

SERVICE
MANUAL

PM-75

4822 725 50864

marantz®

model PM-75

Digital Integrated Amplifier

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.

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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 telex must be signed otherwise such part order will be considered as null and void.

PARTS ORDERING

Parts may be ordered at the following addresses:

| | | | | |
|---|---|---|---|--|
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| BELGIUM SVD DIVISION MARANTZ Industrialaan 1 1720 Groot-Bijgaarden Belgium Telex: 24466 | FRANCE MARANTZ FRANCE 4 Rue Bernard Palissy 92600 Asnières France Telex: 611651 | GREECE SHERTON ELECTRONICS S.A. P.O.Box 21025 Hippocrates Street 188 Athens 11471 Greece Telex: 216.795 | SOUTH AFRICA MARANTZ DIVISION OF PHILIPS S.A. Main Road Martindale P.O. Box. 58088 Newville 21114 South Africa | TURKEY DOGRUOL Ltd. I.M.C. 6 Blok N°6310 Unkapani Istanbul Turkey Telex: 22085 |
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All of the above locations are fully equipped to take care of your total service needs. Because various countries have differing configuration requirements, it is necessary that you contact the service facility in your particular country. In the event that there is no service location listed for your country, please, contact the nearest facility for the necessary assistance.

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

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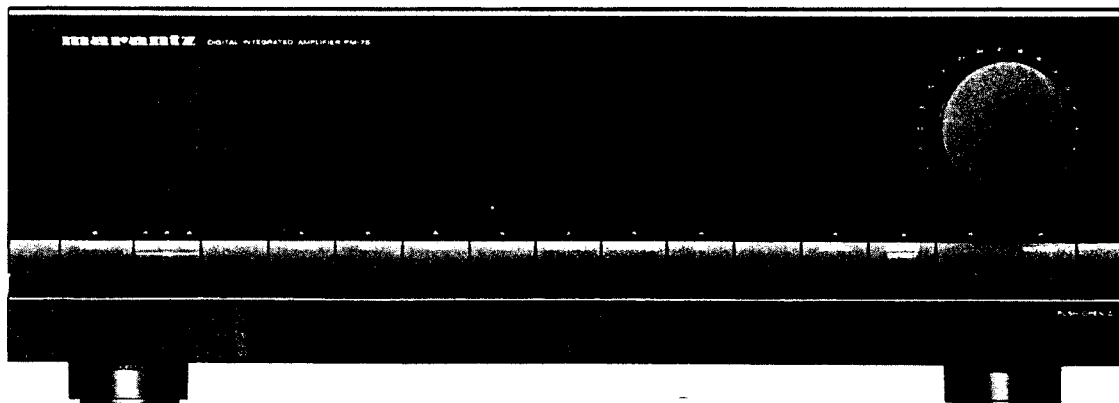
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How to use this service manual

- The "Common parts" which Marantz Japan, Inc. has established are eliminated from this service manual.
- These "Common parts" are applied to all models in the service manuals arranged and issued by MJI.
- To indicate clearly the common parts in the schematic diagram, a line is drawn above or under the Ref. Desig. No. of applicable parts.
- "Common parts" can be supplied from the Marantz service center as ever.
In case of ordering, please establish the parts number of 12 N/C'S following the procedure mentioned in this service manual "How to establish the parts number for common parts".

1) Please correctly write the parts number of 12 N/C'S following the rule.

MODEL PM-75 DIGITAL INTEGRATED AMPLIFIER



1. P.W. BOARDS

As can be seen from the circuit diagram the chassis of Model PM-75 consists of the following units. Each unit mounted on a printed circuit board is described within the square enclosed by a bold dotted line on the circuit diagram.

