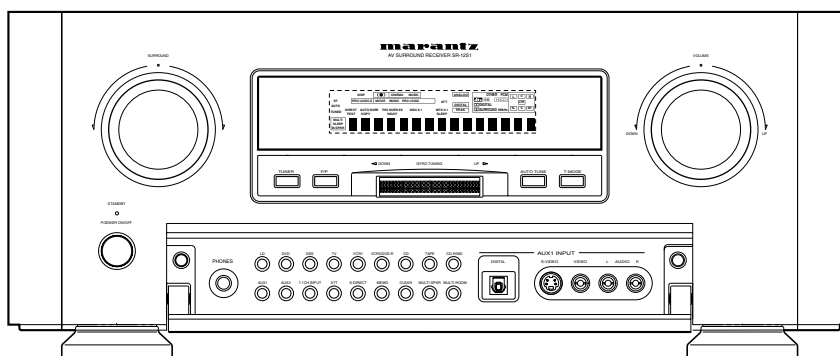


Service Manual

SR-12S1 /N1G/N1S

AV Surround Receiver



THX SURROUND EX



SR-12S1

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

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。

marantz®

SR-12S1

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
1100 MAPLEWOOD DRIVE
ITASCA, IL. 60143
USA
PHONE : 630 - 741 - 0300
FAX : 630 - 741 - 0301

EUROPE / TRADING

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PICKERING, ONTARIO L1W 3K1
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PROFESSIONAL AMERICAS

SUPERSCOPE TECHNOLOGIES, INC.
MARANTZ PROFESSIONAL PRODUCTS
2640 WHITE OAK CIRCLE, SUITE A
AURORA, ILLINOIS 60504 USA
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PROFESSIONAL AUSTRALIA

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41 HUNG TO ROAD, KWUN TONG, KLN.,
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PHONE : 852 - 21913660
FAX : 852 - 21913990

AUSTRALIA

QualiFi Pty Ltd,
24 LIONEL ROAD,
MT. WAVERLEY VIC 3149
AUSTRALIA
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THAILAND

MRZ STANDARD CO., LTD
746 - 754 MAHACHAI ROAD.,
WANGBURAPAPIROM, PHRANAKORN,
BANGKOK, 10200 THAILAND
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FAX : +66 - 2 - 224 6795

SINGAPORE

WO KEE HONG DISTRIBUTION PTE LTD
130 JOO SENG ROAD
#03-02 OLIVINE BUILDING
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NEW ZEALAND

WILDASH AUDIO SYSTEMS NZ
14 MALVERN ROAD MT ALBERT
AUCKLAND NEW ZEALAND
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FAX : +64 - 9 - 8463554

TAIWAN

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TAIPEI, 10429, TAIWAN R.O.C.
PHONE : +886 - 2 - 25221304
FAX : +886 - 2 - 25630415

MALAYSIA

WO KEE HONG ELECTRONICS SDN. BHD.
2ND FLOOR BANGUNAN INFINITE CENTRE
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本社 〒228-8505
神奈川県相模原市相模大野7-35-1

KOREA

MK ENTERPRISES LTD.
ROOM 604/605, ELECTRO-OFFICETEL, 16-58,
3GA, HANGANG-RO, YONGSAN-KU, SEOUL
KOREA
PHONE : +822 - 3232 - 155
FAX : +822 - 3232 - 154

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 AND SERVICE TOOL

TECHNICAL SPECIFICATIONS

FM TUNER SECTION

Frequency Range 87.5 - 108.0 MHz
 Usable Sensitivity IHF 1.8 μ V/16.4 dBf
 Signal to Noise Ratio Mono/Stereo 76/72 dB
 Distortion..... Mono/Stereo 0.2/0.3 %
 Stereo Separation..... 1 kHz 45 dB
 Alternate Channel Selectivity..... \pm 300 kHz 60 dB
 Image Rejection..... 98 MHz 70 dB
 Tuner Output Level 1 kHz, \pm 75 kHz Dev 800 mV

AM TUNER SECTION

Frequency Range 152 - 282 kHz (LW)
 531 - 1602 kHz (MW)
 Signal to Noise Ratio 50 dB
 Usable Sensitivity..... Loop 400 μ V
 Distortion..... 1 kHz, 30 % Mod. 0.5 %
 Selectivity..... \pm 20 kHz 70 dB

AUDIO SECTION

Power Output (20 Hz - 20 kHz/THD=0.08%)
 Front L&R..... 8 ohms 105 W / Ch
 Center 8 ohms 105 W / Ch
 Surround L&R 8 ohms 105 W / Ch
 Surround Back L&R 8 ohms 105 W / Ch

 Front L&R..... 6 ohms 160 W / Ch
 Center 6 ohms 160 W / Ch
 Surround L&R 6 ohms 160 W / Ch
 Surround Back L&R 6 ohms 160 W / Ch

 Input Sensitivity/Impedance..... 168 mV/ 47 Kohms
 Signal to Noise Ratio
 (Analog Input / Source Direct) 105 dB
 Frequency Response
 (Analog Input / Source Direct)... 8 Hz - 100 kHz (\pm 3 dB)
 (Digital Input / 96 kHz PCM) 8 Hz - 45 kHz (\pm 3 dB)

VIDEO

Television Format NTSC/PAL
 Input Level/Impedance..... 1 Vp-p/75 ohms
 Output Level/Impedance 1 Vp-p/75 ohms
 Video Frequency Response 5 Hz to 10 MHz (- 3 dB)
 Component Video
 Frequency Response..... 5 Hz to 50 MHz (- 3 dB)
 S/N..... 60 dB

GENERAL

Power Requirement AC 230 V 50 Hz
 Power Consumption..... 530 W
 Weight 26.5 kg

ACCESSORIES

Remote Control Unit RC3200 1
 AA-size batteries..... 3
 FM Antenna 1
 AM Loop Antenna 1
 RS232C Cable 1

SERVICE TOOL

Updated of the CPU and DSP DISC *SR12S1CDR
 (The disc is regarding when exchanged in QU01.)

The relation between the selected surround mode and the input signal

The surround mode is selected with the surround mode buttons on SR-12S1 or the remote control unit. However, the sound you hear is subject to the relationship between the selected surround mode and input signal. That relationship is as follows;

| Surround Mode | Input Signal | Output Channel | | | | | Signal format indicators | Channel status | Front information display | | |
|-------------------------|-------------------|----------------|---|-------|---------|------|---------------------------|-------------------|---------------------------|--------------------------|--|
| | | L/R | C | SL SR | SBL SBR | SubW | | | Dot matrix display | Segments | |
| AUTO | Dolby D Surr. EX | ○ | ○ | ○ | ○ | ○ | DD DIGITAL | L,C,R,SL,SR,S,LFE | THX SUR EX | AUTO SURR | |
| | DTS-ES | ○ | ○ | ○ | ○ | ○ | dtS , ES | L,C,R,SL,SR,S,LFE | DTS ES | AUTO SURR | |
| | Dolby D (5.1ch) | ○ | ○ | ○ | - | ○ | DD DIGITAL | L,C,R,SL,SR,LFE | DOLBY D | AUTO SURR | |
| | DTS(5.1ch) | ○ | ○ | ○ | - | ○ | dtS | L,C,R,SL,SR,LFE | DTS Cinema | AUTO SURR | |
| | Dolby D(2ch) | ○ | - | - | - | ○ | DD DIGITAL | L,R | DOLBY D | AUTO SURR | |
| | Dolby D(2ch Surr) | ○ | ○ | ○ | - | ○ | DDDIGITAL , DD SURROUND | L,R,S | DOLBY PL2 | AUTO SURR | |
| | PCM(Audio) | ○ | - | - | - | ○ | PCM | L,R | STEREO | AUTO SURR | |
| | PCM 96kHz | ○ | - | - | - | ○ | PCM, 96kHz | L,R | STEREO | AUTO SURR | |
| S-DIRECT | HDCD | ○ | - | - | - | ○ | PCM, HDCD | L,R | STEREO | AUTO SURR | |
| | Analog | ○ | - | - | - | ○ | ANALOG | - | STEREO | AUTO SURR | |
| | Dolby D Surr. EX | ○ | ○ | ○ | ○ | ○ | DD DIGITAL | L,C,R,SL,SR,S,LFE | S-DIRECT | AUTO SURR | |
| | DTS-ES | ○ | ○ | ○ | ○ | ○ | dtS , ES | L,C,R,SL,SR,S,LFE | S-DIRECT | AUTO SURR | |
| | Dolby D (5.1ch) | ○ | ○ | ○ | - | ○ | DD DIGITAL | L,C,R,SL,SR,LFE | S-DIRECT | AUTO SURR | |
| | DTS(5.1ch) | ○ | ○ | ○ | - | ○ | dtS | L,C,R,SL,SR,LFE | S-DIRECT | AUTO SURR | |
| | Dolby D(2ch) | ○ | - | - | - | - | DD DIGITAL | L,R | S-DIRECT | AUTO SURR | |
| | Dolby D(2ch Surr) | ○ | ○ | ○ | - | - | DDDIGITAL , DD SURROUND | L,R,S | S-DIRECT | AUTO SURR | |
| DTS cinema/music | PCM(Audio) | ○ | - | - | - | - | PCM | L,R | S-DIRECT | AUTO SURR | |
| | PCM 96kHz | ○ | - | - | - | - | PCM, 96kHz | L,R | S-DIRECT | AUTO SURR | |
| | HDCD | ○ | - | - | - | - | PCM, HDCD | L,R | S-DIRECT | AUTO SURR | |
| | Analog | ○ | - | - | - | - | ANALOG | - | S-DIRECT | AUTO SURR | |
| | Dolby D Surr. EX | - | - | - | - | - | (DD DIGITAL) | - | (NO DTS INPUT) | | |
| | DTS-ES | ○ | ○ | ○ | - | ○ | dtS , ES | L,C,R,SL,SR,S,LFE | DTS CINEMA or DTS MUSIC | | |
| | Dolby D (5.1ch) | - | - | - | - | - | (DD DIGITAL) | - | (NO DTS INPUT) | | |
| | DTS(5.1ch) | ○ | ○ | ○ | - | ○ | dtS | L,C,R,SL,SR,LFE | DTS CINEMA or DTS MUSIC | | |
| DTS ES | Dolby D(2ch) | - | - | - | - | - | (DDDIGITAL , DD SURROUND) | - | (NO DTS INPUT) | | |
| | Dolby D(2ch Surr) | - | - | - | - | - | (DDDIGITAL , DD SURROUND) | - | (NO DTS INPUT) | | |
| | PCM(Audio) | - | - | - | - | - | (PCM) | - | (NO DTS INPUT) | | |
| | PCM 96kHz | - | - | - | - | - | PCM, (96kHz) | - | (NO DTS INPUT) | | |
| | HDCD | - | - | - | - | - | (PCM) | - | (NO DTS INPUT) | | |
| | Analog | - | - | - | - | - | (ANALOG) | - | (NO DTS INPUT) | | |
| | Dolby D Surr. EX | - | - | - | - | - | (DD DIGITAL) | - | (NO DTS INPUT) | | |
| | DTS-ES | ○ | ○ | ○ | ○ | ○ | dtS , ES | L,C,R,SL,SR,S,LFE | DTS ES | Disc6.1 | |
| Neo6 | Dolby D (5.1ch) | - | - | - | - | - | (DD DIGITAL) | - | (NO DTS INPUT) | | |
| | DTS(5.1ch) | ○ | ○ | ○ | ○ | ○ | dtS | L,C,R,SL,SR,LFE | DTS ES | Mtx 6.1 | |
| | Dolby D(2ch) | - | - | - | - | - | (DDDIGITAL , DD SURROUND) | - | (NO DTS INPUT) | | |
| | Dolby D(2ch Surr) | - | - | - | - | - | (DDDIGITAL , DD SURROUND) | - | (NO DTS INPUT) | | |
| | PCM(Audio) | - | - | - | - | - | (PCM) | - | (NO DTS INPUT) | | |
| | PCM 96kHz | - | - | - | - | - | PCM, (96kHz) | - | (NO DTS INPUT) | | |
| | HDCD | - | - | - | - | - | (PCM) | - | (NO DTS INPUT) | | |
| | Analog | - | - | - | - | - | (ANALOG) | - | (NO DTS INPUT) | | |
| THX | Dolby D Surr. EX | ○ | ○ | ○ | ○ | ○ | DD DIGITAL | L,C,R,SL,SR,S,LFE | (NO DTS INPUT) | | |
| | DTS-ES | ○ | ○ | ○ | ○ | ○ | dtS ES | L,C,R,SL,SR,S,LFE | DTS ES | Disc6.1 | |
| | Dolby D (5.1ch) | ○ | ○ | ○ | - | ○ | DD DIGITAL | L,C,R,SL,SR,S,LFE | (NO DTS INPUT) | | |
| | DTS(5.1ch) | ○ | ○ | ○ | - | ○ | (dtS) | L,C,R,SL,SR,LFE | DTS ES | Mtx 6.1 | |
| | Dolby D(2ch) | ○ | ○ | ○ | ○ | ○ | DD DIGITAL | L,R | NEO 6 | | |
| | Dolby D(2ch Surr) | ○ | ○ | ○ | ○ | ○ | DDDIGITAL , DD SURROUND | L,R,S,LFE | NEO 6 | | |
| | PCM(Audio) | ○ | ○ | ○ | ○ | ○ | PCM | - | NEO 6 | | |
| | PCM 96kHz | ○ | ○ | ○ | ○ | ○ | PCM, (96kHz) | - | NEO 6 | | |
| THX EX | HDCD | ○ | ○ | ○ | ○ | ○ | PCM | - | NEO 6 | | |
| | Analog | ○ | ○ | ○ | ○ | ○ | ANALOG | - | NEO 6 | | |
| | Dolby D Surr. EX | ○ | ○ | ○ | ○ | ○ | DD DIGITAL | L,C,R,SL,SR,S,LFE | THX 5.1 | | |
| | DTS-ES | ○ | ○ | ○ | - | ○ | dtS , ES | L,C,R,SL,SR,S,LFE | THX 5.1 | | |
| | Dolby D (5.1ch) | ○ | ○ | ○ | - | ○ | DD DIGITAL | L,C,R,SL,SR,LFE | THX 5.1 | | |
| | DTS(5.1ch) | ○ | ○ | ○ | - | ○ | dtS | L,C,R,SL,SR,LFE | THX 5.1 | | |
| | Dolby D(2ch) | ○ | ○ | ○ | - | ○ | DD DIGITAL | L,R, LFE | THX CINEMA | PLII, MOVIE | |
| | Dolby D(2ch Surr) | ○ | ○ | ○ | - | ○ | DDDIGITAL , DD SURROUND | L,R,S,LFE | THX CINEMA | PLII, MOVIE | |
| THX ULTRA2 | PCM(Audio) | ○ | ○ | ○ | - | ○ | PCM | L,R | THX CINEMA | PLII, MOVIE | |
| | PCM 96kHz | - | - | - | - | - | PCM, (96kHz) | L,R | THX CINEMA | PLII, MOVIE | |
| | HDCD | ○ | ○ | ○ | - | ○ | PCM | L,R | THX CINEMA | PLII, MOVIE | |
| | Analog | ○ | ○ | ○ | - | ○ | ANALOG | - | THX CINEMA | PLII, MOVIE | |
| | Dolby D Surr. EX | ○ | ○ | ○ | ○ | ○ | DD DIGITAL | L,C,R,SL,SR,S,LFE | THX SUR EX | THX Surr EX | |
| | DTS-ES | ○ | ○ | ○ | ○ | ○ | dtS , ES | L,C,R,SL,SR,S,LFE | THX SUR EX | THX Surr EX | |
| | Dolby D (5.1ch) | ○ | ○ | ○ | ○ | ○ | DD DIGITAL | L,C,R,SL,SR,LFE | THX SUR EX | THX Surr EX | |
| | DTS(5.1ch) | ○ | ○ | ○ | ○ | ○ | dtS | L,C,R,SL,SR,LFE | THX SUR EX | THX Surr EX | |
| THX MUSIC | Dolby D(2ch Surr) | ○ | ○ | ○ | - | ○ | DD DIGITAL | L,R,LFE | THX CINEMA | THX Surr EX, PLII, MOVIE | |
| | PCM(Audio) | ○ | ○ | ○ | - | ○ | PCM | L,R,S,LFE | THX CINEMA | THX Surr EX, PLII, MOVIE | |
| | PCM 96kHz | - | - | - | - | - | PCM, (96kHz) | L,R | THX CINEMA | THX Surr EX, PLII, MOVIE | |
| | HDCD | ○ | ○ | ○ | - | ○ | PCM | L,R | THX CINEMA | THX Surr EX, PLII, MOVIE | |
| THX ULTRA2 | Analog | ○ | ○ | ○ | - | ○ | ANALOG | - | THX CINEMA | THX Surr EX, PLII, MOVIE | |
| | Dolby D Surr. EX | ○ | ○ | ○ | ○ | ○ | DD DIGITAL | L,C,R,SL,SR,S,LFE | THX SUR EX | THX Surr EX | |
| | DTS-ES | ○ | ○ | ○ | ○ | ○ | dtS , ES | L,C,R,SL,SR,S,LFE | TTHX SUR EX | THX Surr EX | |
| | Dolby D (5.1ch) | ○ | ○ | ○ | ○ | ○ | DD DIGITAL | L,C,R,SL,SR,LFE | THX ULTRA2 | | |
| THX MUSIC | DTS(5.1ch) | ○ | ○ | ○ | ○ | ○ | dtS | L,C,R,SL,SR,LFE | THX ULTRA2 | | |
| | Dolby D Surr. EX | ○ | ○ | ○ | ○ | ○ | DD DIGITAL | L,C,R,SL,SR,S,LFE | THX 5.1 MUSIC | | |
| | DTS-ES | ○ | ○ | ○ | ○ | ○ | dtS , ES | L,C,R,SL,SR,S,LFE | THX 5.1 MUSIC | | |
| | Dolby D (5.1ch) | ○ | ○ | ○ | ○ | ○ | DD DIGITAL | L,C,R,SL,SR,LFE | THX 5.1 MUSIC | | |
| THX MUSIC | DTS(5.1ch) | ○ | ○ | ○ | ○ | ○ | dtS | L,C,R,SL,SR,LFE | THX 5.1 MUSIC | | |

| Surround Mode | Input Signal | Output Channel | | | | | Signal format indicators | Front information display | | |
|-----------------------------------------------------------|-------------------|----------------|---|----------|------------|------|--------------------------|---------------------------|---------------------|----------------------------|
| | | L/R | C | SL SR | SBL SBR | SubW | | Channel status | Dot matrix display | Segments |
| DOLBY (PL2-movie) (PL2-music) (PL2-PL) | Dolby D Surr. EX | ○ | ○ | ○ | ○ | ○ | □ DIGITAL | L,C,R,SL,SR,S,LFE | DOLBY D | |
| | DTS-ES | - | - | - | - | - | (dts , ES) | L,C,R,SL,SR,S,LFE | DOLBY D | |
| | Dolby D (5.1ch) | ○ | ○ | ○ | - | ○ | □ DIGITAL | L,C,R,SL,SR,LFE | DOLBY D | |
| | DTS(5.1ch) | - | - | - | - | - | (dts) | L,C,R,SL,SR,LFE | DOLBY D | |
| | Dolby D(2ch) | ○ | ○ | ○ | - | ○ | □ DIGITAL | L,R, LFE | DOLBY PL2 | PLII, MOVIE or MUSIC or PL |
| | Dolby D(2ch Surr) | ○ | ○ | ○ | - | ○ | □ DIGITAL , □ SURROUND | L,R,S,LFE | DOLBY PL2 | PLII, MOVIE or MUSIC or PL |
| | PCM(Audio) | ○ | ○ | ○ | - | ○ | PCM | L,R | DOLBY PL2 | PLII, MOVIE or MUSIC or PL |
| | PCM 96kHz | - | - | - | - | - | PCM, (96kHz) | L,R | DOLBY D | PLII, MOVIE or MUSIC or PL |
| | HDCD | ○ | ○ | ○ | - | ○ | PCM | L,R | DOLBY PL2 | PLII, MOVIE or MUSIC or PL |
| | Analog | ○ | ○ | ○ | - | ○ | ANALOG | - | DOLBY PL2 | PLII, MOVIE or MUSIC or PL |
| CSII music CSII cinema CSII mono | Dolby D Surr. EX | ○ | ○ | ○ | - | ○ | (□ DIGITAL) | L,C,R,SL,SR,S,LFE | DOLBY D | |
| | DTS-ES | ○ | ○ | ○ | - | ○ | dts , ES | L,C,R,SL,SR,S,LFE | DTS-ES | |
| | Dolby D (5.1ch) | ○ | ○ | ○ | - | ○ | □ DIGITAL | L,C,R,SL,SR,LFE | DOLBY D | |
| | DTS(5.1ch) | ○ | ○ | ○ | - | ○ | dts | L,C,R,SL,SR,LFE | DTS cinema | |
| | Dolby D(2ch) | ○ | ○ | ○ | ○ | ○ | □ DIGITAL | L,R, LFE | CSII | ● MUSIC or CINEMA |
| | Dolby D(2ch Surr) | ○ | ○ | ○ | ○ | ○ | □ DIGITAL , □ SURROUND | L,R,S,LFE | CSII | ● MUSIC or CINEMA |
| | PCM(Audio) | ○ | ○ | ○ | - | ○ | PCM | L,R | CSII | ● MUSIC or CINEMA |
| | PCM 96kHz | - | - | - | - | - | PCM, (96kHz) | L,R | CSII | ● MUSIC or CINEMA |
| | HDCD | ○ | ○ | ○ | - | ○ | PCM | L,R | CSII | ● MUSIC or CINEMA |
| | Analog | ○ | ○ | ○ | - | ○ | ANALOG | - | CSII | ● MUSIC or CINEMA |
| STEREO | Dolby D Surr. EX | ○ | - | - | - | ○ | □ DIGITAL | L,C,R,SL,SR,S,LFE | STEREO | |
| | DTS-ES | ○ | - | - | - | ○ | dts , ES | L,C,R,SL,SR,S,LFE | STEREO | |
| | Dolby D (5.1ch) | ○ | - | - | - | ○ | □ DIGITAL | L,C,R,SL,SR,LFE | STEREO | |
| | DTS(5.1ch) | ○ | - | - | - | ○ | dts | L,C,R,SL,SR,LFE | STEREO | |
| | Dolby D(2ch) | ○ | - | - | - | ○ | □ DIGITAL | L,R, LFE | STEREO | |
| | Dolby D(2ch Surr) | ○ | - | - | - | ○ | □ DIGITAL , □ SURROUND | L,R,S,LFE | STEREO | |
| | PCM(Audio) | ○ | - | - | - | ○ | PCM | L,R | STEREO | |
| | PCM 96kHz | ○ | - | - | - | ○ | PCM, 96kHz | L,R | STEREO | |
| | HDCD | ○ | - | - | - | ○ | PCM, HDCD | L,R | STEREO | |
| | Analog | ○ | - | - | - | ○ | ANALOG | - | STEREO | |
| Virtual | Dolby D Surr. EX | ○ | - | - | - | ○ | □ DIGITAL | L,C,R,SL,SR,S,LFE | VIRTUAL | |
| | DTS-ES | ○ | - | - | - | ○ | dts , ES | L,C,R,SL,SR,S,LFE | VIRTUAL | |
| | Dolby D (5.1ch) | ○ | - | - | - | ○ | □ DIGITAL | L,C,R,SL,SR,LFE | VIRTUAL | |
| | DTS(5.1ch) | ○ | - | - | - | ○ | dts | L,C,R,SL,SR,LFE | VIRTUAL | |
| | Dolby D(2ch) | ○ | - | - | - | ○ | □ DIGITAL | L,R, LFE | VIRTUAL | |
| | Dolby D(2ch Surr) | ○ | - | - | - | ○ | □ DIGITAL , □ SURROUND | L,R,S,LFE | VIRTUAL | |
| | PCM(Audio) | ○ | - | - | - | ○ | PCM | L,R | VIRTUAL | |
| | PCM 96kHz | - | - | - | - | - | PCM, (96kHz) | L,R | VIRTUAL | |
| | HDCD | ○ | - | - | - | ○ | PCM | L,R | VIRTUAL | |
| | Analog | ○ | - | - | - | ○ | ANALOG | - | VIRTUAL | |
| Multi Ch. Stereo | Dolby D Surr. EX | ○ | ○ | ○ | ○ | ○ | □ DIGITAL | L,C,R,SL,SR,S,LFE | M-CH ST | |
| | DTS-ES | ○ | ○ | ○ | ○ | ○ | dts , ES | L,C,R,SL,SR,S,LFE | M-CH ST | |
| | Dolby D (5.1ch) | ○ | ○ | ○ | ○ | ○ | □ DIGITAL | L,C,R,SL,SR,LFE | M-CH ST | |
| | DTS(5.1ch) | ○ | ○ | ○ | ○ | ○ | dts | L,C,R,SL,SR,LFE | M-CH ST | |
| | Dolby D(2ch) | ○ | ○ | ○ | ○ | ○ | □ DIGITAL | L,R, LFE | M-CH ST | |
| | Dolby D(2ch Surr) | ○ | ○ | ○ | ○ | ○ | □ DIGITAL , □ SURROUND | L,R,S,LFE | M-CH ST | |
| | PCM(Audio) | ○ | ○ | ○ | - | ○ | PCM | L,R | M-CH ST | |
| | PCM 96kHz | - | - | - | - | - | PCM, (96kHz) | L,R | M-CH ST | |
| | HDCD | ○ | ○ | ○ | - | ○ | PCM | L,R | M-CH ST | |
| | Analog | ○ | ○ | ○ | - | ○ | ANALOG | - | M-CH ST | |
| MOVIE HALL MATRIX | Dolby D Surr. EX | ○ | ○ | ○ | - | ○ | □ DIGITAL | L,C,R,SL,SR,S,LFE | MOVIE, HALL, MATRIX | |
| | DTS-ES | ○ | ○ | ○ | - | ○ | dts , ES | L,C,R,SL,SR,S,LFE | MOVIE, HALL, MATRIX | |
| | Dolby D (5.1ch) | ○ | ○ | ○ | - | ○ | □ DIGITAL | L,C,R,SL,SR,LFE | MOVIE, HALL, MATRIX | |
| | DTS(5.1ch) | ○ | ○ | ○ | - | ○ | dts | L,C,R,SL,SR,LFE | MOVIE, HALL, MATRIX | |
| | Dolby D(2ch) | ○ | ○ | ○ | - | ○ | □ DIGITAL | L,R, LFE | MOVIE, HALL, MATRIX | |
| | Dolby D(2ch Surr) | ○ | ○ | ○ | - | ○ | □ DIGITAL , □ SURROUND | L,R,S,LFE | MOVIE, HALL, MATRIX | |
| | PCM(Audio) | ○ | ○ | ○ | - | ○ | PCM | L,R | MOVIE, HALL, MATRIX | |
| | PCM 96kHz | - | - | - | - | - | PCM, (96kHz) | L,R | MOVIE, HALL, MATRIX | |
| | HDCD | ○ | ○ | ○ | - | ○ | PCM | L,R | MOVIE, HALL, MATRIX | |
| | Analog | ○ | ○ | ○ | - | ○ | ANALOG | - | MOVIE, HALL, MATRIX | |

Note: DOLBY-D(2ch Surr)signals have Dolby Surround flag.
SPKRS setup is full THX system (8ch Speakers).

L/R : Front speaker
SL/SR : Surround speaker
SBL/SBR : Surround back speaker
C : Center speaker
SubW : Sub woofer speaker

PL: The PRO LOGIC indicator lights
PLII: The PRO LOGIC II indicator lights
() : The indicator blinks

2. TECHNICAL DESCRIPTION



THX® is an exclusive set of standards and technologies established by the world-renowned film production company, Lucasfilm Ltd. THX resulted from George Lucas' desire to reproduce the movie soundtrack as faithfully as possible both in the movie theater and in the home theater.

THX engineers developed patented technologies to accurately translate the sound from a movie theater environment into the home, correcting the tonal and spatial errors that occur.

When the THX mode of the SR-12S1 is on, three distinct THX technologies are automatically added:

Re-Equalization-restores the correct tonal balance for watching a movie in a home environment.

These sounds are otherwise mixed to be brighter for a large movie theater. Re-EQ compensates for this and prevents the soundtracks from being overly bright and harsh when played in a home theater.

Timbre Matching-filters the information going to the surround speakers so they more closely match the tonal characteristics of the sound coming from the front speakers.

This ensures seamless panning between the front and surround speakers. Adaptive Decorrelation-slightly changes one surround channel's time and phase relationship with respect to the other surround channel.

This expands the listening position and creates with only two surround speakers the same spacious surround experience as in a movie theater with multiple surround speakers.

The Marantz SR-12S1 was required to pass a rigorous series of quality and performance tests, in addition to incorporating the technologies explained above, in order to be THX Ultra certified by Lucasfilm Ltd.

THX Ultra requirements cover every aspect of performance including pre-amplifier and power amplifier performance and operation, and hundreds of other parameters in both the digital and analog domain.

Movies which have been encoded in Dolby Digital, DTS, Dolby Pro Logic, stereo and Mono will all benefit from the THX mode when being viewed. The THX mode should only be activated when watching movies which were originally produced for a movie theater environment.

THX need not be activated for music, movies made especially for TV, or shows such as sports programming, talk shows, etc.

This is because they were originally mixed for a small room environment.

"Lucasfilm®" and "THX®" are registered trademarks of Lucasfilm Ltd.

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The **THX Ultra2** specification provides uncompromised 7.1 channel playback of any multi-channel program, whether movie soundtracks or music over the widest possible seating area.

There are an additional two processing's for THX Ultra2 as below.

A.S.A. (Advanced Speaker Array)

"ASA is a proprietary THX technology which processes the sound fed to 2 surround and 2 surround back speakers to provide the optimal surround sound experience. When you set up your home theater system using all eight speaker outputs (Left, Center, Right, Surround Right, Surround Back Right, Surround Back Left, Surround Left and Subwoofer), placing the two Surround Back speakers close together facing the front of the room as shown in the diagram will provide the largest sweet spot. If for practical reasons you have to place the Surround Back speakers apart, you will need to go to the **THX Audio Set-up** screen and choose the setting that most closely corresponds to the speaker distance, which will re-optimize the surround sound-field. ASA is used in two new surround modes; THX Ultra2 Cinema and THX Music Mode.

B.G.C. (Boundary Gain Compensation)

"If your chosen listening room layout (for practical or aesthetic reasons) results in most of the listeners being close to the rear wall, the resulting bass level can be sufficiently reinforced by the boundary that the overall sound quality becomes 'boomy'. THX Ultra2 receivers contain the BGC (Boundary Gain Compensation) feature to provide an improved bass balance. BGC can be selected by choosing 'THX Ultra2 Subwoofer-Yes' from the 'Boundary Gain Compensation' section of the 'THX Audio setup menu'.

THX SURROUND EX

THX Surround EX - Dolby Digital Surround EX is a joint development of Dolby Laboratories and the THX division of Lucasfilm Ltd.

In a movie theater, film soundtracks that have been encoded with Dolby Digital Surround EX technology are able to reproduce an extra channel which has been added during the mixing of the program.

This channel, called Surround Back, places sounds behind the listener in addition to the currently available front left, front center, front right, surround right, surround left and subwoofer channels.

This additional channel provides the opportunity for more detailed imaging behind the listener and brings more depth, spacious ambience and sound localization than ever before.

Movies that were created using the Dolby Digital Surround EX technology when released into the home consumer market may exhibit a Dolby Digital Surround EX logo on the packaging.

A list of movies created using this technology can be found on the Dolby web site at

<http://www.dolby.com>.

"SURROUND EX™" is a trademark of Dolby Laboratories. Used under authorization.



DTS was introduced in 1994 to provide 5.1 channels of discrete digital audio into home theater systems.

DTS brings you premium quality discrete multi-channel digital sound to both movies and music.

DTS is a multi-channel sound system designed to create full range digital sound reproduction.

The no compromise DTS digital process sets the standard of quality for cinema sound by delivering an exact copy

of the studio master recordings to neighborhood and home theaters. Now, every moviegoer can hear the sound exactly as the moviemaker intended.

DTS can be enjoyed in the home for either movies or music on of DVD's, LD's, and CD's.

"DTS" and "DTS Digital Surround" are registered trademarks of Digital Theater Systems, Inc.



The advantages of discrete multichannel systems over matrix are well known.

But even in homes equipped for discrete multichannel, there remains a need for high-quality matrix decoding. This is because of the large library of matrix surround motion pictures available on disc and on VHS tape; and analog television broadcasts.

The typical matrix decoder of today derives a center channel and a mono surround channel from two-channel matrix stereo material. It is better than a simple matrix in that it includes steering logic to improve separation, but because of its mono, band-limited surround it can be disappointing to users accustomed to discrete multichannel.

Neo 6 offers several important improvements as follow,

- Neo 6 provides up to six full-band channels of matrix decoding from stereo matrix material. Users with 6.1 and 5.1 systems will derive six and five separate channels, respectively, corresponding to the standard home-theater speaker layouts.

- Neo 6 technology allows various sound elements within a channel or channels to be steered separately, and in a way which follows naturally from the original presentation.
- Neo 6 offers a music mode to expand stereo nonmatrix recordings into the five- or six-channel layout, in a way which does not diminish the subtlety and integrity of the original stereo recording.



DTS-ES Extended Surround is a new multi-channel digital signal format developed by Digital Theater Systems Inc. While offering high compatibility with the conventional DTS Digital Surround format, DTS-ES Extended Surround greatly improves the 360-degree surround impression and space expression thanks to further expanded surround signals. This format has been used professionally in movie theaters since 1999.

In addition to the 5.1 surround channels (FL, FR, C, SL, SR and LFE), DTS-ES Extended Surround also offers the SB (Surround Back) channel for surround playback with a total of 6.1 channels. DTS-ES Extended Surround includes two signal formats with different surround signal recording methods, as DTS-ES Discrete 6.1 and DTS-ES Matrix 6.1.

"DTS", "DTS-ES Extended Surround" and "Neo:6" are trademarks of Digital Theater Systems, Inc.



The stereo CD is a 16-bit medium with sampling at 44.1 kHz. Professional audio has been 20- or 24-bit for some time, and there is increasing interest in higher sampling rates both for recording and for delivery into the home. Greater bit depths provide extended dynamic range. Higher sampling rates allow wider frequency response and the use of anti-alias and reconstruction filters with more favorable aural characteristics.

DTS 96/24 allows for 5.1 channel sound tracks to be encoded at a rate of 96kHz/24bits on DVD-Video titles.

When DVD-video appeared, it became possible to deliver 24-bit, 96 kHz audio into the home, but only in two channels, and with serious limitations on picture. This capability has had little use.

DVD-audio allows 96/24 in six channels, but a new player is needed, and only analog outputs are provided, necessitating the use of the D/A converters and analog electronics provided in the player.

DTS 96/24 offers the following:

1. Sound quality transparent to the original 96/24 master.
2. Full backward compatibility with all existing decoders. (Existing decoders will output a 48 kHz signal)
3. No new player required: DTS 96/24 can be carried on DVD-video, or in the video zone of DVD-audio, accessible to all DVD players.
4. 96/24 5.1-channel sound with full-quality full-motion video, for music programs and motion picture soundtracks on DVD-video.



Dolby Digital identifies the use of Dolby Digital (AC-3) audio coding for such consumer formats as DVD and DTV. As with film sound, Dolby Digital can provide up to five full-range channels for left, center, and right screen channels, independent left and right surround channels, and a sixth (".1") channel for low-frequency effects.

Dolby Surround Pro Logic II is an improved matrix decoding technology that provides better spatiality and directionality on Dolby Surround program material; provides a convincing three-dimensional soundfield on conventional stereo music recordings; and is ideally suited to bring the surround experience to automotive sound. While conventional surround programming is fully compatible with Dolby Surround Pro Logic II decoders, soundtracks will be able to be encoded specifically to take full advantage of Pro Logic II playback, including separate left and right surround channels. (Such material is also compatible with conventional Pro Logic decoders.)


Dolby Digital EX creates six full-bandwidth output channels from 5.1-channel sources. This is done using a matrix decoder that derives three surround channels from the two in the original recording. For best results, Dolby Digital EX should be used with movies soundtracks recorded with Dolby Digital Surround EX.

Manufactured under license from Dolby Laboratories. "Dolby", "Pro Logic", and the double-D symbol are trademarks of Dolby Laboratories.



Circle Surround II (CS-II) is a powerful and versatile multi-channel technology. CS-II is designed to enable up to 6.1 multi-channel surround sound playback from mono, stereo, CS encoded sources and other matrix encoded sources. In all cases the decoder extends it into 6 channels of surround audio and a LFE/subwoofer signal. The CS-II decoder creates a listening environment that places the listener "inside" music performances and dramatically improves both hi-fi audio conventional surround-encoded video material. CS-II provides composite stereo rear channels to greatly improve separation and image positioning – adding a heightened sense of realism to both audio and A/V productions.

CS-II is packed with other useful feature like dialog clarity (SRS Dialog) for movies and cinema-like bass enrichment (TruBass). CS-II can enable the dialog to become clearer and more discernable in movies and it enables the bass frequencies contained in the original programming to more closely achieve low frequencies – overcoming the low frequency limitations of the speakers by full octave.

SRS Circle Surround II, SRS Dialog, SRS TruBass, SRS and  symbol are trademarks of SRS Labs, Inc.


SRS Circle Surround II, SRS Dialog and SRS TruBass technology are incorporated under license from SRS Labs, Inc.



HDCD[®] (High Definition Compatible Digital[®]) is a patented process for delivering on Compact Disc the full richness and details of the original microphone feed.

HDCD encoded CDs sound better because they are encoded with 20-bits of real musical information as compared to 16-bits for all other CDs. HDCD overcomes the limitation of the 16-bit CD format by using a sophisticated system to encode the additional four bits onto the CD while remaining completely compatible with the CD format.

When listening to HDCD recordings, you hear more dynamic range, a focused 3-D sound stage, and extremely natural vocal and musical timbre. With HDCD, you get the body, depth and emotion of the original performance not a flat, digital imitation.

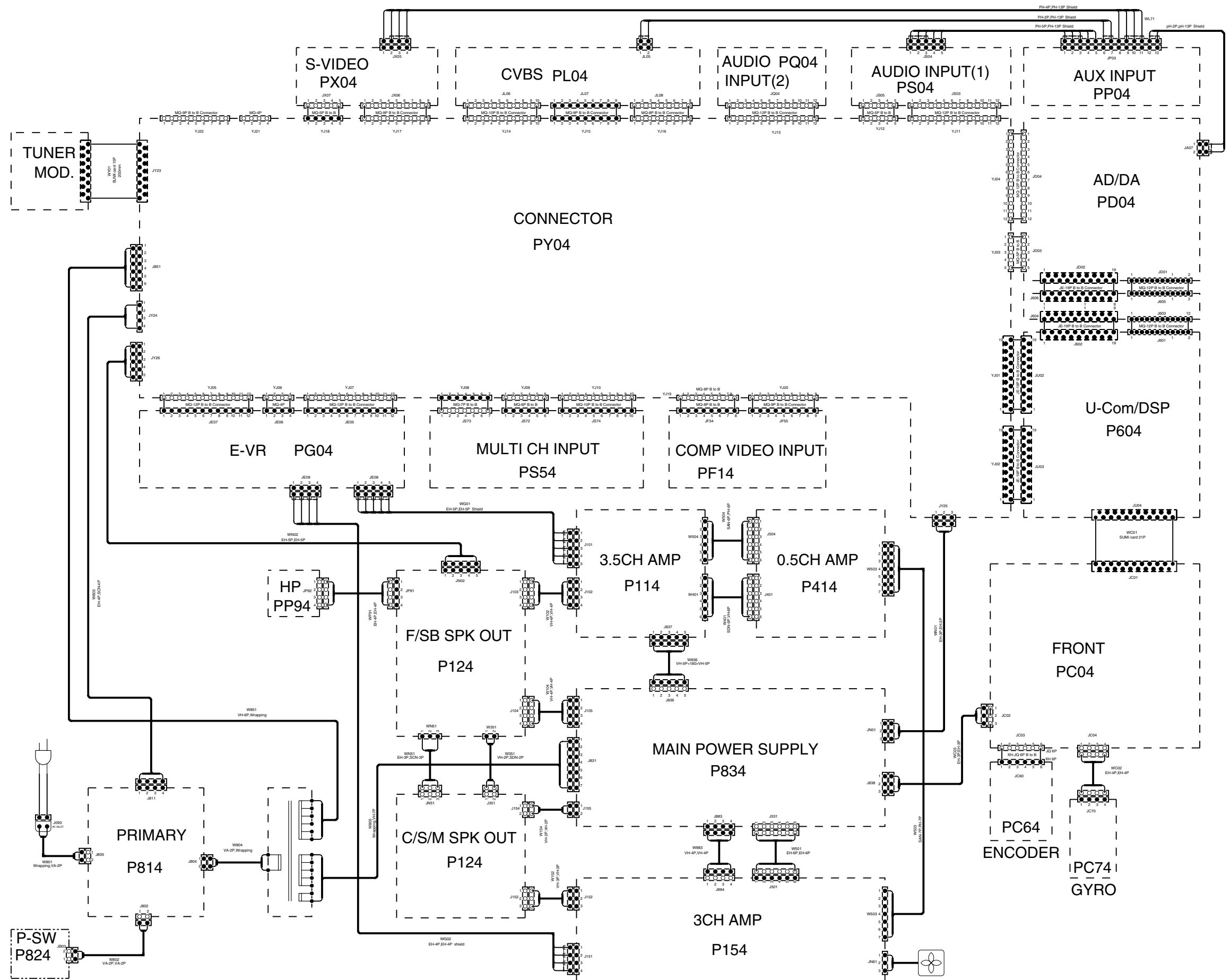
[®], HDCD[®], High Definition Compatible Digital[®] and Pacific Microsonics[™] are either registered trademarks or trademarks of Pacific Microsonics, Inc. in the United States and/or other countries. HDCD system manufactured under license from Pacific Microsonics, Inc. This product is covered by one or more of the following: In the USA: 5,479,168, 5,638,074, 5,640,161, 5,808,574, 5,838,274, 5,854,600, 5,864,311, 5,872,531, and in Australia: 669114. Other patents pending.

Remark : Bass signal output from Sub Woofer terminal.

