

PROFESSIONAL DISC RECORDER YPDR601/RC601

SERVICE MANUAL

IMPORTANT NOTICE

This manual has been provided for the use of authorized YAMAHA Retailers and their service personnel. It has been assumed that basic service procedures inherent to the industry, and more specifically YAMAHA Products, are already known and understood by the users, and have therefore not been restated.

WARNING: Failure to follow appropriate service and safety procedures when servicing this product may result in personal injury, destruction of expensive components and failure of the product to perform as specified. For these reasons, we advise all YAMAHA product owners that all service required should be performed by an authorized YAMAHA Retailer or the appointed service representative.

IMPORTANT: The presentation or sale of this manual to any individual or firm does not constitute authorization, certification or recognition of any applicable technical capabilities, or establish a principle-agent relationship of any form.

The data provided is believed to be accurate and applicable to the unit(s) indicated on the cover. The research, engineering, and service departments of YAMAHA are continually striving to improve YAMAHA products. Modifications are, therefore, inevitable and specifications are subject to change without notice or obligation to retrofit. Should any discrepancy appear to exist, please contact the distributor's Service Division.

WARNING: Static discharges can destroy expensive components. Discharge any static electricity your body may have accumulated by grounding yourself to the ground buss in the unit (heavy gauge black wires connect to this buss).

IMPORTANT: Turn the unit OFF during disassembly and parts replacement. Recheck all work before you apply power to the unit.

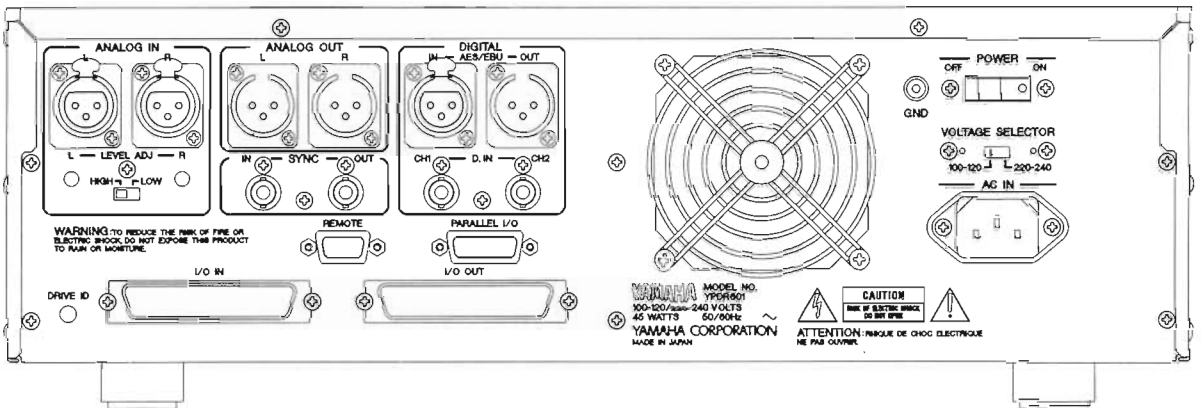
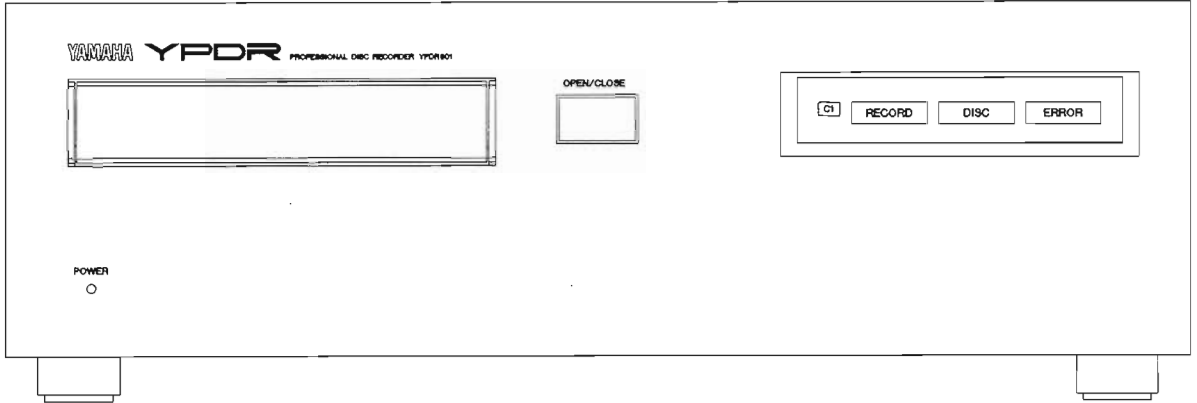
■ CONTENTS

| | |
|---|-------|
| PANEL CONTROL | 1~2 |
| TO SERVICE PERSONNEL | 2~3 |
| SPECIFICATIONS/ 参考仕様 | 4~6 |
| PROTECTION LEVER FOR TRANSPORTATION | 7 |
| INTERNAL VIEW | 7 |
| DISASSEMBLY PROCEDURES/ 分解手順 | 8~9 |
| ADJUSTMENT/ 調整 | 10~29 |
| PRINTED CIRCUIT BOARD | 30~45 |

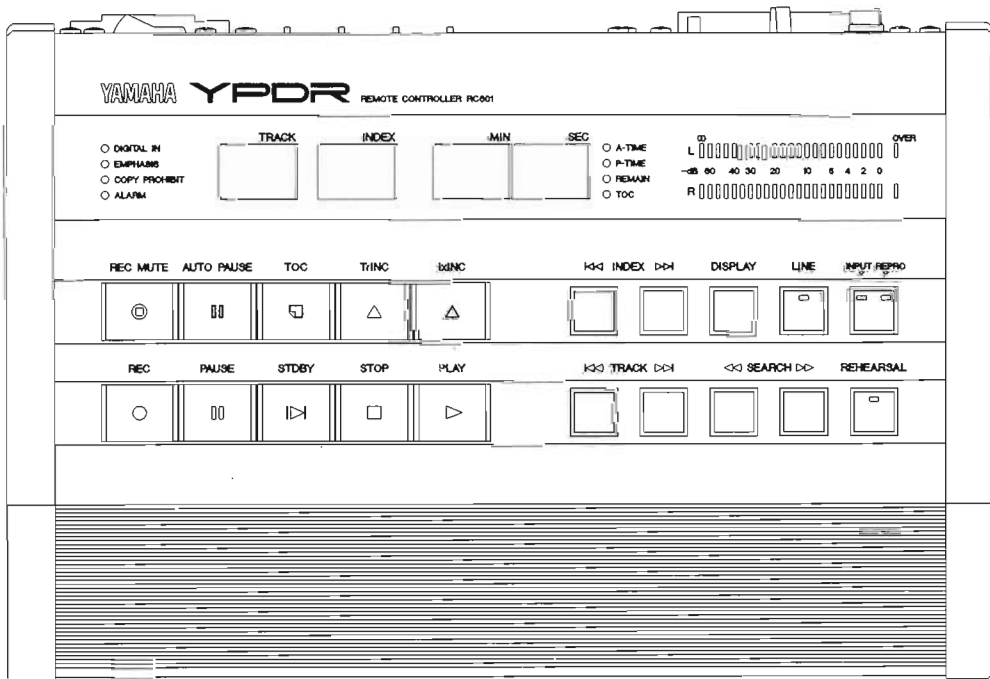
| | |
|---------------------------------------|-------|
| IC DATA | 46~54 |
| WAVEFORM OF TEST POINT | 55 |
| SCHEMATIC DIAGRAM | 56~63 |
| BLOCK DIAGRAM | 64 |
| INTERCONNECT WIRING DIAGRAM | 64 |
| YPDR601 PARTS LIST | 65~77 |
| RC601 PARTS LIST | 78~81 |
| PARTS LIST FOR CARBON RESISTORS | 82 |

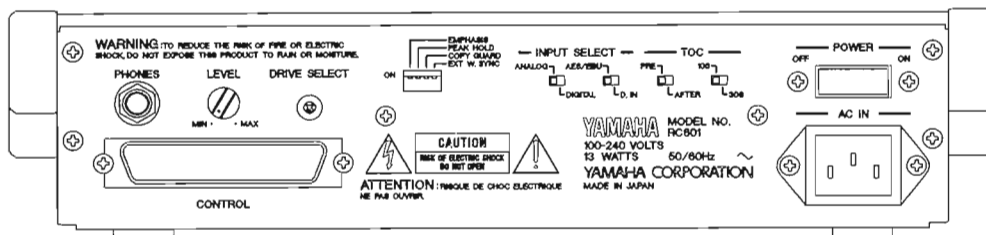
FRONT AND REAR PANELS

YPDR601



RC601





■ TO SERVICE PERSONNEL

1. Critical Components Information.

Components having special characteristics are marked and must be replaced with parts having specifications equal to those originally installed.

CAUTION: USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

THE COMPACT DISC PLAYER SHOULD NOT BE ADJUSTED OR REPAIRED BY ANYONE EXCEPT PROPERLY QUALIFIED SERVICE PERSONNEL.

PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

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

1. Laser Diode Properties

- Material : GaAlAs
- Wavelength : 780 nm
- Emission Duration : Continuous
- Laser Output : max. 44.6 μ W*

* This output is the value measured at a distance of about 200 mm from the objective lens surface on the Optical Pick-up Block.

2. When checking the laser diode emission, keep your eyes more than 30 cm away from the objective lens.

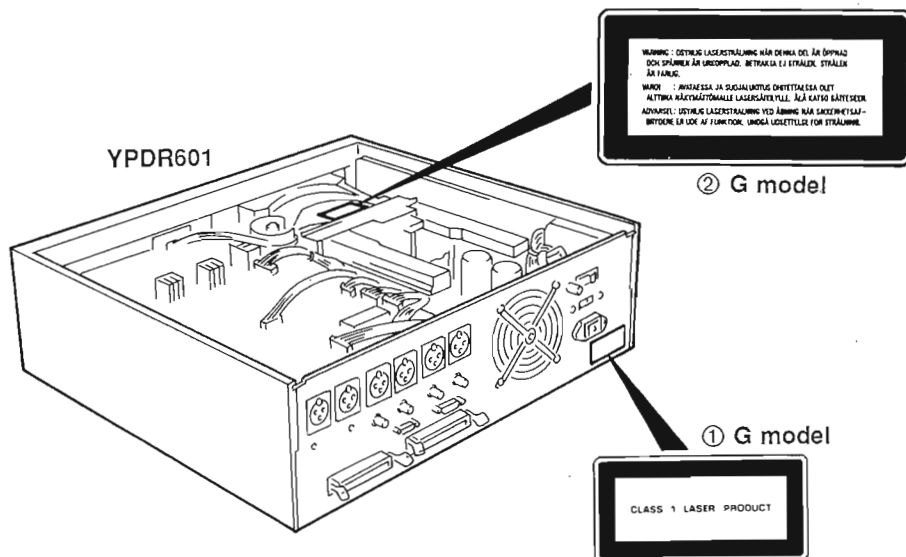
WARNING: CHEMICAL CONTENT NOTICE!

The solder used in the production of this product contains LEAD. In addition, other electrical/electronic and/or plastic (where applicable) components may also contain traces of chemicals found by the California Health and Welfare Agency (and possibly other entities) to cause cancer and/or birth defects or other reproductive harm.

DO NOT PLACE SOLDER, ELECTRICAL/ELECTRONIC OR PLASTIC COMPONENTS IN YOUR MOUTH FOR ANY REASON WHATSOEVER!

Avoid prolonged, unprotected contact between solder and your skin! When soldering, do not inhale solder fumes or expose eyes to solder/flux vapor!

If you come in contact with solder or components located inside the enclosure of this product, wash your hands before handling food.



English

- ① THIS LABEL (SEE POSITION SHOWN IN THE ILLUSTRATION) INFORMS THE USER THAT THE APPARATUS CONTAINS A LASER COMPONENT.
- ② THIS LABEL (SEE POSITION SHOWN IN THE ILLUSTRATION) WARNS THAT ANY FURTHER PROCEDURE WILL BRING THE USER INTO EXPOSURE WITH THE LASER BEAM.

CAUTION : USE OF CONTROLS, ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN, MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

Swedish

- ① DENNA MÄRKNING (SE FIGUR) UPPLYSER OM ATT DET I APPARATEN INGÅR EN LASERKOMPONENT AV TYP KLASS 1.
- ② VARNINGSMÄRKNING (SE FIGUR) FÖR STRÅLNING. INGREPP I APPARATEN BÖR ENDAST FÖRETAGAS AV FACKMAN MED KÄNNEDOM OM LASER. APPARATEN INNEHÅLLER EN LASERKOMPONENT SOM AVGER STRÅLNING ÖVERSTIGANDE GRÄNSEN FÖR LASERKLASS 1.

VARNING : INGREPP I APPARATEN BÖR ENDAST FÖRETAGAS AV FACKMAN MED KUNSKAP OM ATT RISK FÖRE LIGGER FÖR RADIOAKTIV STRÅLNING.

VARNING : OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD : BETRÄKTA EJ STRÅLEN.

Danish

- ① DETTE MÆRKAT ER ANBRAGT SOM VIST I ILLUSTRATIONEN FOR AT ADVARE BRUGEREN OM AT APPARATET INDEHOLDER EN LASERKOMPONENT.
- ② DETTE MÆRKAT OM LASEREN ER ANBRAGT PÅ APPARATET SOM EN OPLYSNING OM AT APPARATET INDEHOLDER ET LASERKOMPONENT.

ADVARSEL : INDGREG BOR KUN FORETAGES AF EN FAGMAND DA DER ER RISIKO FOR RADIOAKTIV STRÅLING.

ADVARSEL : USYNLIG LASERSTRÅLING VED ÅBNING. UNDGÅ UDSÆTTELSE FOR STRÅLING.

Finnish

VAROI : AVATTAESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.

■ SPECIFICATIONS/参考仕様

■ CONTROLLER (RC601)

| | |
|-----------------------|---|
| Operating Temperature | 0°C to 40°C (32°F to 104°F) |
| Relative Humidity | 30%—80% (non-condensing) |
| Operating Voltage | 100VAC—240VAC (50/60Hz) |
| Power Consumption | Maximum 13W |
| Dimensions (WxHxD) | 310 x 75 x 221 (mm) (12-3/16" x 2-15/16" x 8-11/16") |
| Weight | 2.4Kg (5 lbs 5 oz) |
| Accessory | Power cord |

■ RECORDER UNIT (YPDR601)

| | |
|------------------|-------------------------------|
| Recording Medium | Yamaha designated disc |
| Recording Format | CD-DA |
| Recording Time | 74minutes (subject to medium) |

ANALOG CONNECTIONS

| | |
|-------------------------|---|
| ANALOG IN | 2 x XLR-3-31 (balanced) |
| Input Level & Impedance | HIGH: nominal +4dBm, maximum before clipping+24dBm/10KΩ Low: nominal -9dBm, maximum before clipping+11dBm/50KΩ |
| Input Level Trimmer | ±3dB adjustment |
| ANALOG OUT | 2 x XLR-3-32 (balanced) |
| Output Level | Nominal -2dBm, maximum before clipping +18dBm |
| Output Impedance | 150Ω |

DIGITAL CONNECTIONS

| | |
|-------------|---|
| AES/EBU IN | XLR-3-31 (Balanced) Sampling frequency 44.1kHz ±500ppm RS-442A level 110Ω |
| D.IN | BNC x 2, SDIF-II TTL level, 75Ω |
| AES/EBU OUT | XLR-3-32 (balanced), RS-422A level |

CONTROL CONNECTIONS

| | |
|--------------|---|
| SYNC IN | BNC, TTL level, 75Ω Sampling frequency 44.1kHz ±500ppm |
| SYNC OUT | BNC, TTL level |
| REMOTE | D-sub 9pin serial remote |
| PARALLEL I/O | D-sub 15pin parallel remote (GPI) open collector |
| I/O IN | 50pin 57connector |
| I/O OUT | 50pin 57connector |

| | |
|-----------------------|---|
| Operating Temperature | 15°C to 35°C (59°F to 95°F) |
| Relative Humidity | 30%—80% (non-condensing) |
| Power Requirement | 100VAC—120VAC/220VAC—240VAC, 50/60Hz |
| Power Consumption | Maximum 45W |
| Dimensions(WxHxD) | 435 x 146.5 x 400 (mm) (17-1/8" x 5-3/4" x 15-3/4") (with feet but without rack ears) When feet are removed, and rack ears fitted, the YPDR601 can be fitted into a 19" equip- ment rack, taking up 3 rack unit spaces |
| Weight | 14Kg (30 lbs 14 oz) |
| Accessory | Connection cable (50pins) Power cord Rack mount adapter EIA 482.6 mm(19") Data IN/OUT connector Terminator |

■コントローラー (RC601)

| | |
|-----------|--|
| 動作環境 | 性能保証温度 0°C~40°C 湿度 30%~80% (結露な きこと) |
| 電源 | AC100V-240V、50/60Hz |
| 消費電力 (国内) | 7W (AC100V、50/60Hz) |
| 外形寸法 | 310(W)×75(H)×221(D)mm |
| 重量 | 2.4kg |
| 付属品 | 電源コード×1 |

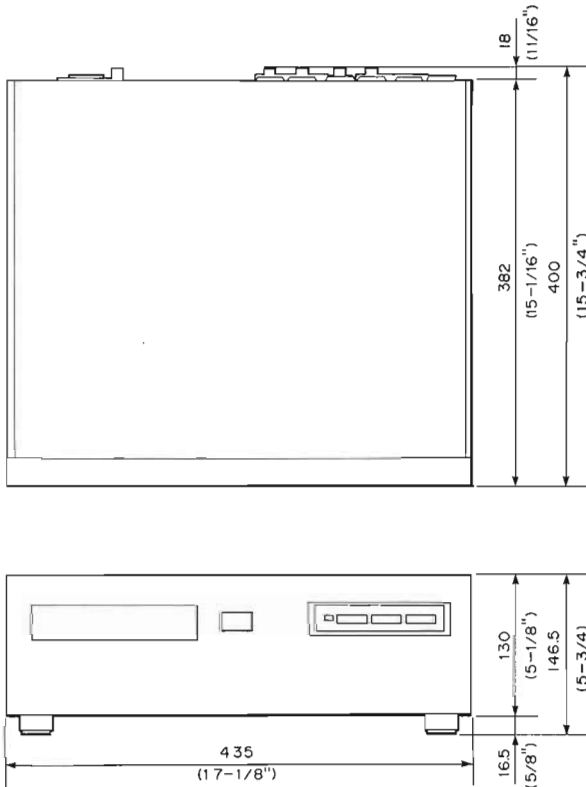
■本体 (YPDR601)

| | |
|--------------|---|
| 記録フォーマット | CD-DA |
| 使用ディスク | ヤマハ指定ディスク |
| 最大記録時間 | 74分 (使用ディスクに依存) |
| アナログ | |
| ANALOG IN | XLR-3-31 type×2 (バランス) |
| 入力レベル | HIGH: +4dBm/最大ノンクリッ プレベル +24dBm/10KΩ インピーダンス LOW: -9dBm/最大ノンクリッ プレベル +11dBm/50KΩ |
| 入力レベル可変範囲 | ±3dB |
| ANALOG OUT | XLR-3-32 type×2 (バランス) |
| 出力レベル | -2dBm/最大ノンクリップレベ ル +18dBm |
| 出力インピーダンス | 150Ω |
| デジタル | |
| AES/EBU IN | XLR-3-31 type (バランス)、fs= 44.1KHz±500ppm RS-422A 110Ω |
| D.IN | BNC×2 SDIF-II TTL 75Ω |
| AES/EBU OUT | XLR-3-32 type (バランス) RS-422A |
| コントロール | |
| W.SYNC IN | BNC TTL 75Ω fs=44.1KHz± 500ppm |
| W.SYNC OUT | BNC TTL |
| REMOTE | D-sub 9PIN Serial Remote |
| PARALLEL I/O | D-sub 15PIN Parallel Remote (GPI) (オープンコレクター) |
| I/O IN | 50PIN 57コネクター |
| I/O OUT | 50PIN 57コネクター |
| 動作環境 | 性能保証温度 15°C~35°C 湿度 30%~80% (結露な きこと) |
| 電源 | AC100-120V/220-240V、50/60 Hz 電圧切換式 |
| 消費電力 | 45W (AC100V、50/60Hz) |
| 外形寸法 | 435(W)×146.5(H)×400(D)mm |
| 重量 | 14kg |
| ラックマウント | EIA 482.6mm(19inch)ラックに取り 付け可能(付属ラックイヤ使用) |
| 付属品 | 50PINケーブル (5m) ×1 電源コード ×1 ラックイヤ ×1組 ターミネータ ×1 |

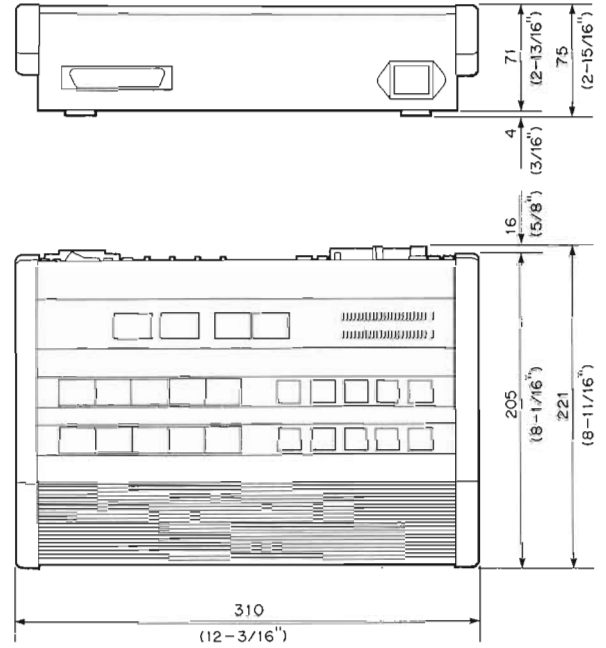
*Specifications are subject to change without notice.

● DIMENSIONS

YPDR601



RC601



Unit : mm (inch)

● 50-pin I/O connector pinout/コントロールI/Oピンアサイン表

| Signal Name 信号名 | Pin No. ピン番号 | Signal Name 信号名 |
|--------------------|-----------------|--------------------|
| SHIELD GROUND | 1 26 | GROUND |
| + DB(0) | 2 27 | - DB(0) |
| + DB(1) | 3 28 | - DB(1) |
| + DB(2) | 4 29 | - DB(2) |
| + DB(3) | 5 30 | - DB(3) |
| + DB(4) | 6 31 | - DB(4) |
| + DB(5) | 7 32 | - DB(5) |
| + DB(6) | 8 33 | - DB(6) |
| + DB(7) | 9 34 | - DB(7) |
| + DB(p) | 10 35 | - DB(p) |
| DIFFSENS | 11 36 | GROUND |
| + AES | 12 37 | - AES |
| TERMPWR | 13 38 | TERMPWR |
| + DATA | 14 39 | - DATA |
| + ATN | 15 40 | - ATN |
| + SFS | 16 41 | - SFS |
| + BSY | 17 42 | - BSY |
| + ACK | 18 43 | - ACK |
| + RST | 19 44 | - RST |
| + MSG | 20 45 | - MSG |
| + SEL | 21 46 | - SEL |
| + C/D | 22 47 | - C/D |
| + REQ | 23 48 | - REQ |
| + I/O | 24 49 | - I/O |
| GROUND | 25 50 | GROUND |

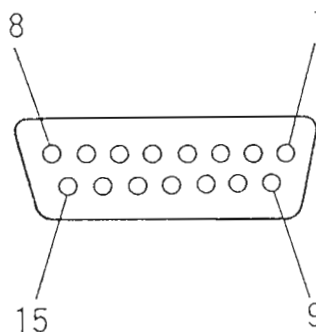
● **Serial REMOTE (D-sub 9-pin)/REMOTE端子**
The connector can transmit PLAY and STOP commands to the source tape recorder (e.g. the Yamaha DMR8 or DRU8) using industry-standard serial protocol.

- シリアルモード出力形式、ストレートケーブルを使用してください。
- YAMAHA DMR8、SONY DMR4000などをコントロール可能。
- サポートコマンド：PLAY、STOP

● PARALLEL I/O (D-Sub 15pin)/ピンアサイン表

| Pin No. ピン番号 | Signal Name 信号名 | I/O |
|-----------------|--------------------|-----|
| 1 | PLAY 1 | O |
| 2 | GND | — |
| 3 | PLAY 2 | O |
| 4 | GND | — |
| 5 | STOP | O |
| 6 | GND | — |
| 7 | REC STOP | I |
| 8 | GND | — |
| 9 | REC PLAY | I |
| 10 | GND | — |
| 11 | REC PAUSE | I |
| 12 | GND | — |
| 13 | Tr INC | I |
| 14 | GND | — |
| 15 | GND | — |

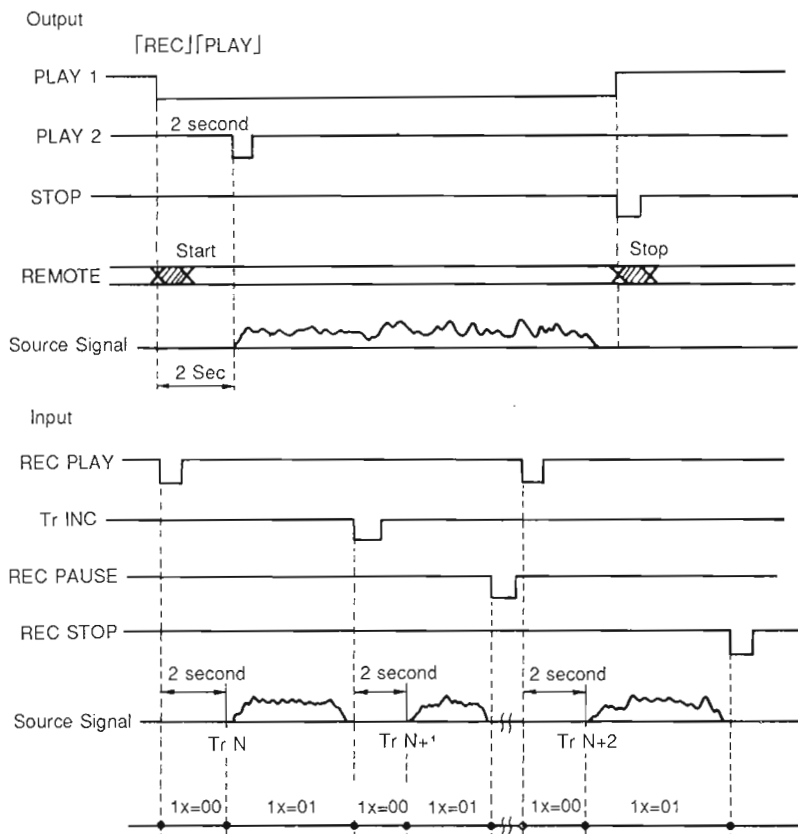
- 平行入出力形式
- 出力はTTLオープンコレクタ Tw=20ms
- 入力はTw≧40ms



An IxINC (I) signal is equivalent to a REC PLAY and a TrINC signal being transmitted simultaneously (both REC PLAY and TrINC go low at the same time).

※ Ix INC (Input) は、9ピンと13ピンを同時に“L”レベルにしてください。

● Parallel I/O timing chart/タイミングチャート (これはREMOTEも含んでいます)



↑ Playback starting point on track search.

CDプレーヤでトラックサーチを行なった時の再生開始点

■ PROTECTION LEVER FOR TRANSPORTATION

Head lock release

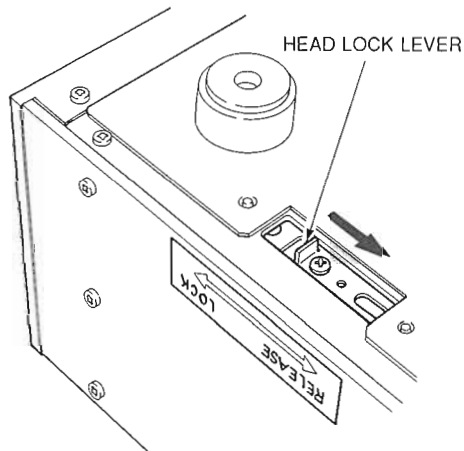
For safety purposes during transportation, head lock is applied to the optical head. Slide the lever on the bottom left side of the Disc Recorder (YPDR601) fully to the towards the rear panel to release the lock.

* Be sure to re-set the head lock when moving the unit around in-house.

ヘッドロックの解除

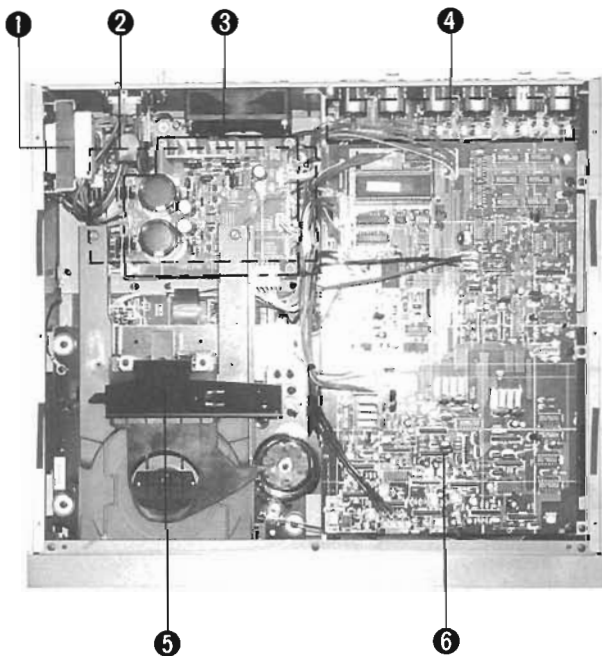
輸送中、光ヘッドは安全のため「ロック」されております。セッティングが終わりましたら、ディスクレコーダー（YPDR601）左下面のレバーを、リリース側（リアパネル側）にいっぱいスライドさせてロックを解除してください。

*なお、社内などで移動される場合も、安全のため「ロック」してください。



■ INTERNAL VIEW

YPDR601



- ① POWER TRANSFORMER
- ② POWER SUPPLY UNIT
- ③ PS CIRCUIT BOARD (1)
- ④ PS CIRCUIT BOARD (3)
- ⑤ WM-3 UNIT
- ⑥ SERVO CIRCUIT BOARD (1)

■ DISSASSEMBLY PROCEDURES/分解手順

1. Removal of Top Panel

Remove 8 screws (①) in Fig. 1.
Lift from the rear side slightly then lift up to prevent front side being bent or scratching the Unit.

2. Removal of Bottom Cover

Remove 9 screws (②) in Fig. 1.

3. Removal of Front Panel

Remove 6 screws (③) in Fig. 1.

4. Removal of WM-3 Unit

- Pull out the Disc Tray by turning the Loading Cam in Fig. 2.
- Remove screw (④) in Fig. 2, and then remove the Stopper TR.
- Turn the loading cam and push in the disc tray once.
- Making sure that the gears of the disc tray and loading cam are not in mesh, lift the flapper and pull out the disc tray.
- Remove screw (⑤) in Fig. 3, and then remove the Ground Wire.
- Remove 4 screws (⑥) in Fig. 3.
- Lift the WM-3 Unit gradually.

5. Removal of Optical Head

- Remove spring (A) in Fig. 4.
- Remove 2 screws (⑦) in Fig. 4, and then remove the Flapper and lifter lever assembly.
- Remove 3 screws (⑧) in Fig. 5, and then remove the optical head.

Note

Make sure that the head lock lever and lock gear assembly lever positions are correct when attaching the YPDR601 bottom cover and WM-3 unit.

1. トップパネルのはずし方

①のネジ8本をはずす。(Fig. 1)
トップパネルを曲げたり、本体にキズを付けない為に後を少し持ち上げてから前の方を持ち上げる。

2. ボトムカバーのはずし方

②のネジ9本をはずす。(Fig. 1)

3. フロントパネルのはずし方

③のネジ6本をはずす。(Fig. 1)

4. WM-3ユニットのはずし方

- ローディングカムを回して、ディスクトレイを引き出す。(Fig. 2)
- ④のネジをはずし、ストッパーTRをはずす。(Fig. 2)
- ローディングカムを回して、ディスクトレイを一旦押し込む。
- ディスクトレイのギヤ部とローディングカムのギヤ部がかみ合っていない状態で、フラッパーを持ち上げてディスクトレイを引き出す。
- ⑤のネジをはずし、アース線をはずす。(Fig. 3)
- ⑥のネジを4本はずす。(Fig. 3)
- WM-3ユニットをゆっくりと持ち上げる。

5. 光ヘッドのはずし方

- Aの(Spring)をはずす。(Fig. 4)
- ⑦のネジ2本をはずし、フラッパー及びリフターレバーAss'yをはずす。(Fig. 4)
- ⑧のネジ3本をはずし、光ヘッドをはずす。(Fig. 5)

注意

YPDR601のボトムカバーまたはWM-3ユニットの取り付けの場合、ヘッドロックレバーとロックギヤAss'yのレバーとの位置に注意してください。

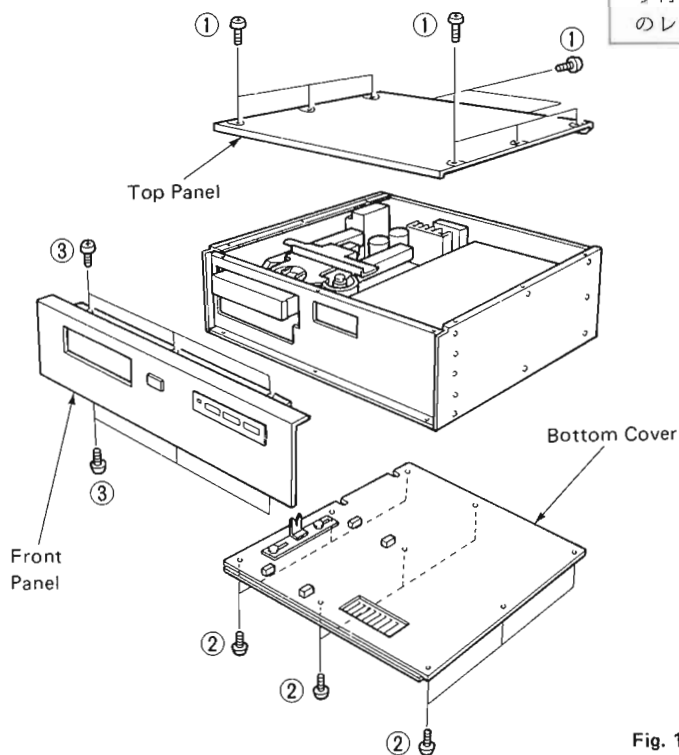


Fig. 1

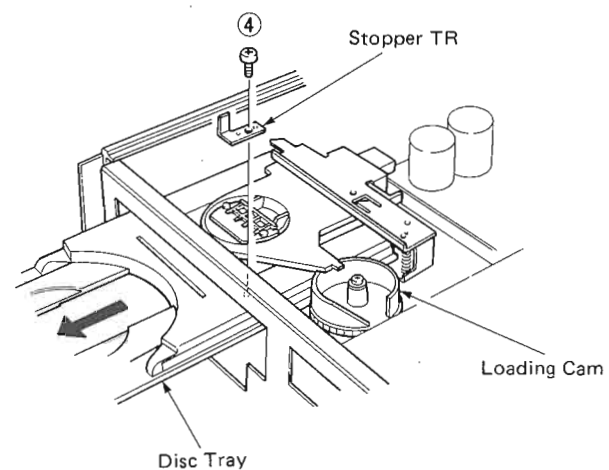


Fig. 2

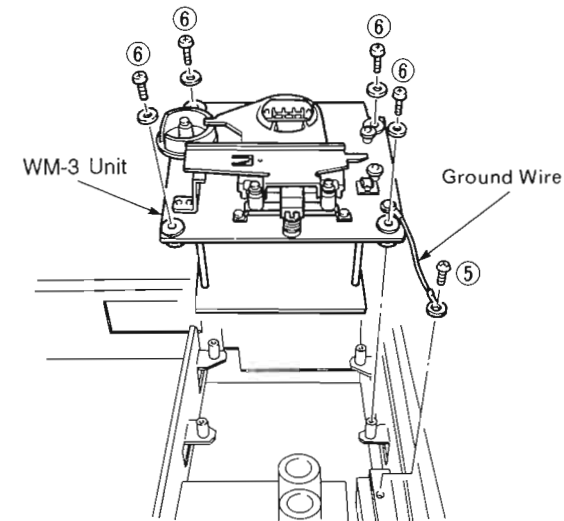


Fig. 3

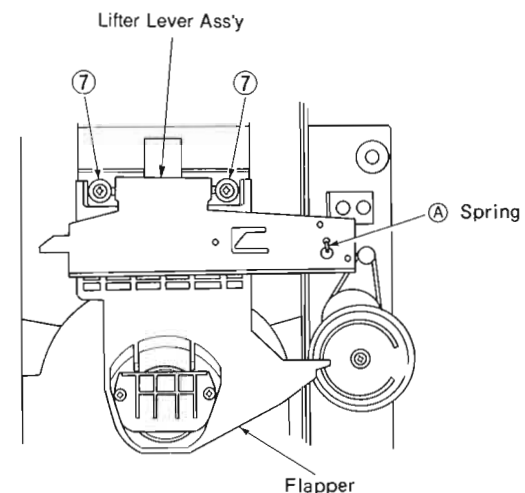


Fig. 4

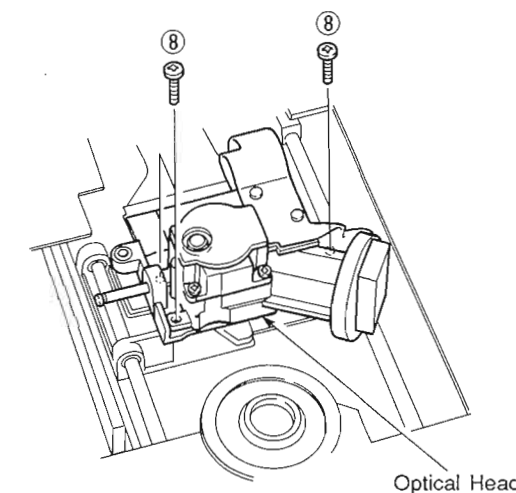


Fig. 5

Note

Wobble or warp tolerance of Disc hub is within 10 μm. Be careful not to scratch or damage this disc hub.

注意

ターンテーブルの傾き精度は、10 μm以内ですので、無理な力を加えたりキズを付けないように気をつけること。

ADJUSTMENTS/調整

ADJUSTMENT MEASURING EQUIPMENT/TEST TOOLS

● Measuring instrument

- Oscilloscope: Dual Channel (2 Channel) Oscilloscope
Bandwidth 100MHz or greater
- Laser power meter: Advantest TQ8215 or equivalent
- Sencer unit: Advantest TQ82021 or equivalent
- Audio frequency oscillator (A.F OSC)
- AC voltmeter (ACVM 2 channel)
- Digital voltmeter (DCVM)
- Frequency counter (100MHz or greater)

● Test discs: TX911730 SONY YEDS-18

- TX913510 Asymmetric Adjustment (12cm)
- TX913520 OPC Adjustment (12cm)
- TX913530 Recorded disc (8cm)
- TX911920 A-BEX 70μm eccentricity disc
- YOD-063 Blank disc (12cm)

● Tool: TX913480 Disc depressor weight

● Filter circuit

● 測定器

- オシロスコープ (2ch、100MHz以上)
- レーザーパワーメーター
(ADVANTEST TQ8215 or equivalent)
- レーザーパワーメーター用センサー
(ADVANTEST TQ82021 or equivalent)
- オーディオ周波数発振器 (A.F.OSC)
- ACボルトメーター (ACVM、2チャンネル)
- DCボルトメーター (DCVM)
- 周波数カウンター (100MHz以上)

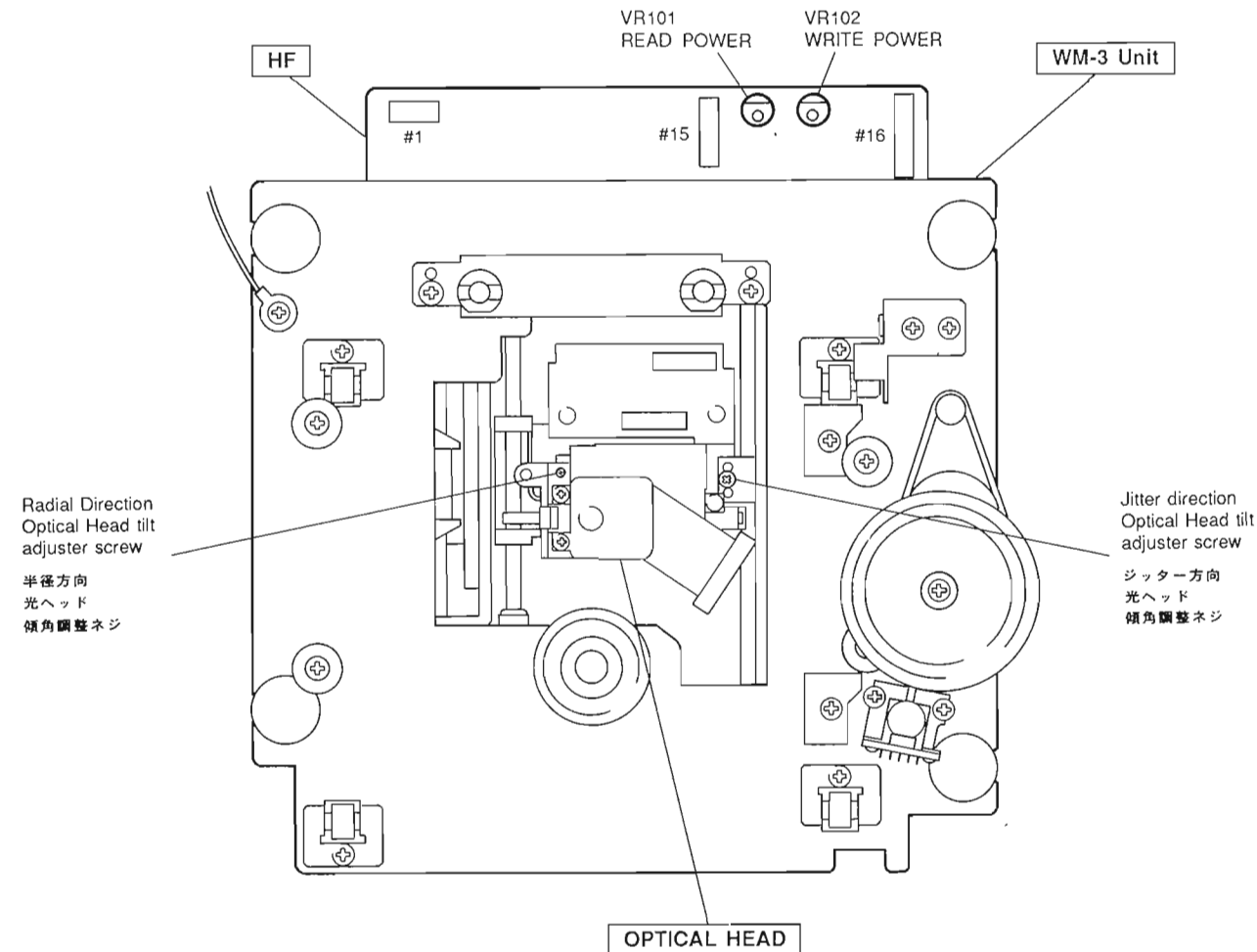
● テストディスク

- TX911730 SONY YEDS-18
- TX913530 記録済みテストディスク (8cm)
- TX913510 アシンメトリ基準ディスク (12cm)
- TX913520 OPCセット用基準ディスク (12cm)
- TX911920 A-BEX 70μm 偏芯ディスク
- YOD-063 記録用ディスク (12cm)

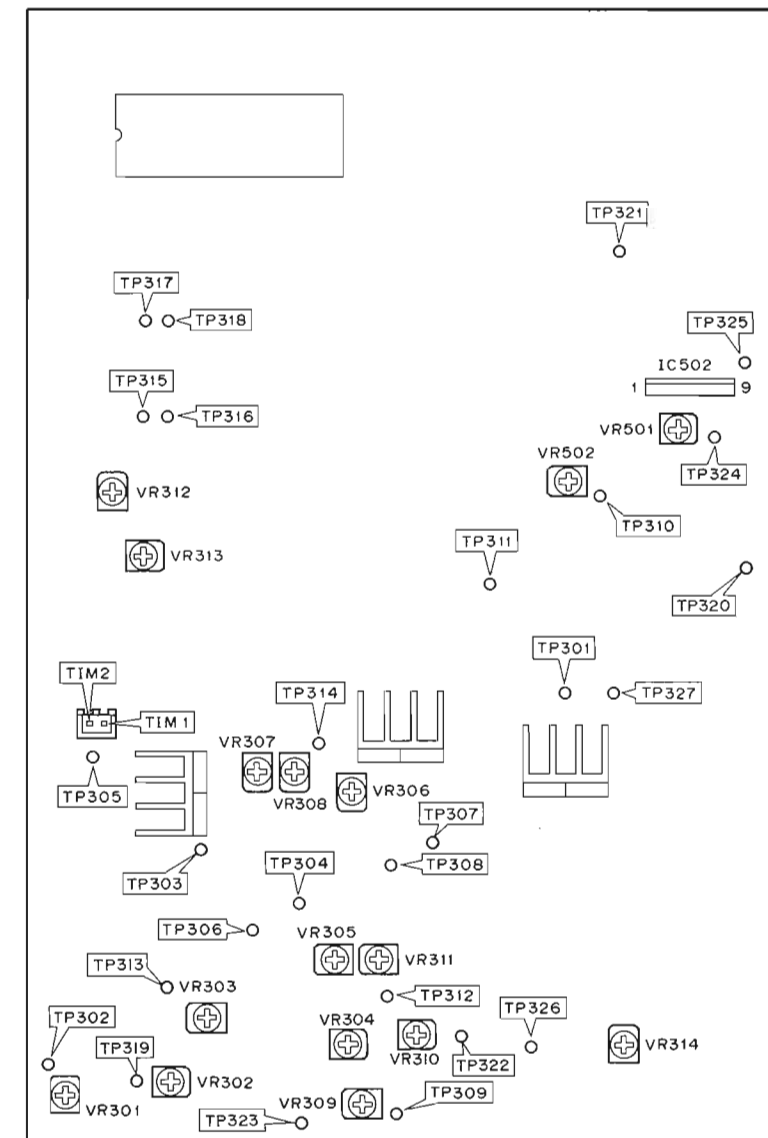
● 工具類

- TX913480 ディスク装着用重り

● 調整用フィルター回路



- * TP301 GND
- * TP302 EFM SIGNAL
- * TP303 STEP 10
- * TP304 STEP 10 AUDIO SIGNAL IN
- * TP305 STEP 4 FOA1
- * TP306 TRACKING ERROR SIGNAL
- * TP307 STEP 11
- * TP308 STEP 11 AUDIO SIGNAL IN
- * TP309 STEP 9 TR LEVEL
- * TP310 STEP 19 V#1
- * TP311 STEP 19 V#2
- * TP312 OFS CPS
- TP313
- * TP314 STEP 13 TRA1
- * TP315 STEP 2 fck
- * TP316 STEP 2 Vc17M
- * TP317 STEP 15 C1
- * TP318 GND
- TP319
- TP320
- * TP321 STEP 3 WVCO
- * TP324 STEP 3
- * TP325 STEP 3
- * TP326 STEP 16
- * TP327 STEP 18 EFM1
- * TIM1 STEP 14
- * TIM2 STEP 14
- * VR301 STEP 15 HF LEVEL adj
- * VR302 STEP 16 W.F.C BAL adj
- * VR303 STEP 10 F.GAIN adj
- * VR304 STEP 8 TR BAL adj
- * VR305 STEP 11 TR GAIN adj
- * VR306 STEP 13 KICK G. adj
- * VR307 STEP 4 F.OFS adj
- * VR308 STEP 7 TR.OFS adj
- * VR309 STEP 9 TE LEVEL adj
- * VR310 STEP 16 W.TR BAL adj
- * VR311 STEP 12 TR OFS CPS adj
- * VR312 STEP 2 VCO adj
- * VR313 STEP 2 Vc17M adj
- * VR314 STEP 18 FEED GAIN adj
- * VR501 STEP 3 WVCO adj
- * VR502 STEP 19 ASYM adj



SERVO CIRCUIT BOARD

Parts replacement and required adjustment

部品交換と調整項目との関係

(1) Electrical parts

| Replaced parts 部品交換力所 | → Required adjustment steps 必要な調整項目 |
|------------------------------------|--|
| 1. HF Circuit Board | → Step 5 Step 7 Step 8 Step 9 Step 16 Step 20 |
| ALPC circuit | → Step 5 Step 20 |
| SPINDLE servo Servo Sensor AMP. | → no adjustments required |
| TRACKING sensor (sampling) | → Step 7 Step 8 Step 9 Step 16 Step 20 |
| FOCUSING sensor | → Step 16 Step 20 |
| 2. Servo Circuit Board | → Step 2 Step 3 Step 4 Step 7 Step 8 Step 9 Step 10 Step 11 Step 12 Step 13 Step 15 Step 16 Step 17 Step 18 Step 19 Step 20 |

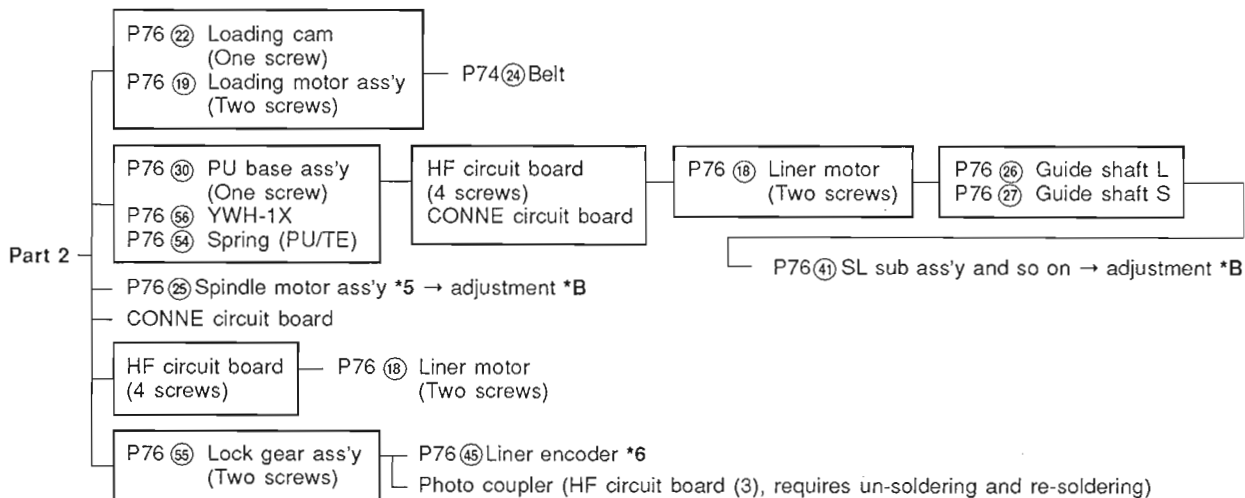
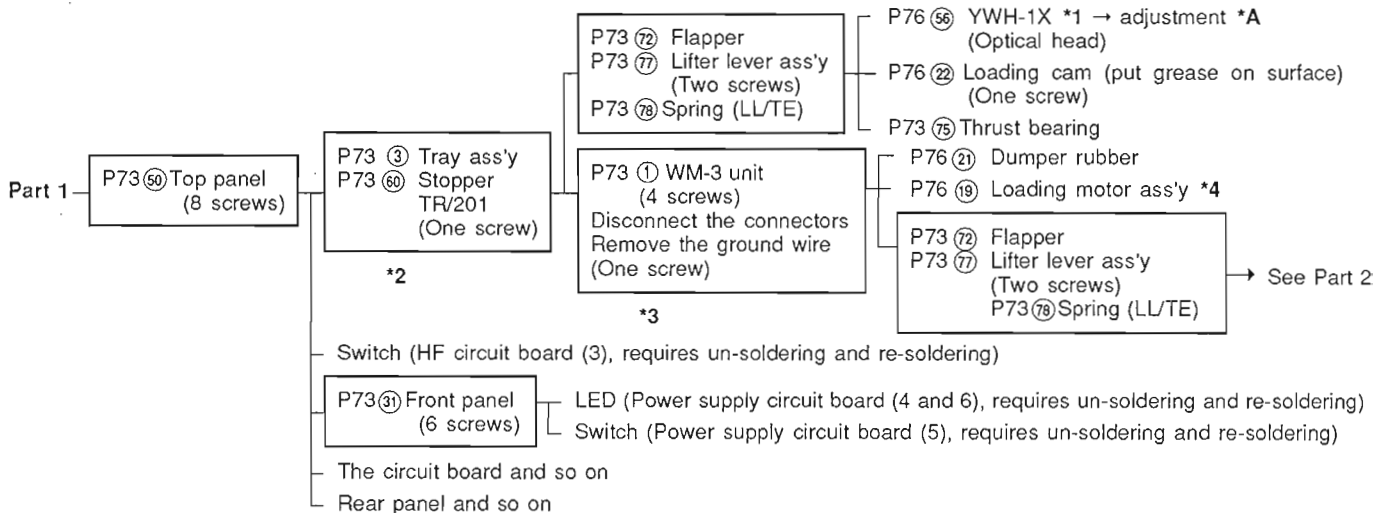
| Replaced parts 部品交換力所 | → Required adjustment steps 必要な調整項目 |
|--------------------------------|---|
| In Servo Circuit Board | |
| FOCUSING servo | |
| around IC301 | → Step 15 |
| around IC303 | → Step 10 Step 16 Step 20 |
| other components | → Step 4 |
| TRACKING servo | |
| around IC308,314 | → Step 8 Step 9 Step 12 Step 16 Step 20 |
| around IC309 | → Step 11 Step 12 |
| around IC313 | → Step 9 |
| other components | → Step 7 |
| FEED servo | |
| around IC315,316 | → Step 18 |
| other components | → No adjustment required |
| around IC501 | → Step 3 |
| around Q504-507, IC518,519 | → Step 19 |
| around IC324(CDVP) Q310,311 | → Step 2 |
| IC326(EEPROM) | → Step 17 Step 20 |
| other components | → no adjustment required |
| 3. AUDIO Circuit Board | → no adjustment required |
| 4. SYS-CON Circuit Board | → no adjustment required |
| 5. PS Circuit Board (1) | → Step 1 |
| 6. Other PS Circuit Board | → no adjustment required |
| 7. Others | → no adjustment required |

(2) Mechanical parts

The flowchart shown below provides basic steps required to remove a part or assembly and also indicates if any adjustment (s) or further procedures are necessary (see cautionary note on page 14).

