

Service Manual

PMD350U/F
74 PMD350/02B
XLR350PMD
Stereo cassette deck/Compact disc player



XLR kit

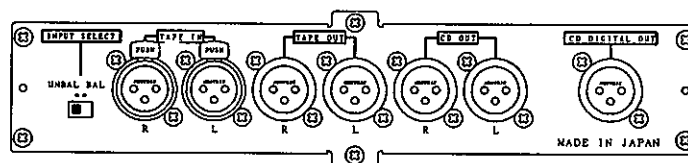


TABLE OF CONTENTS

| SECTION | PAGE |
|---|------|
| 1. TECHNICAL SPECIFICATIONS | 1 |
| 2. CONNECTION DIAGRAM | 1 |
| 3. SCHEMATIC DIAGRAM AND PARTS LOCATION (Pattern Side) PMD350 | 3 |
| 4. SCHEMATIC DIAGRAM AND PARTS LOCATION (Pattern Side) XLR350 kit | 14 |
| 5. EXPLODED VIEW AND PARTS LIST | 17 |
| 6. TEST EQUIPMENT REQUIRED FOR SERVICING | 22 |
| 7. ELECTRICAL ADJUSTMENT | 22 |
| 8. MICROPROCESSOR I/O PINS AND THEIR FUNCTIONS | 29 |
| 9. ELECTRICAL PARTS LIST | 31 |

修理の際は、必ず取扱説明書を準備し操作方法を確認の上作業を行ってください。

Please use this service manual with referring to the user guide (D.F.U) without fail.

marantz®

model PMD350/XLR350 kit

MARANTZ DESIGN AND SERVICE

Using superior design and selected high grade components, **MARANTZ** company has created the ultimate in stereo sound. Only original **MARANTZ** parts can insure that your **MARANTZ** product will continue to perform to the specifications for which it is famous.

Parts for your **MARANTZ** equipment are generally available to our National Marantz Subsidiary or Agent.

ORDERING PARTS:

Parts can be ordered either by mail or by Fax.. In both cases, the correct part number has to be specified.

The following information must be supplied to eliminate delays in processing your order:

1. Complete address
2. Complete part numbers and quantities required
3. Description of parts
4. Model number for which part is required
5. Way of shipment
6. Signature: any order form or Fax. must be signed, otherwise such part order will be considered as null and void.

USA

MARANTZ AMERICA, INC.
440 MEDINAH ROAD
ROSELLE, ILLINOIS 60172 - 2330
USA
PHONE : 708-307-3100
FAX : 708-307-2687

CANADA

LENBROOK INDUSTRIES LIMITED
833 GRANITE COURT,
PICKERING, ONTARIO L1W 3K1
CANADA
PHONE : 416-831-6333
FAX : 416-831-6936

EUROPE

MARANTZ EUROPE B.V.
P.O. BOX 80002
BUILDING SFF2
5600 JB EINDHOVEN
THE NETHERLANDS
PHONE : +31-40-2732241
FAX : +31-40-2735578

PROFESSIONAL-USA

SUPERSCOPE TECHNOLOGIES, INC.
MARANTZ PROFESSIONAL PRODUCTS
1000 CORPORATE BLVD., SUITE D
AURORA, ILLINOIS 60504 USA
PHONE : 708-820-4800
FAX : 708-820-8103

PROFESSIONAL-CANADA

TC ELECTRONICS CANADA LTD
540 FIRING AVE.
BAIE D'URFÉ, QUEBEC H9X 3T2
CANADA
PHONE : 514-457-4044
FAX : 514-457-5524

TRADING

MARANTZ EUROPE B.V.
P.O. BOX 80002
BUILDING SFF2
5600 JB EINDHOVEN
THE NETHERLANDS
PHONE : +31-40-2732241
FAX : +31-40-2735578

AUSTRALIA

MARANTZ AUSTRALIA
3 Figtree Drive
Australia Centre
Homebush, NSW2140 AUSTRALIA
PHONE : +61 2 742.8311
FAX : +61 2 7643074

HONG-KONG

FORWARD INTERNATIONAL CORP. LTD.
15 TH FLOOR, REGENT CENTRE,
88 QUEEN'S ROAD, CENTRAL, H. K.
PHONE : +852 521-0883
FAX : +852 521-7835

THAILAND

MRZ STANDARD CO., LTD.
748-750 WANGBURAPA BANGKOK
10200 THAILAND
PHONE : +66 2222 9181
FAX : +66 2225 8871

TAIWAN

PAI-YUING CO., LTD.
6 TH FL NO. 148 SUNG KIANG RORD,
TAIPEI, 10429. TAIWAN R.O.C.
PHONE : +886 (2) 5221304~8
FAX : +886 (2) 5630415

MALAYSIA

WO KEE HONG ELECTRONICS SDN. BHD.
NO. 102 JALAN SS 21/35, DAMANSARA
UTAMA, 47400 PETALING JAYA
SELANGOR DARUL EHSAN,
MALAYSIA
PHONE : +60 3-7184666
FAX : +60 3-7173828

SINGAPORE

FORWARD MARKETING (SINGAPORE) PTE. LTD.
29, LENG KEE ROAD
SINGAPORE 159099.
PHONE : +65 475-4555
FAX : +65 475-8623

JAPAN-Technical

MARANTZ JAPN INC.
35-1, 7-chome, Sagamiono
Sagamihara-shi, Kanagawa
Japan
PHONE : +81 427 48 2181
FAX : +81 427 48 0889

日本マランツ株式会社

本社 〒228 神奈川県相模原市相模大野7丁目35番1号
営業本部 〒150 東京都渋谷区恵比寿南1丁目11番9号

SHOCK, FIRE HAZARD SERVICE TEST:

CAUTION: After servicing this appliance and prior to returning to customer, measure the resistance between either primary AC cord connector pins (with unit NOT connected to AC mains and its Power switch ON), and the face or Front Panel of product and controls and chassis bottom.

Any resistance measurement less than 1 Megohms should cause unit to be repaired or corrected before AC power is applied, and verified before it is return to the user/customer.

Ref. UL Standard NO.1492.

In case of difficulties, do not hesitate to contact the Technical Department at above mentioned address.

1. TECHNICAL SPECIFICATIONS

TAPE DECK

Track System 4 Track, 2 Channel
 Record/Erase system AC 105kHz Bias
 Head System (Rotary type combination)
 Rec/Play Hard metal alloy
 Erase Dual gap ferrite

Motor System
 Capstan DC Servo Control
 Reel DC
 Wow and flutter 0.14% W-RMS

Frequency Characteristics
 Frequency response (no Dolby NR)
 type I (Normal position) 30Hz-15kHz ±3dB
 type II (High position) 30Hz-16kHz ±3dB
 type IV (Metal position) 30Hz-16kHz ±3dB

Overall S/N(no Dolby NR,IEC-A WTD)
 type I (Normal position) 53dB
 type II (High position) 54dB
 type IV (Metal position) 55dB

Dolby NR effect (B/C S/N improvement, CCIR-ARM WTD)
 Output level/Output impedance 9dB/18dB
 Output level/Output impedance 500mV/1kΩ

Input
 TAPE in 100mV/47kΩ
 MIC in 0.5mV/10kΩ

CD

Channels 2 channels
 Sampling frequency 44.1kHz
 Quantization 16-bit linear/channel
 Error correction Cross-interleave read solomon code (CIRC)
 D/A conversion 1-bit linear/channel
 Wow & flutter Precision of quartz

Optical Readout System
 Laser CaAlAs semiconductor
 Wavelength 780nm

Frequency Characteristics (Pitch control off)
 Frequency response 20Hz-20kHz ±0.3dB
 Dynamic range 90 dB
 S/N ratio 96 dB
 Channel separation 90 dB
 Distortion (THD 1KHz) 0.005 %
 Analog output
 Output level 2 V RMS
 Output impedance < 1kΩ
 Digital output
 Coaxial output (75Ω loaded) 0.5 Vp-p

COMMON PART:

Power supply
 U VERSION 120V AC60Hz
 F VERSION 100V AC50/60Hz
 /02B VERSION 230V AC50Hz

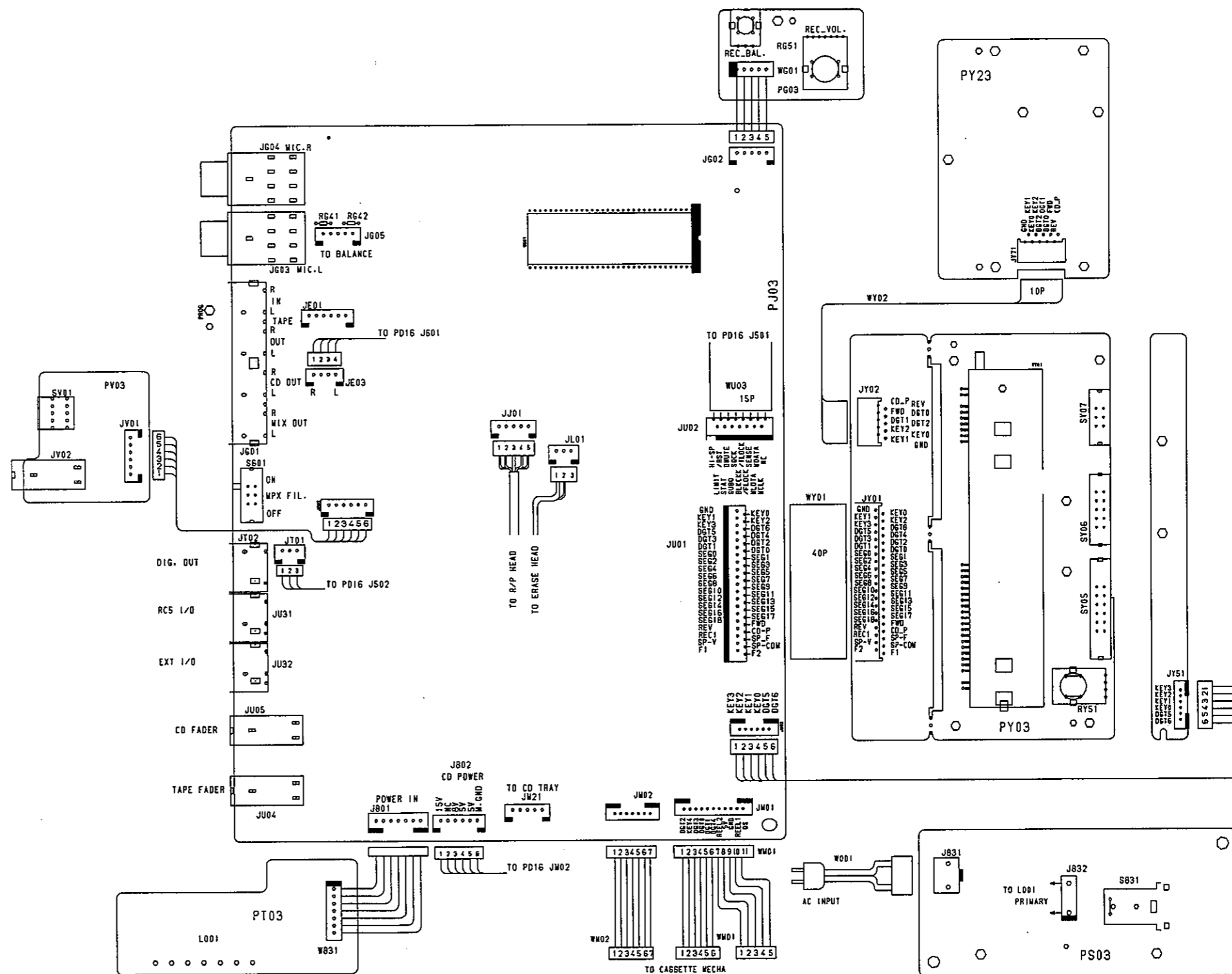
Dimensions
 Width 483mm
 Height 133mm
 Depth 280mm

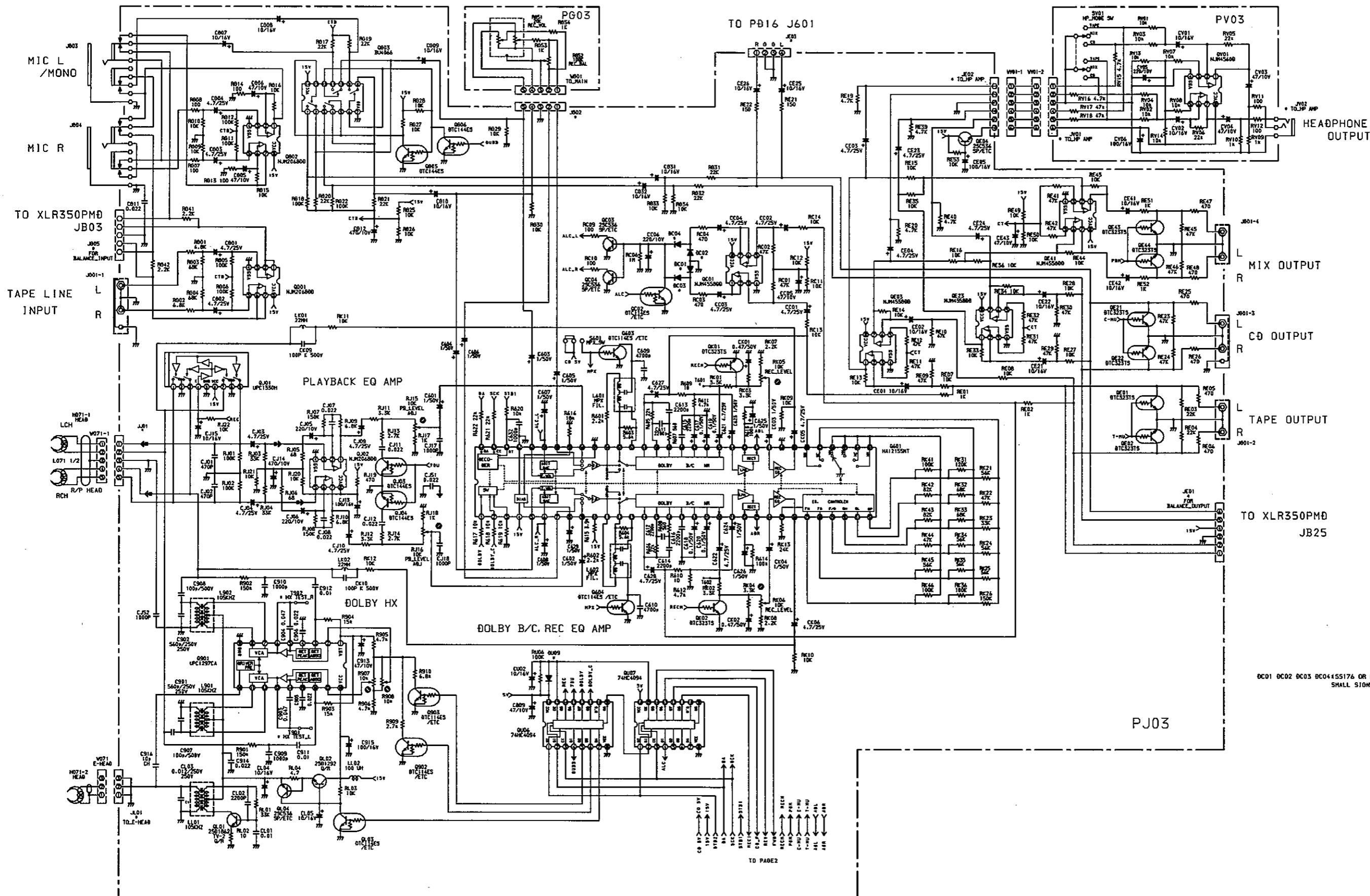
Net Weight 6.1kg

These specifications represent design standards. Higher levels of performance can be expected under most conditions.

* Subject to change without prior notice.