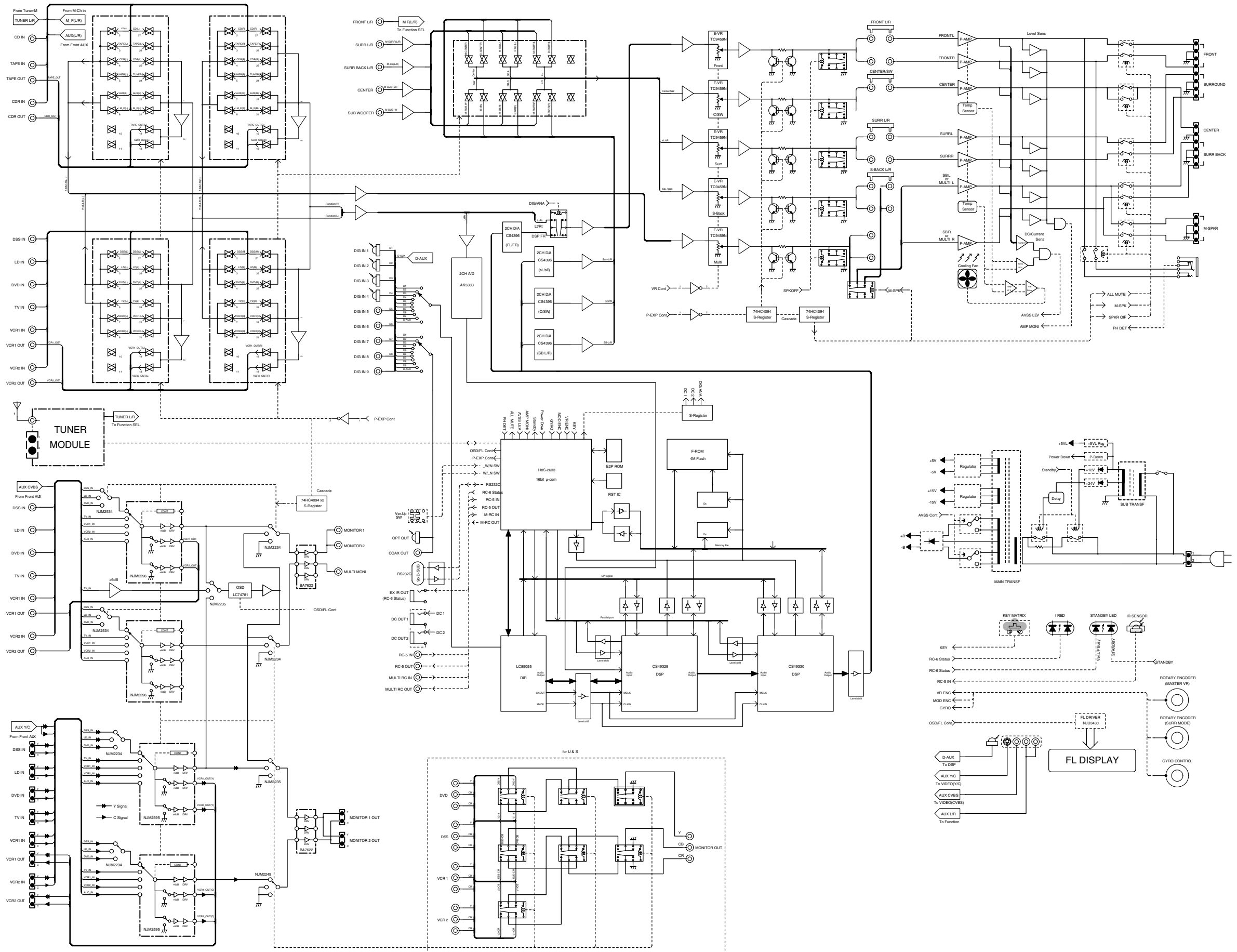
Sub woofer output is not active while all surround modes. Please refer to the following table.

| SPK setup | | | | | ZR38601 | SubWoofer Output by Surround mode | | | | | | |
|------------|-------|--------|-----------------|-----------------|------------|-----------------------------------|----------------------|-----------------|--------|-----------------------------|---------------------|-----|
| Sub Woofer | Front | Center | Surr. L/R | Surr.B (L/R) | Bass CFG # | THX Surr EX, DTS ES | THX5.1, Dolby-D, DTS | PL2, CS, Neo6 | Stereo | AUTO (PCM, Ana) (AC-3, DTS) | (AC-3:2ch, karaoke) | |
| ON | Large | Large | Large | Large | 1 | LFE | LFE | none | L+R | LFE | L+R | |
| | | | Small | Small | 14 | LFE+Sb | LFE | | | | | |
| | | | Small | Large | 3 | LFE+SL+SR | LFE+SL+SR | none | L+R | LFE+SL+SR | L+R | |
| | | | Small | Small | 16 | LFE+SL+SR+Sb | LFE+SL+SR | | | | | |
| | | | None (prohibit) | Small | 1 | LFE | LFE | none | L+R | LFE | L+R | |
| | | | None (prohibit) | Large | 5 | LFE+C | LFE+C | C | L+R | LFE+C | L+R | |
| | | Small | Small | Small | 18 | LFE+C+Sb | LFE+C | | | | | |
| | | | Small | Large | 8 | LFE+C+SL+SR | LFE+C+SL+SR | C | L+R | LFE+C+SL+SR | L+R | |
| | | | Small | Small | 21 | LFE+C+SL+SR+Sb | LFE+C+SL+SR | | | | | |
| | | | None (prohibit) | Small | 5 | LFE+C | LFE+C | C | L+R | LFE+C | L+R | |
| | | | None (prohibit) | Large | 1 | LFE | LFE | none | L+R | LFE | L+R | |
| | | | None (prohibit) | Small | 14 | LFE+Sb | LFE | | | | | |
| | | None | Small | Large | 3 | LFE+SL+SR | LFE+SL+SR | none | L+R | LFE+SL+SR | L+R | |
| | | | Small | Small | 16 | LFE+SL+SR+Sb | LFE+SL+SR | | | | | |
| | | | None (prohibit) | Small | 1 | LFE | LFE | none | L+R | LFE | L+R | |
| | | | Small | Large | 12 | LFE+L+R | LFE+L+R | L+R | L+R | LFE+L+R | L+R | |
| | | | Small | Small | 25 | LFE+L+R+Sb | LFE+L+R | | | | | |
| | | | Small | Large | 11 | LFE+L+R+SL+SR | LFE+L+R+SL+SR | L+R | L+R | LFE+L+R+SL+SR | L+R | |
| | Small | Large | Large | Small | Small | 24 | LFE+L+R+SL+SR+Sb | LFE+L+R+SL+SR | | | | |
| | | | | None (prohibit) | Small | 12 | LFE+L+R | LFE+L+R | L+R | L+R | LFE+L+R | L+R |
| | | | | None (prohibit) | Large | 10 | LFE+L+R+C | LFE+L+R+C | L+R+C | L+R | LFE+L+R+C | L+R |
| | | | Small | Small | Small | 23 | LFE+L+R+C+Sb | LFE+L+R+C | | | | |
| | | | | Small | Large | 0 | LFE+L+R+C+SL+SR | LFE+L+R+C+SL+SR | L+R+C | L+R | LFE+L+R+C+SL+SR | L+R |
| | | | | Small | Small | 13 | LFE+L+R+C+SL+SR+Sb | LFE+L+R+C+SL+SR | L+R+C | L+R | LFE+L+R+C+SL+SR | L+R |
| | | None | None (prohibit) | Small | 10 | LFE+L+R+C | LFE+L+R+C | L+R+C | L+R | LFE+L+R+C | L+R | |
| | | | None (prohibit) | Large | 12 | LFE+L+R | LFE+L+R | L+R | L+R | LFE+L+R | L+R | |
| | | | None (prohibit) | Small | 25 | LFE+L+R+Sb | LFE+L+R | | | | | |
| | | | None (prohibit) | Large | 11 | LFE+SL+SR | LFE+SL+SR | L+R | L+R | LFE+SL+SR | L+R | |
| | | | None (prohibit) | Small | 24 | LFE+SL+SR+Sb | LFE+SL+SR | | | | | |
| | | | None (prohibit) | None (prohibit) | 12 | LFE+L+R | LFE+L+R | L+R | L+R | LFE+L+R | L+R | |
| | | OFF | | | | | No output to subW | | | | | |

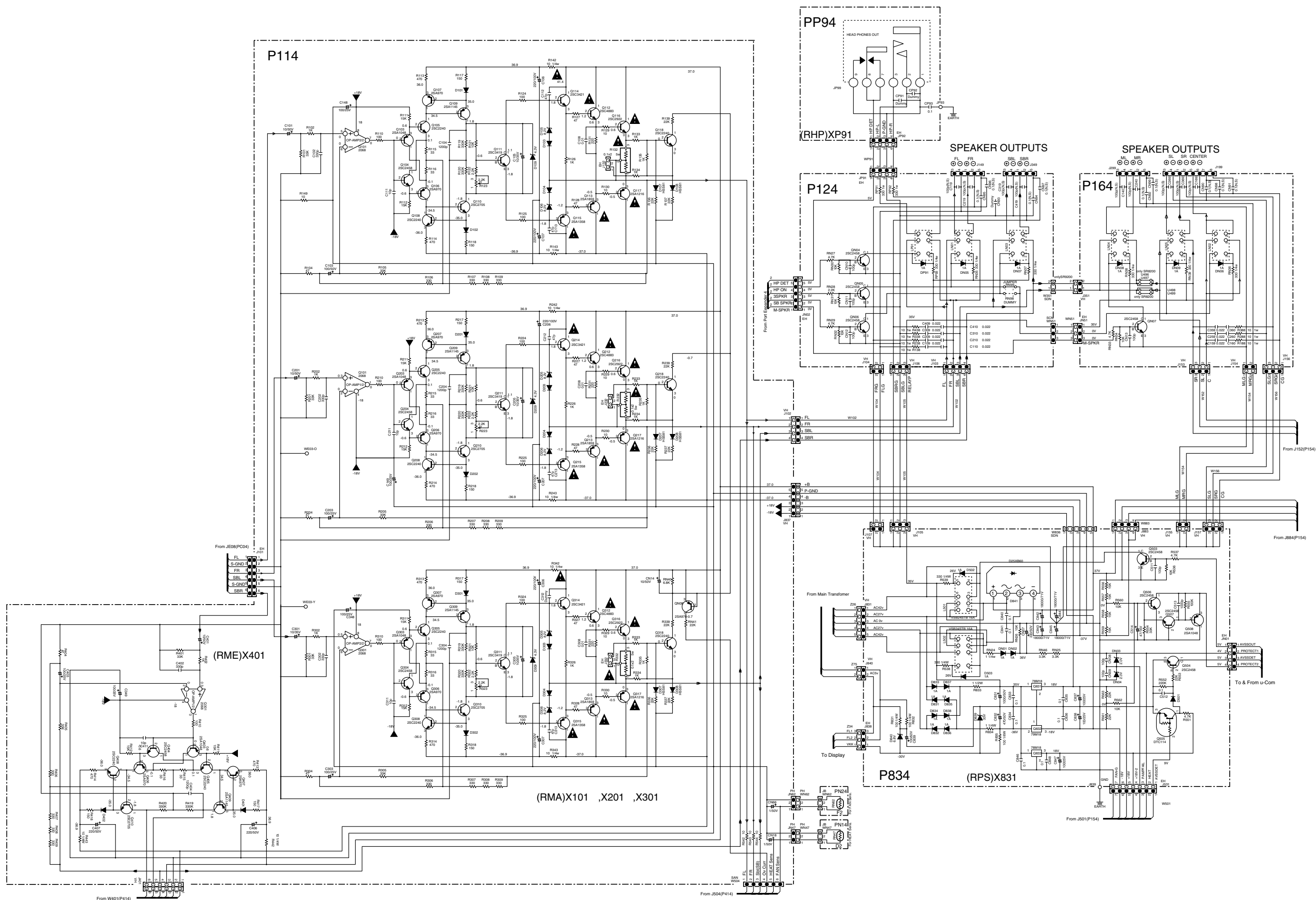
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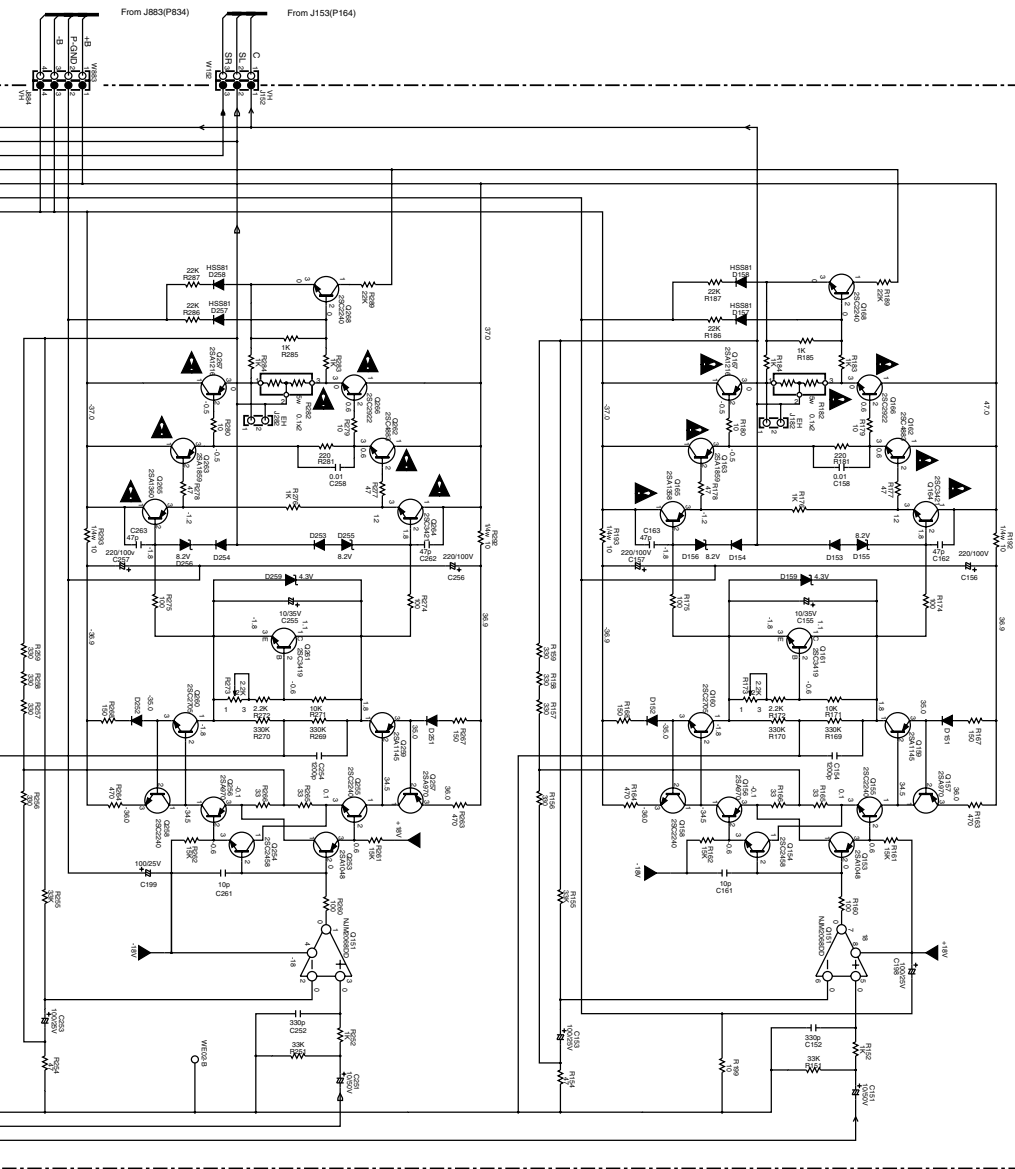
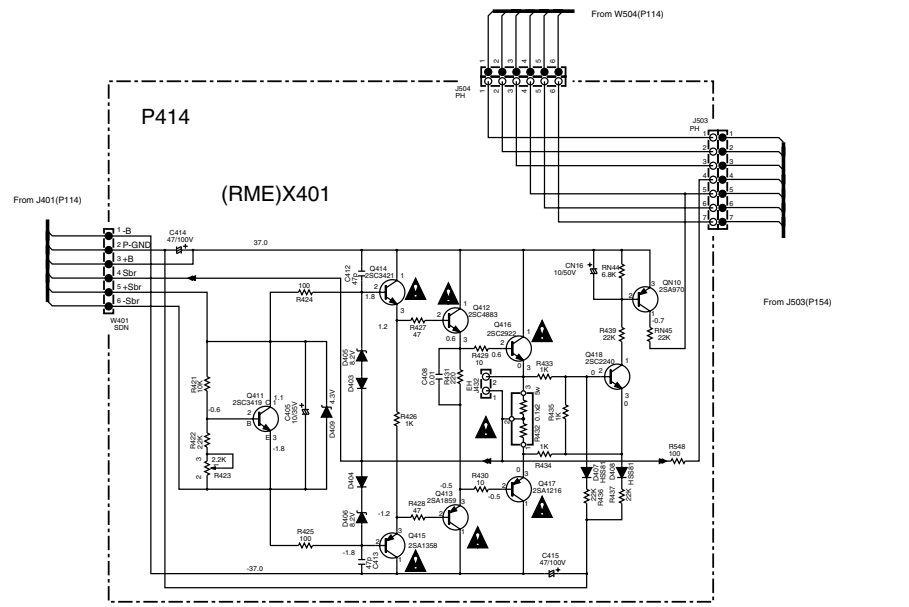
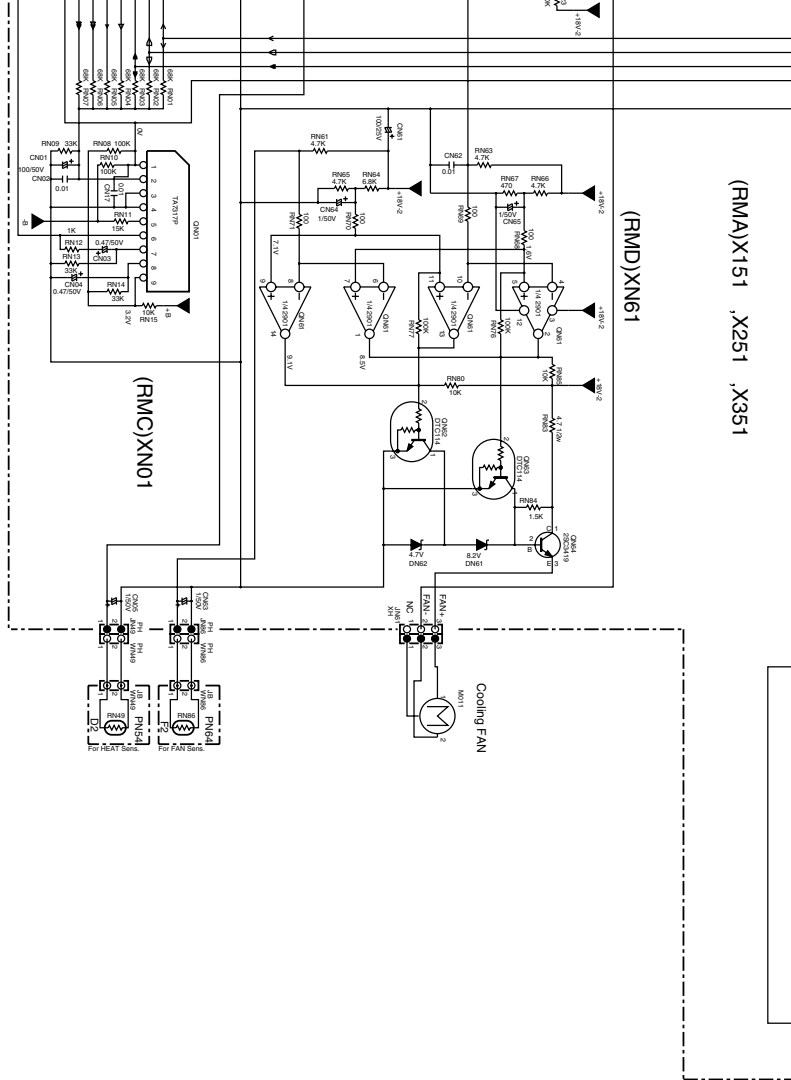
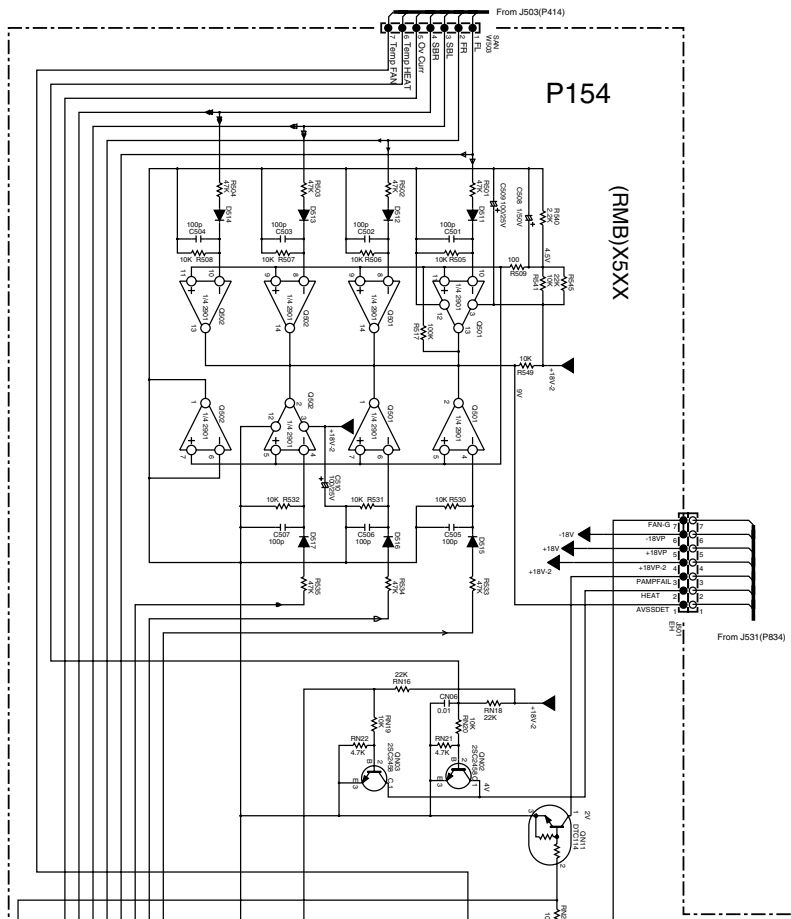


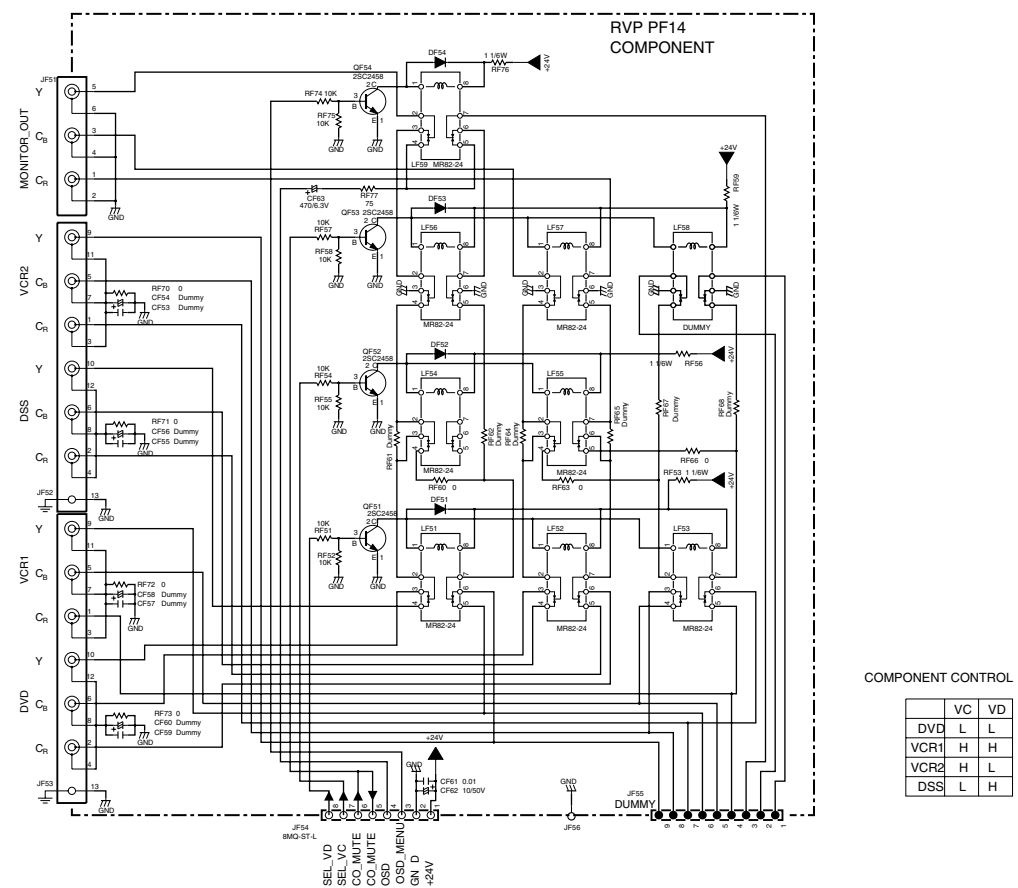
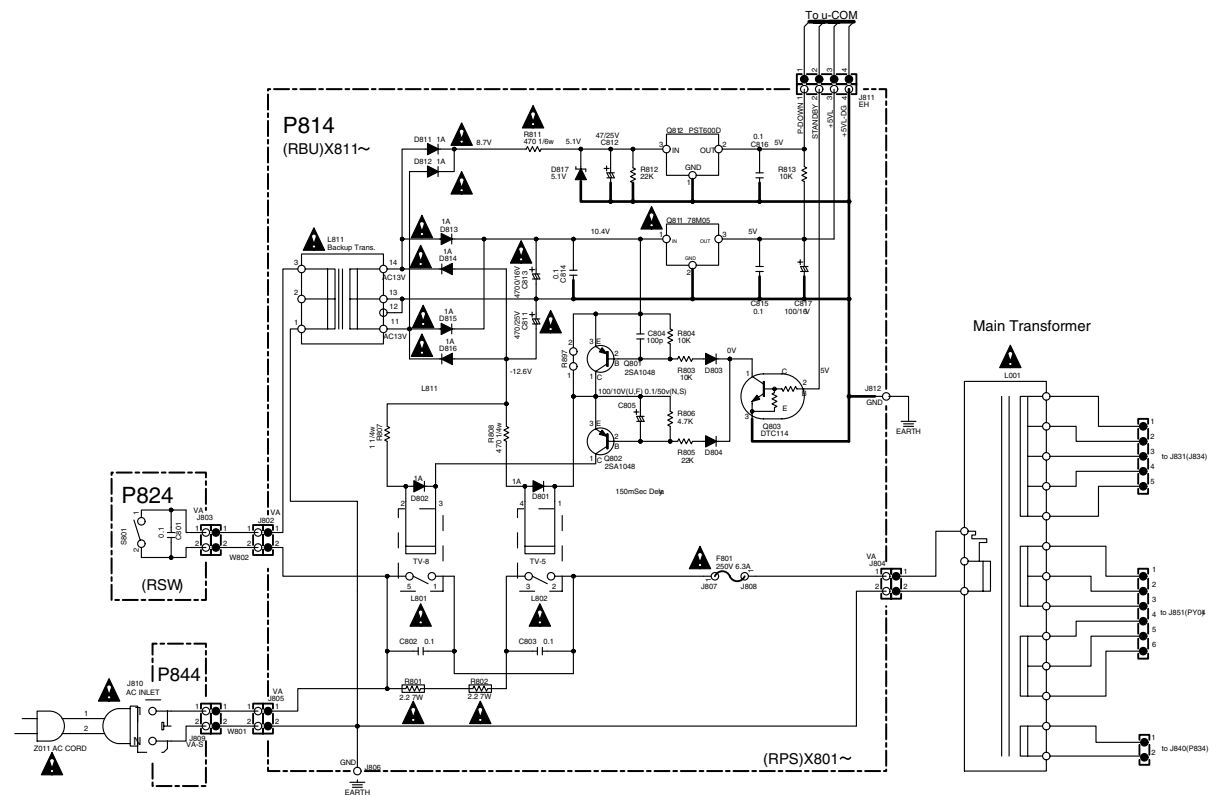
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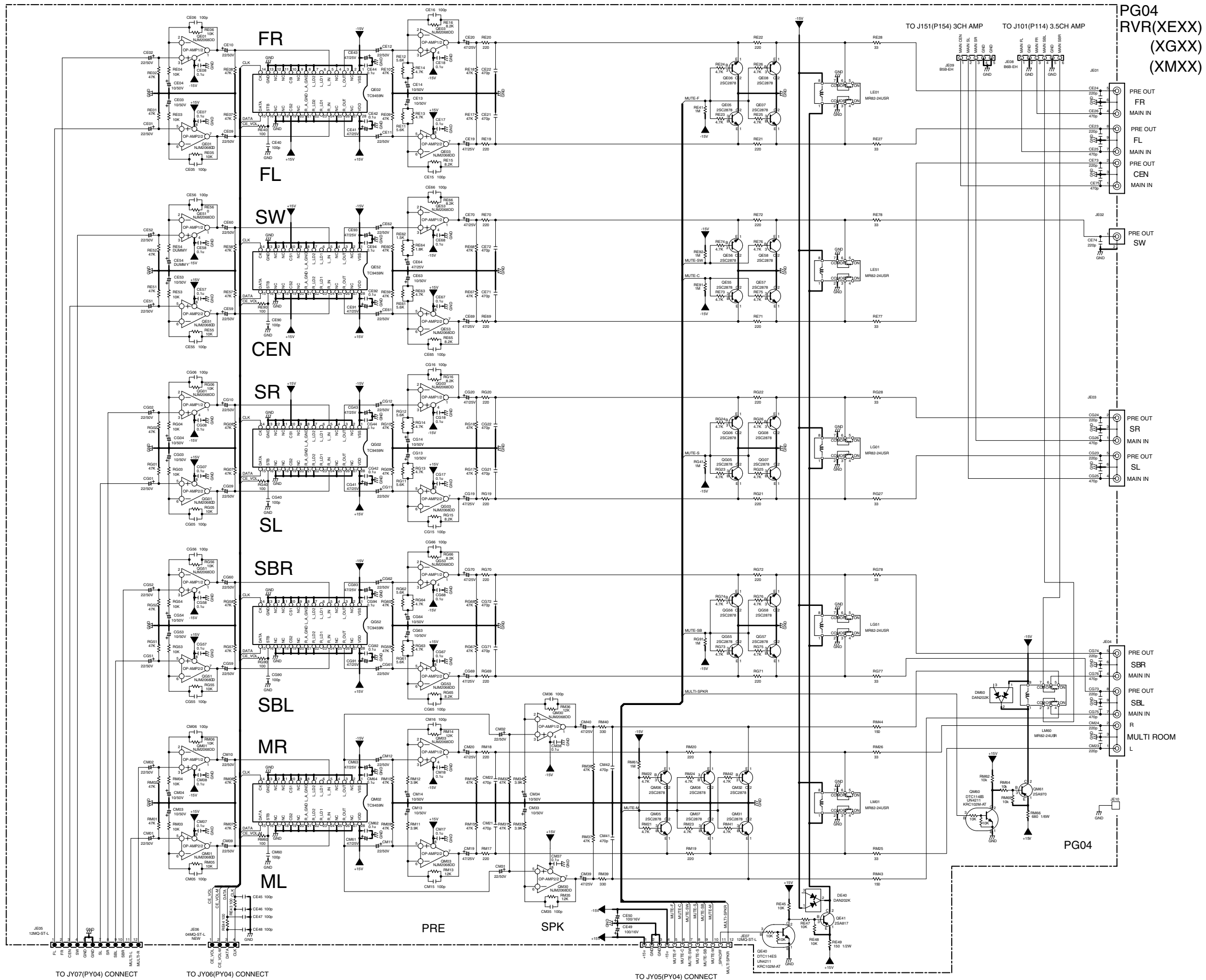


5. SCHEMATIC DIAGRAM









PG04
RVR(XEXX)
(XGXX)
(XMXX)

PRE OUT
FR
MAIN IN
PRE OUT
FL
MAIN IN
PRE OUT
CEN
MAIN IN

PRE OUT
SW

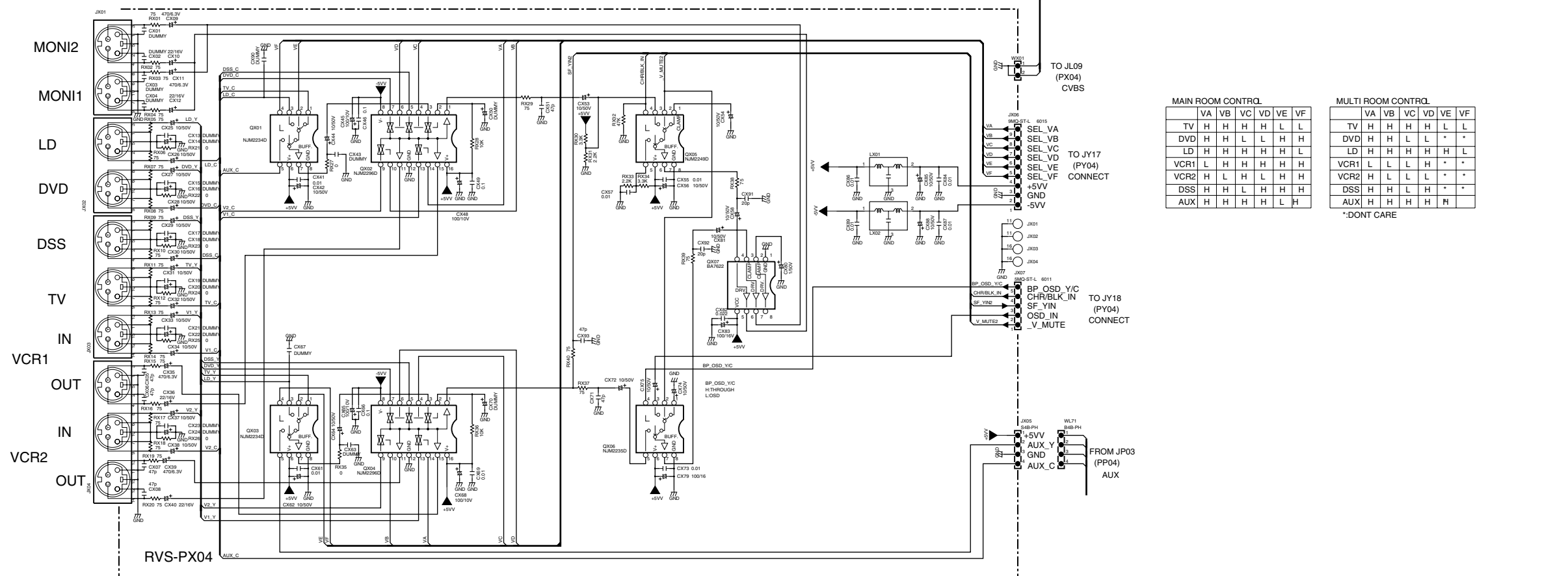
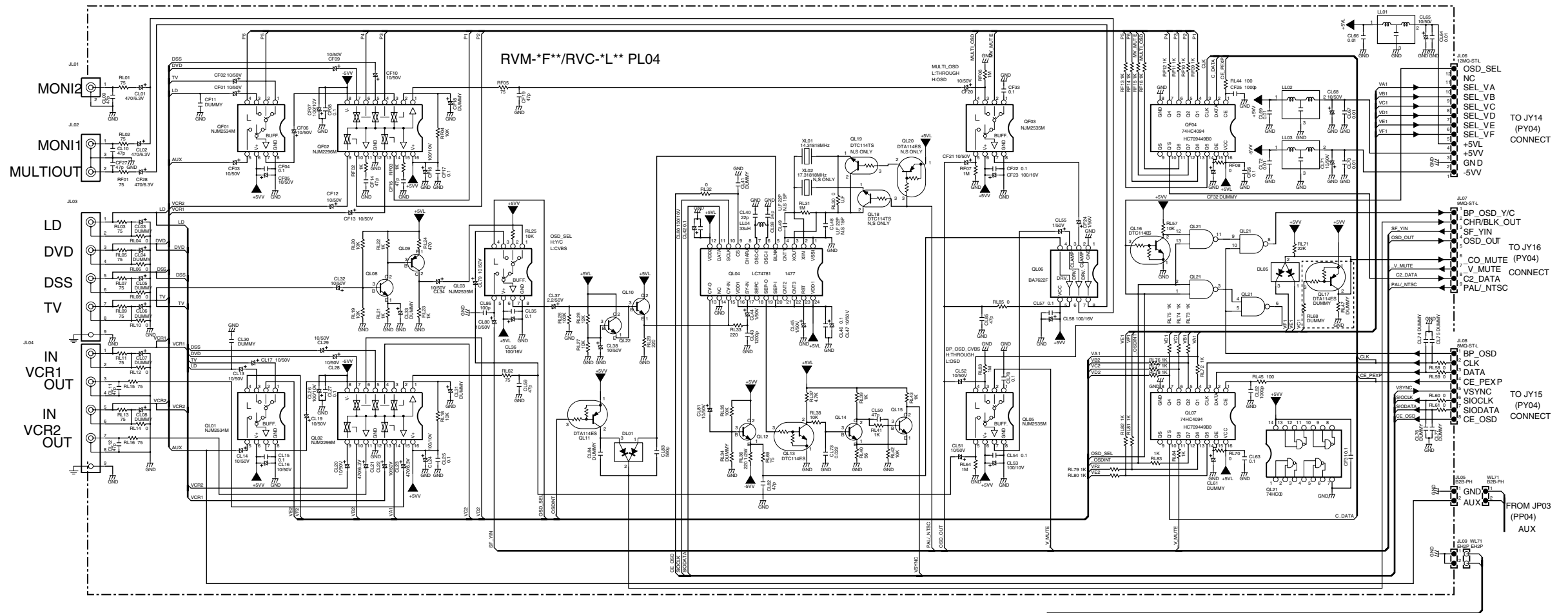
PRE OUT
SR
MAIN IN
PRE OUT
SL
MAIN IN

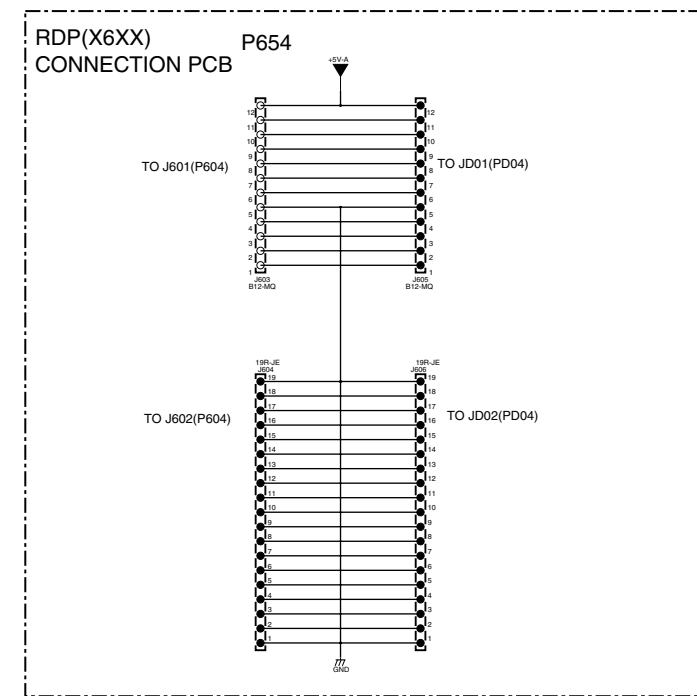
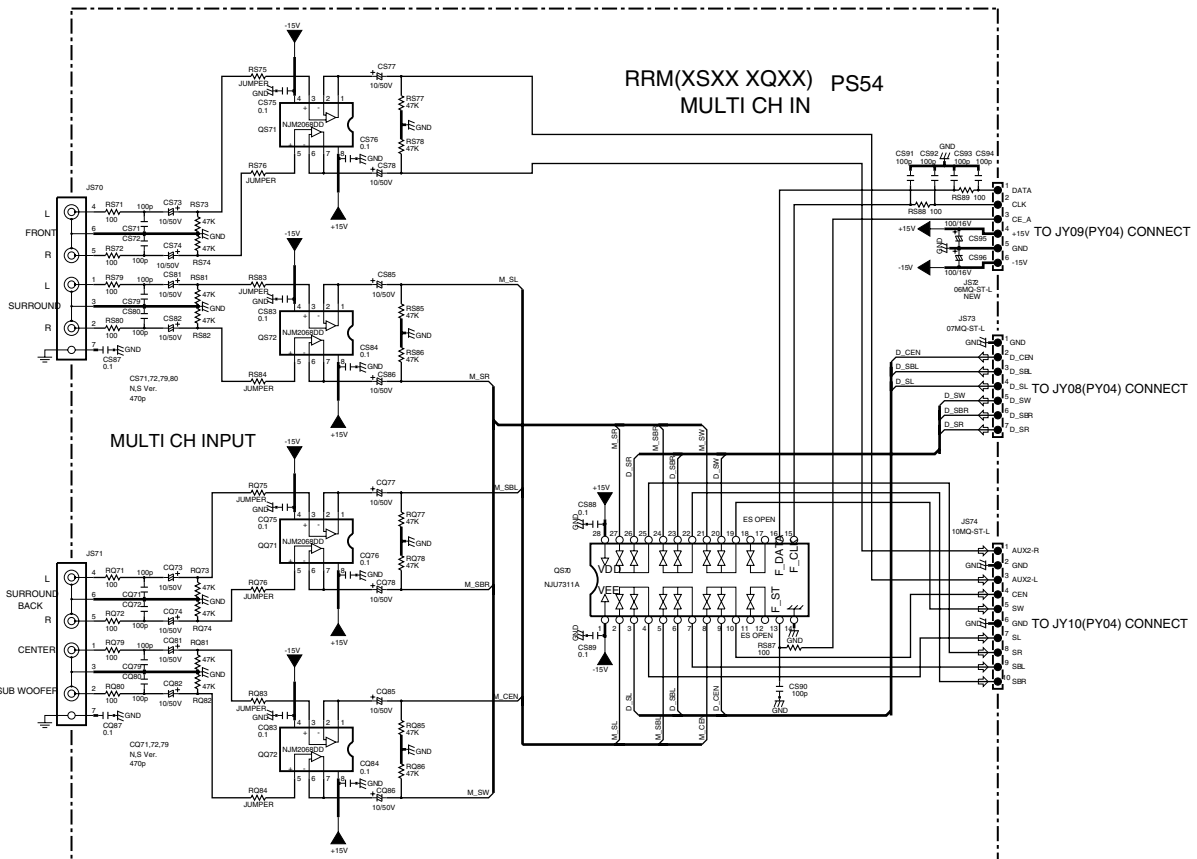
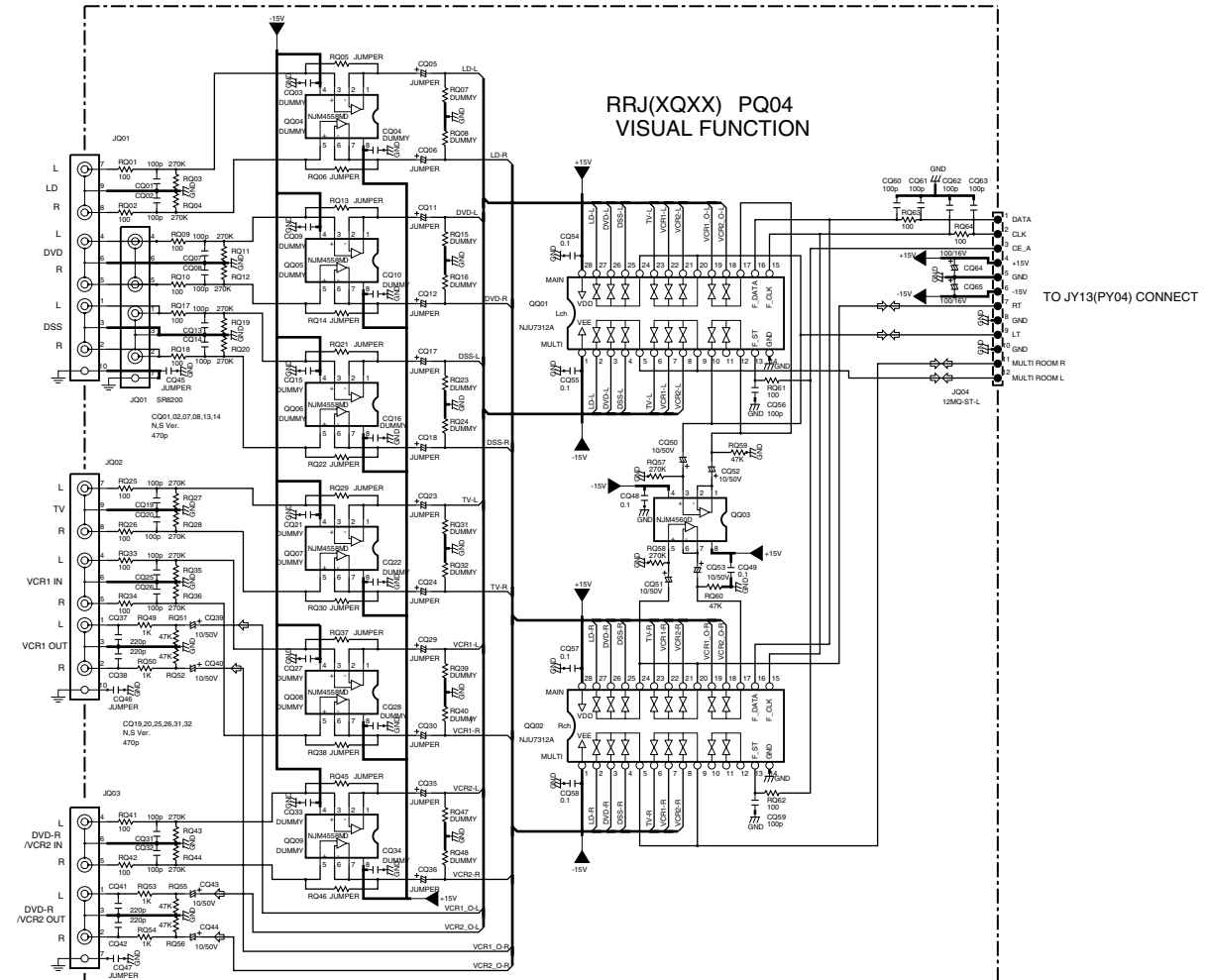
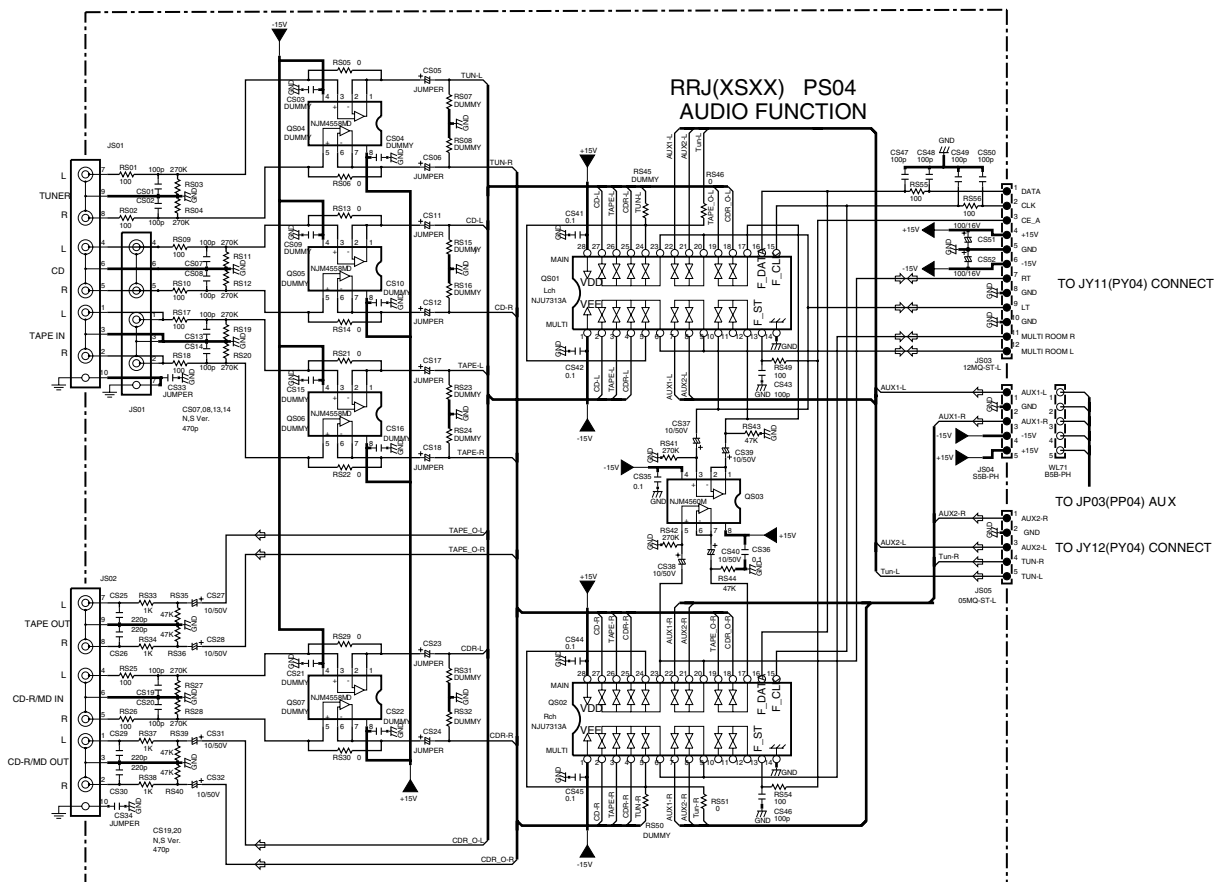
PRE OUT
SBR
MAIN IN
PRE OUT
SBL
MAIN IN
R
MULTI ROOM
L