下記のフローチャートは、メカ部品の取り外しと組立の順序及びその時に必要な調整の内容を示す。

* マークは14ページの注意書きを参照のこと。



Required adjustments steps

| *A | *B |
|---------|---------|
| Step 5 | Step 6 |
| Step 6 | Step 14 |
| Step 7 | Step 16 |
| Step 8 | Step 17 |
| Step 9 | Step 20 |
| Step 10 | |
| Step 11 | |
| Step 12 | |
| Step 13 | |
| Step 14 | |
| Step 15 | |
| Step 16 | |
| Step 17 | |
| Step 19 | |
| Step 20 | |

THE CAUTIONARY NOTATIONS GIVEN BELOW ARE CORRESPOND A NUMBER WITH ASTARISK (*) ON PAGE 13.

Cautionary Notes:

- *1 DO NOT touch the adjustable screws (yellow and stopper screw) unless an adjustment is required.
If you adjust the machine thread adjustment screw, apply lock paint to it after the adjustment has been made.
- *2 When removing the tray assembly, be careful to protect the Open/Close switch and its associated lever.
When replacing or re-assembling, make sure the positions of the TRAY ASSEMBLY, FLAPPER and LIFTER LEVER ASSEMBLY are correct.
- *3 When removing the WM-3 unit, be careful to protect the RUBBER DUMPERS.
When replacing, make sure the HEAD LOCK LEVER and LOCK GEAR ASSEMBLY on the main unit are positioned correctly so that they align and fit together with the new WM-3 unit properly.
- *4 When replacing, make sure that the direction and the position are correct. The label on the loading motor should be positioned on the outside. Make sure that the loading motor is mounted at an optimum distance from the pulley assembly to provide the proper tension for the timing belt. Proper timing belt tension will allow smooth rotation.
- *5 When replacing the spindle motor, be careful not to scratch the surface of turntable which is mounted to the spindle motor.
- *6 Before replacing, observe the linear encoder mounting position and direction. Mounting the new linear encoder in the same position and direction.

◆ RC601 OPERATING PROCEDURES FOR THE YPDR601 ADJUSTMENTS

For most of the YPDR601 test procedures it is required to set the SW1001 TEST switch on the System Control circuit board to the TEST Mode (the ON position).

1. To enter MODES 6, 7 and 8 press the TRACK ►► button until the proper mode number is displayed in the TRACK display and then press the PLAY button.
2. When stepping through the various modes wait for conformation that the mode has been entered correctly (00 00 in the time display - minutes and seconds).
3. SPINDLE MODES
There are three different spindle motor rotation speed control mode settings when in Mode 5 by using the INDEX ►► and ◀◀ buttons. Spindle mode numbers are shown in the INDEX display.
 - ① Index 01: Wobble Mode
This mode controls the speed of the spindle motor by reading the pre-recorded frequency and wobble carrier from a YPDR recording disc.
 - ② Index 02: Radial Mode (default)
This mode controls the speed of the spindle motor by calculating the linear velocity based on the optical pick-up position.
 - ③ Index 03: CD Mode
This mode controls the speed of the spindle motor based on the EFM encoded data stored on a normal CD (Compact Disc).
4. Mode 1 and Mode 5 can also set the laser power for writing.
5. Pushing the STOP button will return to Mode 0 from any Mode. It should be noted that this action does not rest the laser for the reading power mode. Therefore, when an adjustment has been completed, set the laser power for reading before you push the STOP button.
6. The SW1001 TEST switch should be set to the OFF position (NORMAL OPERATING mode) when all adjustments are complete.

注:

- *1. 調整が必要な場合以外は調整ネジに触れないこと。(調整の為に小ネジを動かした場合は調整後に必ずネジロックを塗布のこと。)
- *2. トレーを取り外す時は、Open/Close用のスイッチのレバーを折らないように十分気をつけること。トレーを取り付ける場合は、トレイAss'y、フラッパーとシフターレバーAss'yの位置に注意してそれらを取り付けること。
- *3. WM-3メカユニットの取り外し時はラバーダンパーが切れないように注意すること。WM-3メカユニットを取り付ける場合は、光ヘッドのロックレバーとロックギアAss'yが正しく噛み合っていることを確認する。
- *4. ローディングモーター交換時は、モーターのラベルが外側になるように、又、モーターの軸とプーリーAss'yの軸の間隔を離す方向に取り付けること。(但し、テンションはモーターとギアがスムーズに動くようにする。)
- *5. スピンドルモーターAss'y交換時は、スピンドルモーターに取り付けられているターンテーブル表面に傷を付けないように注意すること。
- *6. リニアエンコーダー交換時は、蒸着面が外側に向くように注意して取り付ける。

◆RC601調整モード操作表

YPDR601の殆どの調整は、シスコンシート内のSW1001を調整モード(ONの位置)にして行います。調整モードの操作手順は次のようになっています。

1. MODE 6、7、8への切り替えは、Trackの►►ボタンでそれぞれ06、07、08を表示させてからPLAYボタンを押して下さい。
2. 電源スイッチをONするとMODE 0の状態になります。MODE 1からMODE 5の間の切り替えは、PLAYボタンを押し、Trackの►►ボタンを押して行きます。それぞれのモードに切り替わるには少し時間が必要ですので、切り替えの都度“Min”と“Sec”の両方に“00”が表示されたことを確認してから次のモードに移して下さい。
3. MODE 5ではINDEX (►►、◀◀)ボタンでスピンドルモーターのモード切り替えが出来ます。
 - ①INDEX 01: WOBBLE MODE
YPDR用ディスクに刻んである溝の中のWobbling carrier信号が規定の周波数になるようにスピンドルモーターを制御する。
 - ②INDEX 02: 半径MODE
ディスクの中心からの距離から演算した線速度でスピンドルモーターを制御する。
 - ③INDEX 03: CD MODE
ディスクに記録されているEFM信号により、スピンドルモーターを制御する。CDプレーヤーと同じモード。未記録部では使用不可。
4. 光ヘッドのWRITE POWERとREAD POWERの切り替えは、MODE 1もしくはMODE 5の時のみ行えます。それ以外のモードでは切り替えられません。MODE 1もしくはMODE 5にセットしてLINEボタンをON又はOFFすることによりWRITE POWERとREAD POWERの切り替えが出来ます。
5. STOPボタンは全ての状態からMODE 0に戻すことが出来ますが、光ヘッドがWRITE POWERの場合READ POWERには切り替わりませんので、調整完了時に必ずREAD POWERにしてからSTOPボタンを押して下さい。
6. 調整終了後は、YPDR601のシスコンシート内のSW1001を必ずノーマルモード(OFFの位置)に戻して下さい。(外側がノーマルモード、内側がテストモードになっています。)

[SETTING THE LASER READ/WRITE POWER MODES]

Note: When the power switch is turned on while in the TEST mode the LINE LED is ON, however, the laser power is set for reading. Initially pressing the LINE button (as instructed below in item 4) will reset the LINE LED to reflect the proper laser power condition (LINE LED OFF = READING).

1. Switch on the power with the SW1001 switch set to the TEST mode (the ON position).
2. Press the PLAY button.
3. Select Mode 1 by pressing the TRACK ►► button.
4. Press the LINE button once to sequence the LINE LED OFF.
5. At this point, you can press the LINE button to select the appropriate laser power.

IMPORTANT NOTES:

- a. When the laser power set for writing, the YPDR601 "RECORD" LED is ON.
- b. DO NOT select other adjustment modes with the laser set to writing (eg. laser power adjustment). This situation will damage recorded data on the test disc. To avoid this, the laser power should always be set for reading mode once an adjustment has been completed. To confirm that the YPDR601 "RECORD" LED is OFF.

【光ヘッドのWRITE POWERのセット方法】

YPDR601をテストモードにして電源を入れた場合はLINE LEDは点灯しますが、光ヘッドはREAD POWERにセットされています。テストモードで電源スイッチを入れた場合は、調整時の光ヘッドのパワーセットを容易にするために次の操作を行って下さい。













1. MODE 0でPLAYボタンを押す。
2. Trackの►►ボタンを押してMODE 1にする。この状態はLINEのLEDは点灯していますが光ヘッドの出力はREAD POWERです。
3. 次にLINEボタンを一回押してLEDを消してから再びLINEボタンを押してLEDを点灯します。この操作をすることにより光ヘッドはWRITE POWERになります。同時にYPDR601に"RECORD"の表示が出ます。
4. 再度LINEボタンを押してREAD POWERに戻す。YPDR601の"RECORD"の表示は消える。

以上の操作によりLINEのLEDの表示が消えていればREAD POWER、点灯していればWRITE POWERとなります。

従いまして、調整を行なう場合は、SW1001を調整モードにして電源を入れたらLINEボタンを一回押してLINE LEDを消しておく、LINEのLED OFFがREADINGで、ONでWRITEのパワーになり、LINE LEDとの関連が明確になります。

注：

- a. WRITE POWERにした場合はYPDR601に"RECORD"のLEDが点灯します。
- b. MODE 1やMODE 5でWRITE POWERにしたまま他のモードに移ると、これらのモード以外ではREAD POWERに切り替えられず、テストディスクの内容を破壊しますので、WRITE POWERでの調整が終わった場合は必ずREAD POWERにしてから他のモードに切り替えて下さい。

| Mode | Function status | Track | Index | Min | Sec |
|------|--|-------|-------|-----|-----|
| 0 | All Servo off <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>Stop</p>  </div> <div style="text-align: center;"> <p>Play</p>  </div> </div> | 08 | 01 | Cd | |
| 1 | LD on <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>Track</p>  </div> <div style="text-align: center;"> <p>Track</p>  </div> </div> | 01 | 01 | 00 | 00 |
| 2 | Spindle Motor on <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>Track</p>  </div> <div style="text-align: center;"> <p>Track</p>  </div> </div> | 02 | 01 | 00 | 00 |
| 3 | Focus on <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>Track</p>  </div> <div style="text-align: center;"> <p>Track</p>  </div> </div> | 03 | 01 | 00 | 00 |
| 4 | Tracking on <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>Track</p>  </div> <div style="text-align: center;"> <p>Track</p>  </div> </div> | 04 | 01 | 00 | 00 |
| 5 | Feed on <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>Track</p>  </div> <div style="text-align: center;"> <p>Track</p>  </div> </div> | 05 | 02 | 00 | 00 |

[ERROR CODE GUIDE]

When some problem occurs with the YPDR601 and RC601 the ALARM indicator lights up. In this case, depress the DISPLAY button and the TrINC button on RC601 simultaneously, the TRACK number LED will then display an ERROR CODE. The ERROR CODES, their associated descriptions, and probable causes of the error (if applicable) are as follows:

| CODE | DESCRIPTION and PROBABLE CAUSE OF ERROR |
|------|---|
| 01 | PLL un-locked (1) Digital audio signal or word clock may have been lost, check the connections. (2) Another sampling frequency other than 44.1 KHz has been received by the unit. |
| 02 | Non standard disc is used (1) Disc format (PRE or AFTER) does not match the setting of the TOC switch on the RC601 (rear panel). |
| 03 | I/O communication failure (1) 50 pin cable connections are bad - check connections. (2) No terminator is connected. (3) ID select switch is set to improper position. |
| 04 | Optical head is locked (1) Head lock lever may be in mechanically the locked position or jammed. |
| 05 | Initial focus error |
| 06 | Spindle motor un-locked |
| 07 | Cannot find optimum power point |
| 08 | Optical head positioning error |
| 09 | Input is non-standard signal (1) The input signal does not have a sampling frequency of 44.1 KHz. (2) The input signal data is not audio data. |
| 0A | Initial tracking error |

[エラーコードの説明]

ALARMインジケーターが点灯した場合、なんらかの異常が発生しています。[DISPLAY] と [Tr INC] のボタンを同時に押しとディスプレイのTRACK番号表示器にエラー内容がコードで表示されます。

| エラーコード | 不良内容 |
|--------|---|
| 0 1 | PLLロック外れ …デジタルオーディオ信号配線不良。 本体とリモコンのスイッチ設定ミス。 (例1) RC601が INPUT SELECTOR ANALOG OR DIGITAL “DIN” EXT W.SYNC ON のセッティングでYPDR601から $f_s=44.1$ KHz 以外のW.SYNCの信号が送られた場合。 (例2) RC601が INPUT SELECTOR DIGITAL AES/EBU のセッティングでYPDR601から $f_s=44.1$ KHz 以外のAES/EBUの信号が送られた場合。 |
| 0 2 | TOC先書き、後書きの設定違い。または、設定時間の間違い。 (例1) RC601が PRE/AFTER PRE(AFTER) のセッティングでYPDR601に“A.TOC FOR- MAT (P.TOC FORMAT)”のディスクを セットした場合。 (例2) RC601が PRE/AFTER PRE 10S/30S 10S(30S) のセッティングでYPDR601に“30S FORMA- T (10S FORMAT)”のディスクをセットし た場合。 |
| 0 3 | I/O通信不能 …リモコンとの接続不良もしくはシステムの相互 連絡不良、又は、本体とリモコンのスイッチ設定 ミス。 (例1) 50ピンケーブルの接続不良。 (例2) RC601のID SWITCHの台数セットとYP DR601の使用台数が合わない場合。 |
| 0 4 | フィードメカロック …フィードメカロックが解除されていない場合。 |
| 0 5 | 初期フォーカス異常。 |
| 0 6 | 初期スピンドル異常。 |
| 0 7 | レーザーパワー最速値検出不能。 |
| 0 8 | ポジショニングエラー |
| 0 9 | 非オーディオ入力、または、f_sが44.1 KHzでない信号。 |
| 0 A | 初期トラッキングエラー …初期トラッキング異常。 |

※エラーを解除するには内容に応じて、障害を取り除く、トレイを開ける、電源を再投入する等の操作を行なって下さい。

[ADJUSTMENT STEPS]

- STEP 0:** PREPARATIONS
STEP 1: ANALOG CIRCUIT POWER SUPPLY VOLTAGE ADJUSTMENT
STEP 2: CDVP AND VCO ADJUSTMENT
STEP 3: WVCO ADJUSTMENT
STEP 4: FOCUS OFFSET ADJUSTMENT
STEP 5: LASER POWER ADJUSTMENT
STEP 6: OPTICAL HEAD TILT, ROUGH ADJUSTMENT
STEP 7: TRACKING OFFSET ADJUSTMENT
STEP 8: TRACKING BALANCE ADJUSTMENT
STEP 9: TRACKING LEVEL ADJUSTMENT
STEP 10: FOCUS GAIN ADJUSTMENT
STEP 11: TRACKING GAIN ADJUSTMENT
STEP 12: TRACKING OFFSET SUPPLEMENTARY ADJUSTMENT
STEP 13: KICK GAIN ADJUSTMENT
STEP 14: OPTICAL HEAD OPTIMUM TILT ADJUSTMENT
STEP 15: HF LEVEL ADJUSTMENT
STEP 16: FOCUS AND TRACKING BALANCE ADJUSTMENT FOR WRITING
STEP 17: LINEAR ENCODER POSITION SELF ADJUSTMENT
STEP 18: FEED GAIN ADJUSTMENT
STEP 19: ASYMMETRIC DETECTION ADJUSTMENT
STEP 20: OPC SET RANK SELF ADJUSTMENT
STEP 21: AUDIO CIRCUIT ADJUSTMENT

| |
|--------------------------------------|
| STEP 0 PREPARATIONS |
|--------------------------------------|

Note: Adjustment preparations should be performed with the power switch is turned off.

- ① Release the head lock.
- ② Remove the flapper and tray. Since the flapper is removed, it is necessary to use the disc depressor weight (part number TX913480).
- ③ If at any stage the optical head is replaced, turn VR101 and VR102 on the HF circuit board counterclockwise 5 full turns and restart the test procedure.
- ④ Connect the terminator to the IN/OUT of the YPDR601.
- ⑤ Set the YPDR601 DRIVE ID to number 0 located on the rear panel.
- ⑥ Set the SW1001 TEST mode switch on the System Control circuit board to the ON position.
Note: Set the SW1001 back to OFF (NORMAL) position when adjustments are completed.
- ⑦ Set the RC601 EXT.W.SYNC switch to the OFF position.
- ⑧ Set the RC601 INPUT SELECT switch to the ANALOG position.
- ⑨ Set the RC601 DRIVE SELECT to number 0.
- ⑩ Set the RC601 TOC (PRE/AFTER) switch to the PRE position.

【調整手順】

- Step 0**
◆調整準備
- Step 1**
◆アナログ系の電源調整 (PSシート)
- Step 2**
◆CDVP調整、VCO調整 (Servoシート)
- Step 3**
◆WVCOセンター周波数の調整 (Servoシート)
- Step 4**
◆フォーカスオフセット調整 (Servoシート)
- Step 5**
◆光ヘッドのパワー調整 (HFシート)
- Step 6**
◆傾角粗調整 (光ヘッド)
- Step 7**
◆トラッキングオフセット調整 (Servoシート)
- Step 8**
◆トラッキングバランス調整 (Servoシート)
- Step 9**
◆トラッキングレベル調整 (Servoシート)
- Step 10**
◆フォーカスゲイン調整 (Servoシート)
- Step 11**
◆トラッキングゲイン調整 (Servoシート)
- Step 12**
◆トラッキングオフセット補正調整 (Servoシート)
- Step 13**
◆キックゲイン調整 (Servoシート)
- Step 14**
◆光ヘッドの最良再生傾角調整 (光ヘッド)
- Step 15**
◆HFレベル調整 (Servoシート)
- Step 16**
◆FOCUS&TRACKING (Write) BALANCE微調整 (Servoシート)
- Step 17**
◆50mm位置調整
- Step 18**
◆フィードゲイン調整 (Servoシート)
- Step 19**
◆アシンメトリ検出調整
- Step 20**
◆OPCセットランク調整
- Step 21**
◆オーディオ回路の調整 (Audioシート)

注: () 内のテストポイントの番号はBバージョンの基板に表示されている番号です。

| |
|---|
| Step 0 ◆調整準備 (電源オフの状態で行うこと。) |
|---|

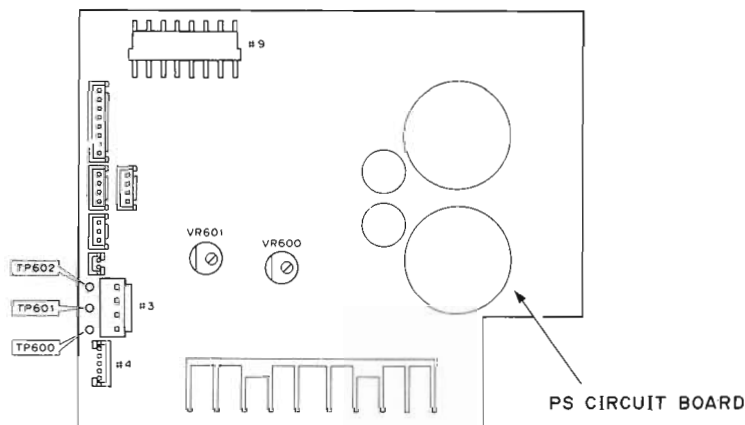
- ① YPDR601のヘッドロックを解除する。
- ② 調整の内容によってはフラッパーとトレイを外す。
その場合、テストディスクはディスク装着用重りで固定すること。
- ③ 光ヘッドを交換した時は電源スイッチを入れる前に必ずHFシートのVR101、VR102を5回転以上左に回す。尚、このVRには特にクリックはありません。
- ④ YPDR601にターミネーターを取り付ける。
- ⑤ YPDR601のリアパネルのDRIVE IDを“0”にする。
- ⑥ YPDR601のSYSCONシートのSW1001をテストモード (ONの位置) にする。(出荷時はノーマル状態 (OFFの位置) になっていること。)
- ⑦ RC601のリアパネルのディップスイッチのEXT.W.SYNCを“OFF”にする。
- ⑧ RC601のリアパネルのINPUT SELECTを“ANALOG”にする。
- ⑨ RC601のリアパネルのDRIVE SELECTを“0”にする。
- ⑩ RC601のリアパネルのTOC SELECTを“PRE”にする。

IMPORTANT NOTE BEFORE PROCEEDING:

Reference pages 10 and 11 for TP testpoints and adjustment VR trim pots.

STEP 1**ANALOG CIRCUIT POWER SUPPLY VOLTAGE ADJUSTMENT**

- ① Remove connectors #3, #4, and #9 from the PS circuit board.
- ② Turn the power on.
- ③ Connect a digital voltmeter to TP600 (+14V) and TP601 (GND).
- ④ Adjust VR600.
Adjustment value: +14 VDC +0.1/- 0 Vdc
- ⑤ Connect a digital voltmeter to TP602 (-14V) and TP601 (GND).
- ⑥ Adjust VR601.
Adjustment value: -14 VDC +0/- 0.1 VDC
- ⑦ Turn the power off and wait approximately 2 minutes. After this time the capacitors are sufficiently discharged which will avoid possible damage when re-connecting.
- ⑧ Re-attach connectors #3, #4, and #9 to the PS circuit board.
- ⑨ Turn the power on and confirm that the two LEDs on PS circuit board turn on indicating a good supply condition.

**STEP 2****CDVP AND VCO ADJUSTMENT****1. CDVP adjustment**

- ① Connect a digital voltmeter to TP316 (VC17M) and TP301 (GND).
- ② Adjust VR313.
Adjustment value: VC17M = +2.5VDC +/- 0.05VDC

2. VCO frequency adjustment

- ① Connect the frequency counter to TP315 (fck) and TP301 (GND).
- ② Adjust VR312.
Adjustment value: fck = 4.3218MHz +/- 0.02MHz

STEP 3**WVCO ADJUSTMENT**

- ① Short circuit between TP324 and TP325 with a jumper wire.
- ② Connect the frequency counter (10:1) probe to TP321 (WVCO) and TP301 (GND).
- ③ Adjust VR501 (WVCO adj).
Adjustment value: WVCO = 22.05KHz +/- 0.1KHz
- ④ Remove the short circuit wire.

STEP 4**FOCUS OFFSET ADJUSTMENT**

- ① Connect a digital voltmeter to TP305 (FOA1) and TP301 (GND).
- ② Adjust VR307.
Adjustment value: 0.0 VDC +/- 50mVDC

注：調整箇所、テストポイントは、10頁と11頁のイラストを参照のこと。

Step 1**◆アナログ系の電源調整 (PSシート調整)**

- ① PSシートのコネクタ # 3、# 4、# 9 を抜く。
(他の配線はそのままが良い)
- ② YPDR601のリアパネルの電源スイッチをONする。
- ③ TP600とTP601 (GND) 間にDCボルトメーターを接続しVR600にて電圧を $+14.0 \pm 0.1$ Vに調整する。
- ④ TP602とTP601 (GND) 間にDCボルトメーターを接続しVR601にて電圧を -14.0 ± 0.1 Vに調整する。
- ⑤ 電源スイッチをOFFしPSシート内のLEDが消灯することを確認する。
(回路内のコンデンサーを十分に放電させる。)
- ⑥ コネクタ # 3、# 4、# 9 を接続する。
- ⑦ 電源スイッチをONしPSシート内のLEDが点灯することを確認する。

Step 2**◆CDVP調整、VCO調整****1. C17M調整**

- ① VR313にて、TP316 (TP16) の電圧値 V_{C17M} を下記の値に調整する。
調整値 $V_{C17M} = 2.50 V_{DC} \pm 0.05 V_{DC}$

2. VCOフリーラン周波数調整

- ① VR312にて、TP315 (TP15) の周波数 f_{CK} を下記の値に調整する。
調整値 $f_{CK} = 4.3218 MHz \pm 0.02 MHz$

Step 3**◆WVCOセンター周波数の調整**

- ① TP324 (TP24) と TP325 (TP25) をジャンパー線でショートする。
- ② 10 : 1 プローブを介して周波数カウンタをTP321 (TP21、WVCO) に接続する。
- ③ VR501 (WVCO adj) を回し、下記の周波数に調整する。
調整値 $F_{WVCO} = 22.05 KHz \pm 0.1 KHz$
- ④ ①のショートジャンパーを取り外す。

Step 4**◆フォーカスオフセット調整**

- ① VR307にて、TP305 (TP 5、FOA 1) の電圧を下記の値に調整する。
調整値 $0 V_{DC} \pm 50 mV_{DC}$

STEP 5 LASER POWER ADJUSTMENT

WARNING:

The light produced by the laser has a wavelength of 790nm, putting it in the near-infrared range. Due to the high output power of this laser it should not be viewed with the naked eye. Therefore, in the interests of safety, avoid looking directly into the optical head.

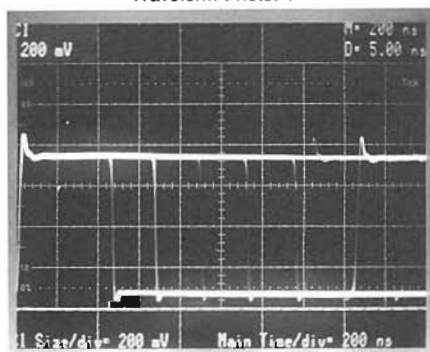
LASER POWER ADJUSTMENT FOR READING

- ① Set the laser power meter to the average (DC or CW) mode and the wave-length to 790nm.
- ② Confirm that VR101 and VR102 on the HF circuit board have been turned counterclockwise 5 full turns to achieve the minimum setting.
- ③ Confirm that the SW1001 TEST switch on the System Control circuit board is set to the ON position (TEST MODE).
- ④ Switch on the YPDR601 and the RC601.
- ⑤ Select Mode 1 (ref. page 14).
- ⑥ Place the laser power meter sensor near the upper portion of the optical head objective lens. The value indicated on the meter may vary depending on the sensor tilt angle. Therefore, make adjustments with it in the position which yields the maximum value.
- ⑦ VR101 is very sensitive, carefully adjust VR101 clockwise. Adjustment value: $PL = 0.5mW \pm 0.05mW$

LASER POWER ADJUSTMENT FOR WRITING

- ① Select Mode 1 and then select the laser writing mode by pressing the LINE button (ref. pages 14 and 15). (YPDR601 "RECORD" LED ON)
 - ② Place the laser power meter sensor near the upper portion of the optical head objective lens.
 - ③ VR102 is very sensitive, carefully adjust VR102 clockwise. Adjustment value: $PL = 3.40mW \pm 0.1mW$
- Note: a. The value indicated on the meter may vary depending on the sensor tilt angle. Therefore, make adjustments with it in the position which yields the maximum value.
b. The writing laser power adjustment value is an average indication. The peak power is approximately 8.0mW and this does not include the over-shoot portion of the waveform.
- ④ Connect the oscilloscope probe to the laser power meter monitor output and set the laser power meter to the peak mode (refer to Waveform photo 1).
 - a. If the waveform looks like the one shown in A of fig. 1 then the optical head is operating correctly. However, if the optical head is defective, the monitor waveform will look like the one shown B in fig. 1. In this case, the optical head should be replaced.
 - b. Set Mode 0 by pressing the stop button and select Mode 8 by pressing TRACK ►► button only (until display shows 08 01 for TRACK and INDEX and nothing is shown in MIN and SEC displays). Press PLAY and observe the laser output power rising in increments of 0.5mW from 6mW to 10mW. To observe this waveform again, press the stop button and repeat same procedures.
 - ⑤ Change to the reading mode by pressing the LINE button (ref. page 15). (YPDR601 "RECORD" LED OFF)
 - ⑥ Select Mode 0 by pressing the STOP button (ref. page 14).

Waveform Photo. 1



波形写真1

Step 5

◆光ヘッドのパワー調整

- 注：・調整するときには、YPDR601の電源をONする前にHFシート内のVR101とVR102を左ネジ方向に5回転させて最小の値にする。
・レーザー光は波長790nmの近赤外光であり、見た目より強い光パワーが射出されるので安全のため光ヘッドの対物レンズを直視しないこと。

◇READ POWER調整

- ①レーザーパワーメーターをAverage (DC or CW) モード、波長を790nmに設定する。
- ②HFシートVR101、102が左ねじ方向に5回転したことを再度確認する。
- ③SYSCONシートのSW1001が調整モード (ONの位置) になっていることを確認する。
- ④YPDR601とRC601の両方の電源スイッチをONする。
- ⑤MODE 1にする。
- ⑥レーザーパワーメーターのセンサーを光ヘッド対物レンズ上部近傍に置き、VR101を徐々に右ネジ方向に回して調整する。

調整値 $P_L = 0.5mW \pm 0.05mW$

- 注：センサーは光ヘッドのレンズに平行よりわずかに傾ける。尚、センサーの角度により指示値が変化するので最大指示になるポイントにて調整すること。

◇WRITE POWER調整

- ①LINEボタンを押して光ヘッドの出力をWrite Powerの状態にする。(ページ14参照のこと)
(YPDR601 "RECORD" LED ON)
- ②レーザーパワーメーターのセンサーを光ヘッド対物レンズ上部近傍に置き、VR102を徐々に右ネジ方向に回して調整する。

調整値 $P_L = 3.40mW \pm 0.1mW$

注：

- a. センサーは光ヘッドのレンズに平行よりわずかに傾ける。尚、センサーの角度により指示値が変化するので最大指示になるポイントにて調整すること。
 - b. 上記の調整値はAverageの指示値であり、PEAK TOPパワーは約8.0mWである。
- ③光パワーメーターをPeakモードにしモニター出力をオシロスコープに接続する。
 - a. WRITE POWERの光出力が写真1のような波形になっていることを確認する。もし、Fig. 1のBのような波形が現れる場合は光ヘッド不良なので交換のこと。
 - b. 調整後、STOPボタンを押しMODE 0の状態にしてから、Trackの►►ボタンを押して表示を"08"(MODE 8)にし、PLAYボタンを押し、光出力が6mW相当から10mW相当まで0.5mWステップで9段階上がることを確認する。
 - ④調整終了後はLINEボタンを押し、光出力を"READ POWER"にする。(YPDR601の"RECORD"のLEDが消えていることも確認する)
 - ⑤STOPボタンを押してMODE 0にする。
- 注：調整後はVR101を動かさないこと。

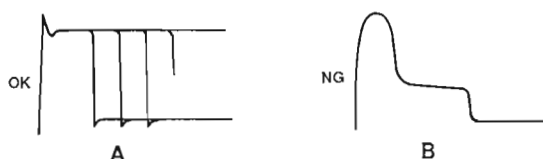


Fig. 1

STEP 6
OPTICAL HEAD TILT ADJUSTMENT
(ROUGH ADJUSTMENT)

Note: A rough adjustment is sufficient at this step and it is not necessary to adjust the tilt angle too precisely.

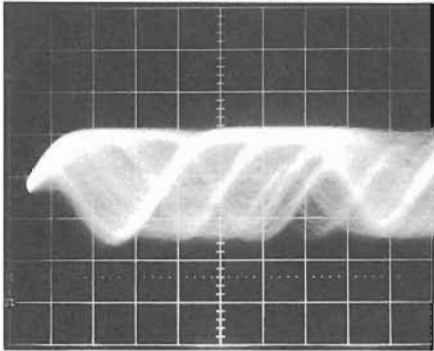
- ① Connect the oscilloscope probe to TP302 (EFM) and TP301 (GND).
 * Oscilloscope Settings: AC coupling,
 H. Range = 0.5 μ S/DIV.
 V. Range = 0.1V/DIV.
- ② Place the TX913530 (8cm) test disc on the turntable and hold disc in place with depressor weight.
- ③ Select Mode 3 (ref. page 14).
- ④ It is not required to adjust tilt angle if waveform at TP302 is similar to Waveform Photo 2 or 3. If waveform is similar to Waveform Photo 4 or 5, adjust the optical head jitter and radial direction (ref. fig. 2).

Step 6
◆傾角粗調整

ここは粗調であり、シビアに調整する必要はない。

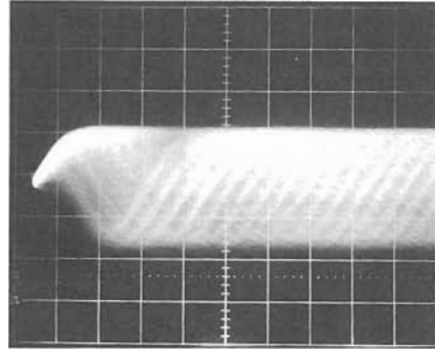
- ①オシロスコープのプロブをサーボシートのTP302(TP 2、EFM)とTP301(TP 1、GND)に接続する。
 (AC coupling H.range 0.5 μ S/div,
 V.range 0.1V/div)
- ②テストディスクTX913530(8cm)をセットしてディスク装着用重りで固定する。
- ③MODE 3にする。
- ④TP302(TP 2)の波形が写真4や5のような場合は、光ヘッドのジッタ方向と半径方向の調整ネジを回して調整する。写真2や3の波形の場合は調整不要。(Fig. 2)

Waveform Photo. 2



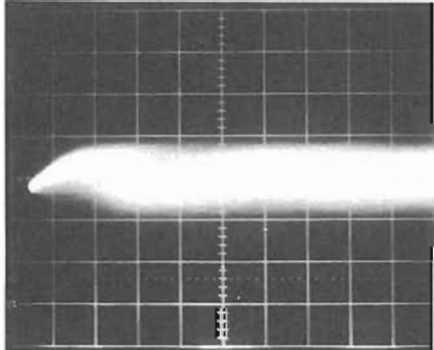
波形写真 2

Waveform Photo. 3



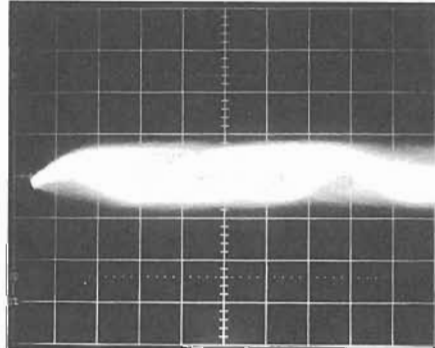
波形写真 3

Waveform Photo. 4



波形写真 4

Waveform Photo. 5



波形写真 5

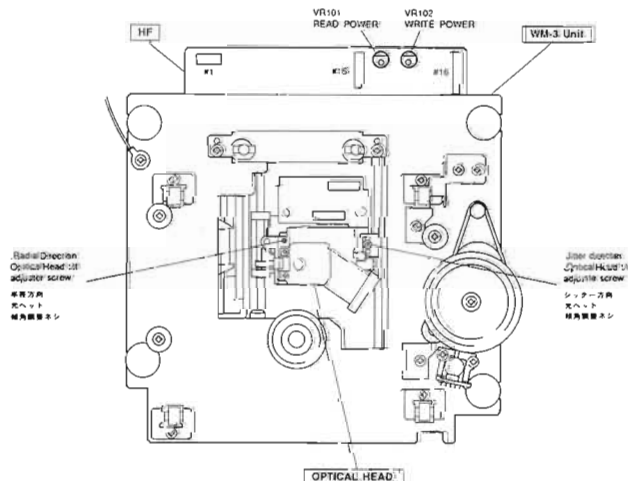


Fig. 2

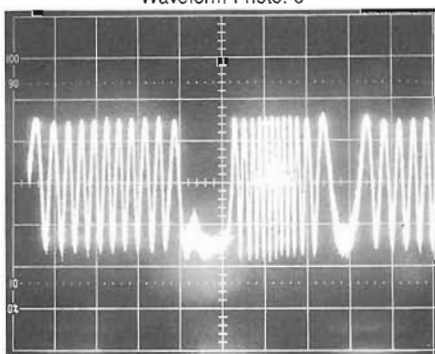
**STEP 7
TRACKING OFFSET ADJUSTMENT**

- ① Place the TX913530 (8cm) test disc on the turntable and hold disc in place with depressor weight.
- ② Connect the oscilloscope probe of CHANNEL 1 to TP306 (Tracking error signal) and the ground lead to TP301 (GND). Connect the CHANNEL 2 probe to TP312 (OFS CPS) and TP301 (GND).
* Oscilloscope Settings: DC coupling, H.range = 20mS/DIV.,
CH1 V. Range = 0.2V/DIV.
CH2 V. Range = 10mV/DIV.
- ③ Select Mode 3 (ref. page 14). When the focus servo is locked, the TP306 waveform will look similar to that of Waveform Photo 6.
- ④ Adjust the DC center voltage at TP312 with VR308.
Adjustment value: 0.0 VDC +/- 10mVDC

**Step 7
◆トラッキングオフセット調整**

- ① テストディスクTX913530 (8 cm) をセットしてディスク装着用重りで固定する。
- ② オシロスコープのプロープのCH 1 をTP306 (TP 6、トラッキングエラー) とTP301 (TP 1、GND) に、CH 2 をTP312 (TP12、オフセット補正) とTP301 (TP 1、GND) に接続する。
(DC coupling H.range 20mS/div,
V.range CH 1 0.2V/div, CH 2 10mV/div)
- ③ MODE 3 にする。フォーカスがかかるとCH 1 (TP306、TP 6) に写真6のトラッキングエラー信号が観測される。
- ④ VR308にて、TP312(TP12)の電圧を下記の値に調整する。
調整値 0 V_{DC} ± 10mV_{DC}

Waveform Photo. 6



波形写真 6

**STEP 8
TRACKING BALANCE ADJUSTMENT**

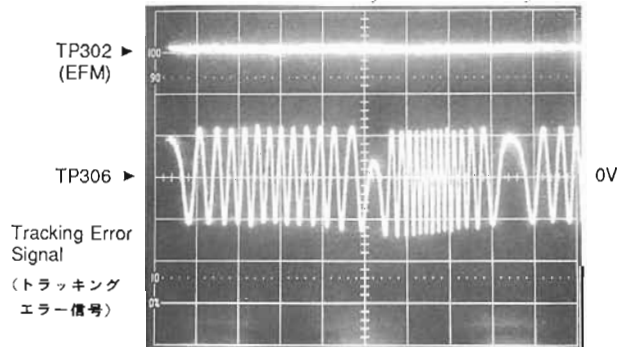
- ① Place the TX913530 (8cm) test disc on the turntable and hold disc in place with depressor weight.
- ② Connect the oscilloscope probe of CHANNEL 1 to TP302 (EFM terminal) and the ground lead to TP301 (GND). Connect the CHANNEL 2 probe to TP306 (Tracking error signal) and TP301 (GND).
* Oscilloscope Settings: DC coupling, H. Range = 20mS/DIV.
CH1 V. Range = 0.2V/DIV.
CH2 V. Range = 0.5V/DIV.
- ③ Select Mode 3 (ref. page 14).
- ④ Adjust VR304 so that the TP306 tracking error signal center value of both the recorded and the blank areas become as close to 0 VDC as possible.

Note: To perform this adjustment, carefully move the optical head position by hand from the recorded area to the blank area of the disc as required by the adjustment. This adjustment may require several movements between the recorded and blank areas. Initially, set one area to 0 VDC then check the other area and view the amount of offset, adjust the trimpot to set this to half its current level. Repeat these steps until an optimum setting is achieved. The TP306 tracking error signal waveform should look similar to Waveform Photo 7 and 8.