2. CONNECTION DIAGRAM



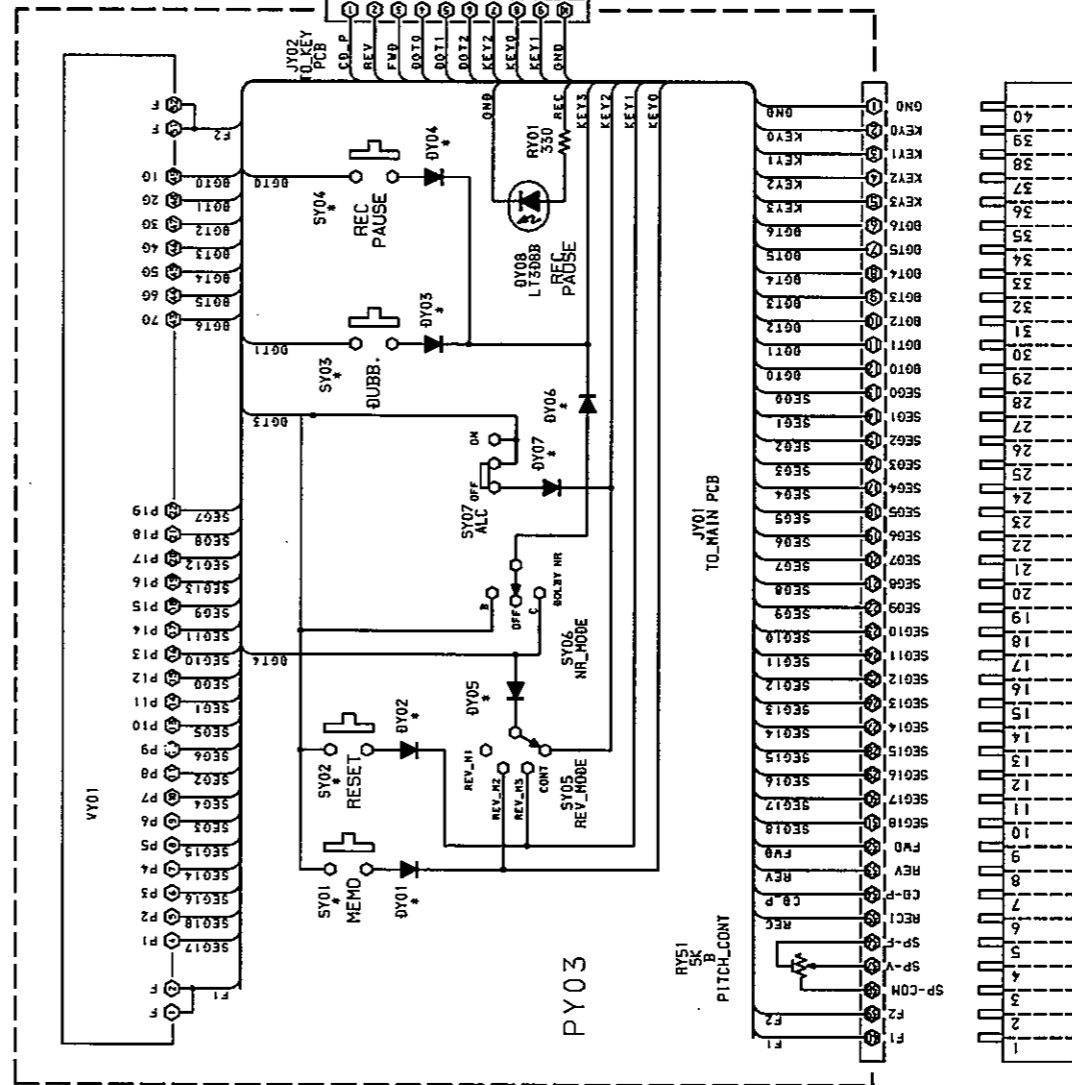
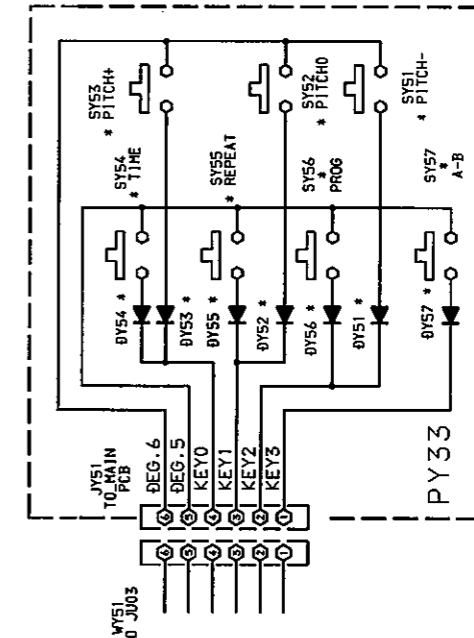
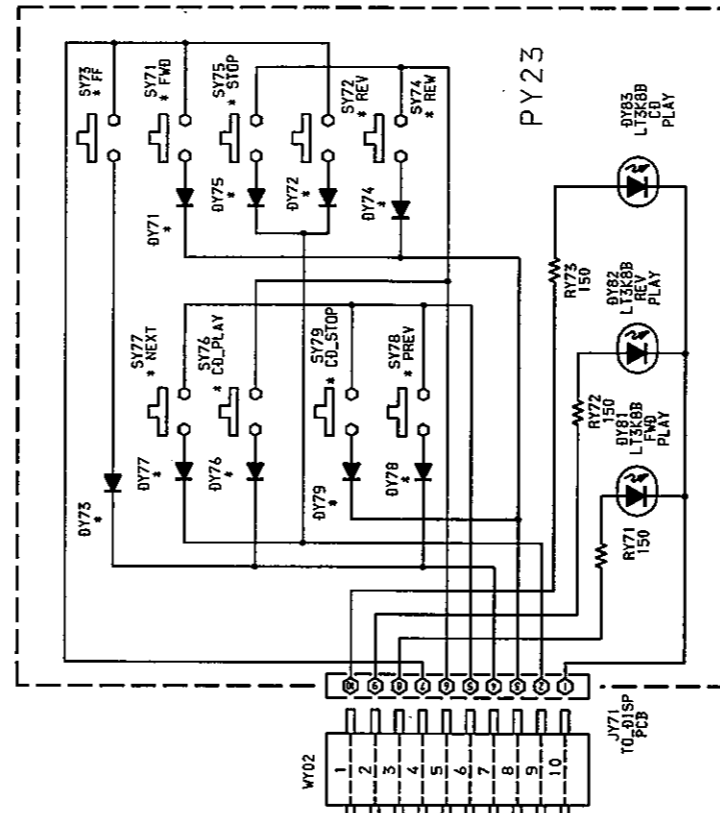


DC01 DC02 DC03 DC04 455176 OR MA165 OR 153254
SHALL SIGNAL 0100 (30V 0.1A)

PJ03

TD PAGE2

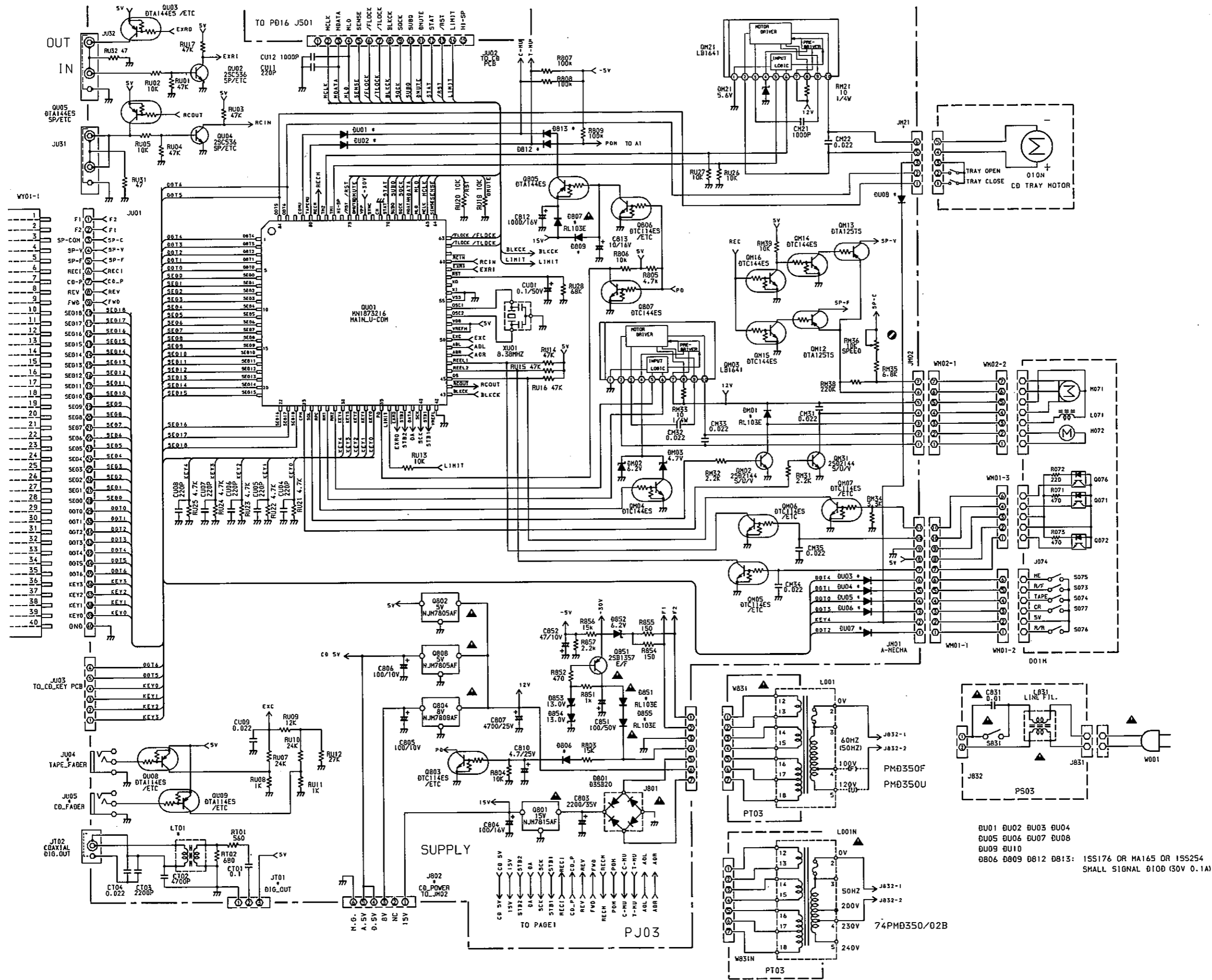
| PIN | NAME | DESCRIPTION | PIN | NAME | DESCRIPTION | | |
|-----|-------|-------------|--------------------------|------|-------------|---|--------------------------|
| 1 | DGT4 | O | DIGIT AND KEY SCAN | 43 | BLKCK | I | CD BLOCK CLOCK |
| 2 | DGT3 | O | DIGIT AND KEY SCAN | 44 | RCOUT | O | RC5 OUTPUT |
| 3 | DGT2 | O | DIGIT AND KEY SCAN | 45 | QS | I | QUICK REVERSE SENSE |
| 4 | DGT1 | O | DIGIT AND KEY SCAN | 46 | REEL2 | I | REEL PULSE INPUT2 |
| 5 | DGT0 | O | DIGIT AND KEY SCAN | 47 | REEL1 | I | REEL PULSE INPUT1 |
| 6 | SEG0 | O | FTD SEGMENT OUTPUT | 48 | ADR | I | LEVEL METER INPUT R |
| 7 | SEG1 | O | FTD SEGMENT OUTPUT | 49 | ADL | I | LEVEL METER INPUT L |
| 8 | SEG2 | O | FTD SEGMENT OUTPUT | 50 | FAC | I | FADER CONTROL INPUT |
| 9 | SEG3 | O | FTD SEGMENT OUTPUT | 51 | VREFL | | A/D REFERENCE H |
| 10 | SEG4 | O | FTD SEGMENT OUTPUT | 52 | VDD | | +5V |
| 11 | SEG5 | O | FTD SEGMENT OUTPUT | 53 | OSC2 | | CLOCK OSC |
| 12 | SEG6 | O | FTD SEGMENT OUTPUT | 54 | OSC1 | | CLOCK OSC |
| 13 | SEG7 | O | FTD SEGMENT OUTPUT | 55 | VSS | | GND |
| 14 | SEG8 | O | FTD SEGMENT OUTPUT | 56 | XI | | GND |
| 15 | SEG9 | O | FTD SEGMENT OUTPUT | 57 | XO | | NC |
| 16 | SEG10 | O | FTD SEGMENT OUTPUT | 58 | RST | I | RESET INPUT |
| 17 | SEG11 | O | FTD SEGMENT OUTPUT | 59 | EXRI | I | EXT. REMOTE INPUT |
| 18 | SEG12 | O | FTD SEGMENT OUTPUT | 60 | RCIN | I | RC5 INPUT |
| 19 | SEG13 | O | FTD SEGMENT OUTPUT | 61 | | | NC |
| 20 | SEG14 | O | FTD SEGMENT OUTPUT | 62 | /TLOCK | I | CD TRACK LOCK DETECT |
| 21 | SEG15 | O | FTD SEGMENT OUTPUT | 63 | /FLOCK | I | CD FOCUS LOCK DETECT |
| 22 | SEG16 | O | FTD SEGMENT OUTPUT | 64 | SENSE | I | CD SENSE INPUT |
| 23 | SEG17 | O | FTD SEGMENT OUTPUT | 65 | MCLK | O | CD CONTROL DATA CLOCK |
| 24 | SEG18 | O | FTD SEGMENT OUTPUT | 66 | MLD | O | CD CONTROL DATA LOAD |
| 25 | CPM | O | CAPSTAN MOTOR CONTROL | 67 | MDATA | O | CD CONTROL DATA |
| 26 | SOL | O | SOLENOID CONTROL | 68 | SQCK | O | SUB Q CLOCK |
| 27 | RPC | O | REEL MOTOR SPEED CONTROL | 69 | SUBQ | I | SUB Q |
| 28 | RM1 | O | REEL MOTOR CONTROL1 | 70 | STAT | I | CD STATUS DATA |
| 29 | RM2 | O | REEL MOTOR CONTROL2 | 71 | CM | I | GND |
| 30 | KEY4 | I | KEY INPUT | 72 | SYNC | O | NC |
| 31 | KEY3 | I | KEY INPUT | 73 | VPP | | BIAS FOR FTD |
| 32 | KEY2 | I | KEY INPUT | 74 | DMUTE | O | DIGITAL MUTE CONTROL |
| 33 | KEY1 | I | KEY INPUT | 75 | /RST | O | CD DECODER RESET |
| 34 | KEY0 | I | KEY INPUT | 76 | - | | NC |
| 35 | PD | I | POWER DOWN DETECT | 77 | TM1 | O | CD TRAY CONTROL1 |
| 36 | LIMIT | I | CD SLED DETECT | 78 | TM2 | O | CD TRAY CONTROL2 |
| 37 | EXRO | O | EXT. REMOTE OUTPUT | 79 | RECM | O | REC. MUTE CONTROL |
| 38 | STB2 | O | AUDIO CONTROL STROB2 | 80 | T-MUTE | O | TAPE OUTPUT MUTE CONTROL |
| 39 | DATA | O | AUDIO CONTROL DATA | 81 | C-MUTE | O | CD OUTPUT MUTE CONTROL |
| 40 | SCK | O | AUDIO CONTROL DATA CLOCK | 82 | - | | NC |
| 41 | STB1 | O | AUDIO CONTROL STROB1 | 83 | DGT6 | O | DIGIT AND KEY SCAN |
| 42 | VREFL | | A/D REFERENCE L | 84 | DGT5 | O | DIGIT AND KEY SCAN |

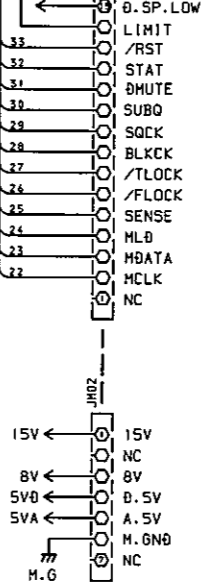
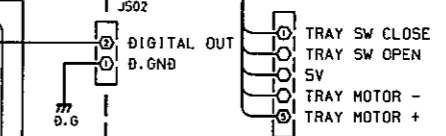
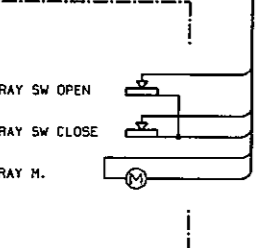
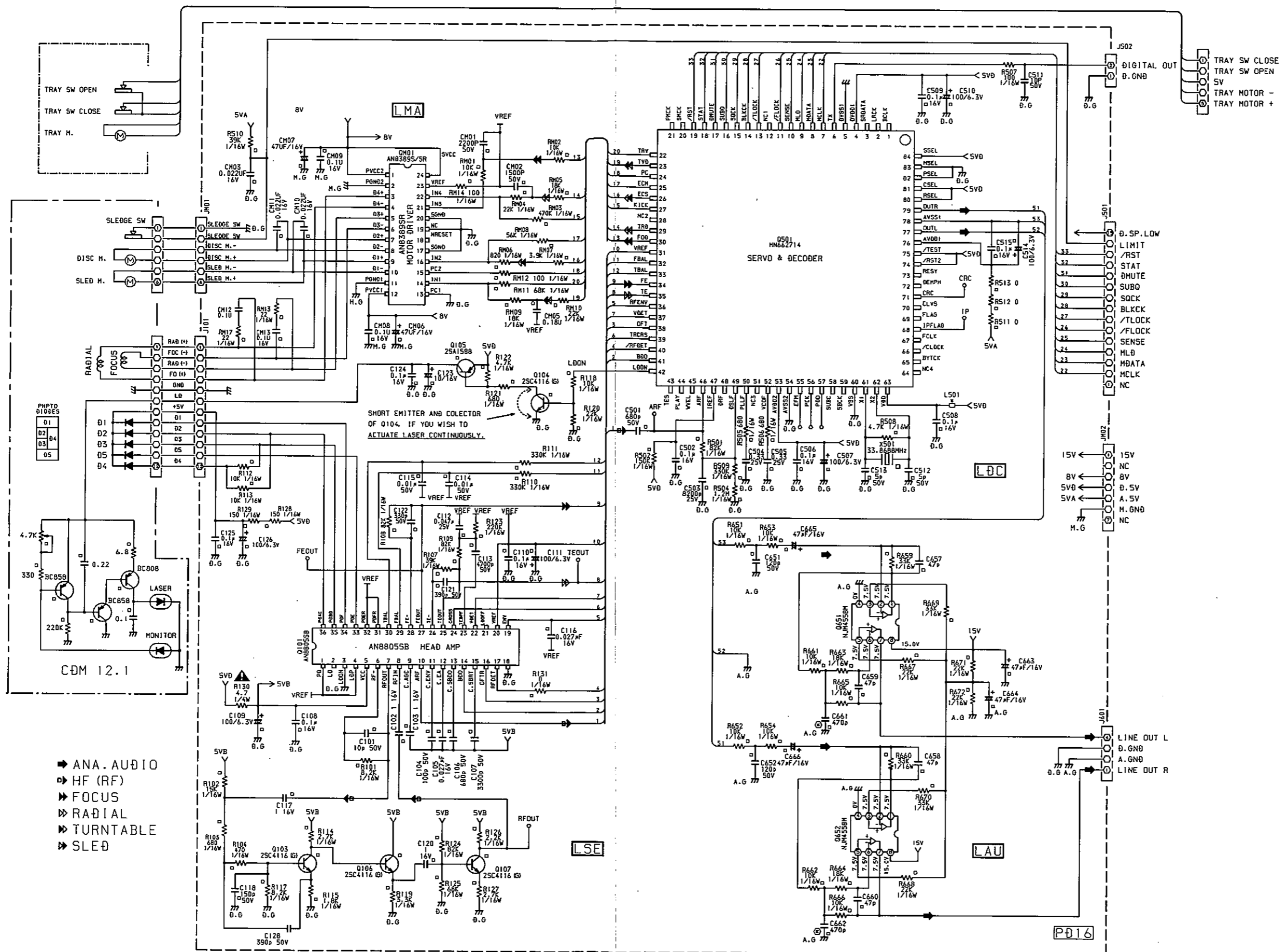


WY01-2

DYT01 DYT02 DYT03 DYT04 DYT05
 DYT06 DYT07 DYT08 DYT09 DYT10
 DYT11 DYT12 DYT13 DYT14 DYT15
 DYT16 DYT17 DYT18 DYT19 DYT20
 DYT21 DYT22 DYT23 DYT24 DYT25
 DYT26 DYT27 DYT28 DYT29 DYT30
 DYT31 DYT32 DYT33 DYT34 DYT35
 DYT36 DYT37 DYT38 DYT39 DYT40
 DYT41 DYT42 DYT43 DYT44 DYT45
 DYT46 DYT47 DYT48 DYT49 DYT50
 DYT51 DYT52 DYT53 DYT54 DYT55
 DYT56 DYT57 DYT58 DYT59 DYT60
 DYT61 DYT62 DYT63 DYT64 DYT65
 DYT66 DYT67 DYT68 DYT69 DYT70
 DYT71 DYT72 DYT73 DYT74 DYT75
 DYT76 DYT77 DYT78 DYT79 DYT80
 DYT81 DYT82 DYT83 DYT84 DYT85
 DYT86 DYT87 DYT88 DYT89 DYT90
 DYT91 DYT92 DYT93 DYT94 DYT95
 DYT96 DYT97 DYT98 DYT99 DYT100

15S176 OR MA165 OR 15S254
SMALL SIGNAL DIODE (30V 0.1A)