1. **Tone/Loudness/Balance** mounted on P.W. Board PE01
2. **Master Volume** mounted on P.W. Board PG01
3. **Motor Volume** mounted on P.W. Board PG51
4. **Tape IN/OUT** mounted on P.W. Board PJ01
5. **Micom** mounted on P.W. Board PU01
6. **Rec Selector** mounted on P.W. Board PU81
7. **Phono Amp/Input** .. mounted on P.W. Board PV01
8. **Speaker Terminal** .. mounted on P.W. Board PW01
9. **Headphone/Speaker Switch** mounted on P.W. Board PW51
10. **D/A Converter IN/OUT** mounted on P.W. Board P101
11. **D/A Converter PLL** mounted on P.W. Board P201
12. **D/A Converter FS IND** mounted on P.W. Board P271
13. **Main Amp** mounted on P.W. Board P701
14. **Power Transformer** mounted on P.W. Board P851
15. **Power Switch** mounted on P.W. Board P901
16. **Power Transformer** mounted on P.W. Board P951

2. ADJUSTMENT PROCEDURE (MAIN IDLING CURRENT)

1. Places for adjustment
Left channel — R751 (470 Ω)
Right channel — R752 (470 Ω)
2. Measuring points
Left channel — TP-1 (-) TP-2 (+)
Right channel — TP-3 (-) TP-4 (+)
3. Steps
 - (1) Connect a DC digital voltmeter to the test points. (Perform with the variable resistor set at minimum, no load, and the rated power supply voltage.)
 - (2) Apply 6 mV to 8 mV between TP-1 and TP-2, TP-3 and TP-4 (center value 7 mV).
An idling current of 16.7 mA to 22.2 mA will flow at this time.
The current will be approximately 19.4 mA when stabilized.

CAUTION: Conduct with the rated voltage, without gradually increasing the primary side power supply voltage (to prevent malfunction).
Let set for about 1 minute after turning the power on before adjusting.

3. TEST EQUIPMENT REQUIRED FOR SERVICING

This table lists the test equipment required for servicing the Model PM-75 Stereo Amplifier.

| Item | Use |
|--|--|
| Distortion Analyzer | Distortion measurements |
| Audio Oscillator | Sinewave and squarewave signal source |
| ACVTVM | Voltage measurements (AC) |
| Oscilloscope | Waveform analysis and trouble shooting and ASO alignment |
| Circuit Tester | Trouble shooting |
| DCVTVM | Voltage measurements (DC) |
| AC Wattmeter | Monitors primary power to amplifier |
| Line Voltmeter | Monitors potential of primary power to amplifier |
| Variable Autotransformer (0 to 140V AC, 10A) | Adjust level of primery power to amplifier |
| Shorting Plug | Shorts amplifier input to eliminate noise pickup |

4. NON CUT-OFF CIRCUIT

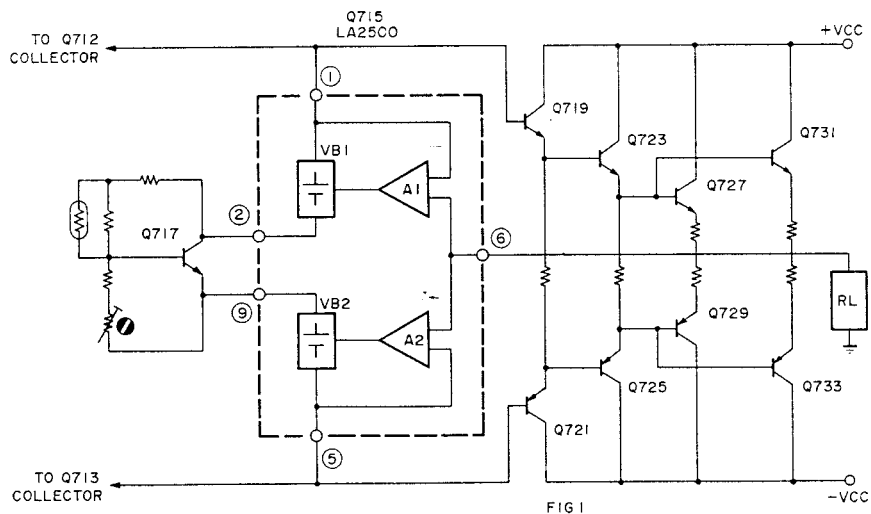
A. Outline of Operation

Fig. 1 shows the configuration of the Power stage of the non cut-off circuit. The section enclosed by dotted lines corresponds to the bias circuit.