**Step 8
◆トラッキングバランス調整**

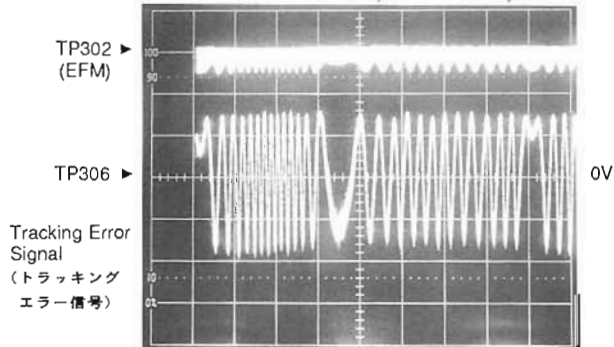
- ① テストディスクTX913530 (8 cm) をセットしてディスク装着用重りで固定する。
 - ② オシロスコープのプロープのCH 1 をTP302 (TP 2、EFM) とTP301 (TP 1、GND) に、CH 2 をTP306 (TP 6、トラッキングエラー) とTP301 (TP 1、GND) に接続する。
(DC coupling H.range 20mS/div,
V.range CH 1 0.2V/div, CH 2 0.5V/div)
 - ③ MODE 3 にして、CH 2 (TP306、TP 6) の記録部と未記録部のトラッキングエラー信号の中心値が 0 V_{DC} になるようにVR304にて調整する。(写真7及び8)
- 注:** 光ヘッドの移動は手で行い、記録部と未記録部に位置の確認はTP302のEFM信号で行う。記録部では写真8のようにEFM信号が見えるが未記録部では写真7のようにDC的な波形となる。

Waveform Photo. 7 (Un-recorded area)



波形写真 7 (未記録部)

Waveform Photo. 8 (Recorded area)



波形写真 8 (記録部)

STEP 9 TRACKING LEVEL ADJUSTMENT

- ① Place the test disc TX911730 (SONY YEDS-18) on the turntable and hold disc in place with depressor weight.
- ② Connect the oscilloscope probe to TP309 (Tracking error signal) and TP301 (GND).
* Oscilloscope Settings:
AC coupling, H. Range = 0.5mS/DIV.
V. Range = 0.2V or 0.5V/DIV.
- ③ Select Mode 3 (ref. page 14).
- ④ Adjust the amplitude at TP309 (Tracking error) with VR309.
Adjustment value: 1.0 V_{pp} +/- 0.1 V_{pp}

STEP 10 FOCUS GAIN ADJUSTMENT

- ① Place the test disc TX911730 (SONY YEDS-18) on the turntable and hold disc in place with depressor weight.
- ② Connect the oscilloscope probe to TP306 (Tracking error signal) and TP301 (GND).
* Oscilloscope Settings: DC coupling, V. Range = 0.2V/DIV.
H. Range = 20mS/DIV.
- ③ Connect the test filter and two CHANNEL AC voltmeter to the Servo circuit board as shown in fig. 3 (CH1=TP303, CH2=TP305 and GND=TP301).
- ④ Select Mode 5 (ref. page 14).
You can confirm the YPDR601 operation by observing the TP306 tracking error signal.
- ⑤ Apply a 1.5 KHz, 0.4 Vrms sine wave signal between TP304 and TP301 (GND) using a sine wave generator.
Note: Connect the ground lead of the sine wave generator output prior to connecting the signal lead to prevent the YPDR601 circuit damage.
- ⑥ Adjust the difference between channels on the AC voltmeter with VR303.
Adjustment value: CH2-CH1 = 13dB +/- 1dB

Step 9 ◆トラッキングレベル調整

- ① テストディスクTX911730 (SONY YEDS-18) をセットしてディスク装着用重りで固定する。
- ② オシロスコープのプロブのCH1をTP309 (TP9、TE. LEVEL) とTP301 (TP1、GND) に接続する。
(AC coupling H.range 0.5mS/div,
V.range 0.2V or 0.5V/div)
- ③ MODE 3 にする。
- ④ VR309にて、TP309 (TP9) のトラッキングエラー信号の振幅を下記の値に調整する。
調整値 1.0V_{pp} ± 0.1V_{pp}

Step 10 ◆フォーカスゲイン調整

- ① テストディスクTX911730 (SONY YEDS-18) をセットしてディスク装着用重りで固定する。
- ② オシロスコープのプロブをTP306 (TP6、トラッキングエラー) とTP301 (TP1、GND) に接続する。
(DC coupling H.range 20mS/div,
V.range 0.2V/div)
- ③ Fig. 2 の様にサーボシートにフィルターとACボルトメーター (2ch) を接続する。
- ④ MODE 5 にする。
この時オシロスコープでTP306 (TP6) を観測しているとYPDR601の動作状態がわかる。
- ⑤ オーディオ発振器の出力を正弦波1.5kHz、0.4Vrmsにセットし、TP304 (TP4) とTP301 (TP1、GND) 間に加える。
注: オーディオ信号の接続はYPDR601の内部回路保護のために必ずGNDを先に接続する。
- ⑥ VR303にて、CH1とCH2のレベル差が下記の値になるように調整する。
調整値 CH2 - CH1 = 13dB ± 1dB

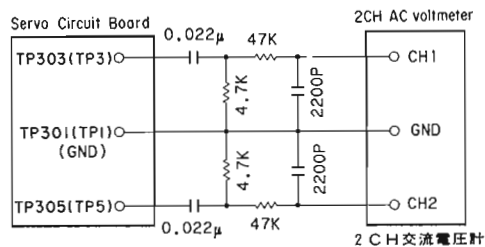
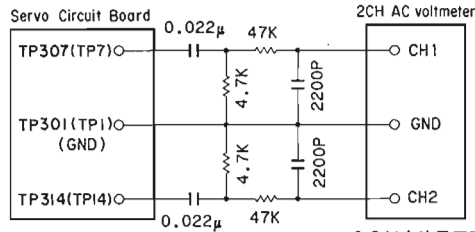


Fig. 3

STEP 11 TRACKING GAIN ADJUSTMENT

- Place the test disc TX911730 (SONY YEDS-18) on the turntable and hold disc in place with depressor weight.
- Connect the oscilloscope probe to TP306 (Tracking error signal) and TP301 (GND).
* Oscilloscope Settings:
DC coupling, V. Range = 0.2V/DIV.
H. Range = 20mS/DIV.
- Connect the test filter and two CHANNEL AC voltmeter to the Servo circuit board as shown in fig. 4 (CH1 = TP307, CH2 = TP314 and GND = TP301)
- Select Mode 5 (ref. page 14).
You can confirm the YPDR601 operation by observing the TP306 tracking error signal.
- Apply a 1.5 KHz, 0.4 Vrms, sine wave between TP308 and TP301 (GND) using a sine wave generator.
Note: Connect the ground lead of the sine wave generator output signal prior to signal lead to prevent the YPDR601 circuit damage.
- Adjust the difference between channels on the AC voltmeter with VR305.
Adjustment value: CH1-CH2=0dB +/- 1dB



Step 11 ◆トラッキングゲイン調整

- テストディスクTX911730 (SONY YEDS-18) をセットしてディスク装着用重りで固定する。
- オシロスコープのプロブをTP306 (TP 6、トラッキングエラー) とTP301 (TP 1、GND) に接続する。
(DC coupling H.range 20mS/div, V.range 0.2V/div)
- Fig. 4 の様にサーボシートにフィルターとACボルトメーター (2ch) を接続する。
- MODE 5 にする。
この時オシロスコープでTP306 (TP 6) を観測しているとYPDR601の動作状態がわかる。
- オーディオ発振器の出力を正弦波1.5kHz、0.4Vrmsにセットし、TP308 (TP 8) とTP301 (TP 1、GND) 間に加える。
注: オーディオ信号の接続は、YPDR601の内部回路保護のために必ずGNDを先に接続する。
- VR305にて、CH 1 とCH 2 のレベル差が下記の値になるように調整する。

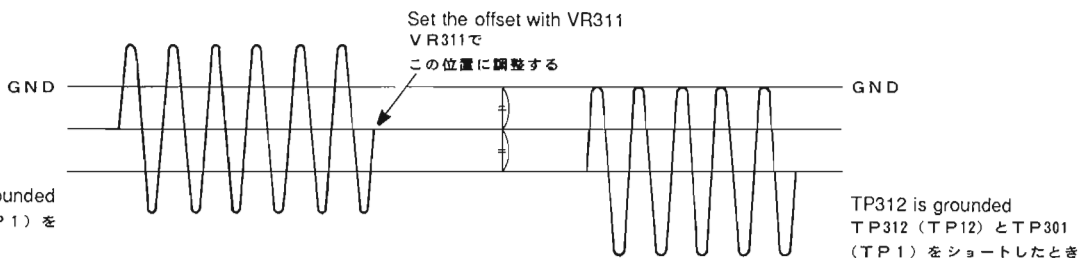
調整値 CH1 - CH2 = 0 dB ± 1 dB

STEP 12 TRACKING OFFSET COMPENSATION ADJUSTMENT

- Place the test disc TX911730 (SONY YEDS-18) on the turntable and hold disc in place with depressor weight.
- Connect the oscilloscope probe of CHANNEL 1 to TP306 (Tracking error signal) and the ground lead to TP301 (GND). Connect the CHANNEL 2 probe to TP312 and TP301 (GND).
* Oscilloscope Settings:
DC coupling, H. Range = 20mS/DIV.
CH1 V. Range = 0.2V/DIV.
CH2 V. Range = 50mV to 0.2V/DIV.
- Select Mode 3 (ref. page 14).
- Adjust the voltage at TP312 to an offset value with VR308.
Adjustment value: -0.40VDC +/- 0.04VDC
- Set ground reference for CH1.
- Short with jumper wire TP312 to TP301 (GND).
- Note the DC center level of waveform at TP306 (oscilloscope CH1, refer to figure 5).
- Remove the jumper wire between TP312 and TP301.
- Using VR311 adjust DC center of waveform to half of that noted in item 7 (refer to figure 5).
- Adjust voltage at TP312 using VR308.
Adjustment value: 0.00VDC +/- 0.01VDC

Step 12 ◆トラッキングオフセット補正調整

- テストディスクTX911730 (SONY YEDS-18) をセットしてディスク装着用重りで固定する。
- オシロスコープのプロブのCH 1をTP306 (TP 6、トラッキングエラー) とTP301 (TP 1、GND) に、CH 2をTP312 (TP 12、オフセット補正) に接続する。
(DC coupling H.range 20mS/div, V.range CH 1 0.2V/div CH 2 50mV ~ 0.2V/div)
- MODE 3 にする。
- TP308にて、TP312 (TP 12) の電圧を下記の値に調整する。(Offsetを加える)
調整値 $-0.40 \pm 0.04 V_{DC}$
- オシロスコープのCH 1のGNDレベルをセットする。
- TP312 (TP 12) とTP301 (TP 1、GND) をリード線でショートしその時のTP306の波形のDCセンターレベルをメモする。
- TP312 (TP 12) とTP301 (TP 1、GND) のジャンパーを外す。
- TP306の波形のDCセンターずれが⑥でメモした値の1/2となるようにVR311で調整する。(Fig. 5)
- VR308にてTP312 (TP 12) の電圧を下記の値に調整する。(Offsetを元に戻す)
調整値 $0.00 V \pm 0.01 V_{DC}$



TP312 is not grounded
TP312 (TP12) とTP301 (TP1) を
ショートしないとき

TP312 is grounded
TP312 (TP12) とTP301
(TP1) をショートしたとき

**STEP 13
KICK GAIN ADJUSTMENT**

- ① Place the test disc TX911730 (SONY YEDS-18) on the turntable and hold disc in place with depressor weight.
 - ② Connect the oscilloscope probe of CHANNEL 1 to TP306 (Tracking error signal) and the ground lead to TP301 (GND). Connect the CHANNEL 2 probe to TP314 (TRA1) and TP301 (GND).
* Oscilloscope Settings: DC coupling, H. Range = 0.2mS/DIV.
CH1 V. Range = 200mV/DIV.
CH2 V. Range = 0.5V~1.0V/DIV.
 - ③ Select Mode 5 (ref. page 14).
 - ④ Select the spindle Mode 03 (CD mode, ref. page 15) then push PAUSE (KICK HOLD mode).
 - ⑤ Adjust VR306 until the waveform at TP314 matches the waveform as shown in figure 6.
 - ⑥ Press PLAY button to cancel KICK HOLD mode.
- Note:** To obtain the waveform shown in the picture on the oscilloscope; (1) set the trigger selector to CH2 (Channel 2 triggering), (2) set the trigger mode to the normal trigger mode (3) adjust the trigger level so that the waveform of CH2 coincides with CH1's waveform (see Waveform Photo 9).

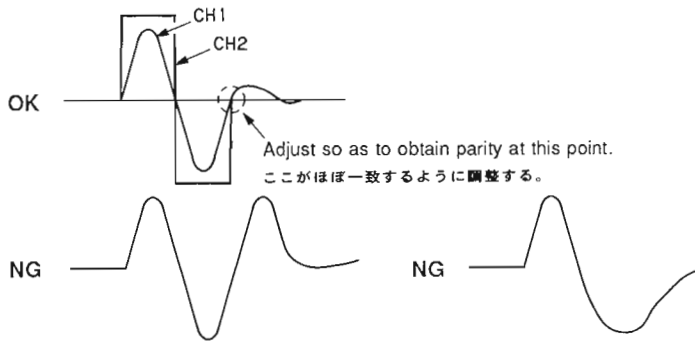


Fig. 6

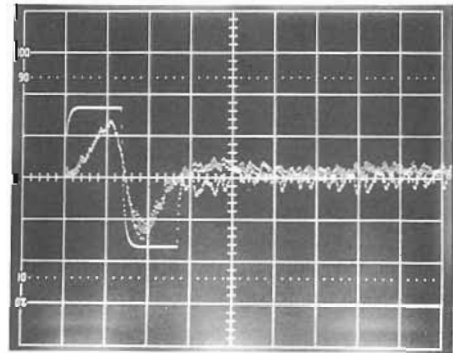
**STEP 14
OPTICAL HEAD OPTIMUM TILT ADJUSTMENT**

- Note:** Check and confirm that the marker position of the tilt cam (ref. page 73 No.40f) is between the 11 and 1 o'clock positions (ref. fig 7). If it is not in the designated position, apply a 3V DC voltage across the TIM1 and TIM2 connections (on the SERVO circuit board) until the tilt cam motor rotates the marker to the correct position.
- ① Place the test disc TX913530 (8cm) on the turntable and hold disc in place with depressor weight.
 - ② Connect the oscilloscope probe to TP302 (EFM terminal) and TP301 (GND).
* Oscilloscope Settings:
AC coupling, H. Range = 0.5μS/DIV.
V. Range = 0.1V to 0.2V/DIV.
 - ③ Select Mode 5 (ref. page 14).
 - ④ Adjust the amplitude of the TP302 eye pattern to the sharpest image and maximum possible level by turning the JITTER adjustment screw to the left or the right, as appropriate (ref. page 10).
 - ⑤ Adjust the amplitude of the TP302 eye pattern to the sharpest image and maximum possible level by turning the RADIAL adjustment screw to the left or the right, as appropriate (ref. page 10).
- Note:** If you cannot gain access to the RADIAL adjustment screw return to MODE 3 and move the head by hand to the outer area of the disc. Now go back to item 3 of this STEP.
- ⑥ Repeat items 4 and 5 until optimum tilt is achieved.
 - ⑦ Confirm the tracking balance and re-adjust if required (Refer to STEP 8).
- Note:** Apply lock paint to both adjustment screws. The location of the jitter direction screw and lock paint application is shown (Fig. 9).
- CAUTION:** There are moving parts on both side of the jitter screw, do not get lock paint on them.

**Step 13
◆キックゲイン調整**

- ① テストディスクTX911730 (SONY YEDS-18) をセットしてディスク装着用重りで固定する。
 - ② オシロスコープのプロブのCH1をTP301 (TP1、GND) とTP306 (TP6、トラッキングエラー) に、CH2をTP301 (TP1、GND) とTP314 (TP14、TRA1) に接続する。
(DC coupling H.range 0.2mS/div, V.range CH1 200mV/div CH2 0.5V~1.0V/div)
 - ③ MODE 5 にしINDEXボタンでSPINDLE MODEを03 (CD) にした後PAUSEにする。
(KICK HOLDの状態)
 - ④ VR306にてFig. 6の様な波形になるように調整する。
 - ⑤ PLAY KEYを押してKICK HOLDを解除する。
- 注:** トリガーモードをノーマル、トリガーチャンネルをCH1にセットしてトリガーレベルを調整するとトリガーがかかり写真9のような波形が現れる。

Waveform Photo. 9



波形写真9

**Step 14
◆WRITE HEADの最良再生傾角調整**

- 注:** 73ページ分解図中の40fのチルトカムのマーカーの位置が11時から1時の間にあることを確認する。(Fig. 7) もしそうでない場合には、サーボシート内の調整用コネクタTIM1とTIM2に乾電池で作った1.5V~3Vの電圧を加えてチルトモーターを回転させ上記の位置に調整する。
- ① テストディスクTX913530 (8cm) をセットしてディスク装着用重りで固定する。
 - ② オシロスコープのプロブをTP302 (TP2、EFM) とTP301 (TP1、GND) に接続する。
(AC coupling H.range 0.5μS/div V.range 0.1V~0.2V/div)
 - ③ MODE 5 にする。
 - ④ ジッター方向の調整ネジを左右に回してTP302 (TP2) のアイパターンの3Tの振幅が最大になるように調整する。(Fig. 8)
 - ⑤ 半径方向の調整ネジを左右に回してTP302 (TP2) のアイパターンの3Tの振幅が最大になるように調整する。(Fig. 8)
- 注:** これらの調整用のネジがディスクに隠れる場合は、MODE 3にして光ヘッドを手で外側に動かして③からやり直す。
- ⑥ VR302 (FC.BAL) を回してTP302 (TP2) のアイパターンの3Tの振幅が最大になりエンベロープの揺れが最小になるように調整する。
 - ⑦ ③~⑥を繰り返して行い最良点に調整する。(写真10、Fig. 9)
 - ⑧ 記録部と未記録部トラッキングバランスの状態を確認し、ズレている場合はステップ8の調整を再び行う。
- 注:** この調整終了後はそれぞれの調整ネジをネジロックする。ジッター方向のネジはFig. 9の位置にネジロックを塗布する。

Tilt cam position

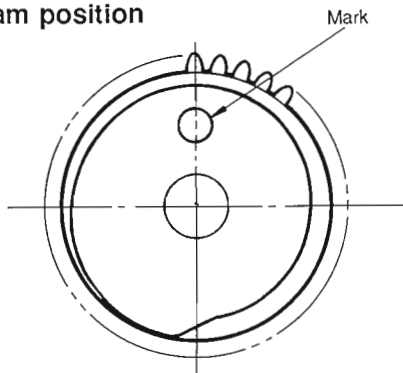
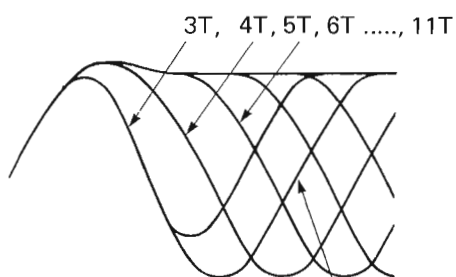


Fig. 7

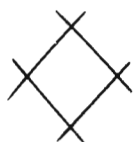
Waveforms 3T - 11T.



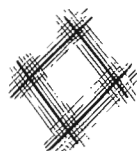
This portion is referred to as the eye pattern.

The abnormal eye pattern has less distinct lines and smaller amplitude than that of a good waveform.

Good waveform



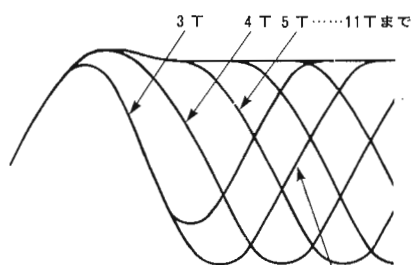
Abnormal waveform



Adjust so that a good waveform is obtained.

アイパターンについて

3 Tから11Tまでの線があります。



この菱形の部分を目にたとえてアイパターンという。

不良な波形は、線がにじんで太くなり良好な波形に較べてアイが小さくなっています。

良好な波形



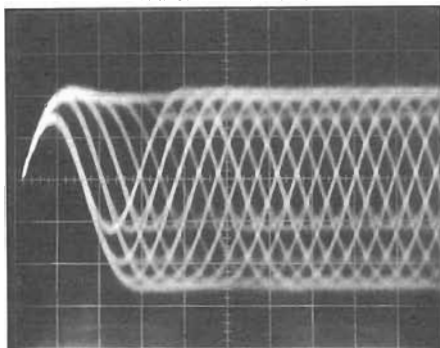
不良な波形



できるだけ良好な波形になるように調整する。

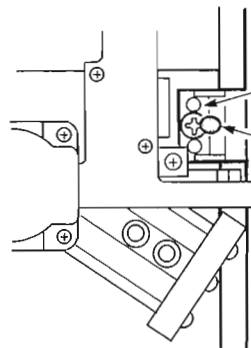
Fig. 8

Waveform Photo. 10



波形写真10

These are moving parts, do not spread lock paint.



この部分にはネジロックが付かないように充分注意して下さい。

Apply lock paint on this point.
ネジロックはこの部分に付ける。

Fig. 9

STEP 15 HF LEVEL ADJUSTMENT

- ① Place the test disc TX911730 (SONY YEDS-18) on the turntable and hold the disc in place with depressor weight.
 - ② Select Mode 5 (Spindle mode 03, CD mode, ref. pages 14 and 15).
 - ③ Adjust the voltage at TP302 (EFM terminal) with VR308.
Adjustment value: $0.35V_{p-p} \pm 0.05V_{p-p}$
 - ④ Connect a frequency counter probe (10:1 probe) to TP317 (C1) and the ground lead to TP318 (GND). Confirm the C1 error rate is less 30Hz.
- Note: If the error rate is more than 30Hz possible causes are: tilt angle, VCO frequency or CDVP IC.

STEP 16 FOCUS AND TRACKING BALANCE ADJUSTMENT FOR WRITING

- ① Connect the oscilloscope probe of CHANNEL 2 to TP306 (Tracking error signal) and the ground lead to TP301 (GND). Connect the CHANNEL 1 probe to TP302 (EFM terminal) and TP301 (GND).
 - ② Place a YOD063 partially recorded disc on the turntable and hold the disc in place with depressor weight.
 - ③ Select Mode 3 (ref. page 14). Set the optical head position by hand to just passed the boundary of the recorded area and blank area (see photos for STEP 8).
 - ④ Select Mode 5 (Spindle mode 02, wobble mode, ref. page 14).
 - ⑤ Set the laser power for the writing mode (ref. page 15).
(YPDR601 "RECORD" LED ON)
 - ⑥ Adjust VR302 (FC. BAL) so that the shaking in portion A of waveform is minimized (see fig. 10).
 - ⑦ Adjust VR310 (W. TR. BAL) so that portion B in the waveform is as small as possible (see fig. 10).
 - ⑧ Change the laser power to reading (ref. page 15). (YPDR601 "RECORD" LED OFF)
 - ⑨ After at least 20 seconds, select Mode 3 (ref. page 14).
- Note: Confirm there is no EFM output at TP302 which should be CH2 of the oscilloscope.
- ⑩ Short TP326 to ground with a jumper wire.
 - ⑪ Adjust VR310 until the following ratio is met.
 $0.5 < D+C < 2.0$
See figure (Fig. 11) for example.
 - ⑫ Remove the jumper wire from TP326 and ground.
 - ⑬ Select Mode 5 (spindle mode 01) and set the laser power for writing using LINE button (ref. pages 14 and 15).
(YPDR601 "RECORD" LED ON)
 - ⑭ Connect the frequency counter probe (10:1 probe) to TP317 (C1) and the ground lead to TP318 (GND). Confirm the C1 error rate is 10Hz.
 - ⑮ Change the laser power for reading (ref. page 15) and then select Mode 0 (ref. page 14).
(YPDR601 "RECORD" LED OFF)

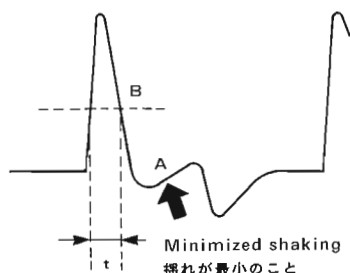


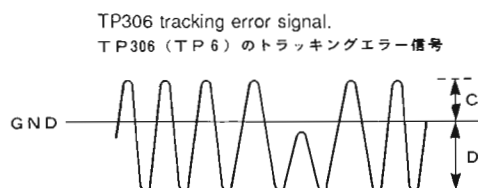
Fig. 10

Step 15 ◆HFレベル調整

- ① テストディスク TX911730 (SONY YEDS-18) をセットしてディスク装着用重りで固定する。
- ② MODE 5 にして INDEX の ▶▶ ボタンを押して "03" の CD プレーにする。
- ③ VR301 にて、TP302 (TP 2、EFM) の電圧を下記の値に調整する。
調整値 $0.35V_{PP} \pm 0.05V_{PP}$
- ④ 周波数カウンタのプロープ (10:1) を TP317 (TP17、C1) と TP318 (TP18、GND) に接続し、C1 エラーレート の 30 秒間の値の平均値が 30Hz 以下であることを確認する。

Step 16 ◆FOCUS&TRACKING (Write) BALANCE微調整

- ① オシロスコープの CH1 を TP302 (TP 2、EFM) と TP301 (TP 1、GND) に接続し (モニター用)、CH2 を TP306 (TP 6、トラッキングエラー) と TP301 (TP 1、GND) に接続する。
- ② 記録用ディスク YOD-063 をセットしてディスク装着用重りで固定する。
- ③ MODE 3 にして TP302 に現れる EFM 信号を見ながら未記録部を探す。未記録部の EFM 信号は DC 的な波形になるので光ヘッドを手で動かして探す。(ステップ 8 の写真 7 と写真 8 参照のこと)
- ④ MODE 5 に切り替え INDEX の ボタンを押して "02" の類 WOBBLE MODE にし、光ヘッドの出力を LINE ボタンを押して WRITE POWER にする。(YPDR601 の RECORDE LED ON、書き込み中)
- ⑤ オシロスコープの CH2 の波形が Fig. 10 のようになっていることを確認する。
- ⑥ Fig. 10 の t が最小になり、A 部分の揺れが最小になるように VR302 (FC. BAL) を調整する。
- ⑦ Fig. 10 の A 部分と B 部分のジッターが最小になるように VR310 (W. TR. BAL) を調整する。
- ⑧ 光ヘッドの出力を LINE ボタンを押して READ POWER に切り替え、20 秒後に MODE 3 にする。
(YPDR601 の RECORDE LED OFF)
- ⑨ TP326 (サーボ基板が B バージョンの場合は Q314 のベース) と GND をショートし、Fig. 11 の C と D が下記条件を満足するように、VR310 を調整する。
 $0.5 < D + C < 2.0$
- ⑩⑨ のショートを解除する。
- ⑪ MODE 5 の WOBBLE MODE にし LINE ボタンを押して光ヘッドの出力を WRITE POWER にする。
(YPDR601 の RECORDE LED ON、書き込み中)
- ⑫ 周波数カウンタのプロープを TP317 (TP17、C1) と TP318 (TP18、GND) に接続し C1 エラーレートが 10Hz 以下であることを確認する。
- ⑬ LINE ボタンを押して光ヘッドの出力を "READ POWER" にしてから MODE 0 にする。
(YPDR601 の "RECORD" の LED が消えていることも確認する)



This signal should be observed on a blank blank (un-recorded) track which is adjacent right after recorded track.

記録直後の未記録部にて観測すること。

Fig. 11

STEP 17
LINEAR ENCODER POSITION SELF ADJUSTMENT

- ① Place a YOD063 blank disc on the turntable and hold the disc in place with depressor weight.
- ② Select Mode 0 and then select Mode 6 using the TRACK ►► button (ref. page 14).
DO NOT PRESS THE PLAY BUTTON FIRST!
- ③ This adjustment is carried out automatically when the PLAY button is pressed.

Note: The RC601 display the following numbers.

| | Track | Index | Min | Sec |
|--------------------------------|-------|-------|-----|-----|
| Before adjustment is started: | 06 | 01 | | |
| After adjustment is completed: | 06 | 01 | 00 | 00 |

- ④ Press the STOP button.

STEP 18
FEED GAIN ADJUSTMENT

- ① Switch off the YPDR601 and the RC601.
- ② Place the test disc TX911920 (A-BEX 70μm eccentricity) on the turntable and hold the disc in place with depressor weight.
- ③ Set the SW1001 switch on the System Control circuit board to the OFF (NORMAL MODE) position and switch on both the YPDR601 and the RC601.
- ④ Confirm that VR314 is set approximately at its center position.
- ⑤ Select and play TRACK 15.

Note: Make the following adjustment only when playing TRACK 15. If the track finishes playing before you complete the adjustment replay the track.

- ⑥ Adjust the feed motor driving voltage (measured between TP327 and TP301 or GND) with VR314.
Adjustment value: 2.0V_{pp} ± 0.5V_{pp}

Step 17
◆50mm位置調整

- ①未記録ディスクYOD-063をセットしてディスク装着用重りで固定する。
- ②MODE 0でTRACKの►►ボタンを押して“06”にセットする。
- ③PLAY KEYを押すと自動的に50mm位置調整が行なわれる。この時のRC601のパネル表示は次のようになり位置セットの完了が確認できる。

| | Trake | Index | Min | Sec |
|-------|-------|-------|-----|-----|
| 調整中 | 06 | 01 | | |
| 調整完了時 | 06 | 01 | 00 | 00 |

- ④STOPボタンを押してMODE 0にする。

Step 18
◆フィードゲインの調整

- ①YPDR601とRC601の両方の電源スイッチをOFFにする。
- ②テストディスクTX911920 (A-BEX 70μm偏芯ディスク)をセットしてディスク装着用重りで固定する。
- ③SYSCONシートのSW1001をノーマルモード (OFFの位置)にしてYPDR601とRC601の両方の電源スイッチをONする。
- ④VR314が機械的センター近辺にあることを確認する。
- ⑤15曲目を再生する。
- ⑥TP327 (サーボ基板がBバージョンの場合はFEM1)とTP301 (TP1 GND)間のフィードモーターの駆動電圧が下記の値になるようにVR314を調整する。

調整値 2.0V_{pp} ± 0.5V_{pp}

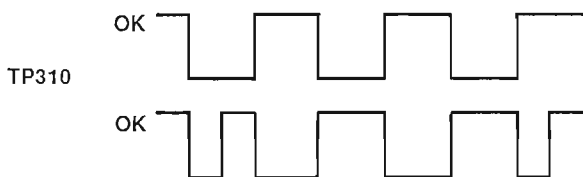
注: この調整中に15曲目が終わった場合は再度15曲目を再生して行うこと。

STEP 19 ASYMMETRIC DETECTION ADJUSTMENT

- ① Switch off the YPDR601 and the RC601.
- ② Place the test disc TX913510 on the turntable and hold the disc in place with depressor weight.
- ③ Set the SW1001 switch on the System Control circuit board to the OFF (NORMAL MODE) position. Confirm that the RC601 TOC (PRE/AFTER) switch is set to the PRE TOC position. Switch on the YPDR601 and the RC601.
- ④ Play the track number printed on the cover of the test disc. It is important to play this track because the track number may vary from disc to disc.

Note: Make the following measurements and adjustment only when playing the specified track (this track plays for approximately 30 seconds). If the track finishes before you complete taking the measurements and making the adjustment re-play the track.

- ⑤ Measure the voltage between TP311 and TP301 (GND) using a digital multimeter.
This voltage is V#1.
- ⑥ Measure the voltage between TP310 and TP301 (GND).
This is V#2.
- ⑦ Adjust VR502 so that the voltage, V#2, will satisfy the following condition.
 $V\#2 = V\#1 \pm 0.1 \text{ Vdc}$
- ⑧ It is a rare occurrence, but, if it is difficult to adjust the voltage due to high voltage fluctuation, connect pin 7 of IC502 to an oscilloscope. Adjust VR502 so that the 5V and 0V transitions are equal in duration (refer to fig. 12).



Step 19 ◆アシンメトリ検出調整

- ① YPDR601とRC601の両方の電源スイッチをOFFにする。
- ② テストディスクTX913510をセットしてディスク装着用重りて固定する。
注: この時RC601のTOCはPRE側にセットされていることを確認する。
- ③ SYSCONシートのSW1001をノーマルモードにしてYPDR601とRC601の両方の電源スイッチをONする。
- ④ ディスクケースに表示されているトラックを再生する。
注: トラック毎の録音時間は30秒となっているので調整中にそのトラック終わった場合は指定トラックに戻して再生する。
- ⑤ TP311 (サーボ基板がBバージョンの場合はIC519 # 2) の電圧をオシロスコープまたはデジタルボルトメーターで測定する。この電圧をV # 1とする。
- ⑥ TP310 (サーボ基板がBバージョンの場合はIC519 # 8) の電圧 (V # 2) が下記の値になるようにVR502を調整する。

$$\text{調整値 } V_{\#2} = V_{\#1} \pm 0.1 \text{ V}_{\text{DC}}$$

- ⑦ まれに⑤⑥の方法ではV # 2の変動が大きすぎて調整が出来ないことがあるのでその場合は、IC502の7ピンをオシロスコープで観測し、5Vと0Vがほぼ同等に出現するようにVR502を調整する。(Fig.12)

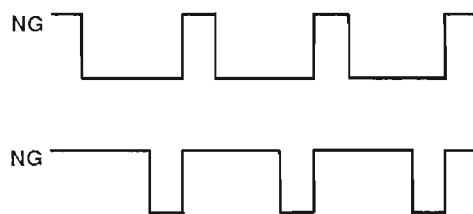


Fig. 12

STEP 20 OPC SET RANK SELF ADJUSTMENT

WARNING: This adjustment proceed to write the data on the test disc by using the specified laser power and appropriate disc area. Then the optimum laser power is set after comparing the output level of the newly recorded data to the pre-recorded data. Make sure that STEP 1 through 19 have been performed and adjusted properly before proceeding. The OPC rank can only be written to the disc one time! Therefore, after this OPC rank is written once, the same disc CANNOT be use for STEP 20 again. So that you do not attempt to used this same test disc again, mark "USED" on the disc after completing this adjustment.

- ① Switch off the YPDR601 and the RC601.
- ② Place the test disc TX913520 on the turntable and hold the disc in place with depressor weight.
- ③ Set the SW1001 switch on the System Control circuit board to the ON (TEST MODE) position. Switch on both the YPDR601 and the RC601.
- ④ Select Mode 0 and then select Mode 7 using the TRACK ►► button (ref. page 14).
- ⑤ The OPC rank is set automatically when the PLAY button is pressed.
- ⑥ The SEC display on the RC601 will indicate the OPC rank. Confirm that the OPC rank is between 05 to 0A (05, 06, 07, 08, 09 and 0A). If the OPC rank number is not in this range either the unit has not been adjusted properly or the laser head may be bad.

Step 20 ◆OPCセットランク調整

注: OPCセットランク調整では、テストディスクの決められた位置に階段状に変化させた光出力で書き込んだ後、記録された信号を読みだして、前もって記録されている信号と比較してその光ヘッドの最適出力値を検出している。従ってOPCセットランク調整用のテストディスクはこの調整には一回しか使用出来ないの、Step19までの調整を充分行った上でこの調整を行うこと。また、一度使用したディスクを再度この調整に使用するとYPDR601に間違った値を記録することになるので、調整完了時に必ず使用済みのディスクであることが判るようにディスク自身にマジックインクで印を付けること。

- ① YPDR601とRC601の両方の電源スイッチをOFFにする。
- ② テストディスクTX913520をセットしてディスク装着用重りて固定する。
- ③ SYSCONシートのSW1001をTESTモード(ONの位置)にしてYPDR601とRC601の両方の電源スイッチをONする。
- ④ MODE 0でTrackの►►ボタンを押して"07"にする。
- ⑤ PLAYボタンを押すとOPCランクが自動的にセットされる。
- ⑥ OPCランクのセットが完了するとRC601の表示器のSEC欄にランクが表示されるのでその値が05, 06, 07, 08, 09, 0Aのいずれかになっていることを確認する。このランク以外が表示された場合はユニット全体の調整をやり直して再度この調整を行うこと。

STEP 21
AUDIO CIRCUIT ADJUSTMENT

1. YPDR SETUP

- ① Switch off the YPDR601 and the RC601.
- ② Set the SW1001 switch on the System Control circuit board to the OFF (NORMAL MODE) position.
- ③ Switch on the YPDR601 and the RC601.

2. CMRR (Common Mode Rejection Ratio) adjustment

- ① Short the hot and cold terminals (pins 2 and 3) of the Left channel ANALOG IN connector (XLR-3-31).
Apply a 1.5KHz, 15dB (4.35Vrms) sine wave signal to this input (refer to figure 13).
- ② Adjust VR703 so that the TP700 signal is minimized.
- ③ Repeat above items 1 and 2 for the Right channel adjusting VR704 so that the TP701 signal is minimized.

3. Output level adjustment

- ① Place the test disc TX911730 (SONY YEDS-18) on the turntable and hold the disc in place with depressor weight.
Note: Press the OPEN/CLOSE switch twice. This lets the YPDR601 know that you have changed the disc.
- ② Make a dummy load by attaching a 600 ohm resistor between the hot and cold terminals (pins 2 and 3) of a female XLR connector as shown in the figure 14.
- ③ Insert the dummy load into the Left channel ANALOG OUT connector.
- ④ Play track number 2 (1KHz, 0dB).
- ⑤ Adjust the output level with VR702 for Left channel.
Adjustment value: 12 dBm +/- 0.5 dBm
- ⑥ Repeat items 3, 4 and 5 for the Right channel, adjusting VR701.

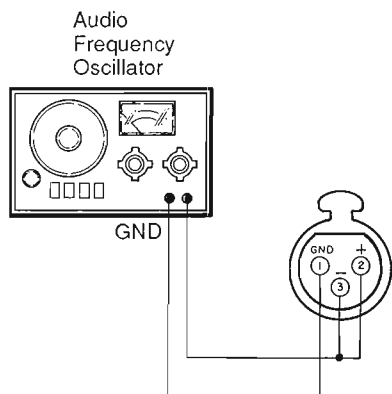


Fig. 13

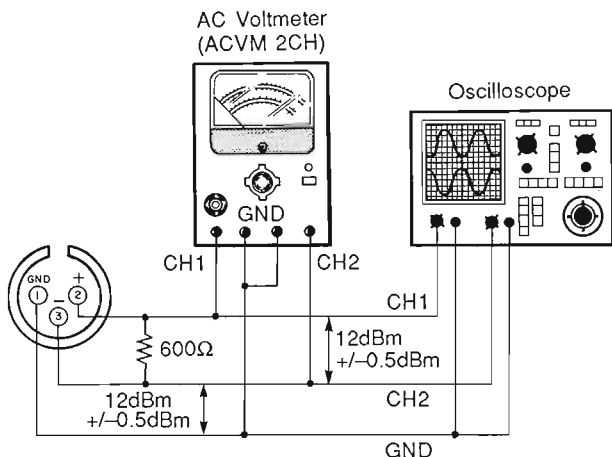


Fig. 14

Step 21
◆オーディオ回路の調整

1. YPDR601のセットアップ

- ① YPDR601とRC601の両方の電源スイッチをOFFにする。
- ② SYSCONシートのSW1001をノーマルモード (OFFの位置) にしてYPDR601とRC601の両方の電源スイッチをONする。

2. CMRR (同相信号除去比調整)
(Common Mode Rejection Ratio)

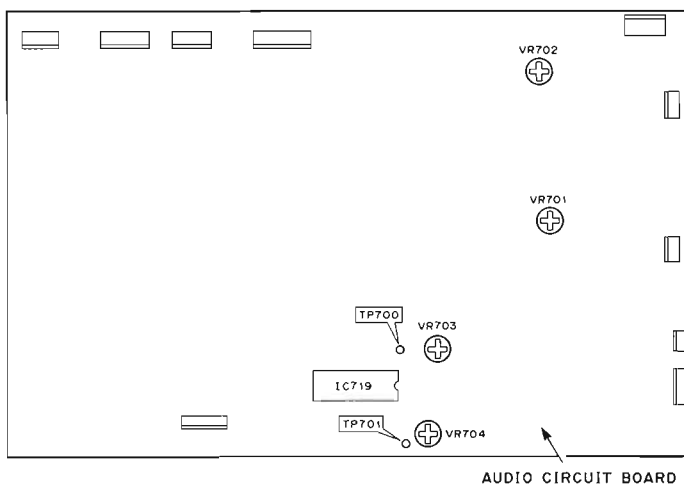
- ① Lchのアナログイン (XLR-3-31) のホット (2ピン) とコールド (3ピン) の両端子をショートして、1 KHz 15dBs (4.35 V) の正弦波の信号を入力する。(Fig.13)
- ② TP700の同相信号レベルが最小になるようにVR703を調整する。
- ③ 同様にRchのアナログイン (XLR-3-31) のホット (2ピン) とコールド (3ピン) の両端子をショートして、1 KHz 15dBs (4.35 V) の正弦波の信号を入力する。(Fig.13)
- ④ TP701の同相信号レベルが最小になるようにVR704を調整する。

3. 出力の調整

- ① テストディスクTX911730 (SONY YEDS-18) をセットしてディスク装着用重りで固定する。
注: OPEN/CLOSEボタンを押してディスクを読み込ませる。
- ② アナログアウト (XLR-3-32) のホット (2ピン) とコールド (3ピン) の端子に600Ωの抵抗を接続する。
- ③ トラック2 (1 KHz 0 dB) をプレーし、ホット (ピン) とコールド (3ピン) の出力レベルが12dBm ± 0.5 dBになるようにそれぞれのVRを調整する。

| | |
|-----|-------|
| Lch | VR702 |
| Rch | VR701 |

この時、オシロスコープを接続すると出力信号のホット端子とコールド端子では位相が180°反転していることが確認出来る。(Fig.14)

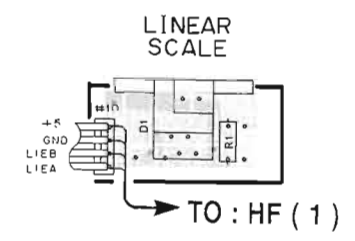


■ YPDR601 PRINTED CIRCUIT BOARD (Parts side)

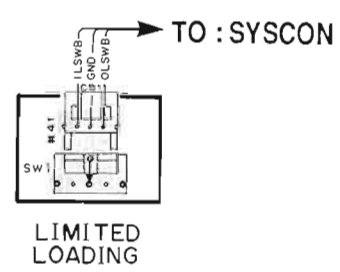
⑤ to ⑦ : WAVEFORM OF TEST POINT (See page 55)

HF C. B (1)

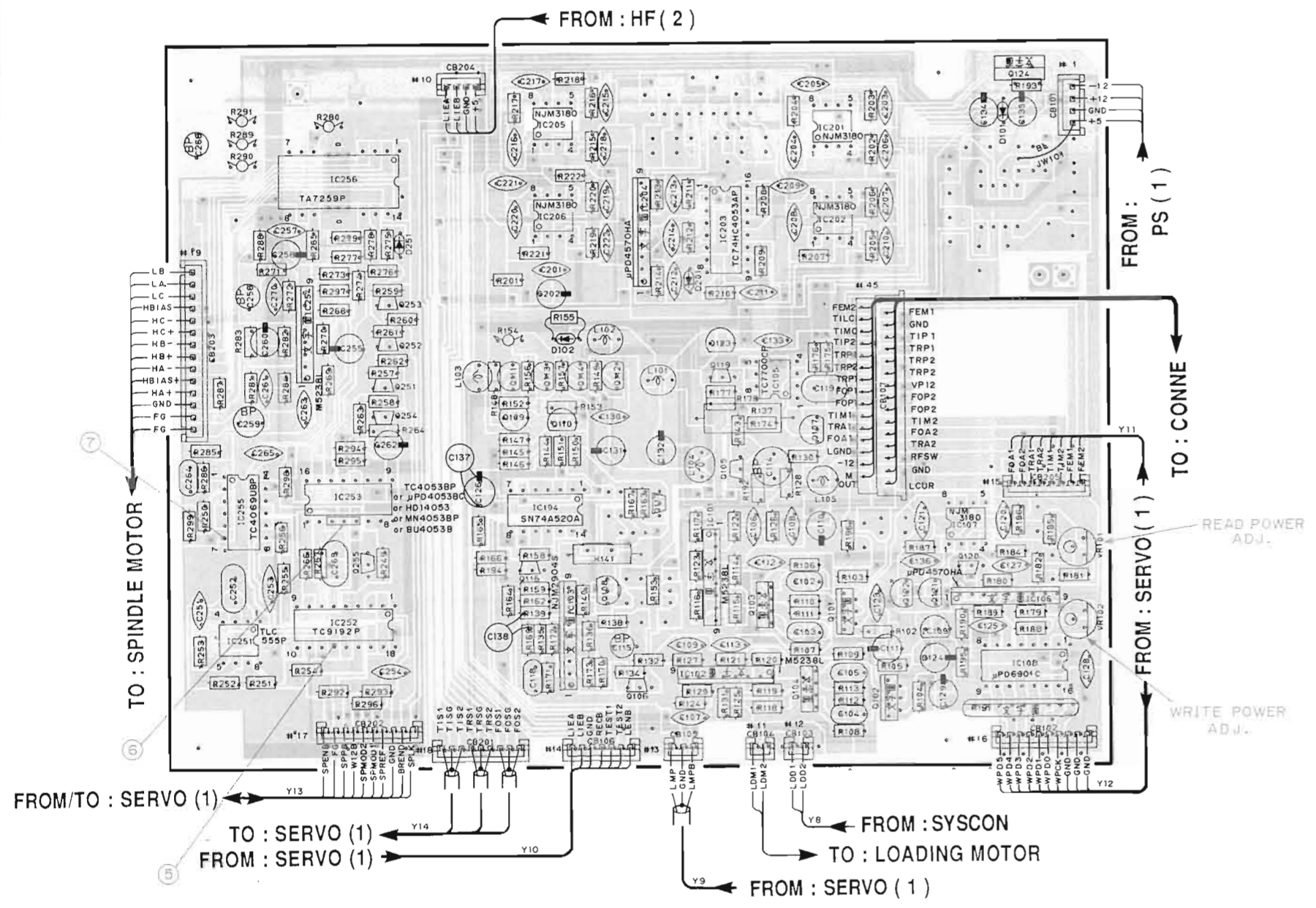
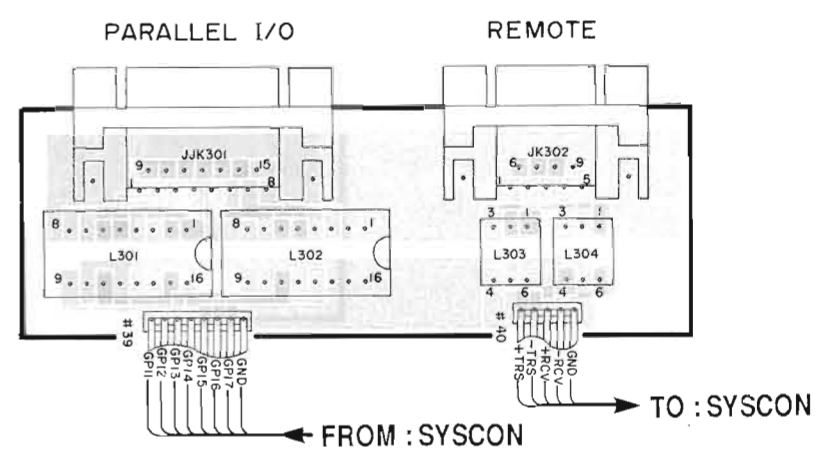
HF C. B (2)



HF C. B (3)



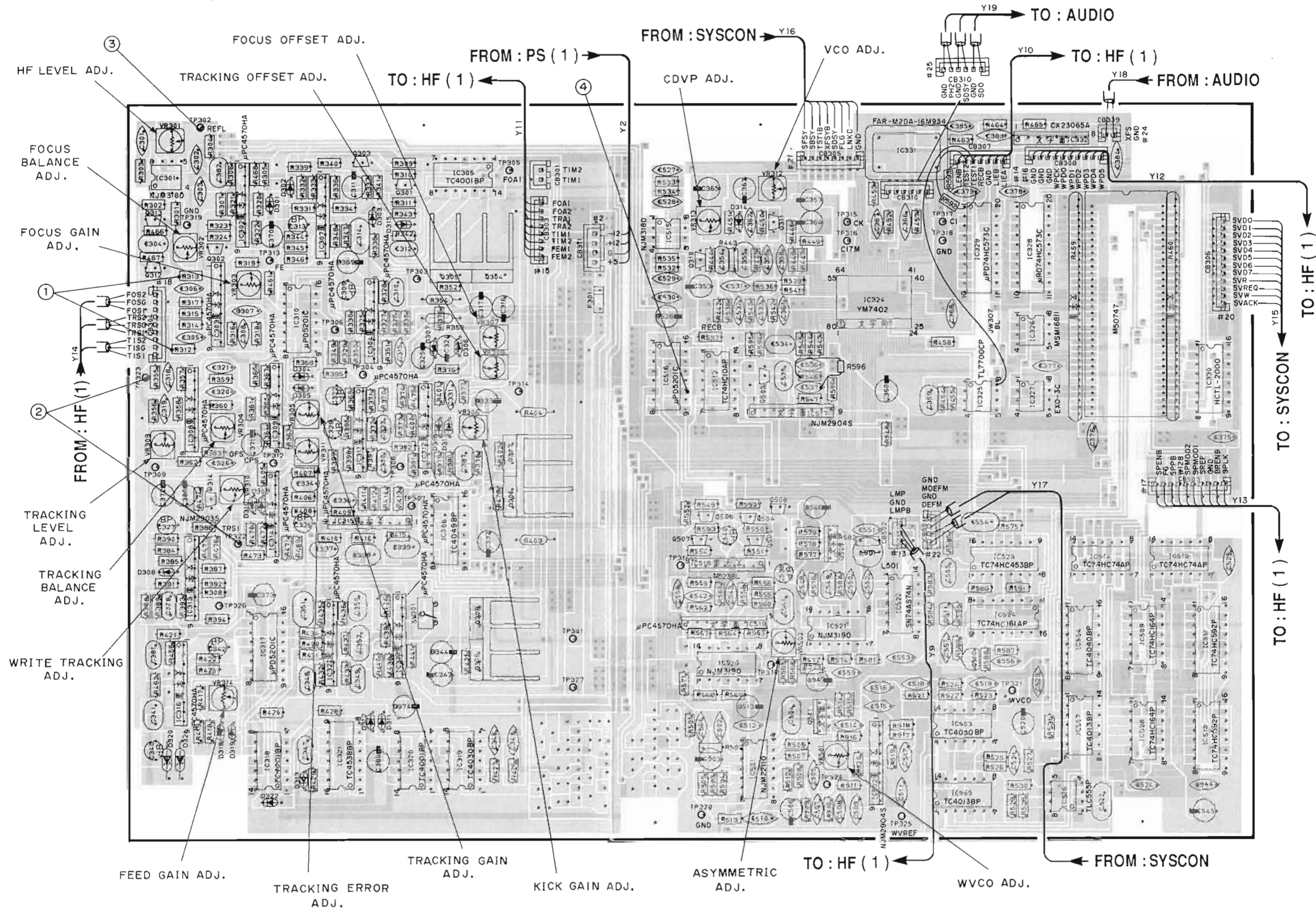
Servo C. B (2)



YPR601 PRINTED CIRCUIT BOARD (Parts side)