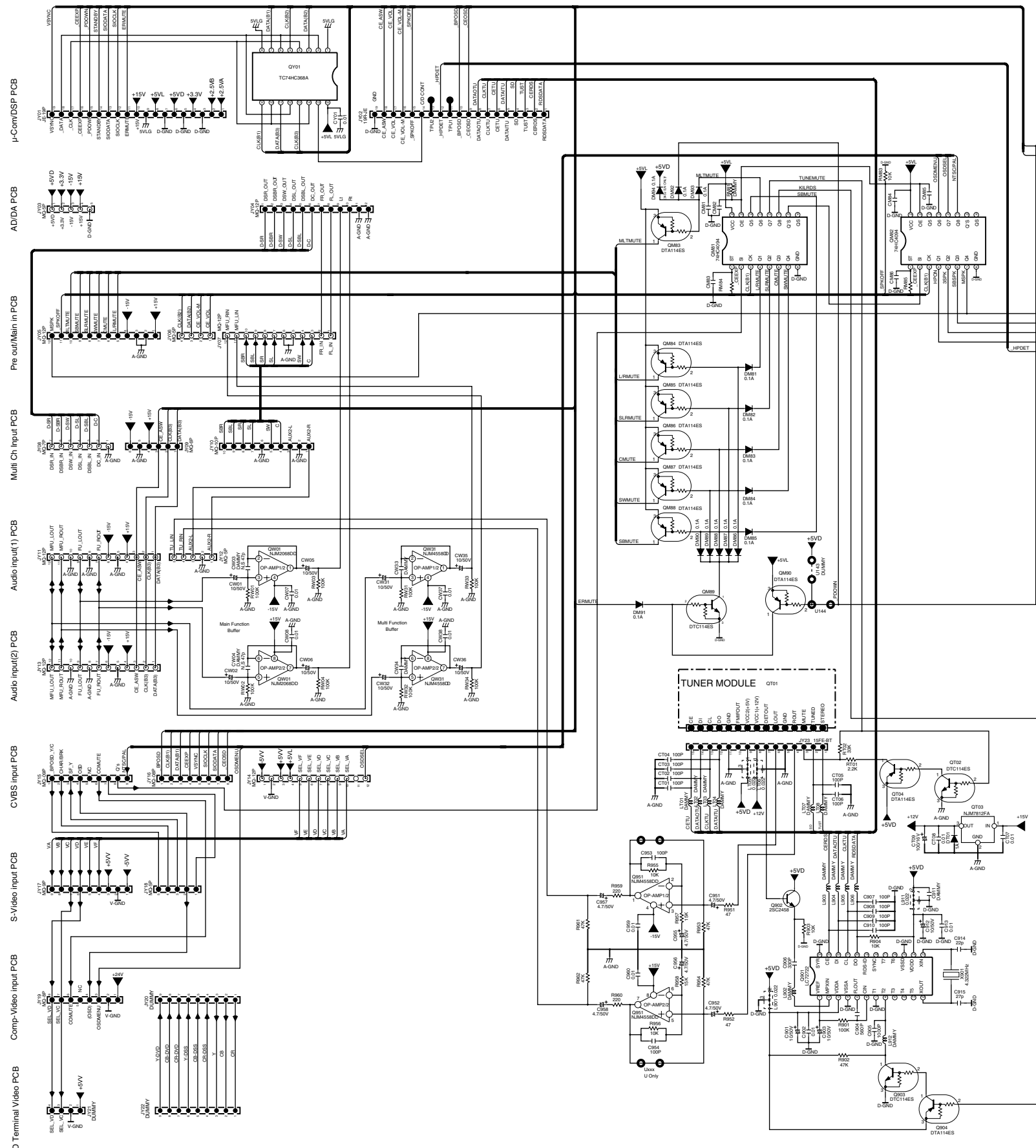
PG04

TO JY07(PY04) CONNECT TO JY06(PY04) CONNECT

TO JY05(PY04) CONNECT



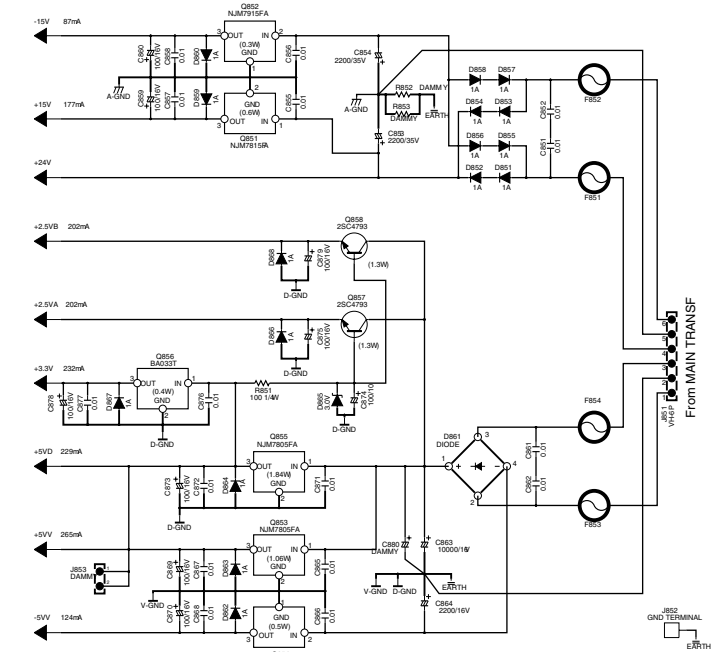


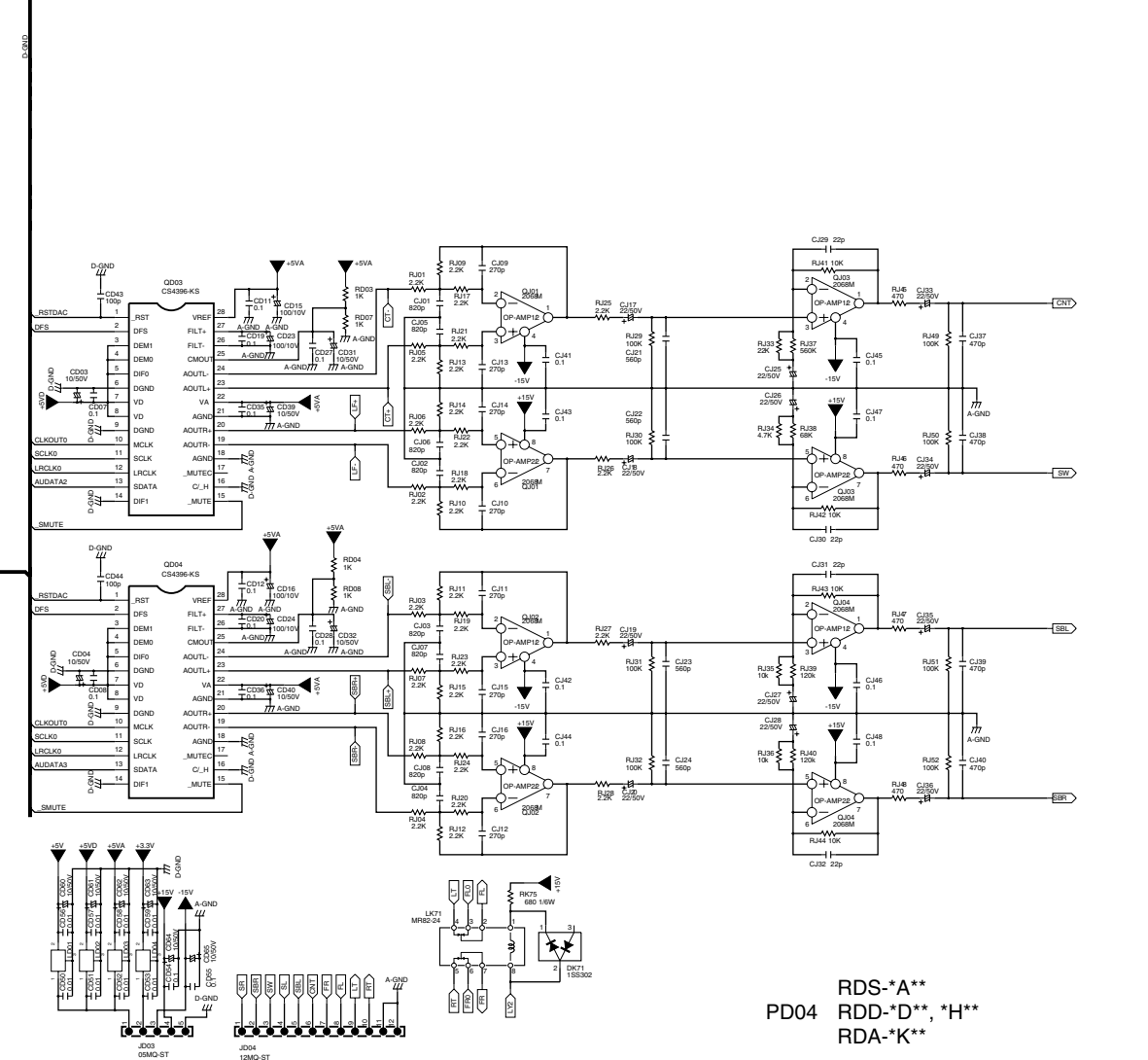
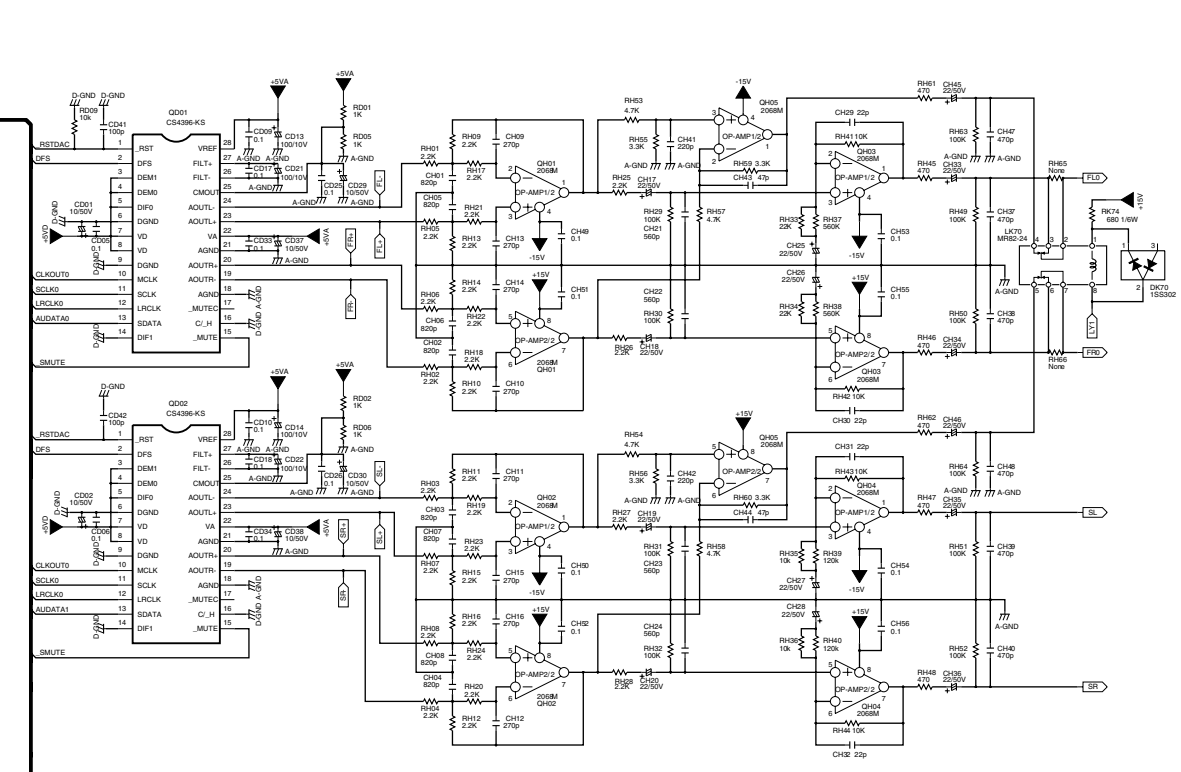
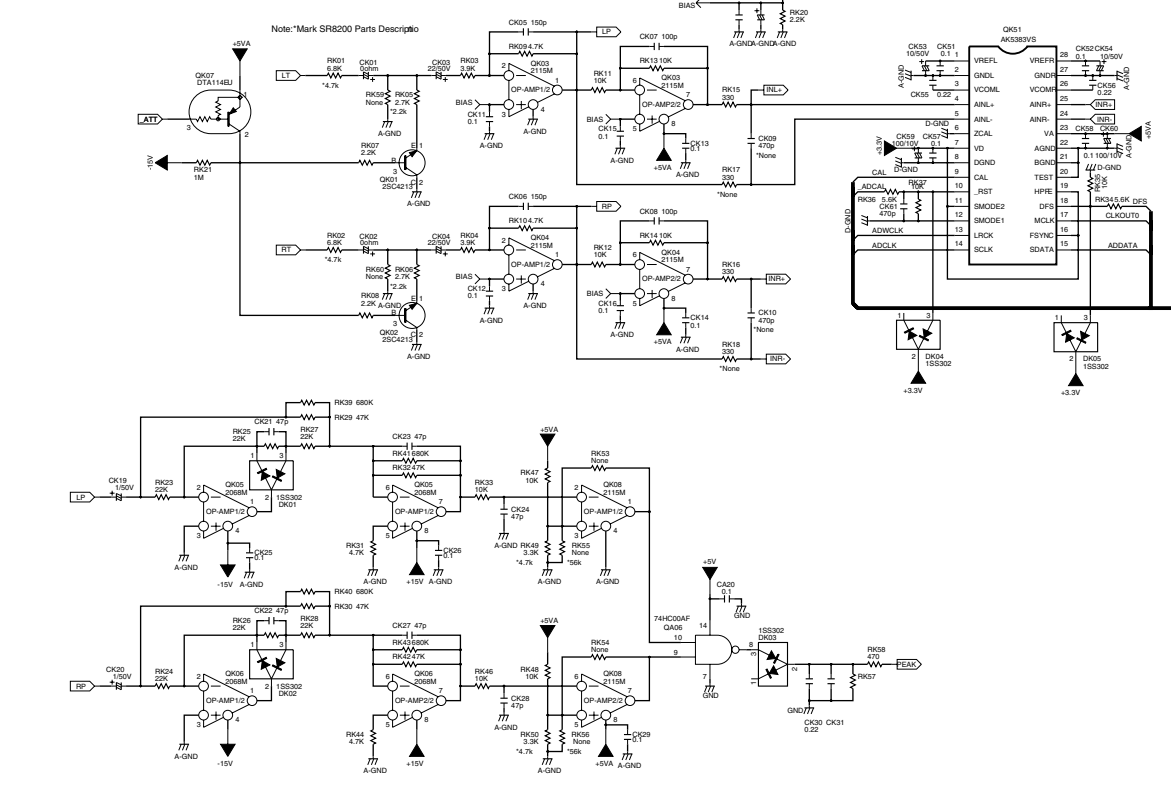
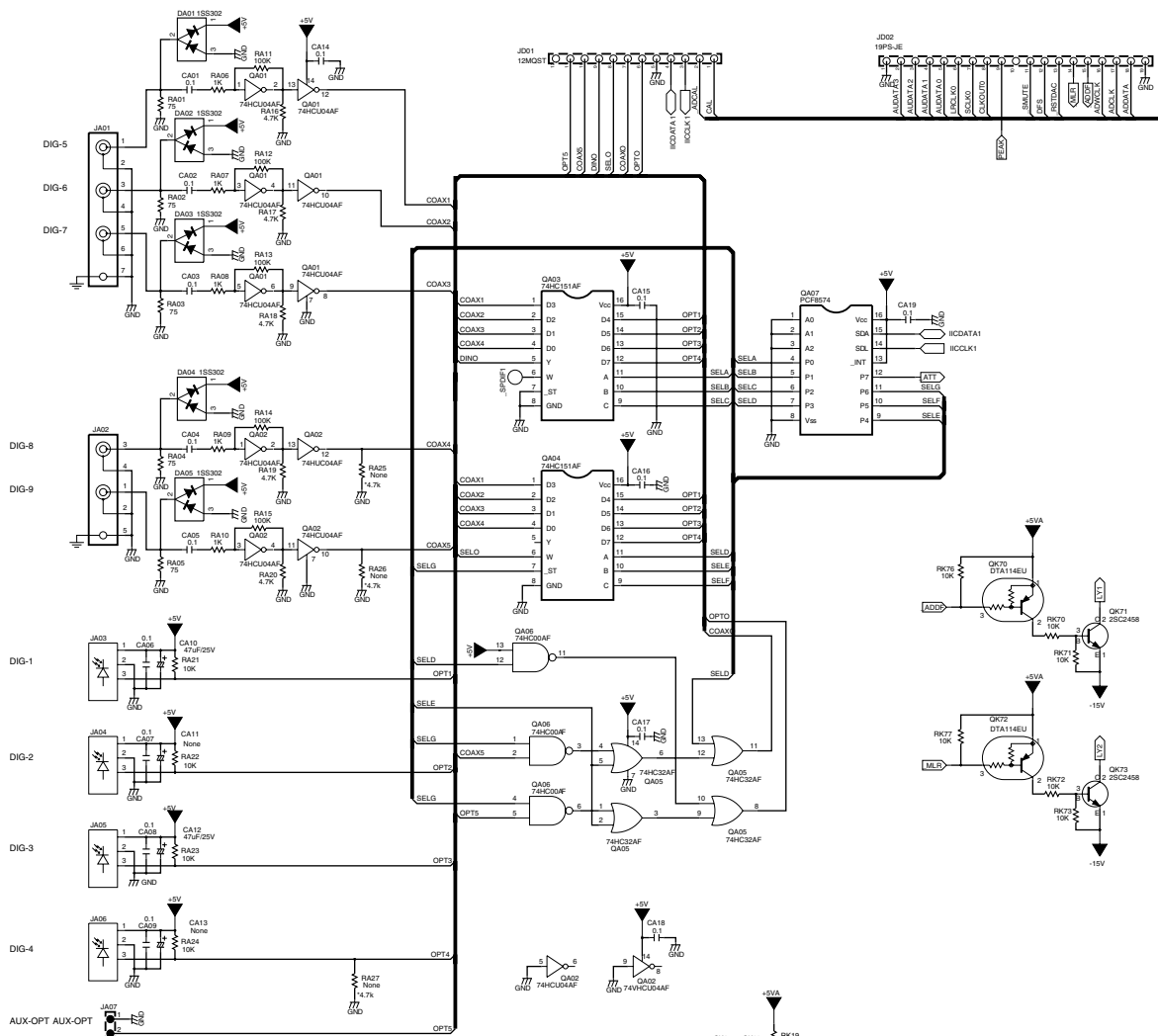


PY04
RCN-*Y**/RVR-*M,W**/RTU-*T**
RTR-*9**/RPS-*8**

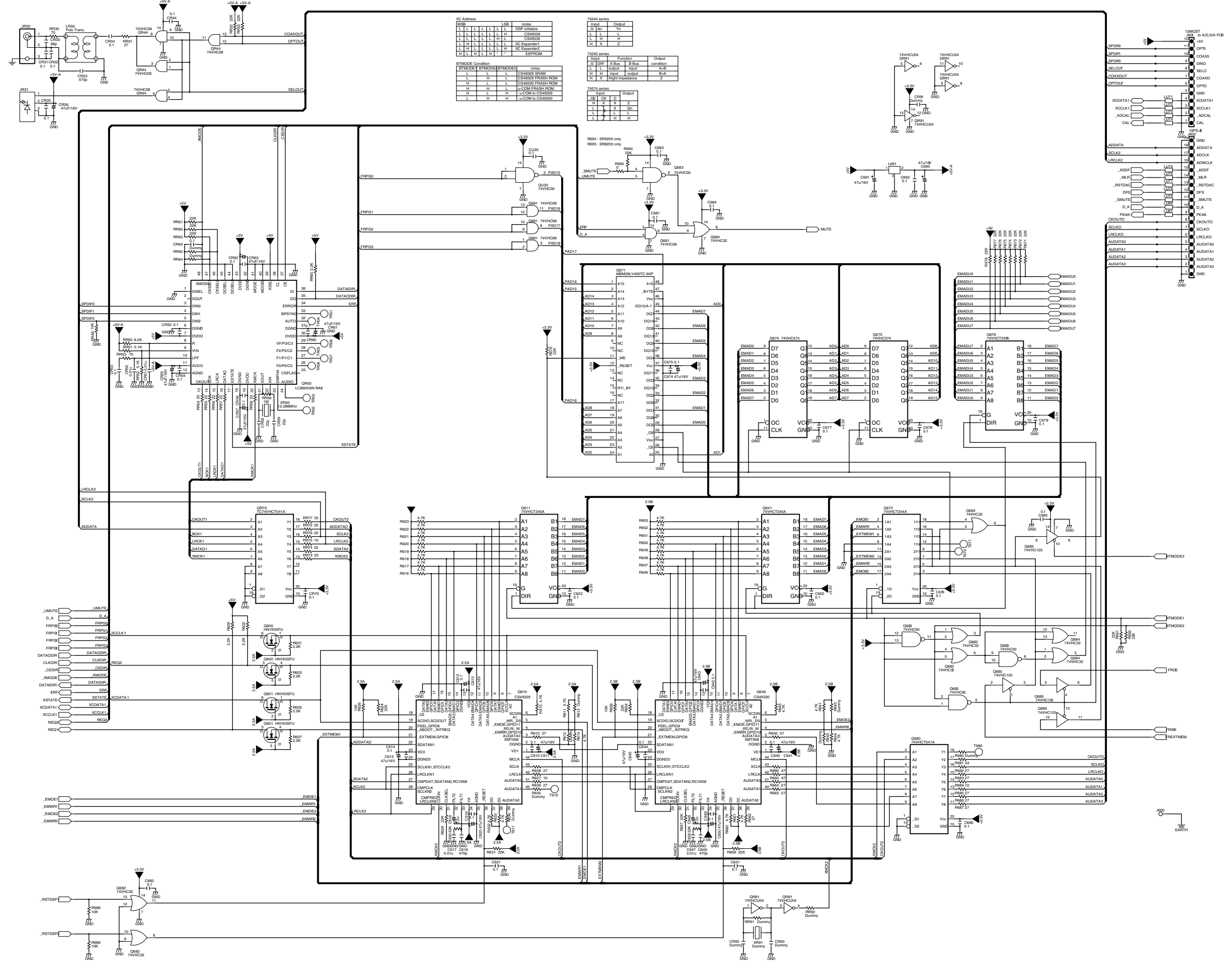
For J811 P804

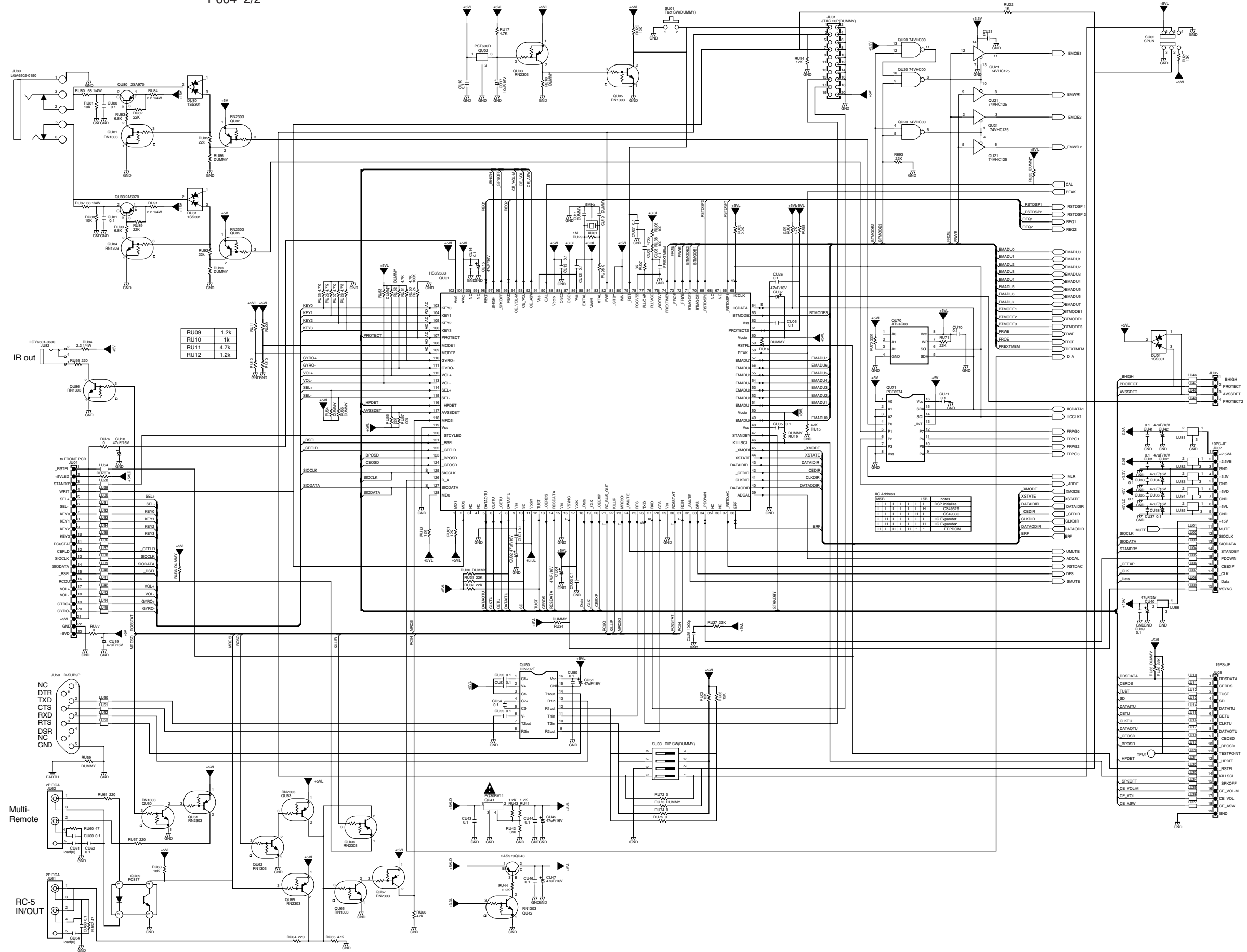
For J812 P124

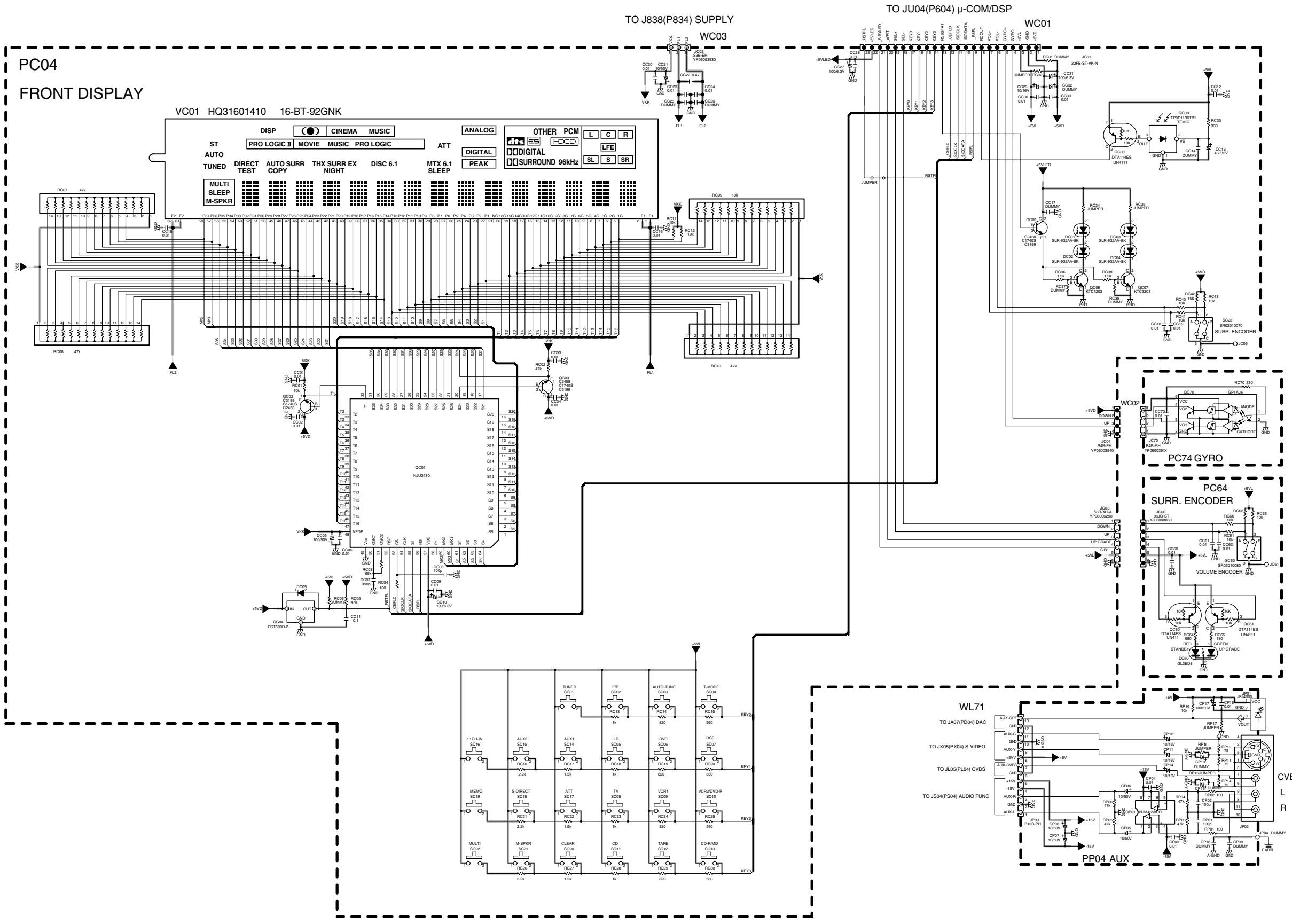




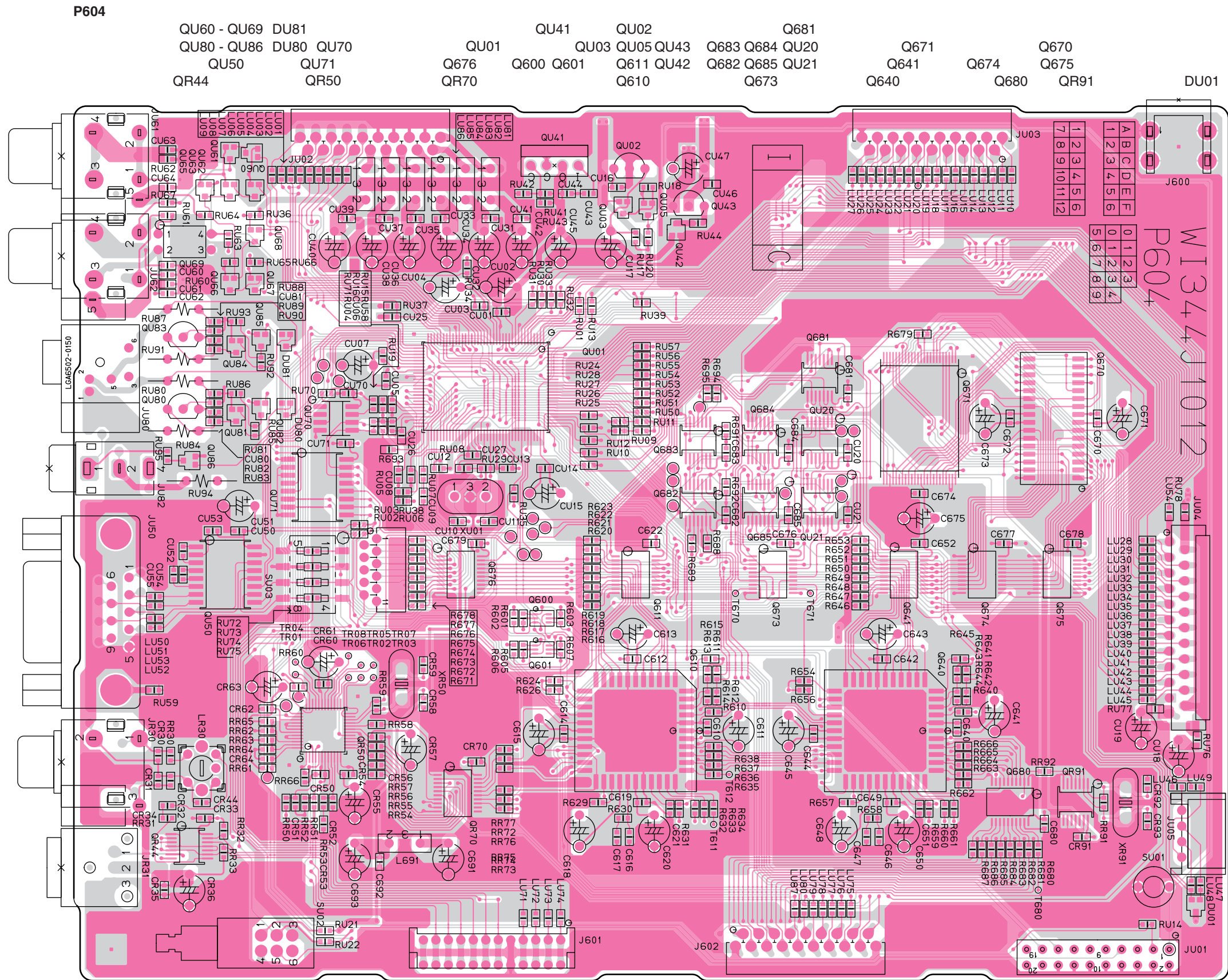
RDS-*A**
 PD04 RDD-*D**, *H**
 RDA-*K**



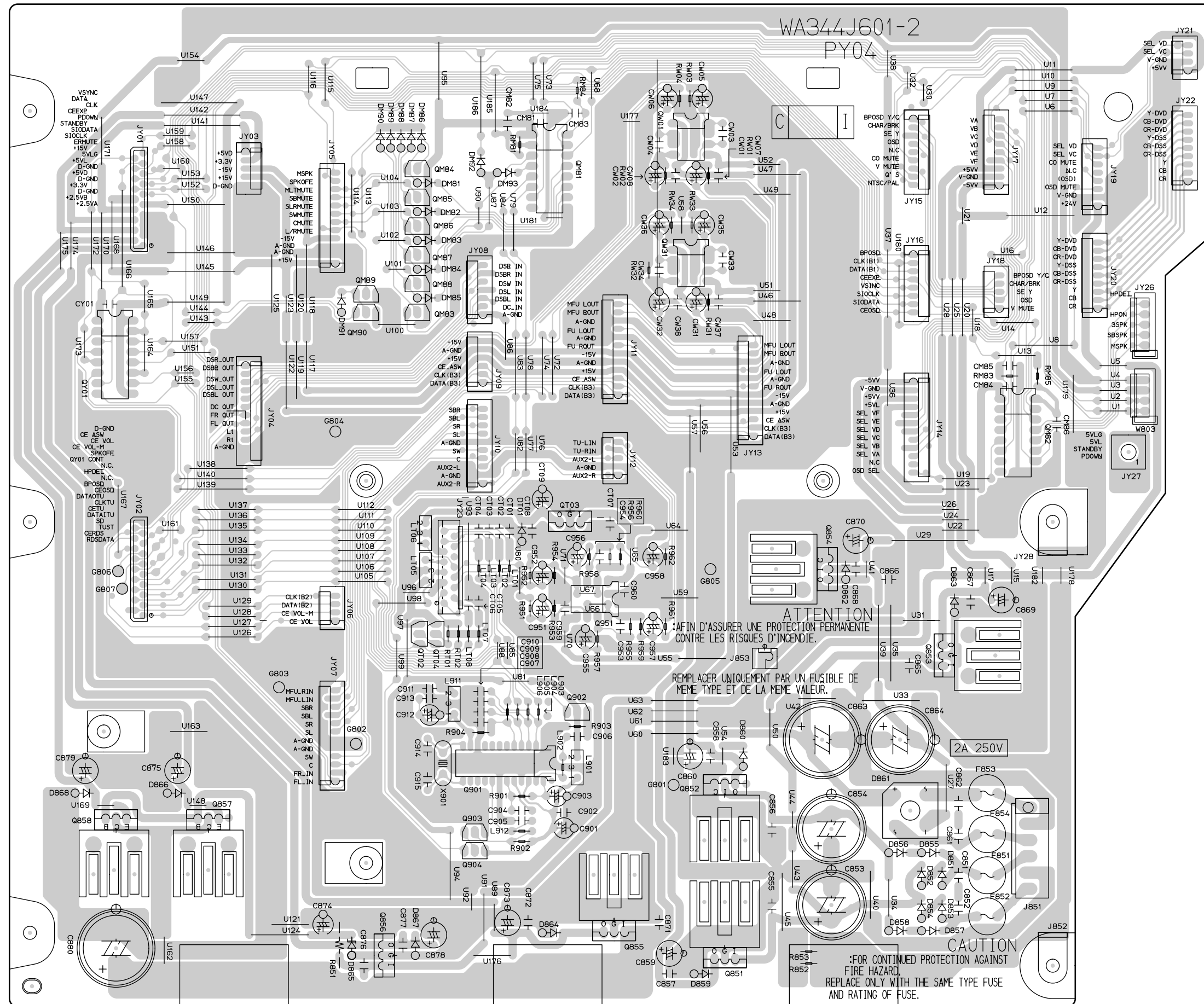




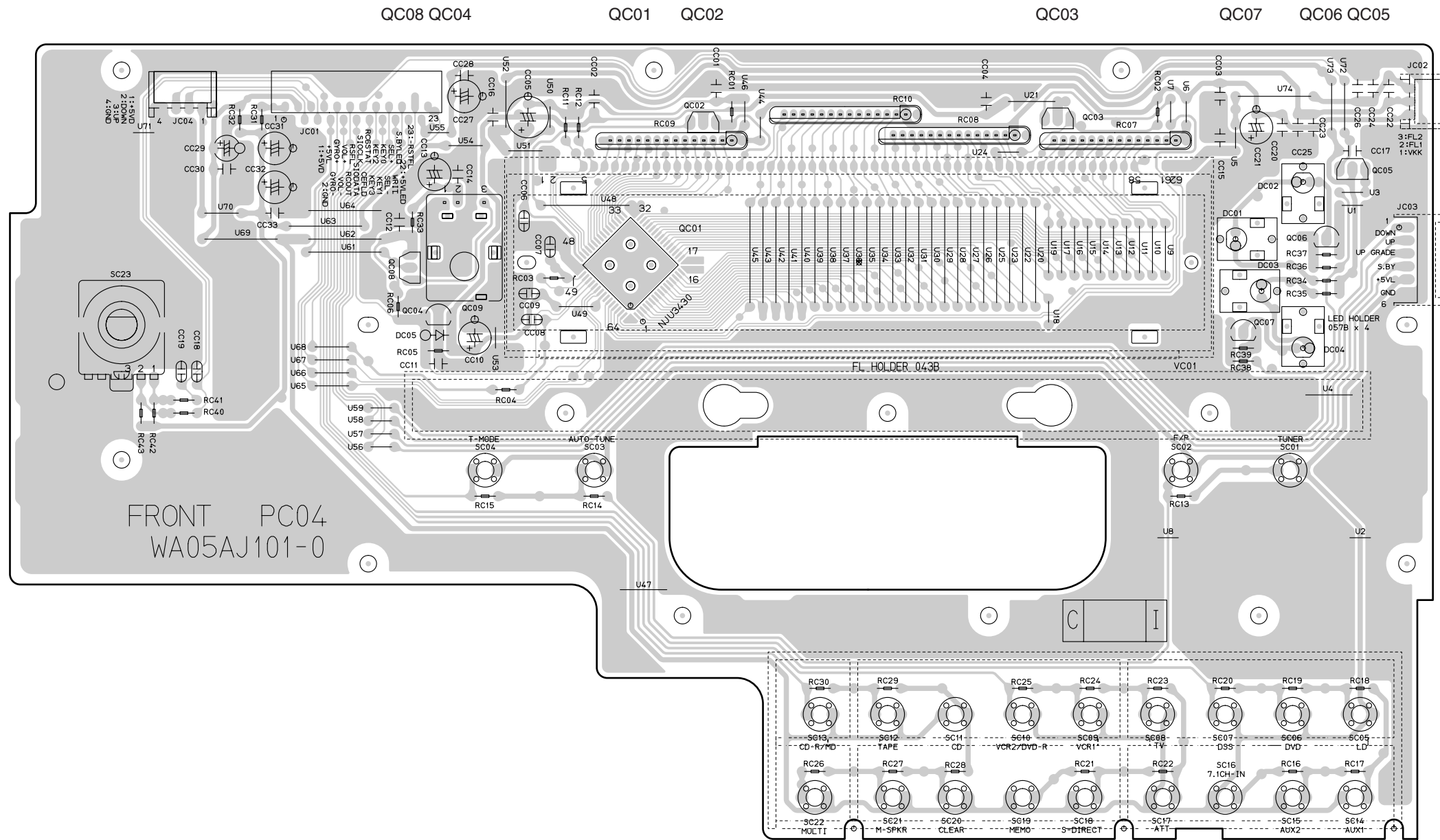
6. PARTS LOCATION



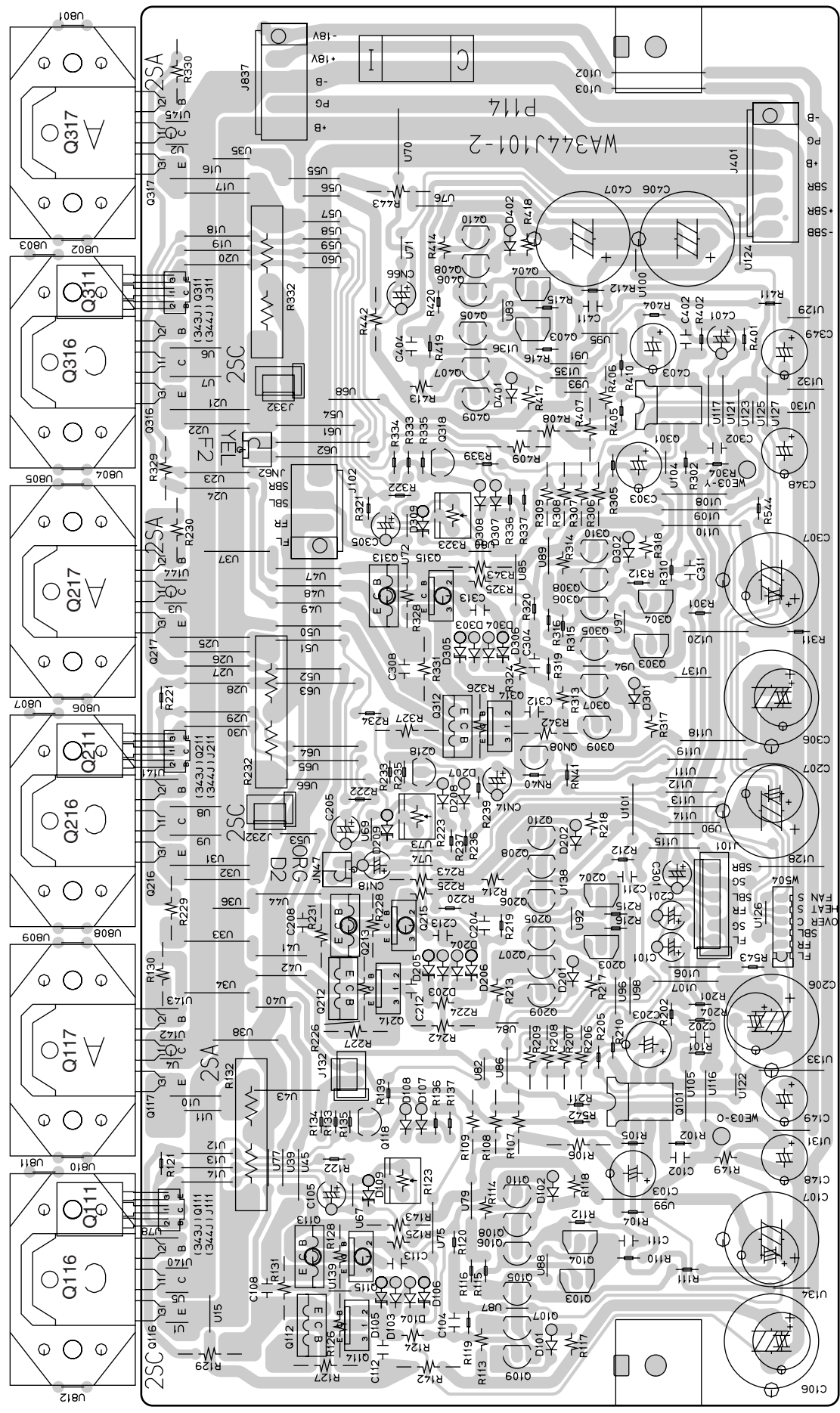
| | | | | |
|---------------------|--------------------------|----------------|------------------------------------|-------------|
| QY01 | DM81 - DM91 | DM92 DM93 QM81 | QW01 | QM82 |
| D868 Q858 D866 Q857 | QM83 - QM90 | QT03 Q951 | QW31 | |
| | QT02 QT04 Q901 | Q902 Q855 | Q852 D860 Q854 D862 D861 D863 Q853 | |
| | D865 Q856 D867 Q903 Q904 | D864 | D859 Q851 | D851 - D858 |