1. A1 and A2 detect the current variation in the Power stage, and apply the input, in the form of current, to the VB1 and VB2.

2. VB1 and VB2 receive the current output from A1 and A2, and convert the current into voltage in order to vary the base bias voltage of the Power stage.

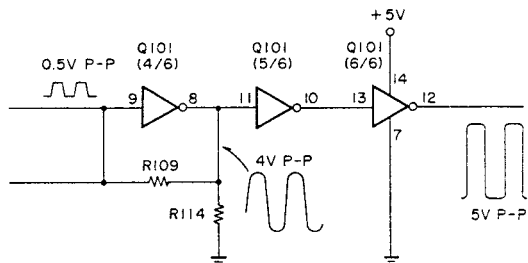
3. Q717 is a constant-voltage circuit which sets the idle current in the Power stage and performs the temperature compensation.



5. DESCRIPTION OF DIGITAL CIRCUIT OPERATIONS

5.1 INPUT CIRCUIT

Q101 (1/6 to 6/6) and Q102 (4/6 to 6/6) make up a circuit which amplifies the 0.5 Vp-p digital signal level to the TTL level of 5 Vp-p and shapes the waveform. The amplifier in the first stage amplifies the signal up to about 4 Vp-p, and the inverter of the second and third stages shapes the waveform and sends the output to the following input selector circuit.



Q103 to Q105 form an input selector circuit using a NAND gate, which is controlled by the μ -COM PU01. The selected signal with the level of 5 Vp-p is sent to the demodulator circuit in the next stage. On the other hand, the selected source signal is also sent to the REC OUT jack. The output at the REC OUT jack is 0.5 Vp-p/75 ohms, so the level with no load is 1 Vp-p.

5.2 DEMODULATOR CIRCUIT

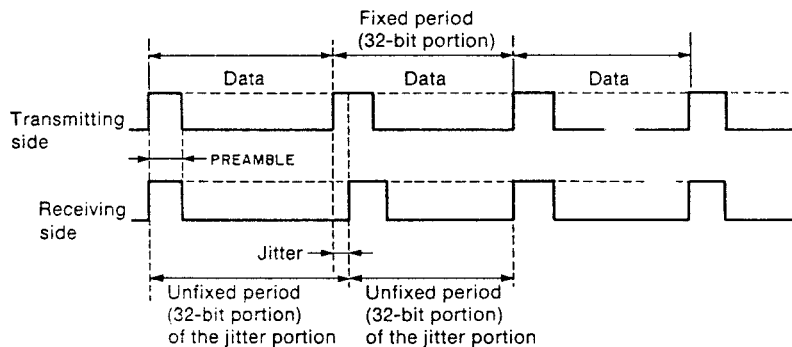
The demodulator (Q201) receives and reproduces the digital audio interface format signal. It incorporates a PLL circuit which is synchronized with the externally-supplied digital audio interface format signal. Therefore, the sampling frequency is automatically set according to the input.