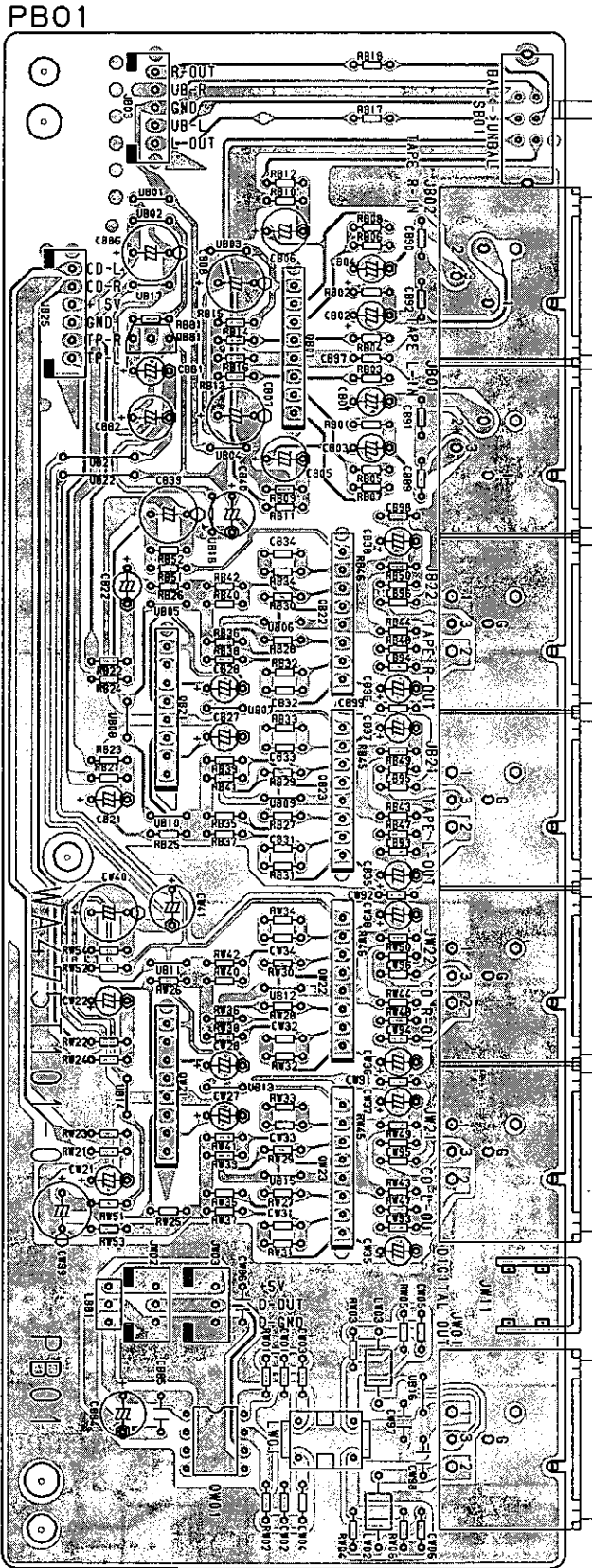


- ▶ ANA. AUDIO
- ▶ HF (RF)
- ▶ FOCUS
- ▶ RADIAL
- ▶ TURNTABLE
- ▶ SLED

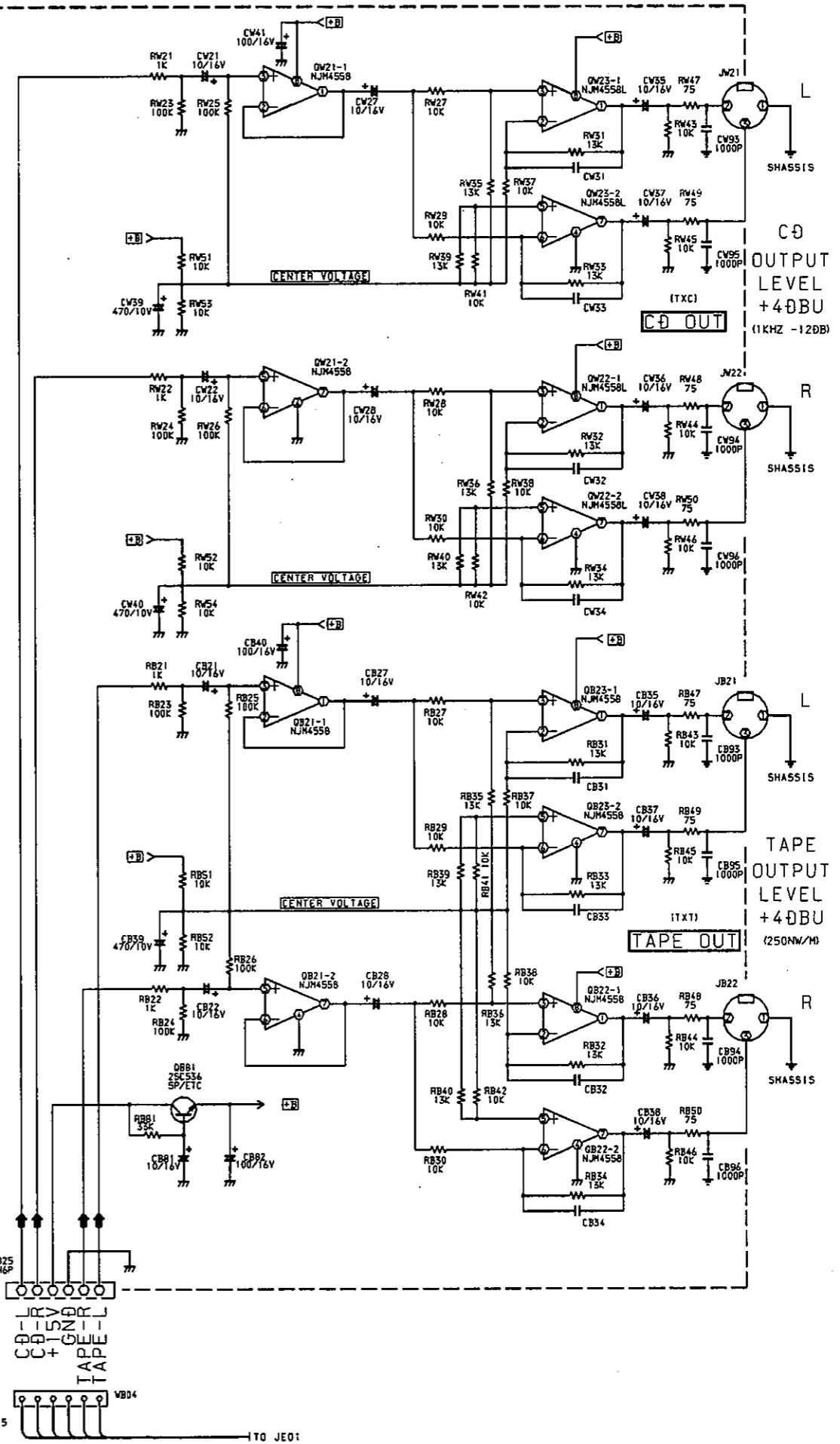
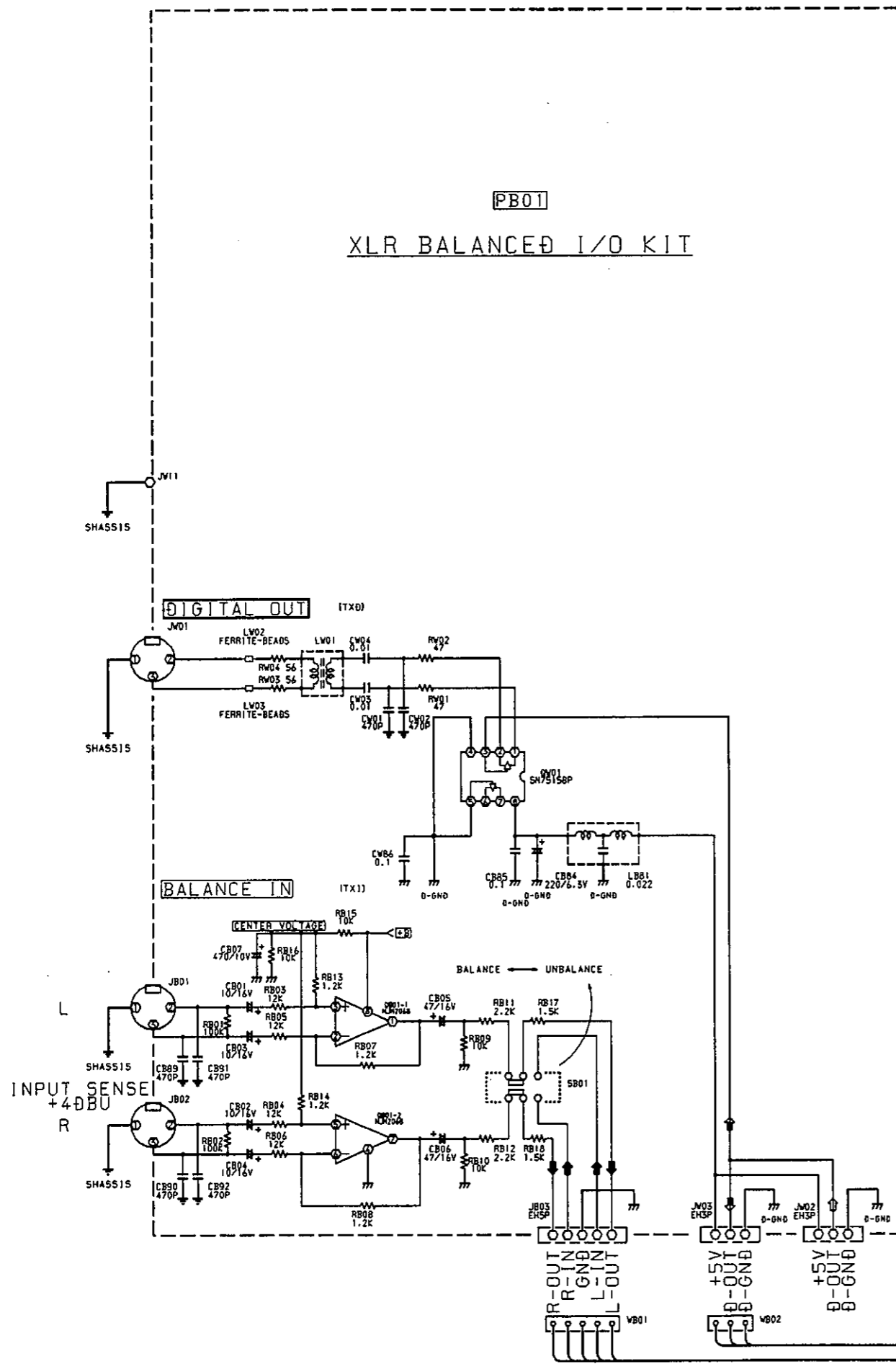
VOLTAGE VALUE IS UNDER CONDITION OF STOP

4. SCHEMATIC DIAGRAM AND PARTS LOCATION (Pattern Side) XLR350 kit

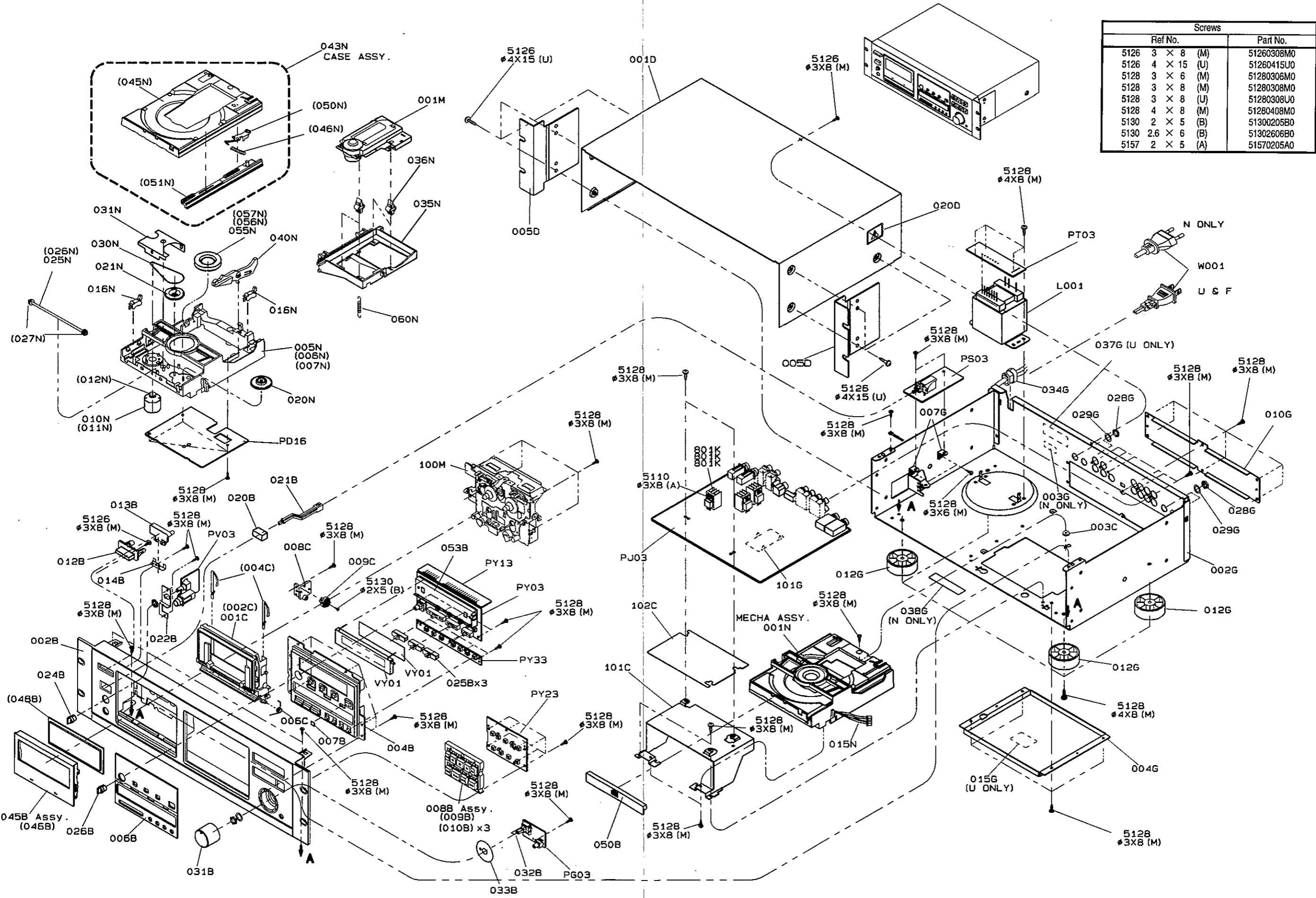
QB81 QB22
 QB21 QB23
 QW21 QW01 QB01 QW23



PB01
XLR BALANCED I/O KIT



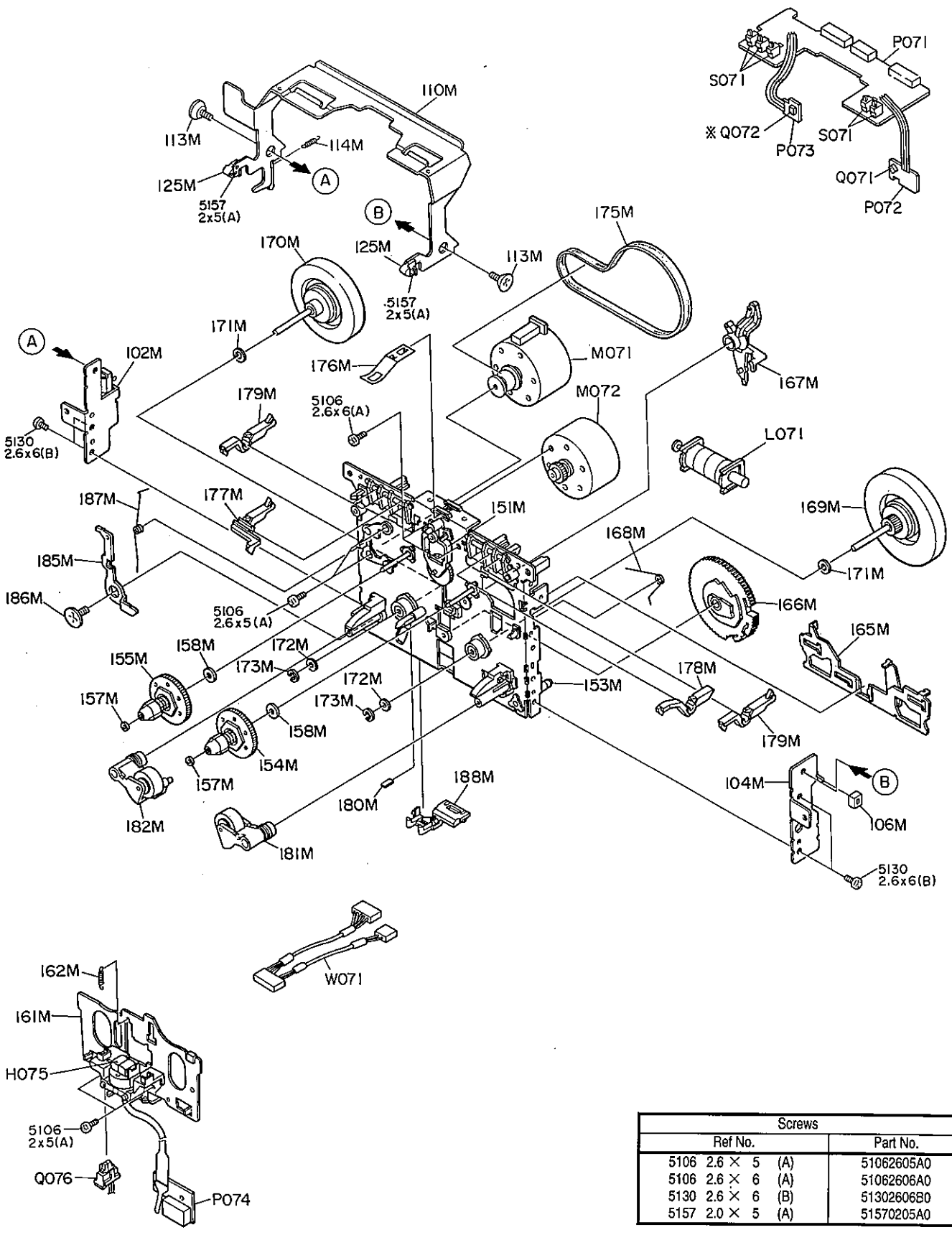
5. EXPLODED VIEW AND PARTS LIST



| Screws | | |
|---------|-------------|------------|
| Ref No. | | Part No. |
| 5126 | 3 × 8 (M) | 51260308M0 |
| 5126 | 4 × 15 (U) | 51260415U0 |
| 5128 | 3 × 6 (M) | 51280306M0 |
| 5128 | 3 × 8 (M) | 51280308M0 |
| 5128 | 3 × 8 (U) | 51280308U0 |
| 5128 | 4 × 8 (M) | 51280408M0 |
| 5130 | 2 × 5 (B) | 51300205B0 |
| 5130 | 2.6 × 6 (B) | 51302606B0 |
| 5157 | 2 × 5 (A) | 51570205A0 |