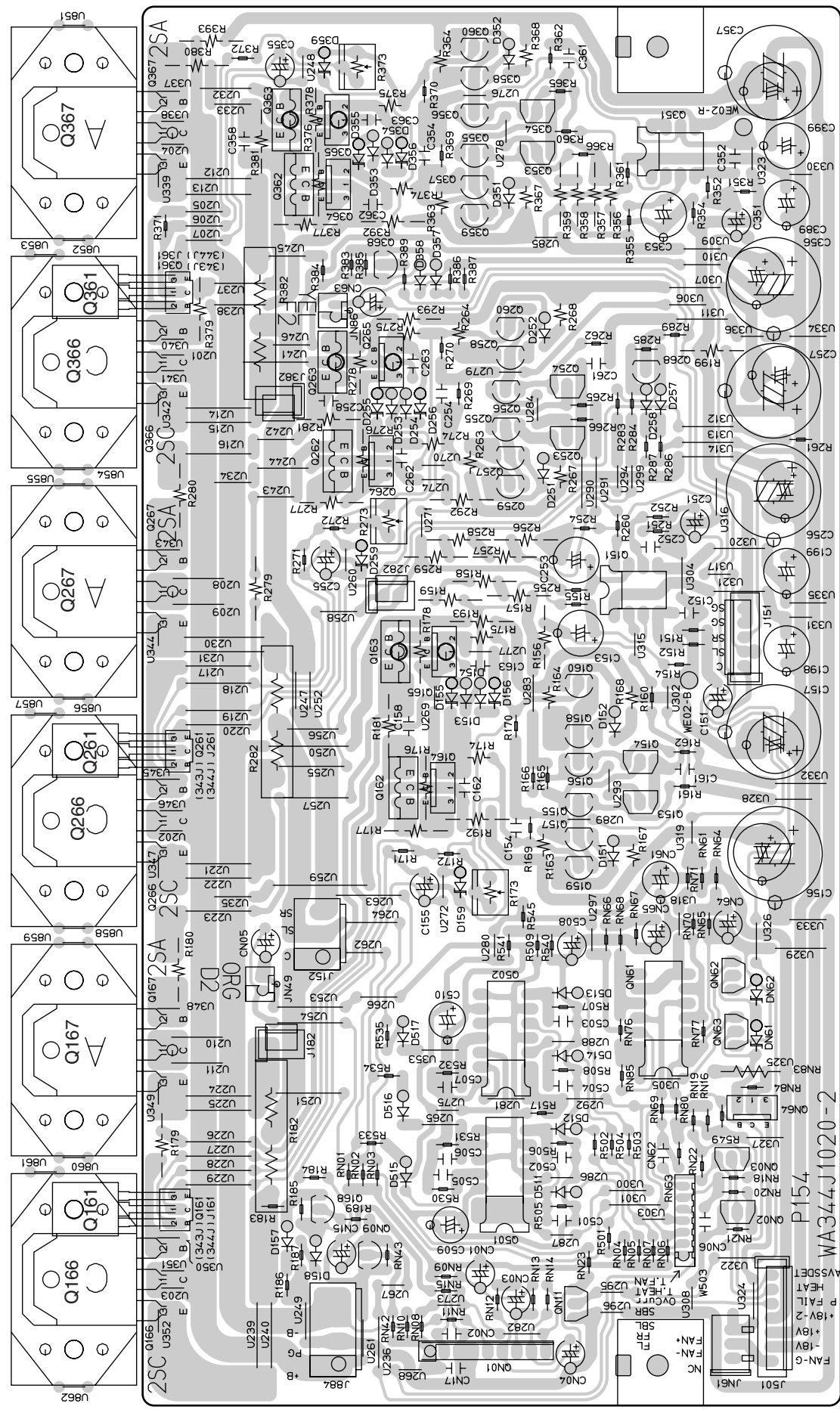
PC04



- Q112 Q113 D209 Q218 Q313 Q405 - Q410
- Q114 Q115 D208 Q312 Q315 D309 Q318 D401 Q403 Q404 D402
- D103 - D106 D207 Q314 D303 - D306 D302 Q301
- Q105 - Q110 Q205 - Q210 QN08 Q305 - Q310 D308
- D101 Q103 Q104 D102 D201 Q203 Q204 D202 D301 Q303 Q304 D302



- D157 D517 D516 D259 Q262 - Q265 Q362 - Q365 D359
- D158 Q168 D502 Q253 - D256 D358 D353 - D356
- QN09 Q501 D514 D513 D159 Q162 - Q165 D255 - D260 D357
- QN11 D511 D512 QN61 Q155 - Q160 Q151 Q251 Q253 Q254 D252 D355 - Q360
- QN02 QN03 QN64 DN61 QN63 QN62 DN62 D151 Q153 Q154 D152 D256 D257 Q268
- Q366 Q367 Q368 Q369 Q350 Q351 Q352 Q353 Q354 D352 Q351



P134
Q111



P174
Q161



P214
Q211



P254
Q261



P314
Q311



P354
Q361



PN14



PN24



PN54

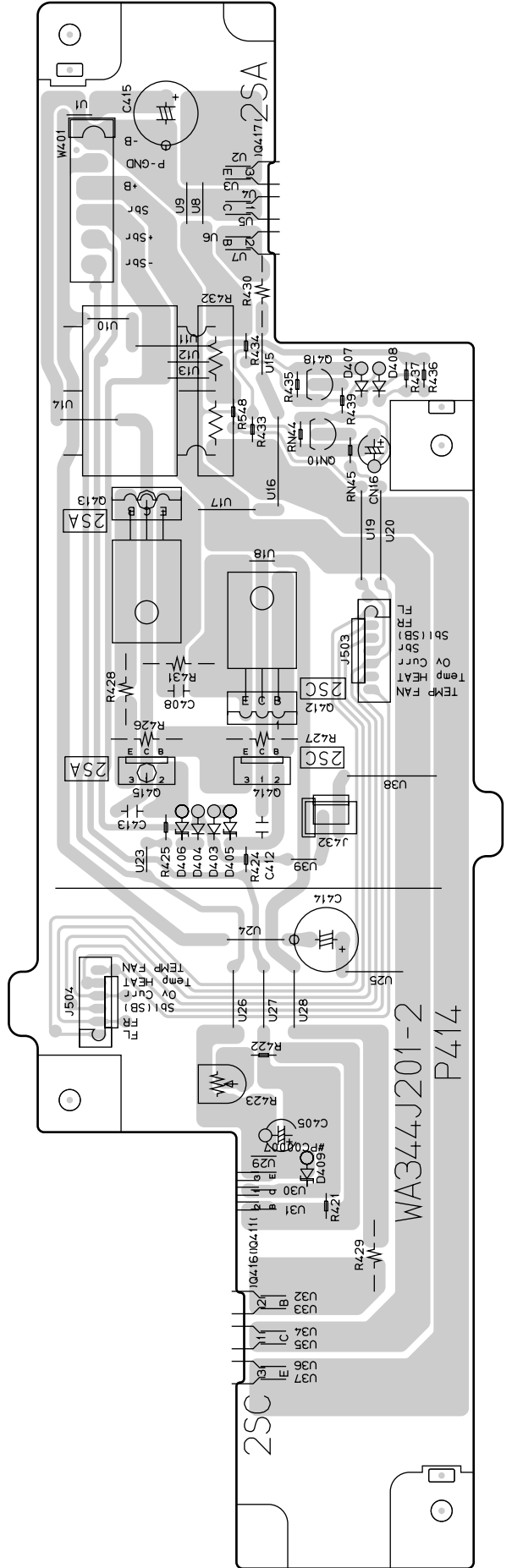


PN64



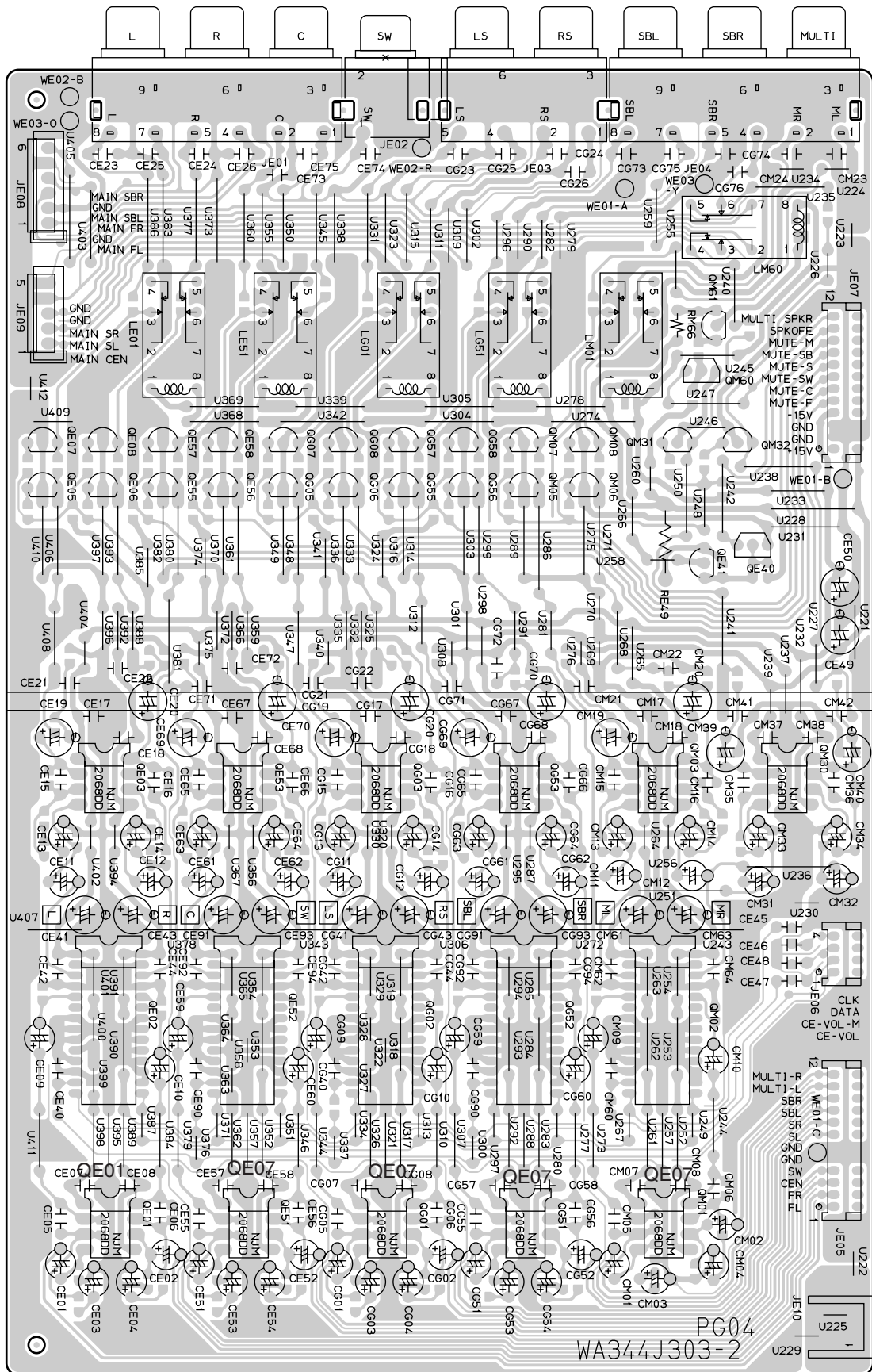
P414

Q415 QN10 Q418 Q417
D403 - D406 D407 D408
Q414 Q412
Q416 Q411



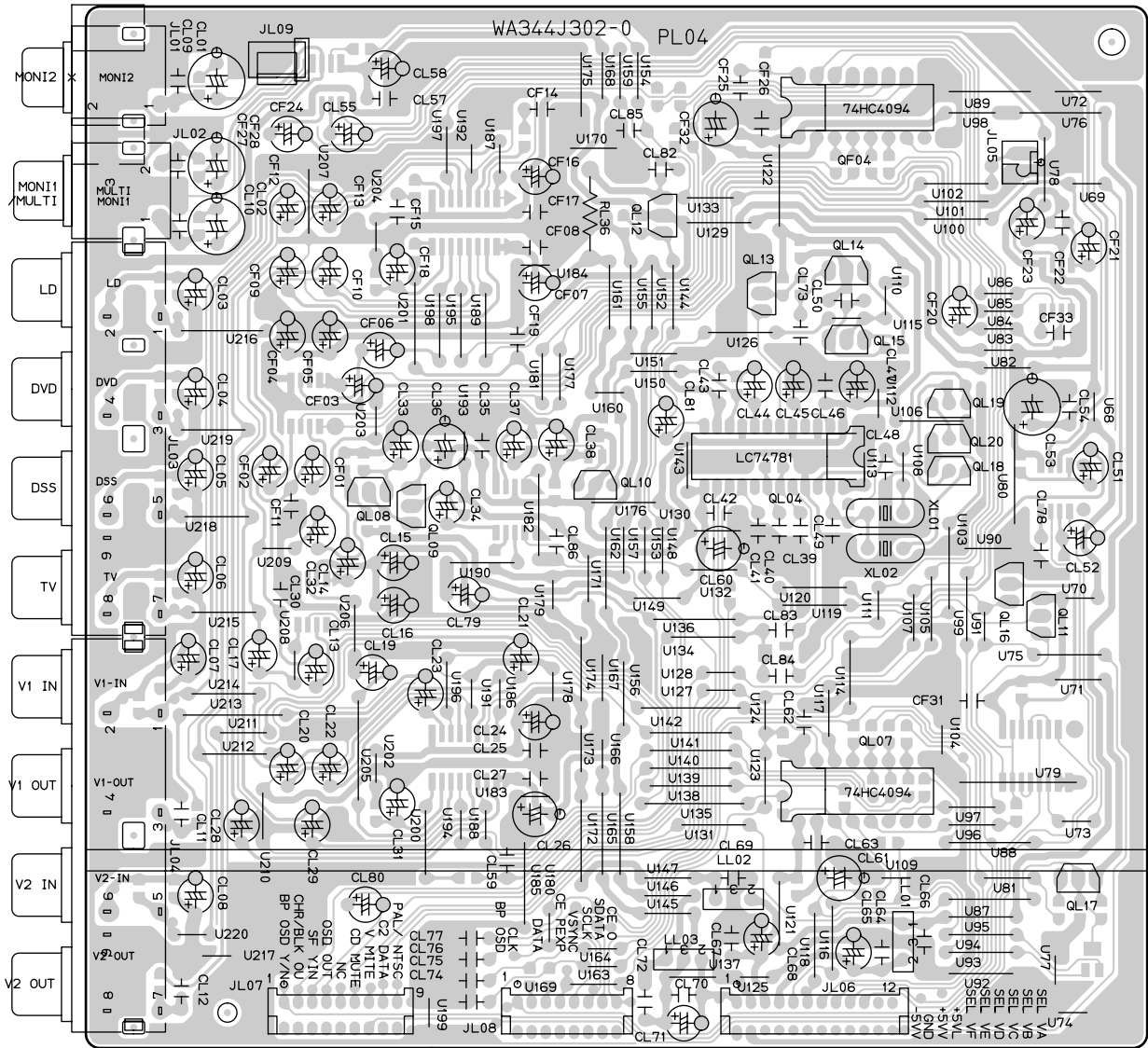
PG04

QE05 - 08 QE55- 58 QG05 - 08 QG55 - 58 QM05 - 08 QM60 QM61
QE31 QE32
QE41 QE40
QE01 - 03 QE51 - 53 QG01 - 03 QG51 - 53 QM01 - 03 QM30



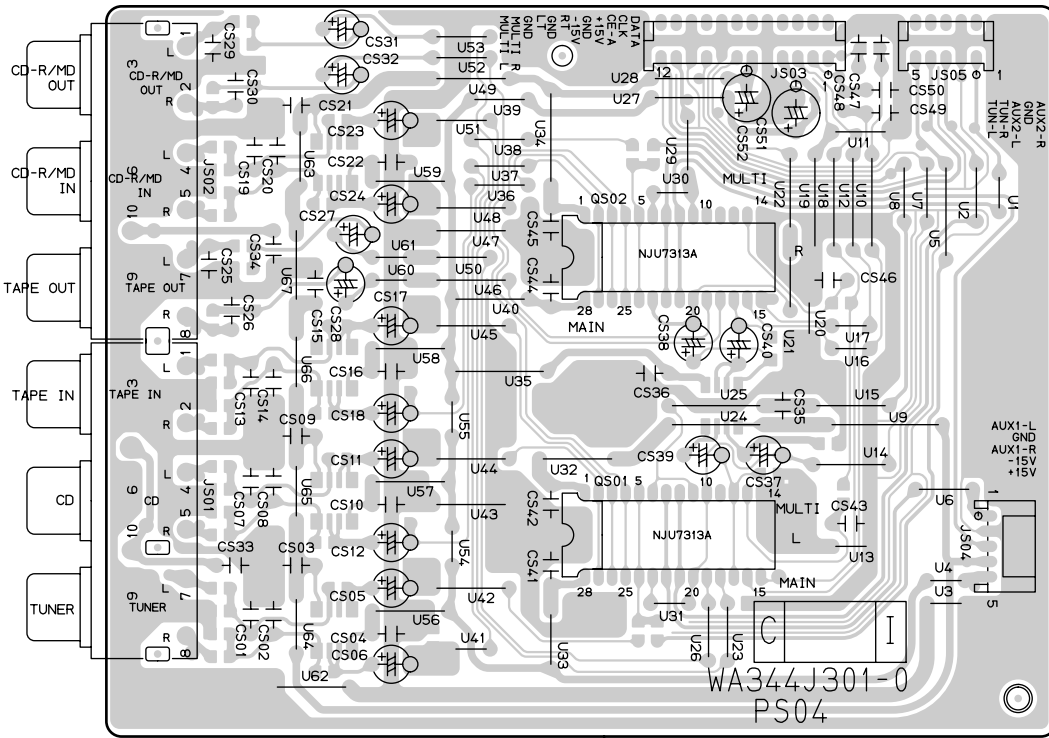
PL04

QL08 QL09 QL10 QL12 QL13 - QL15 QF04
QL04 QL18 - QL20
QL07 QL16 QL11 QL17



PS04

QS02 QS01

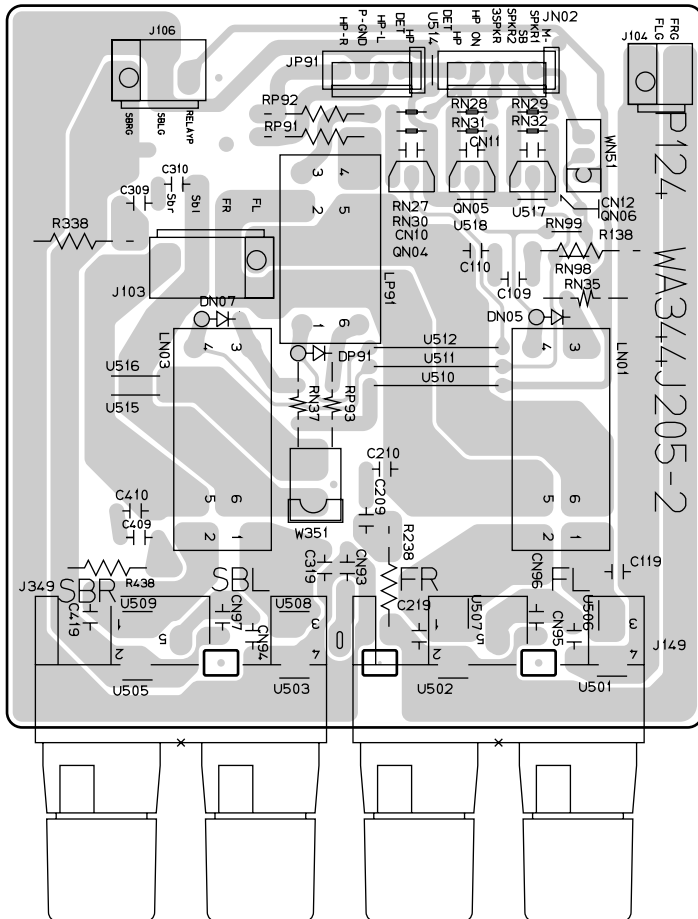


P124

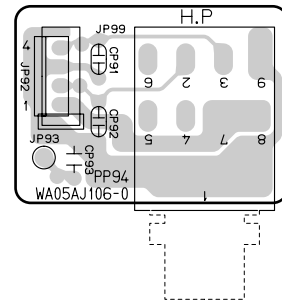
QN04 - QN06

DN07

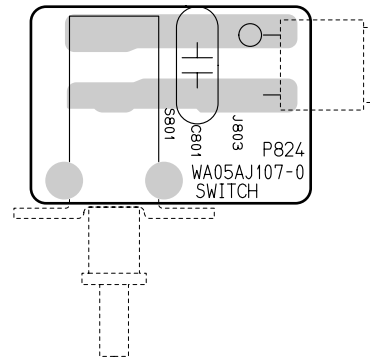
DN05



PP94

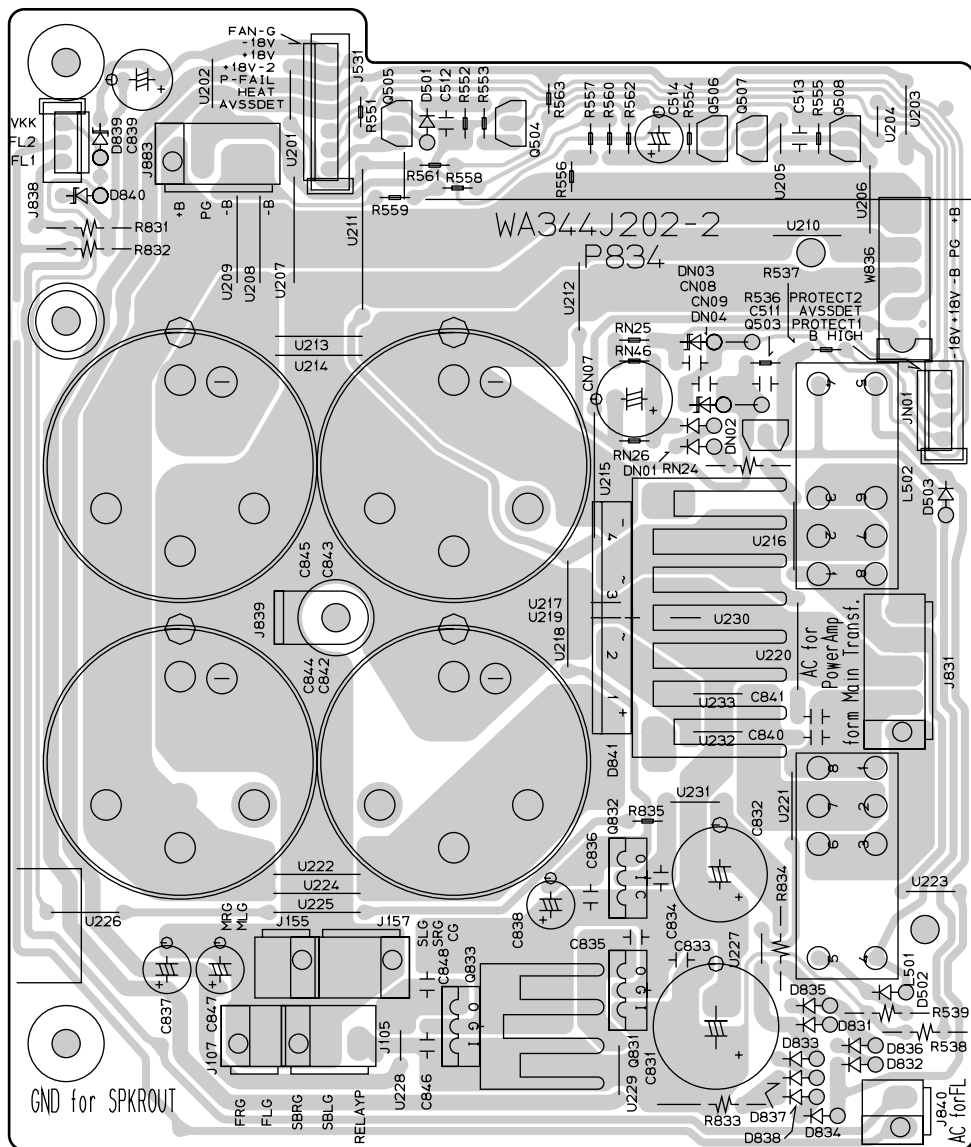


P824



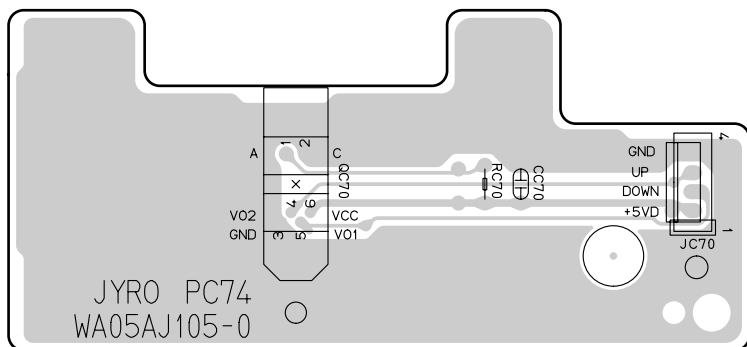
P834

D839 D840 Q505 D501 Q504 Q506 Q507 Q508
 DN01 - DN04 D503
 Q833 Q831 Q832 D831 - D838 D502



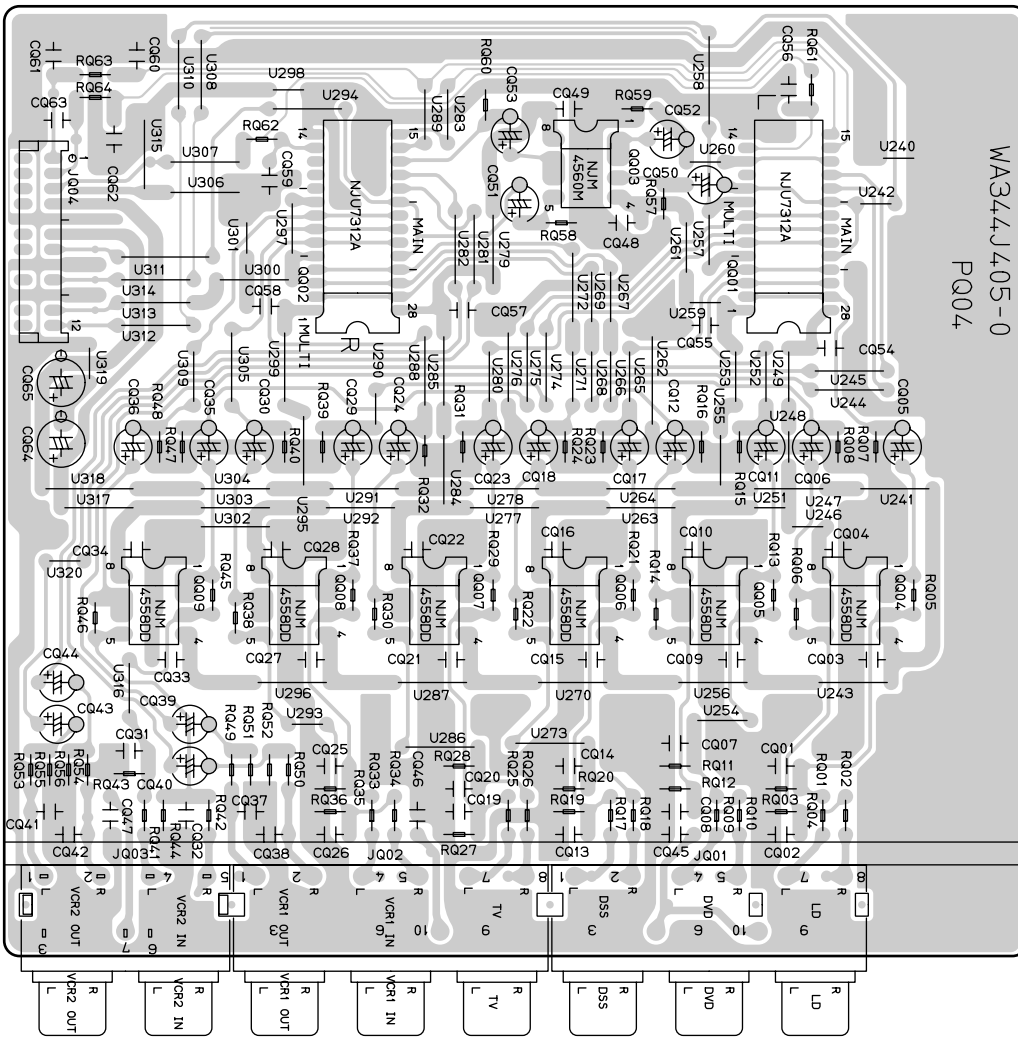
PC74

QC70



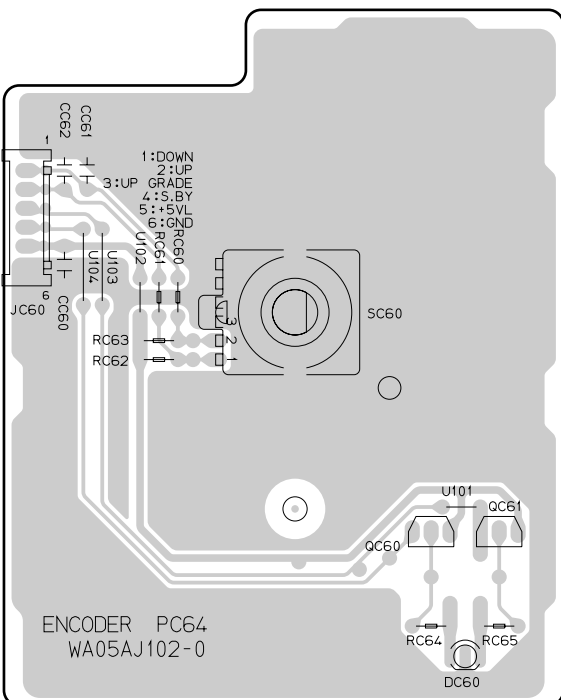
PQ04

QQ09 QQ08 QQ07 QQ06 QQ05 QQ04
 QQ02 QQ03 QQ01

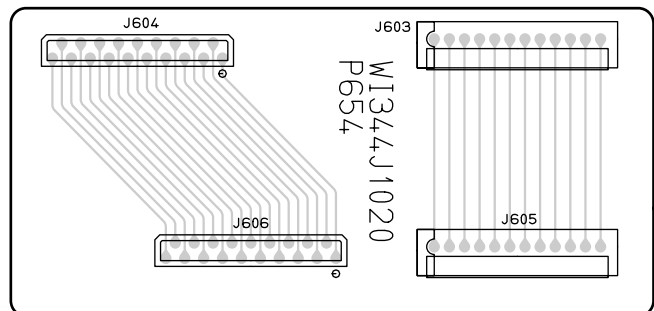


PC64

QC60 QC61

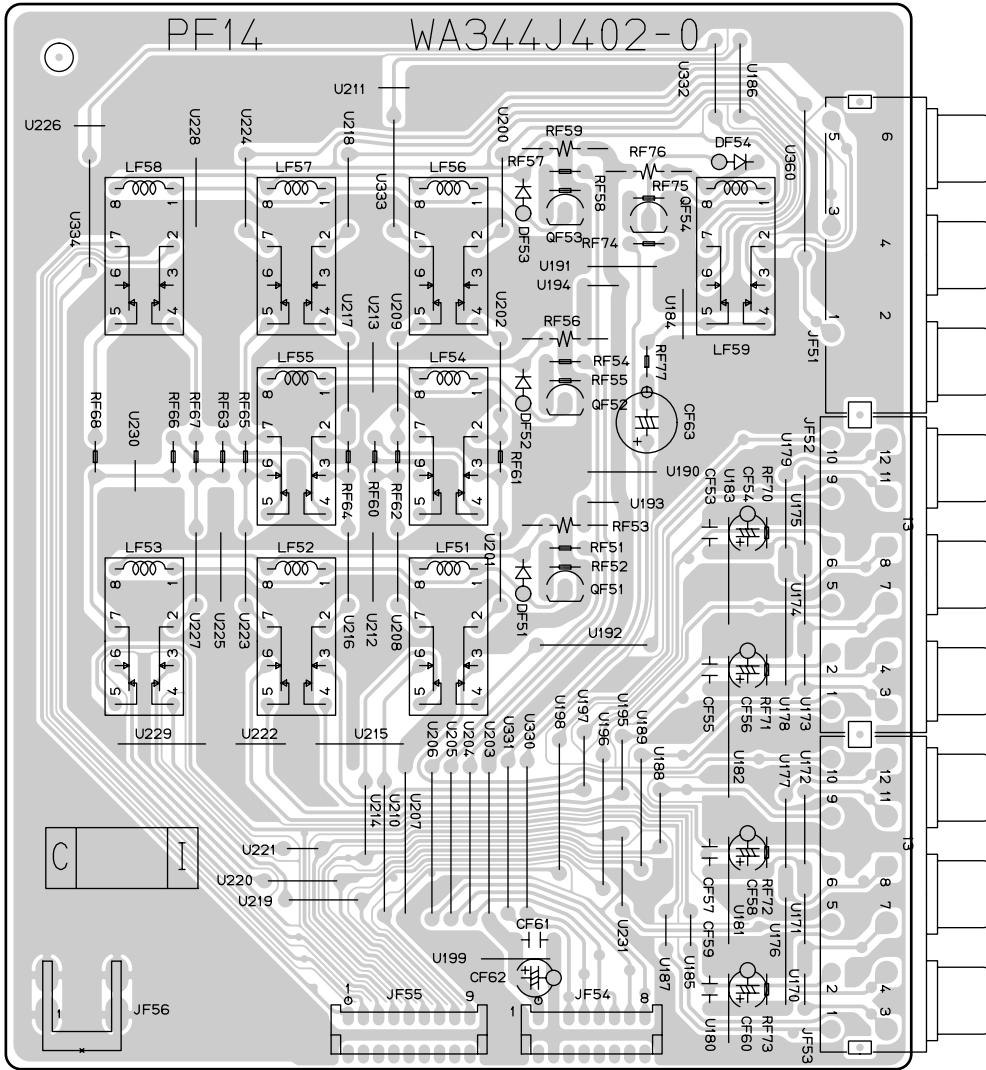


P654

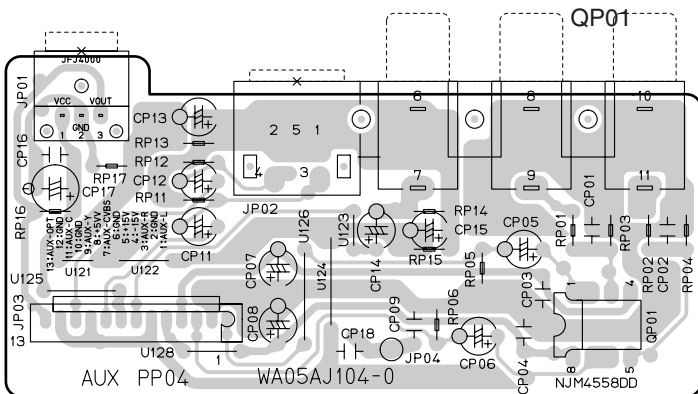


PF14

DF51 QF51 QF54 DF54
DF52 QF52
DF53 QF53

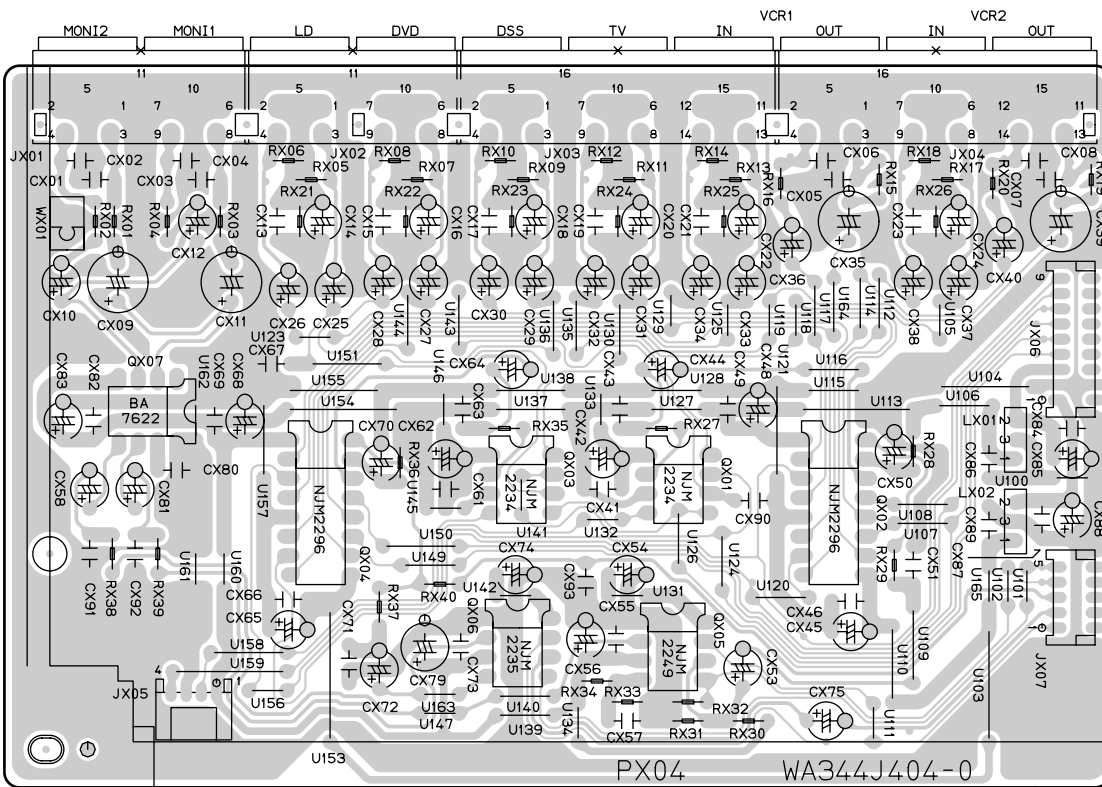


PP04



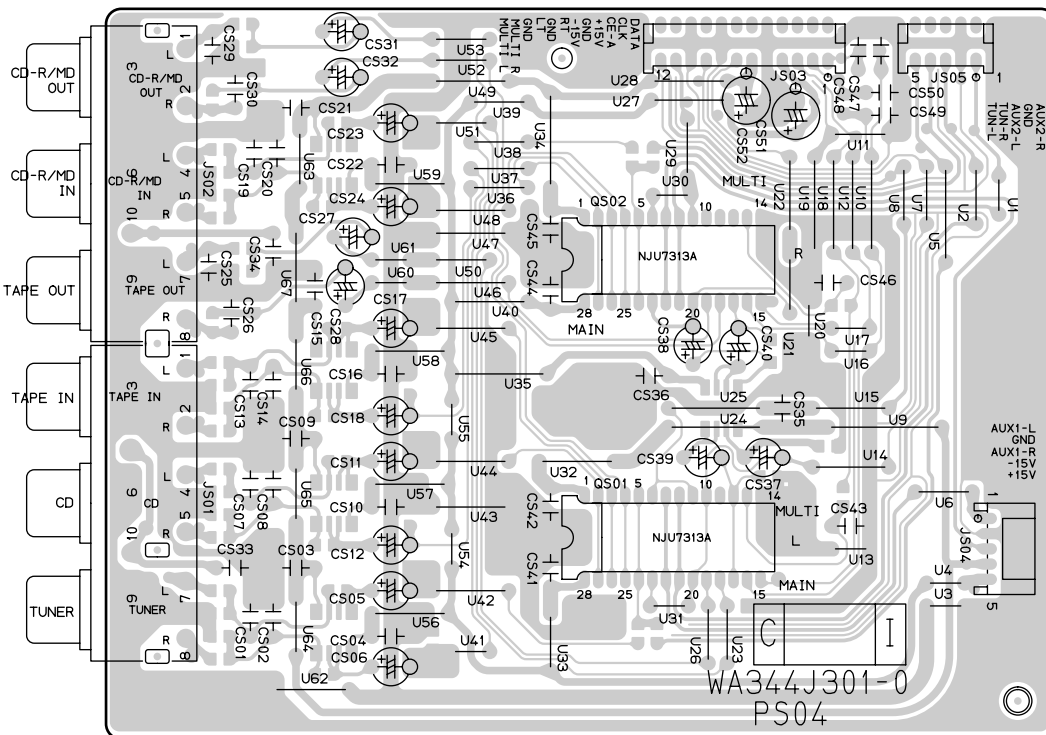
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QX07 QX04 QX03 QX01 QX02
 QX06 QX05



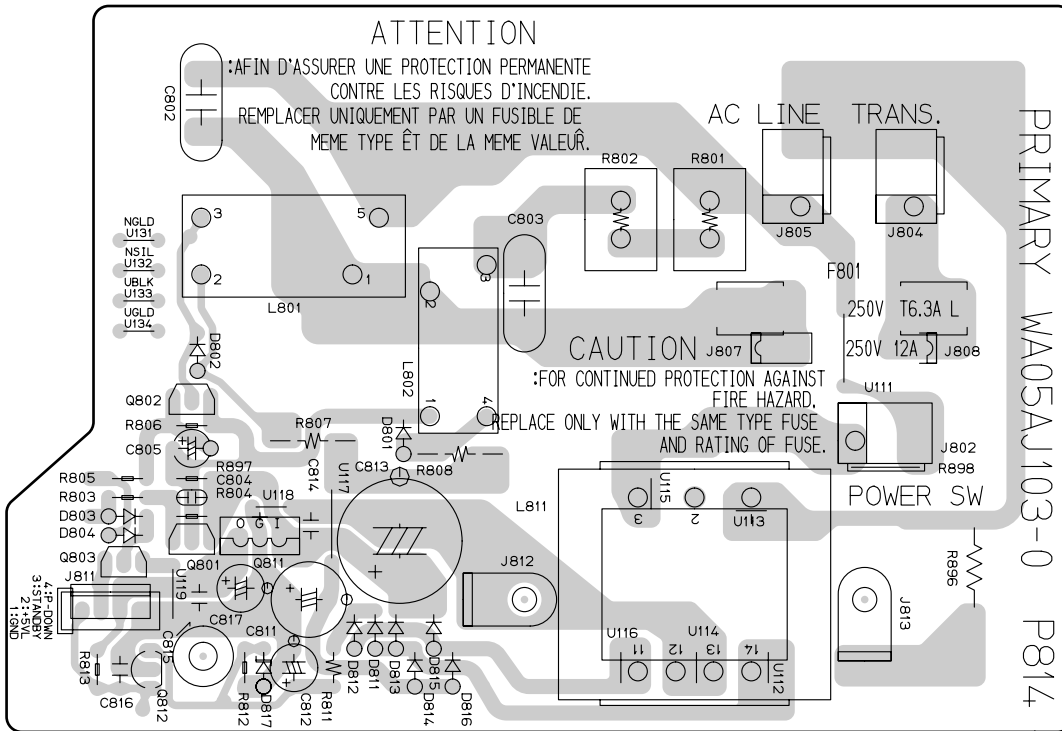
PS04

QS02 QS01



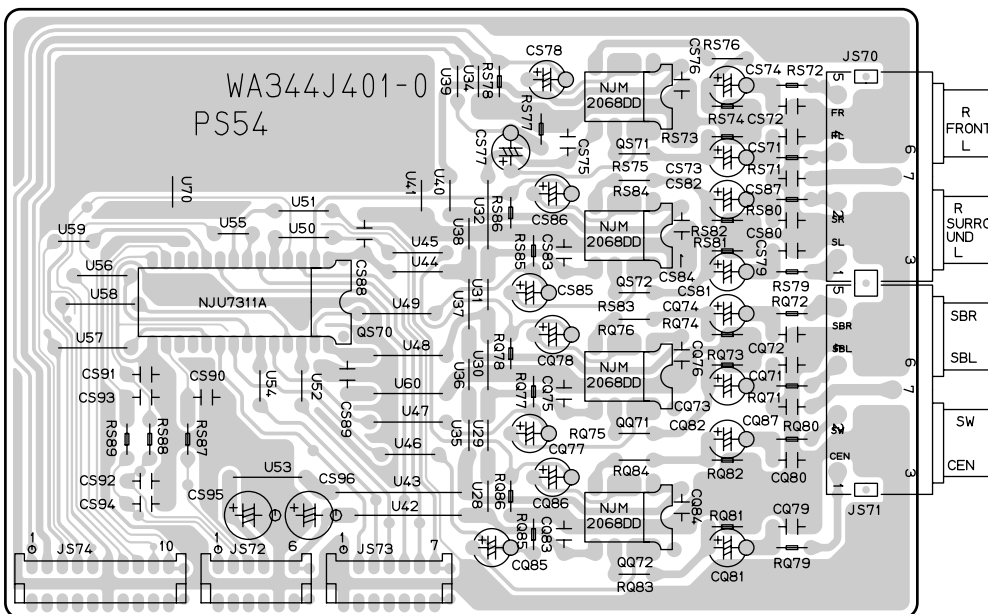
P814

Q802
Q803 Q801 Q811
Q812



PS54

Q802
Q803 Q801 Q811
Q812

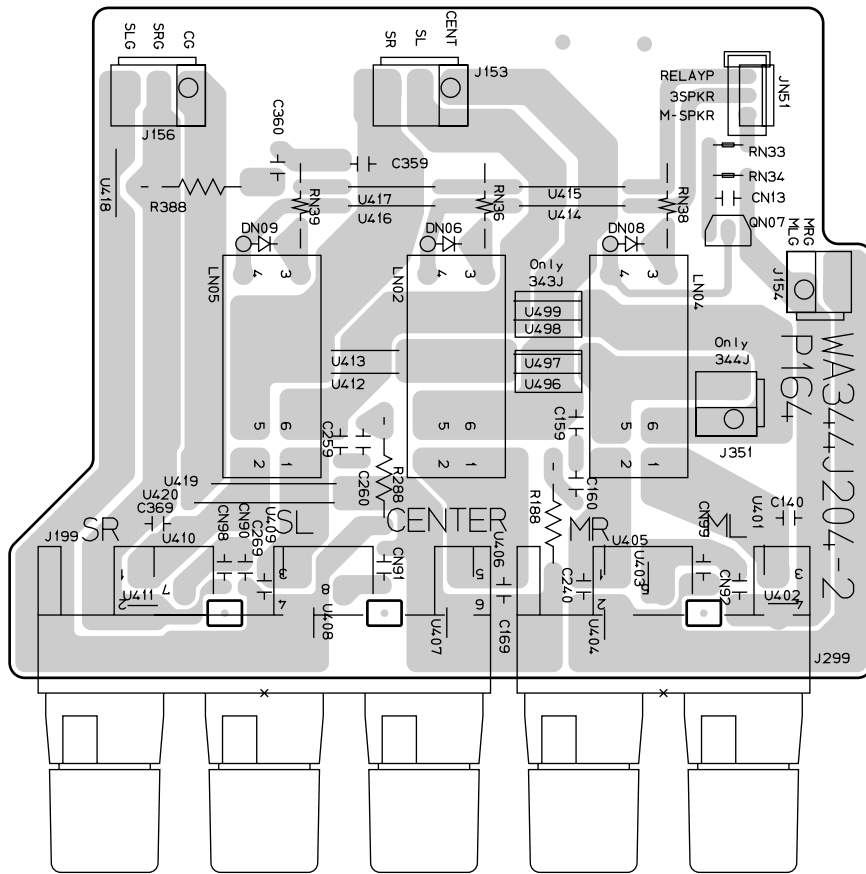


P164

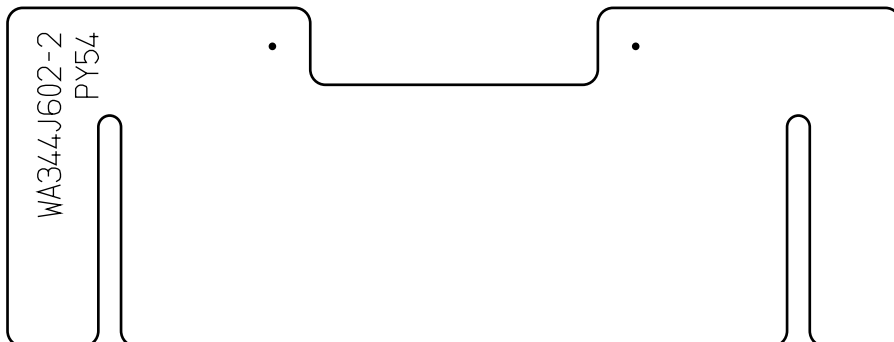
DN09

DN06

DN08



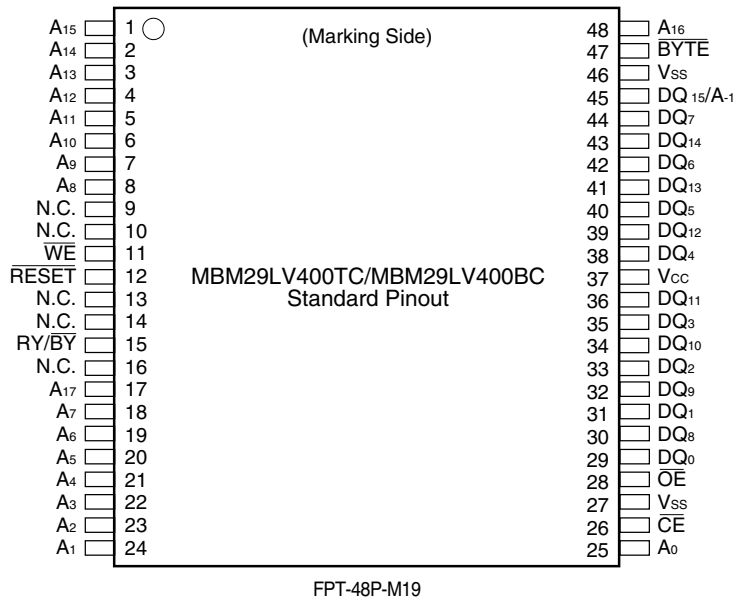
PY54



7. IC DATA

Q671 : MBM29LV400TC

Pin Assignment

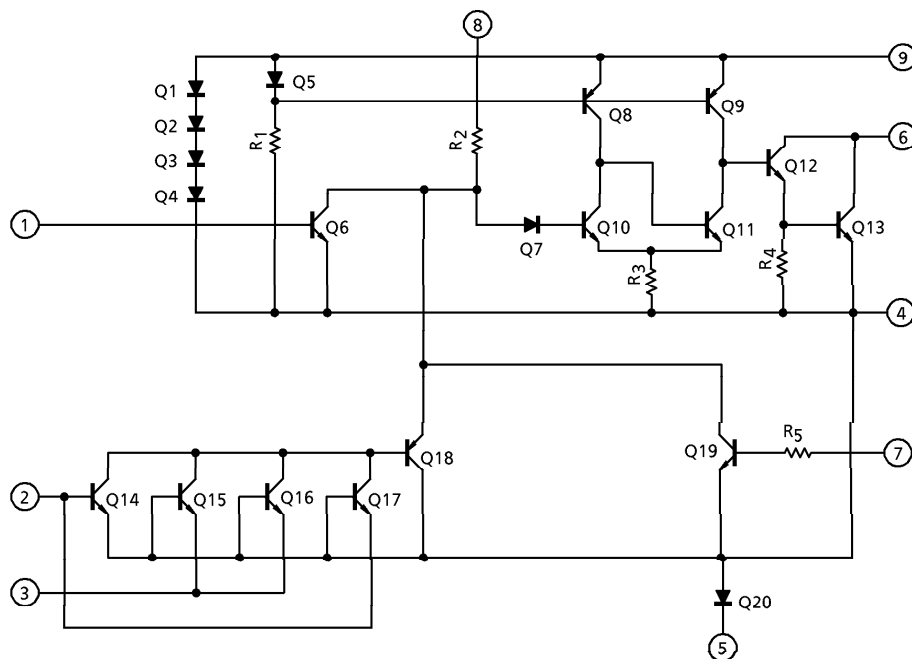


Pin Configuration

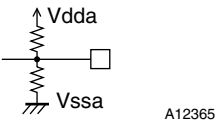
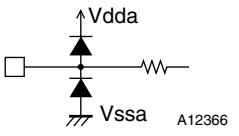
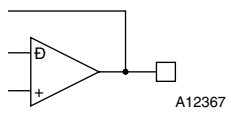
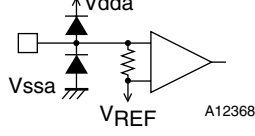
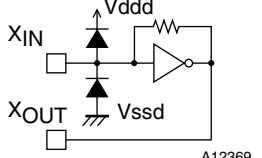
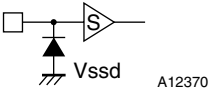
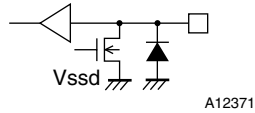
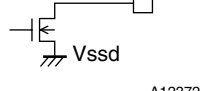
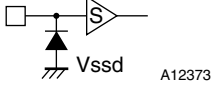
| Pin | Function |
|----------------------------------------|--------------------------------------------------|
| A-1, A ₀ to A ₁₇ | Address Inputs |
| DQ ₀ to DQ ₁₅ | Data Inputs/Outputs |
| \overline{CE} | Chip Enable |
| \overline{OE} | Output Enable |
| \overline{WE} | Write Enable |
| RY/BY | Ready/Busy Output |
| RESET | Hardware Reset Pin/Temporary Sector Unprotection |
| BYTE | Selects 8-bit or 16-bit mode |
| N.C. | No Internal Connection |
| V _{SS} | Device Ground |
| V _{CC} | Device Power Supply |

