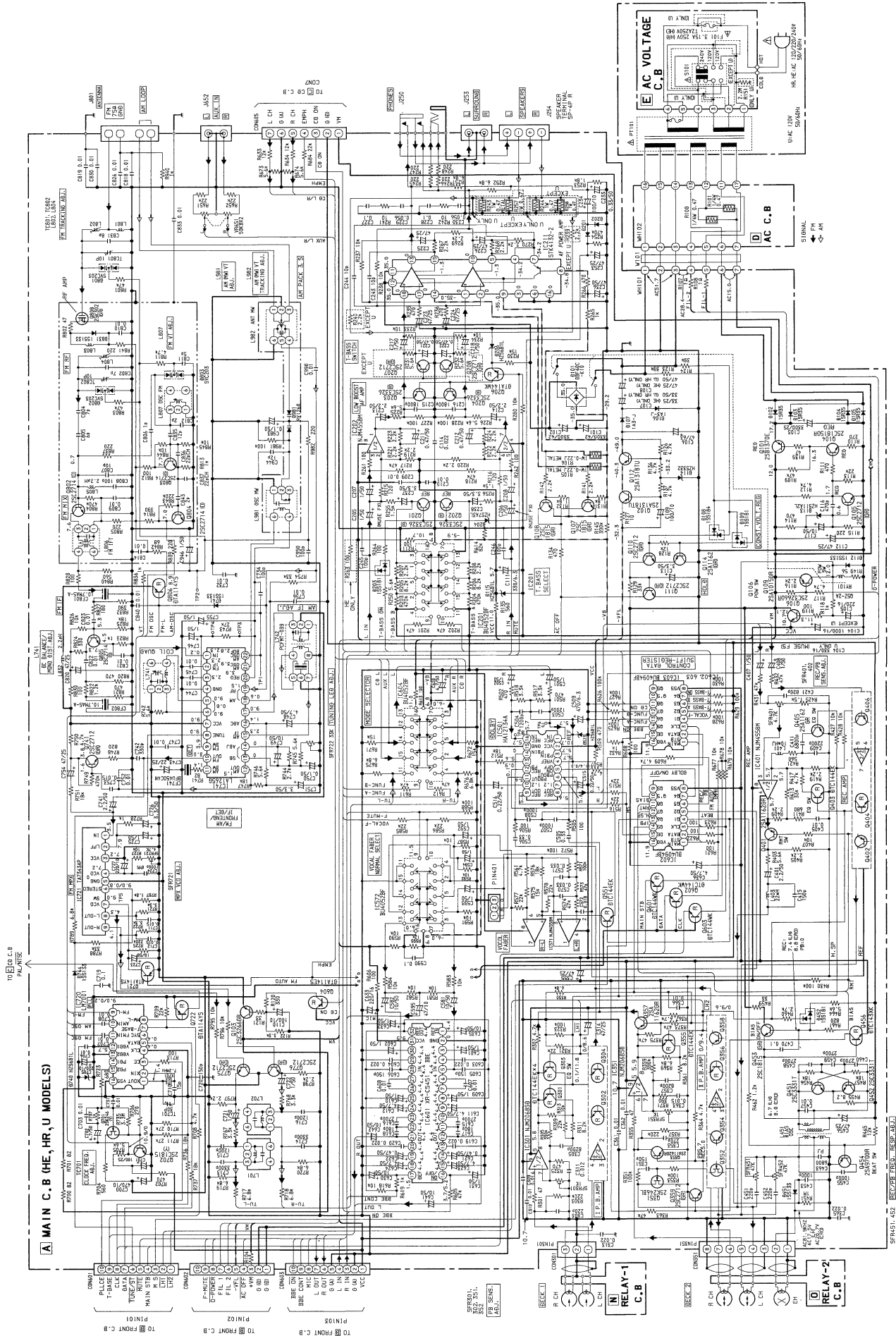




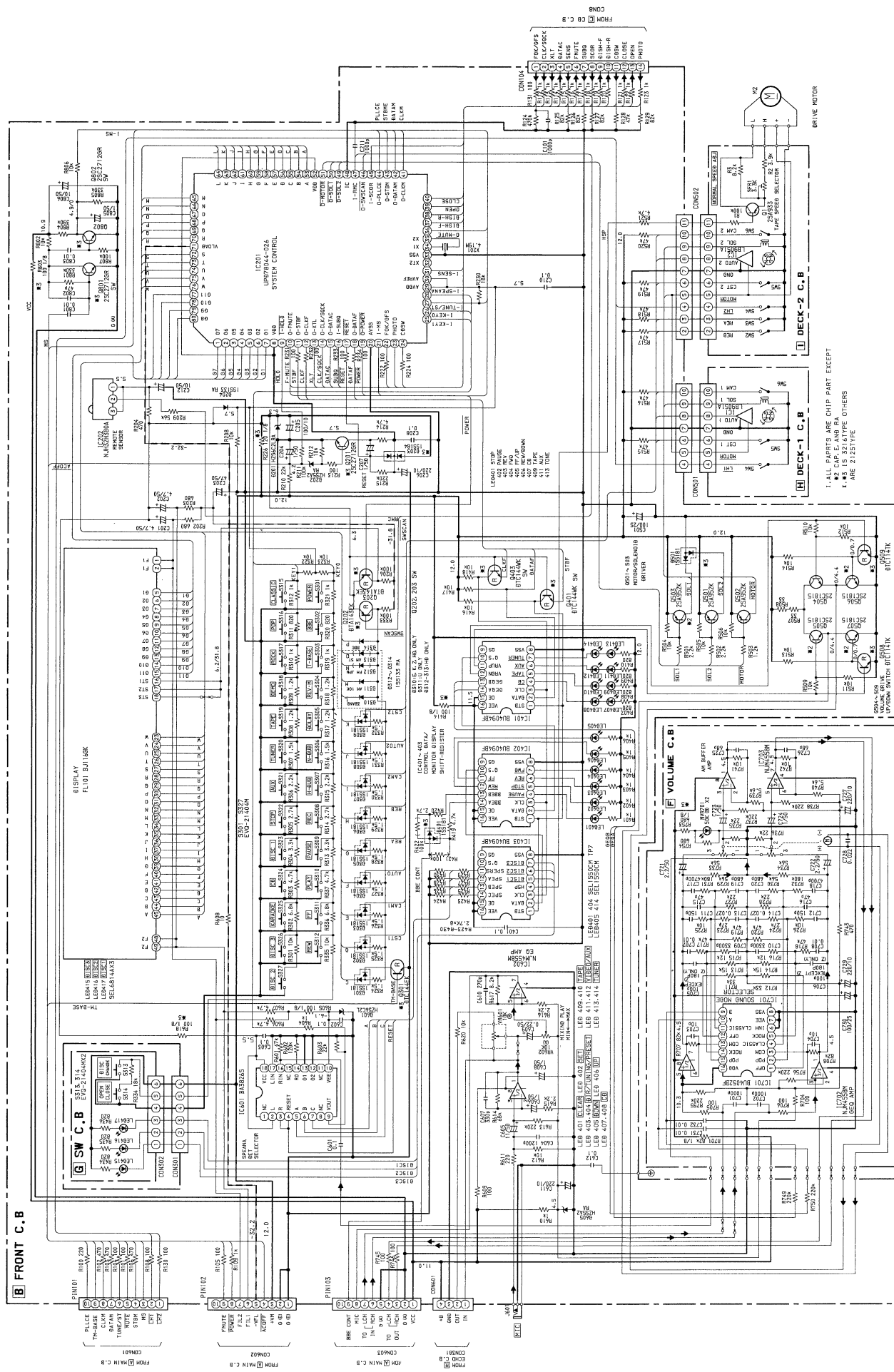
CD SECTION (G2 VERSION)





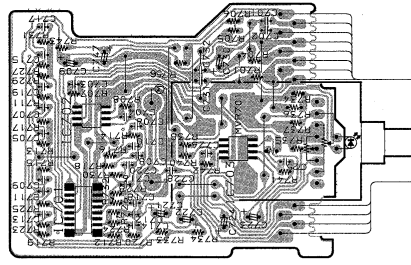




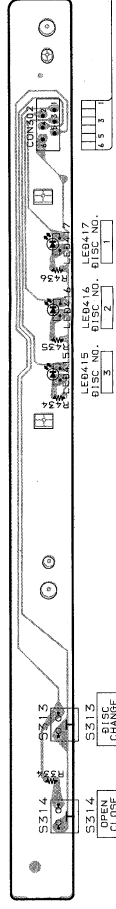


1. ALL PARTS ARE CHIP PART EXCEPT  
 \*2 CAP. E. AND RA  
 I. \*3 IS 3216TYPE OTHERS  
 ARE 2125TYPE

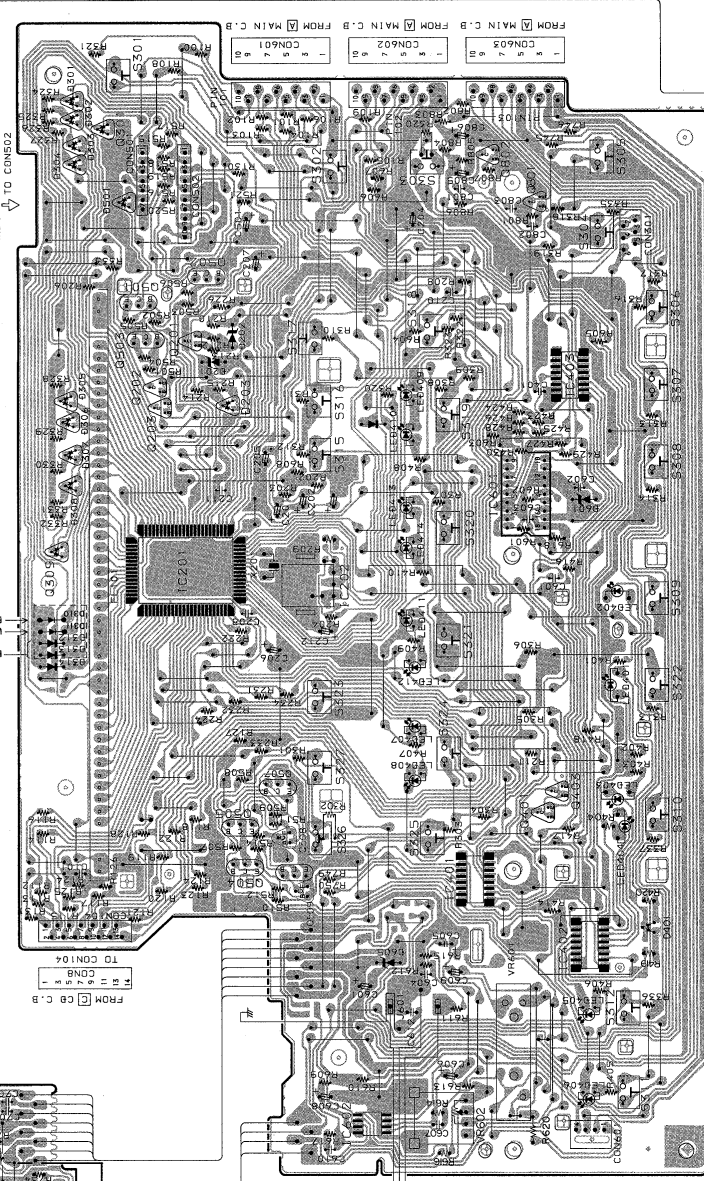
F VOLUME C.B



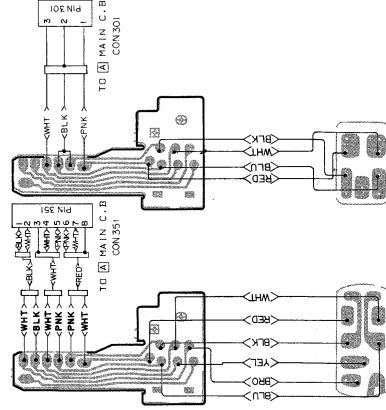
G SW C.B



B FRONT C.B

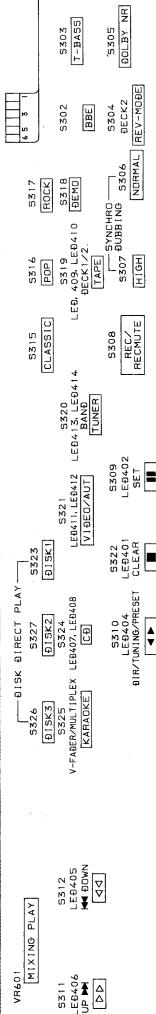
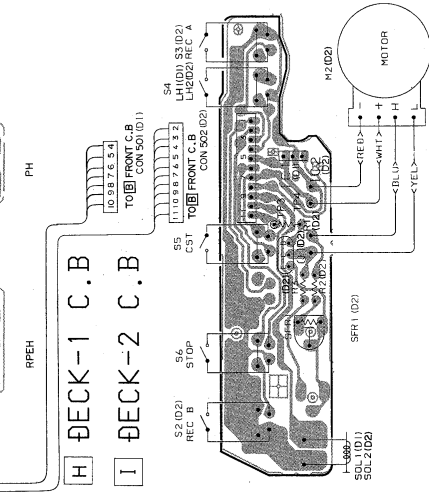