5.3 JITTER KILLER CIRCUIT

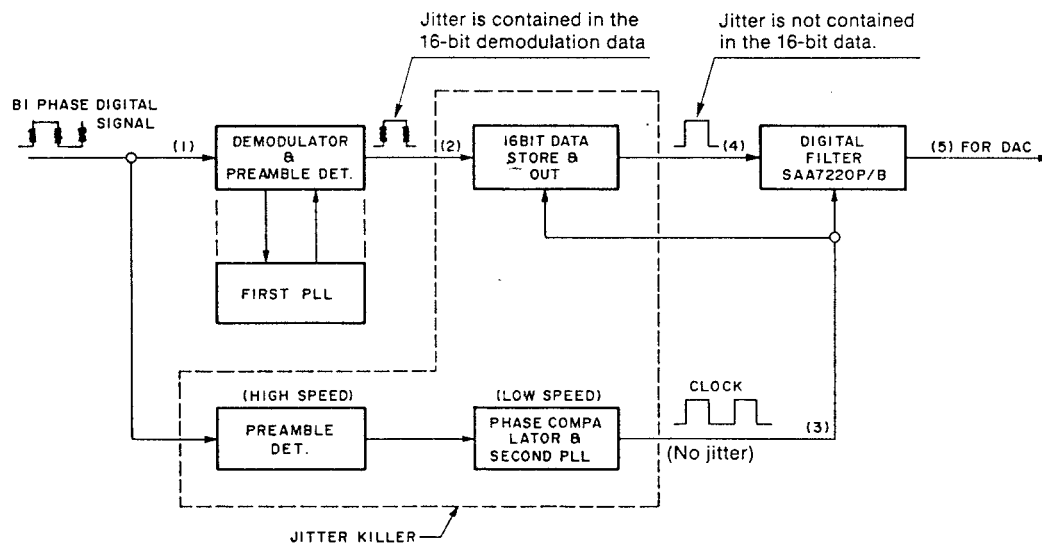
This circuit absorbs jitter (a wavering of the time axis, or a type of shifting distortion) which is generated in the optical transmission system.

The circuit utilizes a twin PLL system with memory. In particular, this circuit is effective in improving the distortion factor in the high region.

5.3.1



5.3.2 Jitter Killer Circuit Diagram



5.4 DIGITAL FILTER

The digital filter (Q222) handles the following functions.

1. Data interpolation in case of error.
2. Attenuation.
3. Muting.
4. Finite impulse response transversal filtering with quadruple oversampling rate.
5. Digital analog output.

5.5 DAC (Q112)

This is a 16-bit dual digital-to-analog converter.

5.6 I/V CONVERTER

- Q115 is the I/V converter, which inputs digital signal of the standard input level (0.5 V_{p-p}) and outputs an analog output voltage of 2 V_{rms} at point (A).
- Q113 is the de-emphasis ON/OFF switch which is controlled by Q201.

| | Q201 Pin 16 (DEF) Out |
|-------------------------------------|-----------------------|
| a When input data is emphasized | H |
| b When input data is not emphasized | L |

—Twin PLL System with Memory—

In terms of sound quality, the PLL has good slow-speed (narrow bandwidth) characteristics, and good high-speed (wide bandwidth) characteristics from the point of the decoder response, presenting a reciprocal relationship. To deal with this situation, two PLL systems are established, a high-speed type and a slow-speed type. The decoder is controlled by the clock that has a lot of jitter, which has been produced by the high-speed PLL (1st PLL). The digital filter which is highly susceptible to sound quality and the DAC are controlled by the clock that has a small amount of jitter produced by the slow-speed PLL (2nd PLL). Note that the clock of the DAC is not directly supplied from the slow-speed PLL, rather, the supply is from the digital filter.

As a method of increasing the jitter margin, the word memory, which consists of a 16-bit shift register, is arranged in front of the digital filter. Data containing jitter which is sent from the decoder is stored in this memory at once. When a one-word portion (16 bits) of data has accumulated, it is read by the clock that has a small amount of jitter (produced by the slow-speed 2nd PLL) and sent to the digital filter. All this is to say that the jitter contained in the data is absorbed by storing the jitter-containing data to memory by the word unit. Note that this circuit structure is the same as CD-12LE of the high end separate CD.

—Circuit Operation—

1. Preamble Detector (Q213-1/4 to 4/4 and Q220-1/2, 2/2)
This circuit detects the head signal occurring with each sample of 16-bit data and outputs it to the phase comparator (Q221) as a sync signal. The frequency is 88.2 kHz for 44.1 kHz sampling.
2. Second PLL (Low Speed)
This circuit is made up of phase comparator (Q221), low pass filter (Q229 and Q230) used for band control, VCO (Q231) which changes the oscillation frequency by means of the output voltage from the LPF, and frequency demultiplier (Q226-1/2, 2/2) which performs division (by 1/128) while accurately adjusting the duty cycle to 50%.