Servo C. B (1)

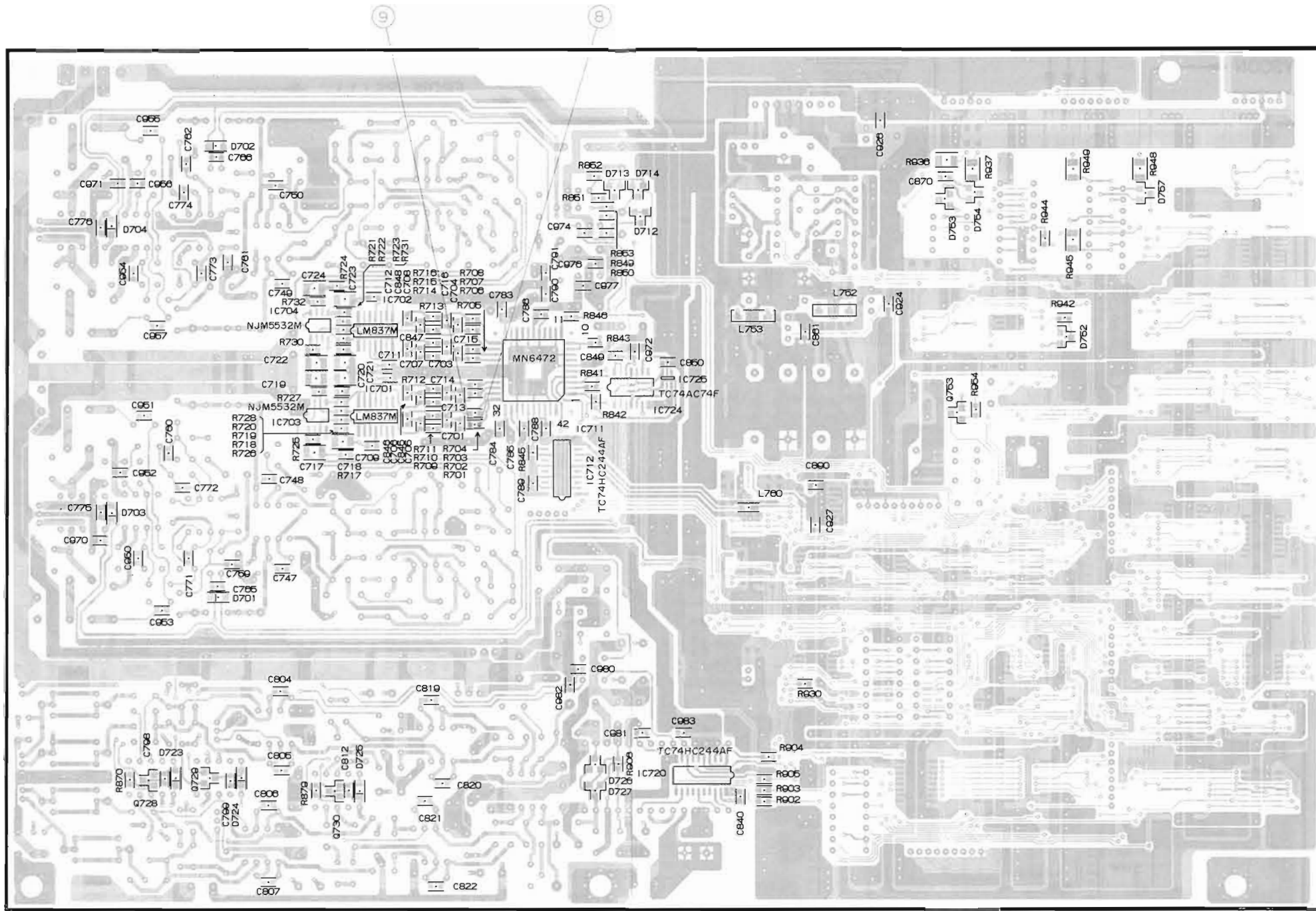
① to ④ : WAVEFORM OF TEST POINT (See page 55)



■ YPDR601 PRINTED CIRCUIT BOARD (Foil side)

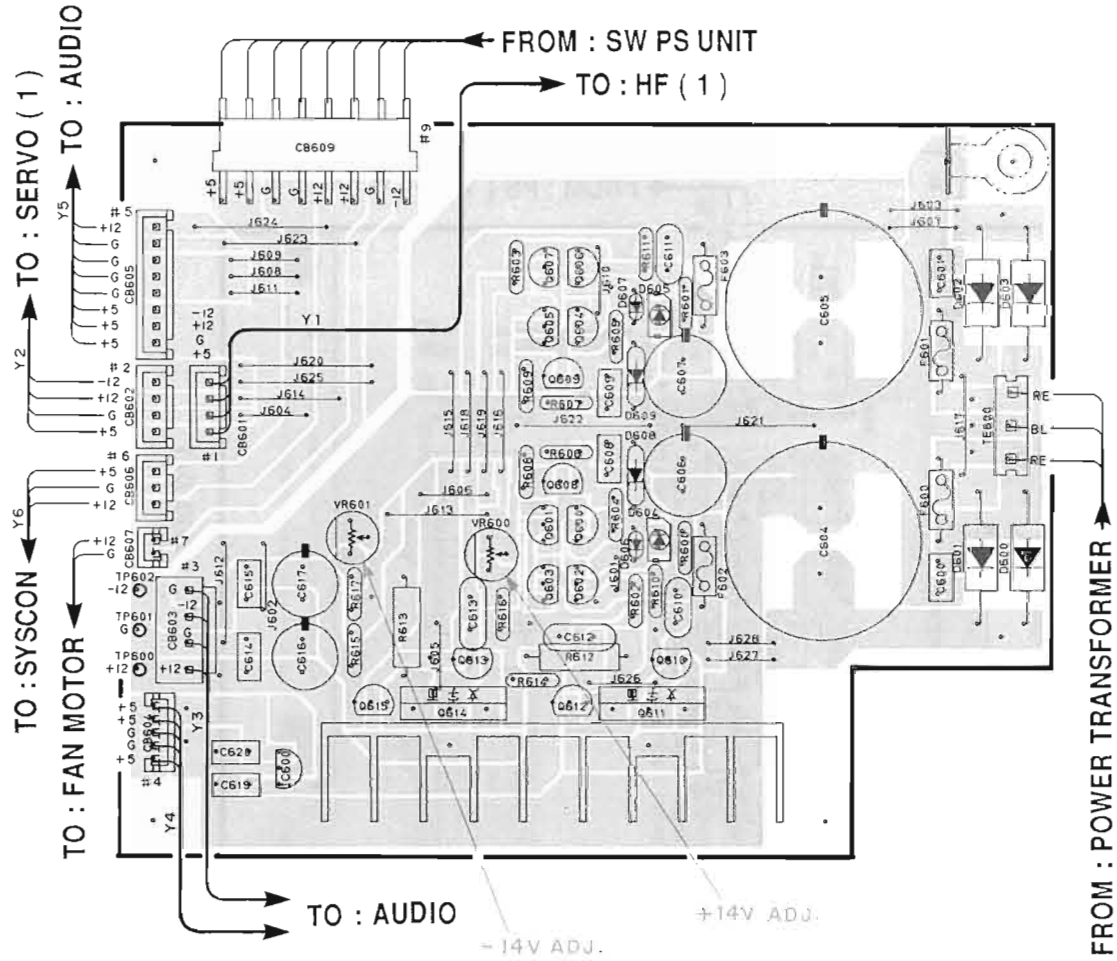
⑧ and ⑨ : WAVEFORM OF TEST POINT (See page 55)

AUDIO C. B

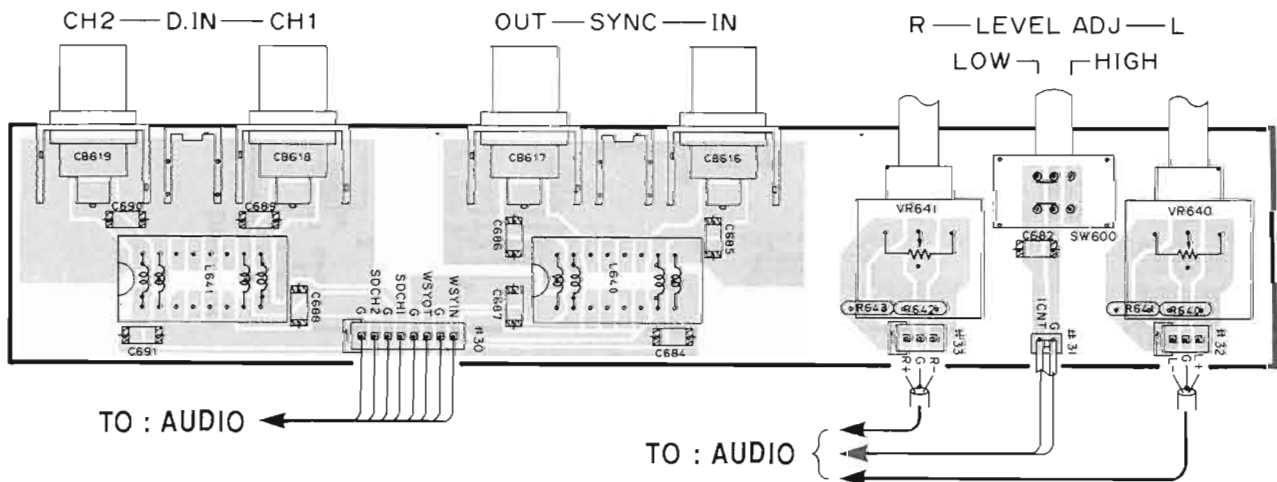


■ YPDR601 PRINTED CIRCUIT BOARD (Parts side)

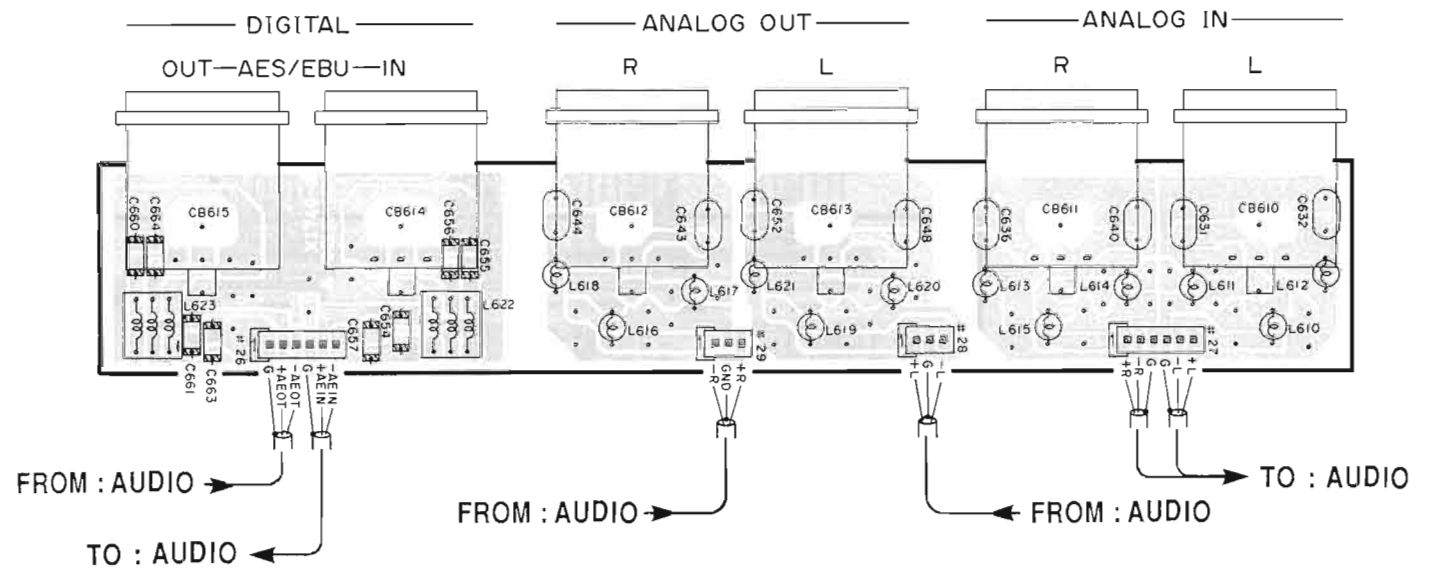
PS C. B (1)



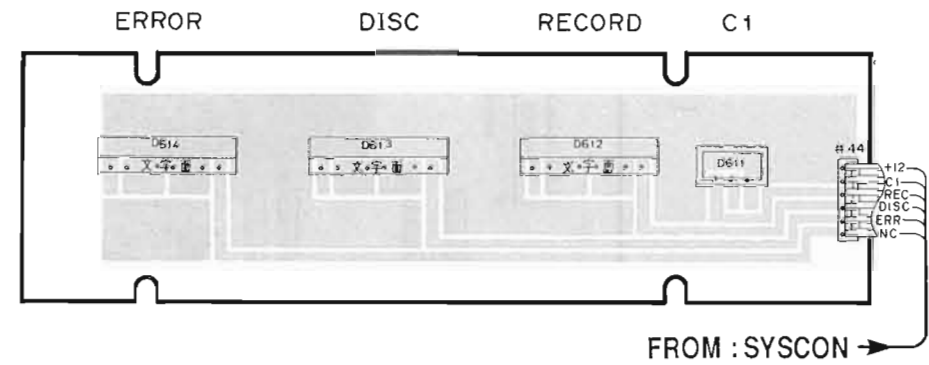
PS C. B (2)



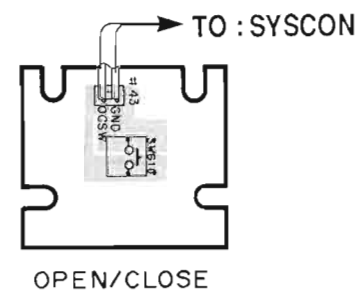
PS C. B (3)



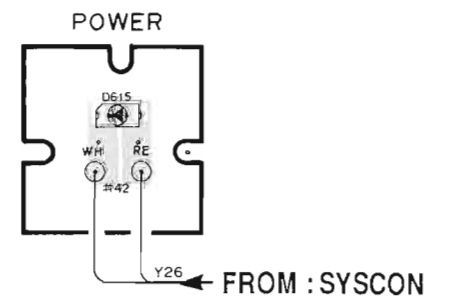
PS C. B (4)



PS C. B (5)



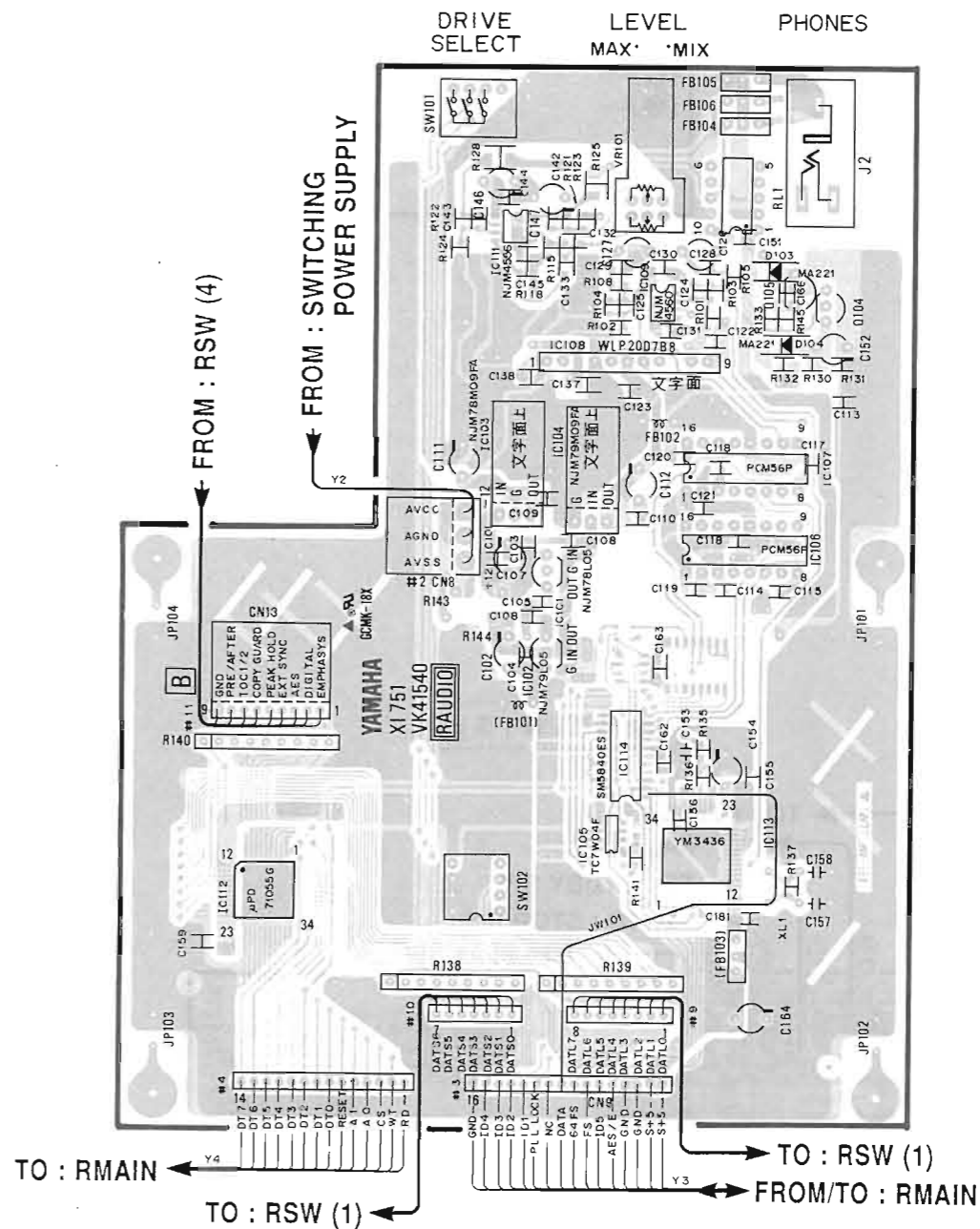
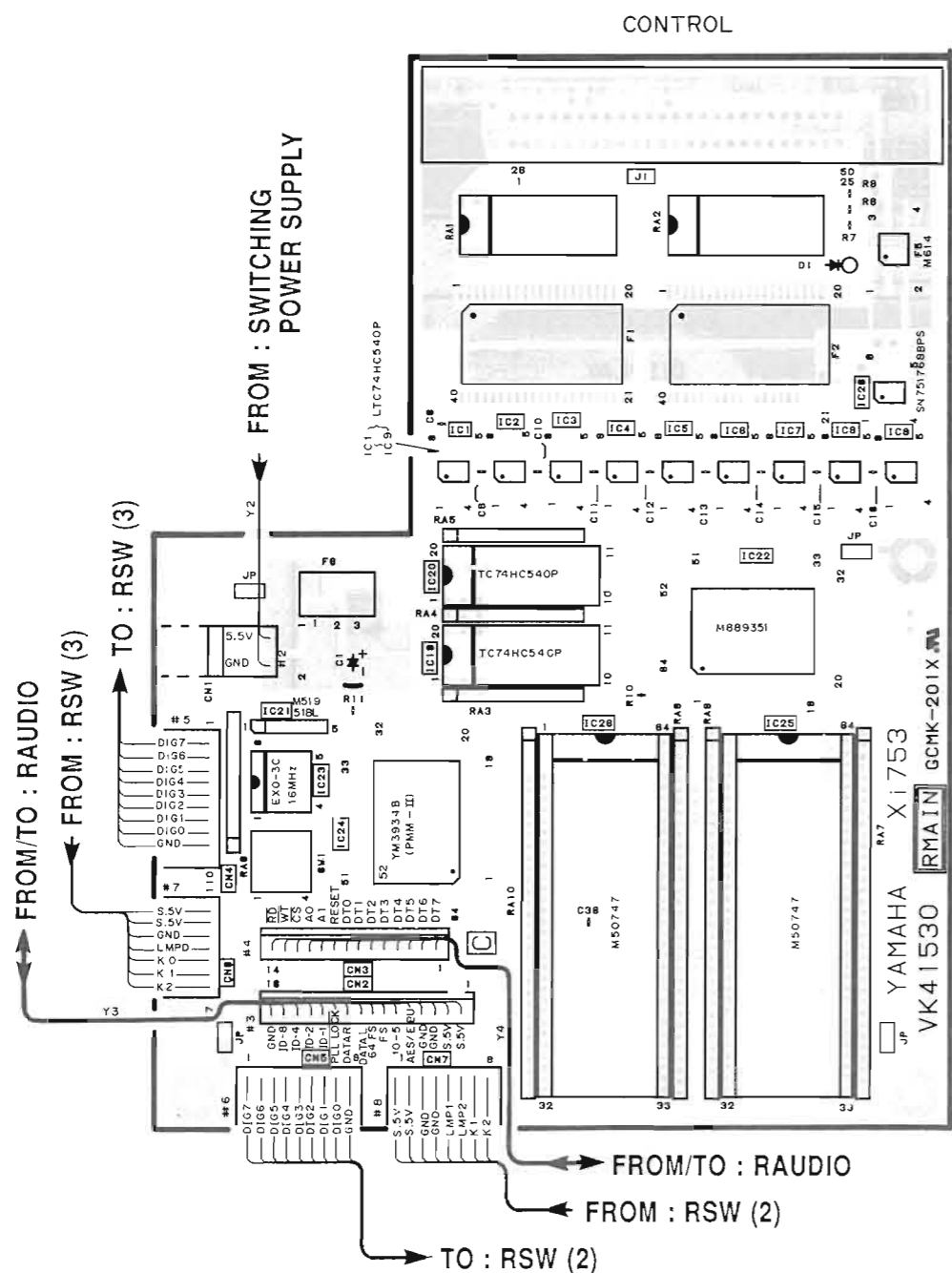
PS C. B (6)



RC601 PRINTED CIRCUIT BOARD (Parts side)

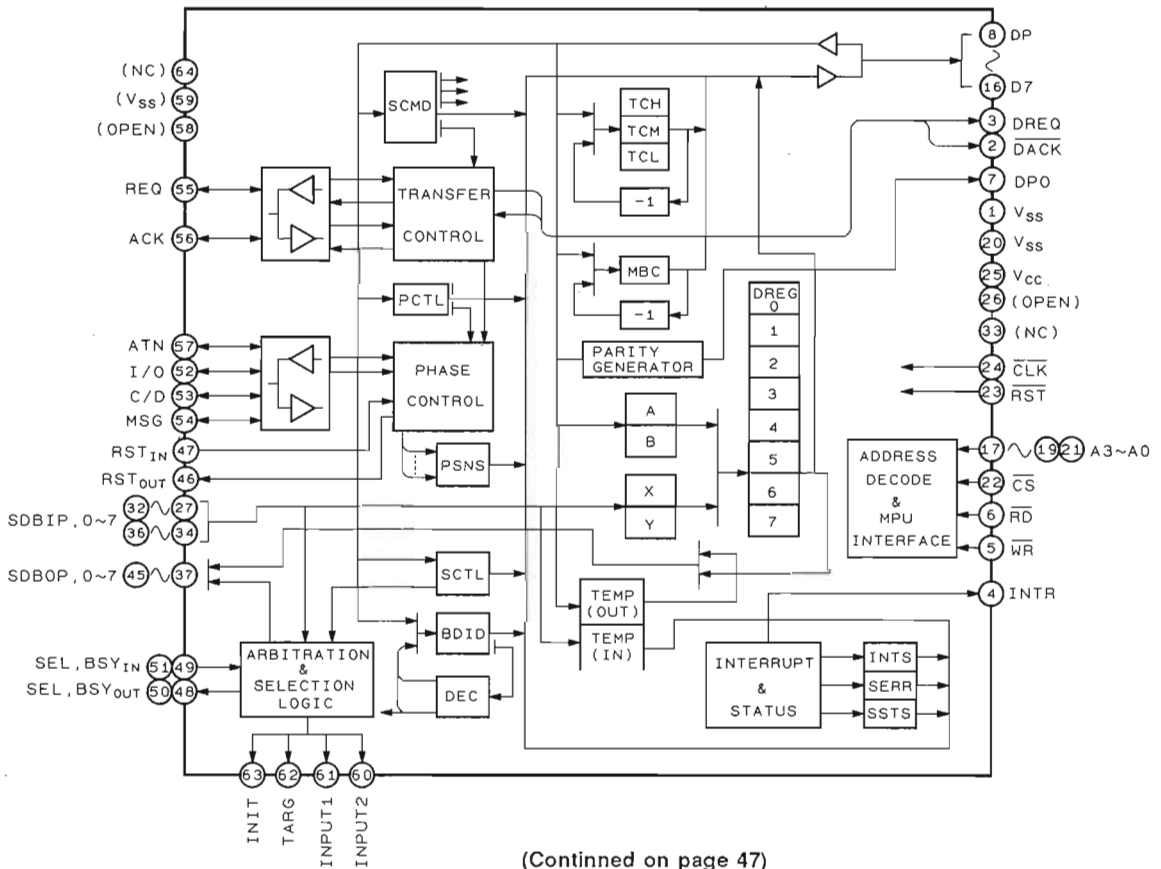
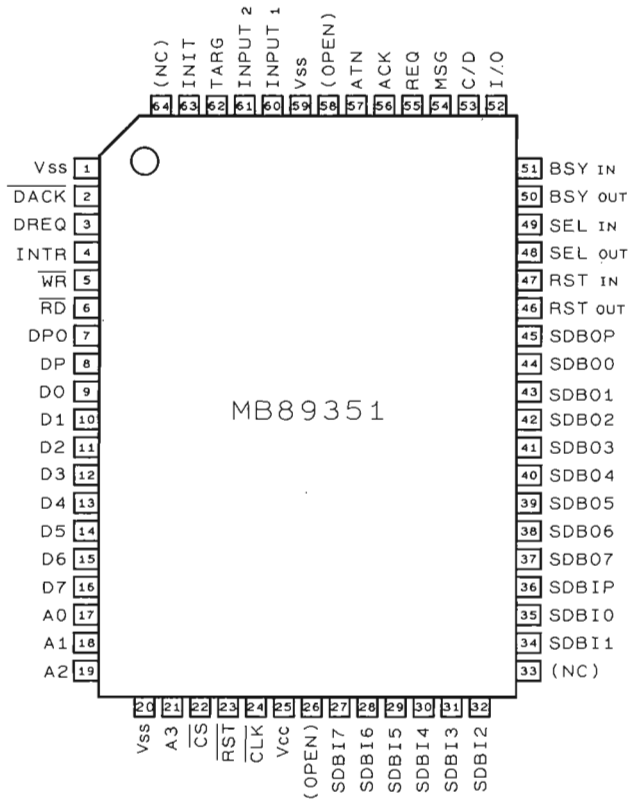
RMAIN C. B

RAUDIO C. B



IC DATA

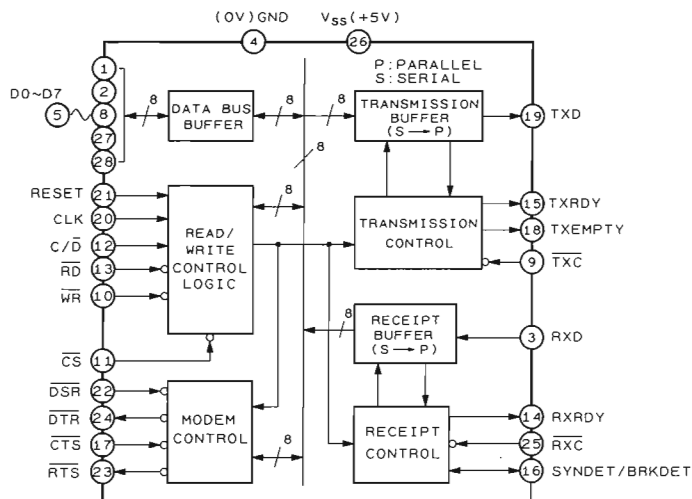
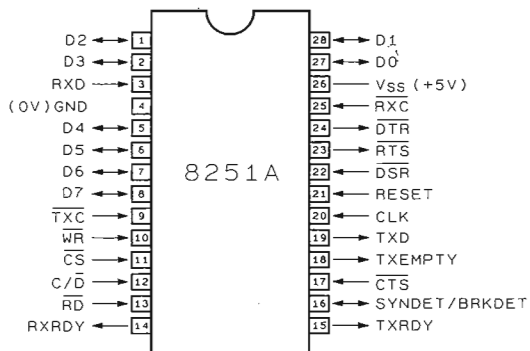
IC22, 1024 : MB89351-PF-G-BND
SCSI Controller



(Continued on page 47)

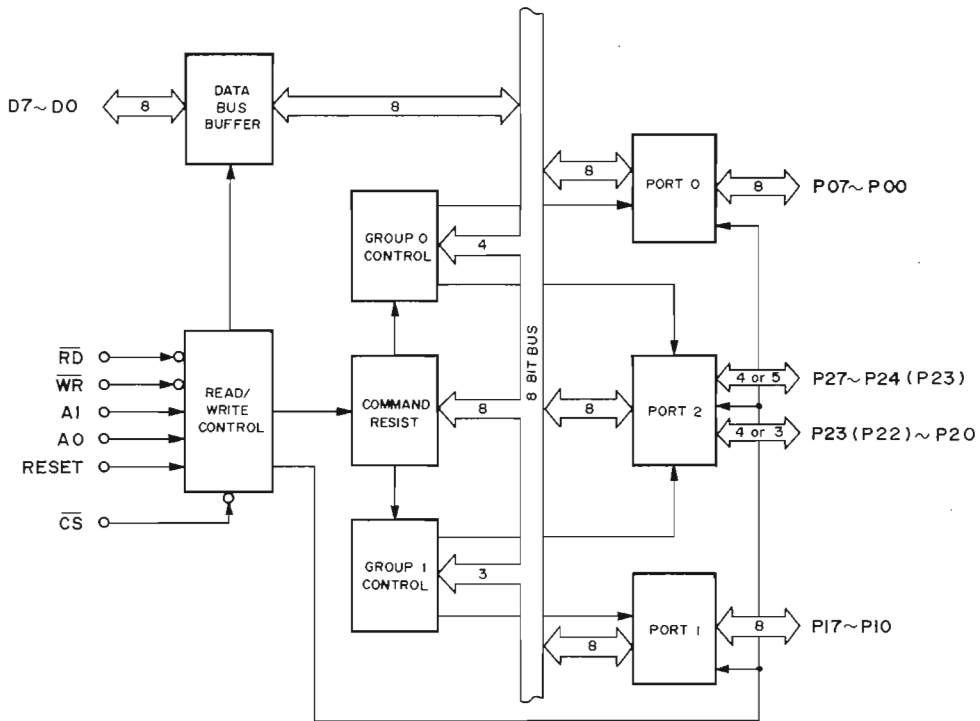
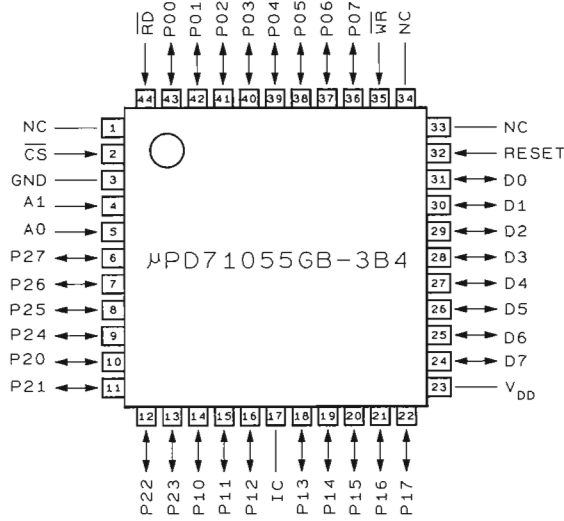
| Pin No. | Pin Name | I/O | Function |
|---------------|----------------------|-----|---|
| 62 | RST | I | Asynchronous reset input to clear internal circuit |
| 63 | CLK | I | Clock input |
| 61 | CS | I | Select enable signal for internal register |
| 44 | RD | I | Strobe input to read out internal register |
| 43 | WR | I | Strobe input to write internal register |
| 60, 57~55 | A5, A2~A0 | I | Address input to select internal register |
| 54~46 | D7~D0, DP | I/O | Bidirectional data bus to be used for reading/writing internal register |
| 42 | INTR | O | Interrupt request signal to inform end of internal operation, DREG access request and error detect. |
| 1~6, 8~10 | SDBI7~SDBI0 SDBIP | I | Input terminal of SCSI bus |
| 11~19 | SDBO7~SDBO0 SDBOP | O | Output terminal of SCSI bus |
| 40 | DACK | I | Response signal for DREQ signal requesting transfer with memory in DMA mode. |
| 20 | RESTO | O | Output signal for resetting to another device and input signal for resetting from another device. |
| 21 | RESTI | I | |
| 41 | DREQ | O | Data transfer request signal to execute data transfer with memory in DMA mode. |
| 45 | DPO | O | Odd No. parity of D7 - D0 is output. |
| 48 | SELO | O | Signal output by initiator and target and input signal to detect them. |
| 49 | SELI | I | |
| 24 | BSYO | O | Signal to show use conditions of SCSI bus |
| 25 | BSYI | I | |
| 26 | I/O | I/O | Indicates direction of data transfer. |
| 27 | C/D | I/O | Enters "H" at command phase, status phase and message phase. |
| 28 | MSG | I/O | Enters "H" only at message phase. |
| 29 | REQ | I/O | Informs from target to initiator of data request and data ready. |
| 30 | ACK | I/O | Response signal for REQ signal requesting transfer from target. |
| 31 | ATN | I/O | Signal to indicate attention condition. |
| 36, 35 | INIT, TARG | O | Signal to indicate coupling condition |
| 33 | INPUT1 | O | Almost the same as INIT and TARG signals, corresponding to INPUT1 and INPUT2 respectively. |
| 34 | INPUT2 | | |
| 64 | VCC | I | +5V power supply terminal |
| 59, 39, 32 | VSS | I | Zero ground (0V) |
| 58, 38, 37, 7 | NC | — | NC terminal |
| 26, 58 | OPEN | — | Open terminal |

IC1061 : μ PD71051GB-3B4
 Universal Synchronous Asynchronous Receiver Transmitter



| Pin No. | Pin Name | I/O | Function | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------------------|-------------------------------|-----------|--|---------------|--|----------------|---------------|-------------|----------------|--|-----------------|---|---|---|---|---|---|------------------|---|---|---|---|---|---|-----------------|---|---|---|---|---|---|-----------------|---|---|---|---|---|---|
| 20 | CLK | I | Being a main clock, it requires a frequency more than 4.5 times as high as RxC and TxC (more than 30 times for X1 mode). | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 21 | RESET | I | Requires a pulse width for 6 cycles of master reset and system clock. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | \overline{CS} | I | <table border="1"> <thead> <tr> <th></th> <th>Data Write</th> <th>Data Read</th> <th>Command Write</th> <th>Status Read</th> <th colspan="2">High Impedance</th> </tr> </thead> <tbody> <tr> <td>\overline{CS}</td> <td>L</td> <td>L</td> <td>L</td> <td>L</td> <td>L</td> <td>H</td> </tr> <tr> <td>$\overline{C/D}$</td> <td>L</td> <td>L</td> <td>H</td> <td>H</td> <td>x</td> <td>x</td> </tr> <tr> <td>\overline{WR}</td> <td>L</td> <td>H</td> <td>L</td> <td>H</td> <td>H</td> <td>x</td> </tr> <tr> <td>\overline{RD}</td> <td>H</td> <td>L</td> <td>H</td> <td>L</td> <td>H</td> <td>x</td> </tr> </tbody> </table> | | Data Write | Data Read | Command Write | Status Read | High Impedance | | \overline{CS} | L | L | L | L | L | H | $\overline{C/D}$ | L | L | H | H | x | x | \overline{WR} | L | H | L | H | H | x | \overline{RD} | H | L | H | L | H | x |
| | Data Write | Data Read | | Command Write | Status Read | High Impedance | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| \overline{CS} | L | L | | L | L | L | H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| $\overline{C/D}$ | L | L | | H | H | x | x | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| \overline{WR} | L | H | L | H | H | x | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| \overline{RD} | H | L | H | L | H | x | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12 | $\overline{C/D}$ | I | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | \overline{WR} | I | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13 | \overline{RD} | I | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 24, 23 | | | $\overline{DTR}, \overline{RTS}$ | O | Input/output signal corresponding to RS-232C signal. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 22 | \overline{DSR} | I | Only I/O signal (freely usable) when not used. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 17 | \overline{CTS} | I | Signal transmission circuit is disabled when at "H". | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 19 | T x D | O | Serial output | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15 | T x RDY | O | Indicates ready state for writing next data (enters "L" when data is written). Masked at Tx disable and prevented from entering "H". | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 18 | T x EMPTY | O | Indicates that all data have been sent out (enters "L" when data is written). | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | T x C | I | Signal transmission clock | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | R x D | I | Serial input | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 14 | R x RDY | O | Indicates that every bit of data has been received and can be read out (enters "L" when data is read out). | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 25 | $\overline{R x C}$ | I | Signal receiving clock | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 | SYNDET (Synchronous mode) | I/O | Enters "H" when Sync character specified by internal SYNC(O) is detected and "L" when status is read out. Synchronous detect mode is cancelled at more than 1 cycle input of external SYNC(I)RxC. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | BRKDET (Asynchronous mode) | O | Enters "H" when break status is detected and 1 word space is inputted, and "L" at mark input or RESET. (Enters "H" at 2 words space input for x1 mode.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

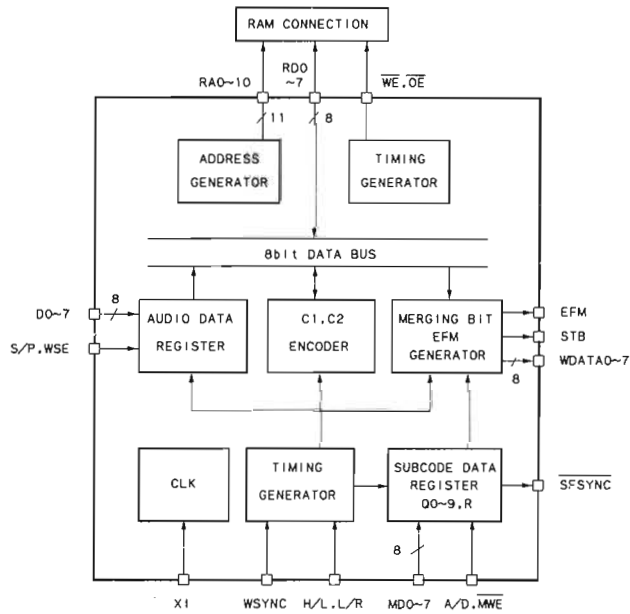
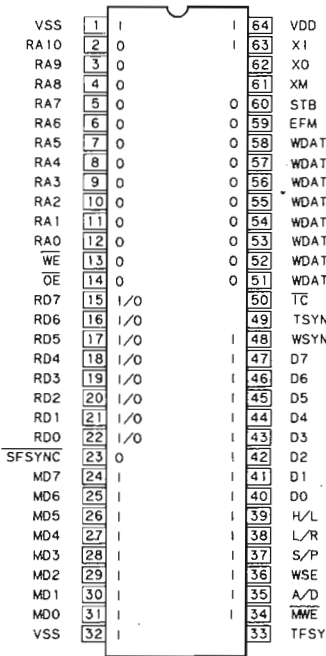
IC112 : μ PD71055GB-3B6
 IC1033 : μ PD71055GB-3B4
 Parallel Interface Unit



| CS | RD | WR | A1 | A0 | Action | CPU Action |
|----|----|----|----|----|--------------------------------|------------|
| 1 | 0 | 1 | 0 | 0 | PORT0 → DATA • PASS | INPUT |
| 0 | 0 | 1 | 0 | 1 | PORT1 → DATA • PASS | INPUT |
| 0 | 0 | 1 | 1 | 0 | PORT2 → DATA • PASS | INPUT |
| 0 | 0 | 1 | 1 | 1 | PROHIBITION | |
| 0 | 0 | 0 | X | X | | |
| 0 | 1 | 0 | 0 | 0 | DATA • PASS → PORT0 | OUTPUT |
| 0 | 1 | 0 | 0 | 1 | DATA • PASS → PORT1 | OUTPUT |
| 0 | 1 | 0 | 1 | 0 | DATA • PASS → PORT2 | OUTPUT |
| 0 | 1 | 0 | 1 | 1 | DATA • PASS → COMMAND RESISTOR | OUTPUT |
| 0 | 1 | 1 | X | X | DATA • PASS → HIGH • IMPEDANCE | |
| 1 | X | X | X | X | | |

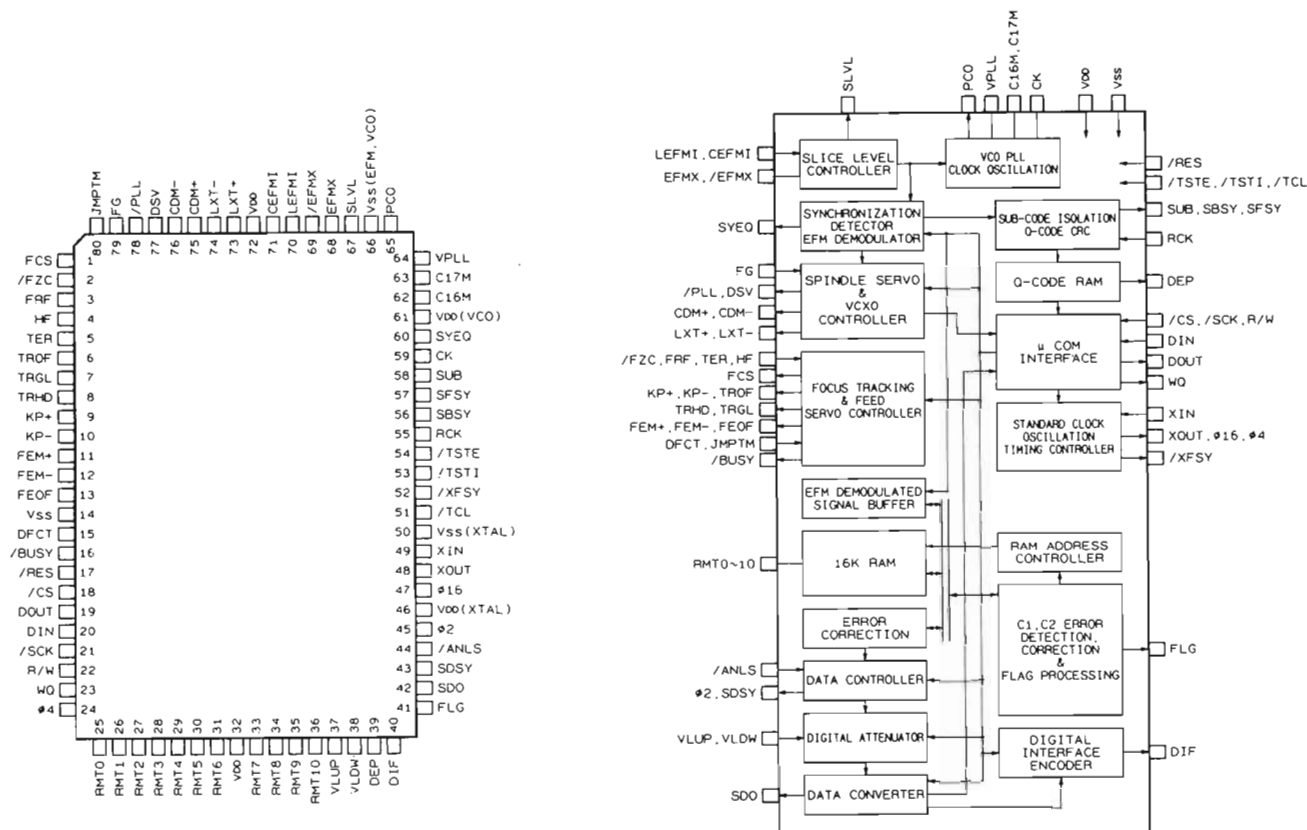
Note: X = 0 or 1

IC1040 : YM6049
Encoder



| Pin No. | Pin Name | I/O | Function |
|---------|----------|-----|--|
| 64 | VDD | I | +5V power supply terminal |
| 32 | VSS | I | Ground terminal |
| 63 | Xi | I | For connection of crystal oscillator |
| 62 | XO | O | Clock can be inputted externally through Xi. |
| 61 | XM | O | Master clock output |
| 2~12 | RA10~0 | O | Address output terminal for external RAM |
| 13 | WE | O | Write enable output terminal for external RAM |
| 14 | OE | O | Out enable output terminal for external RAM |
| 15~22 | RD7~0 | I/O | Data input/output terminal for external RAM |
| 23 | SFSYNC | O | Sub-code frame synchronous signal. Used when inputting sub-code data. |
| 24~31 | MD7~0 | I | Sub-code data input terminal |
| 34 | MWE | I | Sub-code data write enable input terminal |
| 35 | A/D | I | Control input terminal of internal register for sub-code data. Register address is specified at A/D=1 and input data is specified at A/D=0. |
| 36 | WSE | I | Synchronous signal of input data is specified at serial input of audio data. Data is inputted while synchronized with WSYNC signal at WSE=1 and with SYNC pattern in input data at WSE=0. |
| 37 | S/P | I | Specifies whether to input audio data serially or in parallel. Serial input is possible at S/P=1 and parallel input at S/P=0. |
| 38 | L/R | O | Synchronous signal output terminal used when inputting audio data in parallel. L channel data is inputted at L/R=1 and R channel data at L/R=0. |
| 39 | H/L | O | Inputs 16 bits data for each channel of synchronous signal output terminal used when inputting audio data in parallel by dividing them into upper and lower parts. Upper 8 bits are inputted at H/L=1 and lower 8 bits at H/L=0. |
| 40~47 | D7~0 | I | Audio data input terminal. Only D0 and D1 are used for serial input. R channel data is inputted in D0 and L channel data in D1. |
| 48 | WSYNC | I | External synchronous signal input terminal used when inputting audio data. |
| 50 | TC | I | Input terminal for initializing internal circuit. |
| 51~58 | WDATA7~0 | O | Output terminal for converting bit length/blank length of EFM signal |
| 60 | STB | O | Strobe signal output while synchronized with WDATA |
| 59 | EFM | O | Terminal to output EFM signal directly. |
| 49 | TSYNC | I | Input pin for testing. Usually fixed to "1" or "0". |
| 33 | TFSY | I | Input pin for testing. Usually fixed to "1" or "0". |