O RELAY-2 C.B N RELAY-1 C.B

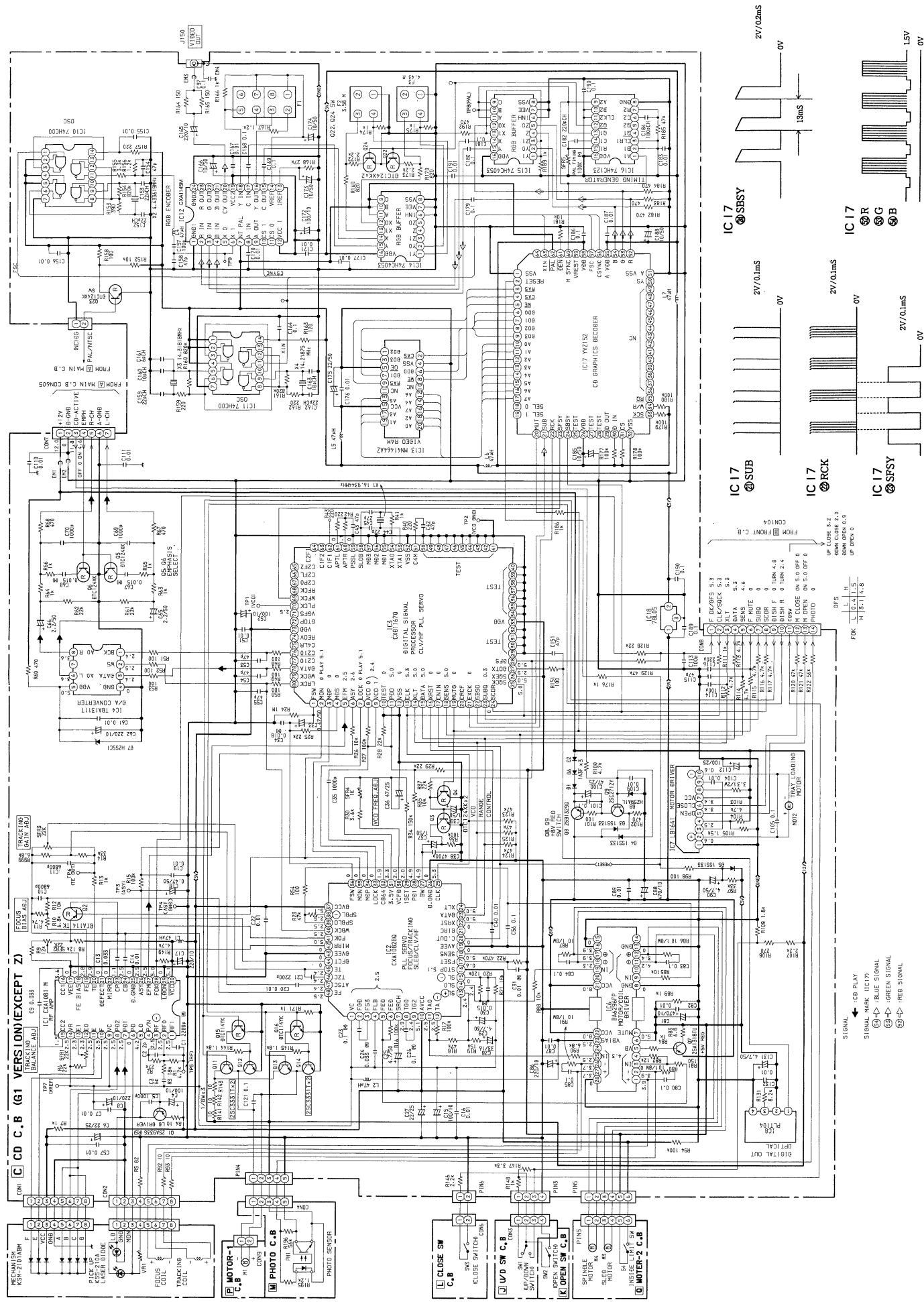


H DECK-1 C.B

I DECK-2 C.B



SCHEMATIC DIAGRAM – 5



1 2 3 4 5 6 7 8 9 10 11 12 13 14

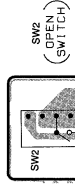
# C CD C.B (G1 VERSION) (EXCEPT Z)

FROM PHOTO C.B.  
CON4  
PINS 1-11

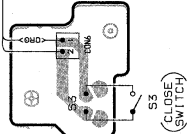
## J U/D SW C.B



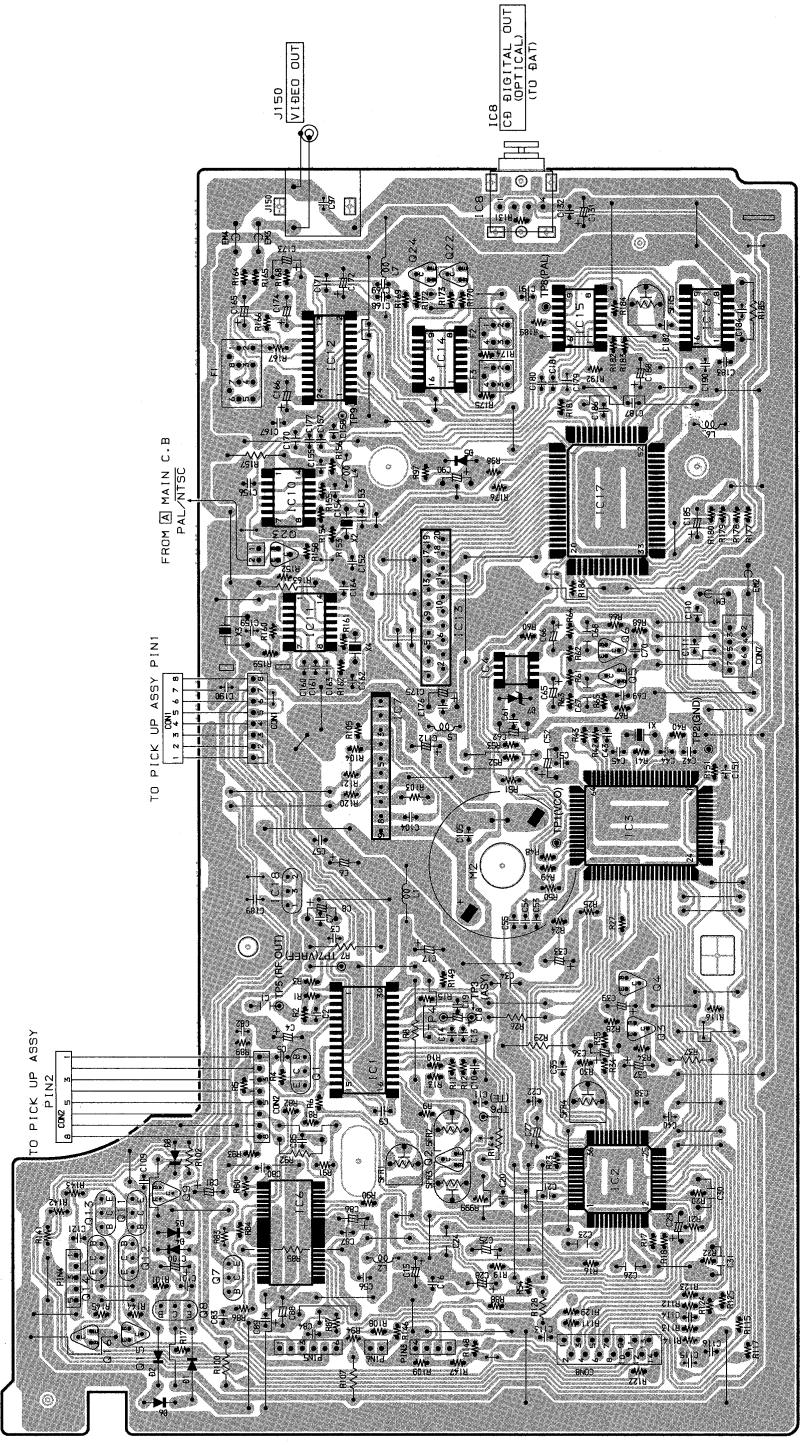
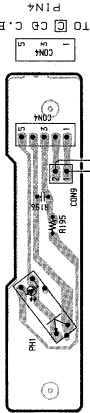
## K OPEN SW C.B



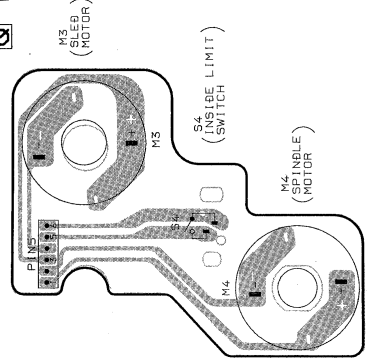
## L CLOSE SW C.B



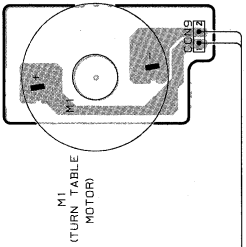
## M PHOTO C.B

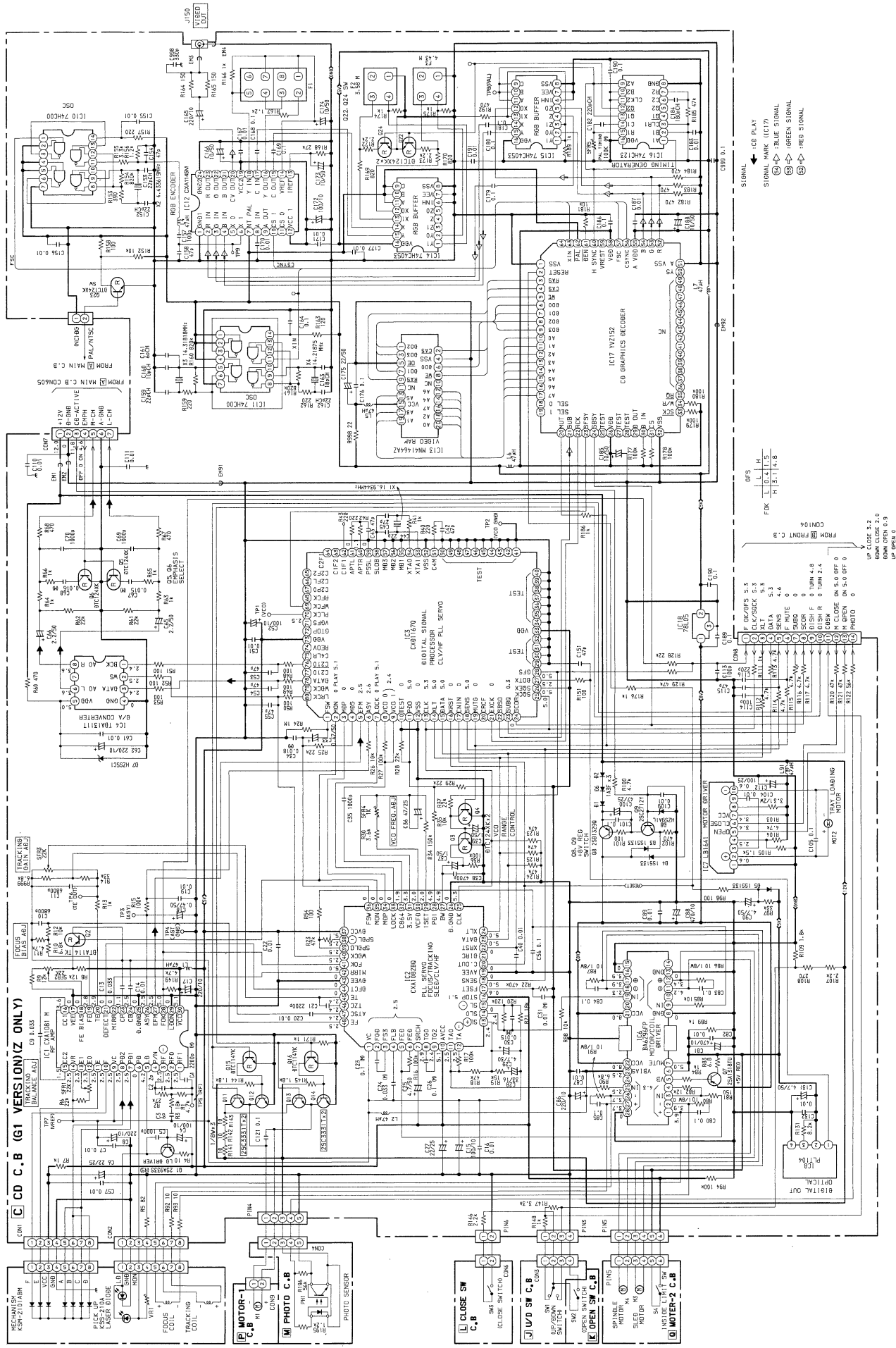


## Q MOTOR-2 C.B

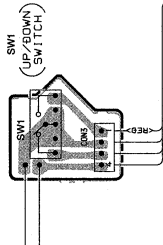


## P MOTOR-1 C.B

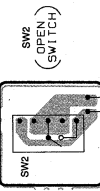




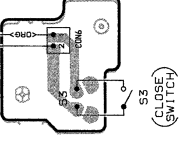
**J** U/D SW C.B



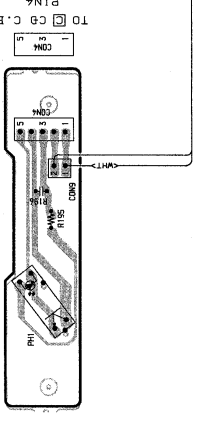
**K** OPEN SW C.B



**L** CLOSE SW C.B

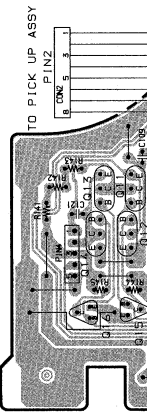


**M** PHOTO C.B



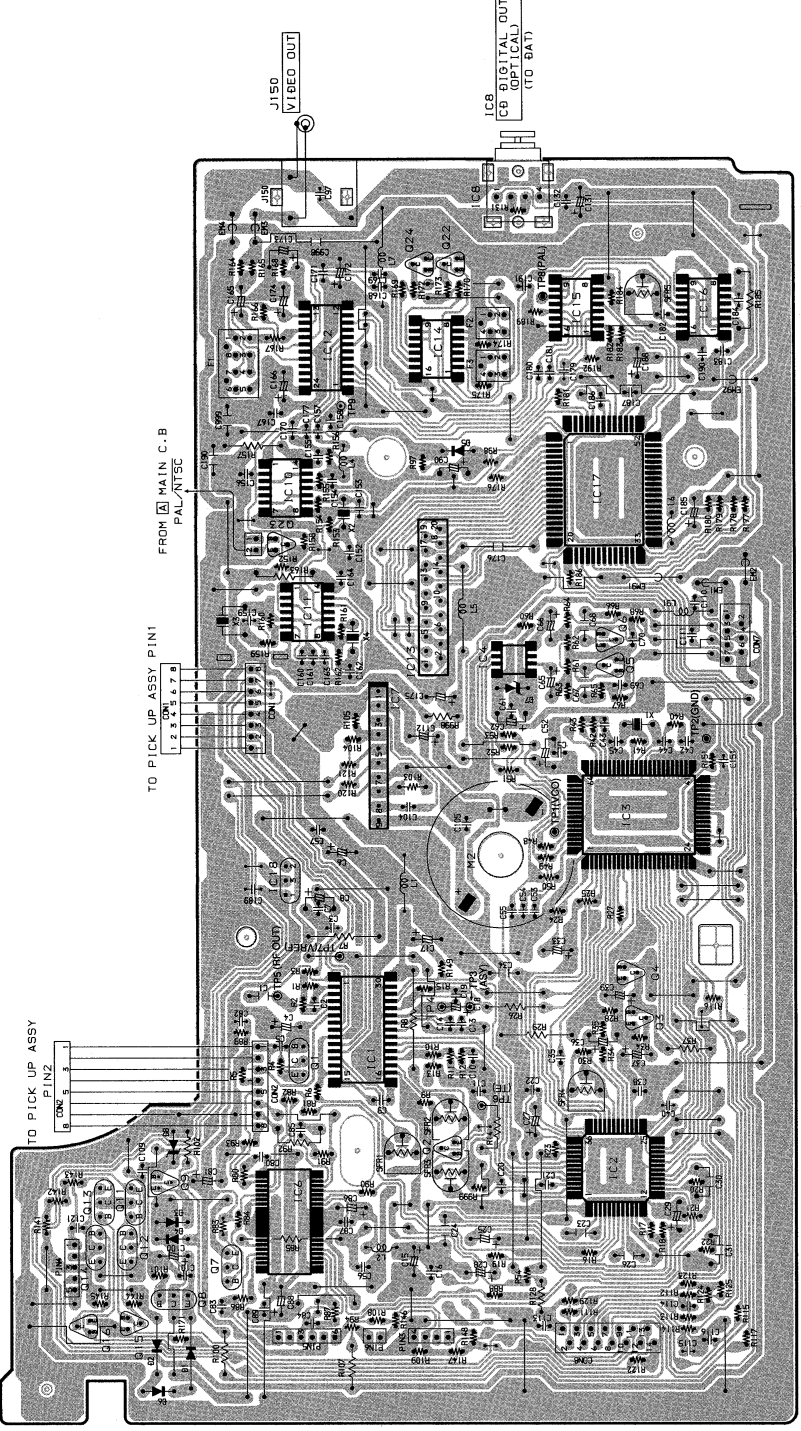
**C** CD C.B (G1 VERSION) (Z ONLY)