QN01 : TA7317P

Equivalent Circuit Diagram



Pin Functions

| Pin No. | Pin name | Function | I/O | Pin circuit |
|---------|---------------------------|-----------------------------------------------------------------------------------------------------|--------|----------------------------------------------------------------------------------------------|
| 1 | VREF | Reference voltage output ($V_{dda}/2$) | Output |  A12365 |
| 2 | MPXIN | Baseband (multiplexed) signal input | Input |  A12366 |
| 5 | FLOUT | Subcarrier output (filter output) | Output |  A12367 |
| 6 | CIN | Subcarrier input (comparator input) | Input |  A12368 |
| 3 | Vdda | Analog system power supply (+5 V) | Ñ | Ñ |
| 4 | Vssa | Analog system ground | Ñ | Ñ |
| 12 | XOUT | Crystal oscillator output (4.332/8.664 MHz) | Output |  A12369 |
| 13 | XIN | Crystal oscillator input (external reference signal input) | Input | |
| 7 | T1 | Test input (This pin must always be connected to ground.) | Input |  A12370 |
| 8 | T2 | Test input (standby control) 0: Normal operation, 1: Standby state (crystal oscillator stopped) | Input | |
| 9 | T3 (RDCL) | Test I/O (RDS clock output) | I/O* |  A12371 |
| 10 | T4 (RDDA) | Test I/O (RDS data output) | | |
| 11 | T5 (RSFT) | Test I/O (soft-decision control data output) | | |
| 16 | T6 (ERROR/57K/TP/BE1) | Test I/O (error status output, regenerated carrier output, TP output, error block count output) | | |
| 17 | T7 (CORREC/ARI-ID/TA/BE0) | Test I/O (Error correction status output, SK detection output, TA output, error block count output) | Output |  A12372 |
| 18 | SYNC | Block synchronization detection output | | |
| 19 | RDS-ID | RDS detection output | | |
| 20 | DO | Data output | Input |  A12373 |
| 21 | CL | Clock input | | |
| 22 | DI | Data input | | |
| 23 | CE | Chip enable | | |
| 24 | SYR | Synchronization and RAM address reset (active high) | | |
| 14 | Vddd | Digital system power supply (+5 V) | Ñ | Ñ |
| 15 | Vssd | Digital system ground | Ñ | Ñ |

Note: * Normally function as an output pin. Used as an I/O pin in test mode, which is not available to user applications.

Pin Functions

| No. | Pin name | I/O | Function |
|-----|----------|-----|-----------------------------------------------------------------------------------------------------|
| 1 | DISEL | I | Data input pin (DIN0, DIN1) selection input pin |
| 2 | DOUT | O | Input bi-phase data through output pin |
| 3 | DIN0 | I | Digital data input pin (CMOS level, with pull-down resistance when no selected) |
| 4 | DIN1 | I | Digital data input pin (CMOS level, with pull-down resistance when no selected) |
| 5 | DIN2 | I | Digital data input pin (TTL level) |
| 6 | DGND | | Digital GND |
| 7 | DVDD | | Digital power supply |
| 8 | R | I | VCO gain control input pin |
| 9 | VIN | I | VCO free-running frequency setting input pin |
| 10 | LPF | O | PLL loop filter setting pin |
| 11 | AVDD | | Analog power supply |
| 12 | AGND | | Analog GND |
| 13 | CKOUT | O | Clock output pin (256 fs, 384 fs, 512 fs, crystal oscillation, VCO free-running oscillation) |
| 14 | BCK | O | 64 fs clock output pin |
| 15 | LRCK | O | fs clock output pin (L = R-ch, H = L-ch, I ² S = inverted) |
| 16 | DATAO | O | Data output pin |
| 17 | XSTATE | O | Source clock switch monitor output pin |
| 18 | DGND | | Digital GND |
| 19 | DVDD | | Digital power supply |
| 20 | XMCK | O | Crystal oscillation clock output pin (24.576 MHz or 12.288 MHz) |
| 21 | XOUT | O | Crystal oscillator connection output pin |
| 22 | XIN | I | Crystal oscillator connection input pin, external signal input supported (24.576 MHz or 12.288 MHz) |
| 23 | EMPHA | O | Channel status emphasis information output pin |
| 24 | AUDIO | O | Channel status bit 1 (non-PCM data detection bit) output pin |
| 25 | CSFLAG | O | First 40 channel status bits update flag output pin |
| 26 | F0/P0/C0 | O | Input fs calculation signal output/Pc data type output/input word length information output pin |
| 27 | F1/P1/C1 | O | Input fs calculation signal output/Pc data type output/input word length information output pin |
| 28 | F2/P2/C2 | O | Input fs calculation signal output/Pc data type output/input word length information output pin |
| 29 | VF/P3/C3 | O | Validity flag output/Pc data type output/input word length information output pin |
| 30 | DVDD | | Digital GND |
| 31 | DGND | | Digital power supply |
| 32 | AUTO | O | Non-PCM burst data transfer detection signal (Pa, Pb detection) output pin |
| 33 | BPSYNC | O | Non-PCM burst preamble Pa, Pb, Pc, Pd sync signal output pin |
| 34 | ERROR | O | PLL lock error or data error flag output pin |
| 35 | DO | O | Microcontroller IF/read data output pin |
| 36 | DI | I | Microcontroller IF/write data input pin |
| 37 | CE | I | Microcontroller IF/Chip enable input pin |
| 38 | CL | I | Microcontroller IF/clock input pin |
| 39 | XSEL | I | [XIN] crystal oscillation selection input pin (24.576 MHz or 12.288 MHz) |
| 40 | MODE0 | I | Mode setting input pin |
| 41 | MODE1 | I | Mode setting input pin |
| 42 | DGND | | Digital GND |
| 43 | DVDD | | Digital power supply |
| 44 | DOSEL0 | I | Output data format selection input pin |
| 45 | DOSEL1 | I | Output data format selection input pin |
| 46 | CKSEL0 | I | Output clock selection input pin |
| 47 | CKSEL1 | I | Output clock selection input pin |
| 48 | XMODE | I | System reset input pin |

Note: * Perform digital power supply (DVDD) and analog power supply (AVDD) ON/OFF with the same potential and the same timing as a latch-up countermeasure.

Pin Description

| No. | Pin Name | I/O | Function | | | | | | | | | | | | | | | | | | | | |
|----------|------------------|-------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------|------|------|---|---|----------------------------|-------|---|---|-------------------------------------------|-------|---|---|-------------------------------|-------|---|---|-------------------------------|-------|
| 1 | VREFL | O | Lch Reference Voltage Pin, 3.75V Normally connected to GNDL with a 10 μ F electrolytic capacitor and a 0.1 μ F ceramic capacitor | | | | | | | | | | | | | | | | | | | | |
| 2 | GNDL | - | Lch Reference Ground Pin, 0V | | | | | | | | | | | | | | | | | | | | |
| 3 | VCOML | O | Lch Common Voltage Pin, 2.75V | | | | | | | | | | | | | | | | | | | | |
| 4 | AINL+ | I | Lch Analog positive input Pin | | | | | | | | | | | | | | | | | | | | |
| 5 | AINL- | I | Lch Analog negative input Pin | | | | | | | | | | | | | | | | | | | | |
| 6 | ZCAL | I | Zero Calibration Control Pin This pin controls the calibration reference signal. "L": VCOML and VCOMR "H": Analog Input Pins(AINL \pm , AINR \pm) | | | | | | | | | | | | | | | | | | | | |
| 7 | VD | - | Digital Power Supply Pin, 3.3V | | | | | | | | | | | | | | | | | | | | |
| 8 | DGND | - | Digital Ground Pin, 0V | | | | | | | | | | | | | | | | | | | | |
| 9 | CAL | O | Calibration Active Signal Pin "H" means the offset calibration cycle is in progress. Offset calibration starts when RST goes "H". CAL goes "L" after 8704 LRCK cycles for DFS="L", 17408 LRCK cycles for DFS ="H". | | | | | | | | | | | | | | | | | | | | |
| 10 | RST | I | Reset Pin When "L", Digital section is powered-down. Upon returning "H", an offset calibration cycle is started. An offset calibration cycle should always be initiated after power-up. | | | | | | | | | | | | | | | | | | | | |
| 11 12 | SMODE2 SMODE1 | I I | Serial Interface Mode Select Pin MSB first, 2's compliment. <table border="0" style="margin-left: 20px;"> <tr> <td style="padding-right: 20px;">SMODE2</td> <td style="padding-right: 20px;">SMODE1</td> <td style="padding-right: 20px;">MODE</td> <td>LRCK</td> </tr> <tr> <td>L</td> <td>L</td> <td>Slave mode : MSB justified</td> <td>: H/L</td> </tr> <tr> <td>L</td> <td>H</td> <td>Master mode : Similar to I²S</td> <td>: H/L</td> </tr> <tr> <td>H</td> <td>L</td> <td>Slave mode : I²S</td> <td>: L/H</td> </tr> <tr> <td>H</td> <td>H</td> <td>Master mode: I²S</td> <td>: L/H</td> </tr> </table> | SMODE2 | SMODE1 | MODE | LRCK | L | L | Slave mode : MSB justified | : H/L | L | H | Master mode : Similar to I ² S | : H/L | H | L | Slave mode : I ² S | : L/H | H | H | Master mode: I ² S | : L/H |
| SMODE2 | SMODE1 | MODE | LRCK | | | | | | | | | | | | | | | | | | | | |
| L | L | Slave mode : MSB justified | : H/L | | | | | | | | | | | | | | | | | | | | |
| L | H | Master mode : Similar to I ² S | : H/L | | | | | | | | | | | | | | | | | | | | |
| H | L | Slave mode : I ² S | : L/H | | | | | | | | | | | | | | | | | | | | |
| H | H | Master mode: I ² S | : L/H | | | | | | | | | | | | | | | | | | | | |
| 13 | LRCK | I/O | Left/Right Channel Select Clock Pin LRCK goes "H" at SMODE2="L" and "L" at SMODE2="H" during reset when SMODE1 "H". | | | | | | | | | | | | | | | | | | | | |
| 14 | SCLK | I/O | Serial Data Clock Pin Data is clocked out on the falling edge of SCLK. Slave mode: SCLK requires more than 48fs clock. Master mode: SCLK outputs a 128fs(DFS="L") or 64fs(DFS="H") clock. SCLK stays "L" during reset. | | | | | | | | | | | | | | | | | | | | |
| 15 | SDATA | O | Serial Data Output Pin MSB first, 2's complement. SDATA stays "L" during reset. | | | | | | | | | | | | | | | | | | | | |
| 16 | FSYNC | I/O | Frame Synchronization Signal Pin Slave mode: When "H", the data bits are clocked out on SDATA. In I ² S mode, FSYNC is Don't care. Master mode: FSYNC outputs 2fs clock. FSYNC stays "L" during reset. | | | | | | | | | | | | | | | | | | | | |
| 17 | MCLK | I | Master Clock Input Pin 256fs at DFS="L", 128fs at DFS="H". | | | | | | | | | | | | | | | | | | | | |
| 18 | DFS | I | Double Speed Sampling Mode Pin "L": Normal Speed "H": Double Speed | | | | | | | | | | | | | | | | | | | | |

| | | | |
|----|-------|---|------------------------------------------------------------------------------------------------------------------------------------------------|
| 19 | HPFE | I | High Pass Filter Enable Pin "L": Disable "H": Enable |
| 20 | TEST | I | Test Pin(pull-down pin) Should be connected to GND. |
| 21 | BGND | - | Substrate Ground Pin, 0V |
| 22 | AGND | - | Analog Ground Pin, 0V |
| 23 | VA | - | Analog Supply Pin, 5V |
| 24 | AINR- | I | Rch Analog negative input Pin |
| 25 | AINR+ | I | Rch Analog positive input Pin |
| 26 | VCOMR | O | Rch Common Voltage Pin, 2.75V |
| 27 | GNDR | - | Rch Reference Ground Pin, 0V |
| 28 | VREFR | O | Rch Reference Voltage Pin, 3.75V Normally connected to GNDR with a 10 μ F electrolytic capacitor and a 0.1 μ F ceramic capacitor |

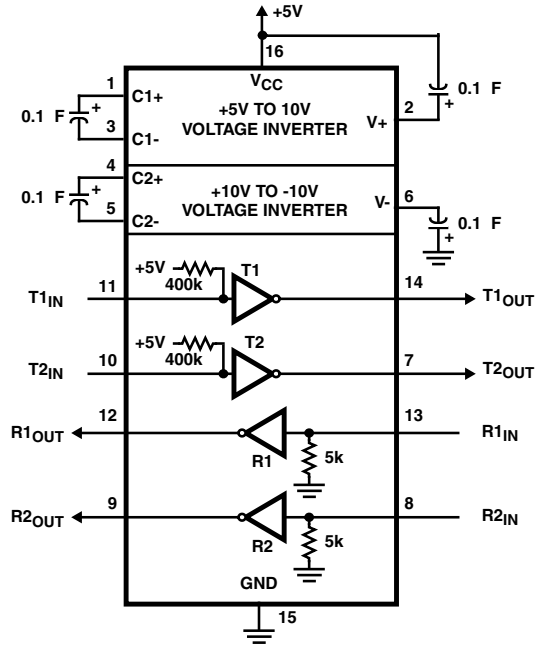
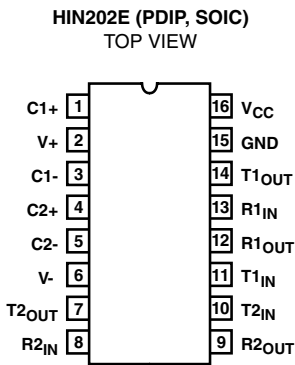
Note: All digital inputs should not be left floating

QA07, QU71 : PCF8574

Pin Description

| SYMBOL | PIN | | DESCRIPTION |
|-------------------------|-------------|--------|-------------------------------|
| | DIP16; SO16 | SSOP20 | |
| A0 | 1 | 6 | address input 0 |
| A1 | 2 | 7 | address input 1 |
| A2 | 3 | 9 | address input 2 |
| P0 | 4 | 10 | quasi-bidirectional I/O 0 |
| P1 | 5 | 11 | quasi-bidirectional I/O 1 |
| P2 | 6 | 12 | quasi-bidirectional I/O 2 |
| P3 | 7 | 14 | quasi-bidirectional I/O 3 |
| V _{SS} | 8 | 15 | supply ground |
| P4 | 9 | 16 | quasi-bidirectional I/O 4 |
| P5 | 10 | 17 | quasi-bidirectional I/O 5 |
| P6 | 11 | 19 | quasi-bidirectional I/O 6 |
| P7 | 12 | 20 | quasi-bidirectional I/O 7 |
| $\overline{\text{INT}}$ | 13 | 1 | interrupt output (active LOW) |
| SCL | 14 | 2 | serial clock line |
| SDA | 15 | 4 | serial data line |
| V _{DD} | 16 | 5 | supply voltage |
| n.c. | - | 3 | not connected |
| n.c. | - | 8 | not connected |
| n.c. | - | 13 | not connected |
| n.c. | - | 18 | not connected |

Pin Assignment



Pin Descriptions

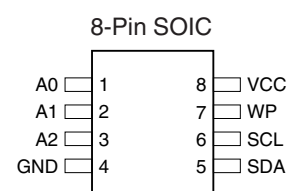
| PIN | FUNCTION |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| V _{CC} | Power Supply Input 5V 10%, (5V 5% HIN207E). |
| V+ | Internally generated positive supply (+10V nominal). |
| V- | Internally generated negative supply (-10V nominal). |
| GND | Ground Lead. Connect to 0V. |
| C1+ | External capacitor (+ terminal) is connected to this lead. |
| C1- | External capacitor (- terminal) is connected to this lead. |
| C2+ | External capacitor (+ terminal) is connected to this lead. |
| C2- | External capacitor (- terminal) is connected to this lead. |
| T _{IN} | Transmitter Inputs. These leads accept TTL/CMOS levels. An internal 400k pull-up resistor to V _{CC} is connected to each lead. |
| T _{OUT} | Transmitter Outputs. These are RS-232 levels (nominally 10V). |
| R _{IN} | Receiver Inputs. These inputs accept RS-232 input levels. An internal 5k pull-down resistor to GND is connected to each input. |
| R _{OUT} | Receiver Outputs. These are TTL/CMOS levels. |
| \overline{EN} | Enable Input. This is an active low input which enables the receiver outputs. With $\overline{EN} = 5V$, the outputs are placed in a high impedance state. |
| SD, \overline{SD} | Shutdown Input. With SD = 5V (HIN213E $\overline{SD} = 0V$), the charge pump is disabled, the receiver outputs are in a high impedance state (except R4 and R5 of HIN241E) and the transmitters are shut off. |
| NC | No Connect. No connections are made to these leads. |

Pin Functions

| Pin No. | Symbol | Function | Description |
|---------|------------------------|---------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | V _{SS1} | Ground | Ground connection (digital system ground) |
| 2 | Xtal _{IN} | Crystal oscillator connection | Used to connect the crystal oscillator and capacitor used to generate the internal synchronization signal, or to input an external clock (2fsc or 4fsc). |
| 3 | Xtal _{OUT} | | |
| 4 | CTRL1 | Crystal oscillator input switching | Switches between external clock input mode and crystal oscillator mode. Low = crystal oscillator mode, high = external clock mode |
| 5 | BLANK | Blanking output | Outputs the blank signal (the OR of the character and border signals). (Outputs a composite sync signal when MOD0 is high.) Outputs the crystal oscillator clock during reset (when the RST pin is low), but can be set up to not output this signal by microprocessor command. |
| 6 | OSC _{IN} | LC oscillator connection | Connections for the coil and capacitor that form the oscillator that generates the character output dot clock. |
| 7 | OSC _{OUT} | | |
| 8 | CHARA | Character output | Outputs the character signal. (Functions as the external synchronization signal discrimination signal output pin when MOD0 is high, and outputs the state of the judgment as to whether the external synchronization signal is present or not. Outputs a high level when the synchronization signal is present.) Outputs the dot clock (LC oscillator) during reset, but can be set up to not output this signal by microprocessor command. |
| 9 | $\overline{\text{CS}}$ | Enable input | Serial data input enable input. Serial data input is enabled when low. A pull-up resistor is built in (hysteresis input). |
| 10 | SCLK | Clock input | Serial data input clock input. A pull-up resistor is built in (hysteresis input). |
| 11 | SIN | Data input | Serial data input. A pull-up resistor is built in (hysteresis input). |
| 12 | V _{DD2} | Power supply | Composite video signal level adjustment power supply pin (analog system power supply). |
| 13 | CV _{OUT} | Video signal output | Composite video signal output |
| 14 | NC | | Must be either connected to ground or left open. |
| 15 | CV _{IN} | Video signal input | Composite video signal input |
| 16 | V _{DD1} | Power supply | Power supply (+5 V: digital system power supply) |
| 17 | SYN _{IN} | Sync separator circuit input | Video signal input for the built-in sync separator circuit (Used for either horizontal synchronization signal or composite sync signal input when the built-in sync separator circuit is not used.) |
| 18 | SEP _C | Sync separator circuit bias voltage | Built-in sync separator circuit bias voltage monitor pin |
| 19 | SEP _{OUT} | Composite sync signal output | Built-in sync separator circuit composite sync signal output. (When MOD1 is high, outputs a high level during internal synchronization and a low level during external synchronization.) (Outputs the SYN _{IN} input signal when the internal sync separator circuit is not used.) |
| 20 | SEP _{IN} | Vertical synchronization signal input | Inputs a vertical synchronization signal created by integrating the SEP _{OUT} pin output signal. An integrator must be attached at the SEP _{OUT} pin. This pin must be tied to V _{DD1} if unused. |
| 21 | CTRL2 | NTSC/PAL-M switching input | The setting indicated by this pin takes priority in switching between the NTSC, PAL, PAL-M and PAL-N formats. A low level selects NTSC after a reset. The microprocessor command NTSC, PAL, PAL-M, or PAL-N setting is valid. High = PAL-M format. |
| 22 | CTRL3 | SEP _{IN} input control | Controls whether or not the $\overline{\text{VSYNC}}$ signal is input to the SEP _{IN} input. Low = $\overline{\text{VSYNC}}$ input, high = VSYNC not input. |
| 23 | RST | Reset input | System reset input. A pull-up resistor is built in (hysteresis input). |
| 24 | V _{DD1} | Power supply (+5 V) | Power supply (+5 V: digital system power supply) |

Pin Configuration

| Pin Name | Function |
|----------|--------------------|
| A0 - A2 | Address Inputs |
| SDA | Serial Data |
| SCL | Serial Clock Input |
| WP | Write Protect |
| NC | No Connect |



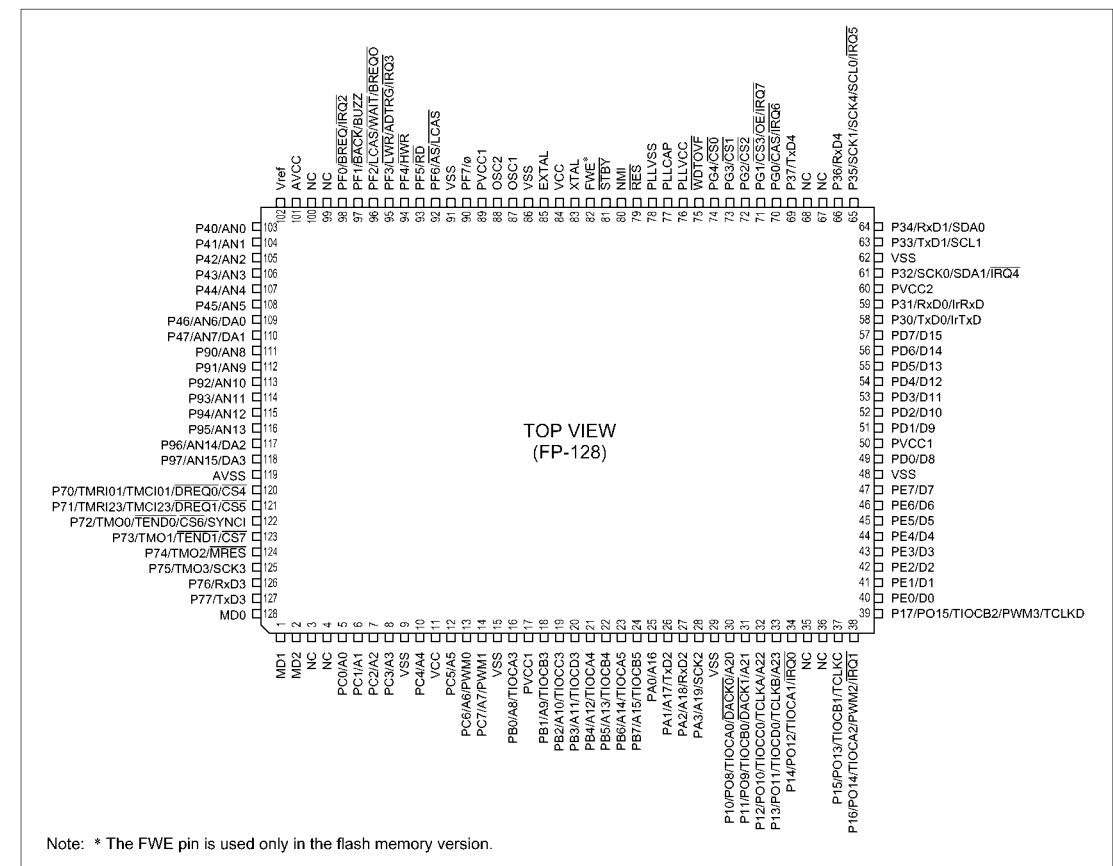
Pin Description

| pin | port mode = 7 | I/O | use | Name | Port Setting | | Note |
|-----|------------------|-----|-------|-----------------|--------------|------|---------------------------------------------------------|
| | | | | | Act. | init | |
| 1 | MD1 | I | YES | MD1 | - | - | Fix H |
| 2 | MD2 | I | YES | MD2 | - | - | Normal :H, Boot :L |
| 3 | NC | - | - | | - | - | N.C. |
| 4 | NC | - | - | | - | - | N.C. |
| 5 | PC0 | I/O | O | DATAOTU | - | L | Tuner Pack |
| 6 | PC1 | I/O | O | CLKTU | - | L | Tuner Pack |
| 7 | PC2 | I/O | O | _CETU | L | L | Tuner Pack |
| 8 | PC3 | I/O | I | DATAITU | - | | Tuner Pack |
| 9 | VSS | I | YES | GND | - | - | GND |
| 10 | PC4 | I/O | I | SD | L | | Tuned |
| 11 | VCC | I | YES | VCC | - | - | 3.3V |
| 12 | PC5 | I/O | I | TUST | H | | Stereo Tune/_ MONO |
| 13 | PC6/PWM0 | I/O | O | _CERDS | L | L | Tuner Pack(RDS) |
| 14 | PC7/PWM1 | I/O | I | RDSDATA | - | | Tuner Pack(RDS) |
| 15 | VSS | I | YES | GND | - | - | GND |
| 16 | PB0/TIOCA3 | I/O | T_IN | VSYNC | H | | V-sync Det. & Change OSD |
| 17 | PVCC1 | I | YES | PVCC1 | - | - | +5V |
| 18 | PB1/TIOCB3 | I/O | O | _Data(Inverted) | | H | P-Exp. (mute, Video), Analog SW, Volume |
| 19 | PB2/TIOCC3 | I/O | O | _CLK(Inverted) | | H | P-Exp.(mute, Video), Analog SW, Volume |
| 20 | PB3/TIOCD3 | I/O | O | _CEEXP | L | H | P-Exp. (mute, Video), |
| 21 | PB4/TIOCA4 | I/O | T_OUT | RC_BUS_OUT | | L | RC BUS Output |
| 22 | PB5/TIOCB4 | I/O | O | KILLIR | H | L | Kill to IR input signal. |
| 23 | PB6/TIOCA5 | I/O | T_OUT | MRC50 | | L | RC BUS MULTI Output |
| 24 | PB7/TIOCB5 | I/O | O | _UMUTE | L | L | logic for Tr mute |
| 25 | PA0 | I/O | O | RTS | | L | UART |
| 26 | PA1/TxD2 | I/O | SO | TXD | | L | UART for Panja, Flash WR Necessary to Pull Up |
| 27 | PA2/RxD2 | I/O | SI | RXD | | - | UART for Panja, Flash WR Necessary to Pull Up |
| 28 | PA3/SCK2 | I/O | I | CTS | - | - | UART |
| 29 | Vss | I | - | GND | - | - | Ground |
| 30 | P10/TIOCA0/ | I/O | T_OUT | RC6STAT | H | L | IR carry out |
| 31 | P11/TIOCB0/ | I/O | T_IN | RCIN | | | IR In for RC-5 \$ RC-6 |
| 32 | P12/ | I/O | O | _SMUTE | L | L | DAC |
| 33 | P13/ | I/O | O | DFS | H | L | DAC&ADC |
| 34 | P14/_IRQ0 | I/O | INT | _PDOWN | L | - | Power Down Detect |
| 35 | NC | - | - | N.C. | - | - | |
| 36 | NC | - | - | N.C. | - | - | |
| 37 | P15/ | I/O | O | _RSTDAC | L | L | DAC |
| 38 | P16/_IRQ1 | I/O | INT | ERF | H | - | error from DIR |

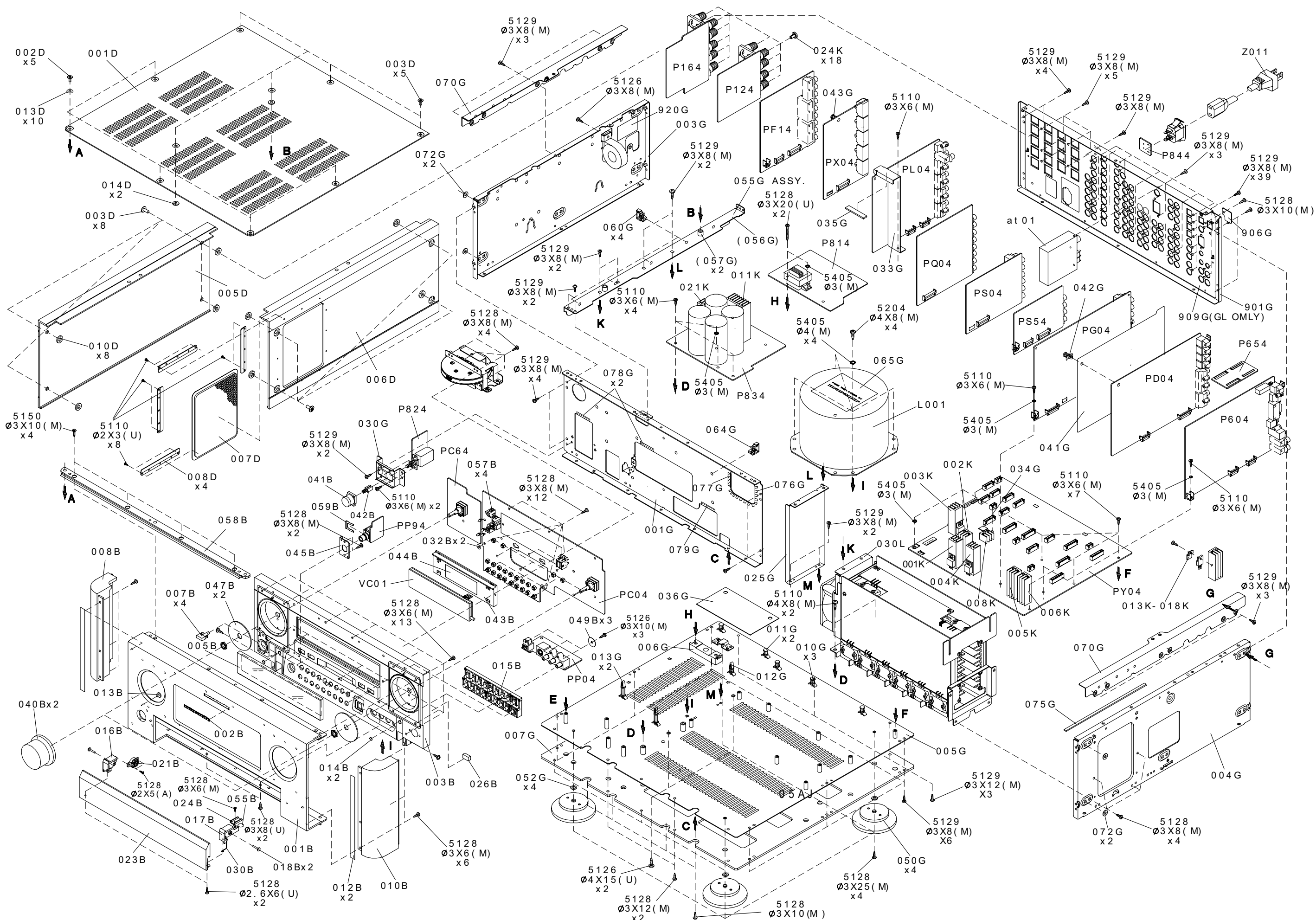
| | | | | | | | |
|-----|--------------------|-----|-----|-----------|---|---|-----------------------------|
| 39 | P17/ | I/O | O | ADCAL | L | L | ADC |
| 40 | PE0 | I/O | O | DATAODIR | | L | DIR |
| 41 | PE1 | I/O | O | CLKDIR | | L | DIR |
| 42 | PE2 | I/O | O | _CEDIR | L | L | DIR |
| 43 | PE3 | I/O | I | DATAIDIR | | L | DIR |
| 44 | PE4 | I/O | I | XSTATE | | - | DIR |
| 45 | PE5 | I/O | O | _XMODE | L | L | DIR |
| 46 | PE6 | I/O | O | KILLSCI | H | L | Kill CLKto Analog Input IC |
| 47 | PE7 | I/O | O | _STANDBY | L | L | Standby Power |
| 48 | VSS | I | - | GND | - | - | GND |
| 49 | PD0 | I/O | I/O | EMADU0 | - | L | exFROM I/F |
| 50 | PVCC1 | I | - | PVcc | - | - | +5V |
| 51 | PD1 | I/O | I/O | EMADU1 | - | L | exFROM I/F |
| 52 | PD2 | I/O | I/O | EMADU2 | | L | exFROM I/F |
| 53 | PD3 | I/O | I/O | EMADU3 | | L | exFROM I/F |
| 54 | PD4 | I/O | I/O | EMADU4 | | L | exFROM I/F |
| 55 | PD5 | I/O | I/O | EMADU5 | | L | exFROM I/F |
| 56 | PD6 | I/O | I/O | EMADU6 | | L | exFROM I/F |
| 57 | PD7 | I/O | I/O | EMADU7 | | L | exFROM I/F |
| 58 | P30/ | I/O | I | PEAK | H | - | Peak Indicator |
| 59 | P31/ | I/O | O | _RSTFL | L | L | Reset FL Driver |
| 60 | PVCC2 | I | - | PVcc | - | - | +5V |
| 61 | P32/SDA1/ IRQ4/ | I/O | Int | _PROTECT2 | L | - | Emergency Protection |
| 62 | VSS | I | - | GND | - | - | GND |
| 63 | P33/SCL1/ | I/O | O | BTMODE3 | - | L | exFROM I/F |
| 64 | P34/SDA0/ | I/O | SD | IICDATA | - | L | I2C0 for DSP,E2PROM,EXP |
| 65 | P35/SCL0/ IRQ5/ | I/O | SC | IICCLK | - | L | I2C0 for DSP,E2PROM,EXP |
| 66 | P36/RxD4 | I/O | O | _RSTDSP1 | L | L | DSP1 |
| 67 | NC | - | - | N.C. | - | - | N.C. |
| 68 | NC | - | - | N.C. | - | - | N.C. |
| 69 | P37/TxD4 | I/O | O | _RSTDSP2 | L | L | DSP1 |
| 70 | PG0/_IRQ6 | I/O | O | BTMODE1 | - | L | exFROM I/F |
| 71 | PG1/_IRQ7 | I/O | O | BTMODE2 | - | L | exFROM I/F |
| 72 | PG2 | I/O | O | _FRWE | L | L | exFROM I/F |
| 73 | PG3 | I/O | O | FROE | L | L | exFROM I/F |
| 74 | PG4 | I/O | O | FREXTMEM | - | L | exFROM I/F |
| 75 | _WDTOVF | O | No | | L | - | WDT OVF Output |
| 76 | PLLVCC | I | YES | PLLVCC | - | - | DC supply for PLL (3.3V) |
| 77 | PLLCAP | I | YES | | - | - | For PLL |
| 78 | PCCVSS | I | YES | GND | - | - | GND for PLL |
| 79 | _RES | I | YES | | L | - | Reset |
| 80 | MNI | I | NO | | - | - | Fix H |
| 81 | _STBY | I | NO | | L | H | Fix H |
| 82 | FWE | I | YES | FWE | H | L | Normal :L, Boot :H |
| 83 | XTAL | I | YES | | - | - | X'tal (4 or 5M) |
| 84 | VCC | I | YES | Vcc | - | - | +3.3V |
| 85 | EXTAL | I | YES | | - | - | X'tal (4 or 5M) |
| 86 | VSS | I | - | GND | - | - | GND |
| 87 | OSC1 | I | NO | | - | - | +3.3V |
| 88 | OSC2 | I | NO | | - | - | N.C. |
| 89 | PVCC1 | I | YES | PVcc | - | - | +5V |
| 90 | PF7/φ | I/O | I | CAL | H | - | Calibration status from ADC |
| 91 | VSS | I | YES | GND | - | - | GND |
| 92 | PF6 | I/O | O | CE_ASW | L | L | Analog Switch |
| 93 | PF5 | I/O | O | CE_VOL | | L | Volume IC |
| 94 | PF4 | I/O | O | CE_VOL-M | | L | Volume IC |
| 95 | PF3/_IRQ3/ | I/O | INT | REQ2 | L | - | DSP2 |
| 96 | PF2 | I/O | O | _SPKROFF | L | L | Speaker relay |
| 97 | PF1/BUZZ | I/O | O | _BHIGH | L | L | Power Amp |
| 98 | PF0/_IRQ2 | I/O | INT | REQ1 | L | - | DSP1 |
| 99 | NC | - | - | | - | - | N.C. |
| 100 | NC | - | - | | - | - | N.C. |
| 101 | AVCC | I | - | AVcc | - | - | +5V |
| 102 | Vref | I | - | Vref | - | - | +5V |

| | | | | | | | |
|-----|--------------|-----|-----|-----------|---|----|-----------------------|
| 103 | P40/AN0 | I | AD | KEY0 | - | - | Front Key |
| 104 | P41/AN1 | I | AD | KEY1 | - | - | Front Key |
| 105 | P42/AN2 | I | AD | KEY2 | - | - | Front Key |
| 106 | P43/AN3 | I | AD | KEY3 | - | - | Front Key |
| 107 | P44/AN4 | I | AD | PROTECT1 | - | - | Protect SPKR |
| 108 | P45/AN5 | I | AD | MODE1 | - | - | CPU mode |
| 109 | P46/AN6/DA0 | I | AD | MODE2 | - | - | CPU mode |
| 110 | P47/AN7/DA1 | I | I | GYRO- | - | - | Front Gyro |
| 111 | P90/AN8 | I | I | GYRO+ | - | - | Front Gyro |
| 112 | P91/AN9 | I | I | VOL+ | - | - | Front Vol. Encoder |
| 113 | P92/AN10 | I | I | VOL- | - | - | Front Vol. Encoder |
| 114 | P93/AN11 | I | I | SEL+ | - | - | Front Select. Encoder |
| 115 | P94/AN12 | I | I | SEL- | - | - | Front Select. Encoder |
| 116 | P95/AN13 | I | I | _HPDET | L | - | HP Jack |
| 117 | P96/AN14/DA2 | I | I | AVSSDET | H | - | power circuit |
| 118 | P97/AN15/DA3 | I | I | MLTRC5I | - | - | Multi RC5 IN |
| 119 | AVSS | I | - | GND | - | - | GND |
| 120 | P70/ | I/O | O | _STBY LED | L | H* | Standby LED On |
| 121 | P71/ | I/O | O | _RSFL | L | L | Front FL driver |
| 122 | P72/ | I/O | O | _CEFLD | L | L | Front FL driver |
| 123 | P73/ | I/O | O | _BPOSD | L | L | Video Circuit |
| 124 | P74/ | I/O | O | _CEOSD | L | H | Video Circuit |
| 125 | P75/SCK3/ | I/O | SC | SIOCLK | - | - | Front FL & Video(OSD) |
| 126 | P76/RxD3 | I/O | O | D_A | - | L | DIR or _ADC sel |
| 127 | P77/TxD3 | I/O | SO | SIODATA | - | - | Front FL & Video(OSD) |
| 128 | MD0 | I | YES | MD0 | - | - | +5V |