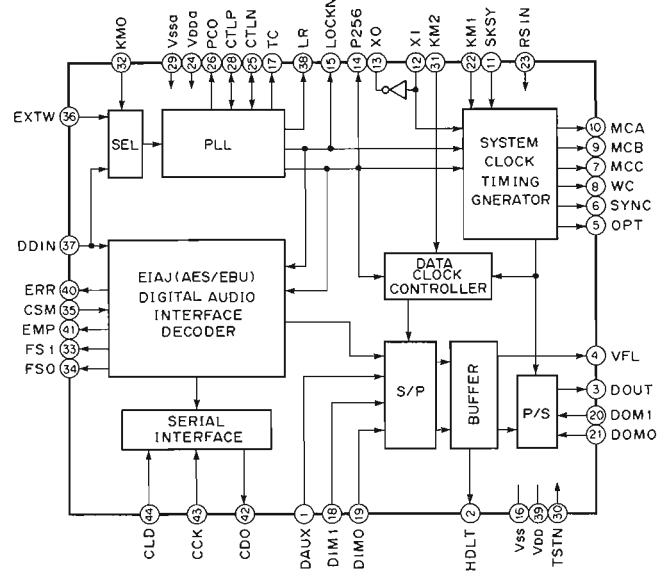
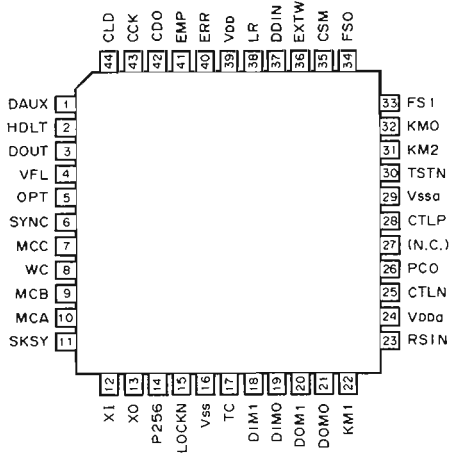
IC324 : YM7402
Signal Processor & Controller for Compact Disc Player



| Pin No. | Pin Name | I/O | Function |
|---------|----------|-----|--|
| 1 | FCS | O | Focus search signal output |
| 2 | FZC | I | Focus zero cross signal input |
| 3 | FRF | I | Focus reflection signal input |
| 4 | HF | I | HF signal input |
| 5 | TER | I | Tracking error signal input |
| 6 | TROF | O | Tracking servo OFF signal output |
| 7 | TRGL | O | TRGL signal output |
| 8 | TRHD | O | Tracking hold signal output |
| 9 | KP+ | O | Outward kick pulse output |
| 10 | KP- | O | Inward kick pulse output |
| 11 | FEM+ | O | Outward feed pulse output |
| 12 | FEM- | O | Inward feed pulse output |
| 13 | FEOF | O | Feed servo OFF signal output |
| 14 | Vss | | GND |
| 15 | DFCT | I | For setting track count synchronous mode |
| 16 | BUSY | O | Sequence control output (H : End of track count) |
| 17 | RES | I | System reset input |
| 18 | CS | I | Chip select input from µ-COM |
| 19 | D OUT | O | Serial data output to µ-COM |
| 20 | D IN | I | Serial data input from µ-COM |
| 21 | SCK | I | Clock input for input/output of serial data with µ-COM |
| 22 | R/W | I | Control signal input for data input/output with µ-COM |
| 23 | WQ | O | Request signal output for data output to µ-COM |
| 24 | Ø4 | O | System clock output (4.2336MHz) |

| Pin No. | Pin Name | I/O | Function |
|---------|----------|-----|--|
| 25 | RMT0 | | For testing internal RAM |
| 26 | RMT1 | | |
| 27 | RMT2 | | |
| 28 | RMT3 | | |
| 29 | RMT4 | | |
| 30 | RMT5 | | |
| 31 | RMT6 | | |
| 32 | VDD | | +5V |
| 33 | RMT7 | | For testing internal RAM |
| 34 | RMT8 | | |
| 35 | RMT9 | | |
| 36 | RMT10 | | |
| 37 | VL UP | I | Volume up input Volume down input |
| 38 | VL DW | I | |
| 39 | DEP | O | Deemphasis control signal output Data output for digital interface Flag output to correct error in SDO output data Serial data output Synchronous signal output (44.1kHz) of SDO output data Analog sound serial data input System lock output (2.1168MHz) |
| 40 | DIF | O | |
| 41 | FLG | O | |
| 42 | SDO | O | |
| 43 | SDSY | O | |
| 44 | ANLS | I | |
| 45 | Ø2 | O | |
| 46 | VDD | | XTAL system +5V |
| 47 | Ø16 | O | System clock output |
| 48 | X OUT | O | For connecting quartz oscillator (16.9344MHz) |
| 49 | X IN | I | |
| 50 | VSS | | XTAL system GND |
| 51 | TCL | I | Test signal input |
| 52 | XFSY | O | Frame synchronous signal output (7.35kHz) |
| 53 | TSTI | | Test mode input Test mode control signal input |
| 54 | TSTE | | |
| 55 | RCK | I | Clock input for reading sub-code Sub-code block synchronization output Sub-code frame signal output Sub-code serial output (P~W) |
| 56 | SBSY | O | |
| 57 | SFSY | O | |
| 58 | SUB | O | |
| 59 | CK | O | VCO system clock output (4.3218MHz) |
| 60 | SYEQ | O | Synchronous coincidence monitor (H : EFM pattern and internal counter are synchronized.) |
| 61 | VDD | | VCO system +5V |
| 62 | C16M | I/O | For VCO control |
| 63 | C17M | I/O | For VCO adjusted voltage |
| 64 | VPLL | | For VCO power supply |
| 65 | PCO | O | Clock reproduction system phase error output |
| 66 | VSS | | EFM, VCO system GND |
| 67 | SLVL | O | Slice level output |
| 68 | EFMX | O | Signal output after limiting amplitude of EFM signal input (normal phase) |
| 69 | EFMX | O | Signal output after limiting amplitude of FFM signal output (reverse phase) |
| 70 | LEFMI | I | LD mode EFM signal input |
| 71 | CEFMI | I | CD mode EFM signal input |
| 72 | VDD | | +5V |
| 73 | LXT+ | O | VCXO frequency up signal output (only in LD mode) |
| 74 | LXT- | O | VCXO frequency down signal output (only in LD mode) |
| 75 | CDM+ | O | Disc motor acceleration signal output (only in CD mode) |
| 76 | CDM- | O | Disc motor deceleration signal output (only in CD mode) |
| 77 | DSV | O | For system expansion |
| 78 | PLL | O | PLL operation monitor (L : Spindle control is PLL operated.) |
| 79 | FG | I | FG signal input |
| 80 | JMPTM | I | Trigger input to start sequence control |

IC113, 799 : YM3436BG (XG948C0)
Digital Format Interface Receiver



| Pin No. | Pin Name | I/O | Function | Pin No. | Pin Name | I/O | Function |
|---------|----------|-----|---|---------|----------|-----|--|
| 1 | DAUX | I | Auxiliary input for audio data | 26 | PCO | O | PLL phase comparison output |
| 2 | HDLT | O | Asynchronous buffer operation flag | 27 | (NC) | | |
| 3 | DOUT | O | Audio data output | 28 | CTLP | I | VCO control input P |
| 4 | VFL | O | Parity flag output | 29 | Vssa | | VCO section power (GND) |
| 5 | OPT | O | Fs x 1 Synchronous output signal for DAC | 30 | TSTN | I | Test terminal. Open for normal use |
| 6 | SYNC | O | Fs x 1 Synchronous output signal for DSP | 31 | KM2 | I | Clock mode switching input 2 |
| 7 | MCC | O | Fs x 64Bit clock output | 32 | KM0 | I | Clock mode switching input 0 |
| 8 | WC | O | Fs x 1Word clock output | 33 | FS1 | O | Channel status sampling frequency display output 1 |
| 9 | MCB | O | Fs x 128Bit clock output | 34 | FS0 | O | Channel status sampling frequency display output 0 |
| 10 | MCA | O | Fs x 256Bit clock output | 35 | CSM | I | Channel status output method selection |
| 11 | SKSY | I | Clock synchronization control input | 36 | EXTW | I | External synchronous auxiliary input word clock |
| 12 | XI | I | Crystal oscillator connection or external clock input | 37 | DDIN | I | EIAJ (AES/EBU) data input |
| 13 | XO | O | Crystal oscillator connection | 38 | LR | O | PLL word clock output |
| 14 | P256 | O | VCO oscillating clock connection | 39 | Vdd | | Logic section power (+5V) |
| 15 | LOCKN | O | PLL lock flag | 40 | ERR | O | Data error flag output |
| 16 | Vss | | Logic section power (GND) | 41 | EMP | O | Channel status emphasis control code output |
| 17 | TC | O | PLL time constant switching output | 42 | CDO | O | 3-wire type microcomputer interface data output |
| 18 | DIM1 | I | Data input mode selection | 43 | CCK | I | 3-wire type microcomputer interface clock input |
| 19 | DIM0 | I | Data input mode selection | 44 | CLD | I | 3-wire type microcomputer interface load input |
| 20 | DOM1 | I | Data output mode selection | | | | |
| 21 | DOM0 | I | Data output mode selection | | | | |
| 22 | KM1 | I | Clock mode switching input 1 | | | | |
| 23 | RSTN | I | System reset input | | | | |
| 24 | Vdda | | VCO section power (+5V) | | | | |
| 25 | CTLN | I | VCO control input N | | | | |

IC795, 796 : YM3437 (XG949A0)
Digital Format Interface Transmitter

| Pin No. | Pin Name | I/O | Function | Pin No. | Pin Name | I/O | Function |
|---------|----------|-----|--|---------|----------|-----|---|
| 1 | VSS | | Ground | 9 | MUTE | I | Mute |
| 2 | MCLK | I | Master clock input | 10 | VFL | I | Validity flag |
| 3 | DM0 | I | DIN/BCLK/WCLK format select | 11 | CCL | I | C, U bit clock input/C bit data input |
| 4 | DM1 | I | DM1, DM0 = 0,0 DSP, LDSP (64bit, LSB first) | 12 | CIN | I | C, U bit data input/U bit data input |
| | | | DM1, DM0 = 0,1 stereo DSP (64bit, MSB first) | 13 | CLD | I | End of C, U bit input/16, 20bit/24bit select |
| | | | DM1, DM0 = 1,0 DSP2 (128bit, MSB first) | 14 | CNTR | I | 32bit counter reset/Top of block |
| 5 | RES | I | System reset | 15 | CSM | I | Channel status input mode select CSM = 0 Asynchronous mode, CSM = 1 Synchronous mode, |
| 6 | WCIN | I | Word clock input | | | | |
| 7 | DIN | I | Digital audio serial data input | | | | |
| 8 | VDD | | Power supply (+5V) | 16 | DOUT | O | Digital interface formatted data output |

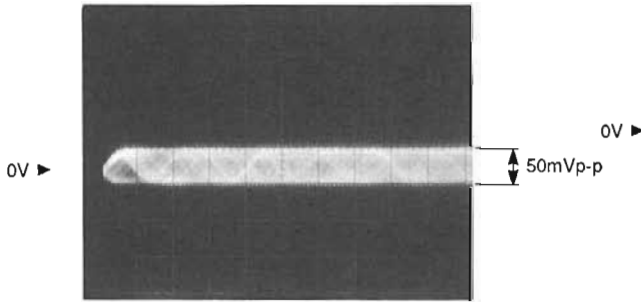
IC24 : YM3934 (XE798A0)
Peak Meter Module

| Pin No. | Pin Name | I/O | Function | Pin No. | Pin Name | I/O | Function |
|---------|----------|-----|----------------------|---------|----------|-----|---|
| 1 | NC | | | 33 | NC | | |
| 2 | NC | | | 34 | NC | | |
| 3 | NC | | | 35 | NC | | |
| 4 | DB11 | O | Meter data output | 36 | DI00 | I | Digital in data |
| 5 | DB10 | O | | 37 | DI01 | I | |
| 6 | DB9 | O | | 38 | DI02 | I | |
| 7 | DB8 | O | | 39 | DI03 | I | |
| 8 | DB7 | O | | 40 | DI04 | I | |
| 9 | DB6 | O | | 41 | DI05 | I | |
| 10 | NC | | | 42 | NC | | |
| 11 | DB5 | O | | 43 | DI06 | I | |
| 12 | DB4 | O | | 44 | DI07 | I | |
| 13 | DB3 | O | | 45 | DI08 | I | |
| 14 | DB2 | O | | 46 | DI09 | I | |
| 15 | DB1 | O | | 47 | DI10 | I | |
| 16 | DB0 | O | | 48 | DI11 | I | |
| 17 | NC | | 49 | NC | | | |
| 18 | NC | | 50 | NC | | | |
| 19 | NC | | 51 | NC | | | |
| 20 | NC | | 52 | NC | | | |
| 21 | OVD | I | Overflow data | 53 | HT1 | I | Falling and holding times are determined by these inputs. |
| 22 | OMODE | I | Output mode control | 54 | HT0 | I | |
| 23 | IMODE | I | Input mode control | 55 | FT1 | I | |
| 24 | NC | | | 56 | FT0 | I | |
| 25 | TST | I | Test pin | 57 | VSS | | Ground |
| 26 | VDD | | Power supply | 58 | VDD | | Power supply |
| 27 | VSS | | Ground | 59 | NC | | |
| 28 | ICLK | I | System clock input | 60 | C3 | O | Channel select |
| 29 | SYNC | I | Synch. pulse | 61 | C2 | O | |
| 30 | RST | I | Initial reset | 62 | C1 | O | |
| 31 | DIEN | I | Digital input enable | 63 | C0 | O | |
| 32 | NC | | | 64 | NC | | |

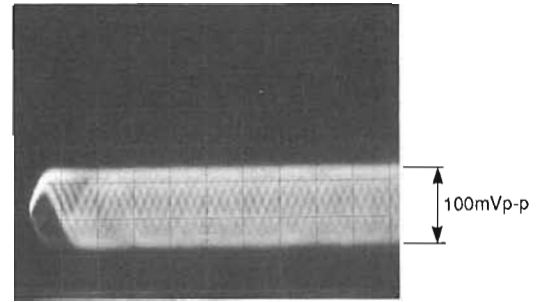
■ WAVEFORM OF TEST POINT (Test Disc TX911730, Track No. 2 1kHz 0dB)

< SERVO >

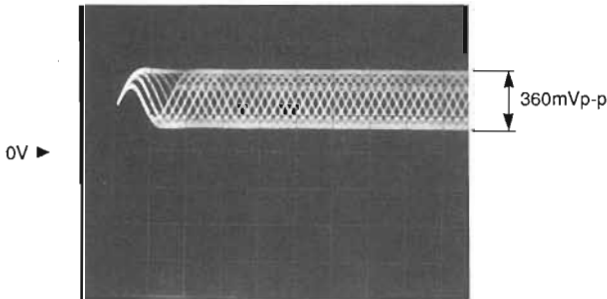
Point ① : F0S1 or F0S2
 V : 50 mV/div H : 1 μsec/div
 DC coupling 1:1 prove



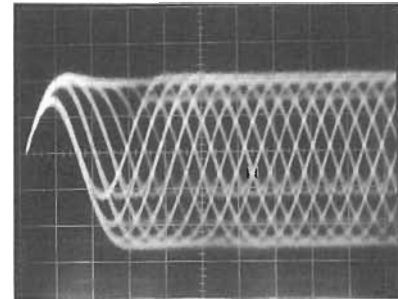
Point ② : TRS1 or TRS2 (TP322 or TP323)
 V : 50 mV/div H : 1 μsec/div
 DC coupling 1:1 prove



Point ③ : REFL (TP302)
 V : 200 mV/div H : 1 μsec/div
 DC coupling 1:1 prove

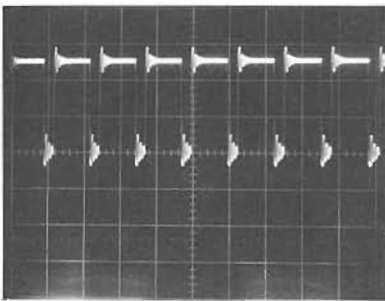


Point ④ : Eye pattern (Pin11 of IC516)
 V : 200 mV/div H : 0.5 msec/div
 AC coupling 1:1 prove

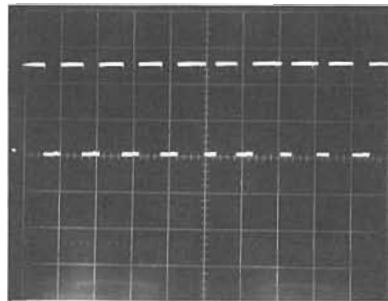


< HF >

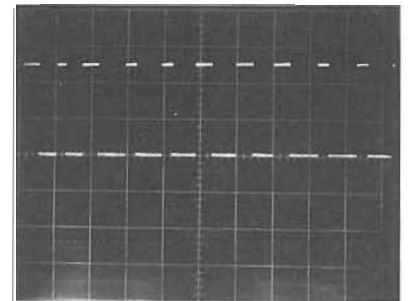
Point ⑤ : CK (Pin13 of IC252)
 V : 2 V/div H : 1 μsec/div
 DC coupling 1:1 prove



Point ⑥ : Z1, Z, Z0 (Pin3 to 5 of IC253)
 V : 2 V/div H : 20 nsec/div
 DC coupling 1:1 prove

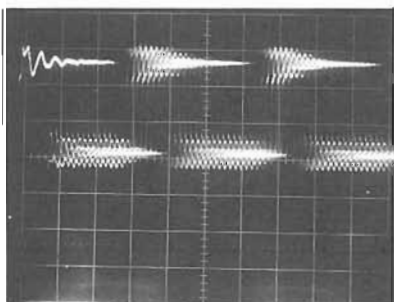


Point ⑦ (Pin6 of IC255)
 V : 2 V/div H : 10 nsec/div
 DC coupling 1:1 prove

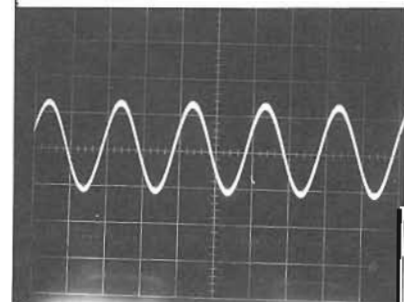


< AUDIO >

Point ⑧ : OTR2- (Pin32 of IC711)
 V : 2 V/div H : 0.2 μsec/div
 DC coupling 1:1 prove

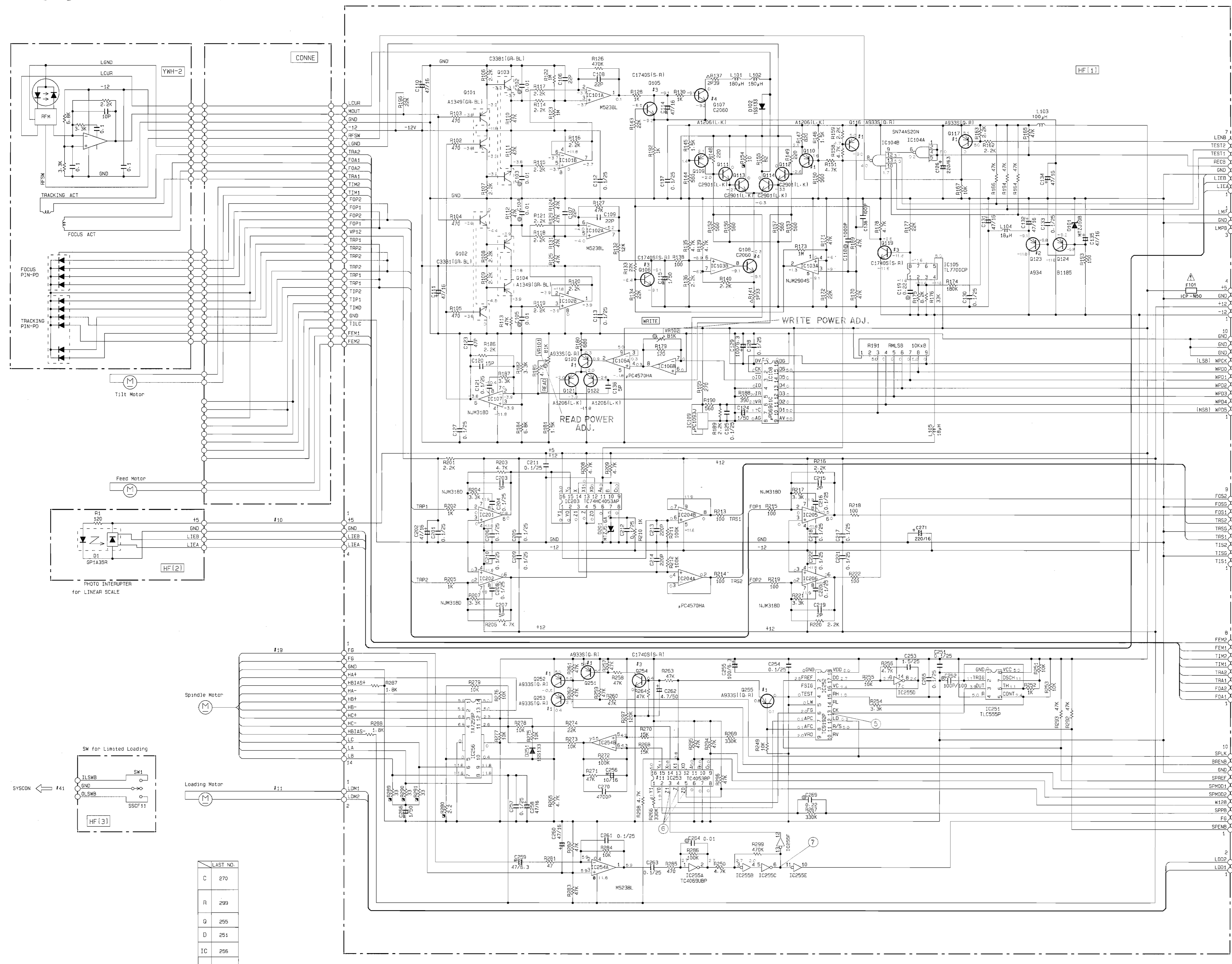


Point ⑨ (R709 side of C701)
 V : 1 V/div H : 0.5 msec/div
 AC coupling 1:1 prove



YPR601 (HF) SCHEMATIC DIAGRAM

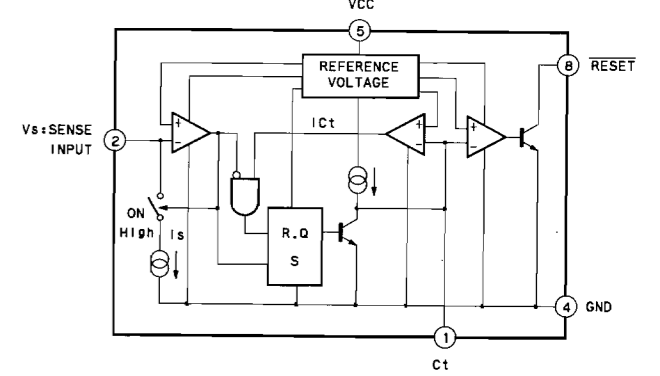
(E) to (7) : WAVEFORM OF TEST POINT (See page 55)



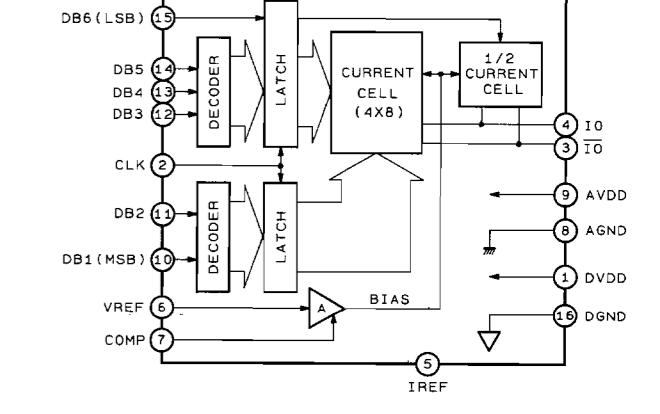
Interchangeable Parts at Manufacture-Stage table with columns for Mark, Reference Parts Number, and Parts Name.

NOTICE (J)..... Japanese model (U)..... U.S.A model (C)..... Canadian model (A)..... Australian model (G)..... European model (B)..... British model (R)..... General model (P)..... JP model

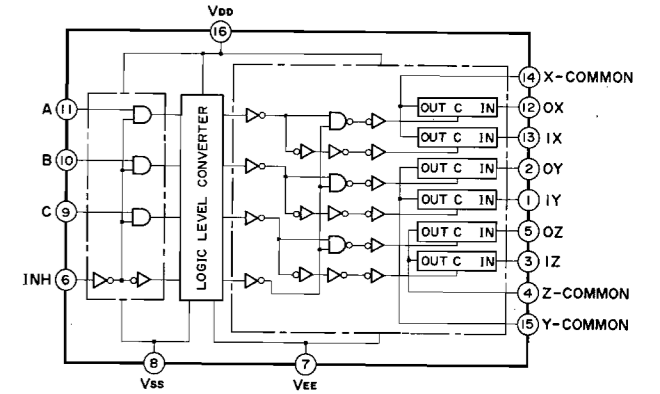
IC105 : TL7700CP System Reset



IC108 : μPD6901C 6 Bit D/A Converter for Video

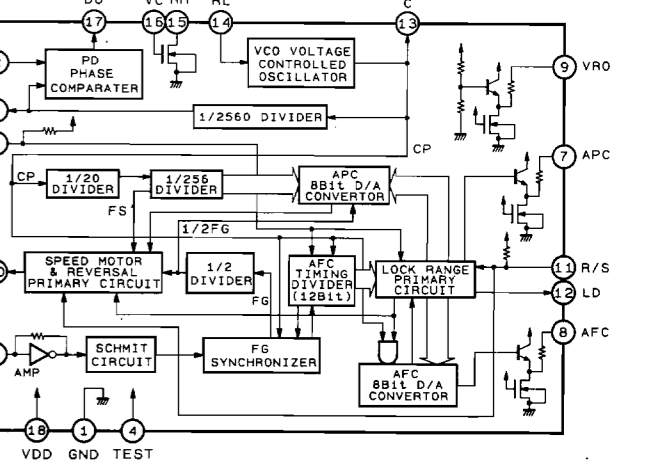


IC203 : TC74HC4053AP IC253 : TC4053BP, μPD4053BC, HD14053, MN4053BP or BU4053B Triple-2 Channel Multiplexer/Demultiplexer

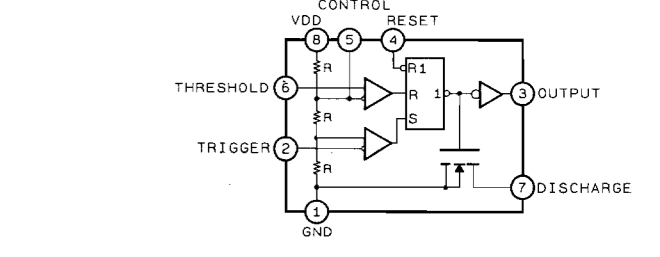


CONTROL INPUTS table with columns for INHIBIT, C, B, A, and 'ON' CHANNEL, listing pin numbers and logic levels.

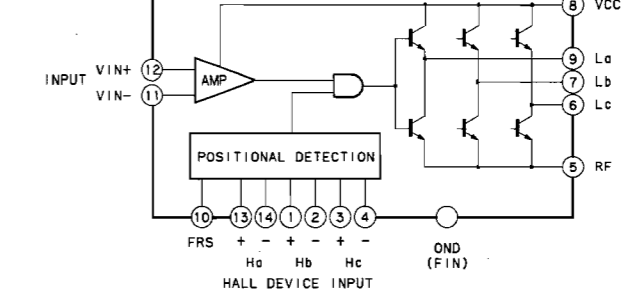
IC252 : TC9192P Motor Controller



IC251 : TLC555P Timer

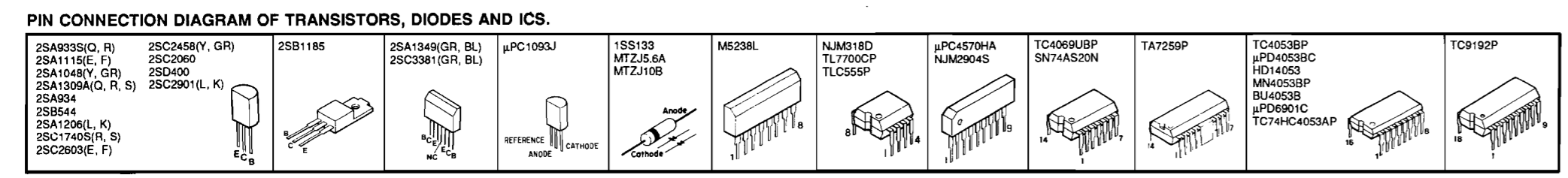


IC256 : TA7259P



RESISTOR table with columns for Remarks, Parts Name, and Part Number, listing various resistor types and values.

CAPACITOR table with columns for Remarks, Parts Name, and Part Number, listing various capacitor types and values.

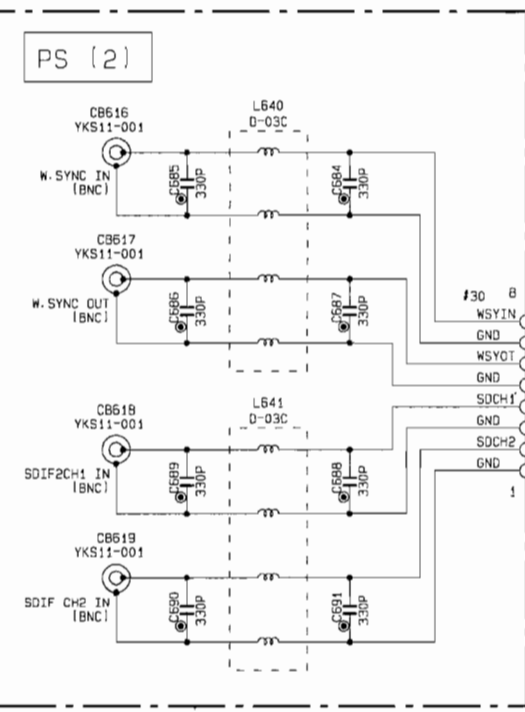
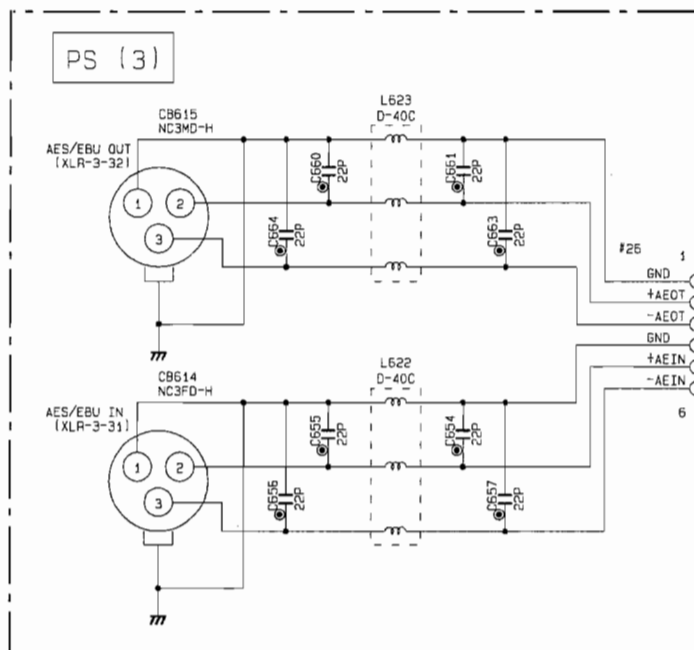


All voltage are measured with a 10MΩ/DC electric volt meter. Components having special characteristics are marked Δ and must be replaced with parts having specifications equal to those originally installed. Schematic diagram is subject to change without notice.

YPR601 (AUDIO 1/2) SCHEMATIC DIAGRAM

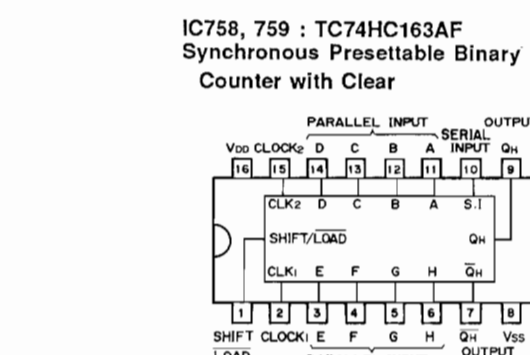
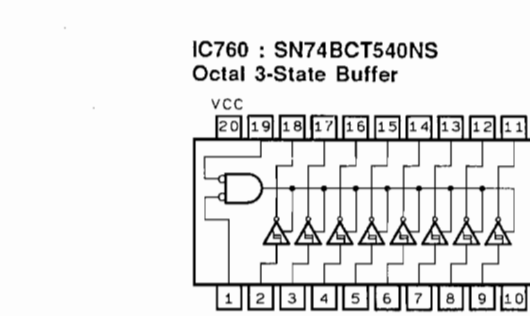
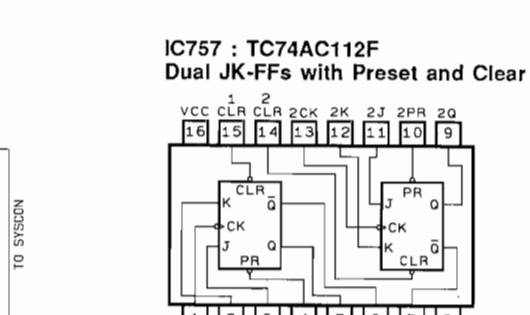
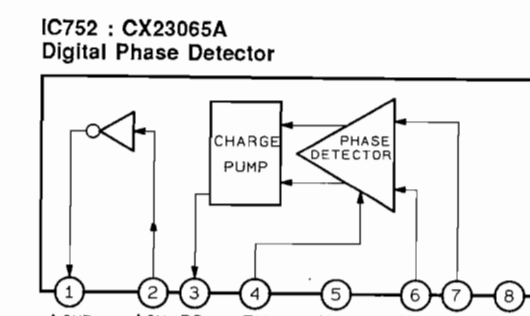
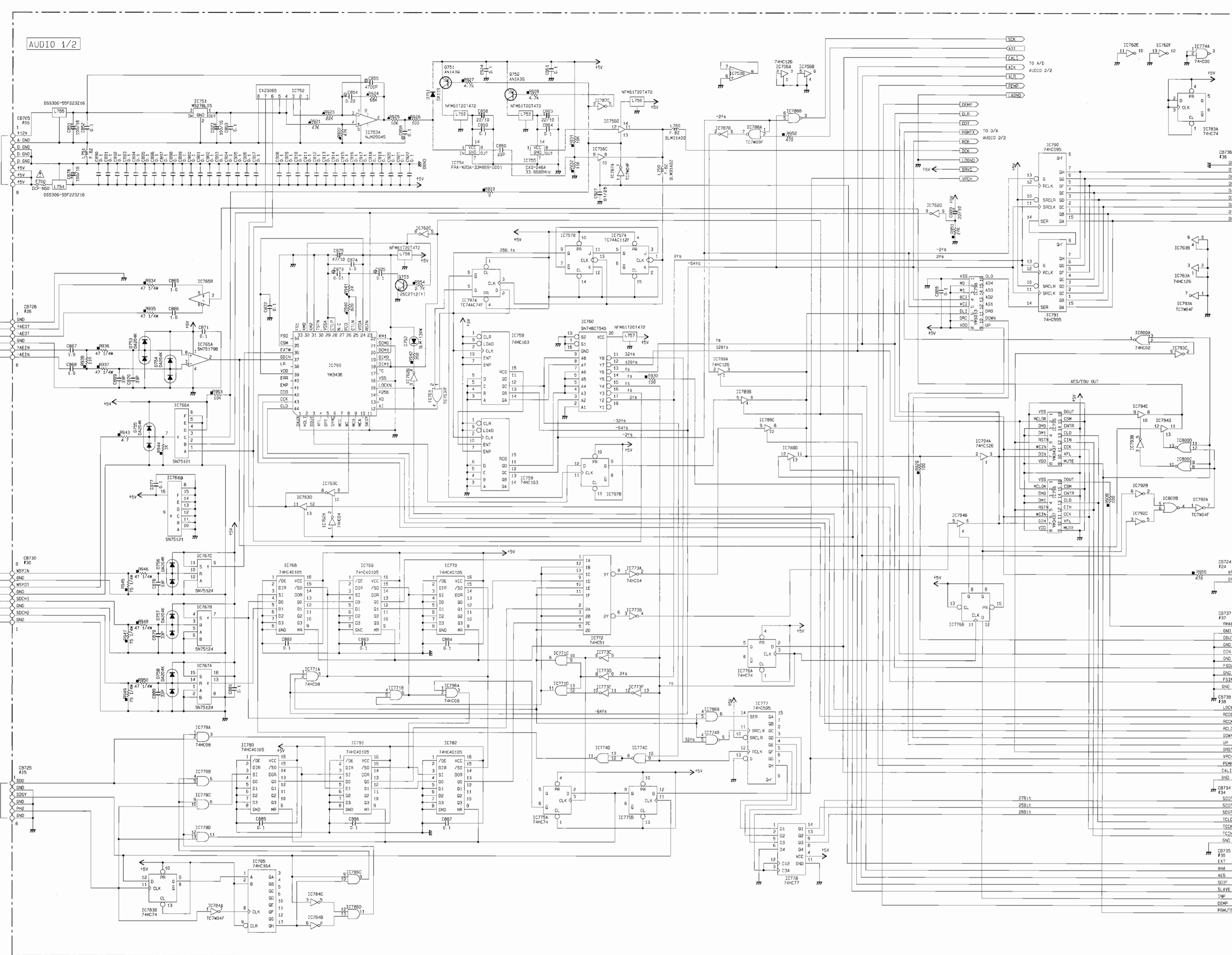
NOTICE
(U)..... Japanese model
(S)..... U.S.A model
(C)..... Canadian model
(A)..... Australian model
(G)..... European model
(B)..... British model
(D)..... General model
(P)..... FP model

Table with 2 columns: LAST NO., PART NO. Rows include C 907, R 905, Q 793, D 798, IC 800, L 760, CB 738.

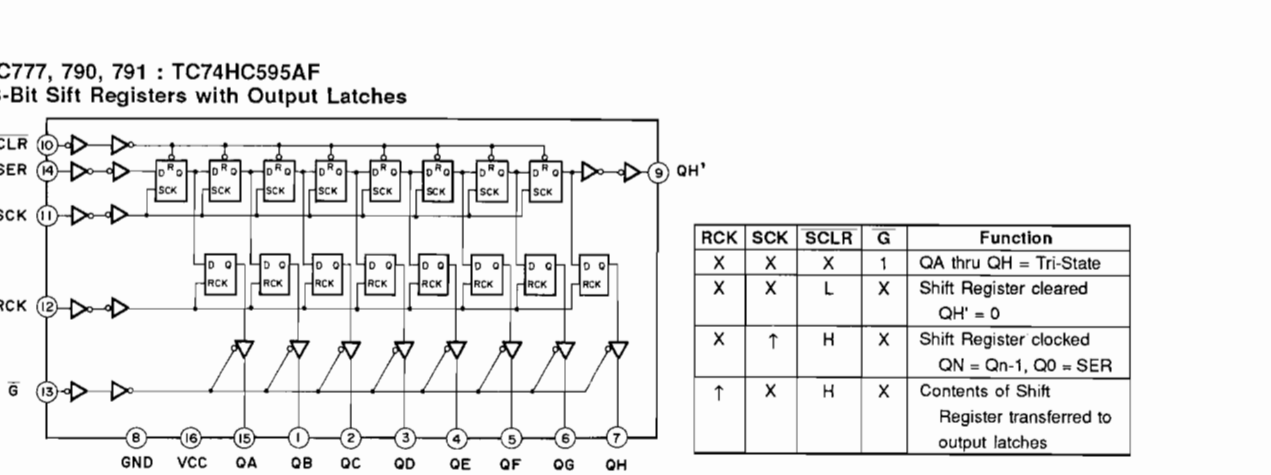
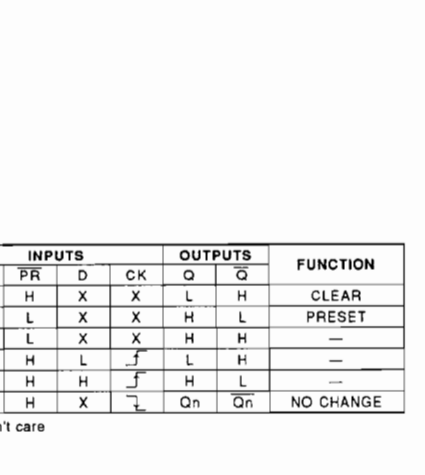
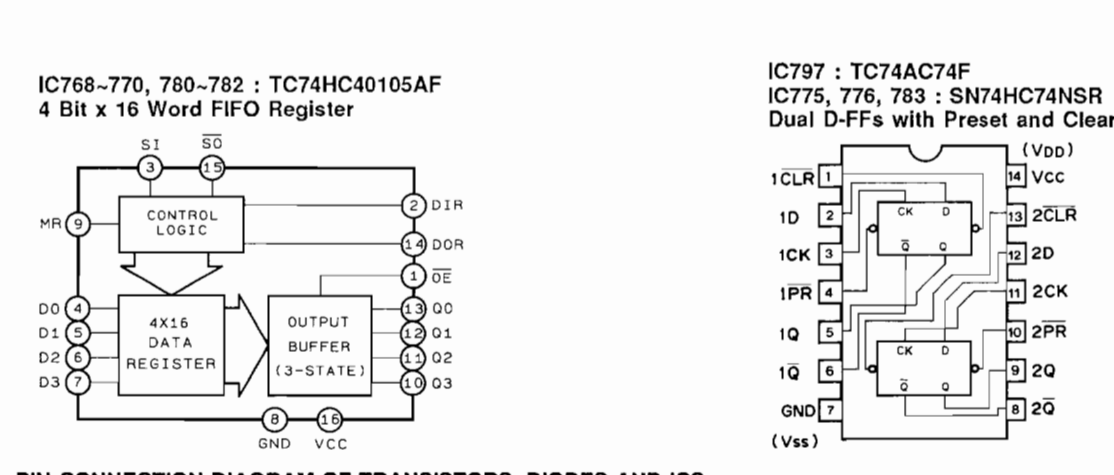
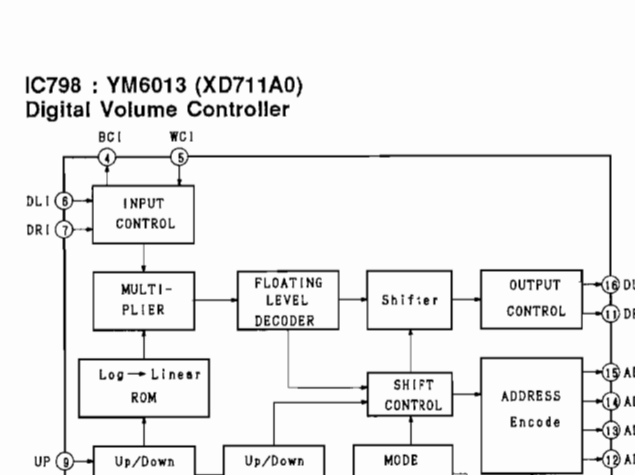
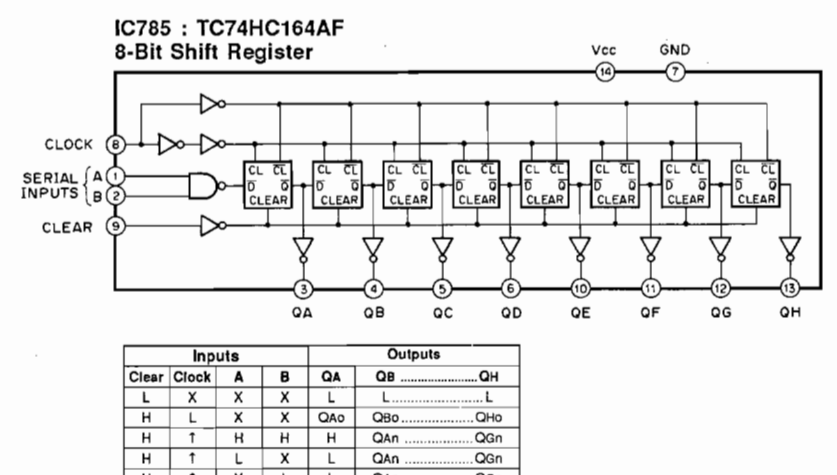
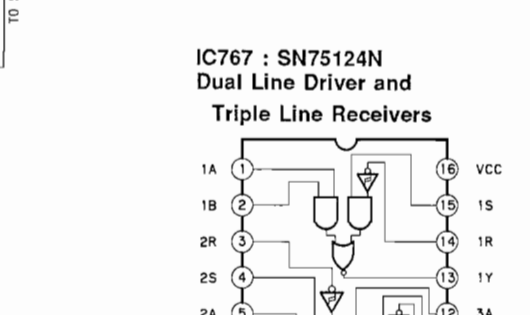
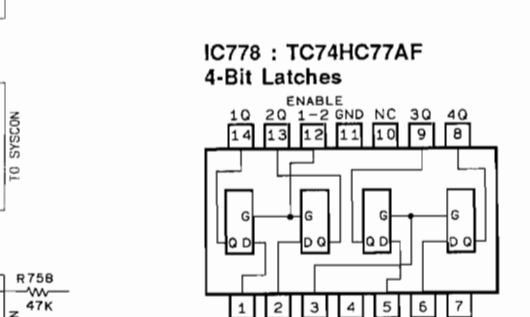
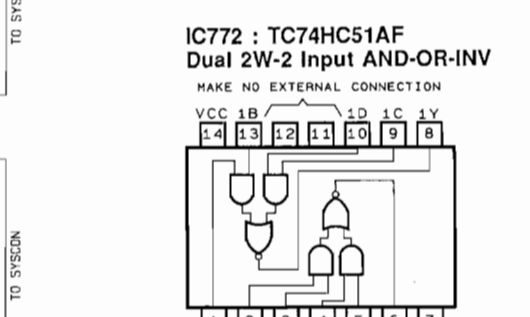
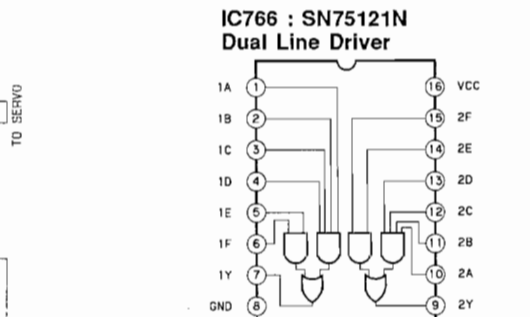


RESISTOR table with columns: REMARKS, PARTS NAME, NO. MARK, VALUE. Lists various resistor types like carbon film, metal oxide film, etc.

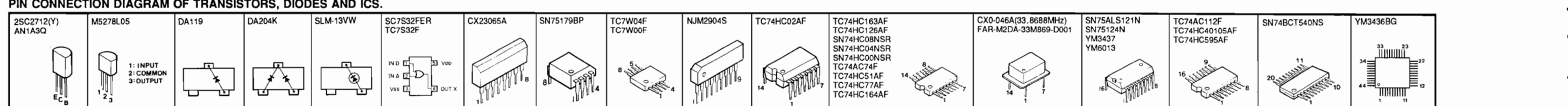
CAPACITOR table with columns: REMARKS, PARTS NAME, NO. MARK, VALUE. Lists various capacitor types like electrolytic, tantalum, ceramic, etc.



Truth Table for IC758, 759 counter, showing inputs (CLOCK, RESEY, LOAD, ENABLE P, ENABLE T) and outputs (COUNT, NO COUNT).



Truth table for IC785 shift register, showing inputs (Clear, Clock, A, B, C, D, E, F, G, H) and outputs (QA, QB, QC, QD, QE, QF, QG, QH).



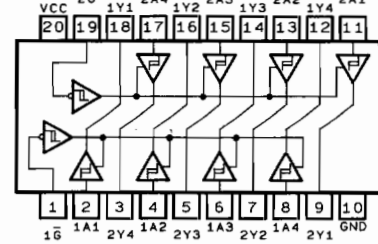
All voltage are measured with a 10MΩ/DC electric volt meter. Components having special characteristics are marked Δ and must be replaced with parts having specifications equal to those originally installed. Schematic diagram is subject to change without notice.