FROM PHOTO C.B  
CON4  
PINS 1, 2, 3, 4



TO PICK UP ASSY  
PINS 1, 2, 3, 4

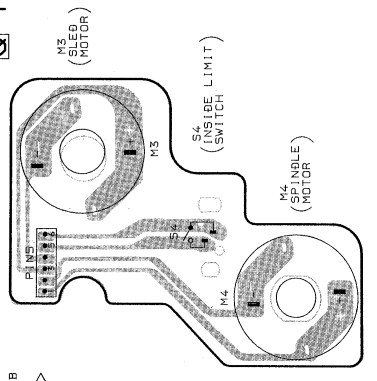
FROM MAIN C.B  
PAL/ATSC



TO CON7  
PINS 7, 8, 9

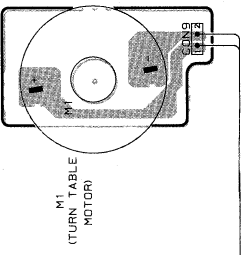
FROM MAIN C.B  
CON605

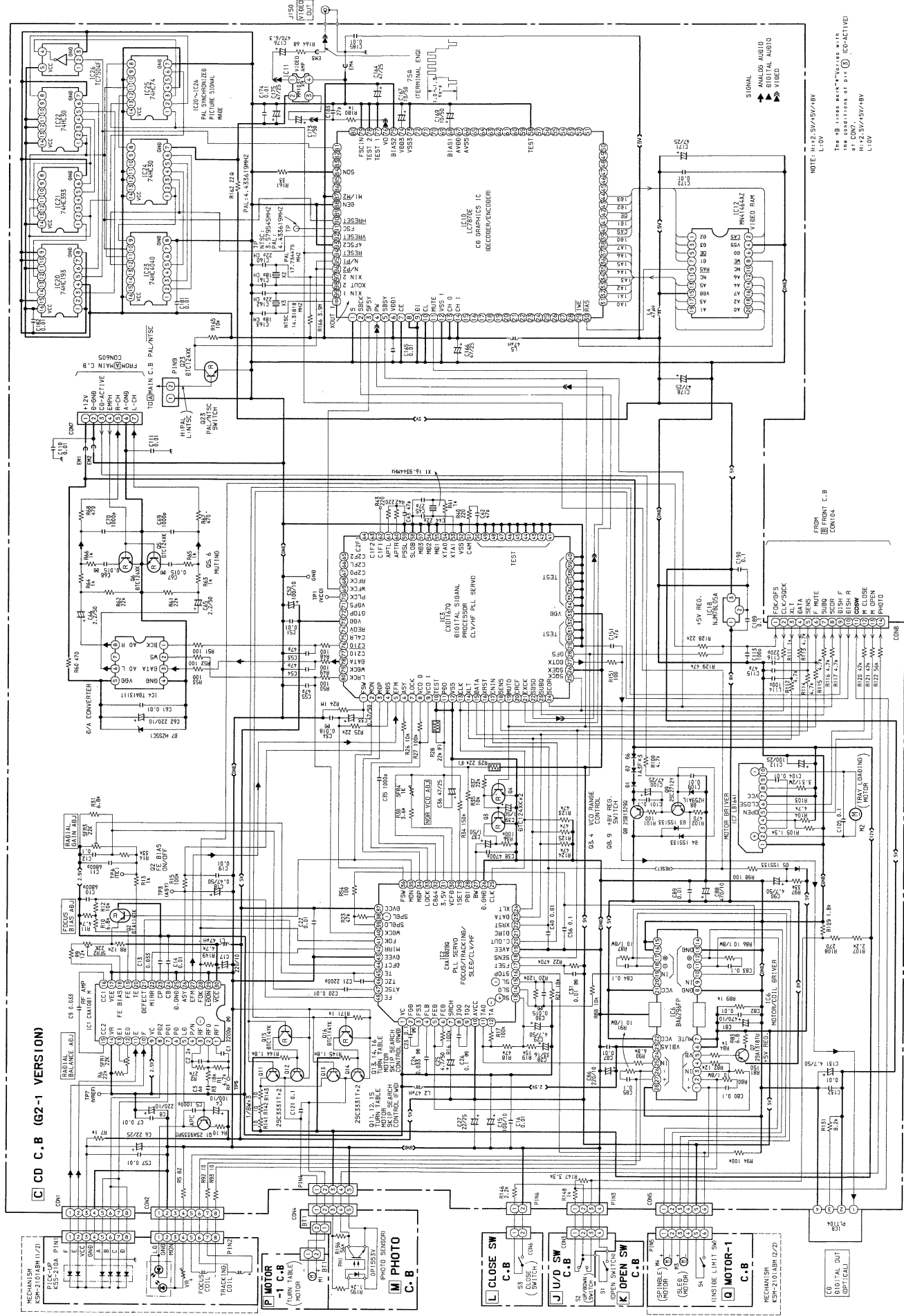
**Q** MOTOR-2 C.B



**P** MOTOR-1 C.B

FROM CD C.B  
PINS 1, 2, 3, 4





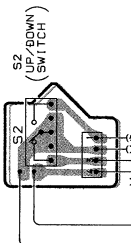
H: +2.5V/+5V/+8V  
L: 0V

FROM [M] PHOTO C.B.

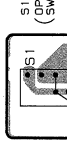
CON 4-1

TO PIN4

[J] U/B SW C.B.



[K] OPEN SW C.B.

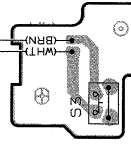


FC1

CON104

TO CON8

FROM [B] FRONT C.B.



[L] CLOSE SW C.B.

[C] CD C.B.  
(G2-1 VERSION)

TO MAIN C.B.  
PAL/NTSC

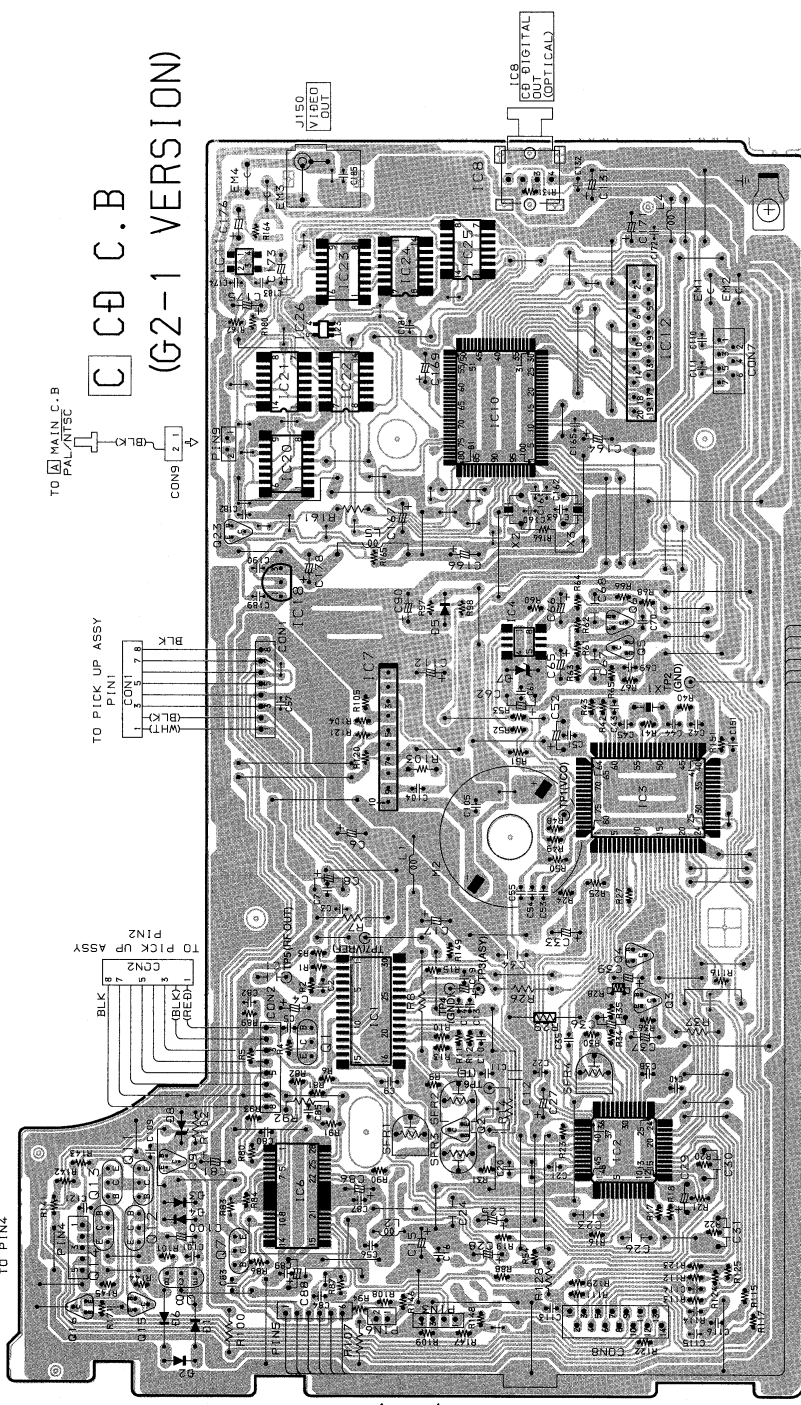
CON9 2 1

TO PICK UP ASSY  
PIN1

CON1 3 2 1

BLK

CON9 2 1



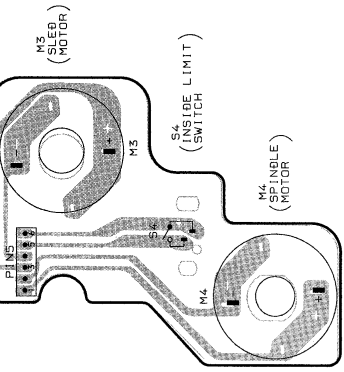
M2  
(TRAY LOADING)  
(MOTOR)

CON5 3 2 1

BLK

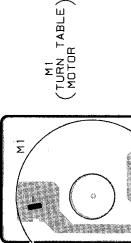
CON7

FROM [A] MAIN C.B.  
CON605

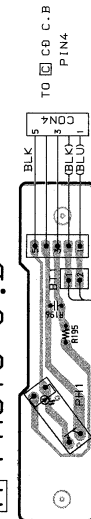


[Q] MOTOR-2 C.B.

[P] MOTOR-1 C.B.



[M] PHOTO C.B.



TO [Q] CD C.B.  
PIN4

CON4

BLK

CON5

BLK

CON4

BLK

CON5

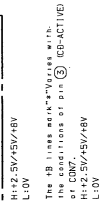
BLK

CON4

BLK

CON5

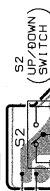
BLK



FROM PHOTO C.B.



U/D SW C.B.



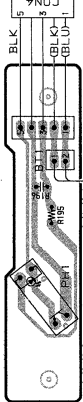
K OPEN SW C.B.



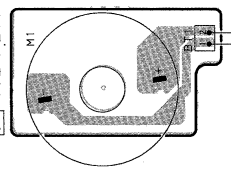
L CLOSE SW C.B.



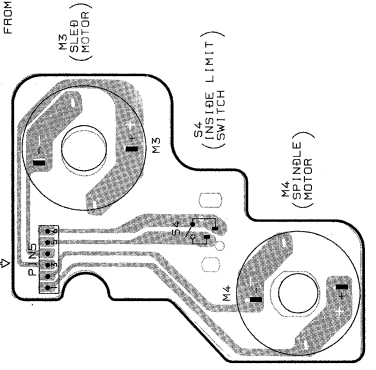
M PHOTO C.B.



P MOTOR-1 C.B.



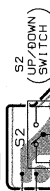
Q MOTOR-2 C.B.



FROM PHOTO C.B.



U/D SW C.B.



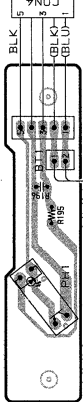
K OPEN SW C.B.



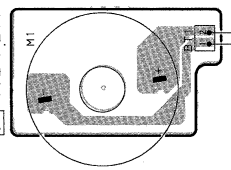
L CLOSE SW C.B.



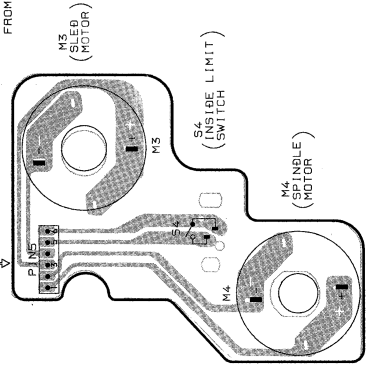
M PHOTO C.B.



P MOTOR-1 C.B.



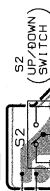
Q MOTOR-2 C.B.



FROM PHOTO C.B.



U/D SW C.B.



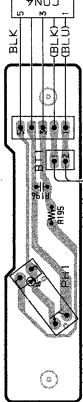
K OPEN SW C.B.



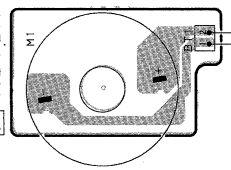
L CLOSE SW C.B.



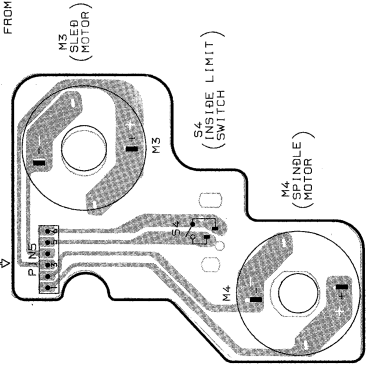
M PHOTO C.B.