Pin Assignment

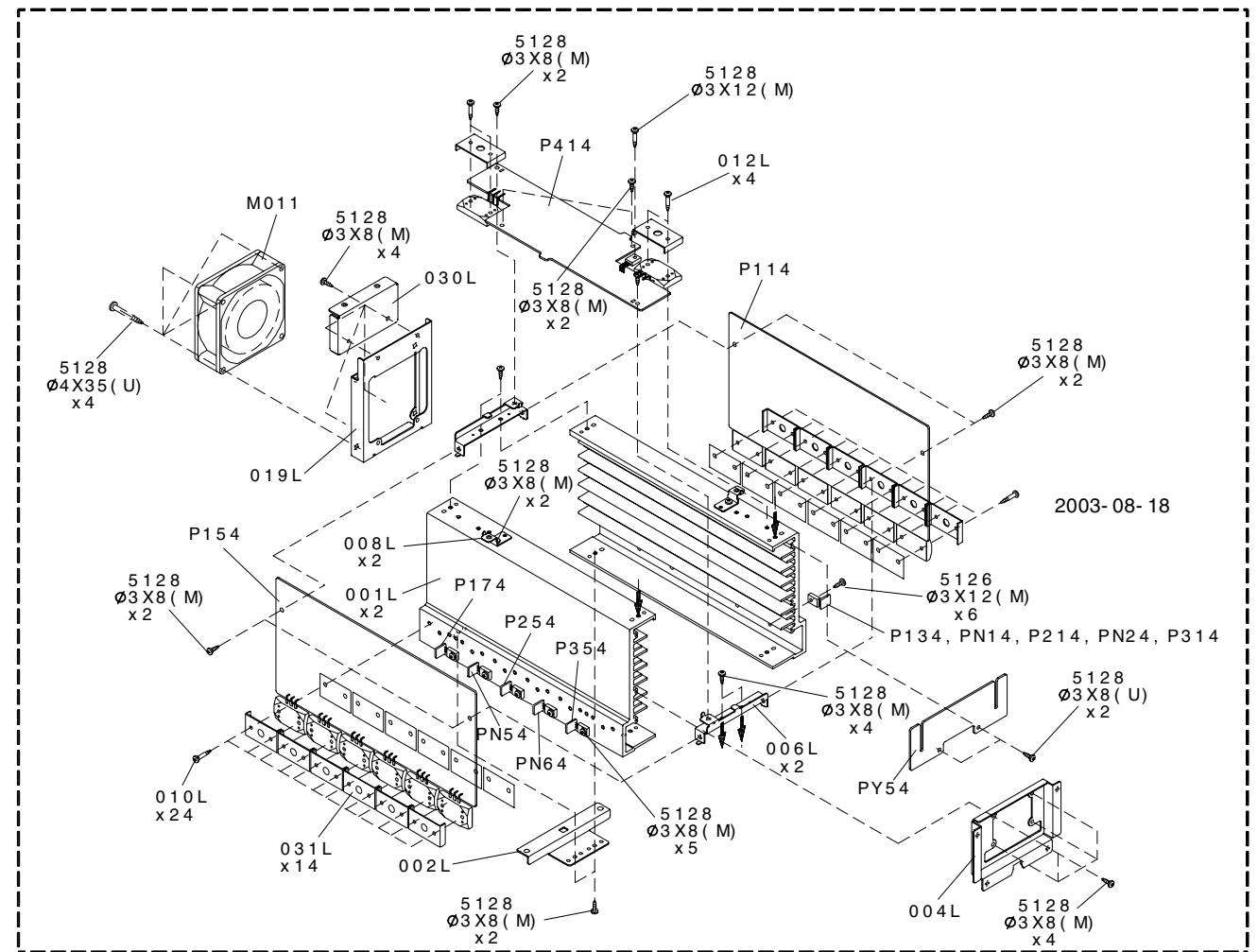
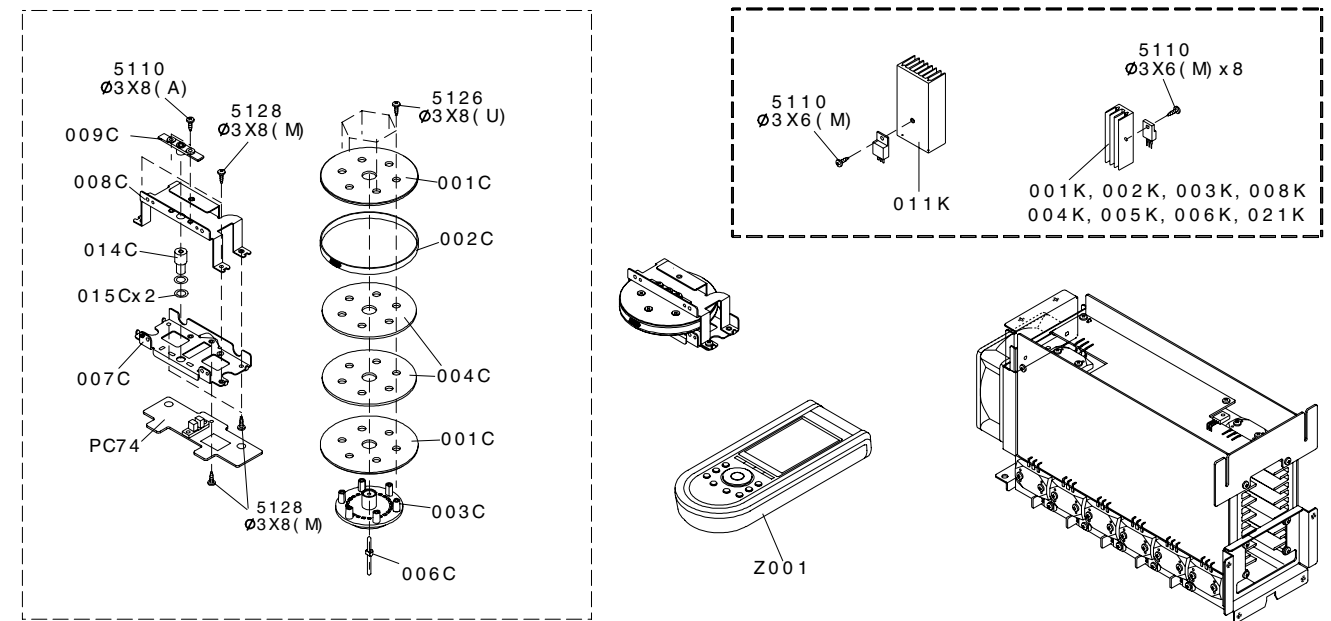


8. EXPLODED VIEW AND PARTS LIST



| POS. NO | VERS. COLOR | PART NO. (FOR EUR) | DESCRIPTION | PART NO. (MJI) | POS. NO | VERS. COLOR | PART NO. (FOR EUR) | DESCRIPTION | PART NO. (MJI) |
|---------|-------------|--------------------|------------------------------|----------------|---------|-------------|--------------------|---------------------------|----------------|
| 001B | /N1G | 05AJ248110 | FRONT AL PANEL (GL N) | 05AJ248110 | L021 | /N | FC50160030 | FERRITE CORE TFCK-16-8-13 | FC50160030 |
| 001B | /N1S | 05AJ248210 | FRONT AL PANEL (SI N) | 05AJ248210 | L031 | /N | FC90400010 | FERRITE CORE SSC-40-12 | FC90400010 |
| 002B | /N1G | 313J251110 | BADGE MARANTZ (GL) | 313J251110 | ▲ M011 | | MM01200320 | D.C MOTOR COOLING FAN | MM01200320 |
| 002B | /N1S | 313J251040 | BADGE MARANTZ (SI) | 313J251040 | WC01 | nsp | | JUMPER LEAD FFC 23P | YU23500530 |
| 003B | /N1G | 05AJ248150 | FRONT MOLD PANEL (GL) | 05AJ248150 | | | | JC01(PC04)-JU04(P604) | |
| 003B | /N1S | 05AJ248250 | FRONT MOLD PANEL (SI) | 05AJ248250 | WY01 | /N | nsp | JUMPER LEAD FFC 15P | YU15200500 |
| 005B | /N1G | 05AJ158110 | WINDOW FL (GL/SI) | 05AJ158110 | | | | TUNERPACK-JY23(PY04) | |
| 005B | /N1S | 05AJ158110 | WINDOW FL (GL/SI) | 05AJ158110 | | | | | |
| 007B | /N1G | 300J270120 | BUTTON | 300J270120 | | | | | |
| 007B | /N1S | 300J270220 | GYRO SIDE FUNCTION (GL) | 300J270220 | 001T | /N | 05AJ851310 | USER GUIDE FOR N | 05AJ851310 |
| 008B | /N1G | 322J063110 | ESCUTCHEON | 322J063110 | Z004 | /N | ZK344J0010 | REMOTE CONTROLLER RC3200 | ZK344J0010 |
| 008B | /N1S | 322J063210 | ESCUTCHEON | 322J063210 | ▲ Z011 | /N | ZC01803080 | MAINS CORD | ZC01803080 |
| 010B | /N1G | 322J063120 | CORNER (L SIDE GL) | 322J063120 | | | | 2P 10A 250V CLASS2 | |
| 010B | /N1S | 322J063220 | CORNER (L SIDE SI) | 322J063220 | | | | | |
| 013B | | 230K355040 | LENS POWER (CLEAR) | 230K355040 | | | | | |
| 015B | /N1G | 05AJ270110 | BUTTON FUNCTION BLOCK(GL) | 05AJ270110 | | | | | |
| 015B | /N1S | 05AJ270210 | BUTTON FUNCTION BLOCK(SI) | 05AJ270210 | | | | | |
| 016B | /N1G | 300J002110 | ARM DOOR HINGE (L SIDE GL) | 300J002110 | | | | | |
| 016B | /N1S | 300J002210 | ARM DOOR HINGE (L SIDE SI) | 300J002210 | | | | | |
| 017B | /N1G | 300J002120 | ARM DOOR HINGE (R SIDE GL) | 300J002120 | | | | | |
| 017B | /N1S | 300J002220 | ARM DOOR HINGE (R SIDE SI) | 300J002220 | | | | | |
| 018B | | 300J112010 | SHAFT DOOR SHAFT | 300J112010 | | | | | |
| 021B | | 391H130030 | DAMPER DOOR | 391H130030 | | | | | |
| 023B | /N1G | 05AJ162110 | DOOR PANEL (GL) | 05AJ162110 | | | | | |
| 023B | /N1S | 05AJ162210 | DOOR PANEL (SI) | 05AJ162210 | | | | | |
| 026B | | 271K305500 | MAGNET DOOR | 271K305500 | | | | | |
| 030B | | 300J115010 | SPRING DOOR ESD | 300J115010 | | | | | |
| 040B | /N1G | 300J154210 | KNOB MASTER (GL) | 300J154210 | | | | | |
| 040B | /N1S | 300J154310 | KNOB MASTER (SI) | 300J154310 | | | | | |
| 041B | /N1G | 176J270150 | BUTTON POWER (GL) | 176J270150 | | | | | |
| 041B | /N1S | 176J270160 | BUTTON POWER (SI) | 176J270160 | | | | | |
| 042B | | 025J125010 | JOINT POWER JOINT | 025J125010 | | | | | |
| 058B | /N1G | 322J063130 | ESCUTCHEON | 322J063130 | | | | | |
| 058B | /N1S | 322J063230 | TOP COVER SPACER (GL) | 322J063230 | | | | | |
| 001C | /N1G | 290J063110 | ESCUTCHEON | 290J063110 | | | | | |
| 001C | /N1S | 290J063210 | GYRO ESC.(UP & DOWN:GL) | 290J063210 | | | | | |
| 002C | /N1G | 290J066110 | ESCUTCHEON | 290J066110 | | | | | |
| 002C | /N1S | 290J066210 | GYRO ESC.(UP & DOWN:SI) | 290J066210 | | | | | |
| 003C | | 290J273110 | RUBBER RING GYRO (GL) | 290J273110 | | | | | |
| 006C | | 290J112010 | RUBBER RING GYRO (SI) | 290J112010 | | | | | |
| 014C | | 300J112020 | FLYWHEEL GYRO WHEEL BASE | 300J112020 | | | | | |
| 001D | /N1G | 322J257110 | SHAFT GYRO MAIN | 322J257110 | | | | | |
| 001D | /N1S | 322J257210 | SHAFT | 322J257210 | | | | | |
| 002D | /N | 323S010070 | GYRO SUSTAINER (UNDER) | 323S010070 | | | | | |
| 003D | /N | 318K010040 | LID TOP COVER (GL) | 318K010040 | | | | | |
| 004D | /N | 258S010030 | LID TOP COVER (SI) | 258S010030 | | | | | |
| 005D | /N1G | 322J249110 | SCREW TOP C. 3X12 HGNI FRONT | 322J249110 | | | | | |
| 005D | /N1S | 322J249210 | SCREW TOP C. REAR 3X5HGNI | 322J249210 | | | | | |
| 006D | /N1G | 322J249120 | SCREW SIDE 4X10 HGNI | 322J249120 | | | | | |
| 006D | /N1S | 322J249220 | SIDE PANEL(L GL) | 322J249220 | | | | | |
| 007D | /N1G | 322J003110 | SIDE PANEL(L SI) | 322J003110 | | | | | |
| 007D | /N1S | 322J003210 | SIDE PANEL(R GL) | 322J003210 | | | | | |
| 001G | | 05AJ105020 | SIDE PANEL(R SI) | 05AJ105020 | | | | | |
| 050G | /N1G | 163J057410 | PERFORATED SIDE NET (GL) | 163J057410 | | | | | |
| 050G | /N1S | 163J057510 | PERFORATED SIDE NET (SI) | 163J057510 | | | | | |
| AT01 | /N | AV01203040 | CHASSIS FRONT METAL | AV01203040 | 001S | /N | | NOT STANDARD SPARE PART | 05AJ801010 |
| ▲ L001 | /N | TS42002210 | LEGS (GOLD) | TS42002210 | 002S | | | PACKING CASE | 300J809010 |
| L011 | | FC50230010 | LEGS (SILVER) | FC50230010 | 003S | | | CUTSION (L SIDE) | 300J809020 |
| | | | | | 011S | /N | | CUTSION (R SIDE) | 05AJ805010 |
| | | | | | | | | MASTER CARTON (N) | |

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



9. SERVICE PROGRAM

Factory Mode

With the following procedure, the Tracking Point, which is necessary for the adjustment and measurement of the tuner, can be memorized.

1. Turn on the unit, press **DVD, TUNER** and **MULTI ROOM** key simultaneously more than three seconds.
2. "FACTORY MODE" will be displayed on the FLD for two seconds and the following frequencies will be stored in the Preset Memory.

| Band | Version | P1 | P4 | P3 | P2 |
|---------------|---------|------|------|-------|------|
| FM AUTO [MHz] | /N | 90.0 | 98.0 | 106.0 | 87.5 |

| Band | Scan Step | P5 | P6 | P7 | P8 | P9 | P10 | P11 | P12 | Other |
|----------|-----------|-----|-----|------|-----|-----|-----|-----|-----|--------|
| AM [kHz] | 9kHz(/N) | 603 | 999 | 1404 | 531 | | | | | No |
| | MW / LW | 603 | 999 | 1404 | 171 | 207 | 270 | 152 | 531 | Preset |

Microprocessor (CPU), DSP Version and FLD Segment Check Mode

Turn the unit into the Factory Mode (See above) first. Each time **DISPLAY** key on the remote control unit is pressed or RC-5 code **161500 (Display)** is entered, information shown on the FLD changes in the following order. Software versions of μ -com and DSP can be seen and FLD segments can be checked.

1. Model Name is displayed like "SR-12S1:."
2. Software version of QU01(CPU) is displayed in the following format.

| | | | | | | | | | | | | | | |
|---|---|---|---|--|---|----------|---|-----------|---|----------|---|---------|---|---|
| M | A | I | N | | V | 0 | 3 | 0 | 4 | 2 | 6 | | 0 | N |
| | | | | | | └ Year ┘ | | └ Month ┘ | | └ Date ┘ | | No Ver. | | |

3. Software Serial Number that is written in the factory is displayed.

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|--|--|--|---|---|---|---|---|---|
| S | E | R | I | A | L | | | | X | X | X | X | X | X |
|---|---|---|---|---|---|--|--|--|---|---|---|---|---|---|

4. Software Type Number is displayed

| | | | | | | | | | | | | |
|--------------------------|---|---|---|--|---|---|---|---|--|--|---|---|
| S | O | F | T | | T | Y | P | E | | | X | X |
| (XX is displayed in Hex) | | | | | | | | | | | | |

5. Group Type Number of the code that is written in the DSP's external ROM is displayed.

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|--|---|---|---|---|--|--|---|---|
| C | O | D | E | - | G | | T | Y | P | E | | | X | X |
|---|---|---|---|---|---|--|---|---|---|---|--|--|---|---|

6. 1G and 2G of the FLD is lighted each other. (Character part of Dot Matrix stays off.)

7. Dot Matrix part of the FLD lights in the checker pattern. (Other part stays off.)

8. Code ID of the code that is written in the DSP's external ROM is displayed.

| | | | | | | | | | | | | | | |
|---|---|--|--------------|---|----|--|----|------------|----|--------------|---|---------------|---|-------------|
| C | D | | X | X | | | X | X | X | X | X | X | X | X |
| | | | └ Code No. ┘ | | | | | └ Device ┘ | | └ Code Sig ┘ | | └ Code Type ┘ | | └ Version ┘ |
| | | | | | ID | | ID | | ID | | | | | |

9. Returns to the step 1 and repeats the sequence.

10. Turn off power to quit Service Mode.

Note:

Step4, 5 is to check if CPU software is capable of DSP code. "Software Type No" is to show what "DSP Code Group" CPU is capable of. And vice versa.

Step 8 is to manage the 16 codes for DSP.

- * When the unit is once turned into Factory Mode, the unit keeps this mode until the main power is turned off. (Turning into stand-by mode does not make it quit from Factory Mode.) When the unit quits from Factory Mode, Information in the memory is also cleared and the unit returns to the status when it is out from the factory.

Product Reset

To reset the back up memory of the unit into the default status, follow the procedure below.

1. Turn of the unit and press **CD-R/MD** and **AUX1** keys simultaneously more than three seconds.
2. After "DEFAULT" is displayed on FLD, power is turned off once and turned of again, EEPROM is cleared to the default status, μ -com is reset and the unit returns to the normal status. (Software Serial Number will not be cleared.)

Note: When the unit is shipped from the factory, the procedure above must be done to set the unit to initial status after the tests.

10. UPDATE FIRMWARE

Software for CPU and DSP can be updated.

Have *SR12S1CDR update disc.

There are two mode of download, regarding to the target of software as bellow.

Mode 1: Download DSP's software to 4M Flash-ROM.

This mode is to update the software for DSP.

The target devise is 4M –Flash ROM (Q671) on P604.

SR-12S1 need to be set download condition, by three front keys.

Mode 2: Download CPU's software to internal Flash-ROM.

This mode is to update the software for CPU.

The target devise is internal flash ROM of CPU (QU01) on P604.

The unit needs to be set to writing condition, by pushing internal switch from back-panel.

The following items are required for updating.

RS232C Dsub-9 pin cable (female to female/Straight type)

PC (Windows 98, NT, ME, 2000) with RS-232C port.

Upgrade software to CPU.

Upgrade software to DSP.

Use RS232C Dsub-9 pin cable (female to female/Straight type) to connect PC and the unit.

COM port on PC needs to be set by dialog box for each program. COM port can be set from COM1 to COM5.

Download Firmware for DSP (Mode 1)

1. Put the "DSP upgrade" folder into anywhere on your PC's hard disc.
2. Connect PC and the unit with the RS-232C cable.
3. Turn on the unit.
4. Press **TUNER**, **AUX1** and **MULTI ROOM** buttons simultaneously more than 5 seconds to turn the unit into Loading Mode.
5. "LOADING MODE" will be shown on FLD.
6. Launch "UpgradeDSP.exe" on PC.
7. Set the Baud Rate to 38400 then click **Start communication** button. If the connection is made successfully, a dialog box saying "Success to connect" appears and "CONNECTED" is displayed on FLD.
8. Click **Send the DSP codes** button on the dialog box. Progress status of downloading will be shown on PC and "LOADING" is displayed on FLD.
9. If downloading is completed successfully, "COMPLETED" is displayed on FLD. And a dialog box saying "Finished the DSP code transmitting" appears. Click **OK** and then click **CLOSE** to close the application.
10. Turn off the unit.

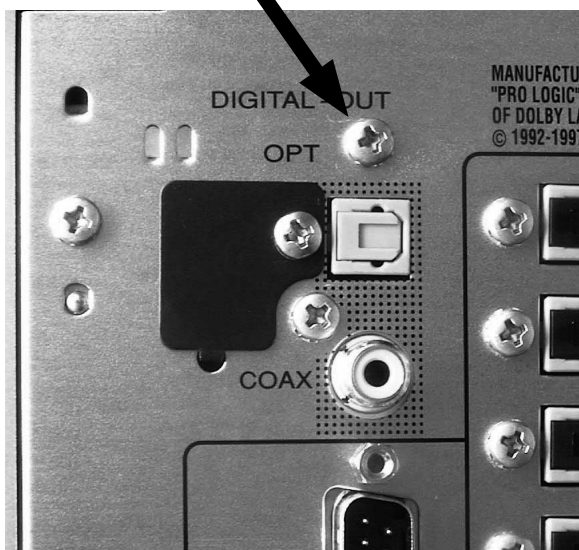
ATTENTION:

The program isn't written in the ROM of QU01 and Q671.

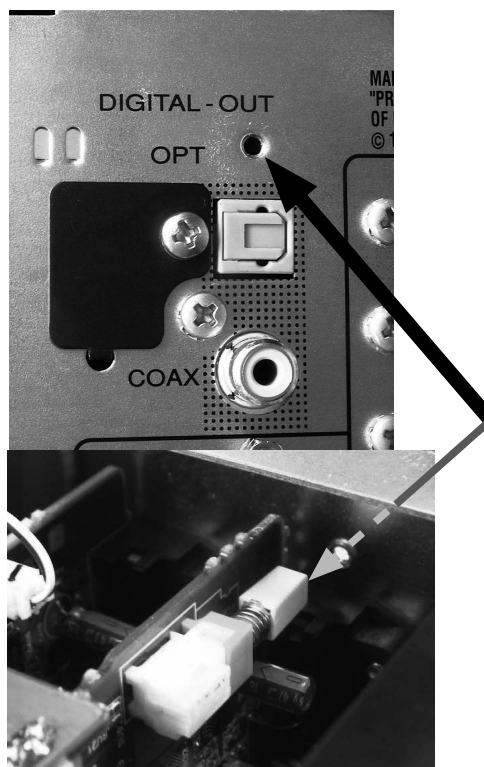
- When QU01 or Q671 was replaced, Writing of software is necessary.
- Write it with the procedure of UPDATE FIRMWARE

Download Firmware for CPU (Mode 2)

1. Put the "CPU upgrade" folder into anywhere on your PC's hard disc.
2. Connect PC and the unit with the RS-232C cable.
3. Remove the screw on the backside of the unit. (Fig.1)



(Fig.1)



(Fig.2)

4. Insert a thin rod to the screw hole and push the switch (SU02) inside to turn on the switch. (Fig.2)
5. Turn on the power of the unit. (Confirm that the stand-by LED lights in green so the unit is in the boot mode.)
6. Launch "H8Download.exe" on PC.
7. Click **other files...** button in the dialog box to specify the file (XXXX.mot) to be upload.
8. Click **Connect** button. If the connection with the H8 μ -com is successfully made, a dialogue box saying "Success to the H8 micro processor connection" appears. If the connection fails, error message will appear.
9. Click **Send** button to start update.
10. If the firmware is updated successfully, a dialog box saying "Finished the firmware program sending" appears.
11. Click **CLOSE** button to close the application.
12. Disconnect Mains power cord.
13. Turn off the internal switch that has been turned on at step 3. Put on the screw.
14. Turn on the unit.

Firmware Version Check

To check the versions of the firmware, see "Microprocessor (CPU), DSP Version and FLD Segment Check Mode" in "SERVICE PROGRAM" section.

11. POWER AMPLIFIER ADJUSTMENT

Idling Current Alignment

- Each of the cement resistors (R132, R182...R432) are provided with the three test points. Set a digital Voltage meter to DC voltage input, connect the meter to the test points at both ends among the three test points on the cement resistors.
- After the setup above, turn on the main switch and heat up the amplifier about 10 minutes.
- Adjust variable resistors (R123, R173...R423) according to the digital voltmeter readings. The target setting value is 2.15 mV ± 0.05 mV (10.8 mA) for each channels.

Settings: Master Volume --- Minimum

Speaker out --- No Load

| Step | Power | Channel | Alignment Point | Measurement Point | Alignment Value |
|------|---------------------|---------|-----------------|---------------------|----------------------------------|
| 1 | Power ON after | Front L | R123 | R132 | ----- |
| | | Center | R173 | R182 | |
| | | Front R | R223 | R232 | |
| | | Surr. L | R273 | R282 | |
| | | Surr. R | R373 | R382 | |
| | | SB L | R323 | R332 | |
| | | SB R | R423 | R432 | |
| 2 | After XX minutes | | | R***:0.1ohms x 2 | See table for alignment value |

Time Table of Idling Current Rise

| After Turning ON | Measurement Voltage (R***) | Idling Current |
|------------------|----------------------------|----------------|
| 10 min. | 2.15 mV | 10.8 mA |
| 15 min. | 2.13 mV | 10.7 mA |
| 20 min. | 2.07 mV | 10.4 mA |
| 25 min. | 2.03 mV | 10.2 mA |
| 30 min. | 2.00 mV | 10.0 mA |
| 40 min. | 2.00 mV | 10.0 mA |

* The Time-Current values in the chart above are from measurement with a unit whose idling current has already adjusted to 10.0mA.

AVSS Function Check

AVSS is the function that switches B voltage automatically depending on the volume of the input signal.

To check whether B voltage is switched or not, follow the procedure below.

1. Check if B voltage is switched to High.

If maximum power can be output, it is OK. IF wave form is clipped and maximum power is not output, it is NG.

2. Check if B voltage is switched to Low.

After adjustment of idling current, if power consumption is within 60W 10W under power on, no signal condition. If it is over 90W, it is NG. It is very possible that B voltage stays High.

Note: Once B voltage is switched to High, it is kept High for 1 minutes. So, power consumption can be over 90W with no signal condition for 1 minute if B voltage has been switched to High.

B voltage is Low upon turning on the power (initial status) if there is no signal input.

Cooling Fan Check

There is three speeds for the cooling fan, stop, Low Speed and High Speed, depending on the temperature of the heat sink.

Heat sink temperature is monitored with RN62, RN86, thermo sensors for cooling fan. If heat sink temperature becomes higher, resistance of the sensors also becomes higher. To check the cooling fan, connect test resistors to JN62, JN86 where the thermo sensors are connected. There are two ways of checking. Remove either sensor and connect the testresister

| | Fan Speed | Test Resister Value | Temperature |
|---|------------|-----------------------|-------------|
| 1 | Stop | 0 – 220Ω (0Ω) | Under 60 °C |
| 2 | Low Speed | 560 – 2.2 kΩ (1.0 kΩ) | 60 – 80 °C |
| 3 | High Speed | 4.7kΩ - (10 kΩ) | Over 80 °C |

Overheat Protection Check

If monitored temperature of the heat sink goes overheat, microcomputer shuts down the unit to stand-by mode. Heat sink temperature is monitored with RN47, RN49, thermo sensors for overheat. To check the overheat protection function, connect test resistors to JN47, JN49 where the thermo sensors are connected.

| | Function | Test Resister Value | Temperature |
|---|----------------------------|---------------------|--------------|
| 1 | Normal | 0 – 220Ω (0Ω) | Under 110 °C |
| 2 | Heat Protection (Stand-by) | 4.7kΩ - (10 kΩ) | Over 110 °C |

If overheat is detected, 2nd pin of J501 is led to GND by a transistor. Normally, it is high impedance (open-collector).

12. SYSTEM ERROR

The CPU inside the unit monitors peripheral interfaces and if a trouble is detected the following information is displayed on the FLD.

1. Trouble in DSP1

If communication with DSP1(Q610) is troubled more than 2 seconds, FLD shows below.

| | | | | | | | | | | | | | | |
|---|---|---|---|---|--|---|---|---|---|--|---|---|---|--|
| E | R | R | O | R | | D | S | P | 1 | | R | O | M | |
|---|---|---|---|---|--|---|---|---|---|--|---|---|---|--|

* This display stays and sound is muted.

2. Trouble in DSP2

If communication with DSP2(Q640) is troubled more than 2 seconds, FLD shows below.

| | | | | | | | | | | | | | | |
|---|---|---|---|---|--|---|---|---|---|--|---|---|---|--|
| E | R | R | O | R | | D | S | P | 2 | | R | O | M | |
|---|---|---|---|---|--|---|---|---|---|--|---|---|---|--|

* This display stays and sound is muted.

3. Trouble in ADC

If CAL signal from A/D converter(QK51, QK52) keeps high more than 2 seconds, FLD shows below.

| | | | | | | | | | | | | | | |
|---|---|---|---|---|--|---|---|---|--|--|--|--|--|--|
| E | R | R | O | R | | A | D | C | | | | | | |
|---|---|---|---|---|--|---|---|---|--|--|--|--|--|--|

* In analog input mode, this display stays and sound is muted.

4. Trouble in EEPROM

If data from EEPROM(QU70) does not match, FLD shows below.

| | | | | | | | | | | | | | | |
|---|---|---|---|---|--|---|---|---|--|--|--|--|--|--|
| E | R | R | O | R | | E | 2 | P | | | | | | |
|---|---|---|---|---|--|---|---|---|--|--|--|--|--|--|

* After displaying it, Back-up Data is reset to default.

5. Trouble in EEPROM I/F

If communication with EEPROM(QU70) is troubled more than 2 seconds, FLD shows below.

| | | | | | | | | | | | | | | |
|---|---|---|---|---|--|---|---|---|--|---|---|--|--|--|
| E | R | R | O | R | | E | 2 | P | | I | F | | | |
|---|---|---|---|---|--|---|---|---|--|---|---|--|--|--|

6. Trouble in 5V Supply

If 5V supply to P604(DSP/CPU PCB) is troubled, FLD shows below.

| | | | | | | | | | | | | | | |
|---|---|---|---|---|--|---|---|---|---|--|--|--|--|--|
| E | R | R | O | R | | P | O | W | 5 | | | | | |
|---|---|---|---|---|--|---|---|---|---|--|--|--|--|--|

7. Trouble in Power Amplifier (1)

If DC offset, over-current, over-heat, trouble in main transformer is detected, FLD shows below.

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|--|--|--|--|--|--|--|--|
| P | R | O | T | E | C | T | | | | | | | | |
|---|---|---|---|---|---|---|--|--|--|--|--|--|--|--|

* If a trouble is detected upon power on, CPU turns off the speaker relay. And if the trouble is not recovered within 2 seconds, CPU turns the unit into stand-by. If DC offset or over-current is detected on power on status, the speaker relay is turned off, and if over-heat, trouble in main transformer is detected, the unit turns into stand-by immediately.

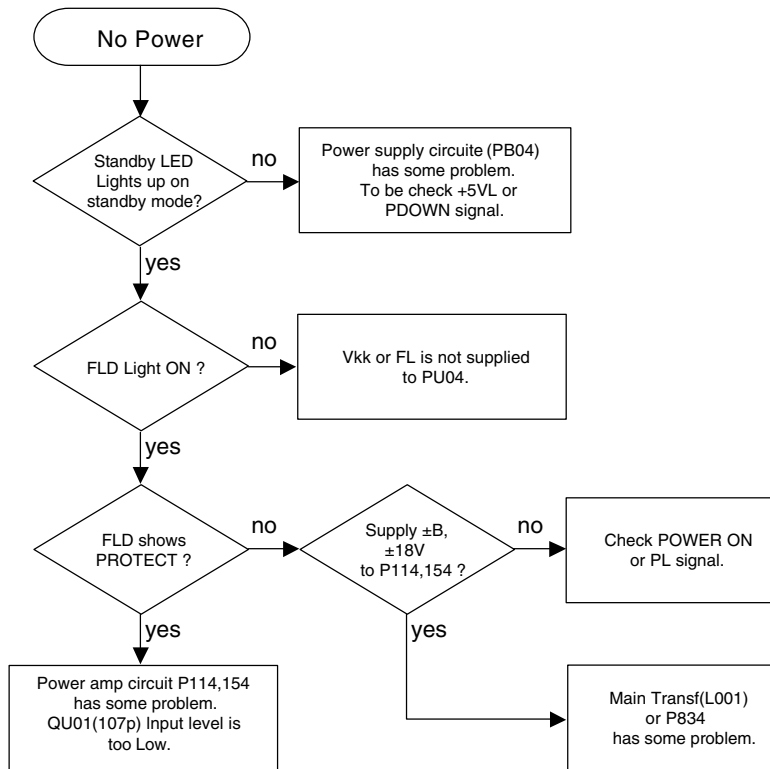
8. Trouble in Power Amplifier (2)

If a trouble in $\pm B$ power supply or $\pm 18V$ power supply is detected, the unit behaves like the followings.

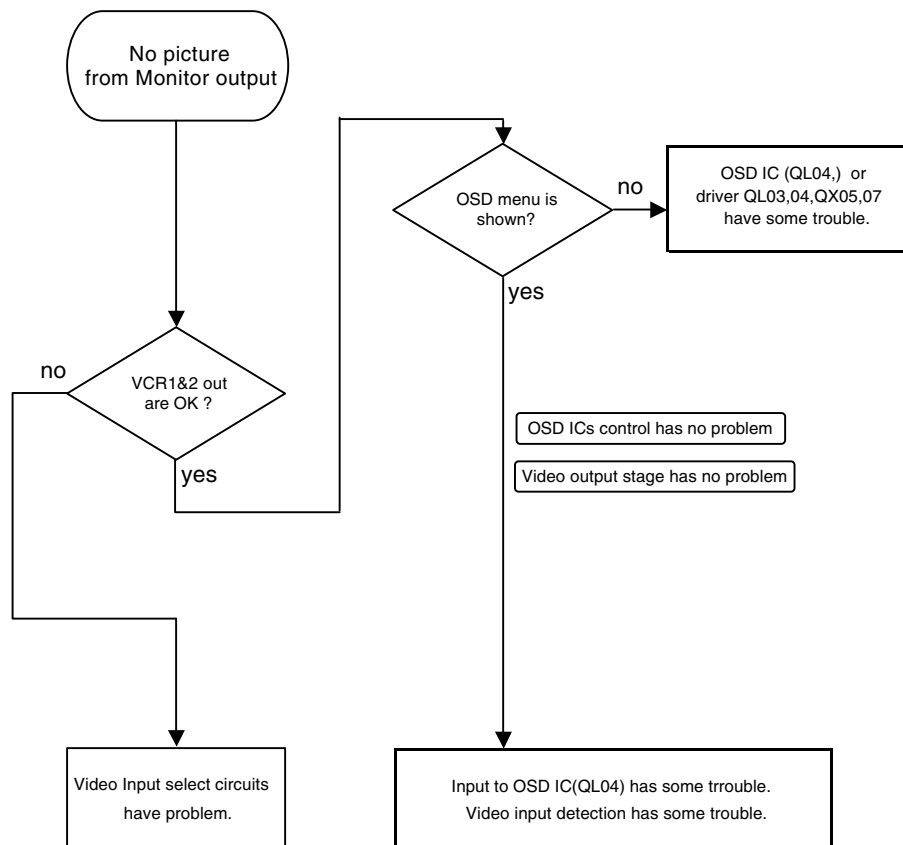
- 1) If a trouble is detected upon power on and the trouble is not recovered within 2 seconds, the unit turns into stand-by.
- 2) If a trouble is detected in power on status, the unit turns into stand-by immediately.

13. TROUBLE SHOOTING

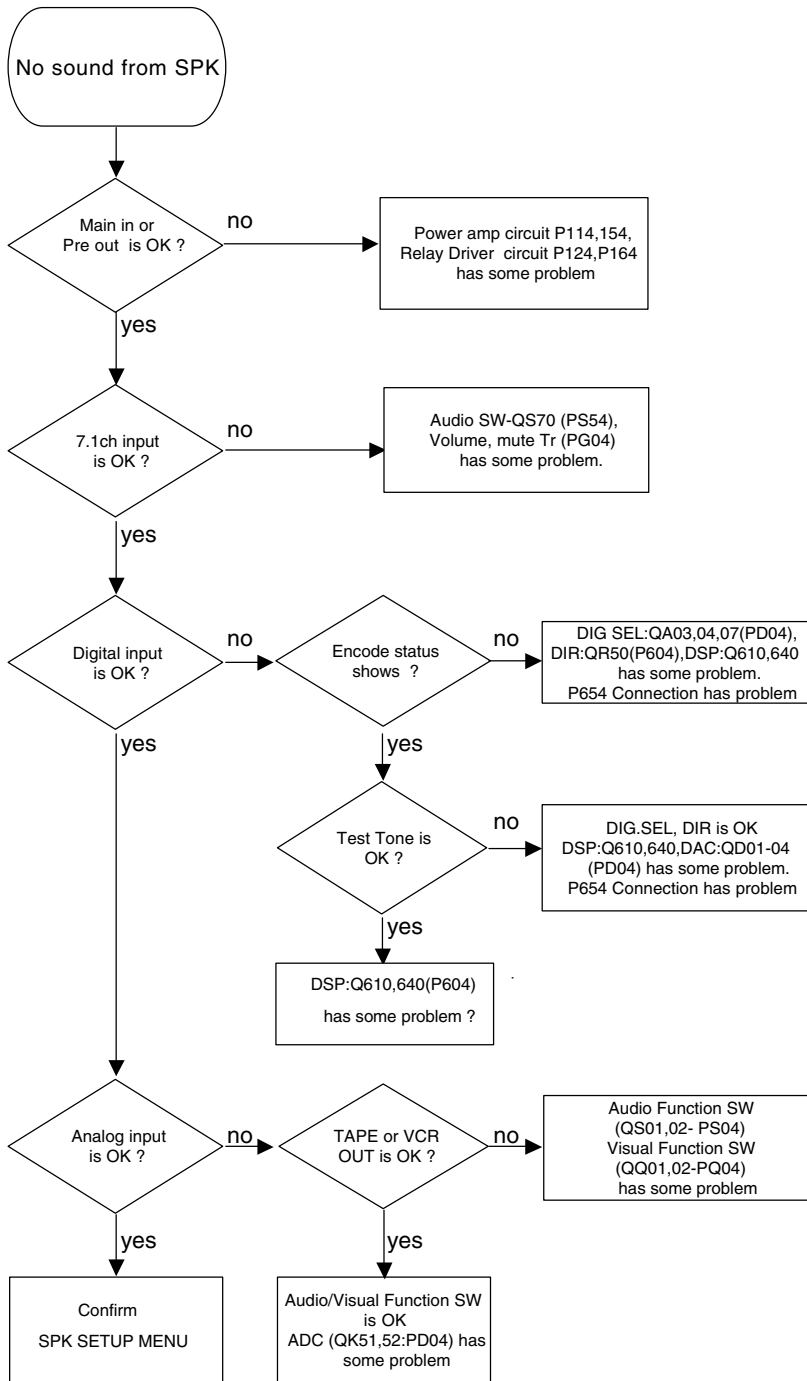
No Power



No Picture



No Sound



14. ELECTRICAL PARTS LIST

ASSIGNMENT OF COMMON PARTS CODES.

RESISTORS

R***: 1) GD05xxx140, Carbon film fixed resistor, ±5% 1/4W
 R***: 2) GD05xxx160, Carbon film fixed resistor, ±5% 1/6W

① Resistance value

Examples ;

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

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

CAPACITORS

C***: CERAMIC CAP.

3) DD1xxx370, Ceramic capacitor
 Disc type
 Temp.coeff.P350 ~ N1000, 50V
 ② Capacity value
 ③ Tolerance

Examples ;

- ② Tolerance (Capacity deviation)
 ±0.25 pF 0
 ±0.5 pF 1
 ±5% 5

* Tolerance of COMMON PARTS handled here are as follows :

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

③ Capacity value

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

C*** : CERAMIC CAP.

4) DK16xxx300, High dielectric constant ceramic capacitor
 Disc type
 Temp.chara. 2B4, 50V
 ④ Capacity value

Examples ;

- ④ Capacity value
 100 pF 101 1000 pF 102 10000 pF 103
 470 pF 471 2200 pF 222

C***: 5) ELECTROLY CAP. ($\frac{\square}{\square}$), 6) FILM CAP. ($\frac{\square}{\square}$)

5) EAxxx10, Electrolytic capacitor
 One-way lead type, Tolerance ±20%
 ⑤ Working voltage
 ⑥ Capacity value

Examples ;

- ⑤ Capacity value
 0.1 μF 104 4.7 μF 475 100 μF 107
 0.33 μF 334 10 μF 106 330 μF 337
 1 μF 105 22 μF 226 1100 μF 118
 2200 μF 228

⑥ Working voltage

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

6) DF15xxx350 Plastic film capacitor
 DF15xxx310 One-way type, Mylar ±5% 50V
 DF16xxx310 Plastic film capacitor
 One-way type, Mylar ±10% 50V
 ⑦ Capacity value

Examples ;

- ⑦ Capacity value
 0.001 μF (1000 pF) 102 0.1 μF 104
 0.0018 μF 182 0.56 μF 564
 0.01 μF 103 1 μF 105
 0.015 μF 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. (MJI) | Type No. (KOA) | Description |
|----------------|----------------|-------------|
| NH05xxx140 | RF25SxxxΩJ | (±5% 1/4W) |
| NH05xxx120 | RF50SxxxΩJ | (±5% 1/2W) |
| NH85xxx110 | RF73B2AxxxΩJ | (±5% 1/10W) |
| NH95xxx140 | RF73B2ExxxΩJ | (±5% 1/4W) |

* Resistance value Resistance value (0.1 Ω - 10 kΩ)

2. Matsushita Electronic Components Co., Ltd

| Part No. (MJI) | Type No. (MEC) | Description |
|----------------|----------------|-------------|
| NF05xxx140 | ERD-2FCJxxx | (±5% 1/4W) |
| RF05xxx140 | | |
| NF02xxx140 | ERD-2FCGxxx | (±2% 1/4W) |
| RF02xxx140 | | |

* Resistance value * Resistance value

Examples ;

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



ABBREVIATION AND MARKS

| | |
|------------------------|----------------------|
| ANT. : ANTENNA | BATT. : BATTERY |
| CAP. : CAPACITOR | CER. : CERAMIC |
| CONN. : CONNECTING | DIG. : DIGITAL |
| HP : HEADPHONE | MIC. : MICROPHONE |
| μ-PRO : MICROPROCESSOR | REC. : RECORDING |
| RES. : RESISTOR | SPK : SPEAKER |
| SW : SWITCH | TRANSF : TRANSFORMER |
| TRIM. : TRIMMING | TRS. : TRANSISTOR |
| VAR. : VARIABLE | X'TAL : CRYSTAL |


NOTE ON FUSE :

Regarding to all parts of parts code **FS20xxx2xx**, replace only with Wickmann-Werke GmbH, Type 372 non glass type fuse.