VERS.:VERSION, U:U.S.A., F:JAPAN, K:FAR EAST, **:EUROPE)

| POS. NO | VERS. COLOR | PART NO. (FOR EUROPE) | DESCRIPTION | PART NO. (USA/JPN) | POS. NO | VERS. COLOR | PART NO. (FOR EUROPE) | DESCRIPTION | PART NO. (USA/JPN) | |
|---------|-------------|-----------------------|-----------------------------|--------------------|---------|-------------|-----------------------|--|--------------------|------------|
| 002B | | 4822 459 04258 | FRONT PANEL | 474T248010 | | | | PACKING PACKING CASE:BL CUSHION (L & R) | | |
| 004B | | 4822 442 00473 | COVER | 474T053010 | 001S | F | | | 474T801110 | |
| 006B | | 4822 450 10171 | WINDOW | 474T158010 | 002S | F | | 457T809010 | | |
| 007B | | | INTRODUCER | 274H151010 | | | | | | |
| 008B | | 4822 410 10636 | MECHA BUTTON K | 474T270500 | 001T | F | 4822 736 14588 | USER MANUAL | 474T851110 | |
| 012B | | 4822 410 60397 | EJECT BUTTON | 416T270040 | 001T | /02B | | | USER MANUAL | 474T851310 |
| 013B | | 4822 403 53866 | EJECT LEVER | 416T354010 | 001T | U | | | USER MANUAL | 474T851250 |
| 016B | | 4822 502 12511 | B.T.SCREW(W/W) | 51260308M0 | | | | | | |
| 020B | | 4822 410 63013 | POWER BUTTON | 023J270020 | | | | | | |
| 021B | | 4822 403 53864 | POWER SW LINK | 416T121010 | | | | | | |
| 024B | | 4822 411 20336 | HP SW KNOB | 284T154310 | | | | | | |
| 025B | | 4822 413 41827 | SLIDE KNOB | 453T154010 | | | | | | |
| 026B | | 4822 411 20336 | PITCH KNOB | 284T154310 | | | | | | |
| 031B | | 4822 413 41912 | REC LEVEL KNOB | 431T154010 | | | | | | |
| 045B | | 4822 443 64448 | CASSETTE COVER K | 457T053500 | | | | | | |
| 050B | | 4822 454 12961 | ESCUTCHEON CD | 292K063010 | | | | | | |
| 053B | | 4822 256 92126 | FL.HOLDER | 453T271020 | | | | | | |
| 054B | | 4822 459 10942 | STICKER ADHESIVE | 056J122020 | | | | | | |
| 001C | | 4822 256 91556 | CASSETTE HOLDER K | 416T271500 | | | | | | |
| 006C | | 4822 492 70617 | CASSETTE HOLDER OPEN SPRING | 420T115030 | | | | | | |
| 009C | | 4822 466 92367 | GEAR DAMPER | 415T130010 | | | | | | |
| 001D | | | LID FOR TOP COVER | 418T257030 | | | | | | |
| 003D | | 4822 502 12511 | B.T.SCREW(W/W) | 51260308M0 | | | | | | |
| 005D | | 4822 403 71258 | SIDE BRACKET (L&R) | 457T160110 | | | | | | |
| 006D | | | B.T.SCREW(W/W) | 51260415U0 | | | | | | |
| 007D | | | B.T.SCREW(W/W) | 51260415U0 | | | | | | |
| 012G | | 4822 462 10312 | LEG FOR MAIN CHASSIS | 176H057040 | | | | | | |
| 028G | | | NUT FOR JACK D:6.4 | 075S011010 | | | | | | |
| 001M | | 4822 691 30278 | CDM12.CD MECHANISM | 292K304500 | | | | | | |
| 001N | | | MECHANISM CD LOADER | 305K304530 | | | | | | |
| 005N | | 4822 464 10054 | FRAME K | 305K401500 | | | | | | |
| 010N | | 4822 361 21741 | D.C MOTOR K | MM0030002R | | | | | | |
| 016N | | 4822 271 30873 | MINI SWITCH | SM01020620 | | | | | | |
| 020N | | 4822 522 33521 | GEAR | 305K058030 | | | | | | |
| 021N | | 4822 528 81537 | PULLEY | 305K262010 | | | | | | |
| 025N | | 4822 522 33522 | GEAR K | 305K058500 | | | | | | |
| 030N | | 4822 358 31314 | BELT | 305K264010 | | | | | | |
| 035N | | 4822 443 51265 | CASE | 305K064110 | | | | | | |
| 036N | | 4822 462 72118 | BUFFER SUSPENSION | 305K056010 | | | | | | |
| 040N | | 4822 402 20104 | ARM | 305K002010 | | | | | | |
| 043N | | 4822 444 50732 | CASE K | 305K064500 | | | | | | |
| 045N | | | CASE | 305K064010 | | | | | | |
| 046N | | 4822 492 33494 | SPRING | 305K115010 | | | | | | |
| 050N | | 4822 528 30429 | CAM | 305K054010 | | | | | | |
| 051N | | 4822 522 33519 | GEAR | 305K058010 | | | | | | |
| 055N | | 4822 401 11582 | CLAMPER K | 305K005500 | | | | | | |
| 060N | | 4822 492 33495 | SPRING | 305K115020 | | | | | | |
| ▲ L001 | F, U | | POWER TRANSF. | TS15724200 | | | | | | |
| ▲ L001 | /02B | 4822 146 21812 | POWER TRANSF. | TS15724210 | | | | | | |
| ▲ W001 | F | | AC POWER CORD | YC01800800 | | | | | | |
| ▲ W001 | /02B | | AC POWER CORD | YC01800790 | | | | | | |
| ▲ W001 | U | | AC POWER CORD | YC01800780 | | | | | | |
| WU03 | | | JUMPER LEAD 15PIN 240MM | YU15240500 | | | | | | |
| WY01 | | | JUMPER LEAD 40X100 | YU40100500 | | | | | | |
| WY02 | | 4822 321 62965 | JUMPER LEAD 10P 110mm | YU10110500 | | | | | | |



| Screws | |
|------------------|------------|
| Ref No. | Part No. |
| 5106 2.6 × 5 (A) | 51062605A0 |
| 5106 2.6 × 6 (A) | 51062606A0 |
| 5130 2.6 × 6 (B) | 51302606B0 |
| 5157 2.0 × 5 (A) | 51570205A0 |

MECHANISM PARTS LIST

(VERS.:VERSION, U:U.S.A., F:JAPAN, K:FAR EAST, **:EUROPE)

| POS. NO | VERS. COLOR | PART NO. (FOR EUROPE) | DESCRIPTION | PART NO. (USA/JPN) |
|---------|-------------|-----------------------|------------------------------|--------------------|
| 100M | | 4822 691 21025 | MECH. ASSY [CMAY2Z483A] | 466T304500 |
| 102M | | | BRACKET L [FC53D-22] | 415T160022 |
| 104M | | | BRACKET R [FC53E-12] | 415T160032 |
| 106M | | | EJECT STOPPER [FD46H-12] | 415T114010 |
| 110M | | | EJECT LEVER [FC49P-91] | 415T258310 |
| 113M | | | SCREW [UG14M-31] | 415T010010 |
| 114M | | | SPRING [FK23R-11] | 415T115040 |
| 125M | | | MOLD HOOK [FD35W-11] | 415T258020 |
| 151M | | 4822 528 81514 | IDLER [F517-049] | 456T001050 |
| 153M | | | MAIN CHASSIS [F612-180] | 456T105050 |
| 154M | | 4822 528 10785 | R-REEL BASE [F623-038] | 420T352050 |
| 155M | | 4822 528 10785 | L-REEL BASE [F623-038] | 420T352050 |
| 157M | | 4822 532 11291 | WASHER [FJ111-17] | 59163202G0 |
| 158M | | 4822 532 11525 | WASHER [UJ12V-11] | 59020802G0 |
| 161M | | | HEAD BASE [FC52E-37] | 456T160050 |
| 162M | | | SPRING [FK26N-14] | 420T115070 |
| 165M | | | HEAD SHIFTER [FC52F-16] | 456T110050 |
| 166M | | 4822 522 33445 | CAM GEAR [FD45B-16] | 456T054050 |
| 167M | | 4822 403 70092 | REVERSE ARM [FD45G-12] | 420T002050 |
| 168M | | 4822 492 70669 | SPRING [FK28R-12] | 420T115060 |
| 169M | | 4822 528 60371 | FLY-WHEEL (R) [FR22D-11] | 425T273100 |
| 170M | | 4822 528 60372 | FLY-WHEEL (L) [FR22E-13] | 425T273110 |
| 171M | | 4822 532 11398 | WASHER [FJ111-30] | 59264702G0 |
| 172M | | 4822 532 11399 | WASHER [FJ111-14] | 59264705G0 |
| 173M | | 4822 532 52213 | E-RING [UG13U-15] | 64001500L0 |
| 175M | | 4822 358 31286 | MAIN BELT [FF17G-31] | 456T264050 |
| 176M | | | SPRING [FC52H-13] | 420T116050 |
| 177M | | 4822 403 70095 | METAL LEVER [FD44V-12] | 420T354070 |
| 178M | | 4822 403 70094 | CASS. LEVER [FD44Y-12] | 420T354060 |
| 179M | | 4822 403 70119 | REC LEVER [FD44T-14] | 424T354100 |
| 180M | | | REFLECTOR [UT11R-11] | 420T274050 |
| 181M | | 4822 528 81515 | PINCH ROL.(R) [FR20L-22] | 456T358550 |
| 182M | | 4822 528 81516 | PINCH ROL.(L) [FR20M-41] | 456T358560 |
| 185M | | | ANTI EJECT ARM [FC39L-70] | 424T002100 |
| 186M | | | SCREW [UG15S-11A] | 424T010100 |
| 187M | | | SPRING [FK28R-15] | 424T115100 |
| 188M | | | HOLDER [FD45H-15] | 420T271050 |
| H075 | | 4822 249 10495 | HEAD ASSY [HADKH5559C] | *LH500030R |
| L071 | | 4822 281 50152 | SOLENOID ASSY [765-263] | ME1035011R |
| M071 | | 4822 361 30311 | MAIN MOTOR [F525-256] | MM1120904R |
| M072 | | 4822 361 30309 | REEL MOTOR [564-288] | MM0075002R |
| PO71 | | | MECHANISM BOARD ASSY. | *** |
| PO72 | | | SENSOR PC BOARD ASSY. | *** |
| PO73 | | | SENSOR PC BOARD ASSY. | *** |
| PO74 | | | HEAD PC BOARD ASSY. | *** |
| Q071 | | 4822 130 82274 | PHOTO TAKE UP [AW13G-00] | HW1000100R |
| Q072 | | 4822 130 82274 | PHOTO SUPPLY [AW13G-00] | HW1000100R |
| Q076 | | 4822 130 82275 | QUICK SENSOR ASSY [AZ13P-00] | HW1000200R |
| S073 | | | | |
| I | | 4822 276 13475 | SWITCH [UE16E-11] | *SP000130R |
| S077 | | | | |

NOTE:***=PART IS LISTED FOR REFERENCE ONLY, MARANTZ WILL NOT SUPPLY THESE PARTS.

◆サービス時に必要な試験器材

●このModelを測定又はチェックするのに次のものがが必要です。

- オーディオ発振器
- アッテネータ (600Ω)
- オーディオノイズメーター
- オシロスコープ
- ワウ、フラッターメーター
- トルクメーター (カセット型)
- デジタル周波数カウンター
- ブランクテープ
(バルクイレーサーで完全に消去したもの)
AC-225 (Normal) AC-713 (Metal)
AC-514 (High Position)

注意：

測定値の異常がテープに起因すると考えられる場合は新しいものと交換し再測定して下さい。

- テストテープ
TCC-112・MTT-111 ワウ・フラッタ、テープスピード
TCC-120・MTT-212N S/N比
TCC-130・MTT-150 出力レベル調整
TCC-174A・MTT-255M ... アジマス調整
(TCC-****:A-BEX/MTT-****:TEAC)
- ヘッドおよびガイドゲージ (M-300)
THG-801 ヘッド、ガイド調整

◆回路の調整と測定

A. 調整上の注意点

- 1) テストテープは減衰しやすいので、使用する前にヘッド、キャプスタン等をイレーサーにて十分に消磁すること。
- 2) テストテープはトランス内蔵の計測機やイレーサーのすぐ近くには置かないこと。
- 3) 消磁の方法として、セットからやや離れた所でイレーサーのスイッチを入れヘッド、キャプスタンに近づけ上下に4~5回動かし、ゆっくり離し遠ざけてからスイッチを切ること。
- 4) 使用する工具は帯磁していないこと、時々バルクイレーサーで消磁すること。
- 5) 調整用半固定抵抗および可変コイル等は、極力最少の回転/回数で調整すること。
- 6) スピード、ワウ等は、セットの通常の姿勢で調整/チェックすること。
- 7) ボンドロックは少量にし、周辺に付着あるいは流れ出ることなど無いよう注意のこと。
- 8) AC電源電圧、低周波発振器出力電圧等は、1日2~3回規定どおりかチェックすること。

6. TEST EQUIPMENT REQUIRED FOR SERVICING

For measuring or checking a Cassette Deck, the following instruments and materials are necessary.

- Audio Oscillator (Audio Signal Generator)
- Attenuator (600 ohm)
- Audio Noise Meter
- Oscilloscope
- Wow and Flutter Meter
- Torque Meter (Cassette Type)
- Digital Frequency Counter
- Test Tape
TCC-112/MTT-111 Wow/Flutter, Tape Speed
TCC-120/MTT-212N Signal-to-Noise Ratio
TCC-130/MTT-150 Dolby Level Adjustment
TCC-174A/MTT-255M Azimuth Adjustment
(TCC-****:A-BEX/MTT-****:TEAC)
- Blank Tapes (Completely erased with bulk eraser)
AC-225 (Normal)
AC-514 (High Position)
AC-713 (Metal)

NOTE:

If any doubt is noted in a measured value, which is due to a tape. Re-measurement is necessary by use the new tape.

- Mirror cassette 12um padless
TCC-902/MTT-902 Tape flowing check
- Head guide gauge (M-300)
THG-801

7. ELECTRICAL ADJUSTMENTS

(A) Remark for adjustment

- 1) Clean and de-magnetize the tape path part before measurement.
- 2) Keep cassette tapes away from equipments.
- 3) De-magnetize tools often.
- 4) Do not turn adjustment parts by strong force.
- 5) Keep a cassette deck horizontally while measuring.
- 6) Keep amount of glue in proper.
- 7) Confirm the mains voltage, output level of oscillator and etc. before adjustment and measurement.

B. S. R. L. (Standard Recording Level) 基準録音レベル

- テープ上に開回路磁束で、250nWb/mの磁束を記録出来るレベルのことであり、記録レベルとテストテープの関係は以下のとおりである。

| | | | | | | |
|----------------------|-------------------------|----------|-----|-----|-----|--|
| TCC-120 (MTT-212) | (IEC REFERENCE LEVEL) | S. R. L. | | | | |
| 開回路磁束 (nWb/m) | 160 | 185 | 200 | 220 | 250 | |
| 閉回路磁束 (nWb/m) | 160 | 185 | 200 | | | |
| TCC-130 (MTT-150) | (DOLBY REFERENCE LEVEL) | | | | | |

注意：開回路磁束 = 閉回路磁束 + 漏洩磁束

- PMD350ではドルビーレベルで再生出力を調整し、基準をIECリファレンスにしているが、便宜上以下のようにする。
 - LINE入りに1kHz、100mVの信号を加え録音状態とする。
 - RECボリュームを調整し、ドルビーテストポイントT601 (L), T601 (R)のレベルが300mVとなるようにする。
 - この状態から入力レベルを+1dBとした状態がすなわち、基準録音レベル(S. R. L.)での規定録音状態である。

注意：
再生の基準レベルはその測定項目により異なり、使用指定のテストテープの記録レベルが基準レベルを決定することになる。

(B) S.R.L. (Standard Recording Level)

- The Standard Recording Level is a signal of 250nWb/m on a tape at *OPEN CIRCUIT MAGNETIC FLUX. The relation between the recording level and a test tape is as follows.

| | | | | | |
|--|-----|-----|-----|-----|-----|
| • OPEN CIRCUIT MAGNETIC FLUX (nWb/m) | 160 | 185 | 200 | 220 | 250 |
| • CLOSED CIRCUIT MAGNETIC FLEX (nWb/m) | | 160 | 185 | 200 | |
| | | | | ** | *** |

(*): OPEN CIRCUIT MAGNETIC FLUX = CLOSED CIRCUIT MAGNETIC FLUX + LEAK MAGNETIC FLUX.