P MOTOR-1 C.B.



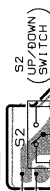
Q MOTOR-2 C.B.



FROM PHOTO C.B.



U/D SW C.B.



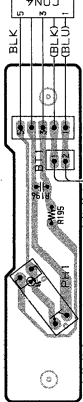
K OPEN SW C.B.



L CLOSE SW C.B.

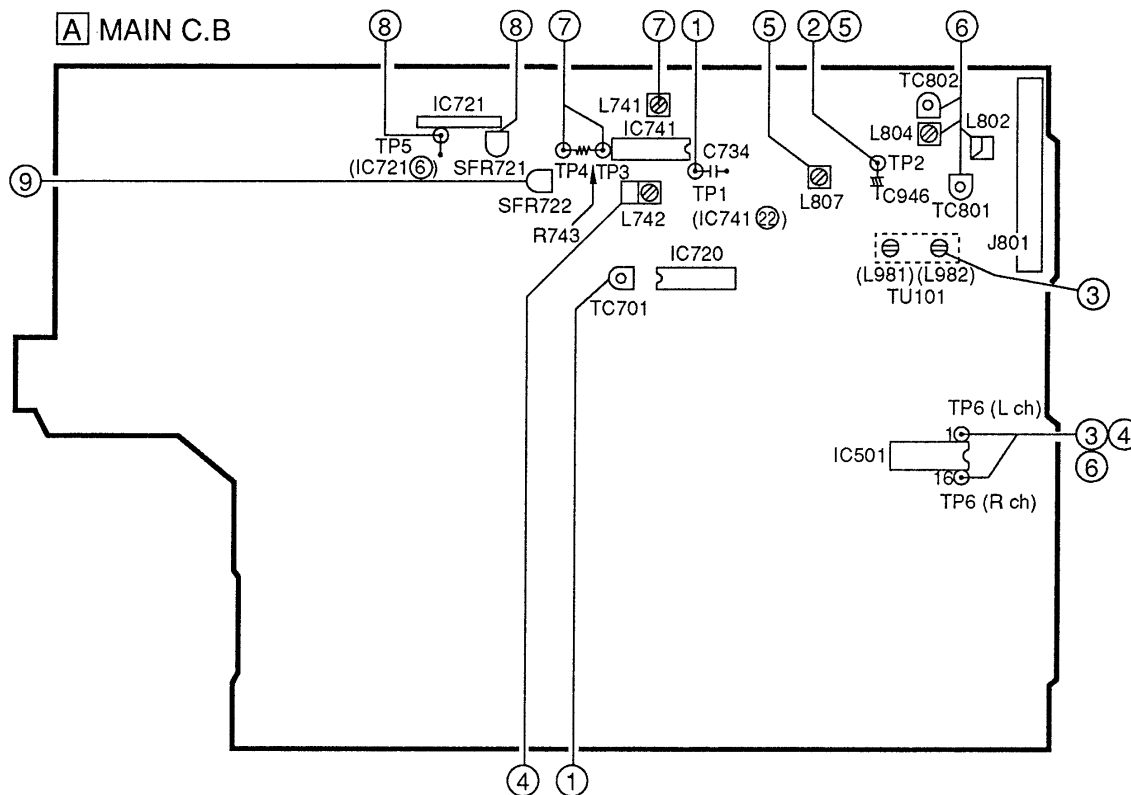


M PHOTO C.B.



# ELECTRICAL ADJUSTMENT—1 <TUNER>

(HD, U Models)



## 1. Clock Frequency Adjustment

Settings: · Test point : TP1 (CLK)

· Adjustment location : TC701

Method: Set to AM 1602kHz (HD), 1710kHz (U) and adjust TC701 so that the test point becomes 2052.00kHz  $\pm$  0.01kHz (HD), 2160.00kHz  $\pm$  0.01kHz (U).

## 2. AM VT Check

Settings: · Test point : TP2 (VT)

Method: Set to AM 1602kHz (HD), 1710kHz (U) and check the test point is 7.0V  $\pm$  1.0V.

## 3. AM Tracking Adjustment

Settings: · Test point : TP6

· Adjustment location : TU101 (L982)

Method: Set to AM 999kHz (HD), 1000KHz (U) and adjust L982 so that the test point becomes 53  $\pm$  6dB.

## 4. AM IF Adjustment

Settings: · Test point : TP6

L742 ······ 450kHz

## 5. FM VT Adjustment

Settings: · Test point : TP2 (VT)

· Adjustment location : L807

Method: Set to FM 76.0MHz (HD), 87.5MHz (U) and adjust L807 so that the test point becomes 1.0V  $\pm$  0.05V (HD), 2.90V  $\pm$  0.05V (U).

## 6. FM Tracking Adjustment

Settings: · Test point : TP6

TC801, TC802 ······ 108MHz

L802, L804 ······ 87.5MHz (HD), 76.0MHz (U)

## 7. DC Balance/MONO Distortion Adjustment

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

TP6 (Distortion)

- Adjustment location : L741
- SSG : 83.0MHz, 54dB (HD)
- 98.0MHz, 54dB (U)

Method: Set to FM83.0MHz (HD), FM98.0MHz (U) and adjust L741 so that the voltage between TP3 and TP4 becomes  $0V \pm 0.02V$ .

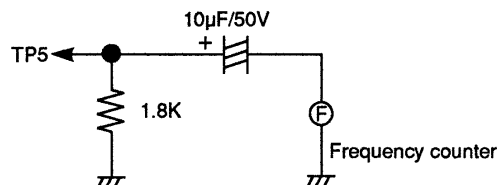
After adjustment, check the distortion is minimum (less than 0.9%).

## 8. MPX VCO Adjustment

Settings: · Test point : TP5

- MODE SW : STEREO
- Adjustment location : SFR721
- SSG : 83.0MHz (Unmodulation) (HD)
- 98.0MHz (Unmodulation) (U)

Method: Connect a capacitor and a resistor as below. Set to FM 83.0MHz (HD), 98.0MHz (U) and adjust SFR721 so that the frequency at the test point becomes  $38kHz \pm 0.05kHz$ .



## 9. Light on Tuning LED Adjustment

Settings: · Adjustment location : SFR722

- Input level : 18dB (HD), 16dB (U)
- SSG : 83.0MHz, 18dB (HD)
- 98.0MHz, 16dB (U)

Method: Set to FM 83.0MHz (HD), 98.0MHz (U) and adjust TUNING LED to light on by SFR722. After that, check the LED goes out when decreasing 2dB from input level.

## PRACTICAL SERVICE FIGURE

### <TUNER SECTION>

#### <FM SECTION>

IHF Sensitivity:  $2 \pm 6dB$  (U)  
(THD 3%) (at 87.5, 98.0, 108.0MHz)  
 $4 \pm 4dB$  (HD)  
(at 83/90/108MHz)

S/N 50dB Quieting Sensitivity:  
 $32 \pm 5dB$   
(U: at 87.5, 98.0, 108.0MHz)  
(HD: at 76/83/108MHz)

Signal to Noise Ratio: More than 64dB  
(U: at 98.0MHz)  
(HD: at 83MHz)

Distortion: Less than 1.2%  
(at 98.0MHz)

Stereo Separation: More than 25dB  
(U: at 98.0MHz)  
(HD: at 83MHz)

Intermediate Frequency: 10.7MHz

### <AM SECTION>

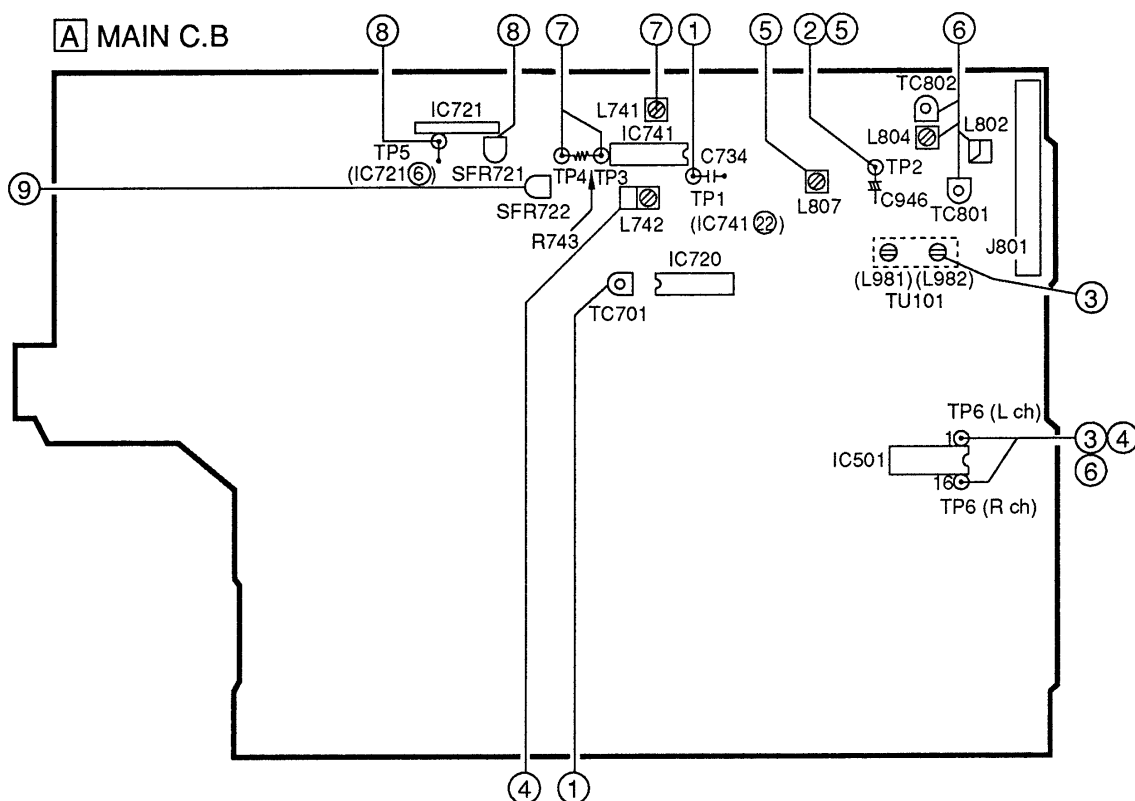
Sensitivity:  $54 \pm 8dB$   
[at 603kHz (HD)]  
[at 600kHz (U)]  
 $53 \pm 6dB$   
[at 999/1404kHz (HD)]  
[at 1000/1400kHz (U)]

Distortion: Less than 1.5%  
[at 999kHz (HD)]  
[at 1000kHz (U)]

Intermediate Frequency: 450kHz

## ADJUSTMENT—1 <TUNER>

(HE, HR Models)



### 1. Clock Frequency Adjustment

Settings: · Test point : TP1 (CLK)

· Adjustment location : TC701

Method: Set to AM 1602kHz and adjust TC701 so that the test point becomes  $2052.00\text{kHz} \pm 0.01\text{kHz}$ .

### 2. AM VT Check

Settings: · Test point : TP2 (VT)

Method: Set to AM 1602kHz and check the test point is  $6.0\text{V} \pm 1.0\text{V}$ .

### 3. AM Tracking Check

Settings: · Test point : TP6

· Adjustment location : TU101 (L982)

Method: Set to AM 999kHz and adjust L982 so that the test point becomes  $53 \pm 6\text{dB}$ .

### 4. AM IF Adjustment

Settings: · Test point : TP6

L742 ..... 450kHz

### 5. FM VT Adjustment

Settings: · Test point : TP2 (VT)

· Adjustment location : L807

Method: Set to FM 87.5MHz and adjust L807 so that the test point becomes  $2.90\text{V} \pm 0.05\text{V}$ .

### 6. FM Tracking Adjustment

Settings: · Test point : TP6

TC801, TC802 ..... 108MHz

L802, L804 ..... 87.5MHz

## 7. DC Balance/MONO Distortion Adjustment

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

TP6 (Distortion)

· Adjustment location : L741

· SSG : 98.0MHz, 54dB

Method: Set to FM 98.0MHz and adjust L741 so that the voltage between TP3 and TP4 becomes  $0V \pm 0.02V$ .

After adjustment, check the distortion is minimum (less than 0.9%).

## 8. MPX VCO Adjustment

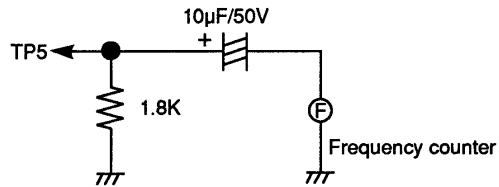
Settings: · Test point : TP5

· MODE SW : STEREO

· Adjustment location : SFR721

· SSG : 98.0MHz (Unmodulation)

Method: Connect a capacitor and a resistor as below. Set to FM 98.0MHz and adjust SFR721 so that the frequency at the test point becomes  $38kHz \pm 0.05kHz$ .



## 9. Light on Tuning LED Adjustment

Settings: · Adjustment location : SFR722

· Input level : 16dB

· SSG : 98.0MHz, 16dB

Method: Set to FM 98.0MHz and adjust TUNING LED to light on by SFR722. After that, check the LED goes out when decreasing 2dB from input level.