YPDR601 (AUDIO 2/2, PS) SCHEMATIC DIAGRAM

④ and ⑤ : WAVEFORM OF TEST POINT (See page 55)

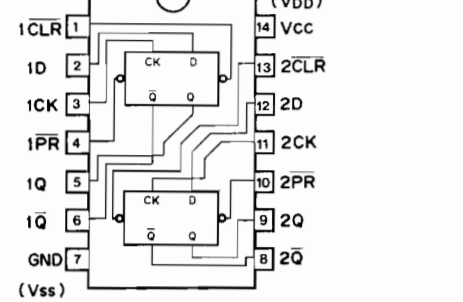
IC712, 720 : TC74HC244FP

Octal 3-State Bus Buffers



IC724 : TC74AC74F

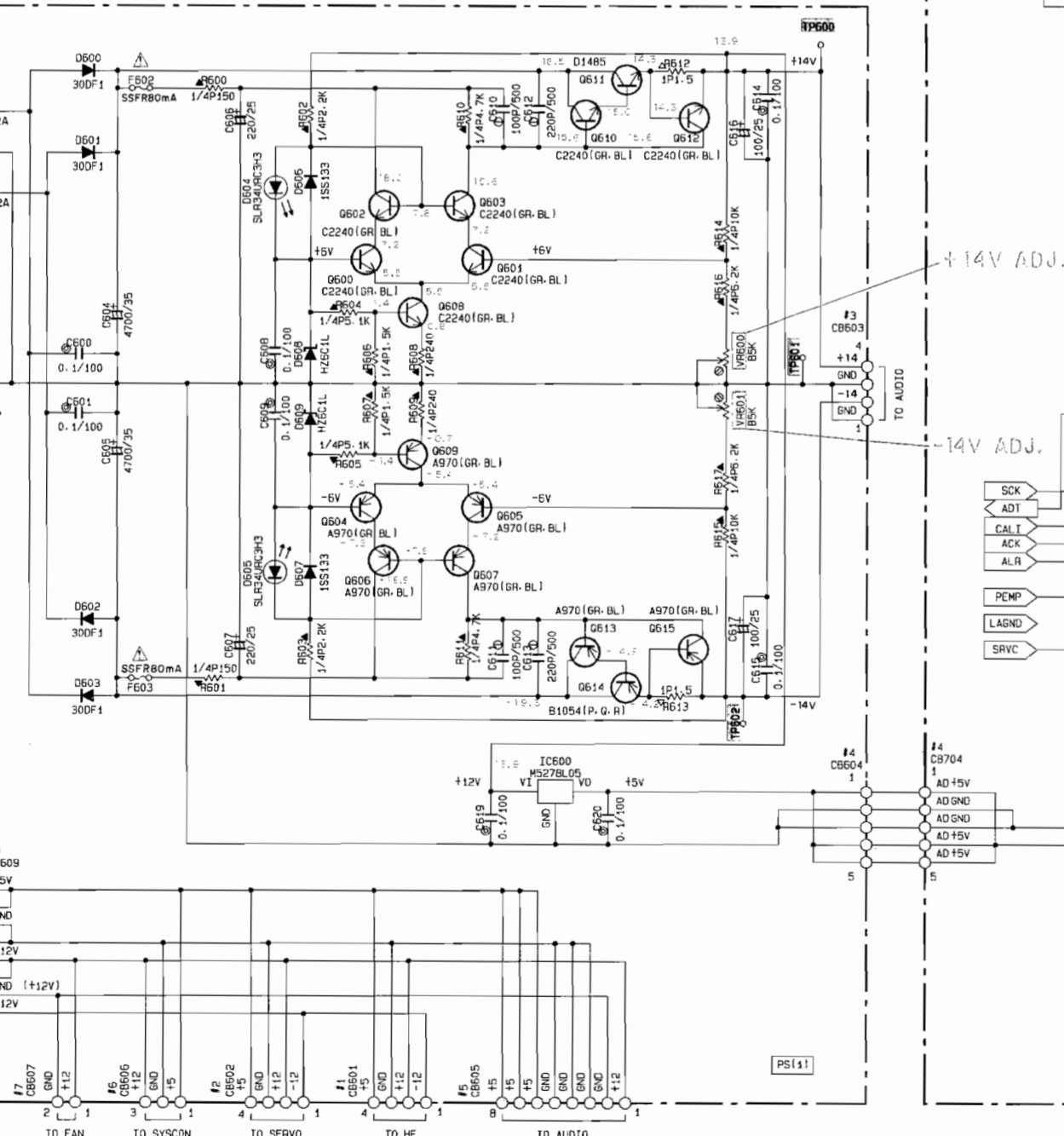
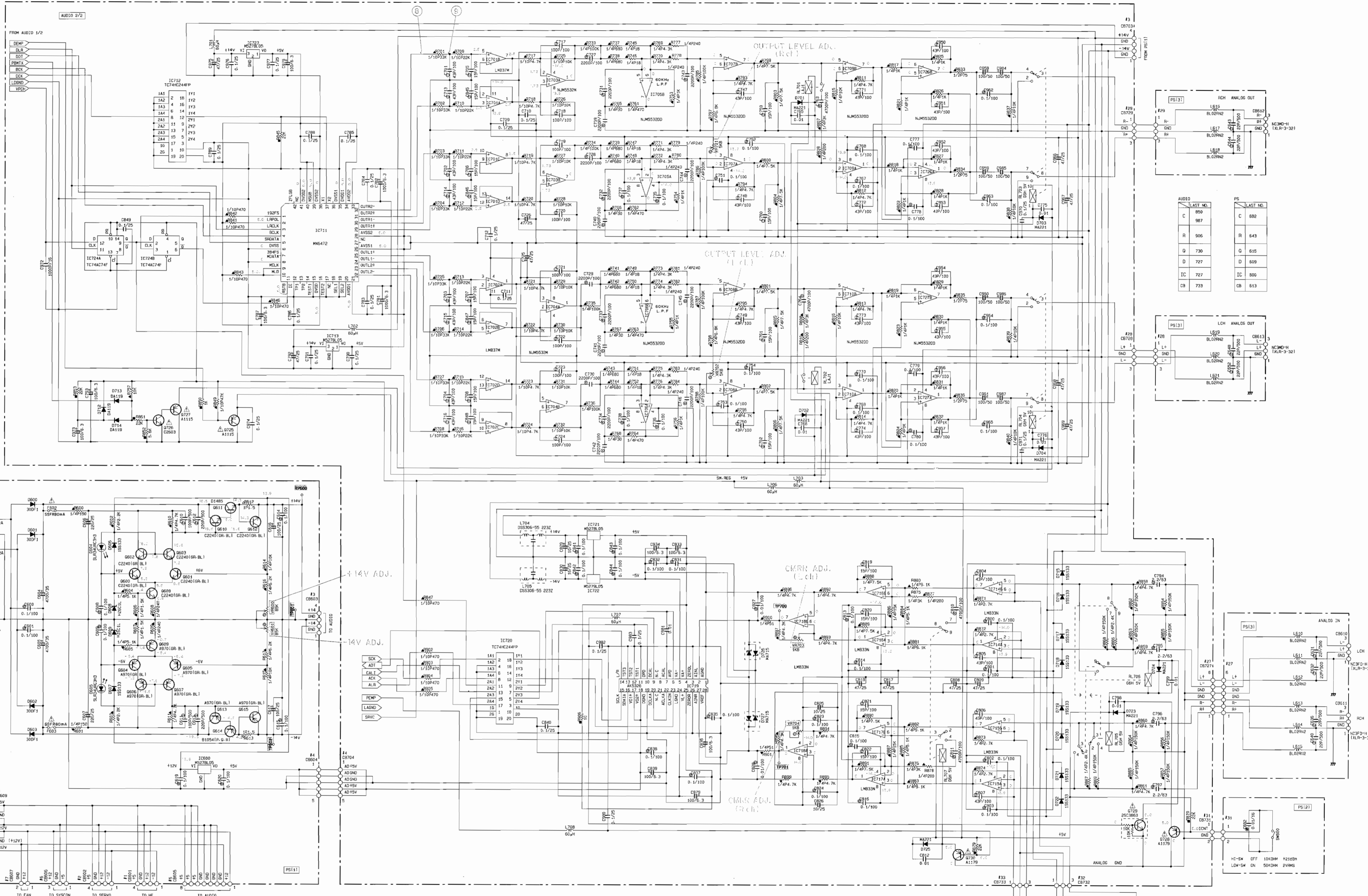
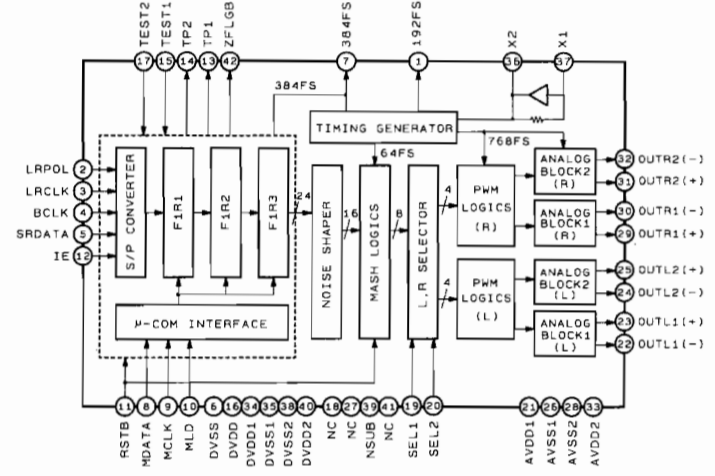
Dual D-FFs with Preset and Clear



| INPUTS | OUTPUTS | FUNCTION |
|--------|---------|-----------|
| CLR | Q | CLEAR |
| PR | Q | PRESET |
| D | Q | DATA |
| CK | Q | CLOCK |
| Q | Q | NO CHANGE |

IC711 : MN6472

D/A Converter



114V ADJ.

14V ADJ.

CMRN ADJ. (Clock)

CMRN ADJ. (Clock)

CAPACITOR

| REMARKS | PARTS NAME |
|---------|----------------------------------|
| NO MARK | ELECTROLYTIC CAPACITOR |
| ⊗ | TANTALUM CAPACITOR |
| ⊙ | CERAMIC CAPACITOR |
| ⊕ | AXIAL LEAD CERAMIC CAPACITOR |
| ⊖ | POLYESTER FILM CAPACITOR |
| ○ | POLYSTYRENE FILM CAPACITOR |
| ◇ | MICA CAPACITOR |
| ⊙ | POLYPROPYLENE FILM CAPACITOR |
| ⊕ | SEMICONDUCTIVE CERAMIC CAPACITOR |

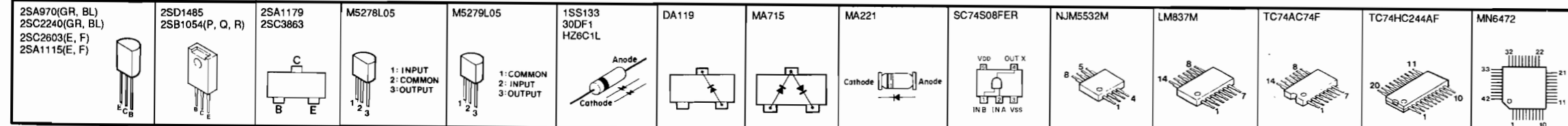
RESISTOR

| REMARKS | PARTS NAME |
|---------|---------------------------------|
| NO MARK | CARBON FILM RESISTOR (1/4W) |
| ⊕ | METAL FILM RESISTOR |
| ⊖ | METAL FILM RESISTOR |
| ⊙ | METAL PLATE RESISTOR |
| ⊕ | FILM PROOF CARBON FILM RESISTOR |
| ⊖ | CEMENT MOLDED RESISTOR |
| ⊙ | SEMI VARIABLE RESISTOR |
| ⊕ | CHIP RESISTOR |

NOTICE

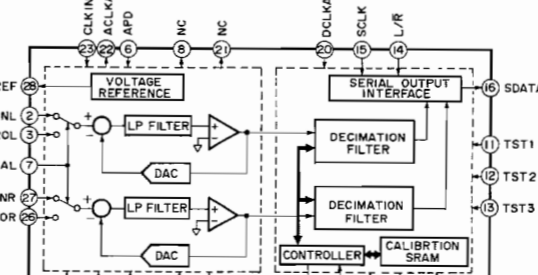
(J)..... Japanese model
 (U)..... U.S.A. model
 (C)..... Canadian model
 (A)..... Australian model
 (E)..... European model
 (B)..... British model
 (R)..... General model
 (P)..... RP model

PIN CONNECTION DIAGRAM OF TRANSISTORS, DIODES AND ICs.



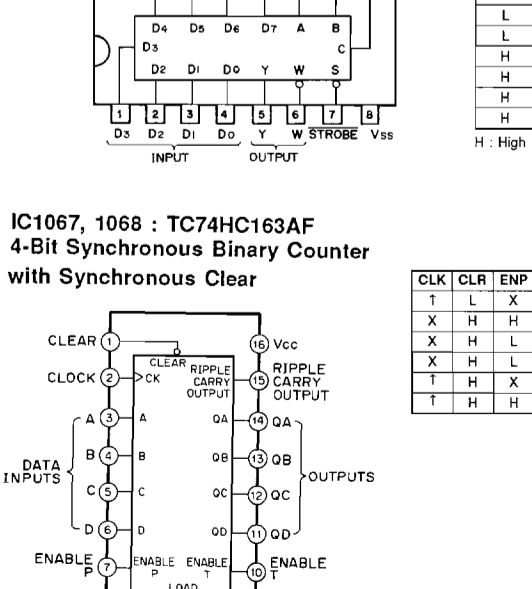
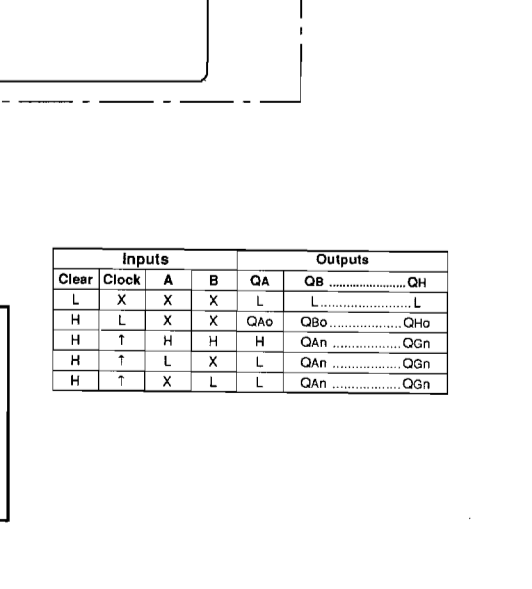
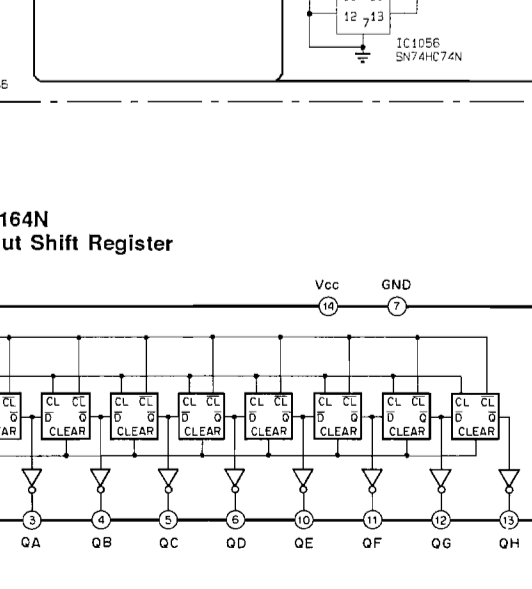
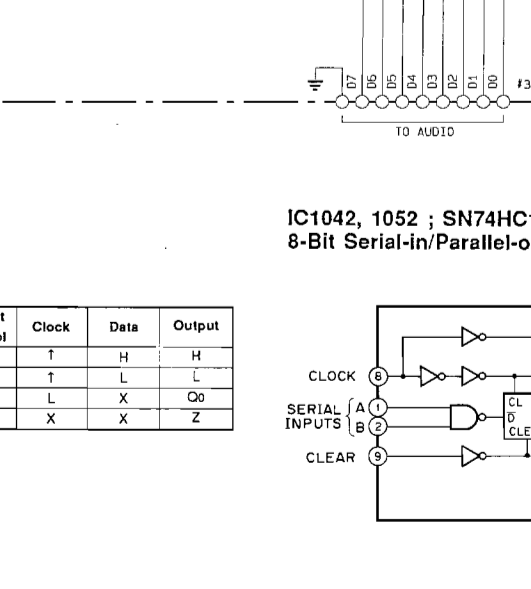
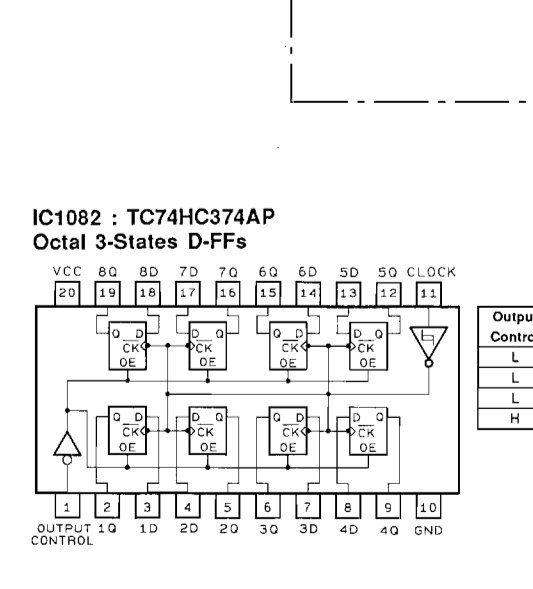
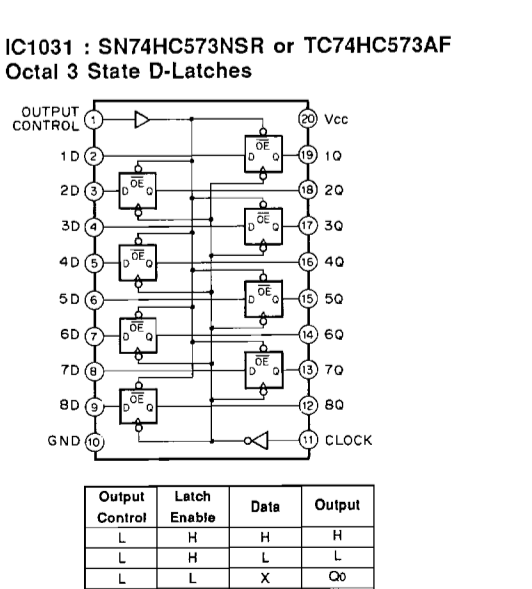
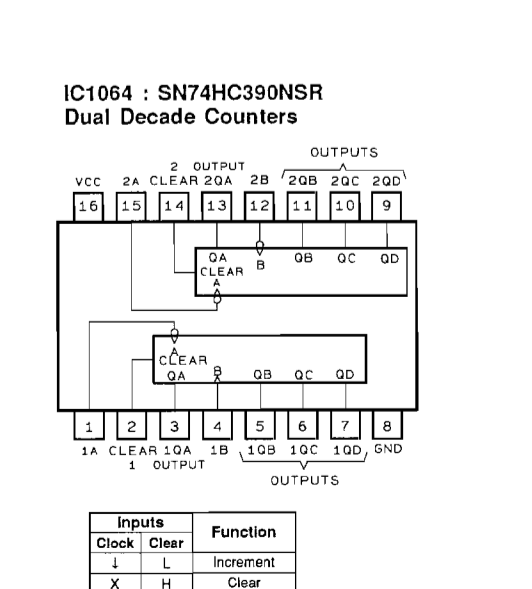
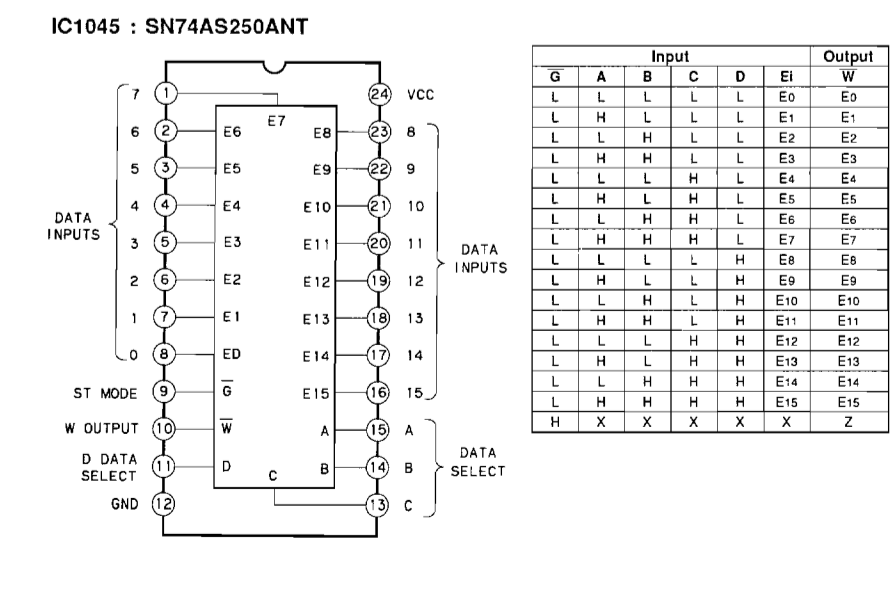
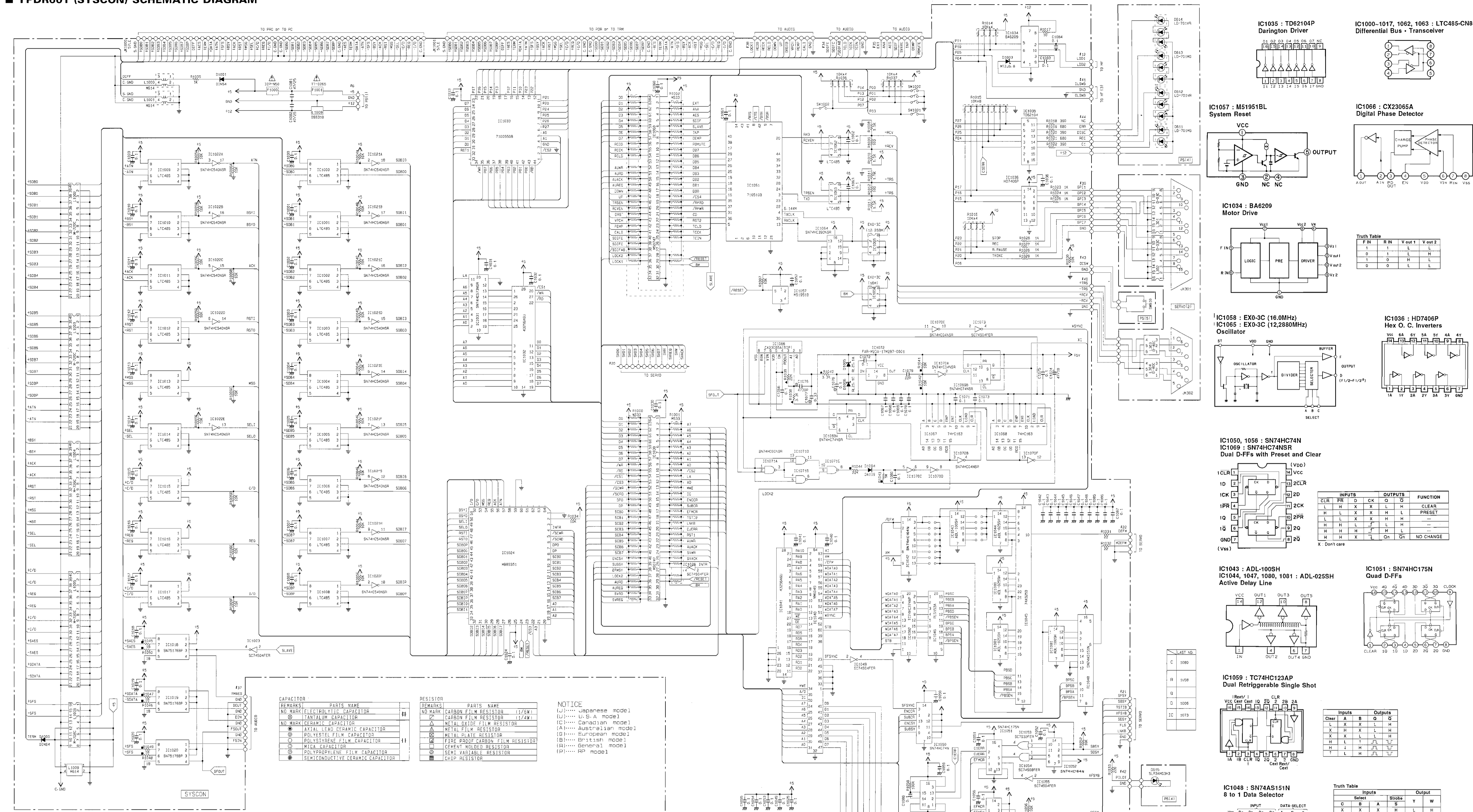
IC719 : AK5326

A/D Converter



All voltage are measured with a 10MΩ/DC electric volt meter.
 Components having special characteristics are marked Δ and must be replaced with parts having specifications equal to those originally installed.
 Schematic diagram is subject to change without notice.

■ YPDR601 (SYSCON) SCHEMATIC DIAGRAM



PIN CONNECTION DIAGRAM OF TRANSISTORS, DIODES AND ICs.

| | | | | | | | | | | | | | | | | | | | | | |
|----------------------|-------|-------------------|----------------|------------|-----------|------------|------------------------|----------|----------|--|--------|--------------------------|------------------------|--|------------------------------|--------------|--------------|--------|---------|----------------------------------|------------------|
| MTZ8-BAT-77 11E54 | DA119 | RLZ5-A RLZ5-IC | VCO 17.2872MHz | SC74508FER | SC7832FER | SC74504FER | ADL-100SH ADL-025SH | M51951BL | CX23065A | EXO-3C(16MHz) EXO-3C(12.288MHz) LTC485-CN8 | BA6209 | TC74HC164F SN74HC164F | IC1064 SN74HC390NSR | TK62104P SN74HC20NSR SN74AS151N TC74HC123AP | SN74HC573NSR SN74HC573NSR | SN74AS250ANT | HM8226LFP-10 | YM6049 | M5074ES | IPD71051QB-384 IPD71055QB-384 | MB89351-PF-G-BND |
|----------------------|-------|-------------------|----------------|------------|-----------|------------|------------------------|----------|----------|--|--------|--------------------------|------------------------|--|------------------------------|--------------|--------------|--------|---------|----------------------------------|------------------|

IC1035 : TD62104P
Darlington Driver

IC1000-1017, 1062, 1063 : LTC485-CN8
Differential Bus - Transceiver

IC1057 : M51951BL
System Reset

IC1066 : CX23065A
Digital Phase Detector

IC1034 : BA6209
Motor Drive

IC1058 : EXO-3C (16.0MHz)
IC1065 : EXO-3C (12.288MHz)
Oscillator

IC1036 : HD7406P
Hex O. C. Inverters

IC1050, 1056 : SN74HC74N
IC1069 : SN74HC4NSR
Dual D-FFs with Preset and Clear

| Inputs | Outputs | Function | |
|--------|---------|----------|-----------|
| CLR | X | Q | CLEAR |
| PR | X | H | PRESET |
| D | X | X | — |
| CK | X | X | — |
| Q | X | X | NO CHANGE |

IC1043 : ADL-100SH
IC1044, 1047, 1000, 1081 : ADL-025SH
Active Delay Line

IC1051 : SN74HC175N
Quad D-FFs

IC1059 : TC74HC123AP
Dual Retriggerable Single Shot

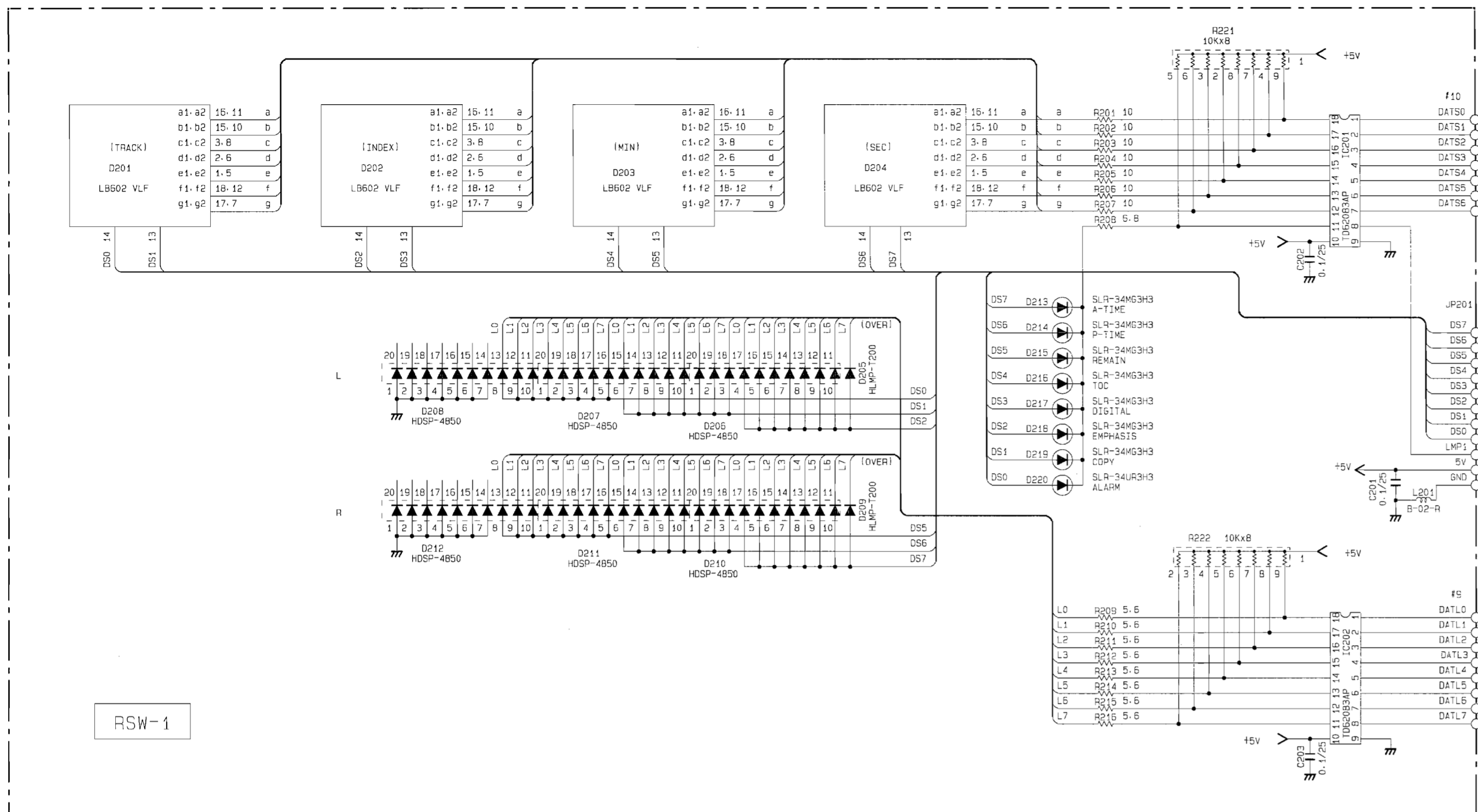
| Inputs | Outputs |
|--------|---------|
| Clear | Q |
| L | X |
| X | X |
| X | L |
| H | L |
| L | H |

IC1046 : SN74AS151N
8 to 1 Data Selector

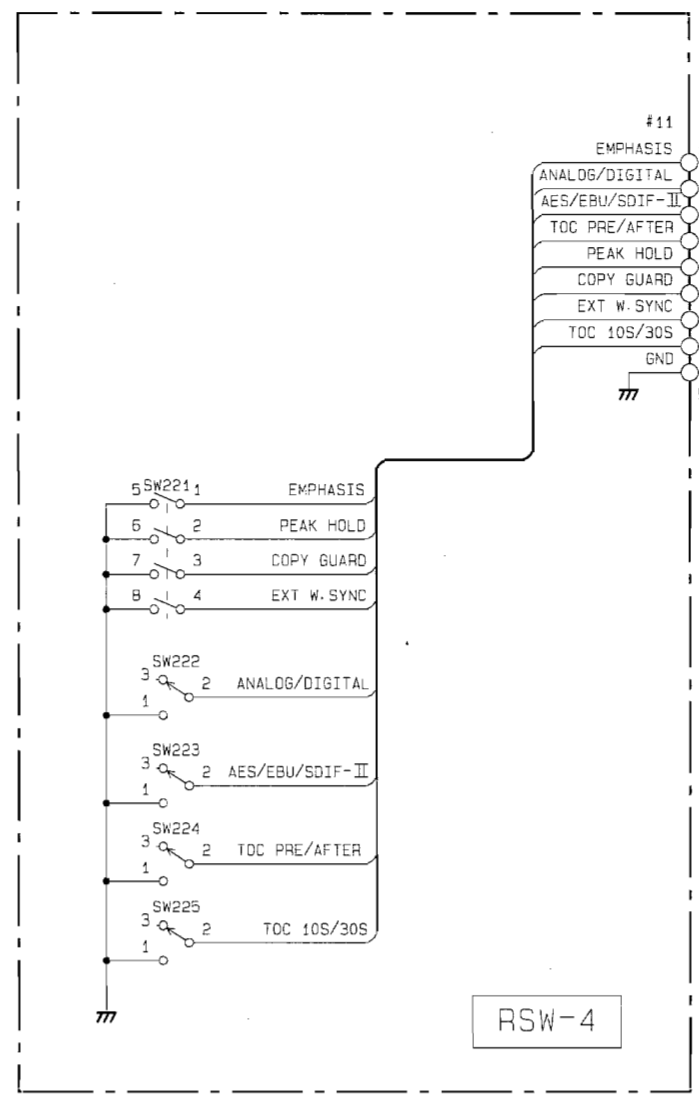
IC1018-1020 : SN75176BP
Differential Bus - Transceiver

* All voltage are measured with a 10M Ω /DC electric volt meter.
* Components having special characteristics are marked Δ and must be replaced with parts having specifications equal to those originally installed.
* Schematic diagram is subject to change without notice.

RC601 (R SW) SCHEMATIC DIAGRAM



RSW-1



RSW-4

NOTICE

- (J)..... Japanese model
- (U)..... U.S.A model
- (C)..... Canadian model
- (A)..... Australian model
- (G)..... European model
- (B)..... British model
- (R)..... General model
- (P)..... RP model

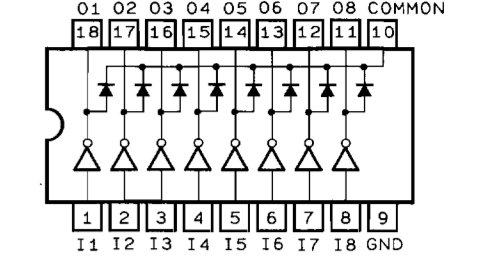
RESISTOR

| REMARKS | PARTS NAME |
|---------|---------------------------------|
| NO MARK | CARBON FILM RESISTOR (1/6W) |
| □ | CARBON FILM RESISTOR (1/4W) |
| △ | METAL OXIDE FILM RESISTOR |
| ▲ | METAL FILM RESISTOR |
| ⊠ | METAL PLATE RESISTOR |
| ⊞ | FIRE PROOF CARBON FILM RESISTOR |
| ⊡ | CEMENT MOLDED RESISTOR |
| ⊚ | SEMI VARIABLE RESISTOR |
| ⊙ | CHIP RESISTOR |

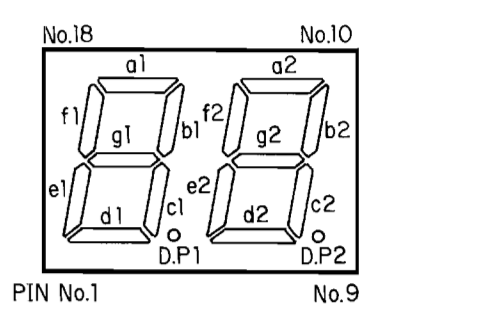
CAPACITOR

| REMARKS | PARTS NAME |
|---------|----------------------------------|
| NO MARK | ELECTROLYTIC CAPACITOR |
| ⊗ | TANTALUM CAPACITOR |
| NO MARK | CERAMIC CAPACITOR |
| ⊙ | AXIAL LEAD CERAMIC CAPACITOR |
| ⊚ | POLYESTER FILM CAPACITOR |
| ⊛ | POLYSTYRENE FILM CAPACITOR |
| ⊜ | MICA CAPACITOR |
| ⊝ | POLYPROPYLENE FILM CAPACITOR |
| ⊞ | SEMICONDUCTIVE CERAMIC CAPACITOR |

IC201, 202 : TD62083AP

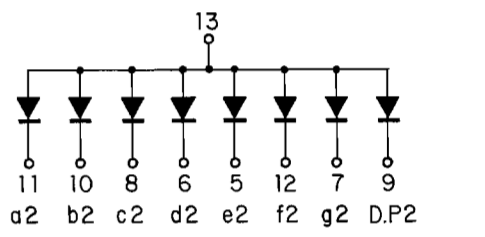


D201-204 : LB602VLF

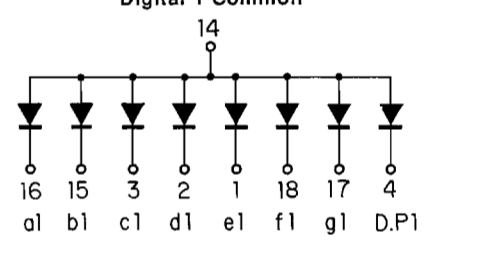


| Pin No. | Function | Pin No. | Function |
|---------|----------------------|---------|----------------------|
| 1 | Segment "a1" Cathode | 10 | Segment "b2" Cathode |
| 2 | Segment "d1" Cathode | 11 | Segment "a2" Cathode |
| 3 | Segment "c1" Cathode | 12 | Segment "b2" Cathode |
| 4 | D.P.1 Cathode | 13 | Digit 2 Common Anode |
| 5 | Segment "e2" Cathode | 14 | Digit 1 Common Anode |
| 6 | Segment "g2" Cathode | 15 | Segment "b1" Cathode |
| 7 | Segment "c2" Cathode | 16 | Segment "a1" Cathode |
| 8 | Segment "e2" Cathode | 17 | Segment "g1" Cathode |
| 9 | D.P.2 Cathode | 18 | Segment "c1" Cathode |

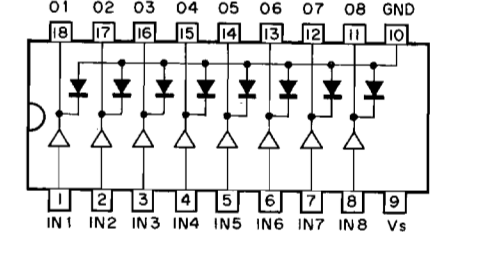
Digital 2 Common



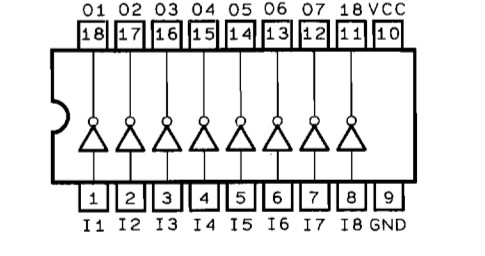
Digital 1 Common



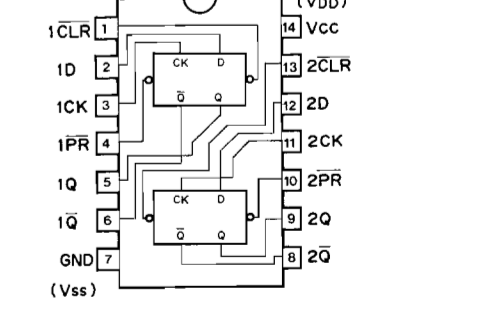
IC203 : TD62783AP



IC204 : TD62380P



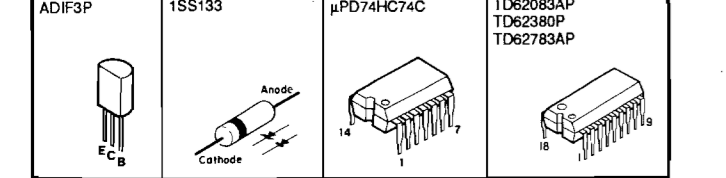
IC205 : μPD74HC74C



| INPUTS | OUTPUTS | FUNCTION |
|--------|---------|-----------|
| CLR | Q | — |
| PR | Q | — |
| D | Q | — |
| CK | Q | — |
| Q | Q | — |
| L | X | CLEAR |
| L | X | PRESET |
| L | X | H |
| L | X | H |
| H | L | L |
| H | L | L |
| H | H | H |
| H | H | H |
| H | X | NO CHANGE |

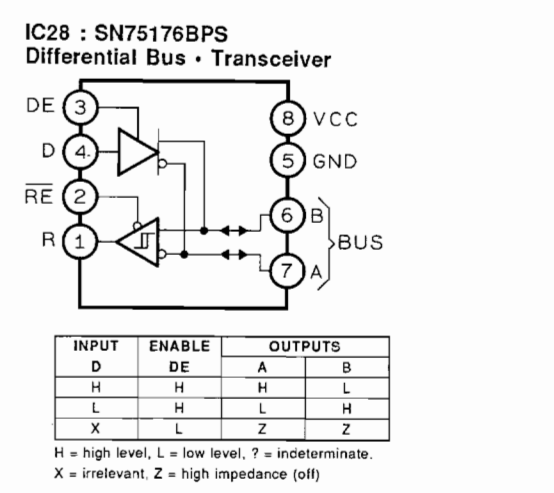
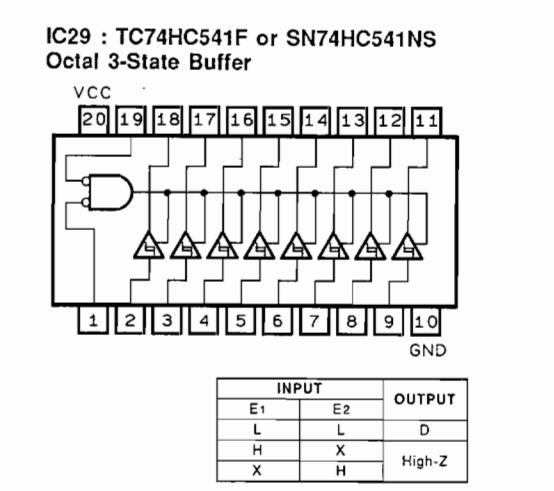
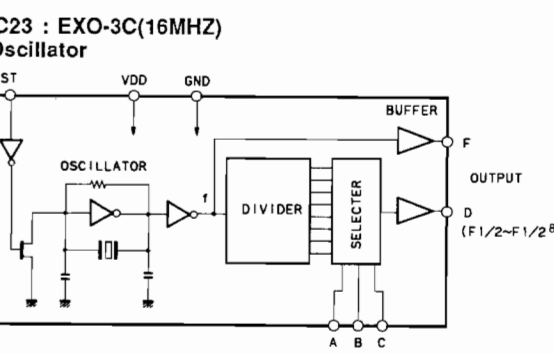
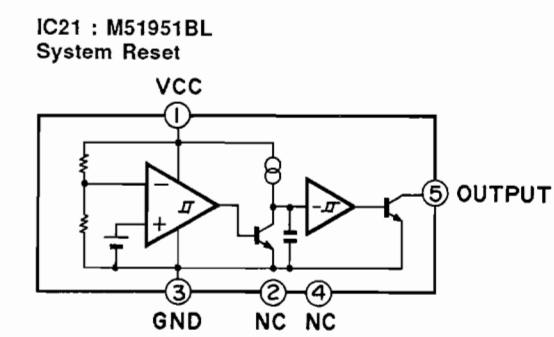
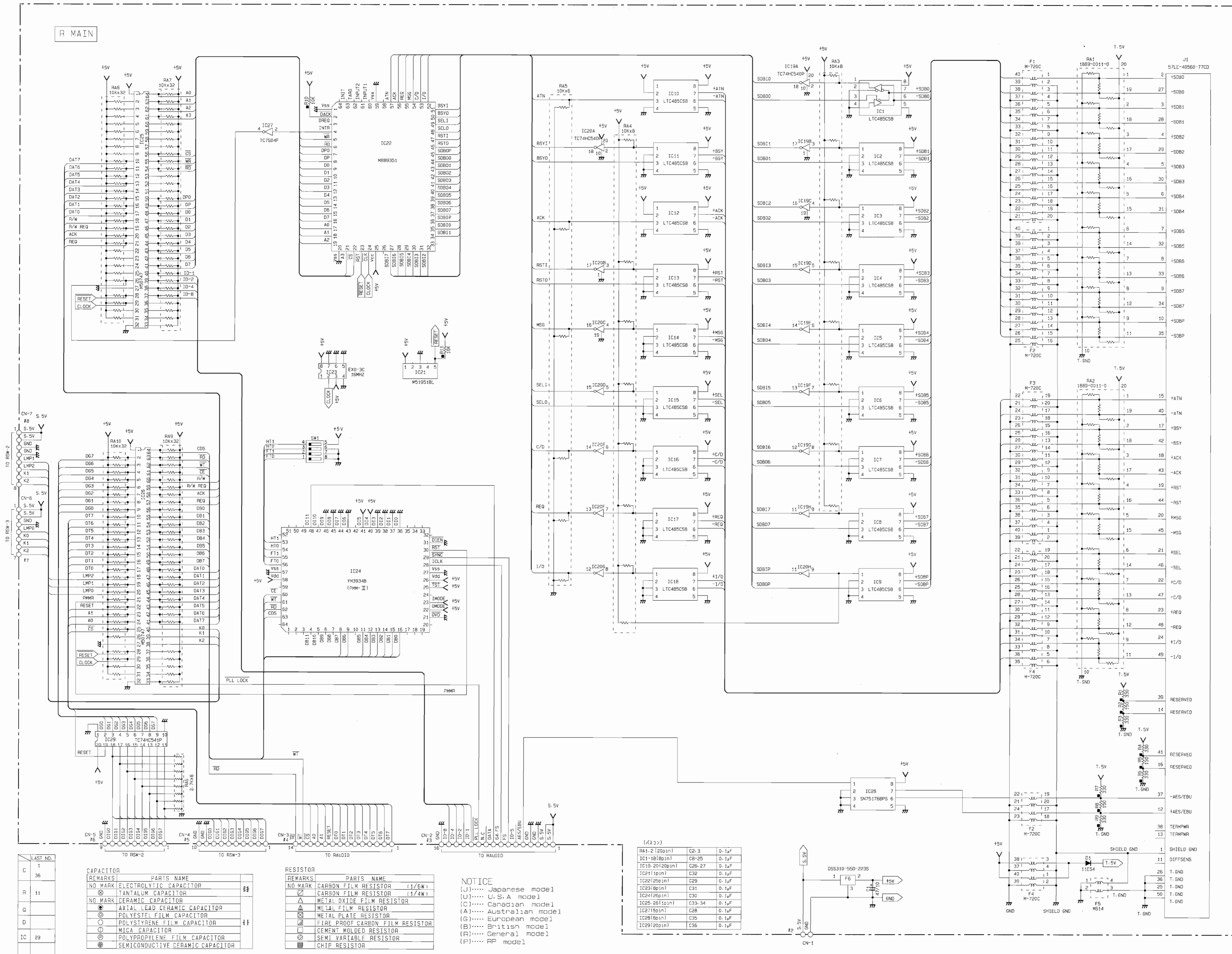
* All voltage are measured with a 10MΩ/DC electric volt meter
 * Components having special characteristics are marked Δ and must be replaced with parts having specifications equal to those originally installed.
 * Schematic diagram is subject to change without notice.

PIN CONNECTION DIAGRAM OF TRANSISTORS, DIODES AND ICs.



| LAST NO. | NO. |
|----------|-----|
| C | 213 |
| R | 224 |
| G | 201 |
| D | 240 |
| IC | 208 |

RC601 (R MAIN) SCHEMATIC DIAGRAM

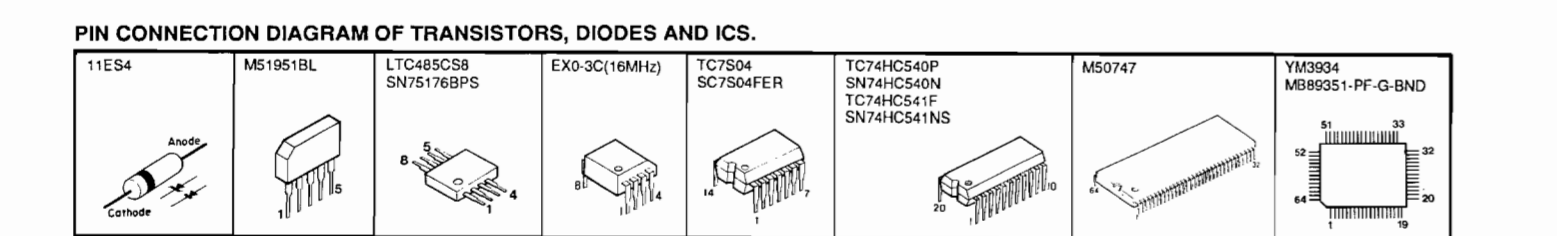


| LAST NO. | REMARKS | CAPACITOR | REMARKS | RESISTOR |
|----------|---------|----------------------------------|-------------------------------------|----------|
| 1 | | NO MARK ELECTROLYTIC CAPACITOR | NO MARK CARBON FILM RESISTOR (1/6W) | |
| 2 | | NO MARK TANTALUM CAPACITOR | NO MARK CARBON FILM RESISTOR (1/4W) | |
| 3 | | NO MARK CERAMIC CAPACITOR | Δ METAL OXIDE FILM RESISTOR | |
| 4 | | AXIAL LEAD CERAMIC CAPACITOR | Δ METAL FILM RESISTOR | |
| 5 | | POLYESTER FILM CAPACITOR | Δ METAL PLATE RESISTOR | |
| 6 | | POLYSTYRENE FILM CAPACITOR | Δ FIRE PROOF CARBON FILM RESISTOR | |
| 7 | | MICA CAPACITOR | Δ CEMENT MOLDED RESISTOR | |
| 8 | | POLYPROPYLENE FILM CAPACITOR | Δ SEMI VARIABLE RESISTOR | |
| 9 | | SEMICONDUCTIVE CERAMIC CAPACITOR | Δ CHIP RESISTOR | |

| REMARKS | PARTS NAME | REMARKS | PARTS NAME |
|----------|------------------|----------|----------------|
| (J)..... | Japanese model | (U)..... | U.S.A model |
| (C)..... | Canadian model | (G)..... | European model |
| (A)..... | Australian model | (B)..... | British model |
| (R)..... | General model | (P)..... | RP model |

NOTICE
(J)..... Japanese model
(U)..... U.S.A model
(C)..... Canadian model
(A)..... Australian model
(G)..... European model
(B)..... British model
(R)..... General model
(P)..... RP model

| RA1, 2 | C2-3 | D, 1, F |
|--------------|--------|---------|
| 181 (200pin) | C8-25 | D, 1, F |
| 181 (200pin) | C26-27 | D, 1, F |
| 181 (200pin) | C28 | D, 1, F |
| 181 (200pin) | C29 | D, 1, F |
| 181 (200pin) | C30 | D, 1, F |
| 181 (200pin) | C33-34 | D, 1, F |
| 181 (200pin) | C28 | D, 1, F |
| 181 (200pin) | C35 | D, 1, F |
| 181 (200pin) | C36 | D, 1, F |



All voltage are measured with a 10MΩ/DC electric volt meter.
Components having special characteristics are marked Δ and must be replaced with parts having specifications equal to those originally installed.
Schematic diagram is subject to change without notice.