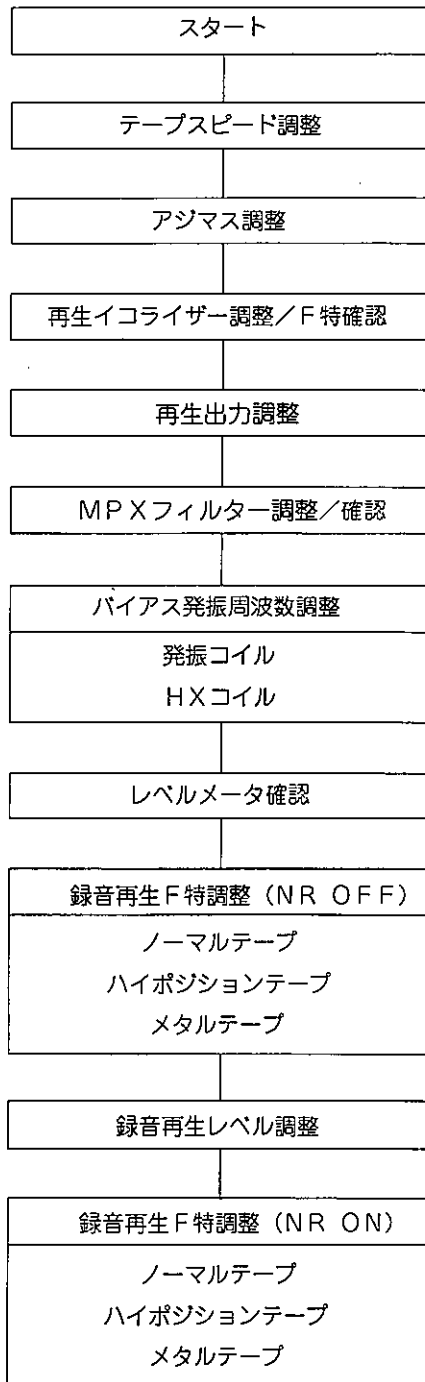
(**): TCC-130 (DOLBY REFERENCE LEVEL) (MTT-150)

(***): TCC-120 (IEC REFERENCE LEVEL) (S.R.L.) (MTT-212N)

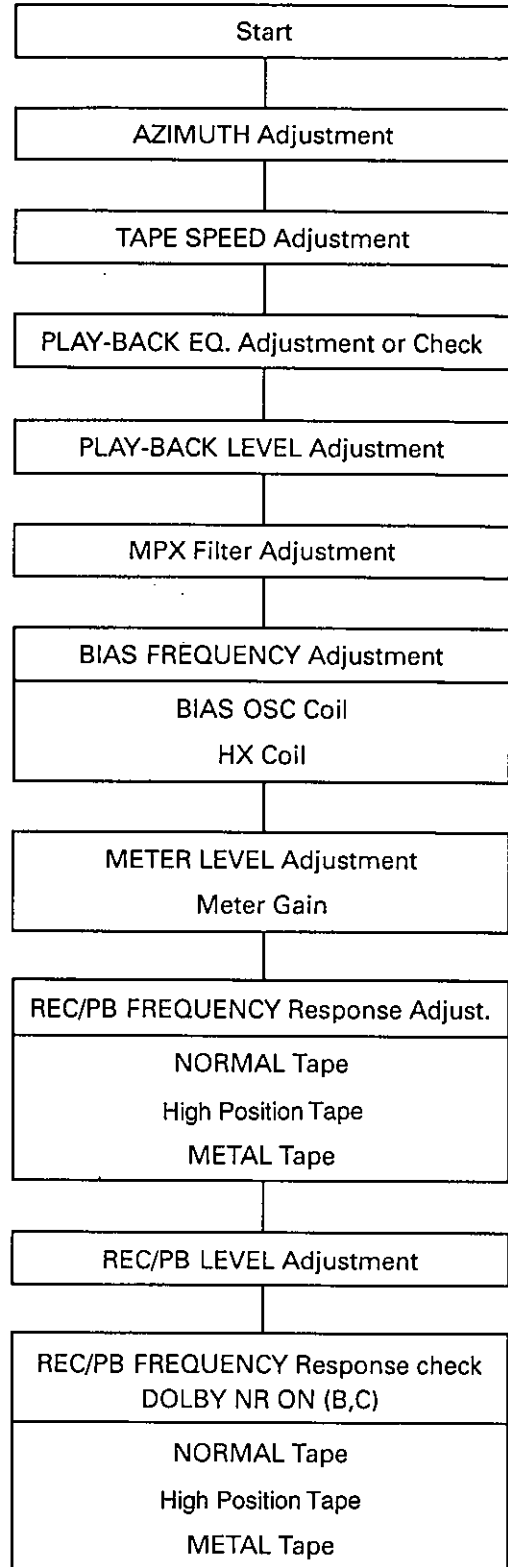
2. S.R.L. Setting

- Apply a 1kHz, 100mV to the LINE INPUT jacks.
- Put the unit in RECORD mode and adjust the REC LEVEL control to obtain the following level of signal at the DOLBY test points T601 (L), T602 (R) 300mV.
- Adjust the output of the audio oscillator applied to the LINE INPUT jacks to 112.2mV (+1dB). This is the rated recording condition for the STANDARD RECORDING LEVEL.

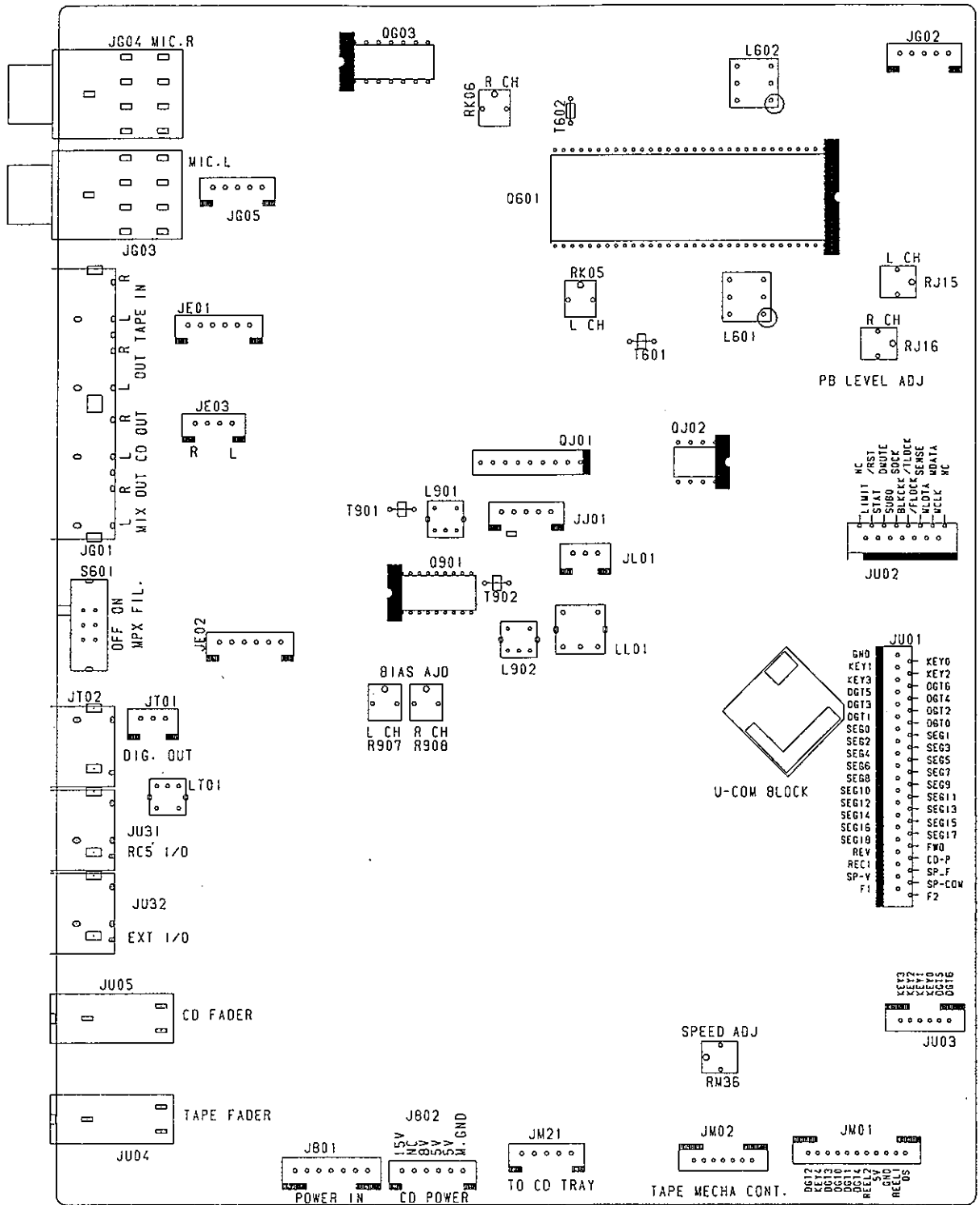
調整フローチャート



ADJUSTMENT FLOW CHART



ADJUSTMENT POINT COMPONENT SIDE



● テープスピード調整

調整は、FWD (PLAY ▷)で行い、REV (< PLAY) 再生は、スペック内であることを確認する。

- 1) テープの中間を再生し、半固定抵抗 (RM36) を調整し、3000Hz (2990~3010Hz) になるようにする。
- 2) 設定後、再度再生して範囲内のことを確認する。

注意：

- (1) 据置き姿勢で行なう。
- (2) メカニズムが常温と大きく異なる温度状態では、行なわないこと。

● ヘッドアジマス調整/再生 F 特調整

- 1) アジマス調整用テープの、12.5kHzの信号を再生する。アジマス調整ビスを回し、締め付け方向で出力最大点に合わせる。
- 2) L/Rピーク点が違う場合は、低いチャンネル側を最大にし、L/Rのバランスを取る。
- 3) 調整ビスをボンドロックする。
- 4) 次に、315Hzの信号を0dBとし、12.5kHzの信号のレベルを読む。無調整タイプのセットなので異常な値でないことを確認する。

7.1 TAPE SPEED ADJUSTMENT

- 1) Playback the middle part of the Wow & Flutter test tape.
- 2) Adjust the variable resistor.

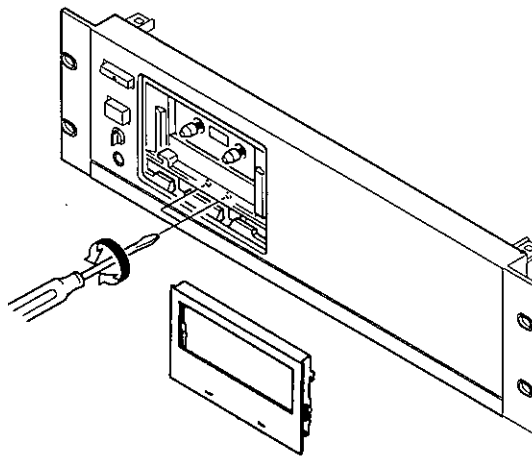
| |
|------------------|
| ADJUSTMENT POINT |
| RM36 |

for 3000Hz (2990Hz - 3010Hz).

- 3) Repeat 1) and 2) for both directions.

7.2 HEAD AZIMUTH ADJUSTMENT and FREQUENCY RESPONSE CHECK

- 1) Playback the 12.5 kHz part of the Azimuth test tape.
- 2) Adjust the proper azimuth screw in both directions for maximum output at the LINE OUTPUT jacks.
- 3) In case the L/R peak points are different, adjust the lower channel to the maximum.
- 4) Lock azimuth screws with glue.
- 5) Playback the 315 Hz part of the test tape and set a 0 dB ref., then playback the 12.5 kHz part of the test tape and confirm that the output is 0 dB, ± 3 dB.



● 再生出力調整

- 1) ドルビーレベルテストテープを再生し、テストポイントの電圧が300mVとなるように調整する。

| MODEL | CH | 測定点 | 調整点 | 調整値 |
|--------|----|------|------|-------|
| PMD350 | L | T601 | RJ15 | 300mV |
| | R | T602 | RJ16 | |

- 2) 調整後再度再生し、再確認する。

7.3 PLAYBACK LEVEL ADJUSTMENT

- 1) Playback the DOLBY test tape, adjust the following variable resistors to the values and the test points indicated below:

| MODEL | CH | TEST POINT | ADJ. RES. | ADJUSTMENT VALUE |
|--------|----|------------|-----------|------------------|
| PMD350 | L | T601 | RJ15 | 300mV |
| | R | T602 | RJ16 | |

- 2) After adjustment, replay and check it again.

Remark:

In case of drifting output during replay, check that the tape running and the test tape are ok, because they may be defective.

● MPXフィルター周波数調整/確認

- 1) ドルビーレベルで録音モニター状態とし、入力信号周波数が1kHzの時のレベルを0dBとする。
- 2) 入力信号周波数を19kHz(±10Hz以内)とし、MPXフィルタースイッチが「ON」の状態ではレベルが最小となるようにコイル調整する。

| CH | 調整点 | 調整値 |
|----|------|---------|
| L | L601 | Minimum |
| R | L602 | |

● 録音バイアス周波数及びHXコイル共振調整

- 1) 録音状態にする。
- 2) バイアス発振周波数を105kHzとなるよう発振コイルを調整する。

| 測定点 | 調整点 | 調整値 |
|------|------|--------|
| R901 | LL01 | 105kHz |

* 周波数カウンターへの接続は、ミリバルを通して行なう。調整/測定が終わったら接続を外すこと。

- 3) 次に、HXチェックポイントにオシロスコープを接続する。
- 4) HXチェックポイントの電圧が最小になる様にHXコイルを調整する。

| CH | 測定点 | 調整点 | 調整値 |
|----|------|------|---------|
| L | T901 | L901 | Minimum |
| R | T902 | L902 | |

● レベルメータ感度確認

- 1) LINE入力1kHz 100mV(アッテネータ、-20dB)にて録音状態とする。次に、REC-LEVELボリュームを調整し、ドルビーテストポイントのレベルが300mVとなるようにする(●再生出力調整参照)。この状態から1dBレベルを上げる。
- 2) この状態で、レベルメータの0dBポイントが点燈していることを確認する。

注意:

- (1) NR OFF とする。

7.4 MPX FILTER ADJUSTMENT

- 1) Put the unit in REC mode with a S.R.L. input.
- 2) The MPX filter switch ON and change the input frequency to 19kHz(±10Hz).
- 3) Adjust L601(L), L602(R) for minimum output at the LINE OUTPUT jacks.

| CH | ADJ. POINT | ADJ. TO |
|----|------------|---------|
| L | L601 | Minimum |
| R | L602 | |

7.5 RECORDING BIAS FREQUENCY AND HX COIL ADJUSTMENT

- 1) Put the unit in REC mode.
- 2) Adjust the following bias oscillator coil for 105kHz at the ERASE HEAD (JL01).

| TEST POINT | ADJ. POINT | ADJ. TO |
|------------|------------|---------|
| R901 | LL01 | 105kHz |

Remark:

May have to connect FREQUENCY COUNTER through an AUDIO VOLT METER.

- 3) Next, connect the Oscilloscope to the HX test point (T901, T902).
- 4) Adjust the HX coils for minimum level.

| CH | TEST POINT | COIL | ADJ. TO |
|----|------------|------|---------|
| L | T901 | L901 | Minimum |
| R | T902 | L902 | |

7.6 LEVEL METER SENSITIVITY CHECK

- 1) Put the unit in REC mode with a 1kHz, 100mV signal to the LINE INPUT jacks.
- 2) Set the REC LEVEL at the test point T601, T602 as 300mV. And 1dB increase.
- 3) Check the VU LEVEL METER indicates 0dB.

Remark:

Dolby switch has to be OFF.

● 録音再生F特調整

- 1) 規定録音状態から入力レベルを5mV(-26dB)に減じ、400Hzと12.5kHzの信号をDolby-OFFポジションで録音する。(NORMALテープ)
- 2) 巻き戻し再生し、400Hzと12.5kHzの信号のレベル差を確認し、±1.0dB以上の場合は、半固定抵抗を調整し再度、録直し確認する。

| MODEL | CH | 調整点 |
|--------|----|------|
| PMD350 | L | R907 |
| | R | R908 |

- 3) High Position、METALでは確認のみを行なう。

● 録音再生レベル調整

- 1) NORMALテープにて規定録音状態とし、400Hzにおけるモニターレベルを0dBとする。
- 2) 巻き戻し再生し、400Hzのレベルが±0.5dB以内となるよう、半固定抵抗を調整する。

| CH | 調整点 |
|----|------|
| L | RK05 |
| R | RK06 |

- 3) High Position、METALでは確認のみを行なう。

● DOLBY NR録音再生F特確認

- 1) 規定録音状態から入力レベルを5mV(-26dB)に減じ、下記の信号をDolby-B、ポジションで録音する。(NORMALテープ)
250Hz、1kHz、3kHz、6.3kHz、10kHz、12.5kHz
- 2) 巻き戻し再生し、各周波数のレベル差がスペックの範囲となることを確認する。
- 3) Dolby-Cポジションでも同様に確認する。
- 4) High Position、METALテープでも同様に行ない確認する。

7.7 REC/PLAYBACK FREQUENCY RESPONSE ADJUSTMENT

- 1) Adjust the output level of the audio oscillator to 5.0mV (-26dB) from the S.R.L. recording condition. Record 400Hz and 12.5kHz signals with DOLBY OFF.
- 2) Playback the recorded part and confirm the level of differences between 400Hz and 12.5kHz are within ± 1.0dB. If the level difference is out of allowance, adjust the variable resistor and confirm the playback level of rerecording

| MODEL | CH. | ADJUSTMENT |
|--------|-----|------------|
| PMD350 | L | R907 |
| | R | R908 |

- 3) Repeat steps #1 and 2 with High Position and METAL type tapes for confirmation.

7.8 REC/PLAYBACK LEVEL ADJUSTMENT

- 1) Input the 400Hz signal and put the unit into record mode. Measure the output level to set the reference level of 0dB.
- 2) Playback the just recorded part and adjust proper variable resistor, until the REC/PB levels are within ±0.5dB.

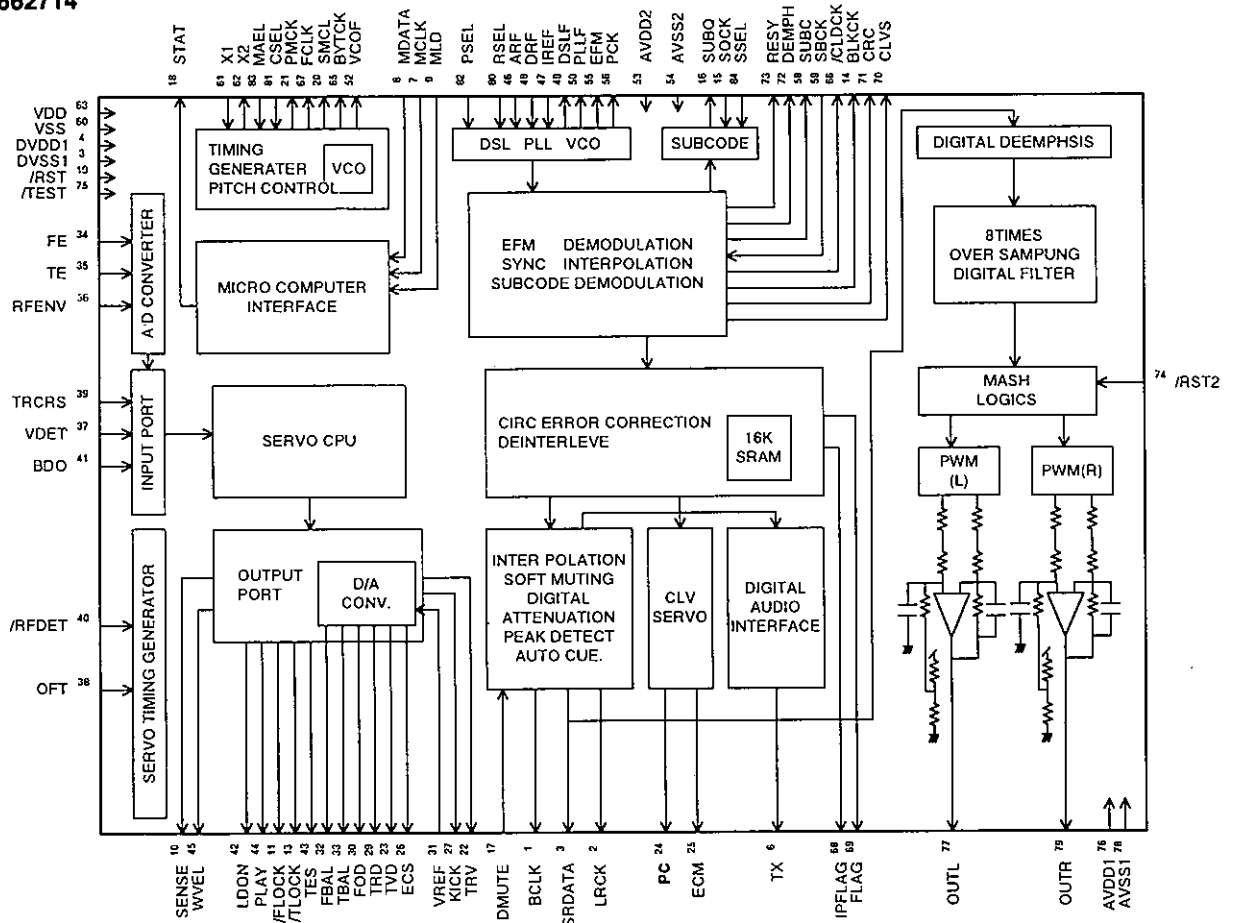
| CH. | ADJUSTMENT |
|-----|------------|
| L | RK05 |
| R | RK06 |

- 3) Repeat steps #1 and 2 with High Position and METAL type tapes for confirmation.