## PRACTICAL SERVICE FIGURE

### <TUNER SECTION>

#### <FM SECTION>

IHF Sensitivity:  $2 \pm 6dB$   
(THD 3%) (at 87.5, 98.0, 108.0MHz)

S/N 50dB Quieting Sensitivity:  
 $32 \pm 5dB$   
(at 87.5, 98.0, 108.0MHz)

Signal to Noise Ratio: More than 64dB  
(at 98.0MHz)

Distortion: Less than 1.2%  
(at 98.0MHz)

Stereo Separation: More than 25dB (at 98.0MHz)

Intermediate Frequency: 10.7MHz

#### <AM SECTION>

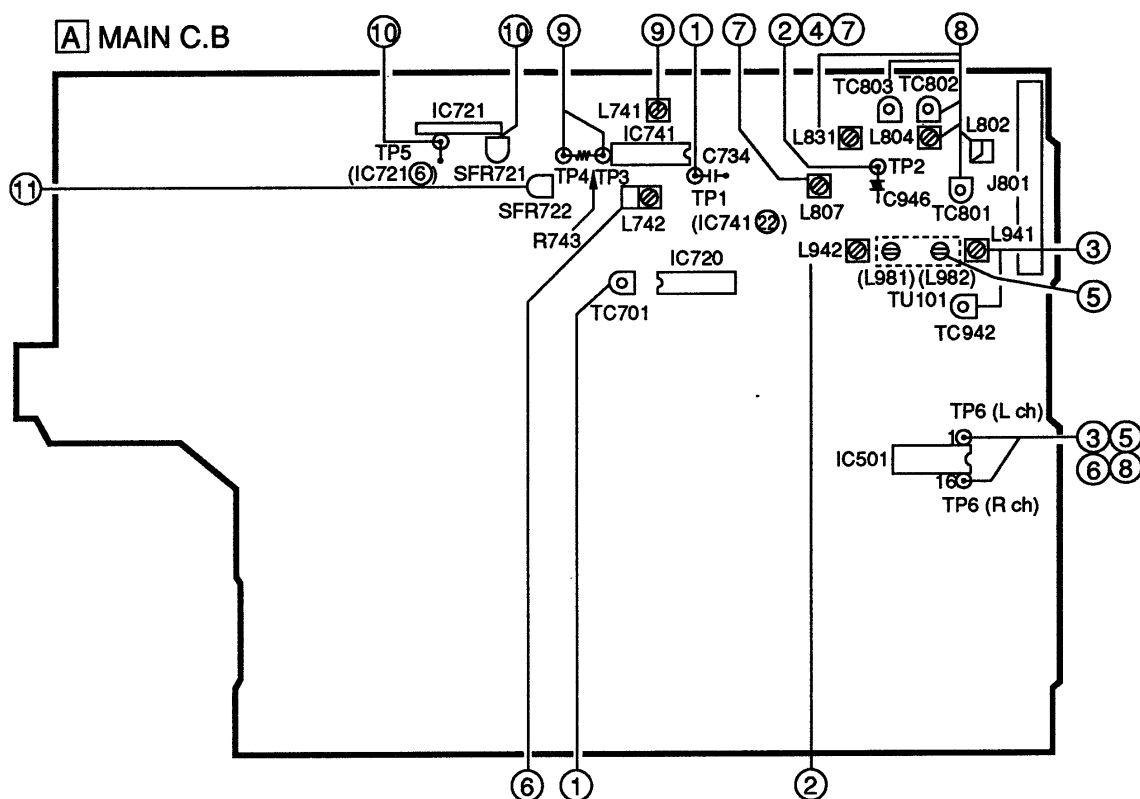
Sensitivity:  $54 \pm \frac{8}{dB}$   
[at 603kHz]  
 $53 \pm 6dB$   
[at 999/1404kHz]

Distortion: Less than 1.5%  
[at 999kHz]

Intermediate Frequency: 450kHz

# ADJUSTMENT—1 <TUNER>

(E, K, Z Models)



1. Clock Frequency Adjustment  
Settings: · Test point : TP1 (CLK)  
· Adjustment location : TC701  
Method: Set to MW 1602kHz and adjust TC701 so that the test point becomes  $2052.00\text{kHz} \pm 0.01\text{kHz}$ .
2. LW VT Adjustment  
Settings: · Test point : TP2 (VT)  
· Adjustment location : L942  
Method: Set to LW 144kHz and adjust L942 so that the test point becomes  $1.50\text{V} \pm 0.05\text{V}$ .
3. LW Tracking Adjustment  
Setting: · Test point : TP6  
L941 ..... 144kHz  
TC942 ..... 290kHz
4. MW VT Check  
Settings: · Test point : TP2 (VT)  
Method: Set to MW 1602kHz and check the test point is  $6.0\text{V} \pm 1.0\text{V}$ .
5. MW Tracking Check  
Settings: · Test point : TP6  
· Adjustment location : TU101 (L982)  
Method: Set to MW 999kHz and adjust L982 so that the test point becomes  $53 \pm 6\text{dB}$ .
6. MW IF Adjustment  
Settings: · Test point : TP6  
L742 ..... 450kHz
7. FM VT Adjustment  
Settings: · Test point : TP2 (VT)  
· Adjustment location : L807  
Method: Set to FM 87.5MHz and adjust L807 so that the test point becomes  $2.90\text{V} \pm 0.05\text{V}$ .
8. FM Tracking Adjustment  
Settings: · Test point : TP6  
TC801, TC802 ..... 108MHz (Except Z)  
TC801, TC802, TC803 ..... 108MHz (Z)  
L802, L804 ..... 87.5MHz (Except Z)  
L802, L804, L831 ..... 87.5MHz (Z)

## 9. DC Balance/MONO Distortion Adjustment

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

TP6 (Distortion)

- Adjustment location : L741
- SSG : 98.0MHz, 54dB

Method: Set to FM 98.0MHz and adjust L741 so that the voltage between TP3 and TP4 becomes  $0V \pm 0.02V$ .

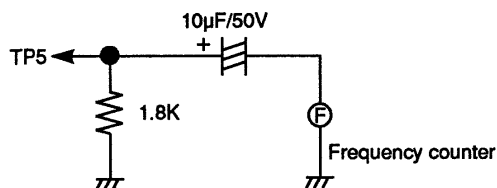
After adjustment, check the distortion is minimum (less than 0.9%).

## 10. MPX VCO Adjustment

Settings: • Test point : TP5

- MODE SW : STEREO
- Adjustment location : SFR721
- SSG : 98.0MHz (Unmodulation)

Method: Connect a capacitor and a resistor as below. Set to FM 98.0MHz and adjust SFR721 so that the frequency at test point becomes  $38kHz \pm 0.05kHz$ .



## 11. Light on Tuning LED Adjustment

Settings: • Adjustment location : SFR722

- Input level : 16dB
- SSG : 98.0MHz, 16dB

Method: Set to FM 98.0MHz and adjust TUNING LED to light on by SFR722. After that, check the LED goes out when decreasing 2dB from input level.

## PRACTICAL SERVICE FIGURE

### <TUNER SECTION>

#### <FM SECTION>

IHF Sensitivity:  $2 \pm 6dB$  (Except Z)  
(THD 3%) (at 87.5, 98.0, 108.0MHz)  
 $7 \pm 6dB$  (Z)  
(at 87.5, 98.0, 108.0MHz)

S/N 50dB Quieting Sensitivity:  
(Except Z)  $32 \pm 5dB$   
(at 87.5, 98.0, 108.0MHz)

S/N 46dB Quieting Sensitivity:  
(Z)  $37 \pm 6dB$   
(at 87.5, 98.0, 108.0MHz)

Signal to Noise Ratio: More than 64dB (Except Z)  
(at 98.0MHz)  
More than 60dB (Z)  
(at 98.0MHz)

Distortion: Less than 1.2%  
(at 98.0MHz)

Stereo Separation: More than 25dB (at 98.0MHz)

Intermediate Frequency: 10.7MHz

### <AM (MW) SECTION>

Sensitivity:  $54 \pm 8dB$   
[at 603kHz]  
 $53 \pm 6dB$   
[at 999/1404kHz (E, K, Z)]

Distortion: Less than 1.5%  
[at 999kHz (E, K, Z)]

Intermediate Frequency: 450kHz

### <LW SECTION>

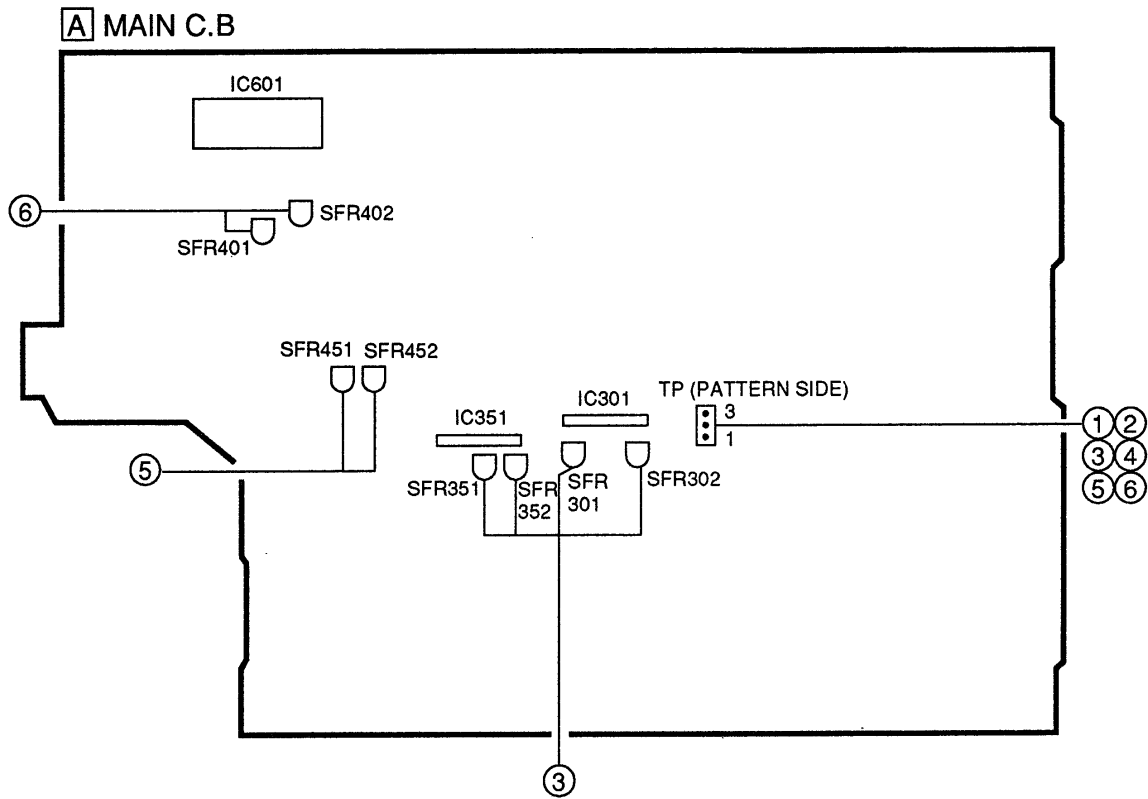
Sensitivity:  $66 \pm 5dB$  (at 144kHz)  
(S/N 20dB)  $63 \pm 5dB$  (at 198kHz)  
 $62 \pm 5dB$  (at 290kHz)

Signal to Noise Ratio: More than 32dB (at 198kHz)

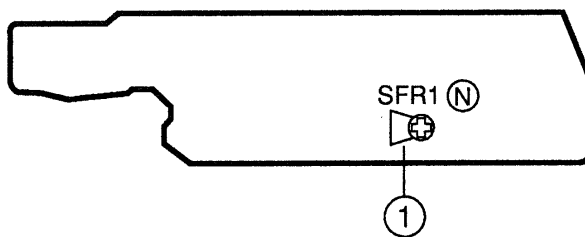
Distortion: Less than 1.5% (at 198kHz)

Intermediate Frequency: 450kHz

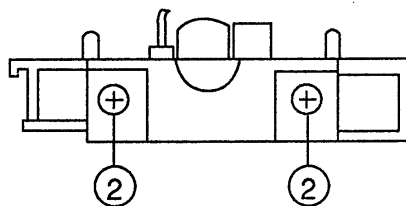
# ADJUSTMENT—2<DECK>



## I DECK—2 C.B



## DECK 1P, DECK 2 R/P/E HEAD



1. Normal Speed Adjustment (DECK-2)
 

Settings: · Test tape : TTA-100  
           · Test point : TP-OUT  
           · Adjustment location : (DECK-2)

Method: Play back the test tape, on FWD PLAY, adjust SFR1 (N) so that the frequency counter reads  $3000\text{Hz} \pm 5\text{Hz}$ . Check the frequency is to  $\pm 45\text{Hz}$  of the FWD value during the REV mode.
2. Head Azimuth Adjustment (DECK-1, DECK-2)
 

Settings: · Test tape : TTA-310  
           · Test point : TP-OUT  
           · Adjustment location : Head azimuth adjustment screw

Method: Play back the 10kHz signal of the test tape and adjust the screw to clockwise so that the output becomes maximum. Next, perform on each FWD PLAY and REV PLAY mode.
3. PB Sensitivity Adjustment (DECK-1, DECK-2)
 

Settings: · Test tape : TTA-200 (TCC-130, TTA-161)  
           · Test point : TP-OUT  
           · Adjustment location :  
                                   SFR301 (DECK-1, Lch)  
                                   SFR302 (DECK-1, Rch)  
                                   SFR351 (DECK-2, Lch)  
                                   SFR352 (DECK-2, Rch)

Method: Play back the test tape and adjust the SFRs so that the output becomes 300mV.
4. PB Frequency Response Check (DECK-1, DECK-2)
 

Settings: · Test tape : TTA-310  
           · Test point : TP-OUT

Method: Play back the 315Hz and 10kHz signals of the test tape and check the output of the 10kHz signal is  $0\text{dB} \pm 2\text{dB}$  with respect to that of the 315Hz signal.
5. REC /PB Frequency Response Adjustment (DECK-2)
 

Settings: · Test tape : TTA-601  
           · Test point : TP-OUT  
           · Adjustment location : SFR451 (Lch)  
                                           SFR452 (R ch)

Method: Apply a 1kHz signal and adjust attenuator so that the level at the TP-OUT is 21.0mV.  
 Record and play back the 1kHz and 10kHz signals and adjust the SFR so that the output level of 10kHz signal is  $0\text{dB} \pm 0.5\text{dB}$  for 1kHz signal.
6. REC /PB Sensitivity Adjustment (DECK-2)
 

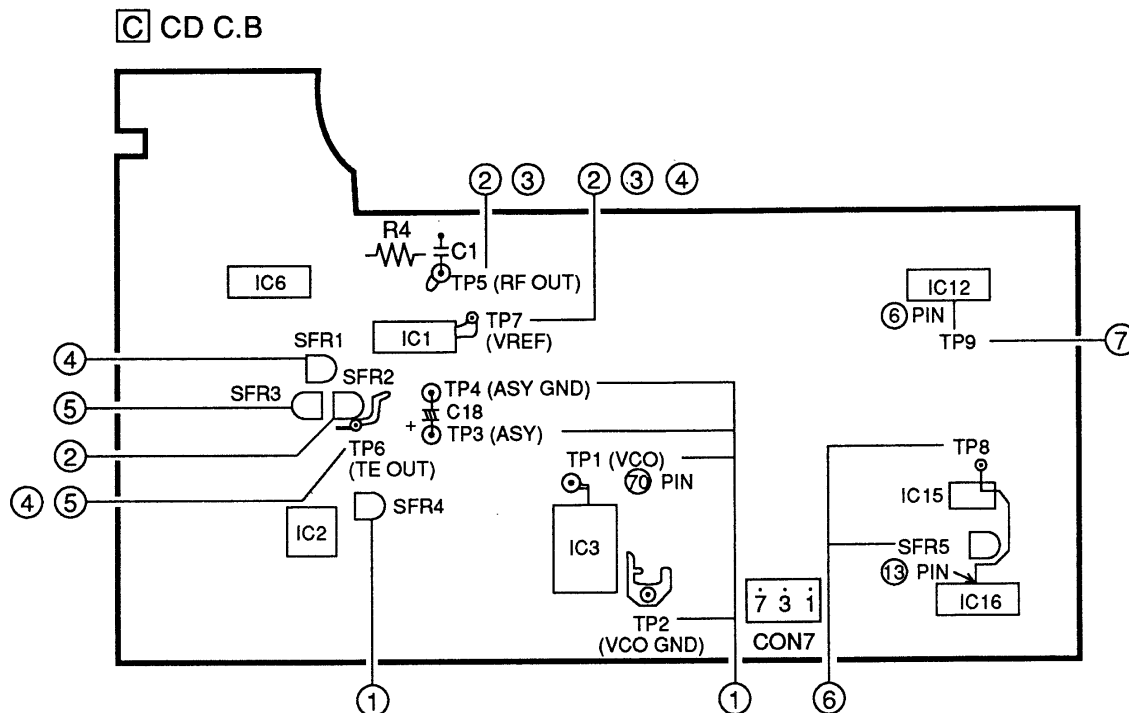
Settings: · Test tape : TTA-601  
           · Test point : TP-OUT  
           · Adjustment location : SFR401 (Lch)  
                                           SFR402 (R ch)

Method: Apply a 1kHz signal and adjust attenuator so that the level at the TP-OUT is 21.0mV.  
 Record and play back the 1kHz signal and 10kHz signals and adjust the SFRs so that the output level is  $21.0\text{mV} \pm 0.5\text{dB}$ .