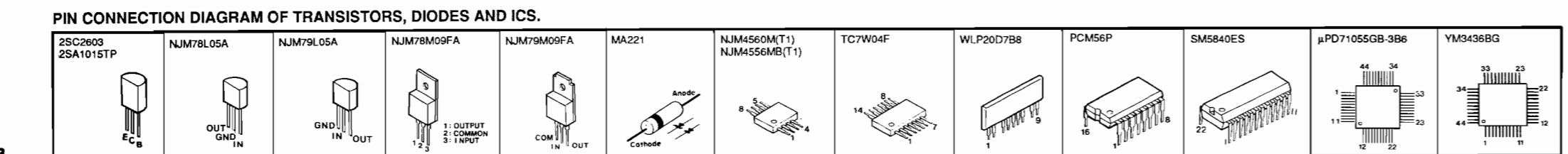
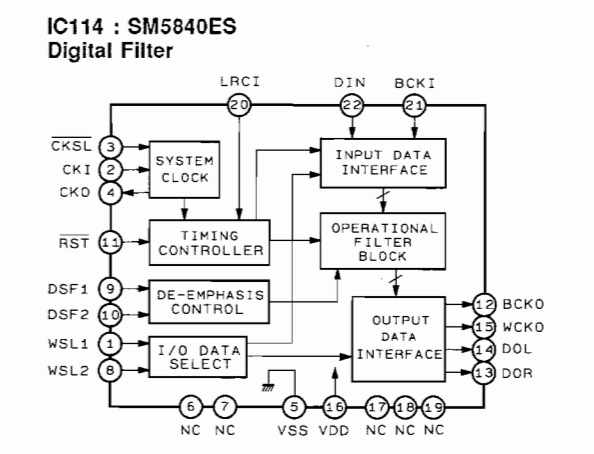
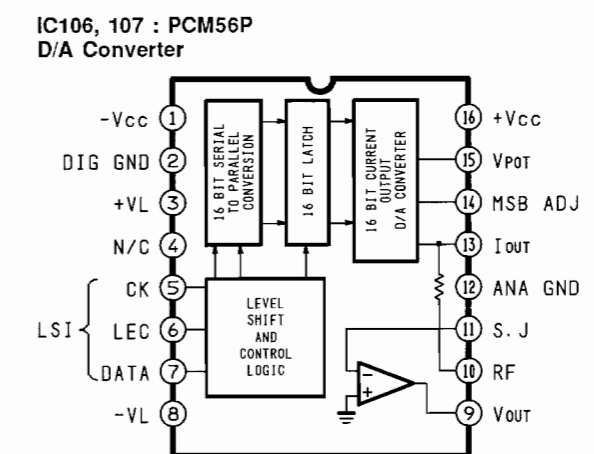
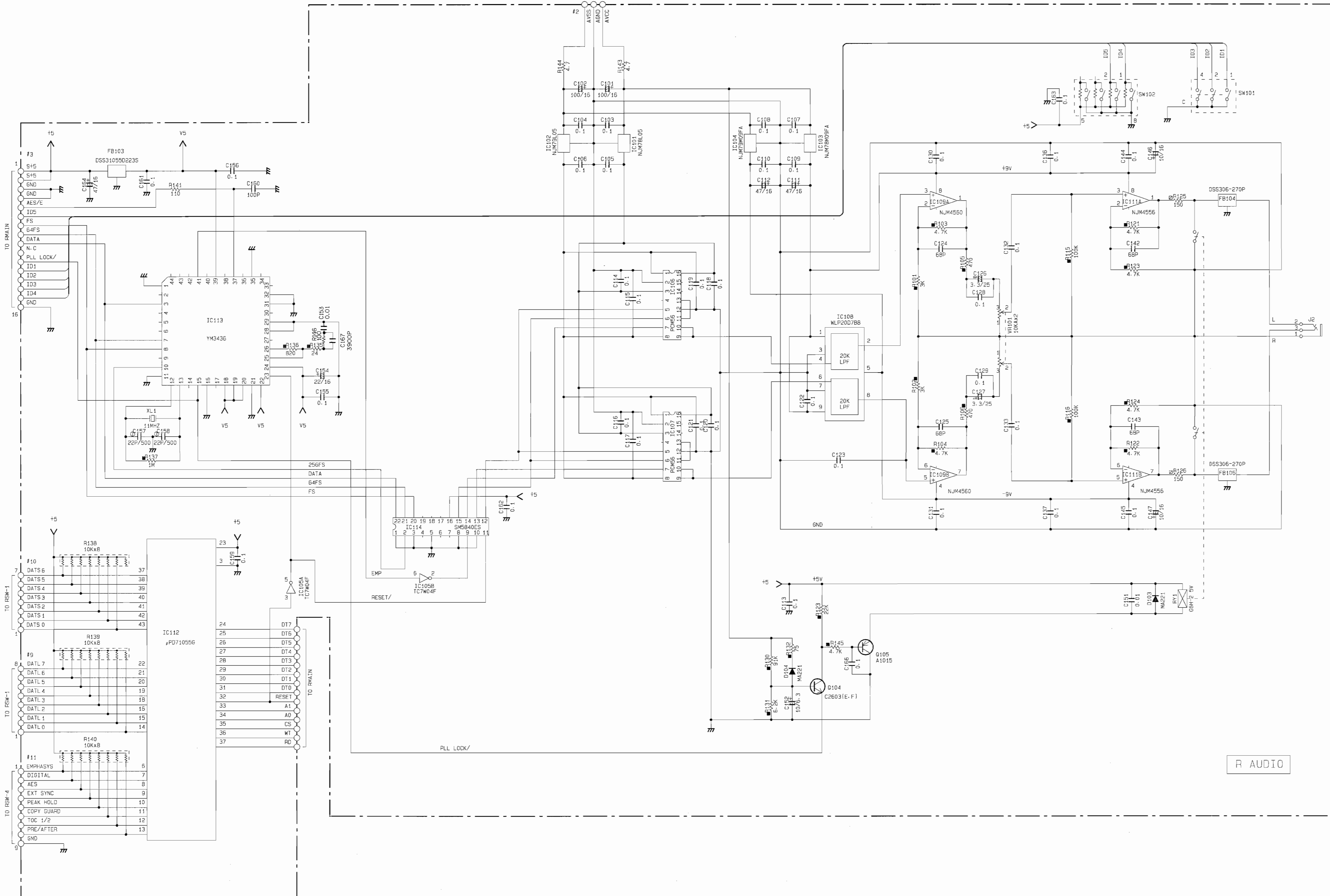
RC601 (R AUDIO) SCHEMATIC DIAGRAM

| CAPACITOR | |
|-----------|----------------------------------|
| REMARKS | PARTS NAME |
| NO MARK | ELECTROLYTIC CAPACITOR |
| ⊗ | TANTALUM CAPACITOR |
| NO MARK | CERAMIC CAPACITOR |
| ● | AXIAL LEAD CERAMIC CAPACITOR |
| ⊙ | POLYESTER FILM CAPACITOR |
| ○ | POLYSTYRENE FILM CAPACITOR |
| ⊖ | MICA CAPACITOR |
| ⊕ | POLYPROPYLENE FILM CAPACITOR |
| ⊗ | SEMICONDUCTIVE CERAMIC CAPACITOR |

| RESISTOR | |
|----------|---------------------------------|
| REMARKS | PARTS NAME |
| NO MARK | CARBON FILM RESISTOR (1/6W) |
| ⊗ | CARBON FILM RESISTOR (1/4W) |
| △ | METAL OXIDE FILM RESISTOR |
| □ | METAL FILM RESISTOR |
| ⊗ | METAL PLATE RESISTOR |
| ⊕ | FIRE PROOF CARBON FILM RESISTOR |
| ⊖ | CEMENT MOLDED RESISTOR |
| ⊕ | SEMI VARIABLE RESISTOR |
| ⊗ | CHIP RESISTOR |

NOTICE
 (J)..... Japanese model
 (U)..... U.S.A model
 (C)..... Canadian model
 (A)..... Australian model
 (G)..... European model
 (B)..... British model
 (R)..... General model
 (P)..... PP model

| LAST NO. | |
|----------|-----|
| C | 166 |
| R | 145 |
| Q | 105 |
| D | 104 |
| IC | 117 |



* All voltage are measured with a 10MΩ/DC electric volt meter.
 * Components having special characteristics are marked Δ and must be replaced with parts having specifications equal to those originally installed.
 * Schematic diagram is subject to change without notice.

PARTS LIST

■ YPDR601 ELECTRICAL PARTS

■ WARNING

Components having special characteristics are marked \triangle and must be replaced with parts having specifications equal to those originally installed.

● Carbon resistors (1/6W or 1/4W) are not included in the ELECTRICAL PARTS List. For the parts No. of the carbon resistors, refer to P. 82.

YPDR601/RC601

| Ref | Part No | Description | | 部品名 | Remarks | ランク |
|-----|----------|-------------------------|--------------|------------|--|-----|
| | VK412600 | Circuit Board | SERVO | サーボシート | | 68 |
| | VK412800 | Circuit Board | PS | PSシート | | 56 |
| | VK415100 | Circuit Board | AUDIO | AUDIOシート | | 79 |
| | VK415200 | Circuit Board | SYSCON | SYSCONシート | | 78 |
| | VK413600 | Circuit Board | CONN | CONNシート | | 15 |
| | VK413700 | Circuit Board | HF | HFシート | | 63 |
| | VK412600 | Circuit Board | SERVO | サーボシート | | 68 |
| | FA153560 | Mylar Capacitor | 5600P 50V J | マイラーコン | C323 | 02 |
| | FA154100 | Mylar Capacitor | 0.0100 50V J | マイラーコン | C359,538,549 | 02 |
| | FA154150 | Mylar Capacitor | 0.0150 50V J | マイラーコン | C555 | 02 |
| | FA154180 | Mylar Capacitor | 0.0180 50V J | マイラーコン | C334,354 | 02 |
| | FA154220 | Mylar Capacitor | 0.0220 50V J | マイラーコン | C310,328,347 | 02 |
| | FA154330 | Mylar Capacitor | 0.0330 50V J | マイラーコン | C336,337,348,349 | 02 |
| | FA154470 | Mylar Capacitor | 0.0470 50V J | マイラーコン | C341,350,534,535 | 02 |
| | FA155100 | Mylar Capacitor | 0.1000 50V J | マイラーコン | C304,382 | 02 |
| | FA155220 | Mylar Capacitor | 0.2200 50V J | マイラーコン | C312,314,352,381 .387,541 | 02 |
| | FA155240 | Mylar Capacitor | 0.2400 50V J | マイラーコン | C355 | 02 |
| | FA155330 | Mylar Capacitor | 0.3300 50V J | マイラーコン | C388,339 | 02 |
| | FA155470 | Mylar Capacitor | 0.4700 50V J | マイラーコン | C351 | 02 |
| | FA155560 | Mylar Capacitor | 0.5600 50V J | マイラーコン | C330 | 03 |
| | UT452220 | Polypropylene Film Cap. | 220P 100V J | PPコン | C554 | 03 |
| | UT453100 | Polypropylene Film Cap. | 1000P 100V J | PPコン | C522 | 03 |
| | UT453220 | Polypropylene Film Cap. | 2200P 100V J | PPコン | C504 | 03 |
| | F1551100 | Ceramic Capacitor | 10P 50V D | セラコン | C527,556,557 | 01 |
| | FG211330 | Ceramic Capacitor | 33P 50V J | セラコン | C358 | 01 |
| | F1551470 | Ceramic Capacitor | 47P 50V J | セラコン | C548 | 01 |
| | FG212120 | Ceramic Capacitor | 120P 50V J | セラコン | C326 | 01 |
| | FG212150 | Ceramic Capacitor | 150P 50V K | セラコン S.L. | C515,516,551 | 01 |
| | FG212220 | Ceramic Capacitor | 220P 50V K | セラコン S.L. | C509 | 01 |
| | FG212330 | Ceramic Capacitor | 330P 50V K | セラコン S.L. | C517 | 01 |
| | FG212390 | Ceramic Capacitor | 390P 50V K | セラコン S.L. | C552 | 01 |
| | FG212470 | Ceramic Capacitor | 470P 50V K | セラコン | C320,321,502 | 01 |
| | FG212560 | Ceramic Capacitor | 560P 50V K | セラコン | C326,356,505 | 01 |
| | FG212820 | Ceramic Capacitor | 820P 50V K | セラコン | C507 | 01 |
| | F1553100 | Ceramic Capacitor | 1000P 50V K | セラコン | C305-308,318,319 .345,346,367,532 .533 | 01 |
| | FG713120 | Ceramic Capacitor | 1200P 50V K | セラコン | C508 | 01 |
| | FG213150 | Ceramic Capacitor | 1500P 50V K | セラコン | C315,331,501 | 01 |
| | FG244100 | Ceramic Capacitor | 0.010 50V Z | セラコン | C531,536,537,542 .543 | 01 |
| | FZ005880 | Monolithic Cera. Cap. | 0.100 25V H | 積層セラコン | C301-303,361,362 .368,375-379,385 .511,512,514,518 .519,521,523-525 .528-530,544,550 .553,558,559 | 01 |
| | VD534400 | Monolithic Cera. Cap. | 1.500 25V Z | 積層セラコン | C366,383,384,510 | 01 |
| | UJ818100 | Electrolytic Cap. | 100.00 6.3V | ケミコン | C353,360,363-365 .513,545 | 01 |
| | UJ818220 | Electrolytic Cap. | 220.00 6.3V | ケミコン | C311 | 01 |
| | UJ837100 | Electrolytic Cap. | 10.00 16.0V | ケミコン | C386 | 01 |
| | UJ837470 | Electrolytic Cap. | 47.00 16.0V | ケミコン | C316,317,324,325 .332,333,343,344 .369-374,380,546 .547 | 01 |
| | UK565470 | Electrolytic Cap. | 0.47 50.0V | B P ケミコン | C538,540 | 01 |
| | UJ866100 | Electrolytic Cap. | 1.00 50.0V | ケミコン | C503,526 | 01 |
| | UJ866220 | Electrolytic Cap. | 2.20 50.0V | ケミコン | C520 | 01 |
| | UJ866470 | Electrolytic Cap. | 4.70 50.0V | ケミコン | C357,506 | 01 |
| | UK137100 | Electrolytic Cap. | 10.00 16.0V | B P ケミコン | C313,327,335 | 01 |
| | UK537220 | Electrolytic Cap. | 22.00 16.0V | B P ケミコン | C342 | 01 |
| | UK546470 | Electrolytic Cap. | 4.70 25.0V | B P ケミコン | C309 | 01 |
| | UK566100 | Electrolytic Cap. | 1.00 50.0V | B P ケミコン | C329,340 | 01 |
| | UK566220 | Electrolytic Cap. | 2.20 50.0V | B P ケミコン | C322 | 01 |
| | VK661300 | IC Protector | ICP-N50 | ICプロテクター | F301 | 01 |
| | VG012400 | Coil | E1.0606 22u | コイル | L501 | 01 |
| | VA928000 | Noise Filter DIP | D-03C | ノイズフィルタ | L301,302 | 07 |
| | VG414700 | Data Line Filter | D-40C | データラインフィルタ | L303,304 | 06 |
| | VH293400 | Fuse Resistor | 2.20 1/6 K | ヒューズ抵抗 | R353,354,403,404 | 01 |
| | VK493600 | Resistor Array | 10KX32 | 抵抗アレイ | R459,460 | 03 |
| | XB247A00 | IC, OP AMP | UPC4570HA | アンプ IC | IC302,304,307- 309,311,312, 314-316,322, 519 | 01 |
| | IG076800 | IC, OP AMP | NJM4558S | アンプ IC | IC323 | 03 |
| | XR248A00 | IC, OP AMP | M5238L | アンプ IC | IC518 | 03 |

* New Parts (新規部品)

ランク : Japan only

| Ref | Part No | Description | 部品名 | Remarks | ランク | |
|-----|----------|----------------------------|------------------|--------------|----------------------------------|----|
| * | XD568A00 | IC, COMPARATOR | NJM2904S | アンプ I C | IC502,517 | 03 |
| * | XF482A00 | IC, OP AMP | NJM2903S | アンプ I C | IC313 | 03 |
| * | XF514A00 | IC, OP AMP | NJM318D | アンプ I C | IC301,515 | 05 |
| * | XB251001 | IC, COMPARATOR | NJM319D | コンパレータ | IC520,521 | 05 |
| * | XF400A00 | IC, VOLTAGE DETECTOR | TL7700CP | 電圧監視用 I C | IC325 | 07 |
| * | XF447A00 | IC, ANALOG SWITCH | UPD5201C | アナログ I C | IC310,317,516 | 06 |
| * | X1756A00 | IC, FSK DEMOD | NJM2211D | I C | IC501 | 06 |
| * | X1758A00 | IC, TIMER | TLC555P | I C | IC506 | 04 |
| * | IG001170 | IC, NOR | TC4001BP | ロジック I C | IC305,318,320 | 03 |
| * | IG001180 | IC, FF | TC4013BP | ロジック I C | IC505,507 | 05 |
| * | IG001790 | IC, XOR | TC4030BP | ロジック I C | IC319,503 | 03 |
| * | IG001260 | IC, BUFFER | TC4049BP | ロジック I C | IC306 | 03 |
| * | IG052400 | IC, COUNTER | TC4040BP | ロジック I C | IC504 | 05 |
| * | IG140200 | IC, FF | TC4538BP | ロジック I C | IC321 | 05 |
| * | IR007400 | IC, D-FF | TC74HC74AP | ロジック I C | IC513,514 | 04 |
| * | IR016100 | IC, SWCC | TC74HC161AP | ロジック I C | IC524 | 03 |
| * | IR016400 | IC, SHIFT REGISTER | TC74HC164P | ロジック I C | IC508,509 | 03 |
| * | IR057320 | IC, LATCH | UPD74HC573 | ロジック I C | IC328,329 | 05 |
| * | XJ010A00 | IC, PLL | CX23065A | ロジック I C | IC332 | 07 |
| * | XD376A00 | IC, D-FF | SN74AS74N | ロジック I C | IC522 | 03 |
| * | XI760A00 | IC, COUNTER | TC74HC592P | ロジック I C | IC510,511 | 04 |
| * | XI794A00 | IC, MONO MULTI | TC74HC4538AP | ロジック I C | IC523 | 03 |
| * | IR001000 | IC, NAND | TC74HC10AP | ロジック I C | IC512 | 03 |
| * | XI802A00 | IC, COUNTER | HCTL-2000 | ロジック I C | IC330 | 11 |
| * | VM520600 | IC, FLA-WR | PLS153A | I C | IC1046 | |
| * | XK176A00 | IC, SV CPU | M50747ESP | サーボマイコン I C | IC*** | |
| * | XF451A00 | IC, EPROM | MSM16811 | メモリー I C | IC326 | 06 |
| * | XF455A00 | Crystal Resonator | EXO-3C16MHZ | 水晶発振器 | IC327 | 06 |
| * | XJ305A00 | IC, VCO | FAR-M2DA-16H934 | バリメガモジュール | IC331 | 16 |
| * | XG491A00 | IC, CDVP | YH7402 | I C | IC324 | 12 |
| * | VD110500 | Slide Switch | SSSS2 1-2(A) | スライド S W | SW301 | 01 |
| * | VE340300 | Test Point | IRS-1169 | テストポイントピン | TP301-326 | 01 |
| * | VC026500 | D-sub Connector | D-SUB 15P SE | D-U Bコネクタ | JK301 | 06 |
| * | VI576000 | D-sub Connector | DEL.C-J9SAF-10L9 | D-U Bコネクタ | JK302 | 05 |
| * | VJ693100 | Trimmer Potentiometer | B 1.5K 3P | 半固定抵抗 | VR313 | 01 |
| * | VJ693400 | Trimmer Potentiometer | B 4.7K 3P | 半固定抵抗 | VR303 | 01 |
| * | VJ693600 | Trimmer Potentiometer | B 10.0K 3P | 半固定抵抗 | VR301,305,312,501 | 01 |
| * | VJ694200 | Trimmer Potentiometer | B 100.0K 3P | 半固定抵抗 | VR502 | 01 |
| * | VJ693800 | Trimmer Potentiometer | B 22.0K 3P | 半固定抵抗 | VR304,306-310 | 01 |
| * | VJ694000 | Trimmer Potentiometer | B 47.0K 3P | 半固定抵抗 | VR302,314 | 01 |
| * | VJ694600 | Trimmer Potentiometer | B 470.0K 3P | 半固定抵抗 | VR311 | 01 |
| * | IA093320 | Transistor | 2SA933S Q,R | トランジスタ | Q313,503,504,507 | 01 |
| * | VG578600 | Transistor | 2SA1206 L,K | トランジスタ | Q511 | 01 |
| * | VC139700 | Transistor | 2SB1185 | トランジスタ | Q305,307,309 | 02 |
| * | IC174020 | Transistor | 2SC1740S R,S | トランジスタ | Q301-303,310-312,505,506 | 01 |
| * | VG413700 | Transistor | 2SC2901 L,K | トランジスタ | Q510 | 02 |
| * | VC139800 | Transistor | 2SD1762 | トランジスタ | Q304,306,308 | 02 |
| * | VK432900 | Transistor | 2SD1915(F) ST | トランジスタ | Q314 | 01 |
| * | IA134900 | Transistor Array | 2SA1349 GR,BL | トランジスタアレイ | Q509 | 03 |
| * | IC338100 | Transistor | 2SC3381 GR,BL | トランジスタ | Q501 | 02 |
| * | IF004600 | Diode | 1SS133 T-77 | ダイオード | D301-305,309-319 | 01 |
| * | VG437700 | Zener Diode | MTZ J 5.6B 5.6V | ツェナーダイオード | D306-308 | 01 |
| * | IF010540 | Zener Diode | HZ2B3 | ツェナーダイオード | D321 | 01 |
| * | VG435000 | Zener Diode | MTZJ 2.0A | ツェナーダイオード | D320 | 01 |
| * | VA024500 | IC Socket | D1CS-64AS | I Cソケット | | 08 |
| * | VC132300 | Heat Sink | 20X15X25 | ヒートシンク | | 03 |
| * | EG330030 | Bind Head Screw | 3.0X6 FCM3BL | バインド小ネジ | 6pcs | 01 |
| * | VK412800 | Circuit Board | PS | P Sシート | | 56 |
| * | VG276600 | Ceramic Capacitor | 22P 50V J | 円筒セラ (S L) | C654-657,660,661,663,664 | 01 |
| * | VF467300 | Ceramic Capacitor | 0.01 16.0V | 円筒セラ | C682 | 01 |
| * | VG278600 | Ceramic Capacitor | 330P 50V K | 円筒セラ (B) | C684-691 | 01 |
| * | VK445900 | Electrolytic Cap. | 100.0 25.0V | ケミコン | C616,617 | 02 |
| * | VK476100 | Electrolytic Cap. | 220.00 25.0V | ケミコン | C606,607 | 02 |
| * | VK446000 | Electrolytic Cap. | 4700 35.0V | ケミコン | C604,605 | 06 |
| * | FU452100 | Maica Capacitor | 100P 500V J | マイカコン | C610,611 | 01 |
| * | FU452220 | Maica Capacitor | 220P 500V J | マイカコン | C812,613 | 02 |
| * | FU451220 | Maica Capacitor | 22.0 500V | マイカコン | C631,632,636,640,643,644,648,652 | 01 |
| * | VI862200 | Metalized Polypropylene C. | 0.100 100V | メタライズドポリコン | C600,601,608,609,614,615,619,620 | 01 |
| * | VB871100 | Ferrite Bead | BL02RN2-R62 | フェライトビーズ | L610-621 | |
| * | VA928000 | Noise Filter DIP | D-03C | ノイズフィルタ | L640,641 | 07 |
| * | VG414700 | Data Line Filter | D-40C | データラインフィルタ | L622,623 | 06 |
| * | HU575150 | Metal Film Resistor | 150.0 1/4 F | 金属被膜抵抗 | R600,601 | 02 |

* New Parts (新規部品)

ランク : Japan only.

| Ref | Part No | Description | 部品名 | Remarks | ランク | |
|-----|----------|---------------------------|-----------------|-----------|--|----|
| | HU575240 | Metal Film Resistor | 240.0 1/4 F | 金属被膜抵抗 | R608,609 | 02 |
| | HU576150 | Metal Film Resistor | 1.5K 1/4 F | 金属被膜抵抗 | R606,607,640,642 | 02 |
| | HU576220 | Metal Film Resistor | 2.2K 1/4 F | 金属被膜抵抗 | R602,603 | 02 |
| | HU576470 | Metal Film Resistor | 4.7K 1/4 F | 金属被膜抵抗 | R610,611 | 02 |
| | HU576510 | Metal Film Resistor | 5.1K 1/4 F | 金属被膜抵抗 | R604,605 | 02 |
| | HU576620 | Metal Film Resistor | 6.2K 1/4 F | 金属被膜抵抗 | R616,617 | 02 |
| | HU577100 | Metal Film Resistor | 10.0K 1/4 F | 金属被膜抵抗 | R614,615 | 02 |
| | HU577110 | Metal Film Resistor | 11.0K 1/4 F | 金属被膜抵抗 | R641,643 | 02 |
| | HL313150 | Metal Oxide Film Resistor | 1.5 1W K | 酸化金属被膜抵抗 | R612,613 | 01 |
| | XG945A00 | IC, REGULATOR +5V | M5278L05 | 電源IC | IC600 | 01 |
| | VG392900 | Switch | SK11VA | タクトスイッチ | SW610 | 01 |
| | VK446400 | Slide Switch | SSSP12 | スライドスイッチ | SW600 | 03 |
| | VL826600 | IC Protector | SSFR80MA-N1 | ICプロテクタ | F602,603 | |
| | VL826700 | IC Protector | SSFR2A-N1-F003 | ICプロテクタ | F600,601 | |
| | VF340300 | Test Point | IRS-1169 | テストポイントピン | TP600-602 | 01 |
| | LA002120 | Wrapping Terminal | 3P I-503NWA | ラッピング端子 | TE600 | 01 |
| | V1552200 | BNC Connector | YKS11-0 1P | BNCコネクタ | CB616-619 | 05 |
| | VK429300 | XLB Connector | 3P NC3FD-H | キャノンコネクタ | CB610,611,614 | 06 |
| | VK429400 | XLB Connector | 3P NC3MD-H | キャノンコネクタ | CB612,613,615 | 06 |
| | VK455900 | Trimmer Potentiometer | B 5.0K 3P | 半固定抵抗 | VR600,601 | 05 |
| | VK456000 | Variable Resistor | C 10K RK18111 | ロータリーVR | VR640,641 | 05 |
| | IA097030 | Transistor | 2SA970 GR,BL | トランジスタ | Q604,607,609,613,615 | 01 |
| | VK456100 | Transistor | 2SB1054 P,Q,R | トランジスタ | Q614 | 05 |
| | IC224030 | Transistor | 2SC2240 GR,BL | トランジスタ | Q600-603,608,610 | 01 |
| | VB222700 | Transistor | 2SD1485 P,Q,R | トランジスタ | Q612,611 | 04 |
| | IF004600 | Diode | 1SS133 T-77 | ダイオード | D606,607 | 01 |
| | IH000960 | Diode | 30DF1 | ダイオード | D600-603 | 03 |
| | IF003530 | Zener Diode | HZ6C1L 6.0V | ツェナーダイオード | D608,609 | 01 |
| | IF008230 | LED | LD-001MG GR | LED | D611 | 03 |
| | VB749800 | LED | LD701VR RE | LED | D612,614 | 03 |
| | VB822500 | LED | LD701MG GR | LED | D613 | 03 |
| | VK456600 | LED | SLR-34MG3H3 GR | LED | D615 | 01 |
| | VH201400 | LED | SLR-34URC3H3 RE | LED | D604,605 | 01 |
| | VL208800 | Radiator | OSH-7030-SP | ラジエータ | | 04 |
| | VK257500 | Support | V01 | サポート | | 09 |
| | VI014500 | Pan Head Screw | SP3.0X12 ZMC2BL | ナベ小ネジ | 2pcs | 62 |
| | VK364900 | Bind Head Tapping Screw-P | 2.0x5 ZMC2BL | ナブインドPタイト | 6pcs | |
| | VC719300 | Terminal Plate | P-424 | ターミナル金具 | 2pcs | 01 |
| | BB066290 | Waher | H4.5 CR-3020 | アスワッシャー | 1pc | 01 |
| | EK395040 | Bind Head Tapping Screw-B | 3.0X8 ZMC2BL | ナブインドBタイト | 2pcs | 01 |
| | VK415100 | Circuit Board | AUDIO | AUDIOシート | | 79 |
| | VJ223900 | Ceramic Capacitor | 0.1 25V K | チップセラコン | C709-712,783-786,788-791,840,852,853,859,861,871,872,877,864,881 | 01 |
| | VD915100 | Ceramic Capacitor | 0.01 50V K | チップセラコン | -888,890-922,982,977,980,974,976,970,971,849,850,924,983 | 01 |
| | VJ900300 | Ceramic Capacitor | 22P 50V J | チップセラコン | C765,766,775,776,798,799,812,981 | 01 |
| | VJ900700 | Ceramic Capacitor | 33P 50V J | チップセラコン | C860,869,870,878,879,880 | 01 |
| | VD303400 | Ceramic Capacitor | 1.0 16V K | チップセラコン | C867,868,865,866,874 | 01 |
| | VJ904300 | Ceramic Capacitor | 1000P 16V K | チップセラコン | C927,972 | 01 |
| | UJ838100 | Electrolytic Cap. | 100.0 16V M | ケミコン | C851,876 | 01 |
| | UJ827220 | Electrolytic Cap. | 22.0 10V M | ケミコン | C858,863,889 | |
| | UJ827470 | Electrolytic Cap. | 47.0 10V M | ケミコン | C875 | 01 |
| | UJ837100 | Electrolytic Cap. | 10.0 16V M | ケミコン | C923 | 01 |
| | VK679900 | Electrolytic Cap. | 47.0 25V M | ケミコン | C725,726,792,808,809,966-969,975 | 01 |
| | FZ005420 | Electrolytic Cap. | 10.0 25V M | ケミコン | C829,830 | 01 |
| | VL574100 | Electrolytic Cap. | 100.0 50V | ケミコン | C958-961,984-987 | 01 |
| | VK679700 | Electrolytic Cap. | 100.0 6.3V M | ケミコン | C787,793,833,834,836,839,973,978,979 | 01 |
| | VK679800 | Electrolytic Cap. | 10.0 25V M | ケミコン | C817,818,825,826 | 01 |
| | UJ519100 | Electrolytic Cap. | 1000.0 6.3V M | ケミコン | C781,782 | 01 |
| | VK680200 | Mica Capacitor | 43P 100V F | チップマイカコン | C701-704,713-716,747-750,771-774,804-807,950-957 | 03 |
| | VK680100 | Mica Capacitor | 15P 100V F | チップマイカコン | C705-708,759,762 | 03 |

* New Parts (新規部品)

ランク : Japan only

| Ref | Part No | Description | 部品名 | Remarks | ランク |
|-----|----------|----------------------------|-----------------|------------------|-----|
| | VK680300 | Mica Capacitor | チップマイコン | .819-822,845-848 | |
| | UA353470 | Mylar Capacitor | マイラーコン | C717-724 | 03 |
| | UA655220 | Mylar Capacitor | マイラーコン | C855 | 01 |
| | UA655100 | Mylar Capacitor | マイラーコン | C854 | 01 |
| | VI540000 | Mylar Capacitor | マイラーコン | C856,925 | 01 |
| | VK679300 | Metalized Polypropylene C. | メタライズドポリコン | C873 | 01 |
| | VI862200 | Metalized Polypropylene C. | メタライズドポリコン | C794-797 | 06 |
| | | | | C735-738,751-754 | 01 |
| | | | | .787-770,779-780 | |
| | | | | .800-803,813-816 | |
| | | | | .823,824,831,832 | |
| | | | | .835,837,838,841 | |
| | | | | -844,777,778,962 | |
| | | | | -965 | |
| | VI503200 | Metalized Polypropylene C. | メタライズドポリコン | C827,828 | 01 |
| | VK679500 | Polypropylene Film Cap. | PPコン | C727-734,739-746 | 02 |
| | VK679600 | Polypropylene Film Cap. | PPコン | C763,764,810,811 | 02 |
| | GE300610 | Ferrite Bead | フェライトビーズ | L751 | 01 |
| | VD542700 | EMI Filter | E M I フィルタ | L704,705,754,755 | 01 |
| | VI298000 | EMI Filter | チップ E M I フィルタ | L752,753,756-758 | 01 |
| | VI139800 | Coil | チップインダクタンス | L759,760 | |
| | VD473700 | Coil | コイル | L701-703,706-708 | 01 |
| | VI198600 | Metal Film Resistor | チップ金属被膜抵抗 | R701-708 | 01 |
| | VI198200 | Metal Film Resistor | チップ金属被膜抵抗 | R709-716,851,870 | 01 |
| | | | | .879,845,853 | |
| | VI196600 | Metal Film Resistor | チップ金属被膜抵抗 | R717-724 | 01 |
| | VI197400 | Metal Film Resistor | チップ金属被膜抵抗 | R725,732 | 01 |
| | VI194100 | Metal Film Resistor | チップ金属被膜抵抗 | R841-843,846,847 | 01 |
| | | | | .902-905 | |
| | VI199000 | Metal Film Resistor | チップ金属被膜抵抗 | R849 | 01 |
| | VK682700 | Metal Film Resistor | 金属被膜抵抗 | R733-736,785-788 | 01 |
| | VK681200 | Metal Film Resistor | 金属被膜抵抗 | R737-744 | 01 |
| | VK680500 | Metal Film Resistor | 金属被膜抵抗 | R745-752 | 01 |
| | VK681300 | Metal Film Resistor | 金属被膜抵抗 | R753-756,817-820 | 01 |
| | | | | .825-832 | |
| | VK681100 | Metal Film Resistor | 金属被膜抵抗 | R761-764 | 01 |
| | VK680600 | Metal Film Resistor | 金属被膜抵抗 | R765-768 | 01 |
| | VK681800 | Metal Film Resistor | 金属被膜抵抗 | R769-776,807,898 | 01 |
| | VK681000 | Metal Film Resistor | 金属被膜抵抗 | R777-784 | 01 |
| | VK681900 | Metal Film Resistor | 金属被膜抵抗 | R793-796,811-814 | 01 |
| | | | | .858-861,892-896 | |
| | | | | .899 | |
| | VK682000 | Metal Film Resistor | 金属被膜抵抗 | R797,798 | 01 |
| | VK682100 | Metal Film Resistor | 金属被膜抵抗 | R799-802,886-891 | 01 |
| | | | | .803-806 | |
| | VK681600 | Metal Film Resistor | 金属被膜抵抗 | R807,808,875,876 | 01 |
| | VK680900 | Metal Film Resistor | 金属被膜抵抗 | R809,810,877,878 | 01 |
| | VI208700 | Metal Film Resistor | 金属被膜抵抗 | R815,816 | 01 |
| | VK681400 | Metal Film Resistor | 金属被膜抵抗 | R866,867 | 01 |
| | VK681500 | Metal Film Resistor | 金属被膜抵抗 | R871-874 | 01 |
| | VK682200 | Metal Film Resistor | 金属被膜抵抗 | R880-883 | 01 |
| | VK682300 | Metal Film Resistor | 金属被膜抵抗 | R837-840,757,815 | |
| | | | | .816 | |
| | VI403400 | Metal Film Resistor | 金属被膜抵抗 | R884,885 | |
| | VK680800 | Metal Film Resistor | 金属被膜抵抗 | R900,901 | 01 |
| | HU474750 | Metal Film Resistor | 金属被膜抵抗 | R833-836 | 01 |
| | VK911600 | Metal Film Resistor | 金属被膜抵抗 | R854-857,862-865 | 01 |
| | | | | .868,869 | |
| | VB068800 | Metal Film Resistor | 金属被膜抵抗 | R921,922 | 01 |
| | VB068100 | Metal Film Resistor | 金属被膜抵抗 | R923 | 01 |
| | VA867000 | Metal Film Resistor | 金属被膜抵抗 | R924 | |
| | VA074400 | Metal Film Resistor | 金属被膜抵抗 | R925 | |
| | VA863000 | Metal Film Resistor | 金属被膜抵抗 | R940 | 01 |
| | VA859400 | Metal Film Resistor | 金属被膜抵抗 | R941 | |
| | VK684100 | Diode Array | ダイオードアレイ | D726,727 | |
| | VB493900 | Diode | ダイオード | D701,704,723,725 | 01 |
| | VK666000 | Diode | ダイオード | D712-714,751 | 01 |
| | VK666100 | Diode | ダイオード | D753-758 | |
| | VK666200 | LED | S L M - 1 3 V W | D752 | 01 |
| | VB941200 | Diode | ダイオード | D715-722 | 01 |
| | | | | | |
| | VK683200 | Transistor | チップトランジスタ | Q728,730 | 01 |
| | VI276900 | Transistor | トランジスタ | Q729 | 01 |
| | IC260320 | Transistor | トランジスタ | Q726 | 01 |
| | JA111520 | Transistor | トランジスタ | Q725,727 | 01 |
| | VI927100 | Transistor | トランジスタ | Q753 | 01 |
| | | | | | |
| | VK683800 | Digital Transistor | デジタルトランジスタ | Q751,752 | 01 |
| | XJ031A00 | IC, OP AMP | I C | IC701,702 | 03 |
| | XC011001 | IC, OP AMP | I C | IC703,704 | 05 |
| | XD238001 | IC, BUFFER | I C | IC712,720 | 04 |

≠ New Parts (新規部品)

ランク: Japan only.

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| Ref | Part No | Description | 部品名 | Remarks | ランク |
|-----|----------|-----------------------|-----------------|-----------------|---|
| | XJ008A00 | IC, JK-FF | TC74AC112F | IC | IC757 |
| | XJ007A00 | IC, FF | TC74AC74F | IC | IC724,797 |
| | XJ014A00 | IC, BINARY COUNTER | TC74HC163AF | IC | IC758,759 |
| | XJ022A00 | IC, INVERTER | SN74BCT540NS | IC | IC760 |
| | XJ013A00 | IC, BUS BUFFER | TC74HC126AF | IC | IC756,763,789, |
| | XJ017A00 | IC, FIFO | TC74HC40105AF | IC | 794 IC788,769,770, 780,781,782 |
| | XD831A00 | IC, AND | SN74HC08NSR | IC | IC771,779,786 |
| | XD830A00 | IC, INVERTER | SN74HC04NSR | IC | IC773,762 |
| | XE165A00 | IC, NAND | SN74HC00NSR | IC | IC774 |
| | XC726001 | IC, D-PF | SN74HC74NSR | IC | IC775,776,783, |
| | XJ011A00 | IC, AND/OR | TC74HC51AF | IC | IC772 |
| | XJ016A00 | IC, SHIFT REGISTER | TC74HC595AF | IC | IC777,790,791 |
| | XJ012A00 | IC, LATCH | TC74HC77AF | IC | IC778 |
| | XJ015A00 | IC, SHIFT REGISTER | TC74HC164AF | IC | IC785 |
| | XI995A00 | IC, AND | SC74S08FER | IC | IC725 |
| | XJ021A00 | IC, INVERTER | TC7W04F | IC | IC784,787,792, 793 |
| | XJ020A00 | IC, NAND | TC7W00F | IC | IC788 |
| | XJ035A00 | IC, DAC | MN6472 | IC | IC711 |
| | XJ010A00 | IC, PLL | CX23065A | IC | IC752 |
| | XD568A00 | IC, OP AMP | NJM2904S | IC | IC753 |
| | XJ023A00 | IC, DRIVER | SN75179BP | IC | IC765 |
| | XJ024A00 | IC, LINE DRIVER | SN75ALS12N | IC | IC766 |
| | XE737A00 | IC, RECEIVER | SN75124N | IC | IC767 |
| | IG142800 | IC, OP AMP | NJM5532D | IC | IC705-710,726, 727 |
| | XJ030A00 | IC, OP AMP | LM833N | IC | IC714-718 |
| | XJ034A00 | IC, ADC | AK5326 | IC | IC719 |
| | XG945A00 | IC, REGULATOR +5V | H5278L05 | IC | IC713,721,723, 751 |
| | XG946A00 | IC, REGULATOR -5V | H5279L05 | IC | IC722 |
| | XG948C00 | IC, DIR2 | YM3436BG | IC | IC799 |
| | XG949A00 | IC, DIT2 | YM3437CE | IC | IC795,796 |
| | XD711001 | IC, DVC2 | YM6013 | IC | IC798 |
| | VL136900 | Crystal Resonator | CX0040A | IC | IC755 33.8668MHz |
| | XJ025A00 | IC, VCO | FARW2DA33M869D0 | IC | IC754 |
| | XI000A00 | IC, OR | SC7S32FER | IC | IC761 |
| | XJ411A00 | IC, NOR | TC74HC02AF | IC | IC800 |
| | VK683000 | Relay | I.AJ1 5V | リレー | RL701,702 |
| | VK682900 | Relay | G6H-2 5V | リレー | RL703-707 |
| | VK455900 | Trimmer Potentiometer | B5K TM-7P | 半固定抵抗 | VR701,702 |
| | VK455800 | Trimmer Potentiometer | B1K TM-7P | 半固定抵抗 | VR703,704 |
| | VE340300 | Test Point | IRS-1169 | テストポイントピン | TP700,701 |
| | VK661300 | IC Protector | ICP-N50 (2A) | ICプロテクタ | F700 |
| | VK415200 | Circuit Board | SYSCON | S Y S C O N シート | |
| | VE439400 | EHI Filter | DSS310-55Z223S | E M I フィルタ | L1008 |
| | VK660800 | EHI Filter | M614 | チップ EMI フィルタ | L1000,1009 |
| | VK660900 | EHI Filter | M708C | チップ EMI フィルタ | L1006 |
| | VK661000 | EHI Filter | M720C | チップ EMI フィルタ | L1002-1005 |
| | V1225200 | Ceramic Capacitor | 22P 50V J | チップセラコン | C1079 |
| | VJ798800 | Ceramic Capacitor | 0.10 25V Z | チップセラコン | C1000-1025,1030- |
| | | | | | 1033,1036,1040- 1058,1060-1072, 1075,1080,1083, 1084,1073,1059, 1085-1087 |
| | UA353470 | Mylar Capacitor | 4700P 50V J | マイラーコン | C1076 |
| | UA655330 | Mylar Capacitor | 0.33 50V J | マイラーコン | C1077 |
| | UA355100 | Mylar Capacitor | 0.10 50V J | マイラーコン | C1078 |
| | UA253220 | Mylar Capacitor | 0.0022 50V | マイラーコン | C1088 |
| | UJ847470 | Electrolytic Cap. | 47.0 25.0V | ケミコン | C1074,1081,1082 |
| | VA864600 | Metal Film Resistor | 3.30K 1/4 F | 金属被膜抵抗 | R1038,1040 |
| | VB068100 | Metal Film Resistor | 22.00K 1/4 F | 金属被膜抵抗 | R1039 |
| | VK493600 | Resistor Array | 10K MS33-1-103J | 抵抗アレイ | R1000-1003 |
| | HZ004730 | Resistor Array | 10K RMLS8-103J | 抵抗アレイ | R1004-1006,1015 |
| | VA822600 | Resistor Array | 10K RMLS4-103J | 抵抗アレイ | R1014,1016,1036, 1037 |
| | VK661300 | IC Protector | ICP-N50 2A | ICプロテクタ | F1000,L1007 |
| | VB481900 | Diode | 11ES4 | ダイオード | D1001,1002 |
| | VG438200 | Zener Diode | HTZ J 6.8AT-77 | ツェナーダイオード | D1003 |
| | VB506200 | Zener Diode | RLZ 5.1A | ツェナーダイオード | D1005 |
| | IF010700 | Zener Diode | HTZ 5.1C | ツェナーダイオード | D1006 |
| | VK666000 | Zener Diode | DA119 | ツェナーダイオード | D1004 |
| | XI332A00 | IC, SRAH 258K | HM62256LFP-10 | IC | IC1032,1041 |
| | XH600A00 | IC, PIO | HPD71055GB-3B4 | IC | IC1033 |

* New Parts (新規部品)