Concerning the basic operation of the circuit, first, the VCO oscillates at the previously set free-running frequency. Next, this frequency is divided by the demultiplier and the phase of the resultant signal is compared with the phase of the receive data sync signal by the phase comparator. A voltage corresponding to the phase difference is produced and fed back to the VCO via the LPF, and the oscillation frequency is changed in the direction that decreases the phase difference. In a short time, the frequency and the phase of the demultiplied signal become roughly equal to the input sync signal and they are locked in this condition. The receive data and the synchronized master clock (11.2896 MHz) pass through the output of the VCO and the NAND gate IC (Q223-3/4) and are then output to the digital filter.

SERVICE INFORMATION

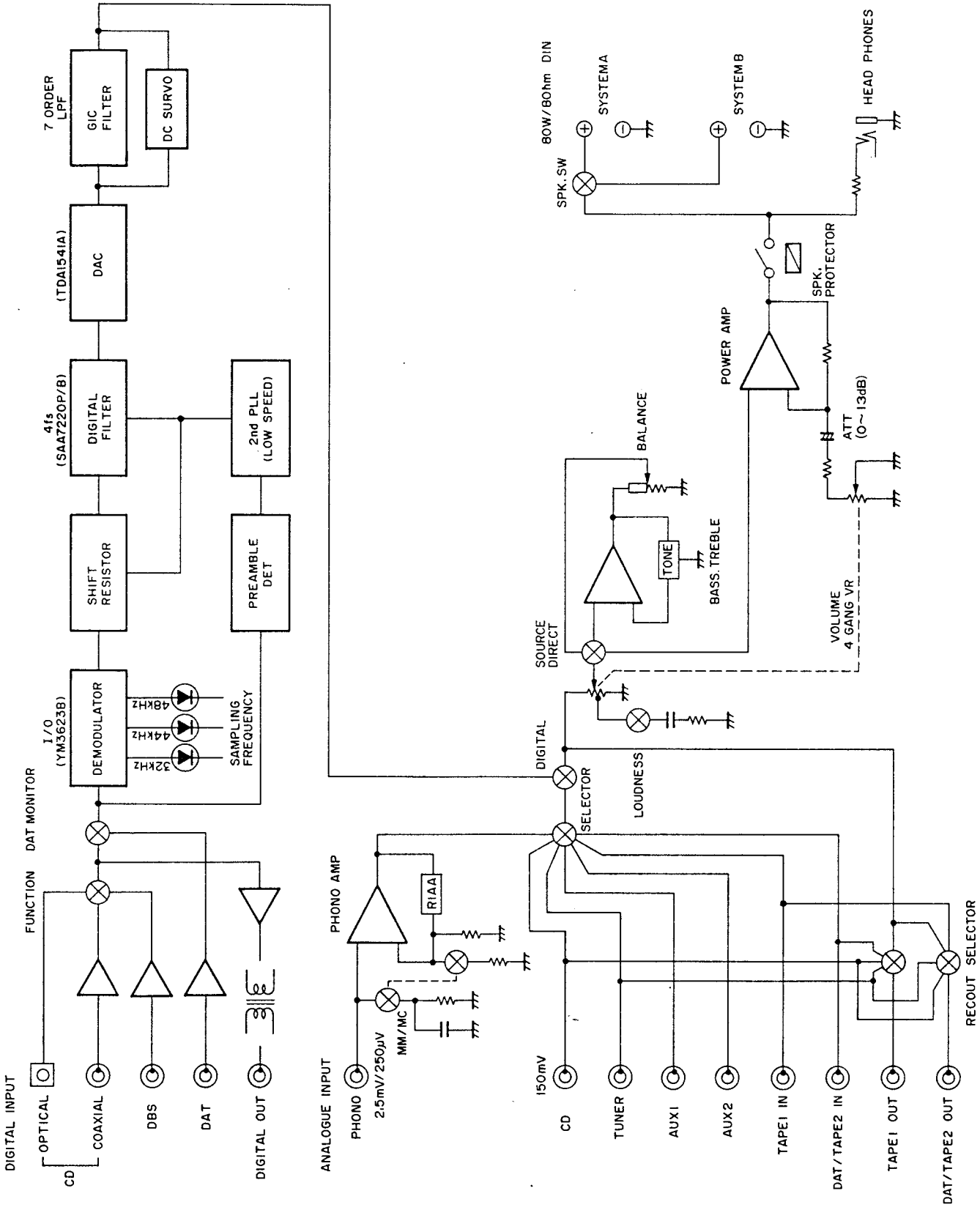
1. Function Initialize (Initial setting)