## PRACTICAL SERVICE FIGURE

### <DECK SECTION>

|                           |                                                                                                                             |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| PB Output Level:          | $2.8\text{V} \pm 1.5\text{dB}$ (SP OUT)                                                                                     |
| REC/PB Output Level:      | $2\text{V} \pm 2\text{dB}$ (SP OUT)                                                                                         |
| Distortion (REC/PB):      | Less than 2.0% (NORM, CrO <sub>2</sub> )                                                                                    |
| Noise (PB):               | Less than 100mV/150mV<br>(DOLBY OFF/ON CrO <sub>2</sub> , VR MAX.)<br>Less than 130mV/200mV<br>(DOLBY OFF/ON NORM, VR MAX.) |
| Noise (REC/PB):           | Less than 35mV/16mV<br>(DOLBY OFF/ON NORM, SP OUT)<br>Less than 23mV/13mV<br>(DOLBY OFF/ON CrO <sub>2</sub> , SP OUT)       |
| Erasing Ratio:            | More than 60dB<br>(TTA-601) (at 125Hz)                                                                                      |
| Cross talk:               | More than 60dB                                                                                                              |
| Channel Separation:       | More than 50dB                                                                                                              |
| Recording Bias Frequency: | 85kHz                                                                                                                       |
| Tape speed:               | $3\text{kHz} \pm 1.5\%$                                                                                                     |
| Wow & Flutter:            | Less than 0.25% (DECK-1/2)<br>TTA-100 (TTA-111S)                                                                            |
| Take-up Torque:           | 30~55g-cm (DECK-1/2)                                                                                                        |
| F.F & REW Torque:         | 75~140g-cm (DECK-1/2)                                                                                                       |
| Back Tension:             | 2~6g-cm (DECK-1/2)                                                                                                          |
| Test Tape:                | NORMAL :TTA-601<br>CrO <sub>2</sub> :TTA-610                                                                                |



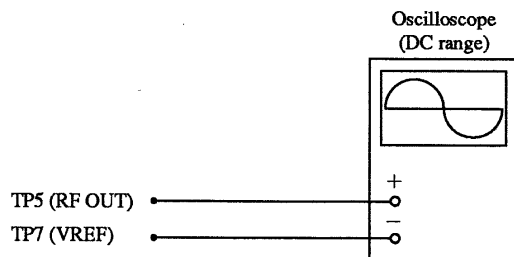
Note: Connect a probe (10:1) of the oscilloscope or the frequency counter to a test point.

### 1. VCO Frequency Adjustment

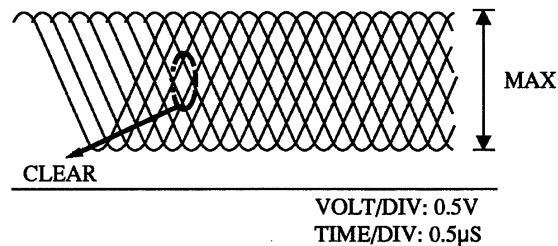
1. Short pin ① and ③ of CON7 with wire.
2. Connect and short between TP3 (ASY) and TP4 (GND).
3. Connect the frequency counter to test points TP1 (VCO) and TP2 (GND).
4. Adjust SFR4 (VCO) so that the frequency counter reading is  $4.27 \pm 0.02\text{MHz}$ .
5. After the adjustment is completed, remove the short lead wires from TP2 (GND), TP3 (ASY) and TP4.

### 2. Focus Bias Adjustment

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



1. Connect an oscilloscope to test points TP5 (RF OUT) and TP7 (VREF).
2. Turn on the power switch.
3. Insert the test disc TCD-782 (YEDS-18) and play back the second composition.
4. Adjust SFR2 so that the RF waveform must be maximum and clear.

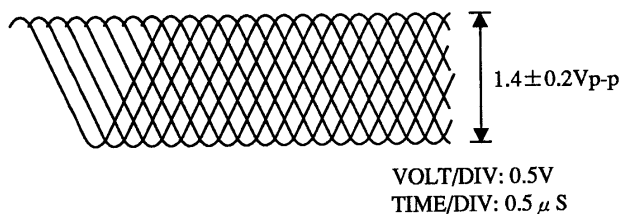


### 3. RF Waveform Check

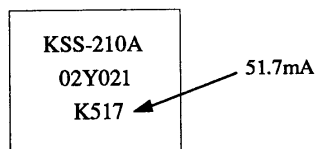
This check should be performed whenever the optical system block is replaced in repair.

1. Connect an oscilloscope to test points TP5 (RF OUT) and TP7 (VREF).
2. Turn on the power switch.
3. Insert test disc TCD-782 (YEDS-18) and play back the second composition.
4. Check that the waveform appears as shown in the figure below.

RF signal waveform

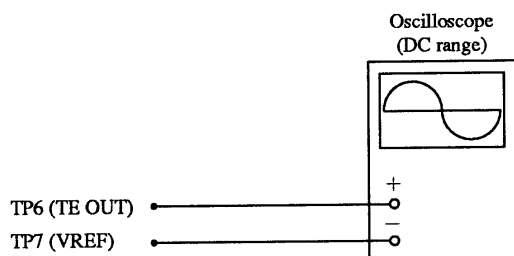


Note: The current of the laser signal can be checked with the voltages on both sides of R4 (10  $\Omega$ ). The difference for the specified value shown on the label must be within  $\pm 6.0mA$ .

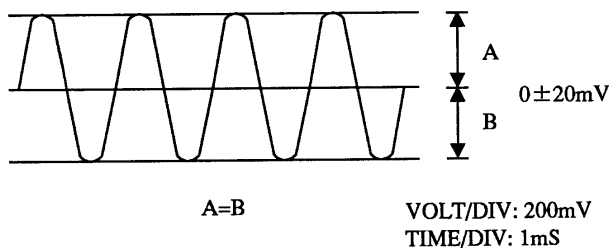


$$\text{Laser current } I_{op} = \frac{\text{Voltage across R4}}{10 \Omega}$$

#### 4. Tracking Balance Adjustment



1. Connect an oscilloscope to test points TP6 (TE OUT) and TP7 (VREF).
2. Turn on the power switch.
3. Insert test disc TCD-782 (YEDS-18) and press the PLAY (▶) button.
4. Connected the wire from intermediate point of SFR3 to TP7 (VREF).
5. Adjust SFR1 so that the waveform on the oscilloscope is vertically symmetrical as shown in the figure below.
6. After the adjustment is completed, remove the wire from SFR3.



#### 5. Tracking Gain Adjustment

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

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

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

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

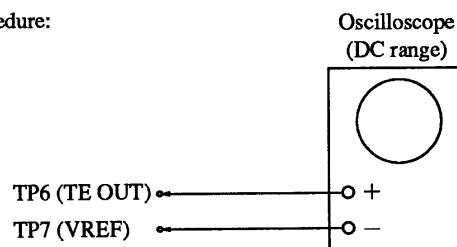
| Symptoms                                                                                                                                        | Gain | (Focus)     | Tracking    |
|-------------------------------------------------------------------------------------------------------------------------------------------------|------|-------------|-------------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

The following is simple adjustment method.

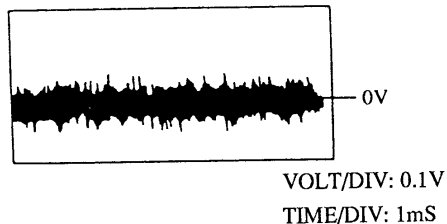
- Simple adjustment -

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

Procedure:



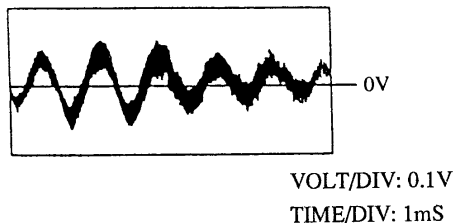
1. Keep the set horizontal. (If the set is not kept horizontally, this adjustment cannot be performed due to the gravity against the 2-axis device.)
2. Insert test disc TCD-782 (YEDS-18) and play back the second composition.
3. Connect an oscilloscope to TP6 (TE OUT).
4. Adjust SFR3 so that the waveform appears as shown in the figure below. (tracking gain adjustment)



● Incorrect example

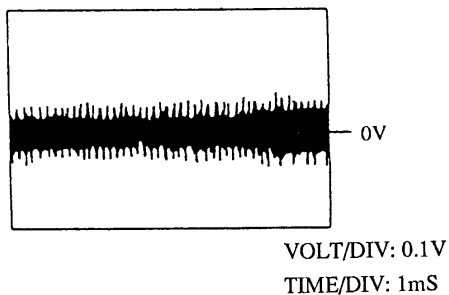
Low tracking gain

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



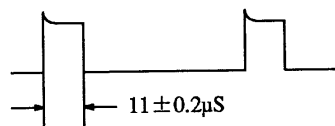
High tracking gain

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



## 6. PAL Timing Adjustment (G1 version only)

1. Turn on the power switch and set the PAL mode.
2. Insert the test disc TCD-782 (YEDS-18) and press the PLAY (▶) button.



3. Connect an oscilloscope (10:1 input impedance) to test point TP8 (IC16 ⑬ PIN)
4. Adjust SFR5 so that the pulse duration becomes  $11 \pm 0.2 \mu\text{S}$ .

## 7. NTSC, PAL Clock Frequency Check

1. Set the NTSC mode pressing the DEMO/NTSC/PAL button.
2. Connect an oscilloscope to test point TP9 (IC12 ⑥ PIN) and check that the frequency is shown  $3.579545\text{MHz} \pm 100\text{Hz}$ .
3. Set the PAL mode pressing the DEMO/NTSC/PAL button.
4. Check the frequency is shown  $4.433619\text{MHz} \pm 100\text{Hz}$ .

# IC DESCRIPTION

## IC, YVZ152

| Pin No.       | Pin Name | I/O | Description                                             |
|---------------|----------|-----|---------------------------------------------------------|
| 1             | VSS      | —   | GND (digital system)                                    |
| 2             | RESET    | I   | Reset input (Low active)                                |
| 3             | RAS      | O   | DRAM interface: RAS                                     |
| 4             | CAS      | O   | DRAM interface: CAS                                     |
| 5             | WE       | O   | DRAM interface: WE                                      |
| 6             | DO0      | I/O | DRAM interface: data (LSB)                              |
| 7             | DO1      | I/O | DRAM interface: data                                    |
| 8             | DO2      | I/O | DRAM interface: data                                    |
| 9             | DO3      | I/O | DRAM interface: data (MSB)                              |
| 10            | A0       | I   | DRAM interface: address (LSB)                           |
| 11            | A1       | I   | DRAM interface: address                                 |
| 12            | A2       | I   | DRAM interface: address                                 |
| 13            | A3       | I   | DRAM interface: address                                 |
| 14            | A4       | I   | DRAM interface: address                                 |
| 15            | A5       | I   | DRAM interface: address                                 |
| 16            | A6       | I   | DRAM interface: address                                 |
| 17            | A7       | I   | DRAM interface: address (MSB)                           |
| 18            | SEL0     | I+  | Subcode interface: interface select (Not used)          |
| 19            | SEL1     | I+  | Subcode interface: interface select (Not used)          |
| 20            | MUT      | I   | Subcode interface: subcode data mute                    |
| 21            | SUB      | I   | Subcode interface: subcode data                         |
| 22            | RCK      | I/O | Subcode interface: clock                                |
| 23            | SFSY     | I   | Subcode interface: frame sync.                          |
| 24            | SBSY     | I   | Subcode interface: system sync.                         |
| 25            | TEST     | I+  | LSI test terminal (normally not connected)              |
| 26            | VDD      | —   | +5 V power supply (digital system)                      |
| 27            | TEST     | I+  | LSI test terminal (normally not connected)              |
| 28            | TEST     | I+  | LSI test terminal (normally not connected)              |
| 29            | DOUT     | O   | Microprocessor interface: serial data output (Not used) |
| 30            | DIN      | I   | Microprocessor interface: serial data input             |
| 31            | CS       | I   | Microprocessor interface: chip select                   |
| 32            | VSS      | —   | GND (digital system)                                    |
| 33            | SCK      | I   | Microprocessor interface: serial clock input            |
| 34            | W/R      | I   | Microprocessor interface: read/write select             |
| 35            | RQ       | O   | Microprocessor interface: subcode readout request       |
| 36<br>{<br>49 | (NC)     |     | No connection                                           |
| 50            | YS       | O   | Superimpose timing output (Not used)                    |

| P i n N o . | P i n N a m e           | I / O | D e s c r i p t i o n                                                        |
|-------------|-------------------------|-------|------------------------------------------------------------------------------|
| 5 1         | A V S S                 | —     | GND (analog system)                                                          |
| 5 2         | R                       | O     | RGB output (R)                                                               |
| 5 3         | G                       | O     | RGB output (G)                                                               |
| 5 4         | B                       | O     | RGB output (B)                                                               |
| 5 5         | A V D D                 | —     | +5 V power supply (analog system)                                            |
| 5 6         | C S Y N C               | O     | Compound sync. signal output                                                 |
| 5 7         | F S C                   | O     | NTSC subcarrier clock output (3.579545MHz)                                   |
| 5 8         | V D D                   | —     | +5 V power supply (digital system)                                           |
| 5 9         | V R S E T               | I +   | Vertical timing reset input                                                  |
| 6 0         | H S Y N C               | O     | Horizontal sync. output                                                      |
| 6 1         | $\overline{\text{DEN}}$ | I +   | Display enable ('L'; data display ON)                                        |
| 6 2         | $\overline{\text{PAL}}$ | I +   | NTSC/PAL select ('H'; NTSC mode/'L'; PAL mode)                               |
| 6 3         | X I N                   | I     | Crystal oscillator connecting terminal or external clock input (14.31818MHz) |
| 6 4         | X O U T                 | O     | Crystal oscillator connecting terminal (Not used)                            |