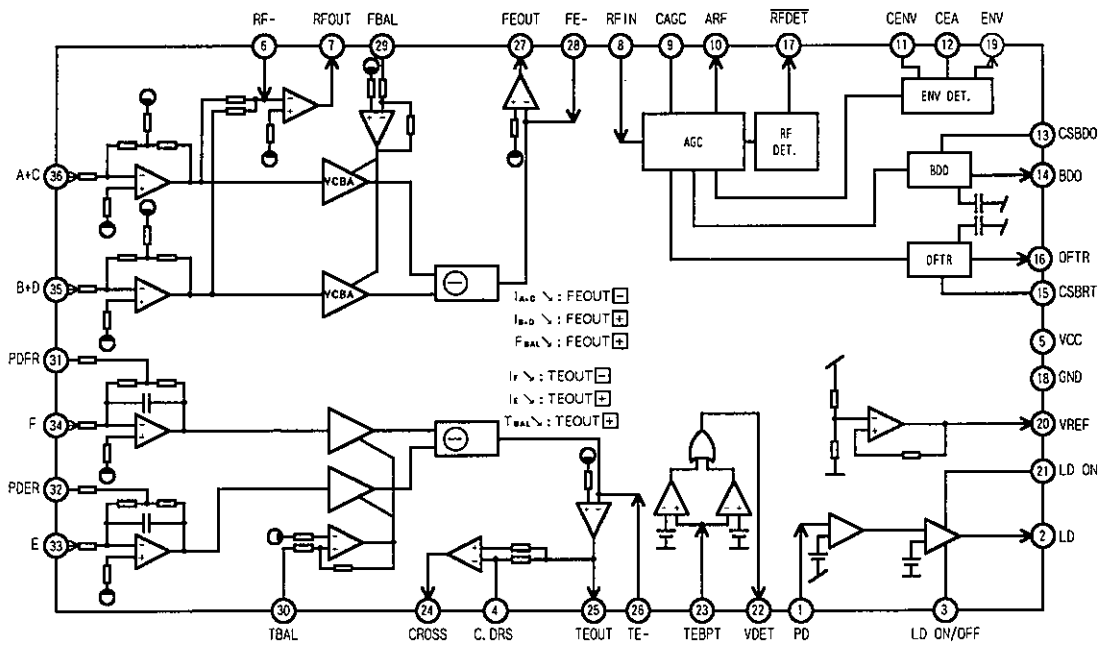
7.9 REC/PLAYBACK FREQUENCY RESPONSE CHECK DOLBY NR

- 1) Adjust the output level of the audio oscillator to 5.0mV (-26dB) from the S.R.L. recording condition. Record the following signals with DOLBY-B ON and Normal tape at 400Hz and 12.5kHz.
- 2) Playback the just recorded part and confirm the difference of levels are within ±1.0dB.
- 3) Repeat steps #1 and 2, with High Position and METAL type tapes.
- 4) Repeat steps #1 and 2, with Dolby-C ON.

8. MICROPROCESSOR I/O PINS AND THEIR FUNCTIONS MN662714



| PIN NO. | PORT NAME | I/O | FUNCTION | PIN NO. | PORT NAME | I/O | FUNCTION |
|---------|-----------|-----|----------------------------------|---------|-----------|-----|------------------------------------|
| 1 | BCLK | O | NC | 43 | TES | O | NC |
| 2 | LRCK | O | NC | 44 | PLAY | O | NC |
| 3 | SRDATA | O | NC | 45 | WVEL | O | BC |
| 4 | DVDD1 | I | +5V FOR DIGITAL | 46 | ARF | I | RF SIGNAL |
| 5 | DVSS1 | I | GROUND FOR DIGITAL | 47 | IREF | I | REFERENCE CURRENT |
| 6 | TX | O | DIGITAL AUDIO INTERFACE | 48 | DRF | I | NC |
| 7 | MCLK | I | μ - COM COMMAND CLOCK SIGNAL | 49 | DSLIF | I/O | LOOP FILTER FOR DSL |
| 8 | MDATA | I | μ - COM COMMAND DATA SIGNAL | 50 | PLL F | I/O | LOOP FILTER FOR PLL |
| 9 | MLD | I | μ - COM COMMAND LOAD SIGNAL | 51 | NC3 | | NC |
| 10 | SENSE | O | SENSE SIGNAL | 52 | VCOF | I/O | LOOP FILTER FOR VCO |
| 11 | /FLOCK | O | FOCUS SERVO LOCK SIGNAL | 53 | AVDD2 | I | +5V FOR ANALOG(DSL PLL DA) |
| 12 | NC1 | | NC | 54 | AVSS2 | I | GROUND FOR ANALOG(DSL PLL DA) |
| 13 | /TLOCK | O | TRACKING SERVO LOCK SIGNAL | 55 | EFM | O | EFM SIGNAL |
| 14 | BLKCK | O | SUB CODE BLOCK CLOCK SIGNAL | 56 | PCK | O | PLL CLOCK . 4.321MHz |
| 15 | SOCK | I | SUB CODE O RESISTER CLOCK | 57 | PDO | O | PHASE COMPARATOR FOREFM AND PCK |
| 16 | SUBO | I | SUB CODE O CODE | 58 | SUBC | O | NC |
| 17 | DMUTE | I | MUTE | 59 | SBCK | I | NC |
| 18 | STAT | O | STAUTUS SIGNAL | 60 | VSS | I | GROUND FOR OSCILLATOR |
| 19 | /RST | I | RESET | 61 | X1 | I | CRYSTAL OSCILLATOR F=33.8688MHz |
| 20 | SMCK | O | NC | 62 | X2 | O | CRYSTAL OSCILLATOR F=33.8688MHz |
| 21 | PMCK | O | NC | 63 | VDD | I | +5V SUPPLY VOLTAGE FOR OSCILLATOR |
| 22 | TRV | O | TRAVERSE | 64 | NC4 | | NC |
| 23 | TVD | O | TRAVERSE DRIVE | 65 | BYTCK | O | NC |
| 24 | PC | O | SPINDIE MOTOR ON SIGNAL L:ON | 66 | /CLDCK | O | NC |
| 25 | ECM | O | SPINDIE MOTOR | 67 | FCLK | O | NC |
| 26 | ECS | O | SPINDIE MOTOR DRIVE | 68 | IPFLAG | O | INTERPOLATION FLAG H:INTERPOLATION |
| 27 | KICK | O | KICK PULSE | 69 | FLAG | O | NC |
| 28 | NC2 | | NC | 70 | CLVS | O | NC |
| 29 | TRD | O | TRACKING DRIVE | 71 | CRC | O | SUB CODE CRC CHECK H:OK L:NG |
| 30 | FOD | O | FOCUS DRIVE | 72 | DEMPH | O | NC |
| 31 | VREF | I | REFERENCE VOLTAGE | 73 | RESY | O | NC |
| 32 | FBAL | O | FOCUS BALANCE ADJ. | 74 | /RST2 | I | RESET FOR MSH L:RESET |
| 33 | TBAL | O | TRACKING BALANCE ADJ. | 75 | /TEST | I | TEST |
| 34 | FE | I | FOCUS ERROR SIGNAL | 76 | AVDD1 | I | +5V FOR ANALOG(AUDIO) |
| 35 | TE | I | TRACKING ERROR SIGNAL | 77 | OUTL | O | ANALOG L CH |
| 36 | RFENV | I | RF ENVELOP | 78 | AVSS1 | I | GROUND FOR ANALOG(AUDIO) |
| 37 | VDDET | I | VIBRATION DET. | 79 | OUTR | O | ANALOG R CH |
| 38 | OFT | I | OFF TRACK SIGNAL | 80 | RSEL | I | RF POLARITY SEL. |
| 39 | TRCRS | I | TRACK LOSS SIGNAL | 81 | CSEL | I | H:CSEL=33.8688MHz |
| 40 | /FDET | I | RF DETECTOR SIGNAL | 82 | PSEL | I | TEST |
| 41 | BDO | I | DROP - OUT SIGNAL | 83 | MSEL | I | L:SMCK=4.2336MHz |
| 42 | LDON | O | LASER ON SIGNAL | 84 | SSEL | I | RESY MODE |



| PIN NO. | PORT NAME | I/O | FUNCTION | PIN NO. | PORT NAME | I/O | FUNCTION |
|---------|-----------|-----|------------------------------------|---------|-----------|-----------------|-------------------|
| 1 | PD | I | APC AMP. (Auto,atic Power Control) | 19 | ENV | O | 3TENV |
| 2 | LD | O | APC AMP. | 20 | VREF | O | VREF |
| 3 | LD ON | | APC ON/OFF CONTROL | 21 | LD OFF | | APC OFF CONTROL |
| 4 | C. CRS | | CAP. FOR CROSS | 22 | VDET | O | VDET |
| 5 | VCC | | VCC | 23 | TEBPF | I | VDET |
| 6 | RF - | I | RF AMP. INVERTING | 24 | CROSS | O | CROSS |
| 7 | RF OUT | O | RF AMP. | 25 | TE OUT | O | TE AMP. |
| 8 | RF IN | I | AGC | 26 | TE - | I | TE AMP. INVERTING |
| 9 | CAGC | | LOOP FILTER FOR AGC | 27 | FE OUT | O | FE AMP. |
| 10 | ARF | O | AGC | 28 | FE - | I | EF AMP. INVERTING |
| 11 | CENV | | CAP. FOR RF DET. | 29 | FBAL | | F BAL CONTROL |
| 12 | CEA | | CAP. FOR HPF - AMP. | 30 | TBAL | | T BAL CONTROL |
| 13 | C. SBDO | | CAP. FOR RF ENVELOP DARK DET. | 31 | PDRF | I - V AMP. ADJ. | |
| 14 | BDO | O | BDO | 32 | PDER | I - V AMP. ADJ. | |
| 15 | C. SBRT | | CAP. FOR RF ENVELOP BRIGHT DET. | 33 | PDE | I - V AMP. E | |
| 16 | OFTR | O | OFTR | 34 | PDF | I - V AMP. F | |
| 17 | RFDET | O | RFDET | 35 | PDBO | I - V AMP. B+D | |
| 18 | GND | | GND | 36 | PDAC | I - V AMP. A+C | |

9. ELECTRICAL PARTS LIST

ASSIGNMENT OF COMMON PARTS CODES.

RESISTOR

R*** : 1) GD05 x x x 140, Carbon film fixed resistor, ±5% 1/4W
R*** : 2) GD05 x x x 160, Carbon film fixed resistor, ±5% 1/6W

① — Resistance value

Examples :

| ① Resistance value | | | |
|--------------------|------------|-------------|-------------|
| 0.1Ω...001 | 10Ω...100 | 1kΩ...102 | 100kΩ...104 |
| 0.5Ω...005 | 18Ω...180 | 2.7kΩ...272 | 680kΩ...684 |
| 1Ω...010 | 100Ω...101 | 10kΩ...103 | 1MΩ...105 |
| 6.8Ω...068 | 390Ω...391 | 22kΩ...223 | 4.7MΩ...475 |

(Note) Please distinguish 1/4W from 1/6W by the shape of parts used actually.

C*** : CERAMIC CAP.

1) DD1 x x x 370, Ceramic capacitor
 Disc type
 Temp.coeff.P350~N1000,50V

① — Capacity value
 ② — Tolerance

Examples

① Tolerance (Capacity deviation)

| |
|-------------|
| ±0.25pF...0 |
| ±0.5pF...1 |
| ±5%...5 |

* Tolerance of COMMON PARTS handled here are as follows :

| |
|---------------------|
| 0.5pF~5pF...±0.25pF |
| 6pF~10pF...±0.5pF |
| 12pF~560pF...±5% |

② Capacity value

| | | |
|-------------|------------|-------------|
| 0.5pF...005 | 3pF...030 | 100pF...101 |
| 1pF...010 | 10pF...100 | 220pF...221 |
| 1.5pF...015 | 47pF...470 | 560pF...561 |

C*** : CERAMIC CAP.

1) DK16 x x x 300, High dielectric constant ceramic capacitor
 Disc type
 Temp.chara. 2B4, 50V

① — Capacity value

Examples

① Capacity value

| | | |
|-------------|--------------|---------------|
| 100pF...101 | 1000pF...102 | 10000pF...103 |
| 470pF...471 | 2200pF...222 | |

C*** : ELECTROLY CAP. (), FILM CAP. ()

1) EA x x x x x 10, Electrolytic capacitor
 One-way lead type, Tolerance ±20%

① — Working voltage
 ② — Capacity value

Examples

① Capacity value

| | | |
|--------------|-------------|--------------|
| 0.1μF...104 | 4.7μF...475 | 100μF...107 |
| 0.33μF...334 | 10μF...106 | 330μF...337 |
| 1μF...105 | 22μF...226 | 1100μF...118 |
| | | 2200μF...228 |

② Working voltage

| | |
|------------|-----------|
| 6.3V...006 | 25V...025 |
| 10V...010 | 35V...035 |
| 16V...016 | 50V...050 |

2) DF15 x x x 350 — Plastic film capacitor
 DF15 x x x 310 — One-way type, Mylar ±5% 50V
 DF16 x x x 310 — Plastic film capacitor
 One-way type, Mylar ±10% 50V

① — Capacity value

Examples

① Capacity value

| | |
|-----------------------|--------------|
| 0.001μF(1000pF)...102 | 0.1μF...104 |
| 0.0018μF...182 | 0.56μF...564 |
| 0.01μF...103 | 1μF...105 |
| 0.015μF...153 | |

NOTE : 1) The above CODES (**R*****, **R*****, **C*****, **C***** and **C*****) are omitted on the schematic diagram in some case.

- 2) On the occasion, be confirmed the common parts on the parts list.
 3) Refer to "Common Parts List" for the other common parts(RI05, DD4, DK4).

NOTE ON SAFETY FOR FUSIBLE RESISTOR :

The suppliers and their type numbers of fusible resistors are as follows :

1. KOA Corporation

| Part No. | Type No. | Description |
|----------------|--------------------|---------------|
| NH05 x x x 140 | RF25S x x x x ΩJ | (± 5% 1/4W) |
| NH05 x x x 120 | RF50S x x x x ΩJ | (± 5% 1/2W) |
| NH85 x x x 110 | RF73B2A x x x x ΩJ | (± 5% 1/10W) |
| NH95 x x x 140 | RF73B2E x x x x ΩJ | (± 5% 1/4W) |

* Resistance value (0.1-10kΩ)

2. Matsushita Electronic Components Co., Ltd

| Part No. | Type No. | Description |
|----------------|----------------|--------------|
| NF05 x x x 140 | ERD-2FCJ x x x | (± 5% 1/4W) |
| RF05 x x x 140 | | |
| NF02 x x x 140 | ERD-2FCG x x x | (± 2% 1/4W) |
| RF02 x x x 140 | | |

* Resistance value

Examples :



* Resistance value

| | | | |
|------------|------------|-------------|-------------|
| 0.1Ω...001 | 10Ω...100 | 1kΩ...102 | 100kΩ...104 |
| 0.5Ω...005 | 18Ω...180 | 2.7kΩ...272 | 680kΩ...684 |
| 1Ω...010 | 100Ω...101 | 10kΩ...103 | 1MΩ...105 |
| 6.8Ω...068 | 390Ω...391 | 22kΩ...223 | 4.7MΩ...475 |


ABBREVIATION AND MARKS

| | |
|--------------------------|--------------------------|
| 1 ANT. : ANTENNA | 2 BATT. : BATTERY |
| 3 CAP. : CAPACITOR | 4 CER. : CERAMIC |
| 5 CONN. : CONNECTING | 6 DIG. : DIGITAL |
| 7 HP : HEADPHONE | 8 MIC. : MICROPHONE |
| 9 μ-PRO : MICROPROCESSOR | 10 REC. : RECORDING |
| 11 RES. : RESISTOR | 12 SPK : SPEAKER |
| 13 SW : SWITCH | 14 TRANSF. : TRANSFORMER |
| 15 TRIM. : TRIMMING | 16 TRS. : TRANSISTOR |
| 17 VAR. : VARIABLE | 18 X'TAL : CRYSTAL |
| 19 | 20 |
| 21 | 22 |
| 23 | 24 |
| 25 | 26 |
| 27 | 28 |
| 29 | 30 |

NOTE ON SAFETY :

Symbol  Fire or electrical shock hazard. Only original parts should be used to replaced any part marked with symbol . Any other component substitution (other than original type), may increase risk of fire or electrical shock hazard.