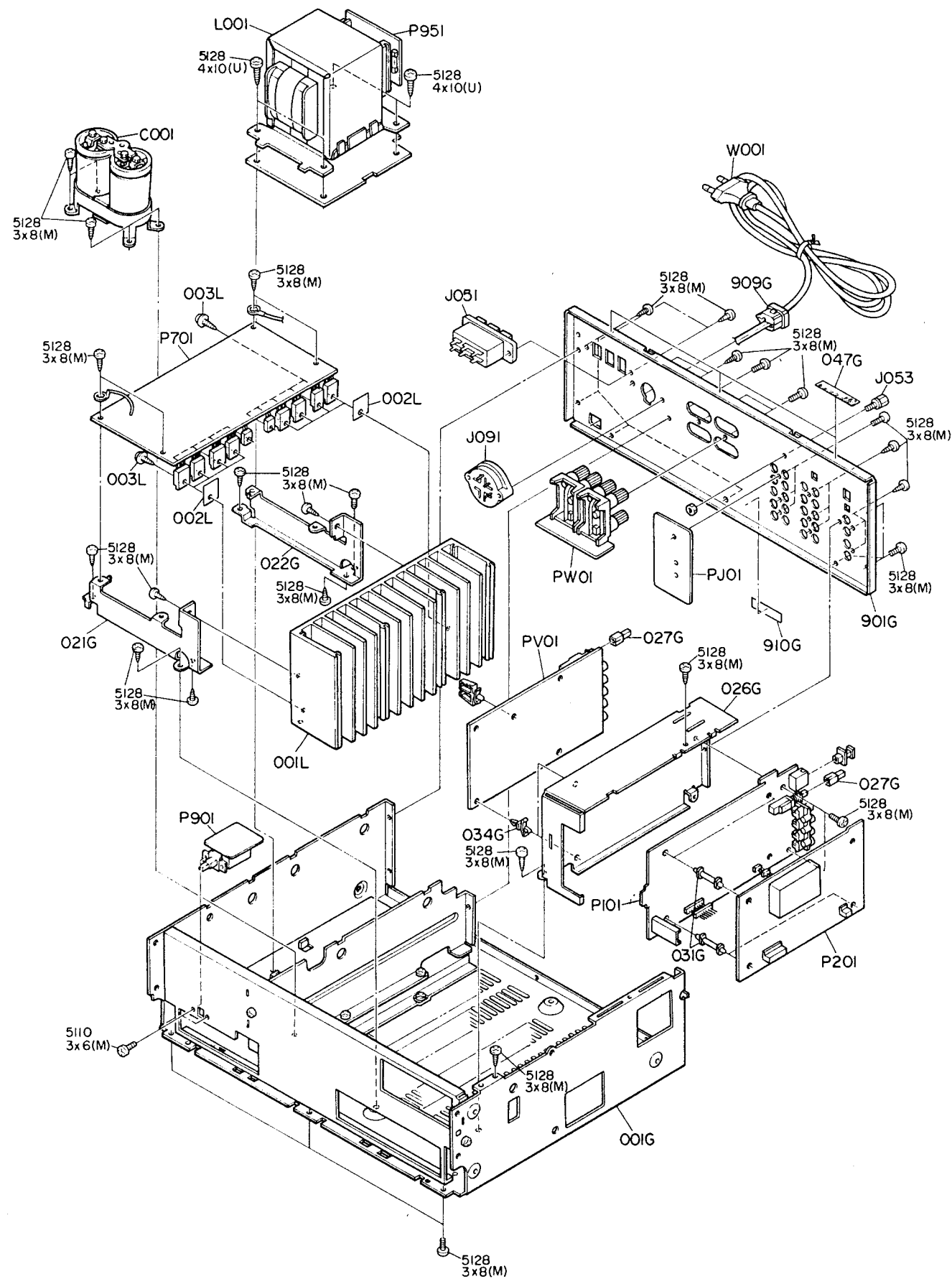
| | |
|------------------|----------------|
| INPUT SELECTOR — | CD |
| DIGITAL — | OFF (ANALOGUE) |
| SOURCE DIRECT — | OFF (TONE IN) |
| MUTING — | OFF |