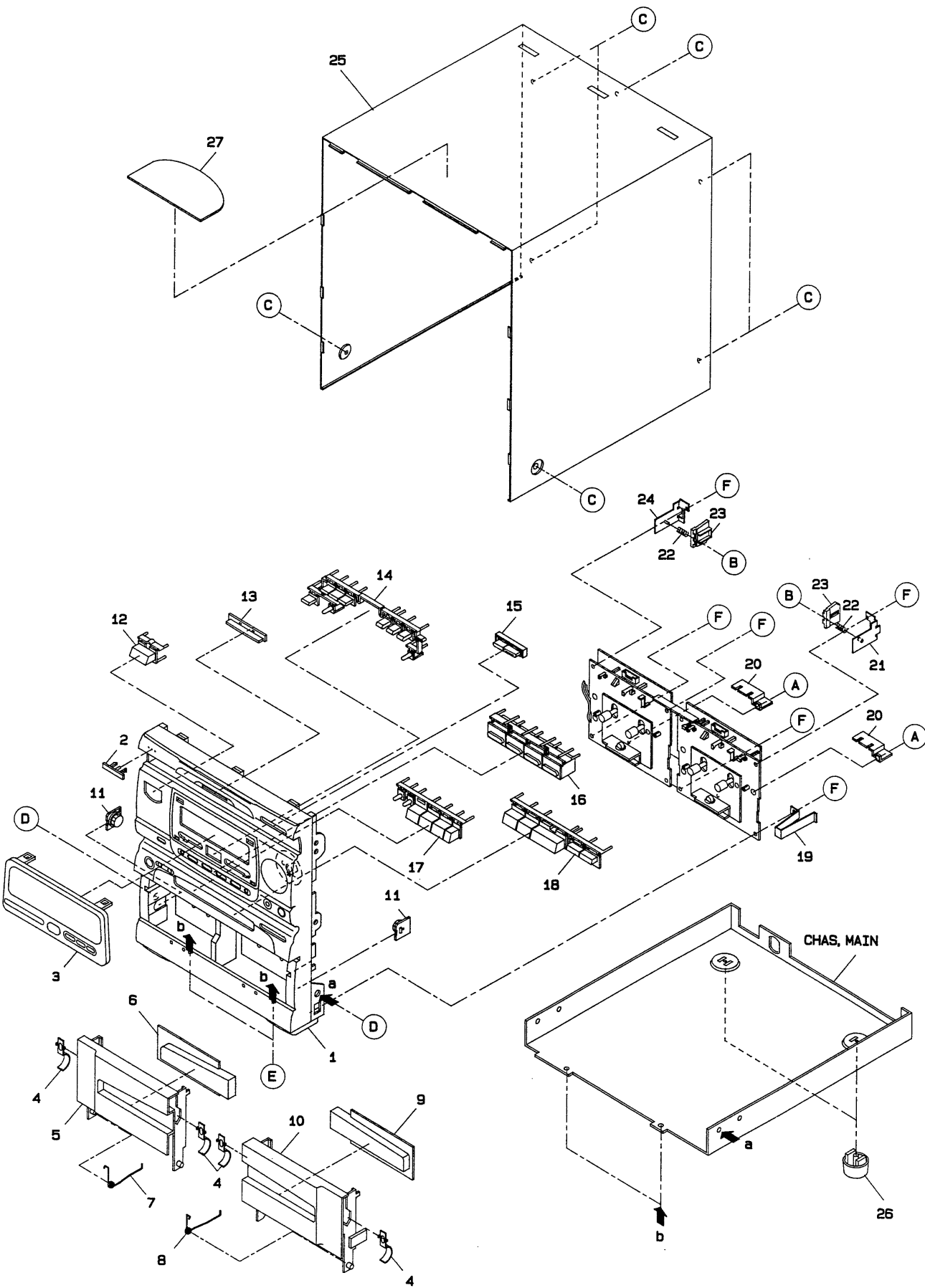
Note) I + ; input terminal with pull-up resistor  
OT ; Tri-state output terminal

## IC,LC7870E

| Pin No. | Pin Name         | I/O | Description                                                                                          |
|---------|------------------|-----|------------------------------------------------------------------------------------------------------|
| 1       | S                | I   | Connected to GND                                                                                     |
| 2       | SBCK             | O   | Subcode read/write clock                                                                             |
| 3       | SFSY             | I   | Subcode frame sync signal                                                                            |
| 4       | PW               | I   | Subcode read/write data                                                                              |
| 5       | SBSY             | I   | Subcode block sync signal                                                                            |
| 6       | VDD1             | —   | Digital block power supply                                                                           |
| 7       | CE               | I   | Connected to GND                                                                                     |
| 8       | —                | —   | Not used (Connected to GND)                                                                          |
| 9       | DI               | I   | Not used (Connected to GND)                                                                          |
| 10      | CL               | I   | Not used (Connected to GND)                                                                          |
| 11      | MUTE             | I   | Muting input                                                                                         |
| 12      | VSS1             | —   | GND (Digital)                                                                                        |
| 13      | CH0              | I   | Channel selection. Enabled at "H" (Pull-down resistor is built in.)                                  |
| 14      | CH1              | I   | Connected to +5V                                                                                     |
| 15~28   | —                | —   | Not used (No connection)                                                                             |
| 29      | $\overline{IWE}$ | O   | DRAM No.1 control                                                                                    |
| 30      | $\overline{RAS}$ | O   | DRAM No.1 and 2 common control                                                                       |
| 31~38   | 1A0~1A7          | O   | DRAM No.1 address                                                                                    |
| 39      | 1D0              | I/O | DRAM No.1 data                                                                                       |
| 40      | $\overline{CAS}$ | O   | DRAM No.1 and 2 common control                                                                       |
| 41      | 1D1              | I/O | DRAM No.1 data                                                                                       |
| 42      | $\overline{OE}$  | O   | DRAM No.1 control                                                                                    |
| 43      | 1D2              | I/O | DRAM No.1 data                                                                                       |
| 44      | 1D3              | I/O | DRAM No.1 data                                                                                       |
| 45~57   | —                | —   | Not used (No connection)                                                                             |
| 58      | TEST             | I   | Test pin (connected to GND)                                                                          |
| 59~67   | —                | —   | Not used (No connection)                                                                             |
| 68      | BIAS1            | O   | Connected to capacitor for eliminating ripples                                                       |
| 69~72   | —                | —   | Not used (No connection)                                                                             |
| 73      | VSS3             | —   | GND (Analog)                                                                                         |
| 74      | VDD3             | —   | Analog block power supply                                                                            |
| 75      | BIAS2            | O   | Connected to capacitor for eliminating ripples                                                       |
| 76      | VD               | O   | Composite video output (8-bit DAC output)                                                            |
| 77~78   | TEST1~2          | I   | Test (Connected to GND)                                                                              |
| 79      | FSCIN            | I   | Subcarrier clock input (Feedback resistor built in)                                                  |
| 80~83   | —                | —   | Not used (No connection)                                                                             |
| 84      | SON              | I   | Superimpose ON/OFF (Connected to GND)                                                                |
| 85~86   | —                | —   | Not used (No connection)                                                                             |
| 87      | M1/M2            | I   | Switching between 256 DRAM1 and 2 H: 1 L: 1 and 2 (Connected to VDD)                                 |
| 88      | DEN              | I   | Disk information display enable H: BGC L: Enable (Pull-down resistor is built in, connected to GND.) |

| P i n N o . | P i n N a m e | I / O | D e s c r i p t i o n                                                                        |
|-------------|---------------|-------|----------------------------------------------------------------------------------------------|
| 89          | —             | —     | Not used (No connection)                                                                     |
| 90          | HRESET        | I     | Horizontal timing external control                                                           |
| 91          | FSC           | O     | Subcarrier clock output NTSC mode: 3.57954 MHz PAL mode: 4.433619 MHz                        |
| 92          | VRESET        | I     | Vertical timing external control terminal                                                    |
| 93          | 4FSC2         | I     | External clock input during superimposing (Feedback resister built in)<br>(Connected to GND) |
| 94          | RESET         | I     | Reset input                                                                                  |
| 95          | N/P1          | I     | NTSC/PAL selection (RGB encoder) "H": NTSC "L": PAL                                          |
| 96          | N/P2          | I     | NTSC/PAL selection (CD-EG decoder) "H": NTSC "L": PAL                                        |
| 97          | XIN2          | I     | Crystal oscillator 17.734476 MHz (for PAL)                                                   |
| 98          | XOUT2         | O     | Crystal oscillator 17.734476 MHz (for PAL)                                                   |
| 99          | XIN1          | I     | Crystal oscillator connection 14.31818 MHz (for NTSC)                                        |
| 100         | XOUT1         | O     | Crystal oscillator connection 14.31818 MHz (for NTSC)                                        |