安全上の注意 :

 がついている部品は、安全上重要な部品です。必ず指定されている部品番号の部品を使用して下さい。

(VERS.:VERSION, U:U.S.A., F:JAPAN, K:FAR EAST, **:EUROPE)

| POS. NO | VERS. COLOR | PART NO. (FOR EUROPE) | DESCRIPTION | PART NO. (USA/JPN) | POS. NO | VERS. COLOR | PART NO. (FOR EUROPE) | DESCRIPTION | PART NO. (USA/JPN) |
|---------|-------------|-----------------------|--|--------------------|---------|-------------|-----------------------|-----------------------------------|--------------------|
| | | | PD16-CD BLOCK CIRCUIT BOARD | | CM07 | | 4822 124 41842 | TANTL. 47 μ F/16V CHIP | EY47601620 |
| | | | PD16-CAPACITORS | | CM08 | | 4822 126 11687 | CER. 0.1 μ F +80 -20% CHIP | DK98104200 |
| C101 | | 4822 122 33741 | CER. 10pF \pm 0.5pF CHIP | DD91100300 | CM09 | | 4822 126 11687 | CER. 0.1 μ F +80 -20% CHIP | DK98104200 |
| C102 | | 4822 126 11678 | CER. 1 μ F +80 -20% CHIP | DK58105200 | CM10 | | 4822 126 11567 | CER. 0.022 μ F \pm 10% CHIP | DK96223200 |
| C103 | | 4822 126 11678 | CER. 1 μ F +80 -20% CHIP | DK58105200 | CM11 | | 4822 126 11567 | CER. 0.022 μ F \pm 10% CHIP | DK96223200 |
| C104 | | 4822 122 33744 | CER. 100pF \pm 5% CHIP | DD95101300 | CM12 | | 4822 123 30378 | MICA 0.1 μ F \pm 5% CHIP | DF95104060 |
| C105 | | 4822 125 60204 | CER. 0.027 μ F 10% CHIP | DK96273200 | CM13 | | 4822 126 11687 | CER. 0.1 μ F +80 -20% CHIP | DK98104200 |
| C106 | | 4822 126 11702 | CER. 680pF \pm 10% CHIP | DK96681300 | | | | PD16-SEMICONDUCTORS | |
| C107 | | 5322 126 11579 | CER. 3300pF \pm 10% CHIP | DK96332300 | Q101 | | 4822 209 33815 | IC AN88055B | HC10148020 |
| C108 | | 4822 126 11687 | CER. 0.1 μ F +80 -20% CHIP | DK98104200 | Q103 | | 4822 130 61541 | CHIP TR. 2SC4116 | HX341162B0 |
| C109 | | 4822 124 10772 | TANTL. 100 μ F/6.3V CHIP | EY10700620 | Q104 | | 4822 130 61541 | CHIP TR. 2SC4116 | HX341162B0 |
| C110 | | 4822 126 11687 | CER. 0.1 μ F +80 -20% CHIP | DK98104200 | Q105 | | 4822 130 63609 | CHIP TR. 2SA1588(Y) | HX115881A0 |
| C111 | | 4822 124 10772 | TANTL. 100 μ F/6.3V CHIP | EY10700620 | Q106 | | 4822 130 61541 | CHIP TR. 2SC4116 | HX341162B0 |
| C112 | | 4822 126 13396 | CER. 0.047 μ F \pm 10% CHIP | DK96473200 | Q107 | | 4822 130 61541 | CHIP TR. 2SC4116 | HX341162B0 |
| C113 | | 4822 126 11685 | CER. 4700pF \pm 10% CHIP | DK96472300 | Q501 | | 4822 209 33817 | IC MN662714 | HC10150020 |
| C114 | | 5322 126 11583 | CER. 10000pF \pm 10% CHIP | DK96103200 | Q651 | | 4822 209 71451 | IC NJM4558M(Y) | HC10011090 |
| C115 | | 5322 126 11583 | CER. 10000pF \pm 10% CHIP | DK96103200 | Q652 | | 4822 209 71451 | IC NJM4558M(Y) | HC10011090 |
| C116 | | 4822 125 60204 | CER. 0.027 μ F \pm 10% CHIP | DK96273200 | QM01 | | 4822 209 33816 | IC AN8389S | HC10149020 |
| C117 | | 4822 126 11678 | CER. 1 μ F +80 -20% CHIP | DK58105200 | | | | PD16-RESISTORS | |
| C118 | | 4822 122 33753 | CER. 150pF \pm 5% CHIP | DD95151300 | R101 | | 4822 116 83221 | CHIP 8.2k Ω \pm 5% 1/16W | NN05822610 |
| C120 | | 4822 126 11678 | CER. 1 μ F +80 -20% CHIP | DK58105200 | R102 | | 4822 051 30153 | CHIP 15k Ω \pm 5% 1/16W | NN05153610 |
| C121 | | 4822 126 13395 | CER. 390P \pm 10% CHIP | DK96391300 | R103 | | 4822 051 30684 | CHIP 680 Ω \pm 5% 1/16W | NN05681610 |
| C122 | | 4822 126 11695 | CER. 330pF \pm 5% CHIP | DD95331300 | R104 | | 4822 051 30471 | CHIP 470 Ω \pm 5% 1/16W | NN05391610 |
| C123 | | 4822 124 11074 | TANTL. 10 μ F/16V CHIP | EY10601620 | R107 | | 4822 116 83214 | CHIP 39k Ω 5% 1/16W | NN05393610 |
| C124 | | 4822 126 11687 | CER. 0.1 μ F +80 -20% CHIP | DK98104200 | R108 | | 4822 116 83222 | CHIP 82k Ω \pm 5% 1/16W | NN05823610 |
| C125 | | 4822 126 11687 | CER. 0.1 μ F +80 -20% CHIP | DK98104200 | R109 | | 4822 116 83222 | CHIP 82k Ω \pm 5% 1/16W | NN05823610 |
| C126 | | 4822 124 10772 | TANTL. 100 μ F/6.3V CHIP | EY10700620 | R110 | | 4822 051 30334 | CHIP 330k Ω \pm 5% 1/16W | NN05334610 |
| C128 | | 4822 126 11723 | CER. 390pF \pm 5% CHIP | DD95391370 | R111 | | 4822 051 30334 | CHIP 330k Ω \pm 5% 1/16W | NN05334610 |
| C501 | | 4822 126 11702 | CER. 680pF \pm 10% CHIP | DK96681300 | R112 | | 4822 051 30103 | CHIP 10k Ω \pm 5% 1/16W | NN05103610 |
| C502 | | 4822 126 11687 | CER. 0.1 μ F +80 -20% CHIP | DK98104200 | R114 | | 4822 051 30272 | CHIP 2.7k Ω \pm 5% 1/16W | NN05272610 |
| C503 | | 4822 126 13698 | CER. 8200pF 10% CHIP | DK96822200 | R115 | | 4822 116 83211 | CHIP 1.8k Ω \pm 5% 1/16W | NN05182610 |
| C504 | | 4822 126 13807 | CER. 0.33 μ F \pm 10% CHIP | DK56334200 | R117 | | 4822 116 83221 | CHIP 8.2k Ω \pm 5% 1/16W | NN05822610 |
| C505 | | 4822 126 13807 | CER. 0.33 μ F \pm 10% CHIP | DK56334200 | R118 | | 4822 051 30103 | CHIP 10k Ω \pm 5% 1/16W | NN05103610 |
| C506 | | 4822 126 11687 | CER. 0.1 μ F +80 -20% CHIP | DK98104200 | R119 | | 4822 051 30332 | CHIP 3.3k Ω \pm 5% 1/16W | NN05332610 |
| C507 | | 4822 124 10772 | TANTL. 100 μ F/6.3V CHIP | EY10700620 | R120 | | 4822 051 30223 | CHIP 22k Ω \pm 5% 1/16W | NN05223610 |
| C508 | | 4822 126 11687 | CER. 0.1 μ F +80 -20% CHIP | DK98104200 | R121 | | 4822 051 30684 | CHIP 680 Ω \pm 5% 1/16W | NN05681610 |
| C509 | | 4822 126 11687 | CER. 0.1 μ F +80 -20% CHIP | DK98104200 | R122 | | 4822 051 30472 | CHIP 4.7k Ω \pm 5% 1/16W | NN05472610 |
| C510 | | 4822 124 10772 | TANTL. 100 μ F/6.3V CHIP | EY10700620 | R123 | | 4822 051 30224 | CHIP 220k Ω \pm 5% 1/16W | NN05224610 |
| C511 | | 4822 122 33741 | CER. 10pF \pm 0.5pF CHIP | DD91100300 | R124 | | 4822 116 83222 | CHIP 82k Ω \pm 5% 1/16W | NN05823610 |
| C512 | | 4822 126 11661 | CER. 5pF \pm 0.25pF CHIP | DD90050300 | R125 | | 4822 051 30683 | CHIP 68k Ω \pm 5% 1/16W | NN05683610 |
| C513 | | 4822 126 11661 | CER. 5pF \pm 0.25pF CHIP | DD90050300 | R126 | | 4822 051 30222 | CHIP 2.2k Ω \pm 5% 1/16W | NN05222610 |
| C514 | | 4822 124 10772 | TANTL. 100 μ F/6.3V CHIP | EY10700620 | R127 | | 4822 051 30272 | CHIP 2.7k Ω \pm 5% 1/16W | NN05272610 |
| C515 | | 4822 126 11687 | CER. 0.1 μ F +80 -20% CHIP | DK98104200 | R128 | | 4822 051 30151 | CHIP 150 Ω \pm 5% 1/16W | NN05151610 |
| C651 | | 4822 122 33751 | CER. 120pF \pm 5% CHIP | DD95121300 | R129 | | 4822 051 30151 | CHIP 150 Ω \pm 5% 1/16W | NN05151610 |
| C652 | | 4822 122 33751 | CER. 120pF \pm 5% CHIP | DD95121300 | R130 | | 4822 111 90967 | FUSE 4.7 Ω \pm 5% 1/4W | NF05047140 |
| C657 | | | | | R131 | | 4822 116 82487 | CHIP 0 Ω \pm 5% 1/16W | NN05000610 |
| C660 | | 4822 122 33777 | CER. 47pF \pm 5% CHIP | DD95470300 | R501 | | 4822 116 83222 | CHIP 82k Ω \pm 5% 1/16W | NN05823610 |
| C661 | | 4822 123 30409 | MICA 470pF \pm 5% CHIP | DF95471040 | R502 | | 4822 051 30154 | CHIP 150k Ω \pm 5% 1/16W | NN05154610 |
| C662 | | 4822 123 30409 | MICA 470pF \pm 5% CHIP | DF95471040 | R504 | | | CHIP 1.2M Ω \pm 5% 1/16W | NN05125610 |
| C663 | | | | | R505 | | 4822 051 30684 | CHIP 680 Ω \pm 5% 1/16W | NN05681610 |
| C666 | | 4822 124 41842 | TANTL. 47 μ F/16V CHIP | EY47601620 | R506 | | 4822 051 30684 | CHIP 680 Ω \pm 5% 1/16W | NN05681610 |
| CM01 | | 4822 126 11566 | CER. 2200pF \pm 10% CHIP | DK96222300 | R507 | | 4822 051 30101 | CHIP 100 Ω \pm 5% 1/16W | NN05101610 |
| CM02 | | 4822 126 12495 | CER. 1500pF \pm 10% CHIP | DK96152300 | R508 | | 4822 051 30472 | CHIP 4.7k Ω \pm 5% 1/16W | NN05472610 |
| CM03 | | 4822 126 11567 | CER. 0.022 μ F \pm 10% CHIP | DK96223200 | R509 | | 4822 051 30334 | CHIP 330k Ω \pm 5% 1/16W | NN05334610 |
| CM05 | | 4822 126 13394 | CER. 0.018 μ F \pm 10% CHIP | DK96183200 | R510 | | 4822 116 83214 | CHIP 39k Ω \pm 5% 1/16W | NN05393610 |
| CM06 | | 4822 124 41842 | TANTL. 47 μ F/16V CHIP | EY47601620 | R651 | | | | |
| | | | | | R654 | | 4822 051 30103 | CHIP 10k Ω \pm 5% 1/16W | NN05103610 |

(VERS.:VERSION, U:U.S.A., F:JAPAN, K:FAR EAST, **:EUROPE)

| POS. NO | VERS. COLOR | PART NO. (FOR EUROPE) | DESCRIPTION | PART NO. (USA/JPN) | POS. NO | VERS. COLOR | PART NO. (FOR EUROPE) | DESCRIPTION | PART NO. (USA/JPN) |
|---------|-------------|-----------------------|--------------------------------------|--------------------|---------|-------------|-----------------------|-----------------------|--------------------|
| R659 | | 4822 051 30333 | CHIP 33kΩ ±5% 1/16W | NN05333610 | C626 | | 4822 124 23053 | ELECT 1μF/50V | EJ10505010 |
| R660 | | 4822 051 30333 | CHIP 33kΩ ±5% 1/16W | NN05333610 | C627 | | 4822 124 21899 | ELECT 4.7μF/25V | EJ47502510 |
| R661 | | 4822 051 30103 | CHIP 10kΩ ±5% 1/16W | NN05103610 | C628 | | 4822 124 21899 | ELECT 4.7μF/25V | EJ47502510 |
| R662 | | 4822 051 30103 | CHIP 10kΩ ±5% 1/16W | NN05103610 | C629 | | 4822 124 23053 | ELECT 1μF/50V | EJ10505010 |
| R663 | | 4822 116 83212 | CHIP 18kΩ ±5% 1/16W | NN05183610 | C810 | | 4822 124 21899 | ELECT 4.7μF/25V | EJ47502510 |
| R664 | | 4822 116 83212 | CHIP 18kΩ ±5% 1/16W | NN05183610 | C813 | | 4822 124 21894 | ELECT 10μF/16V | EJ10601610 |
| R665 | | 4822 051 30103 | CHIP 10kΩ ±5% 1/16W | NN05103610 | C901 | | 4822 121 43775 | FILM 560pF ±10% | DF76561530 |
| R666 | | 4822 051 30103 | CHIP 10kΩ ±5% 1/16W | NN05103610 | C902 | | 4822 121 43775 | FILM 560pF ±10% | DF76561530 |
| R667 | | 4822 051 30223 | CHIP 22kΩ ±5% 1/16W | NN05223610 | C907 | | 4822 122 31211 | CER. 100pF ±10% | DK16101550 |
| R668 | | 4822 051 30223 | CHIP 22kΩ ±5% 1/16W | NN05223610 | C908 | | 4822 122 31211 | CER. 100pF ±10% | DK16101550 |
| R669 | | 4822 051 30333 | CHIP 33kΩ ±5% 1/16W | NN05333610 | C914 | | 4822 122 30103 | CER. 0.022μF +80 -20% | DK18223310 |
| R670 | | 4822 051 30333 | CHIP 33kΩ ±5% 1/16W | NN05333610 | C916 | | 4822 122 32185 | CER. 10pF ±0.5pF | DD11100300 |
| R671 | | 4822 051 30223 | CHIP 22kΩ ±5% 1/16W | NN05223610 | CC01 | | | | |
| R672 | | 4822 051 30223 | CHIP 22kΩ ±5% 1/16W | NN05223610 | I | | 4822 124 21899 | ELECT 4.7μF/25V | EJ47502510 |
| RM01 | | 4822 051 30103 | CHIP 10kΩ ±5% 1/16W | NN05103610 | CC04 | | | | |
| RM02 | | 4822 051 30103 | CHIP 10kΩ ±5% 1/16W | NN05103610 | CE01 | | 4822 124 21894 | ELECT 10μF/16V | EJ10601610 |
| RM03 | | 4822 051 30474 | CHIP 470kΩ ±5% 1/16W | NN05474610 | CE02 | | 4822 124 21894 | ELECT 10μF/16V | EJ10601610 |
| RM04 | | 4822 051 30223 | CHIP 22kΩ ±5% 1/16W | NN05223610 | CE03 | | 4822 124 21899 | ELECT 4.7μF/25V | EJ47502510 |
| RM05 | | 4822 116 83212 | CHIP 18kΩ ±5% 1/16W | NN05183610 | CE04 | | 4822 124 21899 | ELECT 4.7μF/25V | EJ47502510 |
| RM06 | | 4822 116 83219 | CHIP 820Ω ±5% 1/16W | NN05821610 | CE21 | | 4822 124 21894 | ELECT 10μF/16V | EJ10601610 |
| RM07 | | 4822 051 30392 | CHIP 3.9kΩ ±5% 1/16W | NN05392610 | CE22 | | 4822 124 21894 | ELECT 10μF/16V | EJ10601610 |
| RM08 | | 4822 116 83216 | CHIP 56kΩ ±5% 1/16W | NN05563610 | CE23 | | 4822 124 21899 | ELECT 4.7μF/25V | EJ47502510 |
| RM09 | | 4822 116 83212 | CHIP 18kΩ ±5% 1/16W | NN05183610 | CE24 | | 4822 124 21899 | ELECT 4.7μF/25V | EJ47502510 |
| RM10 | | 4822 051 30223 | CHIP 22kΩ ±5% 1/16W | NN05223610 | CE25 | | 4822 124 21894 | ELECT 10μF/16V | EJ10601610 |
| RM11 | | 4822 051 30683 | CHIP 68kΩ ±5% 1/16W | NN05683610 | CE26 | | 4822 124 21894 | ELECT 10μF/16V | EJ10601610 |
| RM12 | | 4822 051 30101 | CHIP 100Ω ±5% 1/16W | NN05101610 | CE41 | | 4822 124 21894 | ELECT 10μF/16V | EJ10601610 |
| RM13 | | 4822 051 30229 | CHIP 22Ω ±5% 1/16W | NN05220610 | CE42 | | 4822 124 21894 | ELECT 10μF/16V | EJ10601610 |
| RM14 | | 4822 051 30101 | CHIP 100Ω ±5% 1/16W | NN05101610 | CG01 | | | | |
| RM17 | | 4822 051 30229 | CHIP 22Ω ±5% 1/16W | NN05220610 | I | | 4822 124 21899 | ELECT 4.7μF/25V | EJ47502510 |
| | | | PD16-MISCELLANEOUS | | CG04 | | | | |
| J101 | | 4822 265 41349 | JACK TOC-L12X-A1 12P FFC | YJ07007950 | CG07 | | | | |
| J501 | | | JACK HLEM15R-1 FFC CONN. | YJ06011250 | I | | 4822 124 21894 | ELECT 10μF/16V | EJ10601610 |
| L501 | | 4822 158 60654 | FERRITE CORE BLM31A02 | FC90030070 | CG10 | | | | |
| X501 | | 4822 242 81864 | XTAL 33.8688MHZ | JX33001350 | CG11 | | 4822 122 30103 | CER. 0.022μF +80 -20% | DK18223310 |
| | | | PG03-REC.VOL. CIRCUIT BOARD | | CG31 | | 4822 124 21894 | ELECT 10μF/16V | EJ10601610 |
| | | | PG03-RESISTORS | | CG32 | | 4822 124 21894 | ELECT 10μF/16V | EJ10601610 |
| RG51 | | 4822 101 30724 | VAR. 20K-A | RM02030360 | CJ03 | | 4822 124 21899 | ELECT 4.7μF/25V | EJ47502510 |
| RG52 | | 4822 101 30837 | VAR. 100KB RK09K113C | RK01040660 | CJ04 | | 4822 124 21899 | ELECT 4.7μF/25V | EJ47502510 |
| | | | PG03-RESISTORS (COMMON) | | CJ09 | | 4822 124 21899 | ELECT 4.7μF/25V | EJ47502510 |
| R*** | | | Carbon Film Fixed Resistor, ±5% 1/6W | | CJ10 | | 4822 124 21899 | ELECT 4.7μF/25V | EJ47502510 |
| | | | RG53, RG54 | | CJ15 | | 4822 124 21894 | ELECT 10μF/16V | EJ10601610 |
| | | | PG03-MISCELLANEOUS | | CJ51 | | 4822 122 30103 | CER. 0.022μF +20 -20% | DK18223310 |
| WG01 | | | 5P EH-SUN UL1430 AWG26 | YB00121820 | CK01 | | 4822 124 23054 | ELECT 0.47μF/50V | EJ47405010 |
| | | | PJ03-MAIN CIRCUIT BOARD | | CK02 | | 4822 12423054 | ELECT 0.47μF/50V | EJ47405010 |
| | | | PJ03-CAPACITORS | | CK03 | | 4822 124 23053 | ELECT 1μF/50V | EJ10505010 |
| C601 | | | | | CK04 | | 4822 124 23053 | ELECT 1μF/50V | EJ10505010 |
| I | | 4822 124 23053 | ELECT 1μF/50V | EJ10505010 | CK05 | | 4822 124 21899 | ELECT 4.7μF/25V | EJ47502510 |
| C608 | | | | | CK06 | | 4822 124 21899 | ELECT 4.7μF/25V | EJ47502510 |
| C617 | | | | | CK09 | | 4822 122 31211 | CER. 100pF ±10% | DK16101550 |
| I | | 4822 124 41604 | ELECT 0.1μF/50V | EJ10405010 | CK10 | | 4822 122 31211 | CER. 100pF ±10% | DK16101550 |
| C620 | | | | | CL03 | | 4822 121 43774 | FILM 0.012μF ±10% | DF76123530 |
| | | | | | CL04 | | 4822 124 21894 | ELECT 10μF/16V | EJ10601610 |
| C621 | | 4822 124 21899 | ELECT 4.7μF/25V | EJ47502510 | CL05 | | 4822 124 21894 | ELECT 10μF/16V | EJ10601610 |
| C622 | | 4822 124 21899 | ELECT 4.7μF/25V | EJ47502510 | CM22 | | 4822 122 30103 | CER. 0.022μF +80 -20% | DK18223310 |
| C623 | | | | | CM31 | | | | |
| I | | 4822 124 23053 | ELECT 1μF/50V | EJ10505010 | I | | 4822 122 30103 | CER. 0.022μF +80 -20% | DK18223310 |
| C625 | | | | | CM35 | | | | |
| | | | | | CT04 | | 4822 122 30103 | CER. 0.022μF +80 -20% | DK18223310 |
| | | | | | CU01 | | 4822 124 41604 | ELECT 0.1μF/50V | EJ10405010 |
| | | | | | CU02 | | 4822 124 21894 | ELECT 10μF/16V | EJ10601610 |
| | | | | | CU09 | | 4822 122 30103 | CER. 0.022μF +80 -20% | DK18223310 |