ランク: Japan only

| Ref | Part No | Description | 部品名 | Remarks | ランク | |
|-----|----------|-------------------------|-----------------|----------|--|---------------|
| * | XI999A00 | IC, SERIAL I/O | UPD71051GB-3B4 | IC | IC1061 | 06 |
| * | XI993A00 | IC, SCSI CONTROLLER | MB89351PF-G-BND | IC | IC1024 | 11 |
| * | XF403A00 | IC, DATA SELECTOR | SN74AS151N | IC | IC1048 | 05 |
| * | XF407A00 | IC, DATA SELECTOR | SN74AS250ANT | IC | IC1045 | 06 |
| * | IG058400 | IC, INVERTER | HD7406P | IC | IC1036 | 03 |
| * | IG085900 | IC, INVERTER | TD62104P | IC | IC1035 | 04 |
| * | XI991A00 | IC, TRANSCEIVER | LTC485CN8 | IC | IC1000-1017,1062 ,1063 | 07 |
| * | XJ703A00 | IC, TRANSCEIVER | SN75176BP | IC | IC1018-1020 | |
| * | XI996A00 | IC, COUNTER | SN74HC390NSR | IC | IC1064 | 04 |
| * | XE155A00 | IC, NAND | SN74HC00NSR | IC | IC1071 | 01 |
| * | XD830A00 | IC, INVERTER | SN74HC04NSR | IC | IC1070 | 01 |
| * | XJ014A00 | IC, BINARY COUNTER | TC74HC163AF | IC | IC1067,1068 | 03 |
| * | XG726A00 | IC, D-FF | SN74HC74NSR | IC | IC1069 | 01 |
| * | IR016450 | IC, SHIFT REGISTER | SN74HC164N | IC | IC1042,1052 | 05 |
| * | IR017550 | IC, D-FF | SN74HC175N | IC | IC1051 | 04 |
| * | IR007450 | IC, D-FF | SN74HC74N | IC | IC1050,1056 | 04 |
| * | IR037400 | IC, D-FF | TC74HC374AP | IC | IC1082 | 06 |
| * | XE537A00 | IC, BUFFER | SN74HC540NSR | IC | IC1021,1022 | 04 |
| * | IR012300 | IC, MONO-FF | TC74HC123AP | IC | IC1059 | 04 |
| * | XH224A00 | IC, T-LATCH | TC74HC573AF | IC | IC1031 | 04 |
| * | XI994A00 | IC, INVERTER | SC74S04F | IC | IC1023,1025,1049 ,1055,1073 | 01 |
| * | XI995A00 | IC, AND | SC74S08F | IC | IC1054 | 01 |
| * | XI000A00 | IC, OR | SC7S32FER | IC | IC1053 | 01 |
| * | XB253001 | IC, RESET | M51951BL | IC | IC1057 | 03 |
| * | XJ010A00 | IC, PLL | CX23065A | IC | IC1066 | 07 |
| * | IG101100 | IC, METER DRIVER | BA6209 | IC | IC1034 | 05 |
| * | XF418A00 | IC, VCO | VCO 17.2872MHz | IC | IC1072 | 14 |
| * | VC039800 | Crystal Resonator | EX03C 16.000MHz | IC | IC1058 | 06 |
| * | VC886700 | Crystal Resonator | EX03C 12.288MHz | IC | IC1063 | 06 |
| * | XJ000A00 | IC, DELAY LINE | ADL025SH | IC | IC1044,1047,1080 ,1081 | 08 |
| * | XJ001A00 | IC, DELAY LINE | ADL100SH | IC | IC1043 | 08 |
| * | XF427A00 | IC, | YM6049 | IC | IC1040 | 11 |
| * | XK177A00 | IC, SYSTEM CPU | M50747ESP | IC | ICシステムマイコン | IC1030 |
| * | XK178A00 | IC, AUDIO CPU | M50747ESP | IC | オーディオマイコン | IC1060 |
| * | VD110500 | Slide Switch | S8SS2 1-2A | IC | スライドスイッチ | SW1001,1002 |
| * | VK661200 | Rotary Encoder | S8031 | IC | ロータリースイッチ | SW1000 |
| * | VA024500 | IC Socket | D1CS64AS | IC | ICソケット | (IC1030,1060) |
| * | VJ538700 | IC Socket | D1CF20CS-E | IC | ICソケット | (IC1046) |
| * | VK413600 | Circuit Board | CONN | CONN | CONNシート | 15 |
| * | VK413700 | Circuit Board | HF | HF | HFシート | 63 |
| * | FA154100 | Mylar Capacitor | 0.0100 50V J | マイラーコン | C102-105,264 | 02 |
| * | UA253100 | Mylar Capacitor | 1000P 50V J | マイラーコン | C118 | 02 |
| * | FA155220 | Mylar Capacitor | 0.2200 50V J | マイラーコン | C119,269 | 02 |
| * | UT452100 | Polypropylene Film Cap. | 100P 100V J | PPコン | C252 | 03 |
| * | FG200200 | Ceramic Capacitor | 2P 50V C | セラコン | C203,215,219 | 01 |
| * | FG210500 | Ceramic Capacitor | 5P 50V C | セラコン | C136,207 | 01 |
| * | FG211150 | Ceramic Capacitor | 15P 50V J | セラコン | C120 | 01 |
| * | FI552100 | Ceramic Capacitor | 100P 50V J | セラコン | C138 | 01 |
| * | FI551220 | Ceramic Capacitor | 22P 50V K | セラコン S L | C106-109 | |
| * | FI551470 | Ceramic Capacitor | 47P 50V J | セラコン | C123 | 01 |
| * | FG212220 | Ceramic Capacitor | 220P 50V K | セラコン S L | C213,214 | 01 |
| * | FG213470 | Ceramic Capacitor | 4700P 50V K | セラコン S L | C270 | 01 |
| * | FZ005880 | Monolithic Cera. Cap. | 0.100 25V H | 積層セラコン | C112,113,121,125 ,127,128,130,133 ,201,204-206,208 -212,216-218,220 -222,251,254,257 | 01 |
| * | VD534400 | Monolithic Cera. Cap. | 1.500 25V Z | 積層セラコン | C253 | 01 |
| * | UJ818220 | Electrolytic Cap. | 220.00 6.3V | ケミコン | C126 | |
| * | UJ818100 | Electrolytic Cap. | 100.00 6.3V | ケミコン | C129,255 | 01 |
| * | UJ837470 | Electrolytic Cap. | 47.00 16.0V | ケミコン | C110,111,131,132 ,134,135,202,258 ,260 | 01 |
| * | UJ866100 | Electrolytic Cap. | 1.00 50.0V | ケミコン | C124 | 01 |
| * | UJ866470 | Electrolytic Cap. | 4.70 50.0V | ケミコン | C262 | 01 |
| * | UJ838220 | Electrolytic Cap. | 220.00 16.0V | ケミコン | C271 | 01 |
| * | FK117470 | Electrolytic Cap. | 47.00 6.3V | B P ケミコン | C259 | 03 |
| * | UK137100 | Electrolytic Cap. | 10.00 16.0V | B P ケミコン | C256 | 01 |
| * | UK566100 | Electrolytic Cap. | 1.00 50.0V | B P ケミコン | C115,266 | 01 |
| * | VD926800 | Electrolytic Cap. | 47.00 16.0V | B P ケミコン | C114 | 01 |
| * | GE901960 | Coil | EL0606RA 18u | 固定コイル | L105 | 01 |

* New Parts (新規部品)

ランク: Japan only

| Ref | Part No | Description | 部品名 | Remarks | ランク |
|-----|----------|----------------------------|---------------|------------------------------|-----|
| | VG413100 | Coil | ELO607RA 18u | L104 | 01 |
| | VG869700 | Coil | ELO607RA 180u | L101,102 | 01 |
| | VE008800 | Coil | ELO606RA 100u | L103 | 01 |
| | HV453220 | Flame Proof Carbon Resisto | 2.2 1/4 J | R280 | 01 |
| | HV454100 | Flame Proof Carbon Resisto | 10.0 1/4 J | R154 | 01 |
| | HV454330 | Flame Proof Carbon Resisto | 33.0 1/4 J | R289-291 | 01 |
| | HL314330 | Metal Oxide Film Resistor | 33.0 1W K | R141 | 01 |
| | HL324390 | Metal Oxide Film Resistor | 39.0 2W K | R137 | 01 |
| | HZ002880 | Resistor Array | RMLS8 10KX8 | R191 | 02 |
| | XB247A00 | IC, OP AMP | UPC4570HA | IC106,204 | 01 |
| | XB248A00 | IC, OP AMP | W5238L | IC101,102,254 | 03 |
| | XD568A00 | IC, OP AMP | NJH2904S | IC103 | 03 |
| | XF514A00 | IC, OP AMP | NJH318D | IC107,201,202, 205,206 | 05 |
| | XF400A00 | IC, VOLTAGE DETECTOR | TL7700CP | IC105 | 07 |
| | XF445A00 | IC, DRIVER | TA7259P | IC256 | 05 |
| | XI758A00 | IC, TIMER | TLC555P | IC251 | 04 |
| | XI757A00 | IC, COUNTER | TC9192P | IC252 | 06 |
| | XH969A00 | IC, | UPC1093 | IC109 | 02 |
| | JG001720 | IC, INVERTER | TC4069UBP | IC255 | 03 |
| | IG055100 | IC, MULTIPLEXER | TC4053BP | IC253 | 05 |
| | XI759A00 | IC, GATE | SN74AS20N | IC104 | 03 |
| | XI761A00 | IC, DAC | UPD6901C | IC108 | 06 |
| | IR405300 | IC, ANALOG SWITCH | TC74HC4053AP | IC203 | 03 |
| | VG452200 | Slide Switch | SSCF11 | SW1 | 02 |
| | VE633300 | Connector | FFC/FPC 30P | CB107 | 04 |
| | VG858100 | Trimmer Potentiometer | B 1K 3P | VR101,102 | 07 |
| | IA093320 | Transistor | 2SA933S Q,R | Q116,117,120,251 -253,255 | 01 |
| | IA093410 | Transistor | 2SA934 P,Q,R | Q123 | 01 |
| | VG578600 | Transistor | 2SA1206 L,K | Q109,110,121,122 | |
| | VC139700 | Transistor | 2SB1185 | Q124 | 02 |
| | IC174020 | Transistor | 2SC1740S R,S | Q105,106,119,254 | 01 |
| | IC206010 | Transistor | 2SC2060 P,Q,R | Q107,108 | 01 |
| | VG413700 | Transistor | 2SC2901 L,K | Q111-114 | 02 |
| | IA134900 | Transistor Array | 2SA1349 GR,BL | Q101,104 | 03 |
| | IC338100 | Transistor | 3381 GR,BL | Q102,103 | 02 |
| | IF004600 | Diode | 1SS133 T-77 | Q102.251 | 01 |
| | VG437600 | Zener Diode | MTZ J 5.6A | D201 | 01 |
| | VG439500 | Zener Diode | MTZ J 10.0B | D101 | 01 |
| | VG465700 | Photo Coupler | GPIA35R | D1 | 08 |
| | VK661300 | IC Protector | ICP-N50 | F101 | 02 |
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* New Parts (新規部品)

ランク : Japan only

MECHANISM PARTS Note) Ø : Diameter

| Ref | Part No | Description | 部品名 | Remarks | ランク |
|-----|----------|-----------------------|-----------------|-----------------|-------|
| 1 | VK412500 | OVERALL ASEMBLY | 総組み立て | YPDR601 | |
| 2 | VK412200 | WM-3 Unit | WM3ユニット | | 17 |
| 3 | VK420600 | Lid Assembly | リッド Ass'y | | 68 |
| 4 | VK412600 | Tray Assembly | トレイ Ass'y | SERVO | |
| 5 | VK412800 | Circuit Board | S E R V O シート | PS | 56 |
| 6 | VK415100 | Circuit Board | P S シート | AUDIO | 79 |
| 7 | VK415200 | Circuit Board | A U D I O シート | SYSCON | 78 |
| 8 | -- | -- | S Y S C O N シート | | |
| 9 | -- | -- | | | |
| 10 | -- | -- | | | |
| 11 | VK485100 | Voltage Selector | 電圧切替器 | SDKG-DPDT | 03 |
| 12 | VK416200 | Seesaw Switch | シーソースイッチ | SDDT-DPST | 05 |
| 13 | LA001660 | Terminal, Earth | アースターミナル | 1P T-10 | 03 |
| 14 | VL574200 | AC INLET | 電源ソケット | GL-2030ET | |
| 15 | VG617000 | Jumper Socket | ジャンパーソケット | JM 2P | 01 |
| 16 | -- | -- | | | |
| 17 | -- | -- | | | 09 |
| 18 | XI795A00 | Power Transformer | 電源トランス | | 12 |
| 19 | VL678100 | Power Supply Unit | スイッチング電源 | FEM-501Z | J.U.C |
| 19 | VK476800 | Power Supply Unit | スイッチング電源 | FEM-501 | X |
| 20 | FI384100 | Ceramic Cap. | 規格認定コン | 0.010 400V | 2pcs |
| 21 | CB095260 | Cover, Capacitor | コンデンサカバー | SB-0833 | 2pcs |
| 22 | VL075600 | Connector Bracket | コネクタブラケット | NC3FD-HB | 3pcs |
| 23 | VL075700 | Connector Bracket | コネクタブラケット | NC3MD-HB | 3pcs |
| 24 | -- | -- | | | |
| 25 | -- | -- | | | |
| 26 | -- | -- | | | |
| 27 | -- | -- | | | |
| 28 | -- | -- | | | |
| 29 | -- | -- | | | |
| 30 | -- | -- | | | |
| 31 | VK254700 | Front Panel | フロントパネル | | 22 |
| 32 | VG673900 | Collar | カラー | A | 05 |
| 33 | VG674000 | Collar | カラー | B | 05 |
| 34 | VK420500 | lens | レンズ | | 11 |
| 35 | VK694300 | Button | ボタン | | |
| 36 | VG629300 | Button Hinge | ボタンヒンジ | | 04 |
| 37 | -- | -- | | | |
| 38 | VK258200 | Support, Lid | サポート/リック | L | 04 |
| 39 | VK258400 | Support, Lid | サポート/リッド | R | 04 |
| 40 | VK258800 | Damper, Lid | ダンパー/リッド | | 03 |
| 41 | VK258600 | Spring | スプリング | LL/TE | |
| 42 | -- | -- | サブシャーシ | | |
| 43 | -- | -- | フレームL | L | |
| 44 | -- | -- | フレームC | C | |
| 45 | -- | -- | フレームR | R | |
| 46 | -- | -- | フレームサブR | | |
| 47 | VG629800 | Bottom Assembly | ボトム Ass'y | | 18 |
| 48 | VH204700 | Leg | レッグ | TRANN | 4pcs |
| 49 | VK256300 | Rear Panel | リアパネル | | 12 |
| 50 | VK256400 | Top Panel | トップパネル | | 18 |
| 51 | VK256500 | Side Panel | サイドパネル | L | 12 |
| 52 | VK256700 | Rim | リム | L | 10 |
| 53 | VK256600 | Side Panel | サイドパネル | R | 13 |
| 54 | VK256800 | Rim | リム | R | 10 |
| 55 | -- | -- | プレート | PS | |
| 56 | -- | -- | サポート | PS | |
| 57 | -- | -- | | | |
| 58 | VH613800 | Cushon | クッション | | 4pcs |
| 59 | VK257000 | Post, Damper | ポスト/ダンパー | | 04 |
| 60 | VH939500 | Stopper | ストッパ | TR/201 | 05 |
| 61 | VG674500 | Slide Plate | スライドプレート | | 04 |
| 62 | VG683900 | Plate | プレート | HL | 06 |
| 63 | VG674100 | Collar | カラー | C | 06 |
| 64 | VK381600 | Motor | モーター 12V | DC MHF08C12DL-R | 11 |
| 65 | -- | -- | シールドプレート | T | |
| 66 | -- | -- | シールドプレート | B | |
| 67 | VG728300 | Damper Washer | ダンパーワッシャー | | 4pcs |
| 68 | CB099540 | Support, P.C.B. | P C B ヒンジ | NO.336 | 3pcs |
| 69 | VG873500 | Cushon | クッション | | 4pcs |
| 70 | VG575500 | Spacer | スペーサー | FL | 2pcs |
| 71 | VG735300 | Washer | ワッシャー | | 2pcs |
| 72 | VG834800 | Flapper | フラッパー | | |
| 73 | VG576100 | Stabilizer | スタビライザー | | 17 |
| 74 | VD938700 | Roller | ローラ | φ 2.5 SP | 01 |
| 75 | CB855540 | Thrust Bearing | スラストベアリング | 2 | 01 |
| 76 | VE647800 | Spring | スプリング | CO | 01 |
| 77 | VH939600 | Lifter Lever Assembly | リフターレバー Ass'y | | |

* New Parts (新規部品)

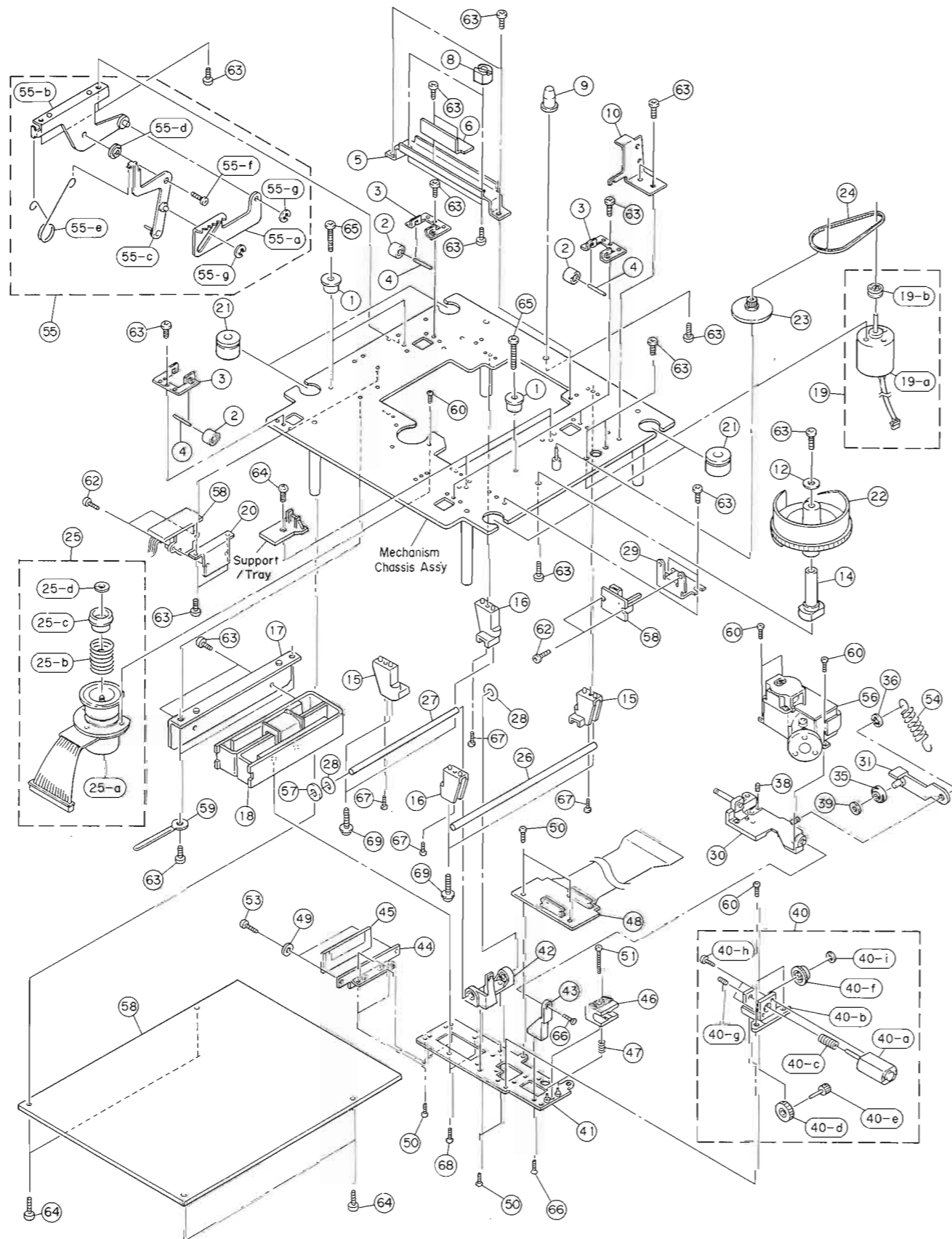
ランク : Japan only

| Ref | Part No | Description | 部品名 | Remarks | ランク |
|-----|----------|---------------------------|------------|-----------------|-------|
| 78 | VG576600 | Spring | スプリング | LL/TE | 02 |
| 79 | -- | -- | | | |
| 80 | -- | -- | | | |
| 81 | -- | -- | | | |
| 82 | VK949100 | Fan Guard | ファンガード | FG-08HL | 06 |
| 83 | -- | -- | | | |
| 84 | -- | -- | | | |
| 85 | ED330046 | Bind Head Screw | + バインド小ネジ | 3.0X4 FCM3BL | 5pcs |
| 86 | EG330030 | Bind Head Screw | + バインド小ネジ | 3.0X6 FCM3BL | 28pcs |
| 87 | ED330106 | Bind Head Screw | + バインド小ネジ | 3.0X10 FCM3BL | 4pcs |
| 88 | EA040086 | Pan Head Screw | + ナベ小ネジ | 4.0X8 ZMC2Y | 1pc |
| 89 | VK385100 | Bind Head Screw | + バインド小ネジ | 4.0X35 FCM3BL | 4pcs |
| 90 | VH283300 | Blaze Washer Head Screw | + BWH小ネジ | 3.0X12 ZMC2BL | 12pcs |
| 91 | ED340106 | Bind Head Screw | + バインド小ネジ | 4.0X10 FCM3BL | 4pcs |
| 92 | EK950020 | Bind Head Tapping Screw-B | + バインドBタイト | 3.0X6 ZMC2BL | 9pcs |
| 93 | EP600830 | Bind Head Tapping Screw-B | + バインドBタイト | 3.0X8 FCM3BL | 6pcs |
| 94 | EK950060 | Bind Head Tapping Screw-B | + バインドBタイト | 4.0X8 ZMC2BL | 4pcs |
| 95 | EX602050 | Bonding Tapping Screw-B | ボンディングBタイト | 3.0X8 FCM3BL | 58pcs |
| 96 | EX600240 | Blaze Washer Head Screw-B | + BWH Bタイト | 3.0X8-8 FCM3BL | 11pcs |
| 97 | -- | -- | | | |
| 98 | E0130086 | Flat Head Tapping Screw-B | + 皿Bタイト | 3.0X8 FCM3-3G | 12pcs |
| 99 | EK336020 | Blaze Washer Head Screw-B | + BWH Bタイト | 3.0X6-8 FCM3BL | 4pcs |
| 100 | EP620150 | Bind Head Tapping Screw-P | + バインドPタイト | 2.6X5 ZMC2BL | 2pcs |
| 101 | EP600730 | Bind Head Tapping Screw-P | + バインドPタイト | 3.0X8 FCM3BL | 2pcs |
| 102 | -- | -- | | | |
| 103 | EV410046 | Toothed Lock Washer | 歯付き座金内歯形 | A 4.0 ZMC2Y | 1pc |
| 104 | EV410036 | Toothed Lock Washer | 歯付き座金内歯形 | A 3.0 ZMC2Y | 1pc |
| 105 | EV300300 | Spring Washer | バネ座金 | #2 3.0 ZMC2Y | 2pcs |
| 106 | EV300046 | Spring Washer | バネ座金 | #2 4.0 ZMC2Y | 4pcs |
| 107 | VA226300 | Flat Washer | 平座金みがき丸 | 3.0X7 0.5 ZMC2Y | 5pcs |
| 108 | EV100046 | Hexagonal Nut | 六角ナット | #2 4.0 ZMC2Y | 4pcs |
| 109 | ES200020 | Hexagonal Nut | 六角ナット | #2 3.0 ZMC2Y | 2pcs |
| | | <ACCESSORIES> | <付属品> | | |
| | VG525100 | AC Cord | 電源コード | 125V KP300 2.5m | J |
| | VL741500 | AC Cord | 電源コード | 125V KS31 2.5m | U,C |
| | VL023300 | AC Cord | 電源コード | 250V KS31A 2.5m | X |
| | VM554000 | AC Cord | 電源コード | 6A HE-8 2.0m | B |
| | VK477400 | Terminator | ターミネータ | CSCI | 24 |
| | VL641300 | Cable | ケーブル | 50P 5m | 24 |
| | VK368300 | Rack Ear | ラックイヤー | | |

* New Parts (新規部品)

ランク : Japan only

EXPLODED VIEW (WM-3 Unit)



MECHANISM PARTS (WM-3 Unit) Note) Ø : Diameter

| Ref | Part No | Description | 部品名 | Remarks | ランク |
|-----|----------|---------------------------|----------------|------------|------|
| ** | VK412500 | WM-3 Unit | WM3 ユニット | | |
| 1 | VG574900 | Guide | ガイド | 4pcs | |
| 2 | VG575000 | Roller | ローラ | 4pcs | |
| 3 | VG575100 | Bracket | ブラケット | 4pcs | |
| 4 | VG575200 | Shaft | シャフト | 4pcs | |
| 5 | VG575300 | Bracket | ブラケット | | 06 |
| 6 | VH366300 | Shield Plate | シールドプレート | | 02 |
| 7 | -- | -- | -- | | |
| 8 | VG575400 | Guide | ガイド | 2pcs | 10 |
| 9 | VG575600 | Guide | ガイド | | 06 |
| 10 | VG575700 | Stopper | ストッパー | | 05 |
| 11 | -- | -- | -- | | |
| 12 | VG735300 | Washer | ワッシャー | | 03 |
| 13 | -- | -- | -- | | |
| 14 | VG575900 | Shaft | シャフト | | 09 |
| 15 | VG616900 | Shaft Holder | シャフトホルダー | 2pcs | 04 |
| 16 | VG617100 | Shaft Holder | シャフトホルダー | 2pcs | 04 |
| 17 | VG617600 | Bracket | LMブラケット | | 06 |
| 18 | VG465600 | Linear Motor | リニアモーター 10V | | 10 |
| 19 | -- | LO Motor Assembly | LOモーターアッセンブリ | | |
| 19a | VE356300 | Motor | モーター 12V | | 06 |
| 19b | VC787300 | Motor Pulley Assembly | モータープーリーアッセンブリ | | 01 |
| 20 | VG684100 | Sensor Bracket | センサーブラケット | | 06 |
| 21 | VG617800 | Damper rubber | ダンパーゴム | 4pcs | 05 |
| 22 | CB655560 | Loading Cam | ローディングカム | | 03 |
| 23 | VF910500 | Pulley Assembly | プーリーアッセンブリ | | 01 |
| 24 | VF910400 | Belt | ベルト | | 01 |
| 25 | VG617900 | SP Motor Assembly | SPモーターアッセンブリ | | 50 |
| 25a | -- | Motor | モーター 12V | | |
| 25b | VG618200 | Spring | スプリング | | 02 |
| 25c | VG618400 | Chuck Ring Assembly | チャックリングアッセンブリ | | 14 |
| 25d | VG729000 | CW | 2.6X0.13 CW | | 02 |
| 26 | VG618900 | Guide Shaft | ガイドシャフト | | 06 |
| 27 | VG619100 | Guide Shaft | ガイドシャフト | | 06 |
| 28 | VG623300 | O-Ring | Oリング | 2pcs | |
| 29 | VG576000 | Bracket | ブラケット | | 05 |
| 30 | VG623800 | PU Base Assembly | PUベースアッセンブリ | | 11 |
| 31 | VG625100 | Arm Assembly | アームアッセンブリ | | 06 |
| 32 | -- | -- | -- | | |
| 33 | -- | -- | -- | | |
| 34 | -- | -- | -- | | |
| 35 | VG625300 | Roller | ローラー | | 06 |
| 36 | VB294200 | Stop Ring | E形止め輪 | | 01 |
| 37 | -- | -- | -- | | |
| 38 | EZ001380 | Set Screw | 2.0X6 ZHC2BL | すりわり付き止めねじ | 01 |
| 39 | VD880500 | CW | 1.7X0.25 | CW | 02 |
| 40 | VG625500 | Tilt Motor Assembly | チルトモーターアッセンブリ | | 17 |
| 40a | -- | Tilt Motor | モーター 4.5V | | |
| 40b | VG625800 | Bracket Assembly | ブラケットアッセンブリ | | 09 |
| 40c | VG626200 | Worm Gear | ウォームギヤ | | 06 |
| 40d | VG626400 | Wheel | ホイール | | 05 |
| 40e | VG727700 | Shat Gear Assembly | シャフトギアアッセンブリ | | 08 |
| 40f | VH212900 | Cam Gear | カムギヤ | | 04 |
| 40g | VG735100 | Set Screw | 2.0X4 ZHC2-BL | すりわり付き止めねじ | 01 |
| 40h | EA320046 | Pan Head Screw | 2.0X4 ZHC2-BL | ナベ小ネジ | 01 |
| 40i | VD880500 | CW | 1.7X0.25 | CW | 02 |
| 41 | VG620400 | SL Sub-assembly | SLサブアッセンブリ | | 07 |
| 42 | VG621500 | Metal Assembly | メタルアッセンブリ | | 18 |
| 43 | VG621900 | PU Base Guide | PUベースガイド | | 04 |
| 44 | VG622100 | Scale Holder | スケールホルダー | | 04 |
| 45 | VG622300 | Linear Encoder | リニアエンコーダー | | 14 |
| 46 | VG622400 | Slide Block | スライドブロック | | 03 |
| 47 | VG622700 | Spring | スプリング | 2pcs | 02 |
| 48 | VK413600 | Circuit Board | CONNESHIRT | | 15 |
| 49 | VD015500 | Washer | ワッシャー | 2pcs | 01 |
| 50 | ED320046 | Bind Head Screw | 2.0X4 ZHC2BL | +バインド小ネジ | 01 |
| 51 | ED020126 | Bind Head Screw | 2.0X12 ZHC2Y | +バインド小ネジ | 01 |
| 52 | -- | -- | -- | | |
| 53 | VD294600 | Bind Head Tapping Screw-P | 2.0X6 FCM3B1 | +バインドPタイト | 2pcs |
| 54 | VG622800 | Spring | PU/TE | スプリング | 02 |
| 55 | VG627200 | Lock Gear Assembly | ロックギアアッセンブリ | | 10 |
| 55a | VG627400 | Lock Gear | ロックギヤ | | 05 |
| 55b | VG623000 | Lock Lever Assembly | ロックレバーアッセンブリ | | 05 |
| 55c | VG626800 | Lock Arm Assembly | ロックアームアッセンブリ | | 06 |
| 55d | CB072880 | Isolation Bushing | 絶縁ブッシュ | | 01 |
| 55e | VG727900 | Spring | スプリング | | 03 |
| 55f | ED326056 | Bind Head Screw | 2.0X5 FCM3BL | +バインド小ネジ | 01 |
| 55g | VB294200 | Stop Ring | 2.0 E形止め輪 | | 01 |
| 56 | VK319500 | YWH-1X | YWH-1X | | 93 |

* New Parts (新規部品)

ランク : Japan only

PARTS LIST

RC601 ELECTRICAL PARTS

WARNING

Components having special characteristics are marked \triangle and must be replaced with parts having specifications equal to those originally installed.

Carbon resistors (1/6W or 1/4W) are not included in the ELECTRICAL PARTS List. For the parts No. of the carbon resistors, refer to P. 82.

| Ref | Part No | Description | | 部品名 | Remarks | ランク |
|-----|----------|---------------------------|-----------------|-----------------|------------------|-----|
| | VK414700 | Circuit Board | RSW | R S W シート | | |
| | VK415300 | Circuit Board | RMAIN | R M A I N シート | | 67 |
| | VK415400 | Circuit Board | RAUDIO | R A U D I O シート | | 38 |
| | VK414700 | Circuit Board | RSW | R S W シート | | |
| | IR007420 | IC, D-FF | UPD74HC74C | I C | IC205-208 | 02 |
| | IG136700 | Transistor Array | TD62083AP | トランジスタアレイ | IC201,202 | 05 |
| | VK456300 | Transistor Array | TD62783AP | トランジスタアレイ | IC203 | 04 |
| | VK456200 | Transistor Array | TD62380P | トランジスタアレイ | IC204 | 04 |
| | VK456400 | Digital Transistor | AD1F3P | デジタルトランジスタ | Q201 | 01 |
| | VK456800 | Photo Diode | LB-602VLF | 発光ダイオード | D201-204 | 04 |
| | IF004600 | Diode | 1SS133 T-77 | ダイオード | D221-240 | 01 |
| | VK456500 | LED | HLMP-T200 RE | L E D | D205,209 | 03 |
| | VH201400 | LED | S1R-34URC3H3 RE | L E D | D220 | 01 |
| | VK456600 | LED | S1R-34MG3H3 GR | L E D | D213-219 | 01 |
| | VK456700 | LED Display | SDSP-4850 | L E D ディスプレイ | D206-208,210-212 | 08 |
| | VJ836100 | Electrolytic Capacitor | 47.00 6.3V | ケミコン | C206 | 01 |
| | UM387470 | Electrolytic Capacitor | 47.00 6.3V | ケミコン | C212,213 | 01 |
| | FZ005880 | Monolithic Cera. Cap. | 0.100 25V M | 積層セラコン | C201-205,207,211 | 01 |
| | HZ002880 | Resistor Array | RML58 | 抵抗アレイ | R221,222 | 02 |
| | VG522500 | Resistor Array | RMLS8J272 | 抵抗アレイ | R233 | 01 |
| | VE925600 | Ferrite Bead | B-02-R | フェライトビーズ | L201 | 02 |
| | VG778500 | Ferrite Bead | FBA04VA600KD | フェライトビーズ | L202 | 01 |
| | VK446800 | Push Switch | TR1-01 | プッシュSW | SW201-206,209 | 02 |
| | VK446300 | Dip Switch | KSPA04 | ディップSW | SW221 | |
| | VK446500 | Slide Switch | SSSS91 | スライドSW | SW222-225 | 01 |
| | VK446700 | Push Switch with LED | TR3-01-L05 | 照明プッシュSW | SW207,210 | 04 |
| | VK446800 | Push Switch with LED | TR3-01-L502 | 照明プッシュSW | SW208 | 04 |
| | VK415300 | Circuit Board | RMAIN | R M A I N シート | | 67 |
| | XI992A00 | IC, TRANSCEIVER | LTC458CS8 | I C | IC1-18 | 07 |
| | IR054050 | IC, INVERTER BUFFER | SN74HC540N | I C | IC19,20 | 05 |
| | XB253001 | IC, RESET | M51951BL | I C | IC21 | 03 |
| | XI993A00 | IC, SCSI CONTROLLER | MB89351PF-G-BND | I C | IC22 | 11 |
| | XE798A00 | IC, PMM2 | YM3934 | I C | IC24 | 12 |
| | XJ018A00 | IC, INVERTER | TC7S04 | I C | IC27 | 01 |
| | XD659A00 | IC, BUFFER | TC74HC541AF | I C | IC29 | |
| | XJ704A00 | IC, DRIVER | SN75176BPS | I C | IC28 | |
| | VB481900 | Diode | 11ES4 | ダイオード | D1 | 01 |
| | VC039800 | Crystal Resonator | EX0-3C 16MHz | 水晶振動子 | IC23 | 06 |
| | UI627470 | Electrolytic Capacitor | 47.00 10.0V M | ケミコン | C1 | |
| | VJ798800 | Chip Ceramic Capacitor | 0.1 25V GRM40F | チップコンデンサ | C2,3,8-35,36 | 01 |
| | VK661100 | Resistor Array | 1889-0011-0 | 抵抗アレイ | RA1,2 | 06 |
| | VE445200 | Resistor Array | RCRD-8X-103J | 抵抗アレイ | RA3-5 | 01 |
| | VE444900 | Resistor Array | RCRD-8X-222J | 抵抗アレイ | RA6 | 01 |
| | VK493600 | Resistor Array | MS33-1-103J | 抵抗アレイ | RA7-10 | 03 |
| | VK661000 | Chip Filter | M-720C | E M C チップフィルタ | F1-4 | 09 |
| | VK660800 | Chip Filter | M-614 | E M C チップフィルタ | F5 | 08 |
| | VE439400 | EMI Filter | DSS310-55D-223S | E M I フィルタ | F6 | 01 |
| | VK879400 | Slide Switch | WCAF4103 | スライドSW | SW1 | 07 |
| | VG518900 | Connector, L Type | 57LE-40560-77CD | L 形ディップコネクタ | J1 (CONTROL) | 07 |
| | VA024500 | IC Socket | 64pin | I C ソケット | (IC25,26) | 08 |
| | VK415400 | Circuit Board | RAUDIO | R A U D I O シート | | 38 |
| | IG065510 | IC, REGULATOR +5V | NJM78L05A | I C | IC101 | 03 |
| | IG130500 | IC, REGULATOR -5v | NJM79L05A | I C | IC102 | 03 |
| | XJ141A00 | IC, REGULATOR +9V | NJM78M09FA | I C | IC103 | 02 |
| | XH899A00 | IC, REGULATOR -9V | NJM79M09FA | I C | IC104 | 02 |
| | XJ021A00 | IC, INVERTER | TC7V04F | I C | IC105 | 01 |
| | XB637A00 | IC, DAC | PCH56P | I C | IC106,107 | 07 |
| | VK684200 | IC, ACTIVE FILTER | WLP20D7B8 | I C | IC108 | 09 |
| | XA862B00 | IC, OP AMP | NJM4560M(T1) | I C | IC109 | 02 |
| | IG159200 | IC, OP AMP | NJM4556MB(T1) | I C | IC111 | 03 |
| | XH600A00 | IC, PIO | UPD71055GB-3B6 | I C | IC112 | 06 |
| | XG948C00 | IC, DIR2 | YM3436BG | I C | IC113 | |
| | XJ365A00 | IC, DIGITAL FILTER | SM5840ES | I C | IC114 | 09 |
| | XK179A00 | IC, KEY CONTROL CPU | M50747ESP | キーコントロール CPU | IC26 | |
| | XK180A00 | IC, SCSI CPU | M50747ESP | S C S I CPU | IC25 | |
| | IC260320 | Transistor | 2SC2603 E,F | トランジスタ | Q104 | 01 |
| | JA101571 | Transistor | 2SA1015 O,Y | トランジスタ | Q105 | 01 |
| | VB493900 | Diode | MA221 TP | ダイオード | D103,104 | 01 |
| | VK665900 | Crystal Resonator | AT51 11.0592MHz | 水晶振動子 | XL1 | 05 |
| | VF881700 | Electrolytic Capacitor | 100 16V | ケミコン | C101,102 | 01 |
| | UM397470 | Electrolytic Capacitor | 47 16V | ケミコン | C111-112,164 | 01 |
| | UM397100 | Electrolytic Capacitor | 10 16V | ケミコン | C146,147,152 | 01 |
| | UM397220 | Electrolytic Capacitor | 22 16V | ケミコン | C154 | 01 |
| | VK880000 | Bypolar Electrolytic Cap. | 3.3 25V | B P ケミコン | C126,127 | 01 |
| | VJ798800 | Chip Ceramic Capacitor | 0.1 25V GRM40 | チップ積層セラコン | C103-110,113-123 | 01 |
| | | | | | C128-133,136,137 | |

* New Parts (新規部品)

ランク : Japan only

■ MECHANISM PARTS Note) Ø : Diameter

| Ref | Part No | Description | 部品名 | Remarks | ランク |
|-----|----------|---------------------------|-----------------|--------------|-------|
| 1 | VK414700 | Circuit Board | RSW | シート | |
| 2 | VK415300 | Circuit Board | RMAIN | シート | 67 |
| 3 | VK415400 | Circuit Board | RAUDIO | シート | 38 |
| 7 | VG869800 | Power Switch | SDDT-SPST | シート | 04 |
| 8 | VK447800 | Push Switch | ACD40520XTR | スイッチ | 10 |
| 9 | VK447900 | Push Switch | ACD40520XIX | スイッチ | 10 |
| 10 | VK446900 | Push Switch with LED | ACD40127X | スイッチ | 12 |
| 11 | VK447000 | Push Switch with LED | ACD40121R | スイッチ | 12 |
| 12 | VK447100 | Push Switch with LED | ACD40127X | スイッチ | 12 |
| 13 | VK447200 | Push Switch with LED | ACD40127X | スイッチ | 12 |
| 14 | VK447400 | Push Switch with LED | ACD40127X | スイッチ | 12 |
| 15 | VK447500 | Push Switch with LED | ACD40124JR | スイッチ | 12 |
| 16 | VK447600 | Push Switch with LED | ACD40127XA | スイッチ | 12 |
| 17 | VK447700 | Push Switch with LED | ACD40127XS | スイッチ | 12 |
| 21 | LB300560 | AC INLET Connector | CM-11 | 電源ソケット | 05 |
| 22 | CB095260 | Capacitor Cover | SB-0833 | コンデンサカバー | 01 |
| 23 | FI384100 | Ceramic Capacitor | 0.010 400V | 規格認定コン | 01 |
| 24 | VL120600 | Power Supply Unit | LW15-52 | スイッチング電源 | 26 |
| 24 | VL507100 | Power Supply Unit | LW15-53 | スイッチング電源 | 26 |
| 25 | -- | - | - | - | - |
| 26 | VK445600 | Button, Push Switch | TZ0310D GY | スイッチ用ボタン | 7pcs |
| 27 | VK445700 | Button, Push Switch | TZ0510D GY | スイッチ用ボタン | 2pcs |
| 28 | VK445800 | Button, Push Switch | TZ0710D GY | スイッチ用ボタン | 1pc. |
| 29 | VK445500 | Escutcheon | MD0340151D GY | スイッチ取付け枠 | 10pcs |
| 31 | VK241400 | Front Panel | C.B | フロントパネル | 21 |
| 32 | VK242600 | Window | C.B | ウィンドウ | 12 |
| 33 | -- | Chassis | C.B | シャーシ | |
| 34 | VK241500 | Rear Panel | C.B | リアパネル | 13 |
| 35 | VK242700 | Side Cover | L, R | サイドカバー L, R | 22 |
| 36 | VK241600 | Support | Side L | サポート | 09 |
| 38 | VK241700 | Support | Side R | サポート | 09 |
| 39 | VK241800 | Support | Relay 1 | サポート | 10 |
| 40 | VK241900 | Support | Relay 2 | サポート | 07 |
| 41 | VK242000 | Support | Play B | サポート | 09 |
| 42 | VK242100 | Support | Rec 1 | サポート | 09 |
| 43 | VK242200 | Support | Rec 2 | サポート | 09 |
| 44 | VK242300 | Support | Rec B | サポート | 09 |
| 45 | VK242400 | Support | Slide | サポート | 07 |
| 46 | VK325100 | Foot | P-D | サポング | 4pcs |
| 47 | VH888800 | Knob | (B) D10 | ノブ | 03 |
| 51 | VK493000 | Spacer | BSB-319 | スパーサ | 4pcs |
| 56 | CB605620 | Plastic Rivet | NO.1057 | プラスチックリベット | 01 |
| 57 | CB069250 | Cord Clamper | BK-1 | 束線止め | 7pcs |
| 58 | LX200010 | Flat Washer | 9X14X0.5 FCRN3 | 特殊平座金 | 01 |
| 59 | LX200060 | Hexagonal Nut | 9.0 FNM33G | 特殊六角ナット | 01 |
| 60 | EV410046 | Toothed Lock Washer | A 4.0 ZMC2Y | 歯付き金内歯形 | 01 |
| 61 | ED330066 | Bind Head Screw | 3.0X6 FCM3BL | + バインド小ネジ | 8pcs |
| 62 | EA040086 | Pan Head Screw | 4.0x8 ZMC2Y | + ナベ小ネジ | 01 |
| 62a | EV300046 | Spring Washer | 4.0 ZMC2Y | + ナベ座金 | 01 |
| 63 | EZ001040 | Bind Head Tapping Screw-B | 3.0X6 ZMC2Y | + バインド B タイト | 6pcs |
| 64 | EK395040 | Bind Head Tapping screw-B | 3.0X8 ZMC2BL | + バインド B タイト | 31pcs |
| 65 | -- | - | - | - | - |
| 65 | EQ330086 | Flat Head Tapping Screw-B | 3.0X8 FCM3BL | + 皿 B タイト | 2pcs |
| 66 | EN300010 | Bonding Tapping Screw -B | 3.0X8 FCM3BL | ボンディング B タイト | 6pcs |
| 67 | EQ031106 | Round Head Wood Screw | 3.1X10 ZMC2Y | + 丸木ネジ | 4pcs |
| 71 | CB607350 | Adhesive Tape | | 粘着テープ | 01 |
| 72 | CB074190 | Adhesive Tape | | 粘着テープ | 01 |
| | | <ACCESSORY> | | <付属品> | |
| | VG525100 | AC Cord | 125V KP300 2.5m | 電源コード | 08 |
| | VL741500 | AC Cord | 125V KS31 2.5m | 電源コード | |
| | VL023300 | AC Cord | 250V KS31A 2.5m | 電源コード | 08 |
| | VH554000 | AC Cord | 6A HE-8 2.0m | 電源コード | |

* New Parts (新規部品)

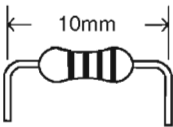
ランク : Japan only

Parts List for Carbon Resistors

| Value | 1/4W Type Part No. | 1/6W Type Part No. | Value | 1/4W Type Part No. | 1/6W Type Part No. |
|----------------|--------------------|--------------------|----------------|--------------------|--------------------|
| 1.0 Ω | HJ35 3100 | HF853100 | 12 K Ω | HJ35 7120 | HF85 7120 |
| 1.8 Ω | HJ35 3180 | * | 15 K Ω | HJ35 7150 | HF85 7150 |
| 2.2 Ω | HJ35 3220 | HF853220 | 18 K Ω | HJ35 7180 | HF85 7180 |
| 3.3 Ω | HJ35 3330 | HF853330 | 22 K Ω | HJ35 7220 | HF85 7220 |
| 4.7 Ω | HJ35 3470 | HF853470 | 27 K Ω | HJ35 7270 | HF85 7270 |
| 5.6 Ω | HJ35 3560 | HF853560 | 33 K Ω | HJ35 7330 | HF85 7330 |
| 10 Ω | HJ35 4100 | HF85 4100 | 39 K Ω | HJ35 7390 | HF85 7390 |
| 15 Ω | HJ35 4150 | HF85 4150 | 47 K Ω | HJ35 7470 | HF85 7470 |
| 22 Ω | HJ35 4220 | HF85 4220 | 56 K Ω | HJ35 7560 | HF85 7560 |
| 27 Ω | HJ35 4270 | HF85 4270 | 68 K Ω | HJ35 7680 | HF85 7680 |
| 33 Ω | HJ35 4330 | HF85 4330 | 82 K Ω | HJ35 7820 | HF85 7820 |
| 39 Ω | HJ35 4390 | HF85 4390 | 91 K Ω | HJ35 7910 | HF85 7910 |
| 47 Ω | HJ35 4470 | HF85 4470 | 100 K Ω | HJ35 8100 | HF85 8100 |
| 56 Ω | HJ35 4560 | HF85 4560 | 120 K Ω | HJ35 8120 | HF85 8120 |
| 68 Ω | HJ35 4680 | HF85 4680 | 150 K Ω | HJ35 8150 | HF85 8150 |
| 82 Ω | HJ35 4820 | HF85 4820 | 180 K Ω | HJ35 8180 | HF85 8180 |
| 100 Ω | HJ35 5100 | HF85 5100 | 220 K Ω | HJ35 8220 | HF85 8220 |
| 110 Ω | HJ35 5110 | HF85 5110 | 270 K Ω | HJ35 8270 | HF85 8270 |
| 120 Ω | HJ35 5120 | HF85 5120 | 330 K Ω | HJ35 8330 | HF85 8330 |
| 150 Ω | HJ35 5150 | HF85 5150 | 390 K Ω | HJ35 8390 | HF85 8390 |
| 160 Ω | HJ35 5160 | * | 470 K Ω | HJ35 8470 | HF85 8470 |
| 180 Ω | HJ35 5180 | HF85 5180 | 560 K Ω | HJ35 8560 | HF85 8560 |
| 220 Ω | HJ35 5220 | HF85 5220 | 680 K Ω | HJ35 8680 | HF85 8680 |
| 270 Ω | HJ35 5270 | HF85 5270 | 820 K Ω | HJ35 8820 | HF85 8820 |
| 330 Ω | HJ35 5330 | HF85 5330 | 1.0 M Ω | HJ35 9100 | HF85 9100 |
| 390 Ω | HJ35 5390 | HF85 5390 | 1.2 M Ω | HJ35 9120 | * |
| 470 Ω | HJ35 5470 | HF85 5470 | 1.5 M Ω | HJ35 9150 | HF85 9150 |
| 510 Ω | * | HF85 5510 | 1.8 M Ω | HJ35 9180 | HF85 9180 |
| 560 Ω | HJ35 5560 | HF85 5560 | 2.2 M Ω | HJ35 9220 | HF85 9220 |
| 680 Ω | HJ35 5680 | HF85 5680 | 3.3 M Ω | HJ35 9330 | HF85 9330 |
| 820 Ω | HJ35 5820 | HF85 5820 | 3.9 M Ω | HJ35 9390 | * |
| 910 Ω | HJ35 5910 | HF85 5910 | 4.7 M Ω | HJ35 9470 | HF85 9470 |
| 1.0 K Ω | HJ35 6100 | HF85 6100 | | | |
| 1.2 K Ω | HJ35 6120 | HF85 6120 | | | |
| 1.5 K Ω | HJ35 6150 | HF85 6150 | | | |
| 1.8 K Ω | HJ35 6180 | HF85 6180 | | | |
| 2.0 K Ω | HJ35 6200 | HF85 6200 | | | |
| 2.2 K Ω | HJ35 6220 | HF85 6220 | | | |
| 2.4 K Ω | HJ35 6240 | HF85 6240 | | | |
| 2.7 K Ω | HJ35 6270 | HF85 6270 | | | |
| 3.0 K Ω | HJ35 6300 | HF85 6300 | | | |
| 3.3 K Ω | HJ35 6330 | HF85 6330 | | | |
| 3.6 K Ω | HJ35 6360 | HF85 6360 | | | |
| 3.9 K Ω | HJ35 6390 | HF85 6390 | | | |
| 4.7 K Ω | HJ35 6470 | HF85 6470 | | | |
| 5.1 K Ω | HJ35 6510 | HF85 6510 | | | |
| 5.6 K Ω | HJ35 6560 | HF85 6560 | | | |
| 6.8 K Ω | HJ35 6680 | HF85 6680 | | | |
| 8.2 K Ω | HJ35 6820 | HF85 6820 | | | |
| 9.1 K Ω | HJ35 6910 | HF85 6910 | | | |
| 10 K Ω | HJ35 7100 | HF85 7100 | | | |

1/4W Type

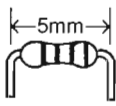
HJ35 ○○○○



10mm

1/6W Type

HF85 ○○○○



5mm