MECHANICAL EXPLODED VIEW 1/3

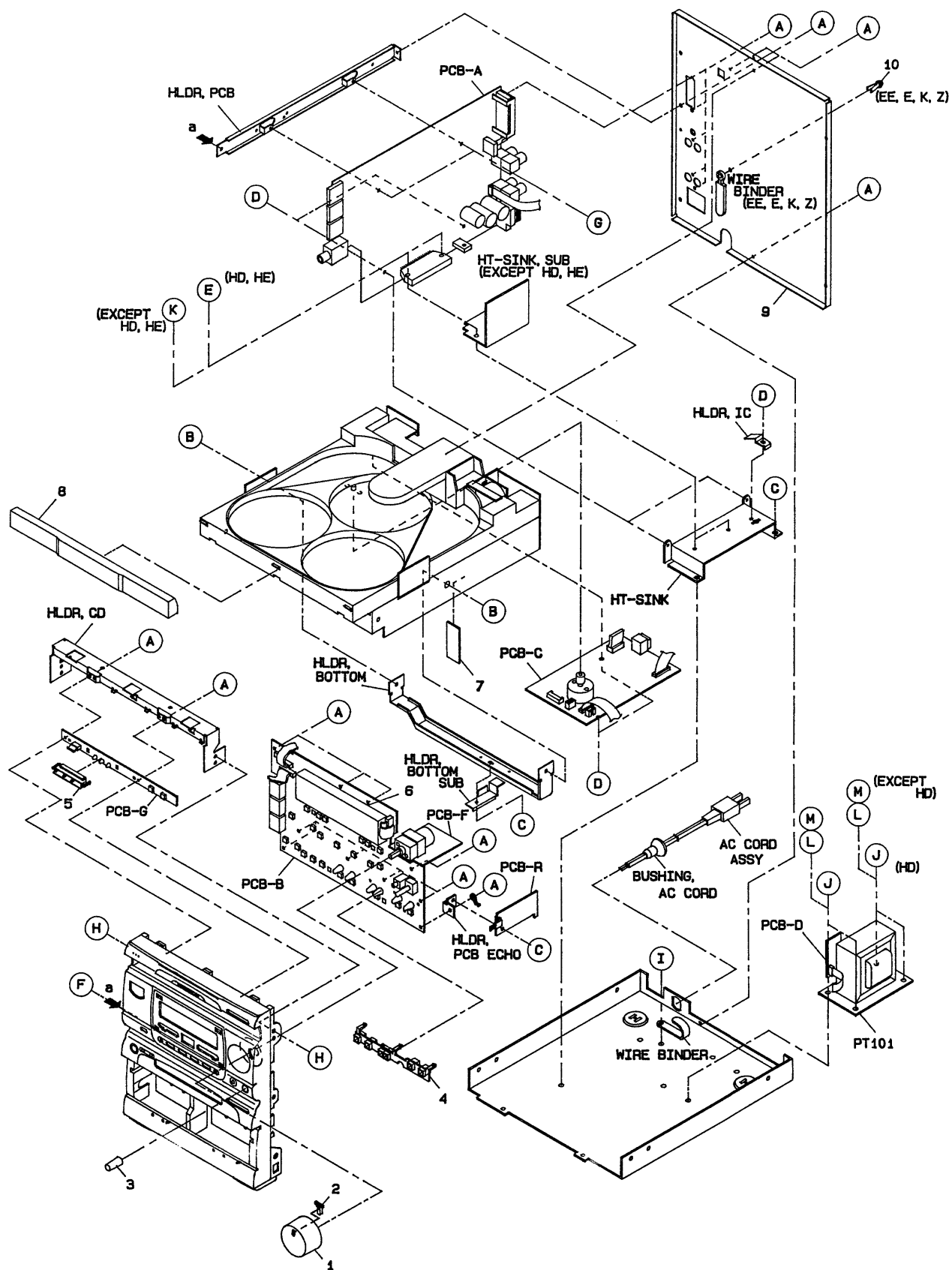


# MECHANICAL PARTS LIST 1/3

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

| REF. NO | PART NO.       | カンリ<br>NO. | DESCRIPTION                       | REF. NO | PART NO.       | カンリ | DESCRIPTION                   |
|---------|----------------|------------|-----------------------------------|---------|----------------|-----|-------------------------------|
| 1       | 82-NF5-048-119 |            | CAB ASSY, FR[B] (HD, HE, HR)      | 19      | 82-NF5-216-019 |     | PLATE, EARTH MECHA            |
| 1       | 82-NF5-049-019 |            | CAB ASSY, FR[N] (HE)              | 20      | 82-ZM3-213-010 |     | PLATE, SHLD                   |
| 1       | 82-NF5-090-019 |            | CAB ASSY, FR[N] (Z, EE, E)        | 21      | 82-NF5-205-010 |     | HLDR ASSY, LOCK 2             |
| 1       | 82-NF5-092-019 |            | CAB ASSY, FR[B] (K)               | 22      | 80-MV3-210-110 |     | SPR-C, LOCK[B] (HD)           |
| 1       | 82-NF5-093-019 |            | CAB ASSY, FR[B] (U)               | 22      | 80-MV3-218-019 |     | SPR-C, LOCK[B] (EXCEPT HD)    |
| 2       | 82-NE8-032-019 |            | BADGE, AIWA 27.5                  | 23      | 80-CD3-233-010 |     | PLATE, LOCK                   |
| 3       | 82-NF5-013-010 |            | WINDOW, DISPLAY                   | 24      | 82-NF5-204-010 |     | HLDR ASSY, LOCK 1             |
| 4       | 81-MX4-223-019 |            | SPR-P, CASS                       | 25      | 82-NF5-046-119 |     | CAB, STEEL[B] (HD, HE, HR, U) |
| 5       | 82-NF5-034-119 |            | BOX, CASS 1[B] (HD, HE, HR, K, U) | 25      | 82-NF5-096-019 |     | CAB, STEEL[N] (HE)            |
| 5       | 82-NF5-074-019 |            | BOX, CASS 1[N] (HE, Z, EE, E)     | 25      | 82-NF5-106-018 |     | CAB, STEEL[N] (Z, EE, E)      |
| 6       | 82-NF5-014-010 |            | WINDOW CASS 1                     | 25      | 82-NF5-072-118 |     | CAB, STEEL[B] (K)             |
| 7       | 82-NF5-218-019 |            | SPR-T, EJECT 1                    | 26      | 87-085-221-010 |     | FOOT, H 13.5                  |
| 8       | 82-NF5-219-019 |            | SPR-T, EJECT 2                    | 27      | 82-NF5-061-019 |     | WINDOW, TOP                   |
| 9       | 82-NF5-015-010 |            | WINDOW, CASS 2                    | A       | 87-571-032-410 |     | VIT+2-3                       |
| 10      | 82-NF5-035-119 |            | BOX, CASS 2[B] (HD, HE, HR, K, U) | B       | 87-081-808-010 |     | PW, 1.7-3.5-0.25              |
| 10      | 82-NF5-075-019 |            | BOX, CASS 2[N] (HE, Z, EE, E)     | C       | 87-067-641-010 |     | UTT2+3-8 BLK                  |
| 11      | 87-063-165-019 |            | OIL-DMPR 150                      | D       | 87-591-094-410 |     | QIT+3-6                       |
| 12      | 82-NF5-005-019 |            | KEY, POWER[B] (HD, HE, HR, K, U)  | E       | 87-067-716-010 |     | BVTT+3-6 BLK                  |
| 12      | 82-NF5-076-019 |            | KEY, POWER[N] (HE, Z, EE, E)      | F       | 87-067-761-010 |     | BVT2+3-10 BLK                 |
| 13      | 82-NF5-020-010 |            | IND, DISC                         |         |                |     |                               |
| 14      | 82-NF5-007-01S |            | KEY, GEO                          |         |                |     |                               |
| 15      | 82-NF5-006-010 |            | KEY, CD                           |         |                |     |                               |
| 16      | 82-NF5-008-010 |            | KEY ASSY, FUN                     |         |                |     |                               |
| 17      | 82-NF5-011-010 |            | KEY, REC                          |         |                |     |                               |
| 18      | 82-NF5-010-010 |            | KEY, PLAY                         |         |                |     |                               |

## MECHANICAL EXPLODED VIEW 2/3



# MECHANICAL PARTS LIST 2/3

| REF. NO | PART NO.       | カンリ<br>NO. | DESCRIPTION                     |
|---------|----------------|------------|---------------------------------|
| 1       | 82-NF5-012-119 |            | KNOB, VOL[B] (HD, HE, HR, K, U) |
| 1       | 82-NE8-084-019 |            | KNOB, VOL[N] HE, Z, EE, E)      |
| 2       | 82-NE6-016-019 |            | IND, MAIN                       |
| 3       | 81-MX4-019-019 |            | KNOB, MIC                       |
| 4       | 82-NF5-213-019 |            | GUIDE LED                       |
| 5       | 82-NF5-214-010 |            | GUIDE DISC                      |
| 6       | 82-NF5-212-010 |            | GUIDE, FL                       |
| 7       | 87-085-227-010 |            | SH, 12. 5-5-0. 5                |
| 8       | 82-NF5-067-119 |            | PANEL, TRAY[B] (HD, HE, HR)     |
| 8       | 82-NF5-078-019 |            | PANEL, TRAY[N] (HE)             |
| 8       | 82-NF5-109-019 |            | PANEL, TRAY[N] (Z, EE, E)       |
| 8       | 82-NF5-108-019 |            | PANEL, TRAY[B] (K, U)           |
| 9       | 82-NF5-117-11S |            | PANEL, REAR[B] (HD)             |
| 9       | 82-NF5-066-119 |            | PANEL, REAR[B, N] (HE)          |
| 9       | 82-NF5-069-119 |            | PANEL, REAR[B] (HR)             |
| 9       | 82-NF5-110-119 |            | PANEL, REAR[N] (Z)              |
| 9       | 82-NF5-104-119 |            | PANEL, REAR[N] (EE, E)          |
| 9       | 82-NF5-105-119 |            | PANEL, REAR[B] (K)              |
| 9       | 82-NF5-111-019 |            | PANEL, REAR[B] (U)              |
| 10      | 87-084-077-019 |            | NYLON RIVET[B, N] (Z, EE, K, E) |

| REF. NO | PART NO.       | カンリ | DESCRIPTION                     |
|---------|----------------|-----|---------------------------------|
| A       | 87-067-761-010 |     | BVT2+3-10 BLK                   |
| B       | 87-067-641-010 |     | UTT2+3-8 W/O SLOT BLK           |
| C       | 87-067-716-010 |     | BVTT+3-6 BLK                    |
| D       | 87-067-579-010 |     | BVT2+3-8 W/O SLOT               |
| E       | 87-067-581-019 |     | BVT2+3-15 W/O[B, N] (HD, HE)    |
| F       | 87-591-094-410 |     | QIT+3-6                         |
| G       | 87-067-633-010 |     | BVT2+3-8 W CONVEX               |
| H       | 87-721-097-410 |     | QT2+3-12 GOLD                   |
| I       | 87-067-585-010 |     | BVTT+4-6                        |
| J       | 87-078-019-019 |     | S-SCREW, 1T+4-6                 |
| K       | 87-067-698-019 |     | BVT2+3-18[B, N] (EXCEPT HD, HE) |
| L       | 87-422-308-019 |     | SW 4[B] (EXCEPT HD)             |
| M       | 87-067-586-010 |     | BVTT+4-8[B] (EXCEPT HD)         |

This diagram illustrates the exploded view of a mechanical assembly, showing the relationship between various components. The components are labeled with letters (A through S) and numbers (1 through 30). Key parts include:

- PCB-K**: A small printed circuit board at the bottom left.
- PCB-L**: A printed circuit board in the middle left.
- PCB-M**: A printed circuit board in the middle right.
- PCB-P**: A printed circuit board at the top right.
- PCB-J**: A printed circuit board at the bottom right.
- M1** and **M2**: Motors or actuators.
- 21**: A large, complex mechanical component at the top.
- 25**: A large, flat mechanical component in the center.
- 26**: A large gear or flywheel on the right.
- 27**: A small component at the top right.
- 28**: A small component at the top right.
- 29**: A small component at the top right.
- 30**: A small component at the bottom right.

The diagram shows the assembly sequence and the relative positions of the components. Arrows indicate the direction of assembly. The components are arranged in a way that shows the relationship between them, such as the motor (M1) driving the gear (26) and the gear (26) driving the flywheel (21).

# MECHANICAL PARTS LIST 3/3

| REF. NO | PART NO.       | カリ<br>NO. | DESCRIPTION                      | REF. NO | PART NO.       | カリ<br>NO. | DESCRIPTION             |
|---------|----------------|-----------|----------------------------------|---------|----------------|-----------|-------------------------|
| 1       | 81-ZG1-268-010 |           | CHAS MECH M[B] (HD)              | 23      | 81-ZG1-262-019 |           | SPR-E, CAM S            |
| 1       | 81-ZG1-246-119 |           | CHAS MECH M[B] (EXCEPT HD)       | 24      | 81-ZG1-016-010 |           | GEAR, MECH CAM BGE      |
| 2       | 81-ZG1-228-110 |           | HLD, MAGNET                      | 25      | 81-ZG1-009-010 |           | TRAY[B] (HD)            |
| 3       | 81-ZG1-253-01S |           | HLD, MECH MK2                    | 25      | 81-ZG1-011-119 |           | TRAY MK2[B] (EXCEPT HD) |
| 4       | 81-ZG1-221-010 |           | WORM GEAR, TT                    | 26      | 81-ZG1-015-010 |           | GEAR, TRAY CAM BLU      |
| 5       | 81-ZG1-230-010 |           | G-CUSH MECH                      | 27      | 81-ZG1-233-110 |           | BELT, TT                |
| 6       | 81-ZG1-231-010 |           | SPR-C, MECH                      | 28      | 81-ZG1-236-010 |           | PULLEY, TT MO           |
| 7       | 81-ZG1-212-010 |           | PULLY, LOAD MO                   | 29      | 81-ZG1-260-019 |           | SHAFT, WORM S           |
| 8       | 81-ZG1-250-019 |           | GEAR, TRAY RELAY MK2             | A       | 81-653-215-010 |           | SPECIAL SCREW VT2       |
| 9       | 81-ZG1-019-019 |           | GEAR, TRAY B YEL                 | B       | 81-ZG1-254-01S |           | S-SCREW, MECH HLD       |
| 10      | 81-ZG1-018-019 |           | GEAR, TRAY A YEL                 | C       | 87-561-096-210 |           | VFT1+3-10               |
| 11      | 81-ZG1-017-019 |           | GEAR, RELAY RED                  | D       | 81-ZG1-239-010 |           | S-SCREW, TT             |
| 12      | 81-ZG1-014-010 |           | PULLEY, RELAY YEL                | E       | 87-067-945-110 |           | VFT1+3-12               |
| 13      | 81-ZG1-240-010 |           | SPR-P, WORM                      | F       | 87-251-071-410 |           | U+2. 6-4                |
| 14      | 87-036-326-010 |           | MAGNET, CLAMPER 93               | G       | 87-067-579-010 |           | BVT2+3-8 W/O SLOT       |
| 15      | 81-ZG1-229-110 |           | PLATE, MAGNET[B] (HD)            | H       | 87-078-029-010 |           | VFT2+3-13               |
| 15      | 81-ZG1-255-119 |           | PLATE, MAGNET MK2[B] (EXCEPT HD) | I       | 87-761-095-410 |           | VFT2+3-8                |
| 16      | 81-ZG1-232-010 |           | BELT, TRAY                       | J       | 81-ZG1-264-010 |           | S-SCREW CAM             |
| 17      | 81-ZG1-238-110 |           | CUSH, TRAY IN                    | K       | 87-067-828-010 |           | VFT2+3-15 DIA 10        |
| 18      | 81-ZG1-222-010 |           | WORM WHEEL, TT                   |         |                |           |                         |
| 19      | 81-ZG1-202-010 |           | GEAR, MAIN                       |         |                |           |                         |
| 20      | 81-ZG1-252-010 |           | LEVER, TT MK2                    |         |                |           |                         |
| 21      | 81-ZG1-010-110 |           | TURNTABLE[B] (HD)                |         |                |           |                         |
| 21      | 81-ZG1-008-219 |           | TURNTABLE[B] (EXCEPT HD)         |         |                |           |                         |
| 22      | 81-ZG1-020-010 |           | PLATE, CAM BGE                   |         |                |           |                         |

## SPEAKER LIST

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

| REF. NO | PART NO.       | カンリ<br>NO. | DESCRIPTION                   |
|---------|----------------|------------|-------------------------------|
| 2       | 82-NS5-013-010 |            | PANEL, FRONT R[B] (U, K)      |
| 2       | 82-NS5-014-010 |            | PANEL, FRONT L[B] (U, K)      |
| 2       | 82-NS5-023-010 |            | PANEL, FRONT RN[N] (HE, E, Z) |
| 2       | 82-NS5-024-010 |            | PANEL, FRONT LN[N] (HE, E, Z) |

## ■ ACCESSORIES/PACKAGE LIST

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

| REF. NO | PART NO.       | カンリ<br>NO. | DESCRIPTION                          |
|---------|----------------|------------|--------------------------------------|
| 1       | 82-NF5-913-110 |            | IB, NSX-510G (HE, HR, U)             |
| 2       | 82-NF5-919-010 |            | IB, NSX-510G HD (HD)                 |
| 3       | 82-NF5-915-110 |            | IB, NSX-510G-G (Z, K, E)             |
| 4       | 82-NF5-916-010 |            | IB, NSX-510G (GFI) (Z, E)            |
| 5       | 87-043-115-010 |            | ANT, FEEDER FM (EXCEPT Z)            |
| 6       | 87-043-106-010 |            | FM, WIRE ANT (Z) (Z)                 |
| 7       | 87-006-225-010 |            | AM LOOP ANT NC2 (EXCEPT K, E)        |
| 8       | 87-006-226-010 |            | AM LOOP ANT CON2 (K, E)              |
| 9       | 82-NF5-638-010 |            | RC, RC-TN500 (EX) (HE, HR, K, U, HD) |
| 10      | 82-NF5-635-010 |            | RC, RC-TN500 (EX) GLD (HE, Z, E)     |
| 11      | 87-042-062-010 |            | PLUG, ADPTR S-16115 (HE, HR)         |
| 12      | 87-009-724-010 |            | PLUG, ADPTR IR39 (HD)                |
| 13      | 82-NF5-718-010 |            | CORD, PIN                            |
| 14      | 87-041-072-010 |            | MIC, DM-SH18YJN (Z)                  |

# 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      |
| THMS        | THERMISTOR         |
| TR          | TRANSISTOR         |
| TRIMMER     | CAP, TRIMMER       |
| TUN-CAP     | VARIABLE CAPACITOR |
| VIB, CER    | RESONATOR, CERAMIC |
| VIB, XTAL   | RESONATOR, CRYSTAL |
| VR          | VOLUME             |
| ZENER       | DIODE, ZENER       |
| サージサプレッサ    | SERGESUPPRESSOR    |
| セラコン        | CAP, CERA          |

## MECHANICAL SECTION

| DESCRIPTION       | REFERENCE NAME       |
|-------------------|----------------------|
| ADHESHIVE         | SHEET ADHESHIVE      |
| AZ                | AZIMUTH              |
| BAR-ANT           | BAR-ANTENNA          |
| BAT               | BATTERY              |
| BAT, CONTACT ASSY | BATTERY CONTACT ASSY |
| 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          |
| KNOB, VOL REV     | KNOB, VOLUME REV     |
| LBL               | LABEL                |
| LID, BATT         | LID, BATTERY         |
| LID, CASS         | LID, CASSETTE        |
| LVR               | LEVER                |
| P-SP              | P-SPRING             |
| PANEL, CONT       | PANEL, CONTORL       |
| PANEL, FR         | PANEL, FRONT         |
| PRGM              | PROGRAM              |
| PULLY, LOAD MO    | PULLY, LOADING 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     |
| SW                | SWITCH               |
| T-SP              | T-SPRING             |
| TERM              | TERMINAL             |
| TRIG              | TRIGGER              |
| TUN               | TUNING               |
| VOL               | VOLUME               |
| W                 | WASHER               |
| WHL               | WHEEL                |
| WORM-WHL          | WORM-WHEEL           |
| ジクアーム             | ARM, SHAFT           |
| ジクガイド             | GUIDE, SHAFT         |
| ストラップ             | STRAP                |
| ヒンジ               | HINGE                |

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