(VERS.:VERSION, U:U.S.A., F:JAPAN, K:FAR EAST, **:EUROPE)

| POS. NO | VERS. COLOR | PART NO. (FOR EUROPE) | DESCRIPTION | PART NO. (USA/JPN) |
|-------------------|-------------|-----------------------|---|--------------------|
| C*** | | | PJ03-CAPACITORS (COMMON) High Dielectric Constant Ceramic Capacitor, ±5% 50V: C632, C909, C910, CJ17, CJ18, CJ52, CM21, CU04-CU08, CU11, CU12 | |
| C*** | | | Electrolytic Capacitor, ±20%: C803-C807, C809, C812, C851, C852, C913, C915, CC05, CC06, CE05, CE43, CG05, CG06, CG12, CJ05, CJ06, CJ13, CJ14 | |
| C*** | | | Plastic Film Capacitor, ±5% 50V: C609-C616, C903-C906, C911-C912, CJ01, CJ02, CJ07, CJ08, CJ11, CJ12, CL01, CL02, CT01-CT03 | |
| | | | PJ03-SEMICONDUCTORS | |
| ▲ D801 | | 4822 130 83067 | DIODE D3SB20 | HE20020290 |
| D806 | | 4822 130 32362 | DIODE 1SS176,MA165,1SS254 | HD20002000 |
| D807 | | 4822 130 32508 | DIODE RL103E/DSF10C | HD20003000 |
| D809 | | 4822 130 32362 | DIODE 1SS176,MA165,1SS254 | HD20002000 |
| D812 | | 4822 130 32362 | DIODE 1SS176,MA165,1SS254 | HD20002000 |
| D813 | | 4822 130 32362 | DIODE 1SS176,MA165,1SS254 | HD20002000 |
| D851 | | 4822 130 32508 | DIODE RL103E/DSF10C | HD20003000 |
| D852 | | 4822 130 83142 | ZENER DIODE 6.2V 04AZ6.2-Z, RD6.2ESB2, MTZJ6.2B | HD30621000 |
| D853 | | 4822 130 80623 | ZENER DIODE 13V 04AZ13-Z, RD13ESB2, MTZJ13B | HD31301000 |
| D854 | | 4822 130 80623 | ZENER DIODE 13V 04AZ13-Z, RD13ESB2, MTZJ13B | HD31301000 |
| D855 | | 4822 130 32508 | DIODE RL103E/DSF10C | HD20003000 |
| DC01 DC04 | | 4822 130 32362 | DIODE 1SS176,MA165,1SS254 | HD20002000 |
| DM01 | | 4822 130 32508 | DIODE RL103E/DSF10C | HD20003000 |
| DM02 | | 4822 130 83142 | ZENER DIODE 6.2V 04AZ6.2-Z, RD6.2ESB2, MTZJ6.2B | HD30621000 |
| DM03 | | 4822 130 33759 | ZENER DIODE NTJ4.7B 4.7V | HD30471000 |
| DM21 | | 4822 130 33948 | ZENER DIODE 5.6V 04AZ5.6-Z, RD5.6ESB2, MTZJ5.6B | HD30561000 |
| DU01 DU09 | | 4822 130 32362 | DIODE 1SS176,MA165,1SS254 | HD20002000 |
| Q601 | | 4822 209 32748 | IC HA12155NT | HC10101010 |
| Q603 | | 4822 130 60588 | DIG.TR DTC114ES/UN4211 | BA20001000 |
| Q604 | | 4822 130 60588 | DIG.TR DTC114ES/UN4211 | BA20001000 |
| ▲ Q801 | | 4822 209 83317 | IC NJM7815FA 15V 1A | HC38915090 |
| ▲ Q802 | | 4822 209 31631 | IC NJM7805FA 5V 1A | HC38905090 |
| Q803 | | 4822 130 60588 | DIG.TR DTC114ES/UN4211 | BA20001000 |
| ▲ Q804 | | 4822 130 42682 | DIG.TR DTA144ES/UN4113 | BA10002000 |
| Q805 | | 4822 130 42682 | DIG.TR DTA144ES/UN4113 | BA10002000 |
| Q806 | | 4822 130 60588 | DIG.TR DTC114ES/UN4211 | BA20001000 |
| Q807 | | 4822 130 42594 | DIG.TR DTC144ES/UN4213 | BA20002000 |
| ▲ Q808 | | 4822 209 31631 | IC NJM7805FA 5V 1A | HC38905090 |
| Q851 | | 4822 130 61176 | TRS. 2SB1357 E OR F 50V 1.8W | HT213572B0 |
| Q901 | | 4822 209 72874 | IC μPC1297CA | HC10200060 |
| Q902 | | 4822 130 60588 | DIG.TR DTC114ES/UN4211 | BA20001000 |
| Q903 | | 4822 130 60588 | DIG.TR DTC114ES/UN4211 | BA20001000 |

| POS. NO | VERS. COLOR | PART NO. (FOR EUROPE) | DESCRIPTION | PART NO. (USA/JPN) |
|-------------------|-------------|-----------------------|--|--------------------|
| QC01 | | 4822 209 83631 | IC NJM4558DD | HC10008090 |
| QC02 | | 4822 130 60588 | DIG.TR DTC114ES/UN4211 | BA20001000 |
| QC03 | | 4822 130 42298 | TRS. 2SC536SP,2SC2458, 2SC3311,2SC1740S | HT30001000 |
| QC04 | | 4822 130 42298 | TRS. 2SC536SP,2SC2458, 2SC3311,2SC1740S | HT30001000 |
| QE01 | | 4822 130 61723 | DIG.TR DTC323TS 2.2K | BA20028210 |
| QE02 | | 4822 130 61723 | DIG.TR DTC323TS 2.2K | BA20028210 |
| QE03 | | 4822 209 83631 | IC NJM4558DD | HC10008090 |
| QE04 | | 4822 130 42298 | TRS. 2SC536SP,2SC2458, 2SC3311,2SC1740S | HT30001000 |
| QE21 | | 4822 130 61723 | DIG.TR DTC323TS 2.2K | BA20028210 |
| QE22 | | 4822 130 61723 | DIG.TR DTC323TS 2.2K | BA20028210 |
| QE23 | | 4822 209 83631 | IC NJM4558DD | HC10008090 |
| QE41 | | 4822 209 83631 | IC NJM4558DD | HC10008090 |
| QE43 | | 4822 130 61723 | DIG.TR DTC323TS 2.2K | BA20028210 |
| QE44 | | 4822 130 61723 | DIG.TR DTC323TS 2.2K | BA20028210 |
| QG01 | | 4822 209 73064 | IC NJM2068DD | HC10053090 |
| QG02 | | 4822 209 73064 | IC NJM2068DD | HC10053090 |
| QG03 | | 4822 209 61973 | IC BU4066B | HC406621B0 |
| QG05 | | 4822 130 42594 | DIG.TR DTC144ES/UN4213 | BA20002000 |
| QG06 | | 4822 130 42594 | DIG.TR DTC144ES/UN4213 | BA20002000 |
| QJ01 | | 4822 209 61667 | IC μPC1330HA | HC10206060 |
| QJ02 | | 4822 209 73064 | IC NJM2068DD | HC10053090 |
| QJ03 | | 4822 130 42594 | DIG.TR DTC144ES/UN4213 | BA20002000 |
| QJ04 | | 4822 130 42594 | DIG.TR DTC144ES/UN4213 | BA20002000 |
| QK01 | | 4822 130 61723 | DIG.TR DTC323TS 2.2K | BA20028210 |
| QK02 | | 4822 130 61723 | DIG.TR DTC323TS 2.2K | BA20028210 |
| QL01 | | 4822 130 61441 | TRS. 2SD1862 TV-2 NPN Q,R | HT418622A0 |
| QL02 | | 4822 130 61886 | TRS. 2SD1292 Q OR R | HT412922A0 |
| QL03 | | 4822 130 60588 | DIG.TR DTC114ES/UN4211 | BA20001000 |
| QL04 | | 4822 130 42298 | TRS. 2SC536SP,2SC2458, 2SC3311,2SC1740S | HT30001000 |
| QM02 | | 4822 130 61892 | TRS. 2SD2144S U OR V | HT421442A0 |
| QM03 | | 4822 209 30193 | IC LB1641 | HC10279030 |
| QM04 | | 4822 130 42594 | DIG.TR DTC144ES/UN4213 | BA20002000 |
| QM05 QM07 | | 4822 130 60588 | DIG.TR DTC114ES/UN4211 | BA20001000 |
| QM12 | | 4822 130 63042 | DIG.TR DTA125TS | BA10032210 |
| QM13 | | 4822 130 63042 | DIG.TR DTA125TS | BA10032210 |
| QM14 QM16 | | 4822 130 42594 | DIG.TR DTC144ES/UN4213 | BA20002000 |
| QM21 | | 4822 209 30193 | IC LB1641 | HC10279030 |
| QM31 | | 4822 130 61892 | TRS. 2SD2144S U OR V | HT421442A0 |
| QU01 | | | μ-PRO MN1873216 | HU474TA020 |
| QU02 | | 4822 130 42298 | TRS. 2SC536SP,2SC2458, 2SC3311,2SC1740S | HT30001000 |
| QU03 | | 4822 130 42682 | DIG.TR DTA144ES/UN4113 | BA10002000 |
| QU04 | | 4822 130 42298 | TRS. 2SC536SP,2SC2458, 2SC3311,2SC1740S | HT30001000 |
| QU05 | | 4822 130 42682 | DIG.TR DTA144ES/UN4113 | BA10002000 |
| QU06 | | 4822 209 30307 | IC 74HC4094 | HC709449B0 |
| QU07 | | 4822 209 30307 | IC 74HC4094 | HC709449B0 |
| QU08 | | 4822 130 61227 | DIG.TR DTA114ES/UN4111 | BA10001000 |
| QU09 | | 4822 130 61227 | DIG.TR DTA114ES/UN4111 | BA10001000 |
| R907 | | 4822 100 11351 | TRIM. 10k Ω RH0638C14R | RA01030780 |
| R908 | | 4822 100 11351 | TRIM. 10k Ω RH0638C14R | RA01030780 |
| RJ15 | | 4822 100 11351 | TRIM. 10k Ω RH0638C14R | RA01030780 |
| RJ16 | | 4822 100 11351 | TRIM. 10k Ω RH0638C14R | RA01030780 |
| RK05 | | 4822 100 11351 | TRIM. 10k Ω RH0638C14R | RA01030780 |

(VERS.:VERSION, U:U.S.A., F:JAPAN, K:FAR EAST, **:EUROPE)

| POS. NO | VERS. COLOR | PART NO. (FOR EUROPE) | DESCRIPTION | PART NO. (USA/JPN) | POS. NO | VERS. COLOR | PART NO. (FOR EUROPE) | DESCRIPTION | PART NO. (USA/JPN) |
|--------------------------------------|-------------|--|--|--|---|-------------|----------------------------------|---|--|
| RK06 RM21 RM33 RM36 | | 4822 100 11351 4822 116 60314 4822 116 60314 4822 100 11351 | TRIM. 10kΩ RH0638C14R FUSIBLE 10Ω 5% 1/4W FUSIBLE 10Ω 5% 1/4W TRIM. 10kΩ RH0638C14R | RA01030780 NH05100140 NH05100140 RA01030780 | R*** | | | PV03-RESISTORS (COMMON) Carbon Film Fixed Resistor, ±5% 1/6W RV01-RV18 | |
| R*** | | | PJ03-RESISTORS (COMMON) Carbon Film Fixed Resistor, ±5% 1/6W R601-R622, R803-R809, R851, R852, R854-R857, R901-R906, R909, R910, RC01-RC04, RC06, RC09-RC14, RE01-RE16, RE19-RE36, RE39-RE53, RG01-RG22, RG25-RG34, RG41, RG42, RJ01-RJ14, RJ17-RJ22, RK01-RK04, RK07-RK13, RK21-RK26, RK31-RK36, RK41-RK46, RL01-RL04, RM31, RM32, RM34, RM35, RM38, RM39, RT01, RT02, RU01-RU18, RU20-RU28, RU31, RU32 | | JV02 | | 4822 267 31126 | PV03-MISCELLANEOUS JACK PHONE JACKS | YJ01003020 |
| | | | PJ03-MISCELLANEOUS 8P CINCH YKC21-3052 JACK HLJ5305-01-3010 (GOLD) JACK HLJ5305-01-3010 (GOLD) TERMINAL 14X14 RA 1L1P BLK JACK 40PIN FFC (ST) | YT02080110 YJ01003520 YJ01003520 YT02010780 YJ06011100 | SV01 | | 4822 273 10281 | ROTARY SW SRBM13NF152-3NS | SR02030200 |
| JG01 JG03 JG04 JT02 JU01 | | 4822 267 31451 4822 267 31897 4822 267 31897 4822 265 10328 4822 265 61275 | | | DY01 DY07 DY08 | | 4822 130 32362 | PY03-DISPLAY CIRCUIT BOARD PY03-SEMICONDUCTORS DIODE 1SS176,MA165,1SS254 | HD20002000 |
| JU02 JU04 JU05 | | 4822 265 41362 4822 267 31132 4822 267 31132 | JACK 15PIN HLEM-15S JACK HLJ0521-01-1010 JACK HLJ0521-01-1010 | YJ06010850 YJ01003050 YJ01003050 | DY08 | | 4822 130 80326 | L.E.D. LT3D8B RED | HI10062320 |
| JU31 JU32 | | 4822 267 41009 4822 265 20542 | TERMINAL 2P RCA PIN JACK TERMINAL YKC21-3249 8P | YT02020890 YT02020970 | RY51 | | | PY03-RESISTORS VAR. 5KB RK11K114 | RK05020530 |
| L601 L602 L901 L902 LK01 | | 4822 157 63828 4822 157 63828 4822 157 63829 4822 157 63829 4822 157 53521 | M.P.X. COIL M.P.X. COIL HX-PRO COIL 105kHz HX-PRO COIL 105kHz CHOKO COIL TL-8 223J | LS10415020 LS10415020 TC10110030 TC10110030 LC22260710 | R*** | | | Carbon Film Fixed Resistor, ±5% 1/6W RY01 | |
| LK02 LL01 LL02 LT01 | | 4822 157 53521 4822 148 81074 4822 157 63825 4822 142 60388 | CHOKO COIL TL-8 223J BIAS OSC COIL 105kHzOF-10 CHOKO COIL EL0607RA101K PULSE TRANSF. | LC22260710 TC10140350 LC11010130 TP41042010 | SY01 SY04 SY05 SY06 SY07 | | 4822 276 13537 | PY03-MISCELLANEOUS PUSH SW SKHVBFB 260GF RED | SP01012030 |
| ▲ S601 S831 | | 4822 277 21789 4822 276 13242 | SLIDE SW SSSUI-6MM KNOB PUSH SW SDDL B TV-3 | SS02020970 SP01011830 | SY01 SY04 SY05 SY06 SY07 | | 4822 277 30867 4822 277 21791 | SLIDE SW SSSU024-P06N1 SLIDE SW SSSU0 2-3 SLIDE SW SSSU L=6MM | SS02040040 SS02030370 SS02021250 |
| XU01 | | 4822 242 81863 | CER.VIB. 8.33MHz EFOEC8384T4 | FQ08384020 | VY01 | | | DISPLAY UNIT FIP7DMW6 | HQ30814060 |
| ▲ C831 | | 4822 122 33276 | PS03-POWER SW CIRCUIT BOARD PS03-CAPACITORS CER. 0.01μF ±20% | DK17103840 | JY01 JY02 | | | PY13-DISPLAY CIRCUIT BOARD SUB PY13-MISCELLANEOUS JACK 40 PIN FFC (L-TYP) JACK 10PIN FFC (L=TYP) | YJ06011500 YJ06011200 |
| ▲ L831 | | 4822 157 70419 | PS03-MICELLANEOUS LINE FILTER LF-4D-102 | FN01020020 | DY71 DY79 DY81 DY83 | | 4822 130 32362 | DIODE 1SS176,MA165,1SS254 | HD20002000 |
| CV01 CV02 | | 4822 124 21894 4822 124 21894 | PV03-HP. AMP CIRCUIT BOARD PV03-CAPACITORS ELECT 10μF/16V ELECT 10μF/16V | EJ10601610 EJ10601610 | JY71 | | | PY23-MECHA KEY CIRCUIT BOARD PY23-SEMICONDUCTORS | |
| C*** | | | PV03-CAPACITORS (COMMON) Electrolytic Capacitor, ±20%: CV03-CV06 | | SY71 SY79 | | 4822 276 20508 | PUSH SW SKHVAE OR SOR-122HS | SP01011280 |
| QV01 | | 4822 209 83274 | PV03-SEMICONDUCTORS IC NJM4560D | HC10007090 | DY51 DY57 | | 4822 130 32362 | DIODE 1SS176,MA165,1SS254 | HD20002000 |
| | | | | | SY51 SY57 | | 4822 276 20508 | PY33-MISCELLANEOUS PUSH SW SKHVAE OR SOR-122HS | SP01011280 |

C

C

C

C

C