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。

| POS. NO | VERS. COLOR | PART NO. (FOR EUR) | DESCRIPTION | PART NO. (MJI) | POS. NO | VERS. COLOR | PART NO. (FOR EUR) | DESCRIPTION | PART NO. (MJI) |
|---------|-------------|--------------------|------------------------------------------------|----------------|---------|-------------|--------------------|-------------------------------|----------------|
| | | | P114-POWER AMP FL FR SBL CUIT BOARD | | | | | P114-SEMICONDUCTORS | |
| | | | P114-CAPACITORS | | | | | | |
| C101 | | nsp | ELECT. 22µF M 25V ARS | OA22602540 | D101 | | nsp | DIODE | HD20002000 |
| C102 | | OF15331540 | FILM 330pF TP 100V PP APSV | OF15331540 | D104 | | | 1SS176 MA165 1SS254 30V 0.1A | |
| C103 | | nsp | ELECT. 100µF M 50V RA-2 | OA10705020 | D105 | | HD30821000 | ZENER DIODE 8.2V | HD30821000 |
| C104 | | OF15122540 | FILM 1200pF TP 100V PP APSV | OF15122540 | D106 | | HD30821000 | ZENER DIODE 8.2V | HD30821000 |
| C105 | | nsp | ELECT. 10µF M 50V RA-2 | OA10605020 | D107 | | nsp | DIODE HSS81TD 150V 150MA | HD20027010 |
| C106 | | nsp | ELECT. 220µF M 100V RA-2 | OA22710020 | D108 | | nsp | DIODE HSS81TD 150V 150MA | HD20027010 |
| C107 | | nsp | ELECT. 220µF M 100V RA-2 | OA22710020 | D109 | | HD30431000 | ZENER DIODE 4.3V | HD30431000 |
| C148 | | nsp | ELECT. 100µF M 25V RA-2 | OA10702520 | D201 | | | | |
| C149 | | nsp | ELECT. 100µF M 25V RA-2 | OA10702520 | D203 | | nsp | DIODE | HD20002000 |
| C201 | | nsp | ELECT. 22µF M 25V ARS | OA22602540 | D204 | | | 1SS176 MA165 1SS254 30V 0.1A | |
| C202 | | OF15331540 | FILM 330pF TP 100V PP APSV | OF15331540 | D205 | | HD30821000 | ZENER DIODE 8.2V | HD30821000 |
| C203 | | nsp | ELECT. 100µF M 50V RA-2 | OA10705020 | D206 | | HD30821000 | ZENER DIODE 8.2V | HD30821000 |
| C204 | | OF15122540 | FILM 1200pF TP 100V PP APSV | OF15122540 | D207 | | nsp | DIODE HSS81TD 150V 150MA | HD20027010 |
| C205 | | nsp | ELECT. 10µF M 50V RA-2 | OA10605020 | D208 | | nsp | DIODE HSS81TD 150V 150MA | HD20027010 |
| C206 | | nsp | ELECT. 220µF M 100V RA-2 | OA22710020 | D209 | | HD30431000 | ZENER DIODE 4.3V | HD30431000 |
| C207 | | nsp | ELECT. 220µF M 100V RA-2 | OA22710020 | D301 | | | | |
| C301 | | nsp | ELECT. 22µF M 25V ARS | OA22602540 | D303 | | nsp | DIODE | HD20002000 |
| C302 | | OF15331540 | FILM 330pF TP 100V PP APSV | OF15331540 | D304 | | | 1SS176 MA165 1SS254 30V 0.1A | |
| C303 | | nsp | ELECT. 100µF M 50V RA-2 | OA10705020 | D305 | | HD30821000 | ZENER DIODE 8.2V | HD30821000 |
| C304 | | OF15122540 | FILM 1200pF TP 100V PP APSV | OF15122540 | D306 | | HD30821000 | ZENER DIODE 8.2V | HD30821000 |
| C305 | | nsp | ELECT. 10µF M 50V RA-2 | OA10605020 | D307 | | nsp | DIODE HSS81TD 150V 150MA | HD20027010 |
| C306 | | nsp | ELECT. 220µF M 100V RA-2 | OA22710020 | D308 | | nsp | DIODE HSS81TD 150V 150MA | HD20027010 |
| C307 | | nsp | ELECT. 220µF M 100V RA-2 | OA22710020 | D309 | | HD30431000 | ZENER DIODE 4.3V | HD30431000 |
| C348 | | nsp | ELECT. 100µF M 25V RA-2 | OA10702520 | D401 | | nsp | DIODE | HD20002000 |
| C349 | | nsp | ELECT. 100µF M 25V RA-2 | OA10702520 | | | | 1SS176 MA165 1SS254 30V 0.1A | |
| C401 | | nsp | ELECT. 22µF M 25V ARS | OA22602540 | D402 | | nsp | DIODE | HD20002000 |
| C402 | | OF15331540 | FILM 330pF TP 100V PP APSV | OF15331540 | | | | 1SS176 MA165 1SS254 30V 0.1A | |
| C403 | | nsp | ELECT. 100µF M 50V RA-2 | OA10705020 | ▲ K102 | | HK121619F0 | TRS. KIT 2SA1216/2SC2922 OPY | HK121619F0 |
| C404 | | OF15122540 | FILM 1200pF TP 100V PP APSV | OF15122540 | ▲ Q116 | | nsp | LF203 PAIR FOR Q116 AND Q117 | nsp |
| C406 | | nsp | ELECT. 220µF M 100V RA-2 | OA22710020 | ▲ Q117 | | nsp | TRS. C2922 OPY 17A 200W LF203 | nsp |
| C407 | | nsp | ELECT. 220µF M 100V RA-2 | OA22710020 | ▲ Q117 | | nsp | PAIR WITH Q117 AS K102. | nsp |
| CN14 | | nsp | ELECT. 10µF M 50V RA-2 | OA10605020 | ▲ K103 | | HK185919C0 | TRS. A1216 OPY 17A 200W LF203 | nsp |
| CN18 | | nsp | ELECT. 1µF M 50V RA-2 | OA10505020 | ▲ K103 | | HK185919C0 | PAIR WITH Q116 AS K102. | nsp |
| CN66 | | nsp | ELECT. 1µF M 50V RA-2 | OA10505020 | ▲ K103 | | HK185919C0 | TRS. KIT 2SA1859/2SC4883 O/O | HK185919C0 |
| | | | P114-CAPACITORS(COMMON) | | ▲ Q112 | | nsp | OR Y/Y PAIR FOR Q112 AND Q113 | nsp |
| | | | PLASTIC FILM CAPACITOR | | ▲ Q113 | | nsp | TRS. 2SC4883 O OR Y | nsp |
| | | | ±5% 50V : C108 C208 C308 | | ▲ Q113 | | nsp | PAIR WITH Q113 AS K103. | nsp |
| | | | P114-RESISTORS | | ▲ K202 | | HK121619F0 | TRS. 2SA1859 O OR Y | nsp |
| | | | TRIM. 1kΩ VERTICAL | | ▲ K202 | | HK121619F0 | PAIR WITH Q112 AS K103. | nsp |
| | | | RES. COMPO. | | ▲ K202 | | HK121619F0 | TRS. KIT 2SA1216/2SC2922 OPY | HK121619F0 |
| | | | 0.1Ω K 5W X2 RGC-55 | | ▲ Q216 | | nsp | LF203 PAIR FOR Q216 AND Q217 | nsp |
| | | | | | ▲ Q216 | | nsp | TRS. C2922 OPY 17A 200W LF203 | nsp |
| | | | | | ▲ Q217 | | nsp | PAIR WITH Q217 AS K202. | nsp |
| | | | | | ▲ Q217 | | nsp | TRS. A1216 OPY 17A 200W LF203 | nsp |
| | | | | | ▲ K203 | | HK185919C0 | PAIR WITH Q216 AS K202. | nsp |
| | | | | | ▲ K203 | | HK185919C0 | TRS. KIT 2SA1859/2SC4883 O/O | HK185919C0 |
| | | | | | ▲ Q212 | | nsp | OR Y/Y PAIR FOR Q212 AND Q213 | nsp |
| | | | | | ▲ Q212 | | nsp | TRS. 2SC4883 O OR Y | nsp |
| | | | | | ▲ Q213 | | nsp | PAIR WITH Q213 AS K203. | nsp |
| | | | | | ▲ Q213 | | nsp | TRS. 2SA1859 O OR Y | nsp |
| | | | | | ▲ K302 | | HK121619F0 | PAIR WITH Q212 AS K203 | nsp |
| | | | | | ▲ K302 | | HK121619F0 | TRS. KIT 2SA1216/2SC2922 OPY | HK121619F0 |
| | | | | | ▲ Q316 | | nsp | LF203 PAIR FOR Q316 AND Q317 | nsp |
| | | | | | ▲ Q316 | | nsp | TRS. C2922 OPY 17A 200W LF203 | nsp |
| | | | | | ▲ Q317 | | nsp | PAIR WITH Q317 AS K302 | nsp |
| | | | | | ▲ Q317 | | nsp | TRS. A1216 OPY 17A 200W LF203 | nsp |
| | | | | | ▲ K303 | | HK185919C0 | PAIR WITH Q316 AS K302 | nsp |
| | | | | | ▲ K303 | | HK185919C0 | TRS. KIT 2SA1859/2SC4883 O/O | HK185919C0 |
| | | | | | ▲ Q312 | | nsp | OR Y/Y PAIR FOR Q312 AND Q313 | nsp |
| | | | | | ▲ Q312 | | nsp | TRS. 2SC4883 O OR Y | nsp |
| | | | | | ▲ Q313 | | nsp | PAIR WITH Q313 AS K303 | nsp |
| | | | | | ▲ Q313 | | nsp | TRS. 2SA1859 O OR Y | nsp |
| | | | | | Q101 | | HC10053090 | PAIR WITH Q312 AS K303 | nsp |
| | | | | | Q103 | | HT600111B0 | TRS. 2SA1859 O OR Y | nsp |
| | | | | | Q104 | | HT800921B0 | PAIR WITH Q312 AS K303 | nsp |
| | | | | | Q105 | | HT800931A0 | TRS. 2SA1859 O OR Y | nsp |
| | | | | | | | | IC NJM-2068-DD | HC10053090 |
| | | | | | | | | TRS. KTA1267 PNP (Y) | HT600111B0 |
| | | | | | | | | TRS. KTC3199 NPN (Y) | HT800921B0 |
| | | | | | | | | TRS. KTC3200 NPN (GR) | HT800931A0 |

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

| POS. NO | VERS. COLOR | PART NO. (FOR EUR) | DESCRIPTION | PART NO. (MJI) | POS. NO | VERS. COLOR | PART NO. (FOR EUR) | DESCRIPTION | PART NO. (MJI) |
|---------|-------------|------------------------------|---------------------------------|----------------|---------|-------------|--------------------|--------------------------------|----------------|
| Q106 | | HT600121A0 | TRS. KTA1268 PNP (GR) | HT600121A0 | LP91 | | LY20240490 | RELAY HP OUT RELAY | LY20240490 |
| Q107 | | HT600121A0 | TRS. KTA1268 PNP (GR) | HT600121A0 | | | | | |
| Q108 | | HT800931A0 | TRS. KTC3200 NPN (GR) | HT800931A0 | | | | P134-Q111 | |
| Q109 | | HT600131B0 | TRS. KTA1024 PNP (Y) | HT600131B0 | | | | CUIT BOARD | |
| Q110 | | HT800941B0 | TRS. KTC3206 NPN (Y) | HT800941B0 | Q111 | | HT334191Y0 | TRS. 2SC3419 Y 40V 0.8A | HT334191Y0 |
| ▲ Q114 | | HT900291B0 | TRS. KTD600K NPN (Y) | HT900291B0 | | | | PC=1.2W (5W) | |
| ▲ Q115 | | HT700241B0 | TRS. KTB631K PNP (Y) | HT700241B0 | | | | | |
| Q118 | | HT800931A0 | TRS. KTC3200 NPN (GR) | HT800931A0 | | | | P154-POWER AMP C SL SR | |
| Q203 | | HT600111B0 | TRS. KTA1267 PNP (Y) | HT600111B0 | | | | AVSS SENS CUIT BOARD | |
| Q204 | | HT800921B0 | TRS. KTC3199 NPN (Y) | HT800921B0 | | | | P154-CAPACITORS | |
| Q205 | | HT800931A0 | TRS. KTC3200 NPN (GR) | HT800931A0 | C151 | nsp | | ELECT. 22µF M 25V ARS | OA22602540 |
| Q206 | | HT600121A0 | TRS. KTA1268 PNP (GR) | HT600121A0 | C152 | OF15331540 | | FILM 330pF TP 100V PP APSV | OF15331540 |
| Q207 | | HT600121A0 | TRS. KTA1268 PNP (GR) | HT600121A0 | C153 | nsp | | ELECT. 100µF M 50V RA-2 | OA10705020 |
| Q208 | | HT800931A0 | TRS. KTC3200 NPN (GR) | HT800931A0 | C154 | OF15122540 | | FILM 1200pF TP 100V PP APSV | OF15122540 |
| Q209 | | HT600131B0 | TRS. KTA1024 PNP (Y) | HT600131B0 | C155 | nsp | | ELECT. 10µF M 50V RA-2 | OA10605020 |
| Q210 | | HT800941B0 | TRS. KTC3206 NPN (Y) | HT800941B0 | C156 | nsp | | ELECT. 220µF M 100V RA-2 | OA22710020 |
| ▲ Q214 | | HT900291B0 | TRS. KTD600K NPN (Y) | HT900291B0 | C157 | nsp | | ELECT. 220µF M 100V RA-2 | OA22710020 |
| ▲ Q215 | | HT700241B0 | TRS. KTB631K PNP (Y) | HT700241B0 | C198 | nsp | | ELECT. 100µF M 25V RA-2 | OA10702520 |
| Q218 | | HT800931A0 | TRS. KTC3200 NPN (GR) | HT800931A0 | C199 | nsp | | ELECT. 100µF M 25V RA-2 | OA10702520 |
| Q301 | | HC10053090 | IC NJM-2068-DD | HC10053090 | C251 | nsp | | ELECT. 22µF M 25V ARS | OA22602540 |
| Q303 | | HT600111B0 | TRS. KTA1267 PNP (Y) | HT600111B0 | C252 | OF15331540 | | FILM 330pF TP 100V PP APSV | OF15331540 |
| Q304 | | HT800921B0 | TRS. KTC3199 NPN (Y) | HT800921B0 | C253 | nsp | | ELECT. 100µF M 50V RA-2 | OA10705020 |
| Q305 | | HT800931A0 | TRS. KTC3200 NPN (GR) | HT800931A0 | C254 | OF15122540 | | FILM 1200pF TP 100V PP APSV | OF15122540 |
| Q306 | | HT600121A0 | TRS. KTA1268 PNP (GR) | HT600121A0 | C255 | nsp | | ELECT. 10µF M 50V RA-2 | OA10605020 |
| Q307 | | HT600121A0 | TRS. KTA1268 PNP (GR) | HT600121A0 | C256 | nsp | | ELECT. 220µF M 100V RA-2 | OA22710020 |
| Q308 | | HT800931A0 | TRS. KTC3200 NPN (GR) | HT800931A0 | C257 | nsp | | ELECT. 220µF M 100V RA-2 | OA22710020 |
| Q309 | | HT600131B0 | TRS. KTA1024 PNP (Y) | HT600131B0 | C351 | nsp | | ELECT. 22µF M 25V ARS | OA22602540 |
| Q310 | | HT800941B0 | TRS. KTC3206 NPN (Y) | HT800941B0 | C352 | OF15331540 | | FILM 330pF TP 100V PP APSV | OF15331540 |
| ▲ Q314 | | HT900291B0 | TRS. KTD600K NPN (Y) | HT900291B0 | C353 | nsp | | ELECT. 100µF M 50V RA-2 | OA10705020 |
| ▲ Q315 | | HT700241B0 | TRS. KTB631K PNP (Y) | HT700241B0 | C354 | OF15122540 | | FILM 1200pF TP 100V PP APSV | OF15122540 |
| Q318 | | HT800931A0 | TRS. KTC3200 NPN (GR) | HT800931A0 | C355 | nsp | | ELECT. 10µF M 50V RA-2 | OA10605020 |
| Q403 | | HT600111B0 | TRS. KTA1267 PNP (Y) | HT600111B0 | C356 | nsp | | ELECT. 220µF M 100V RA-2 | OA22710020 |
| Q404 | | HT800921B0 | TRS. KTC3199 NPN (Y) | HT800921B0 | C357 | nsp | | ELECT. 220µF M 100V RA-2 | OA22710020 |
| Q405 | | HT800931A0 | TRS. KTC3200 NPN (GR) | HT800931A0 | C389 | nsp | | ELECT. 100µF M 25V RA-2 | OA10702520 |
| Q406 | | HT600121A0 | TRS. KTA1268 PNP (GR) | HT600121A0 | C399 | nsp | | ELECT. 100µF M 25V RA-2 | OA10702520 |
| Q407 | | HT600121A0 | TRS. KTA1268 PNP (GR) | HT600121A0 | C508 | nsp | | ELECT. 1µF M 50V RA-2 | OA10505020 |
| Q408 | | HT800931A0 | TRS. KTC3200 NPN (GR) | HT800931A0 | C509 | nsp | | ELECT. 100µF M 25V RA-2 | OA10702520 |
| Q409 | | HT600131B0 | TRS. KTA1024 PNP (Y) | HT600131B0 | C510 | nsp | | ELECT. 100µF M 25V RA-2 | OA10702520 |
| Q410 | | HT800941B0 | TRS. KTC3206 NPN (Y) | HT800941B0 | CN01 | nsp | | ELECT. 100µF M 50V RA-2 | OA10705020 |
| QN08 | | HT600121A0 | TRS. KTA1268 PNP (GR) | HT600121A0 | CN02 | nsp | | CER. 0.01µF Z 50V | DK18103310 |
| | | | P124-SPKOUTS FRONT | | CN03 | nsp | | ELECT. 0.47µF M 50V RA-2 | OA47405020 |
| | | | SURRBACK HEAD CUIT BOARD | | CN04 | nsp | | ELECT. 0.47µF M 50V RA-2 | OA47405020 |
| | | | P124-CAPACITORS(COMMON) | | CN05 | nsp | | ELECT. 1µF M 50V RA-2 | OA10505020 |
| | | | PLASTIC FILM CAPACITOR | | CN06 | nsp | | ELECT. 0.01µF Z 50V | DK18103310 |
| | | | ±5% 50V : C109 C110 C209 | | CN15 | nsp | | ELECT. 10µF M 50V RA-2 | OA10605020 |
| | | | C210 C309 C310 C409 C410 | | CN17 | nsp | | CER. 0.01µF Z 50V | DK18103310 |
| | | | | | CN61 | nsp | | ELECT. 100µF M 25V RA-2 | OA10702520 |
| | | | | | CN62 | nsp | | CER. 0.01µF Z 50V | DK18103310 |
| | | | HIGH DIELECTRIC CONSTANT | | CN63 | nsp | | ELECT. 1µF M 50V RA-2 | OA10505020 |
| | | | GER.CAPACITOR ±10% 50V : | | CN64 | nsp | | ELECT. 1µF M 50V RA-2 | OA10505020 |
| | | | C119 C219 C319 C419 | | CN65 | nsp | | ELECT. 1µF M 50V RA-2 | OA10505020 |
| | | | | | | | | P154-CAPACITORS(COMMON) | |
| | | | P124- RESISTORS(COMMON) | | | | | PLASTIC FILM CAPACITOR | |
| | | | CARBON FILM FIXED RES. | | | | | ±5% 50V : C158 C258 C358 | |
| | | | ±5% 1/6W : RN27-RN32 | | | | | | |
| | | | | | | | | P154-RESISTORS | |
| | | | P124-SEMICONDUCTORS | | | | | TRIM. 1K VERTICAL | |
| | | | DIODE 1D3 1A/200V | HD20002710 | R173 | RA01020760 | | RES. COMPO. | RA01020760 |
| DN05 | nsp | | DIODE 1D3 1A/200V | HD20002710 | ▲ R182 | BW10000050 | | 0.1Ω K 5W X2 RGC-55 | BW10000050 |
| DN07 | nsp | | DIODE 1D3 1A/200V | HD20002710 | | | | TRIM. 1K VERTICAL | RA01020760 |
| DP91 | nsp | | DIODE 1D3 1A/200V | HD20002710 | ▲ R282 | RA01020760 | | RES. COMPO. | BW10000050 |
| | | | | | | | | 0.1Ω 5W X2 RGC-55 | |
| QN04 | HT800921B0 | TRS. KTC3199 NPN (Y) | | HT800921B0 | R373 | RA01020760 | | TRIM. 1kΩ VERTICAL | RA01020760 |
| QN05 | HT800921B0 | TRS. KTC3199 NPN (Y) | | HT800921B0 | ▲ R382 | BW10000050 | | RES. COMPO. | BW10000050 |
| QN06 | HT800921B0 | TRS. KTC3199 NPN (Y) | | HT800921B0 | | | | 0.1Ω K 5W X2 RGC-55 | |
| | | | | | | | | P154- RESISTORS(COMMON) | |
| | | | P124-MISCELLANEOUS | | | | | CARBON FILM FIXED RES. | |
| J149 | YT01040890 | TERMINAL SPKROUT FL FR | | YT01040890 | | | | ±5% 1/6W : R151 R152 R154 | |
| J349 | YT01040890 | TERMINAL SPKROUT SBL SBR | | YT01040890 | | | | | |
| ▲ LN01 | LY20240310 | RELAY VB 24MBU-510 5A/240VAC | | LY20240310 | | | | | |
| ▲ LN03 | LY20240310 | RELAY VB 24MBU-510 5A/240VAC | | LY20240310 | | | | | |

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

| POS. NO | VERS. COLOR | PART NO. (FOR EUR) | DESCRIPTION | PART NO. (MJI) | POS. NO | VERS. COLOR | PART NO. (FOR EUR) | DESCRIPTION | PART NO. (MJI) |
|---------|-------------|--------------------|------------------------------------------------------------------------------------------------------------|----------------|---------|-------------|--------------------|---------------------------------------------------------------|----------------|
| C*** | | | HIGH DIELECTRIC CONSTANT CER.CAPACITOR ±10% 50V : C140 C169 C240 C269 C369 | | D403 | | nsp | P414-SEMICONDUCTORS DIODE | HD20002000 |
| R*** | | | P164- RESISTORS(COMMON) CARBON FILM FIXED RES. ±5% 1/6W : RN33 RN34 | | D404 | | nsp | DIODE 1SS176 MA165 1SS254 30V 0.1A | HD20002000 |
| DN06 | nsp | | P164-SEMICONDUCTORS DIODE 1D3 1A/200V | HD20002710 | D405 | HD30821000 | | ZENER DIODE 8.2V | HD30821000 |
| DN08 | nsp | | DIODE 1D3 1A/200V | HD20002710 | D406 | HD30821000 | | ZENER DIODE 8.2V | HD30821000 |
| DN09 | nsp | | DIODE 1D3 1A/200V | HD20002710 | D407 | nsp | | DIODE HSS81TD 150V 150MA | HD20027010 |
| QN07 | HT800921B0 | | TRS. KTC3199 NPN (Y) | HT800921B0 | D408 | nsp | | DIODE HSS81TD 150V 150MA | HD20027010 |
| J199 | YT01060040 | | P164-MISCELLANEOUS TERMINAL SPKROUT CENTER SL SR | YT01060040 | D409 | HD30431000 | | ZENER DIODE 4.3V | HD30431000 |
| J299 | YT01040890 | | TERMINAL SPKROUT ML MR | YT01040890 | ▲ K402 | HK121619F0 | | TRS. KIT 2SA1216/2SC2922(O Y) PAIR FOR Q416 AND Q417 | HK121619F0 |
| ▲ LN02 | LY20240310 | | RELAY VB 24MBU-510 5A/240VAC | LY20240310 | ▲ Q416 | nsp | | TRS. 2SC2922 O Y PAIR WITH Q417 AS K402 | nsp |
| ▲ LN04 | LY20240310 | | RELAY VB 24MBU-510 5A/240VAC | LY20240310 | ▲ Q417 | nsp | | TRS. 2SA1216 O Y PAIR WITH Q416 AS K402 | nsp |
| ▲ LN05 | LY20240310 | | RELAY VB 24MBU-510 5A/240VAC | LY20240310 | ▲ K403 | HK185919C0 | | TRS. KIT 2SA1859/2SC4883 O/O OR Y/Y PAIR FOR Q412 AND Q413 | HK185919C0 |
| Q161 | HT334191Y0 | | P174-Q161 CUIT BOARD TRS. C3419 Y 40V 0.8A PC=1.2W (5W) | HT334191Y0 | ▲ Q412 | nsp | | TRS. 2SC4883 O OR Y PAIR WITH Q413 AS K403 | nsp |
| Q211 | HT334191Y0 | | P214-Q211 CUIT BOARD TRS. C3419 Y 40V 0.8A PC=1.2W (5W) | HT334191Y0 | ▲ Q413 | nsp | | TRS. 2SA1859 O OR Y PAIR WITH Q412 AS K403 | nsp |
| Q261 | HT334191Y0 | | P254-Q261 CUIT BOARD TRS. C3419 Y 40V 0.8A PC=1.2W (5W) | HT334191Y0 | Q411 | HT334191Y0 | | TRS. 2SC3419 Y 40V 0.8A PC=1.2W (5W) | HT334191Y0 |
| Q311 | HT334191Y0 | | P314-Q311 CUIT BOARD TRS. C3419 Y 40V 0.8A PC=1.2W (5W) | HT334191Y0 | ▲ Q414 | HT900291B0 | | TRS. KTD600K NPN (Y) | HT900291B0 |
| Q361 | HT334191Y0 | | P354-Q361 CUIT BOARD TRS. C3419 Y 40V 0.8A PC=1.2W (5W) | HT334191Y0 | ▲ Q415 | HT700241B0 | | TRS. KTB631K PNP (Y) | HT700241B0 |
| C405 | nsp | | P414-SBR POWER AMP CUIT BOARD | OA10605020 | Q418 | HT800931A0 | | TRS. KTC3200 NPN (GR) | HT800931A0 |
| C414 | EA47610010 | | P414-CAPACITORS ELECT. 10µF M 50V RA-2 | EA47610010 | QN10 | HT600121A0 | | TRS. KTA1268 PNP (GR) | HT600121A0 |
| C415 | EA47610010 | | ELECT. CAP. 47µF 100V | EA47610010 | | | | P604-DSP AND µ-COM CUIT BOARD | |
| CN16 | nsp | | ELECT. CAP. 47µF 100V | EA47610010 | | | | P604-CAPACITORS | |
| CN16 | nsp | | ELECT. 10µF M 50V RA-2 | OA10605020 | C610 | nsp | | CER. CHIP 0.1µF GRM39F104Z16 | DK98104200 |
| C*** | | | P414-CAPACITORS(COMMON) PLASTIC FILM CAPACITOR ±5% 50V : C408 | | C611 | nsp | | ELECT. 47µF M 16V RA-2 | OA47601620 |
| R423 | RA04710780 | | P414-RESISTORS TRIM. 470Ω RH0638CS2R | RA04710780 | C612 | nsp | | CER. CHIP 0.1µF GRM39F104Z16 | DK98104200 |
| ▲ R432 | BW10000050 | | RES. COMPO. 0.1Ω K 5W X2 RGC-55 | BW10000050 | C613 | nsp | | ELECT. 47µF M 16V RA-2 | OA47601620 |
| R*** | | | P414-RESISTORS(COMMON) CARBON FILM FIXED RES. ±5% 1/6W : R421 R422 R433-R437 R439 R548 RN44 RN45 | | C614 | nsp | | CER. CHIP 0.1µF GRM39F104Z16 | DK98104200 |
| | | | | | C615 | nsp | | ELECT. 47µF M 16V RA-2 | OA47601620 |
| | | | | | C616 | nsp | | CER. CHIP 470pF (GR39) | DK96471300 |
| | | | | | C617 | nsp | | CER. CHIP 0.01µF | DK98103300 |
| | | | | | C618 | nsp | | ELECT. 2.2µF M 50V RA-2 | OA22505020 |
| | | | | | C619 | nsp | | CER. CHIP 0.1µF GRM39F104Z16 | DK98104200 |
| | | | | | C620 | nsp | | ELECT. 47µF M 16V RA-2 | OA47601620 |
| | | | | | C621 | nsp | | CER. CHIP 0.1µF GRM39F104Z16 | DK98104200 |
| | | | | | C622 | nsp | | CER. CHIP 0.1µF GRM39F104Z16 | DK98104200 |
| | | | | | C640 | nsp | | CER. CHIP 0.1µF GRM39F104Z16 | DK98104200 |
| | | | | | C641 | nsp | | ELECT. 47µF M 16V RA-2 | OA47601620 |
| | | | | | C642 | nsp | | CER. CHIP 0.1µF GRM39F104Z16 | DK98104200 |
| | | | | | C643 | nsp | | ELECT. 47µF M 16V RA-2 | OA47601620 |
| | | | | | C644 | nsp | | CER. CHIP 0.1µF GRM39F104Z16 | DK98104200 |
| | | | | | C645 | nsp | | ELECT. 47µF M 16V RA-2 | OA47601620 |
| | | | | | C646 | nsp | | CER. CHIP 470pF (GR39) | DK96471300 |
| | | | | | C647 | nsp | | CER. CHIP 0.01µF | DK98103300 |
| | | | | | C648 | nsp | | ELECT. 2.2µF M 50V RA-2 | OA22505020 |
| | | | | | C649 | nsp | | CER. CHIP 0.1µF GRM39F104Z16 | DK98104200 |
| | | | | | C650 | nsp | | ELECT. 47µF M 16V RA-2 | OA47601620 |
| | | | | | C651 | nsp | | CER. CHIP 0.1µF GRM39F104Z16 | DK98104200 |
| | | | | | C652 | nsp | | CER. CHIP 0.1µF GRM39F104Z16 | DK98104200 |
| | | | | | C670 | nsp | | CER. CHIP 0.1µF GRM39F104Z16 | DK98104200 |
| | | | | | C671 | nsp | | ELECT. 47µF M 16V RA-2 | OA47601620 |
| | | | | | C672 | nsp | | CER. CHIP 0.1µF GRM39F104Z16 | DK98104200 |
| | | | | | C673 | nsp | | ELECT. 47µF M 16V RA-2 | OA47601620 |
| | | | | | C674 | nsp | | CER. CHIP 0.1µF GRM39F104Z16 | DK98104200 |
| | | | | | C675 | nsp | | ELECT. 47µF M 16V RA-2 | OA47601620 |
| | | | | | C676 | nsp | | CER. CHIP 0.1µF GRM39F104Z16 | DK98104200 |
| | | | | | } | nsp | | | |
| | | | | | C685 | nsp | | ELECT. 47µF M 16V RA-2 | OA47601620 |
| | | | | | C691 | nsp | | CER. CHIP 0.1µF GRM39F104Z16 | DK98104200 |
| | | | | | C692 | nsp | | | |

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

| POS. NO | VERS. COLOR | PART NO. (FOR EUR) | DESCRIPTION | PART NO. (MJI) | POS. NO | VERS. COLOR | PART NO. (FOR EUR) | DESCRIPTION | PART NO. (MJI) |
|---------|-------------|--------------------|------------------------------|----------------|---------|-------------|--------------------|------------------------------|----------------|
| C693 | | nsp | ELECT. 47µF M 16V RA-2 | OA47601620 | CU61 | | nsp | CHIP RES. 0Ω ±5% 1/16W | NN05000610 |
| CR30 | | nsp | CER. CHIP 68pF (GR39) | DD95680300 | CU62 | | nsp | CER. CHIP 0.1µF GRM39F104Z16 | DK98104200 |
| CR31 | | nsp | CER. CHIP 0.1µF GRM39F104Z16 | DK98104200 | CU63 | | nsp | CER. CHIP 0.1µF GRM39F104Z16 | DK98104200 |
| CR32 | | nsp | CER. CHIP 0.1µF GRM39F104Z16 | DK98104200 | CU64 | | nsp | CHIP RES. 0Ω ±5% 1/16W | NN05000610 |
| CR33 | | nsp | CER. CHIP 470pF (GR39) | DK96471300 | CU70 | | nsp | CER. CHIP 0.1µF GRM39F104Z16 | DK98104200 |
| CR34 | | nsp | CER. CHIP 0.1µF GRM39F104Z16 | DK98104200 | CU71 | | nsp | CER. CHIP 0.1µF GRM39F104Z16 | DK98104200 |
| CR35 | | nsp | CER. CHIP 0.1µF GRM39F104Z16 | DK98104200 | CU80 | | nsp | CER. CHIP 0.1µF GRM39F104Z16 | DK98104200 |
| CR36 | | nsp | ELECT. 47µF M 16V RA-2 | OA47601620 | CU81 | | nsp | CER. CHIP 0.1µF GRM39F104Z16 | DK98104200 |
| CR44 | | nsp | CER. CHIP 0.1µF GRM39F104Z16 | DK98104200 | | | | | |
| CR50 | | nsp | CER. CHIP 0.1µF GRM39F104Z16 | DK98104200 | | | | | |
| CR51 | | nsp | CER. CHIP 0.01µF | DK98103300 | R601 | | nsp | CHIP RES. 2.2kΩ ±5% 1/16W | NN05222610 |
| CR52 | | nsp | CER. CHIP 0.01µF | DK98103300 | R602 | | nsp | CHIP RES. 2.2kΩ ±5% 1/16W | NN05222610 |
| CR53 | | nsp | CER. CHIP 0.1µF GRM39F104Z16 | DK98104200 | R603 | | nsp | CHIP RES. 2.2kΩ ±5% 1/16W | NN05222610 |
| CR54 | | nsp | CER. CHIP 0.1µF GRM39F104Z16 | DK98104200 | R605 | | nsp | CHIP RES. 2.2kΩ ±5% 1/16W | NN05222610 |
| CR55 | | nsp | ELECT. 47µF M 16V RA-2 | OA47601620 | R606 | | nsp | CHIP RES. 2.2kΩ ±5% 1/16W | NN05222610 |
| CR56 | | nsp | CER. CHIP 0.1µF GRM39F104Z16 | DK98104200 | R607 | | nsp | CHIP RES. 2.2kΩ ±5% 1/16W | NN05222610 |
| CR57 | | nsp | ELECT. 47µF M 16V RA-2 | OA47601620 | R610 | | nsp | CHIP RES. 27Ω ±5% 1/16W | NN05270610 |
| CR58 | | nsp | CER. CHIP 22pF ±5% CG 50V | DD95220300 | R611 | | nsp | CHIP RES. 4.7kΩ ±5% 1/16W | NN05472610 |
| CR59 | | nsp | CER. CHIP 22pF ±5% CG 50V | DD95220300 | R614 | | | | |
| CR60 | | nsp | CER. CHIP 0.1µF GRM39F104Z16 | DK98104200 | ∫ | | nsp | CHIP RES. 4.7kΩ ±5% 1/16W | NN05472610 |
| CR61 | | nsp | ELECT. 47µF M 16V RA-2 | OA47601620 | R623 | | | | |
| CR62 | | nsp | CER. CHIP 0.1µF GRM39F104Z16 | DK98104200 | R624 | | nsp | CHIP RES. 22kΩ ±5% 1/16W | NN05223610 |
| CR63 | | nsp | ELECT. 47µF M 16V RA-2 | OA47601620 | R626 | | nsp | CHIP RES. 10kΩ ±5% 1/16W | NN05103610 |
| CR64 | | nsp | CER. CHIP 0.1µF GRM39F104Z16 | DK98104200 | R629 | | nsp | CHIP RES. 22kΩ ±5% 1/16W | NN05223610 |
| CR70 | | nsp | CER. CHIP 0.1µF GRM39F104Z16 | DK98104200 | R630 | | nsp | CHIP RES. 33kΩ ±5% 1/16W | NN05333610 |
| CU01 | | nsp | CER. CHIP 0.1µF GRM39F104Z16 | DK98104200 | R631 | | nsp | CHIP RES. 22kΩ ±5% 1/16W | NN05223610 |
| CU02 | | nsp | ELECT. 47µF M 16V RA-2 | OA47601620 | R632 | | nsp | CHIP RES. 4.7kΩ ±5% 1/16W | NN05472610 |
| CU03 | | nsp | CER. CHIP 0.1µF GRM39F104Z16 | DK98104200 | R633 | | nsp | CHIP RES. 4.7kΩ ±5% 1/16W | NN05472610 |
| CU04 | | nsp | ELECT. 47µF M 16V RA-2 | OA47601620 | R636 | | nsp | CHIP RES. 27Ω ±5% 1/16W | NN05270610 |
| CU05 | | nsp | CER. CHIP 0.1µF GRM39F104Z16 | DK98104200 | R637 | | nsp | CHIP RES. 10Ω ±5% 1/16W | NN05100610 |
| CU06 | | nsp | CER. CHIP 0.1µF GRM39F104Z16 | DK98104200 | R638 | | nsp | CHIP RES. 27Ω ±5% 1/16W | NN05270610 |
| CU07 | | nsp | ELECT. 47µF M 16V RA-2 | OA47601620 | R640 | | nsp | CHIP RES. 27Ω ±5% 1/16W | NN05270610 |
| CU08 | | nsp | CER. CHIP 0.1µF GRM39F104Z16 | DK98104200 | R641 | | nsp | CHIP RES. 4.7kΩ ±5% 1/16W | NN05472610 |
| CU09 | | nsp | CER. CHIP 470pF (GR39) | DK96471300 | R644 | | | | |
| CU12 | | nsp | CER. CHIP 0.1µF GRM39F104Z16 | DK98104200 | ∫ | | nsp | CHIP RES. 4.7kΩ ±5% 1/16W | NN05472610 |
| CU13 | | nsp | CER. CHIP 0.1µF GRM39F104Z16 | DK98104200 | R653 | | | | |
| CU14 | | nsp | CER. CHIP 0.1µF GRM39F104Z16 | DK98104200 | R654 | | nsp | CHIP RES. 22kΩ ±5% 1/16W | NN05223610 |
| CU15 | | nsp | ELECT. 47µF M 16V RA-2 | OA47601620 | R656 | | nsp | CHIP RES. 10kΩ ±5% 1/16W | NN05103610 |
| CU16 | | nsp | CER. CHIP 0.1µF GRM39F104Z16 | DK98104200 | R657 | | nsp | CHIP RES. 22kΩ ±5% 1/16W | NN05223610 |
| CU17 | | nsp | ELECT. 10µF M 16V RA-2 | OA10601620 | R658 | | nsp | CHIP RES. 33kΩ ±5% 1/16W | NN05333610 |
| CU18 | | nsp | ELECT. 47µF M 16V RA-2 | OA47601620 | R659 | | nsp | CHIP RES. 22kΩ ±5% 1/16W | NN05223610 |
| CU19 | | nsp | ELECT. 47µF M 16V RA-2 | OA47601620 | R660 | | nsp | CHIP RES. 4.7kΩ ±5% 1/16W | NN05472610 |
| CU20 | | nsp | CER. CHIP 0.1µF GRM39F104Z16 | DK98104200 | R661 | | nsp | CHIP RES. 4.7kΩ ±5% 1/16W | NN05472610 |
| CU21 | | nsp | CER. CHIP 0.1µF GRM39F104Z16 | DK98104200 | R662 | | nsp | CHIP RES. 27Ω ±5% 1/16W | NN05270610 |
| CU25 | | nsp | CER. CHIP 1000pF ±10% B 50V | DK96102300 | R663 | | nsp | CHIP RES. 27Ω ±5% 1/16W | NN05270610 |
| CU26 | | nsp | CER. CHIP 0.1µF GRM39F104Z16 | DK98104200 | R664 | | nsp | CHIP RES. 27Ω ±5% 1/16W | NN05270610 |
| CU27 | | nsp | CER. CHIP 0.1µF GRM39F104Z16 | DK98104200 | R665 | | nsp | CHIP RES. 47Ω ±5% 1/16W | NN05470610 |
| CU31 | | nsp | CER. CHIP 0.1µF GRM39F104Z16 | DK98104200 | R666 | | nsp | CHIP RES. 47Ω ±5% 1/16W | NN05470610 |
| CU32 | | nsp | ELECT. 47µF M 16V RA-2 | OA47601620 | R671 | | | | |
| CU33 | | nsp | CER. CHIP 0.1µF GRM39F104Z16 | DK98104200 | ∫ | | nsp | CHIP RES. 22kΩ ±5% 1/16W | NN05223610 |
| CU34 | | nsp | ELECT. 47µF M 16V RA-2 | OA47601620 | R679 | | | | |
| CU35 | | nsp | CER. CHIP 0.1µF GRM39F104Z16 | DK98104200 | R681 | | nsp | CHIP RES. 33Ω ±5% 1/16W | NN05330610 |
| CU36 | | nsp | ELECT. 47µF M 16V RA-2 | OA47601620 | R682 | | nsp | CHIP RES. 27Ω ±5% 1/16W | NN05270610 |
| CU37 | | nsp | CER. CHIP 0.1µF GRM39F104Z16 | DK98104200 | R683 | | nsp | CHIP RES. 27Ω ±5% 1/16W | NN05270610 |
| CU38 | | nsp | ELECT. 47µF M 16V RA-2 | OA47601620 | R684 | | nsp | CHIP RES. 10Ω ±5% 1/16W | NN05100610 |
| CU39 | | nsp | CER. CHIP 0.1µF GRM39F104Z16 | DK98104200 | R685 | | nsp | CHIP RES. 27Ω ±5% 1/16W | NN05270610 |
| CU40 | | nsp | ELECT. 47µF M 25V RA-2 | OA47602520 | R686 | | nsp | CHIP RES. 27Ω ±5% 1/16W | NN05270610 |
| CU41 | | nsp | CER. CHIP 0.1µF GRM39F104Z16 | DK98104200 | R687 | | nsp | CHIP RES. 27Ω ±5% 1/16W | NN05270610 |
| CU42 | | nsp | ELECT. 47µF M 16V RA-2 | OA47601620 | R688 | | nsp | CHIP RES. 10kΩ ±5% 1/16W | NN05103610 |
| CU43 | | nsp | CER. CHIP 0.1µF GRM39F104Z16 | DK98104200 | R689 | | nsp | CHIP RES. 10kΩ ±5% 1/16W | NN05103610 |
| CU44 | | nsp | CER. CHIP 0.1µF GRM39F104Z16 | DK98104200 | R691 | | nsp | CHIP RES. 22kΩ ±5% 1/16W | NN05223610 |
| CU45 | | nsp | ELECT. 47µF M 16V RA-2 | OA47601620 | R692 | | nsp | CHIP RES. 22kΩ ±5% 1/16W | NN05223610 |
| CU46 | | nsp | CER. CHIP 0.1µF GRM39F104Z16 | DK98104200 | R693 | | nsp | CHIP RES. 22kΩ ±5% 1/16W | NN05223610 |
| CU47 | | nsp | ELECT. 47µF M 16V RA-2 | OA47601620 | R694 | | nsp | CHIP RES. 22kΩ ±5% 1/16W | NN05223610 |
| CU50 | | nsp | CER. CHIP 0.1µF GRM39F104Z16 | DK98104200 | RR30 | | nsp | CHIP RES. 75Ω ±5% 1/16W | NN05750610 |
| CU51 | | nsp | ELECT. 47µF M 16V RA-2 | OA47601620 | RR31 | | nsp | CHIP RES. 27Ω ±5% 1/16W | NN05270610 |
| CU52 | | | | | RR32 | | nsp | CHIP RES. 22kΩ ±5% 1/16W | NN05223610 |
| ∫ | | nsp | CER. CHIP 0.1µF GRM39F104Z16 | DK98104200 | RR33 | | nsp | CHIP RES. 22kΩ ±5% 1/16W | NN05223610 |
| CU55 | | | | | RR50 | | nsp | CHIP RES. 8.2kΩ ±5% 1/16W | NN05822610 |
| CU60 | | nsp | CER. CHIP 0.1µF GRM39F104Z16 | DK98104200 | RR51 | | nsp | CHIP RES. 5.1kΩ ±5% 1/16W | NN05512610 |

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| POS. NO | VERS. COLOR | PART NO. (FOR EUR) | DESCRIPTION | PART NO. (MJI) | POS. NO | VERS. COLOR | PART NO. (FOR EUR) | DESCRIPTION | PART NO. (MJI) |
|---------|-------------|--------------------|---------------------------|----------------|---------|-------------|--------------------|------------------------------------------------------------------|----------------|
| RR52 | | nsp | CHIP RES. 5.1kΩ ±5% 1/16W | NN05512610 | RU74 | | | | |
| RR53 | | nsp | CHIP RES. 75Ω ±5% 1/16W | NN05750610 | } | | nsp | CHIP RES. 0Ω ±5% 1/16W | NN05000610 |
| RR54 | | nsp | CHIP RES. 33Ω ±5% 1/16W | NN05330610 | | RU78 | | | |
| RR55 | | nsp | CHIP RES. 22Ω ±5% 1/16W | NN05220610 | RU81 | | nsp | CHIP RES. 10kΩ ±5% 1/16W | NN05103610 |
| RR56 | | nsp | CHIP RES. 22Ω ±5% 1/16W | NN05220610 | RU82 | | nsp | CHIP RES. 22kΩ ±5% 1/16W | NN05223610 |
| RR57 | | nsp | CHIP RES. 22Ω ±5% 1/16W | NN05220610 | RU83 | | nsp | CHIP RES. 6.8kΩ ±5% 1/16W | NN05682610 |
| RR58 | | nsp | CHIP RES. 33Ω ±5% 1/16W | NN05330610 | RU85 | | nsp | CHIP RES. 22kΩ ±5% 1/16W | NN05223610 |
| RR59 | | nsp | CHIP RES. 1MΩ ±5% 1/16W | NN05105610 | RU88 | | nsp | CHIP RES. 10kΩ ±5% 1/16W | NN05103610 |
| RR60 | | nsp | CHIP RES. 2.2kΩ ±5% 1/16W | NN05222610 | RU89 | | nsp | CHIP RES. 22kΩ ±5% 1/16W | NN05223610 |
| RR61 | | nsp | CHIP RES. 22kΩ ±5% 1/16W | NN05223610 | RU90 | | nsp | CHIP RES. 6.8kΩ ±5% 1/16W | NN05682610 |
| RR63 | | nsp | CHIP RES. 22kΩ ±5% 1/16W | NN05223610 | RU92 | | nsp | CHIP RES. 22kΩ ±5% 1/16W | NN05223610 |
| RR65 | | nsp | CHIP RES. 22kΩ ±5% 1/16W | NN05223610 | RU95 | | nsp | CHIP RES. 220Ω ±5% 1/16W | NN05221610 |
| RR66 | | nsp | CHIP RES. 10kΩ ±5% 1/16W | NN05103610 | | | | | |
| RR72 | | nsp | CHIP RES. 22Ω ±5% 1/16W | NN05220610 | | | | P604-SEMICONDUCTORS | |
| RR73 | | nsp | CHIP RES. 33Ω ±5% 1/16W | NN05330610 | DU01 | | HZ20028050 | CHIP DIODE 1SS301 | HZ20028050 |
| RR74 | | nsp | CHIP RES. 22Ω ±5% 1/16W | NN05220610 | DU80 | | HZ20028050 | CHIP DIODE 1SS301 | HZ20028050 |
| RR75 | | nsp | CHIP RES. 10Ω ±5% 1/16W | NN05100610 | DU81 | | HZ20028050 | CHIP DIODE 1SS301 | HZ20028050 |
| RR76 | | nsp | CHIP RES. 22Ω ±5% 1/16W | NN05220610 | | | | | |
| RR77 | | nsp | CHIP RES. 33Ω ±5% 1/16W | NN05330610 | Q600 | | HY22010050 | CHIP FET HN1K05FU 2SK2824 X 2 | HY22010050 |
| RU01 | | nsp | CHIP RES. 12kΩ ±5% 1/16W | NN05123610 | Q601 | | HY22010050 | CHIP FET HN1K05FU 2SK2824 X 2 | HY22010050 |
| RU02 | | nsp | CHIP RES. 12kΩ ±5% 1/16W | NN05123610 | Q610 | | HC10009880 | IC CS493292 | HC10009880 |
| RU03 | | nsp | CHIP RES. 12kΩ ±5% 1/16W | NN05123610 | | | | AUDIO DSP CRYSTAL | |
| RU04 | | nsp | CHIP RES. 2.2kΩ ±5% 1/16W | NN05222610 | Q611 | | HC009805K0 | IC TC74VHCT245AFT | HC009805K0 |
| RU05 | | nsp | CHIP RES. 2.2kΩ ±5% 1/16W | NN05222610 | Q640 | | HC10009880 | IC CS493292 | HC10009880 |
| RU06 | | nsp | CHIP RES. 100Ω ±5% 1/16W | NN05101610 | | | | AUDIO DSP CRYSTAL | |
| RU07 | | nsp | CHIP RES. 3kΩ ±5% 1/16W | NN05302610 | Q641 | | HC009805K0 | IC TC74VHCT245AFT | HC009805K0 |
| RU08 | | nsp | CHIP RES. 0Ω ±5% 1/16W | NN05000610 | Q671 | | HC60021000 | IC MBM29LV400TC-90P Flash ROM | HC60021000 |
| RU09 | /N | nsp | CHIP RES. 1.2kΩ ±5% 1/16W | NN05122610 | | | | Note : Rom is written in after the replacement. Refer to 67 pege | |
| RU10 | /N | nsp | CHIP RES. 1kΩ ±5% 1/16W | NN05102610 | | | | | |
| RU11 | /N | nsp | CHIP RES. 4.7kΩ ±5% 1/16W | NN05472610 | Q673 | | HC009705K0 | IC TC74VHCT244AFT | HC009705K0 |
| RU12 | /N | nsp | CHIP RES. 1.2kΩ ±5% 1/16W | NN05122610 | Q674 | | HC009605K0 | IC TC74VHC574FT | HC009605K0 |
| RU13 | | nsp | CHIP RES. 12kΩ ±5% 1/16W | NN05123610 | Q675 | | HC009605K0 | IC TC74VHC574FT | HC009605K0 |
| RU14 | | nsp | CHIP RES. 12kΩ ±5% 1/16W | NN05123610 | Q676 | | HC009805K0 | IC TC74VHCT245AFT | HC009805K0 |
| RU15 | | nsp | CHIP RES. 47kΩ ±5% 1/16W | NN05473610 | Q680 | | HC008805K0 | IC TC74VHCT541AFT | HC008805K0 |
| RU17 | | nsp | CHIP RES. 4.7kΩ ±5% 1/16W | NN05472610 | Q681 | | HC008205K0 | IC TC74VHC08FT | HC008205K0 |
| RU20 | | nsp | CHIP RES. 12kΩ ±5% 1/16W | NN05123610 | Q682 | | HC009505K0 | IC TC74VHC32FT | HC009505K0 |
| RU21 | | nsp | CHIP RES. 12kΩ ±5% 1/16W | NN05123610 | Q683 | | HC005105K0 | IC TC74VHC00FS | HC005105K0 |
| RU22 | | nsp | CHIP RES. 1kΩ ±5% 1/16W | NN05102610 | Q684 | | HC009505K0 | IC TC74VHC32FT | HC009505K0 |
| RU24 | | nsp | CHIP RES. 100kΩ ±5% 1/16W | NN05104610 | Q685 | | HC009405K0 | IC TC74VHC125FT | HC009405K0 |
| RU25 | | nsp | CHIP RES. 4.7kΩ ±5% 1/16W | NN05472610 | QR44 | | HC008205K0 | IC TC74VHC08FT | HC008205K0 |
| RU26 | | nsp | CHIP RES. 4.7kΩ ±5% 1/16W | NN05472610 | QR50 | | HC10405030 | IC LC89055 (SPDIF RECORDER) | HC10405030 |
| RU27 | | nsp | CHIP RES. 4.7kΩ ±5% 1/16W | NN05472610 | QR70 | | HC008805K0 | IC TC74VHCT541AFT | HC008805K0 |
| RU28 | | nsp | CHIP RES. 4.7kΩ ±5% 1/16W | NN05472610 | QU01 | | HC60022010 | IC H8S/2633 FP-128 | HC60022010 |
| RU29 | | nsp | CHIP RES. 1MΩ ±5% 1/16W | NN05105610 | | | | Note : μ-P is written in after the replacement. Refer to 67 pege | |
| RU31 | | nsp | CHIP RES. 22kΩ ±5% 1/16W | NN05223610 | QU02 | | HC10098550 | IC PST600D-2 RESET IC | HC10098550 |
| RU32 | | nsp | CHIP RES. 22kΩ ±5% 1/16W | NN05223610 | QU03 | | BA10013050 | DIG. TRS. RN2303 PNP(22K+22K) | BA10013050 |
| RU37 | | nsp | CHIP RES. 22kΩ ±5% 1/16W | NN05223610 | QU05 | | BA21303000 | DIG. TRS. | BA21303000 |
| RU38 | | nsp | CHIP RES. 100Ω ±5% 1/16W | NN05101610 | | | | DTC124EU RN1303 UMT | |
| RU39 | | nsp | CHIP RES. 22kΩ ±5% 1/16W | NN05223610 | QU20 | | HC005105K0 | IC TC74VHC00FS | HC005105K0 |
| RU41 | | nsp | CHIP RES. 1.2kΩ ±5% 1/16W | NN05122610 | QU21 | | HC009405K0 | IC TC74VHC125FT | HC009405K0 |
| RU42 | | nsp | CHIP RES. 390Ω ±5% 1/16W | NN05391610 | QU41 | ▲ | HC3693032F | IC REG. PQ30RV11 | HC3693032F |
| RU43 | | nsp | CHIP RES. 1.2kΩ ±5% 1/16W | NN05122610 | QU42 | | BA21303000 | DIG. TRS. | BA21303000 |
| RU44 | | nsp | CHIP RES. 2.2kΩ ±5% 1/16W | NN05222610 | | | | DTC124EU RN1303 UMT | |
| RU50 | | nsp | CHIP RES. 4.7kΩ ±5% 1/16W | NN05472610 | QU43 | | HT600141B0 | TRS. KTA1271 PNP (Y) | HT600141B0 |
| RU51 | | nsp | CHIP RES. 4.7kΩ ±5% 1/16W | NN05472610 | QU50 | | HC10204990 | IC HIN202ECB | HC10204990 |
| RU56 | | nsp | CHIP RES. 22kΩ ±5% 1/16W | NN05223610 | | | | 16LEAD WIDE BODY | |
| RU57 | | nsp | CHIP RES. 22kΩ ±5% 1/16W | NN05223610 | QU60 | | BA21303000 | DIG. TRS. | BA21303000 |
| RU58 | | nsp | CHIP RES. 4.7kΩ ±5% 1/16W | NN05472610 | | | | DTC124EU RN1303 UMT | |
| RU60 | | nsp | CHIP RES. 47Ω ±5% 1/16W | NN05470610 | QU61 | | BA10013050 | DIG. TRS. RN2303 PNP(22K+22K) | BA10013050 |
| RU61 | | nsp | CHIP RES. 220Ω ±5% 1/16W | NN05221610 | QU62 | | BA21303000 | DIG. TRS. | BA21303000 |
| RU62 | | nsp | CHIP RES. 47Ω ±5% 1/16W | NN05470610 | | | | DTC124EU RN1303 UMT | |
| RU63 | | nsp | CHIP RES. 18kΩ ±5% 1/16W | NN05183610 | QU63 | | BA10013050 | DIG. TRS. RN2303 PNP(22K+22K) | BA10013050 |
| RU64 | | nsp | CHIP RES. 220Ω ±5% 1/16W | NN05221610 | QU65 | | BA10013050 | DIG. TRS. RN2303 PNP(22K+22K) | BA10013050 |
| RU65 | | nsp | CHIP RES. 47kΩ ±5% 1/16W | NN05473610 | QU66 | | BA21303000 | DIG. TRS. | BA21303000 |
| RU66 | | nsp | CHIP RES. 47kΩ ±5% 1/16W | NN05473610 | | | | DTC124EU RN1303 UMT | |
| RU67 | | nsp | CHIP RES. 220Ω ±5% 1/16W | NN05221610 | QU67 | | BA10013050 | DIG. TRS. RN2303 PNP(22K+22K) | BA10013050 |
| RU70 | | nsp | CHIP RES. 22kΩ ±5% 1/16W | NN05223610 | QU68 | | BA10013050 | DIG. TRS. RN2303 PNP(22K+22K) | BA10013050 |
| RU71 | | nsp | CHIP RES. 22kΩ ±5% 1/16W | NN05223610 | ▲ QU69 | | HW10006320 | PHOTO UNIT PC-817 PHOTO CUPLER 1PAIR | HW10006320 |
| RU72 | | nsp | CHIP RES. 0Ω ±5% 1/16W | NN05000610 | | | | | |

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

| POS. NO | VERS. COLOR | PART NO. (FOR EUR) | DESCRIPTION | PART NO. (MJI) | POS. NO | VERS. COLOR | PART NO. (FOR EUR) | DESCRIPTION | PART NO. (MJI) |
|---------|-------------|--------------------|---------------------------------------|----------------|---------|-------------|--------------------|-------------------------------------------------------|----------------|
| QU70 | | HC10191990 | IC AT24C08 8PIN ATMEL SOIC | HC10191990 | | | | P814-SEMICONDUCTORS | |
| QU71 | | HC10068490 | IC PCF8574(I/O EXPANDER) | HC10068490 | D801 | | nsp | DIODE 1D3 1A/200V | HD20002710 |
| QU80 | | HT600121A0 | TRS. KTA1268 PNP (GR) | HT600121A0 | D802 | | nsp | DIODE 1D3 1A/200V | HD20002710 |
| | | | | | D803 | | nsp | DIODE | HD20002000 |
| QU81 | | BA21303000 | DIG. TRS. DTC124EU RN1303 UMT | BA21303000 | D804 | | nsp | 1SS176 MA165 1SS254 30V 0.1A DIODE | HD20002000 |
| QU82 | | BA10013050 | DIG. TRS. RN2303 PNP(22K+22K) | BA10013050 | | | | 1SS176 MA165 1SS254 30V 0.1A | |
| QU83 | | HT600121A0 | TRS. KTA1268 PNP (GR) | HT600121A0 | ▲ D811 | | | | |
| QU84 | | BA21303000 | DIG. TRS. DTC124EU RN1303 UMT | BA21303000 | ▲ D816 | | nsp | DIODE 1D3 1A/200V | HD20002710 |
| QU85 | | BA10013050 | DIG. TRS. RN2303 PNP(22K+22K) | BA10013050 | D817 | | HD30511000 | ZENER DIODE 5.1V | HD30511000 |
| QU86 | | BA21303000 | DIG. TRS. DTC124EU RN1303 UMT | BA21303000 | Q801 | | HT600111B0 | TRS. KTA1267 PNP (Y) | HT600111B0 |
| | | | | | Q802 | | HT600111B0 | TRS. KTA1267 PNP (Y) | HT600111B0 |
| | | | | | Q803 | | BA20001000 | DIG. TRS. | BA20001000 |
| JR30 | | YT02010790 | P604-MISCELLANEOUS TERMINAL | YT02010790 | Q811 | | HC3850509F | DTC114ES/UN4211 10K 10K IC REG. NJM78M05FA | HC3850509F |
| JR31 | | YJ15000210 | OPT. OUTPUT CONNE. JFJ300 | YJ15000210 | Q812 | | HC10098550 | IC PST600D-2 RESET IC | HC10098550 |
| JU50 | | YJ90001220 | JACK DELC-J9PAF-20L9 | YJ90001220 | | | | | |
| JU61 | | YT02020890 | TERMINAL 2P CINCH PIN JACK | YT02020890 | | | | | |
| JU62 | | YT02021740 | TERMINAL CINCH PIN JACK GRN-GRN | YT02021740 | ▲ F801 | /N | FS10630850 | FUSE 6.3 A 250V BS LISTED | FS10630850 |
| JU80 | | YJ01004750 | JACK 3.5MM MINI JACK LGA6502-0150 | YJ01004750 | ▲ J802 | /N | YP04000760 | PLUG CONNECTOR 2P B3P-VH | YP04000760 |
| JU82 | | YJ01004670 | JACK LGY6501-0600 3.5 MINI | YJ01004670 | ▲ J804 | | YP04000760 | PLUG CONNECTOR 2P B3P-VH | YP04000760 |
| L691 | | FM12223010 | EMI FILTER DSS306-91-F-223Z | FM12223010 | ▲ J805 | | YP04000760 | PLUG CONNECTOR 2P B3P-VH | YP04000760 |
| LR30 | | TP41042030 | PULSE TRNSF. (TPS247MN-0386AN) | TP41042030 | ▲ L801 | | LY10240240 | RELAY VS24MB-NR TV-8 SEMKO LISTED | LY10240240 |
| LU01 | | | | | ▲ L802 | | LY10120400 | RELAY POWER G5PA-1 5A | LY10120400 |
| LU54 | | | | | ▲ L811 | /N | TS13521080 | BACKUP TRANS. AC230V | TS13521080 |
| LU71 | | | | | | | | | |
| LU80 | | FC90020120 | FERRIT BEADS BK1608HM102-T | FC90020120 | | | | P824-POWER SWITCH CUIT BOARD | |
| LU81 | | | | | ▲ C801 | /N | nsp | CER. DE1307-1E 472M-KH | DK17472910 |
| LU86 | | | | | ▲ J803 | /N | YP06013300 | PLUG B2P3S-VH | YP06013300 |
| LU87 | | FM12223010 | EMI FILTER DSS306-91-F-223Z | FM12223010 | ▲ S801 | /N | SP01012460 | PUSH SWITCH POWER SDDL1 TV-5 | SP01012460 |
| SU02 | | SP02022320 | PUSH SWITCH SPUJ191000 WITH KNOB | SP02022320 | | | | P834-POWER SUPPLY FOR POWER AMP CUIT BOARD | |
| XR50 | | JX12013260 | CRYSTAL 12.288MHz (AT-49) | JX12013260 | | | | P834-CAPACITORS | |
| XU01 | | FQ05004050 | CERAMIC VIB. CSTLS 5.0MHz | FQ05004050 | C831 | | nsp | ELECT. ELNA RA2 16X25 | OA10805020 |
| P654 | | nsp | P.W.BOARD CONNECTION PCB | W1344J1020 | C832 | | nsp | ELECT. 470µF M 50V RA-2 | OA47705020 |
| J603 | | YJ06030450 | JACK BASE POST 12P B12P-MQ-C | YJ06030450 | C837 | | nsp | ELECT. 100µF M 25V RA-2 | OA10702520 |
| J605 | | YJ06030450 | JACK BASE POST 12P B12P-MQ-C | YJ06030450 | C838 | | nsp | ELECT. 100µF M 25V RA-2 | OA10702520 |
| | | | | | C839 | | nsp | ELECT. 100µF M 50V RA-2 | OA10705020 |
| | | | | | ▲ C842 | | | | |
| | | | | | ▲ C845 | | OB18907120 | ELECT. CAP 35XL90 VNSD BLUE ON MJI LOGO | OB18907120 |
| | | | | | ▲ C847 | | nsp | ELECT. 100µF M 25V RA-2 | OA10702520 |
| | | | | | ▲ CN07 | | nsp | ELECT. 220µF M 50V RA-2 | OA22705020 |
| ▲ C802 | | nsp | CER. DE1607-1F 103M-KH | DK17103910 | | | | P834-CAPACITORS(COMMON) | |
| ▲ C803 | | nsp | CER. DE1607-1F 103M-KH | DK17103910 | | | | PLASTIC FILM CAPACITOR | |
| C805 | | nsp | ELECT. 100µF M 10V RA-2 | OA10701020 | | | | ±5% 50V : C512 | |
| ▲ C811 | | nsp | ELECT. 470µF 25V M RA-2 | OA47702520 | | | | | |
| ▲ C812 | | nsp | ELECT. 47µF M 25V RA-2 | OA47602520 | | | | HIGH DIELECTRIC CONSTANT | |
| ▲ C813 | | nsp | ELECT. 4700µF 16V | OA47801620 | | | | CER.CAPACITOR ±10% 50V : | |
| C817 | | nsp | ELECT. 100µF M 16V RA-2 | OA10701620 | | | | C513 | |
| | | | P814-RESISTORS | | ▲ RN24 | | nsp | P834-RESISTORS | |
| ▲ R801 | | NQ15022070 | ROTOR RES. 2.2Ω 7W W/TEMP. FUSE | NQ15022070 | | | | RES. 1Ω ±5% 1/4W | GG05010140 |
| ▲ R802 | | NQ15022070 | ROTOR RES. 2.2Ω 7W W/TEMP. FUSE | NQ15022070 | | | | P834- RESISTORS(COMMON) | |
| ▲ R807 | | nsp | RES. 1Ω ±5% 1/4W | GG05010140 | | | | CARBON FILM FIXED RES. | |
| ▲ R808 | | nsp | RES. 470Ω ±5% 1/4W | GG05471140 | | | | ±5% 1/6W : R536 R537 | |
| ▲ R811 | | nsp | RES. 470Ω ±5% 1/6W | GG05471160 | | | | R551-R563 RN25 RN26 RN46 | |
| | | | P814- RESISTORS(COMMON) | | | | | P834-SEMICONDUCTORS | |
| | | | CARBON FILM FIXED RES. | | D501 | | nsp | DIODE | HD20002000 |
| | | | ±5% 1/6W : R803-R806 R812 R813 | | D502 | | nsp | 1SS176 MA165 1SS254 30V 0.1A DIODE 1D3 1A/200V | HD20002710 |

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

| POS. NO | VERS. COLOR | PART NO. (FOR EUR) | DESCRIPTION | PART NO. (MJI) | POS. NO | VERS. COLOR | PART NO. (FOR EUR) | DESCRIPTION | PART NO. (MJI) |
|---------|-------------|--------------------|--------------------------------|----------------|---------|-------------|--------------------|--------------------------------|----------------|
| D503 | | nsp | DIODE 1D3 1A/200V | HD20002710 | | | | PC04-SEMICONDUCTORS | |
| ▲ D831 | | nsp | DIODE 1D3 1A/200V | HD20002710 | DC01 | | HI20006030 | GAS LED GL-350 | HI20006030 |
| ▲ D838 | | | | | DC04 | | | SLR-932AV-8K A RANK 5MM P2.5 | |
| D839 | | HD33301000 | ZENER DIODE MTZJ33D | HD33301000 | DC05 | nsp | nsp | DIODE | HD20002000 |
| D840 | | HD30681000 | ZENER DIODE 6.8V | HD30681000 | | | | 1SS176 MA165 1SS254 30V 0.1A | |
| ▲ D841 | | HE20029290 | DIODE 600V 25A | HE20029290 | QC01 | | HC10220090 | IC NJU3430FG1 | HC10220090 |
| ▲ DN01 | | nsp | BRIDGE-DI D25XB60 | HD20002710 | QC02 | | HT30001000 | TRS. C2458 C1740S C3199 ETC. | HT30001000 |
| ▲ DN02 | | nsp | DIODE 1D3 1A/200V | HD20002710 | QC03 | | HT30001000 | TRS. C2458 C1740S C3199 ETC. | HT30001000 |
| DN03 | | HD30201000 | ZENER DIODE MTZJ2.0B | HD30201000 | QC04 | | HC10098550 | IC PST600D-2 RESET IC | HC10098550 |
| DN04 | | HD30201000 | ZENER DIODE MTZJ2.0B | HD30201000 | QC05 | | HT30001000 | TRS. C2458 C1740S C3199 ETC. | HT30001000 |
| ▲ L501 | | LY10240300 | RELAY VSB24STB 16A AVSS | LY10240300 | QC06 | | HT800951B0 | TRS. KTC3203 NPN (Y) | HT800951B0 |
| ▲ L502 | | LY10240300 | RELAY VSB24STB 16A AVSS | LY10240300 | QC07 | | HT800951B0 | TRS. KTC3203 NPN (Y) | HT800951B0 |
| Q503 | | HT800921B0 | TRS. KTC3199 NPN (Y) | HT800921B0 | QC08 | | BA10001000 | DIG. TRS. | BA10001000 |
| Q504 | | HT800921B0 | TRS. KTC3199 NPN (Y) | HT800921B0 | QC09 | | HW10002620 | DTA114ES/UN4111 10K 10K | HW10002620 |
| Q505 | | BA20001000 | DIG. TRS. | BA20001000 | | | | PHOTO UNIT | |
| Q506 | | HT800921B0 | DTC114ES/UN4211 10K 10K | HT800921B0 | | | | IR SENSOR TSOP 1136 TB1 | |
| Q507 | | HT800921B0 | TRS. KTC3199 NPN (Y) | HT800921B0 | | | | | |
| Q508 | | HT600111B0 | TRS. KTA1267 PNP (Y) | HT600111B0 | SC01 | | SP01013370 | PUSH SWITCH | SP01013370 |
| ▲ Q831 | | HC3851809F | IC REG. NJM78M18FA | HC3851809F | SC22 | | SR02010070 | EVQ11L05R H/5MM 160GF | SR02010070 |
| ▲ Q832 | | HC3951809F | IC NJM79M18FA JR | HC3951809F | SC23 | | HQ31601410 | ROTARY SWITCH ROTALY | HQ31601410 |
| ▲ Q833 | | HC3851809F | -18V 500MA REG. | HC3851809F | VC01 | | HQ31601410 | ENCODER 36PULSE EC16B | HQ31601410 |
| | | | IC NJM78M18FA REG. | HC3851809F | | | | DISPLAY UNIT | |
| | | | | | | | | 6-BT-92GNK | |
| | | | P844-MAINS INLET | | | | | PC64-ENCODER | |
| | | | CUIT BOARD | | | | | CUIT BOARD | |
| ▲ J810 | | YJ04002440 | JACK 2P MAINS INLET PWI1910-H | YJ04002440 | | | | PC64-CAPACITORS | |
| | | | | | CC60 | nsp | nsp | CER. 0.01µF Z 50V | DK18103310 |
| | | | PC04-FRONT PCB | | CC61 | nsp | nsp | CER. 0.01µF Z 50V | DK18103310 |
| | | | CUIT BOARD | | CC62 | nsp | nsp | CER. 0.01µF Z 50V | DK18103310 |
| | | | PC04-CAPACITORS | | | | | PC64- RESISTORS(COMMON) | |
| CC01 | | nsp | CER. 0.01µF Z 50V | DK18103310 | | | | CARBON FILM FIXED RES. | |
| CC02 | | nsp | CER. 0.01µF Z 50V | DK18103310 | | | | ±5% 1/6W : RC60-RC65 | |
| CC03 | | nsp | CER. 0.01µF Z 50V | DK18103310 | R*** | | | | |
| CC04 | | nsp | CER. 0.01µF Z 50V | DK18103310 | | | | PC64-SEMICONDUCTORS | |
| CC05 | | nsp | ELECT. 100µF M 50V RA-2 | OA10705020 | DC60 | | HI10099320 | L.E.D. GL3ED8 SHARP | HI10099320 |
| CC12 | | nsp | CER. 0.01µF Z 50V | DK18103310 | | | | RED/GREEN | |
| CC15 | | nsp | CER. 0.01µF Z 50V | DK18103310 | QC60 | | BA10001000 | DIG. TRS. | BA10001000 |
| CC16 | | nsp | CER. 0.01µF Z 50V | DK18103310 | | | | DTA114ES/UN4111 10K 10K | |
| CC20 | | nsp | CER. 0.01µF Z 50V | DK18103310 | QC61 | | BA10001000 | DIG. TRS. | BA10001000 |
| CC23 | | nsp | CER. 0.01µF Z 50V | DK18103310 | | | | DTA114ES/UN4111 10K 10K | |
| CC24 | | nsp | CER. 0.01µF Z 50V | DK18103310 | | | | PC64-MISCELLANEOUS | |
| CC28 | | nsp | CER. 0.01µF Z 50V | DK18103310 | JC60 | | YJ06008860 | JACK 06JQ-ST 6P (YOKO) | YJ06008860 |
| CC30 | | nsp | CER. 0.01µF Z 50V | DK18103310 | SC60 | | SR02010080 | ROTARY SWITCH ROT ENCOD | SR02010080 |
| CC33 | | nsp | CER. 0.01µF Z 50V | DK18103310 | | | | EC16B 16PLS 16CLICK | |
| | | | PC04-CAPACITORS(COMMON) | | | | | PC74-JYRO | |
| | | | PLASTIC FILM CAPACITOR | | | | | CUIT BOARD | |
| | | | ±5% 50V : CC22 | | QC70 | /N | HW10033320 | PHOTO UNIT GP1A06 2PHASE | HW10033320 |
| | | | PC04-RESISTORS | | RC70 | /N | nsp | RES. 330Ω ±5% 1/6W | GD05331160 |
| RC07 | | BW05473230 | RES. COMPO. | BW05473230 | | | | PD04-DIG IN/ADC/DAC | |
| | | | RKC13BS473J ±5% P1.8 | | | | | CUIT BOARD | |
| RC08 | | BW05473230 | RES. COMPO. | BW05473230 | | | | PD04-CAPACITORS | |
| | | | RKC13BS473J ±5% P1.8 | | CA01 | | nsp | CER. CHIP 0.1µF ±10% B 10V | DK96104200 |
| RC09 | | BW05103330 | RES. COMPO. | BW05103330 | CA05 | | nsp | CER. CHIP 0.1µF GRM39F104Z16 | DK98104200 |
| | | | RKC13BS103J ±5% P1.8 | | CA06 | | nsp | CER. CHIP 0.1µF GRM39F104Z16 | DK98104200 |
| RC10 | | BW05473230 | RES. COMPO. | BW05473230 | CA07 | | nsp | CER. CHIP 0.1µF GRM39F104Z16 | DK98104200 |
| | | | RKC13BS473J ±5% P1.8 | | CA08 | | nsp | CER. CHIP 0.1µF GRM39F104Z16 | DK98104200 |
| | | | | | CA09 | | nsp | CER. CHIP 0.1µF GRM39F104Z16 | DK98104200 |
| | | | PC04- RESISTORS(COMMON) | | CA10 | | nsp | ELECT. 47µF M 25V RA-2 | OA47602520 |
| | | | CARBON FILM FIXED RES. | | CA12 | | nsp | ELECT. 47µF M 25V RA-2 | OA47602520 |
| | | | ±5% 1/6W : RC01-RC05 | | | | | | |
| | | | RC11-RC30 RC33 RC36 RC38 | | | | | | |
| | | | RC40-RC43 | | | | | | |

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|---------|-------------|--------------------|------------------------------|----------------|-------------|-------------|--------------------|--------------------------------|----------------|
| RK23 | | nsp | CHIP RES. 22kΩ ±5% 1/16W | NN05223610 | QK51 | | HC10033480 | IC ADC AK5383VS 96KHZ 24BIT | HC10033480 |
| RK24 | | nsp | CHIP RES. 22kΩ ±5% 1/16W | NN05223610 | QK70 | | BA10026210 | DIG. TRS. DTA114EU | BA10026210 |
| RK25 | | nsp | CHIP RES. 22kΩ ±5% 1/16W | NN05223610 | QK71 | | HT800951B0 | TRS. KTC3203 NPN (Y) | HT800951B0 |
| RK26 | | nsp | CHIP RES. 22kΩ ±5% 1/16W | NN05223610 | QK72 | | BA10026210 | DIG. TRS. DTA114EU | BA10026210 |
| RK27 | | nsp | CHIP RES. 22kΩ ±5% 1/16W | NN05223610 | QK73 | | HT800951B0 | TRS. KTC3203 NPN (Y) | HT800951B0 |
| RK28 | | nsp | CHIP RES. 22kΩ ±5% 1/16W | NN05223610 | | | | | |
| RK29 | | nsp | CHIP RES. 47kΩ ±5% 1/16W | NN05473610 | | | | PD04-MISCELLANEOUS | |
| RK30 | | nsp | CHIP RES. 47kΩ ±5% 1/16W | NN05473610 | JA01 | | YT02030610 | TERMINAL | YT02030610 |
| RK31 | | nsp | CHIP RES. 4.7kΩ ±5% 1/16W | NN05472610 | | | | 14X14 RA 1L3P BLK AU F-SHIELD | |
| RK32 | | nsp | CHIP RES. 47kΩ ±5% 1/16W | NN05473610 | JA02 | | YT02021540 | TERMINAL | YT02021540 |
| RK33 | | nsp | CHIP RES. 10kΩ ±5% 1/16W | NN05103610 | | | | CINCH 2P AU(BL) FRONT SHIELD | |
| RK34 | | nsp | CHIP RES. 5.6kΩ ±5% 1/16W | NN05562610 | JA03 | | YJ15000200 | OPT. RECEIVER CONNE. JFJ400 | YJ15000200 |
| RK35 | | nsp | CHIP RES. 10kΩ ±5% 1/16W | NN05103610 | JA04 | | YJ15000200 | OPT. RECEIVER CONNE. JFJ400 | YJ15000200 |
| RK36 | | nsp | CHIP RES. 5.6kΩ ±5% 1/16W | NN05562610 | JA05 | | YJ15000200 | OPT. RECEIVER CONNE. JFJ400 | YJ15000200 |
| RK37 | | nsp | CHIP RES. 10kΩ ±5% 1/16W | NN05103610 | JA06 | | YJ15000200 | OPT. RECEIVER CONNE. JFJ400 | YJ15000200 |
| RK39 | | nsp | CHIP RES. 680kΩ ±5% 1/16W | NN05684610 | LD01 | | FM12223010 | EMI FILTER DSS306-91-F-223Z | FM12223010 |
| RK40 | | nsp | CHIP RES. 680kΩ ±5% 1/16W | NN05684610 | LD02 | | FM12223010 | EMI FILTER DSS306-91-F-223Z | FM12223010 |
| RK41 | | nsp | CHIP RES. 680kΩ ±5% 1/16W | NN05684610 | LD03 | | FM12223010 | EMI FILTER DSS306-91-F-223Z | FM12223010 |
| RK42 | | nsp | CHIP RES. 47kΩ ±5% 1/16W | NN05473610 | LD04 | | FM12223010 | EMI FILTER DSS306-91-F-223Z | FM12223010 |
| RK43 | | nsp | CHIP RES. 680kΩ ±5% 1/16W | NN05684610 | LK70 | | LY20240480 | RELAY MR82-24USR | LY20240480 |
| RK44 | | nsp | CHIP RES. 4.7kΩ ±5% 1/16W | NN05472610 | LK71 | | LY20240480 | RELAY MR82-24USR | LY20240480 |
| RK46 | | nsp | CHIP RES. 10kΩ ±5% 1/16W | NN05103610 | | | | PF14-COMPONENT | |
| RK47 | | nsp | CHIP RES. 10kΩ ±5% 1/16W | NN05103610 | | | | CUIT BOARD | |
| RK48 | | nsp | CHIP RES. 10kΩ ±5% 1/16W | NN05103610 | | | | PF14-CAPACITORS | |
| RK49 | | nsp | CHIP RES. 3.3kΩ ±5% 1/16W | NN05332610 | CF61 | /N | nsp | CER. 0.01µF Z 50V | DK18103310 |
| RK50 | | nsp | CHIP RES. 3.3kΩ ±5% 1/16W | NN05332610 | CF62 | /N | nsp | ELECT. 10µF M 50V RA-2 | OA10605020 |
| RK51 | | nsp | CHIP RES. 10kΩ ±5% 1/16W | NN05103610 | CF63 | /N | nsp | ELECT. 470µF M 6.3V RA-2 | OA47700620 |
| RK58 | | nsp | CHIP RES. 470Ω ±5% 1/16W | NN05471610 | | | | PF14-RESISTORS (COMMON) | |
| RK70 | | nsp | CHIP RES. 10kΩ ±5% 1/16W | NN05103610 | | | | CARBON FILM FIXED RES. | |
| RK71 | | nsp | CHIP RES. 10kΩ ±5% 1/16W | NN05103610 | R*** | | | ±5% 1/6W : RF51 RF52 RF54 RF55 | |
| RK72 | | nsp | CHIP RES. 10kΩ ±5% 1/16W | NN05103610 | | | | RF57 RF58 RF74 RF75 RF77 | |
| RK73 | | nsp | CHIP RES. 10kΩ ±5% 1/16W | NN05103610 | | | | PF14-SEMICONDUCTORS | |
| RK76 | | nsp | CHIP RES. 10kΩ ±5% 1/16W | NN05103610 | DF51 | | | DIODE | |
| RK77 | | nsp | CHIP RES. 10kΩ ±5% 1/16W | NN05103610 | DF54 | /N | nsp | 1SS176 MA165 1SS254 30V 0.1A | HD20002000 |
| DA01 | | | | | QF51 | | | | |
| DA05 | | HZ20018050 | CHIP DIODE 1SS302 (TOSHIBA) | HZ20018050 | QF54 | /N | HT800921B0 | TRS. KTC3199 NPN (Y) | HT800921B0 |
| DK01 | | | | | | | | PF14-MISCELLANEOUS | |
| DK05 | | HZ20018050 | CHIP DIODE 1SS302 (TOSHIBA) | HZ20018050 | JF51 | /N | YT02030700 | TERMINAL YKC21-4076 1L3 FS AU | YT02030700 |
| DK70 | | HZ20018050 | CHIP DIODE 1SS302 (TOSHIBA) | HZ20018050 | JF52 | /N | YT02060640 | TERMINAL | YT02060640 |
| DK71 | | | | | | | | 6P CINCH R/G/B DUAL GND 2L6P | |
| QA01 | | HC700400Z0 | IC CMOS 74HCU04 | HC700400Z0 | JF53 | /N | YT02060640 | TERMINAL | YT02060640 |
| QA02 | | HC700400Z0 | IC CMOS 74HCU04 | HC700400Z0 | | | | 6P CINCH R/G/B DUAL GND 2L6P | |
| QA03 | | HC715100Z0 | IC TC74HC151AF | HC715100Z0 | LF51 | | | RELAY MR82-24USR | |
| QA04 | | HC715100Z0 | IC TC74HC151AF | HC715100Z0 | LF57 | /N | LY20240480 | RELAY MR82-24USR | LY20240480 |
| QA05 | | HC703200Z0 | IC OR-GATE 74HC32 | HC703200Z0 | LF59 | /N | LY20240480 | RELAY MR82-24USR | LY20240480 |
| QA06 | | HC700000Z0 | IC CMOS 74HC00 FLAT | HC700000Z0 | | | | PG04-ELE.VOLUME | |
| QA07 | | HC10068490 | IC PCF8574(I/O EXPANDER) | HC10068490 | | | | CUIT BOARD | |
| QD01 | | HC10011880 | IC 24BIT 192KHZ DAC DR=120DB | HC10011880 | CE01 | | nsp | ELECT. 47µF M 25V RA-2 | OA47602520 |
| QD02 | | HC10011880 | IC 24BIT 192KHZ DAC DR=120DB | HC10011880 | CE02 | | nsp | ELECT. 47µF M 25V RA-2 | OA47602520 |
| QD03 | | HC10011880 | IC 24BIT 192KHZ DAC DR=120DB | HC10011880 | CE03 | | nsp | ELECT. 10µF M 50V RA-2 | OA10605020 |
| QD04 | | HC10011880 | IC 24BIT 192KHZ DAC DR=120DB | HC10011880 | CE04 | | nsp | ELECT. 10µF M 50V RA-2 | OA10605020 |
| QH01 | | | | | CE05 | | OF15101540 | FILM 100pF J 100V APSV | OF15101540 |
| QH05 | | HC10102090 | IC NJM2068M | HC10102090 | CE06 | | OF15101540 | FILM 100pF J 100V APSV | OF15101540 |
| QJ01 | | | | | CE09 | | nsp | ELECT. 22µF M 50V RA-2 | OA22605020 |
| QJ04 | | HC10102090 | IC NJM2068M | HC10102090 | CE10 | | nsp | ELECT. 22µF M 50V RA-2 | OA22605020 |
| QK01 | | HX342132A0 | CHIP TR. 2SC4213 | HX342132A0 | CE11 | | nsp | ELECT. 22µF M 25V ARS | OA22602540 |
| QK02 | | HX342132A0 | CHIP TR. 2SC4213 | HX342132A0 | CE12 | | nsp | ELECT. 22µF M 25V ARS | OA22602540 |
| QK03 | | HC10172090 | IC NJM2115M TE1 | HC10172090 | CE13 | | nsp | ELECT. 10µF M 50V RA-2 | OA10605020 |
| QK04 | | HC10172090 | IC NJM2115M TE1 | HC10172090 | CE14 | | nsp | ELECT. 10µF M 50V RA-2 | OA10605020 |
| QK05 | | HC10102090 | IC NJM2068M | HC10102090 | CE15 | | OF15101540 | FILM 100pF J 100V APSV | OF15101540 |
| QK06 | | HC10102090 | IC NJM2068M | HC10102090 | | | | | |
| QK07 | | BA10026210 | DIG. TRS. DTA114EU | BA10026210 | | | | | |
| QK08 | | HC10172090 | IC NJM2115M TE1 | HC10172090 | | | | | |

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

| POS. NO | VERS. COLOR | PART NO. (FOR EUR) | DESCRIPTION | PART NO. (MJJ) | POS. NO | VERS. COLOR | PART NO. (FOR EUR) | DESCRIPTION | PART NO. (MJJ) |
|-------------|-------------|--------------------|---------------------------------------------------------------------------------------------------------------------------------|----------------|-------------|-------------|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| RN86 | | HP00042230 | PN64-RN86 BF CUIT BOARD VARISTOR FOR FAN SENS. 80C BF | HP00042230 | R*** | | | PQ04- RESISTORS(COMMON) CARBON FILM FIXED RES. ±5% 1/6W : RQ01-RQ04 RQ09-RQ12 RQ17-RQ20 RQ25-RQ28 RQ33-RQ36 RQ41-RQ44 RQ49-RQ64 | |
| CP03 | nsp | | PP04-AUX CUIT BOARD PP04-CAPACITORS CER. 0.01µF Z 50V | DK18103310 | QQ01 | | HC10124090 | PQ04-SEMICONDUCTORS IC NJU7312L ANALOG SWITCH | HC10124090 |
| CP04 | nsp | | CER. 0.01µF Z 50V | DK18103310 | QQ02 | | HC10124090 | IC NJU7312L ANALOG SWITCH | HC10124090 |
| CP05 | nsp | | ELECT. 10µF M 50V RA-2 | OA10605020 | QQ03 | | HC10021090 | IC NJM4560D-D | HC10021090 |
| CP06 | nsp | | ELECT. 10µF M 50V RA-2 | OA10605020 | | | | PQ04-MISCELLANEOUS | |
| CP07 | nsp | | ELECT. 10µF M 50V RA-2 | OA10605020 | JQ01 | | YT02060670 | TERMINAL 14X14 RA 2L6 WH+RE AU F-GROUND | YT02060670 |
| CP08 | nsp | | ELECT. 10µF M 50V RA-2 | OA10605020 | JQ02 | | YT02060670 | TERMINAL 14X14 RA 2L6 WH+RE AU F-GROUND | YT02060670 |
| CP16 | nsp | | CER. 0.01µF Z 50V | DK18103310 | JQ03 | | YT02041280 | TERMINAL 14X14 RA 2L4 WH+RE AU F-GROUND | YT02041280 |
| CP17 | nsp | | ELECT. 100µF M 10V RA-2 | OA10701020 | | | | PS04-AUDIO FUNCTION CUIT BOARD | |
| C*** | | | PP04-CAPACITORS(COMMON) HIGH DIELECTRIC CONSTANT CER.CAPACITOR ±10% 50V : CP01 CP02 | | | | | PS04-CAPACITORS | |
| RP11 | nsp | | RES. 75Ω ±5% 1/6W | GD05750160 | CS07 | /N | OF15471540 | FILM 470pF TP 100V PP APSV | OF15471540 |
| RP12 | nsp | | RES. 75Ω ±5% 1/6W | GD05750160 | CS08 | /N | OF15471540 | FILM 470pF TP 100V PP APSV | OF15471540 |
| RP14 | nsp | | RES. 75Ω ±5% 1/6W | GD05750160 | CS13 | /N | OF15471540 | FILM 470pF TP 100V PP APSV | OF15471540 |
| R*** | | | PP04- RESISTORS(COMMON) CARBON FILM FIXED RES. ±5% 1/6W : RP01-RP06 RP16 | | CS14 | /N | OF15471540 | FILM 470pF TP 100V PP APSV | OF15471540 |
| JP01 | | YJ15000200 | OPT. RECEIVER CONNE. JFJ400 | YJ15000200 | CS19 | /N | OF15471540 | FILM 470pF TP 100V PP APSV | OF15471540 |
| QP01 | | HC10008090 | IC NJM4558D-D | HC10008090 | CS20 | /N | OF15471540 | FILM 470pF TP 100V PP APSV | OF15471540 |
| JP99 | /N | YJ01004330 | PP94-HEADPHONE CUIT BOARD JACK HLJ2307-01-3163 GOLD | YJ01004330 | CS27 | | nsp | ELECT. 10µF M 50V RA-2 | OA10605020 |
| | | | PQ04-A-FUNCTION-V CUIT BOARD PQ04-CAPACITORS | | CS28 | | nsp | ELECT. 10µF M 50V RA-2 | OA10605020 |
| CQ01 | /N | OF15471540 | FILM 470pF TP 100V PP APSV | OF15471540 | CS31 | | nsp | ELECT. 10µF M 50V RA-2 | OA10605020 |
| CQ02 | /N | OF15471540 | FILM 470pF TP 100V PP APSV | OF15471540 | CS32 | | nsp | ELECT. 10µF M 50V RA-2 | OA10605020 |
| CQ07 | /N | OF15471540 | FILM 470pF TP 100V PP APSV | OF15471540 | CS35 | | nsp | CER. 0.01µF Z 50V | DK18103310 |
| CQ08 | /N | OF15471540 | FILM 470pF TP 100V PP APSV | OF15471540 | CS36 | | nsp | CER. 0.01µF Z 50V | DK18103310 |
| CQ13 | /N | OF15471540 | FILM 470pF TP 100V PP APSV | OF15471540 | CS37 | | nsp | ELECT. 10µF M 50V RA-2 | OA10605020 |
| CQ14 | /N | OF15471540 | FILM 470pF TP 100V PP APSV | OF15471540 | CS38 | | nsp | ELECT. 10µF M 50V RA-2 | OA10605020 |
| CQ19 | /N | OF15471540 | FILM 470pF TP 100V PP APSV | OF15471540 | CS39 | | nsp | ELECT. 10µF M 50V RA-2 | OA10605020 |
| CQ20 | /N | OF15471540 | FILM 470pF TP 100V PP APSV | OF15471540 | CS51 | | nsp | ELECT. 100µF M 16V RA-2 | OA10701620 |
| CQ25 | /N | OF15471540 | FILM 470pF TP 100V PP APSV | OF15471540 | CS52 | | nsp | ELECT. 100µF M 16V RA-2 | OA10701620 |
| CQ26 | /N | OF15471540 | FILM 470pF TP 100V PP APSV | OF15471540 | C*** | | | PS04-CAPACITORS(COMMON) HIGH DIELECTRIC CONSTANT CER.CAPACITOR ±10% 50V : CS25 CS26 CS29 CS30 CS43 CS46-CS50 | |
| CQ31 | /N | OF15471540 | FILM 470pF TP 100V PP APSV | OF15471540 | RS09 | | NI05101110 | PS04-RESISTORS CHIP RES. 100Ω ±5% 1/10W | NI05101110 |
| CQ32 | /N | OF15471540 | FILM 470pF TP 100V PP APSV | OF15471540 | RS10 | | NI05101110 | CHIP RES. 100Ω ±5% 1/10W | NI05101110 |
| CQ39 | nsp | | ELECT. 10µF M 50V RA-2 | OA10605020 | RS11 | | NI05274110 | CHIP RES. 270kΩ ±5% 1/10W | NI05274110 |
| CQ40 | nsp | | ELECT. 10µF M 50V RA-2 | OA10605020 | RS12 | | NI05274110 | CHIP RES. 270kΩ ±5% 1/10W | NI05274110 |
| CQ43 | nsp | | ELECT. 10µF M 50V RA-2 | OA10605020 | RS13 | | NI05000110 | CHIP RES. 0Ω ±5% 1/10W | NI05000110 |
| CQ44 | nsp | | ELECT. 10µF M 50V RA-2 | OA10605020 | RS14 | | NI05000110 | CHIP RES. 0Ω ±5% 1/10W | NI05000110 |
| CQ50 | nsp | | ELECT. 10µF M 50V RA-2 | OA10605020 | RS17 | | NI05101110 | CHIP RES. 100Ω ±5% 1/10W | NI05101110 |
| CQ51 | nsp | | ELECT. 10µF M 50V RA-2 | OA10605020 | RS18 | | NI05101110 | CHIP RES. 100Ω ±5% 1/10W | NI05101110 |
| CQ52 | nsp | | ELECT. 10µF M 50V RA-2 | OA10605020 | RS19 | | NI05274110 | CHIP RES. 270kΩ ±5% 1/10W | NI05274110 |
| CQ53 | nsp | | ELECT. 10µF M 50V RA-2 | OA10605020 | RS20 | | NI05274110 | CHIP RES. 270kΩ ±5% 1/10W | NI05274110 |
| CQ64 | nsp | | ELECT. 100µF M 16V RA-2 | OA10701620 | RS21 | | NI05000110 | CHIP RES. 0Ω ±5% 1/10W | NI05000110 |
| CQ65 | nsp | | ELECT. 100µF M 16V RA-2 | OA10701620 | RS22 | | NI05000110 | CHIP RES. 0Ω ±5% 1/10W | NI05000110 |
| C*** | | | PQ04-CAPACITORS(COMMON) HIGH DIELECTRIC CONSTANT CER.CAPACITOR ±10% 50V : CQ37 CQ38 CQ41 CQ42 CQ56 CQ59-CQ63 | | RS25 | | NI05101110 | CHIP RES. 100Ω ±5% 1/10W | NI05101110 |
| | | | | | RS26 | | NI05101110 | CHIP RES. 100Ω ±5% 1/10W | NI05101110 |
| | | | | | RS27 | | NI05274110 | CHIP RES. 270kΩ ±5% 1/10W | NI05274110 |
| | | | | | RS28 | | NI05274110 | CHIP RES. 270kΩ ±5% 1/10W | NI05274110 |
| | | | | | RS29 | | NI05000110 | CHIP RES. 0Ω ±5% 1/10W | NI05000110 |
| | | | | | RS30 | | NI05000110 | CHIP RES. 0Ω ±5% 1/10W | NI05000110 |
| | | | | | RS33 | | NI05102110 | CHIP RES. 1kΩ ±5% 1/10W | NI05102110 |
| | | | | | RS34 | | NI05102110 | CHIP RES. 1kΩ ±5% 1/10W | NI05102110 |
| | | | | | RS35 | | NI05473110 | CHIP RES. 47kΩ ±5% 1/10W | NI05473110 |
| | | | | | RS36 | | NI05473110 | CHIP RES. 47kΩ ±5% 1/10W | NI05473110 |

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| POS. NO | VERS. COLOR | PART NO. (FOR EUR) | DESCRIPTION | PART NO. (MJI) |
|---------------------------|-------------|--------------------|---------------------------------------------------|----------------|
| QM82 | | HC709449B0 | IC 74HC4094 16PIN DIP PHILIPS | HC709449B0 |
| QM83 | | | | |
| QM88 | | BA10001000 | DIG. TRS. | BA10001000 |
| QM89 | | BA20001000 | DTA114ES/UN4111 10K 10K DIG. TRS. D | BA20001000 |
| QM90 | | BA10001000 | TC114ES/UN4211 10K 10K DIG. TRS. | BA10001000 |
| QT02 | /N | BA20001000 | DTA114ES/UN4111 10K 10K DIG. TRS. | BA20001000 |
| QT03 | /N | HC3891209F | DTC114ES/UN4211 10K 10K IC REG. NJM7812FA +12V | HC3891209F |
| QT04 | /N | BA10001000 | DIG. TRS. | BA10001000 |
| QW01 | | HC10053090 | DTA114ES/UN4111 10K 10K IC DUAL NJM2068DD | HC10053090 |
| QW31 | | HC10008090 | IC NJM4558D-D | HC10008090 |
| QY01 | | HC736805B0 | IC TC74HC368AP | HC736805B0 |
| PY04-MISCELLANEOUS | | | | |
| ▲ F851 | /N | FS20200200 | FUSE T2.0A 250V TR5 | FS20200200 |
| ▲ F852 | /N | FS20200200 | FUSE T2.0A 250V TR5 | FS20200200 |
| ▲ F853 | /N | FS20200200 | FUSE T2.0A 250V TR5 | FS20200200 |
| ▲ F854 | /N | FS20200200 | FUSE T2.0A 250V TR5 | FS20200200 |
| JY04 | | YJ06030450 | JACK BASE POST 12P B12P-MQ-C | YJ06030450 |
| JY05 | | YJ06030450 | JACK BASE POST 12P B12P-MQ-C | YJ06030450 |
| JY06 | | YJ06031800 | JACK JACK B04P-MQ-C | YJ06031800 |
| JY07 | | YJ06030450 | JACK BASE POST 12P B12P-MQ-C | YJ06030450 |
| JY09 | | YJ06031810 | JACK JACK B06MQ-C | YJ06031810 |
| JY11 | | YJ06030450 | JACK BASE POST 12P B12P-MQ-C | YJ06030450 |
| JY13 | | YJ06030450 | JACK BASE POST 12P B12P-MQ-C | YJ06030450 |
| JY14 | | YJ06030450 | JACK BASE POST 12P B12P-MQ-C | YJ06030450 |
| JY15 | | YJ06030440 | JACK BASE POST 9P B09P-MQ-C | YJ06030440 |
| JY17 | | YJ06030440 | JACK BASE POST 9P B09P-MQ-C | YJ06030440 |
| L901 | /N | FM12223010 | EMI FILTER DSS306-91-F-223Z | FM12223010 |
| L911 | /N | FM12223010 | EMI FILTER DSS306-91-F-223Z | FM12223010 |
| LT05 | /N | FM12223010 | EMI FILTER DSS306-91-F-223Z | FM12223010 |
| LT06 | /N | FM12223010 | EMI FILTER DSS306-91-F-223Z | FM12223010 |

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