2. SERVICE TEST PROGRAM

- 2-1. When the POWER is turned ON while pressing the PHONO, AUX 1 and AUX 2 keys simultaneously, the unit enters the test routine. Then, the speaker relay will be turned ON after 5 seconds.
During this period, the volume level will automatically be lowered if the level is raised.
- 2-2. Then, press the CD, TUNER and TAPE 2 keys simultaneously to start test routine. The contents of the test routine is as shown below, and is performed repeatedly.
 - 1) The PHONO, AUX 1, AUX 2, TAPE 1, TAPE 2, TUNER, CD, DIGITAL, DIRECT and MUTING indicators are all lit twice. The setting of the SELECTOR switch is CD at this time.
 - 2) In the above order, the indicator and switch for each function will be changed in sequence, then all indicators will go out.
 - 3) About 5 seconds later, MUTING is turned ON and OFF, then test program is returned to step 1), and performed repeatedly.
- 2-3. To release the test routine, press the DIRECT and MUTING keys simultaneously.

6. BLOCK DIAGRAM





| REF. DESIG. | PART NO. | DESCRIPTION |
|-------------|----------------|----------------------------|
| 027G | 4822 412 20506 | Knob, OPT-COAX/MM-MC |
| 047G | 4822 535 71084 | Spacer |
| 901G | 4822 443 51141 | Rear Panel [N] |
| | 4822 443 51142 | Rear Panel [A, W] |
| 003L | 4822 502 12512 | B.T. Screw B3 x 12 |
| ▲ C001 | 4822 124 22692 | Elect Cap. 1500μF 63V |
| ▲ J051 | 4822 267 30797 | Jack, AC Outlet [E] |
| J053 | 4822 266 30288 | Terminal, GND |
| ▲ L001 | 4822 146 21377 | Power Transformer |
| ▲ J091 | 4822 272 10236 | Voltage Selector [A, N, W] |
| | 4822 272 10227 | Voltage Selector [E] |

| REF. DESIG. | PART NO. | DESCRIPTION |
|---------------|----------------|--|
| | | PG01-MISCELLANEOUS |
| JG01 | 4822 265 10078 | Plug, 3P |
| JG02 | 4822 265 10078 | Plug, 3P |
| JG03 | 4822 265 30641 | Plug, 2P |
| JG04 | 4822 265 10078 | Plug, 3P |
| JG05 | 4822 265 30641 | Plug, 2P |
| JG06 | 4822 265 10078 | Plug, 3P |
| JG07 | 4822 265 30641 | Plug, 2P |
| JG10 | 4822 265 30473 | Plug, 5P |
| | | PG51-MOTOR VOLUME CIRCUIT BOARD |
| CG51 | 4822 122 40491 | Ceramic Cap. 0.022 μ F +80% -20% |
| JG51 | 4822 265 30641 | Plug, 2P |
| | | PJ01-TAPE IN/OUT CIRCUIT BOARD |
| CJ01 | 4822 122 32486 | Ceramic Cap. 0.01 μ F +80% -20% |
| CJ02 | 4822 122 32486 | Ceramic Cap. 0.01 μ F +80% -20% |
| CJ03 | 4822 122 40617 | Ceramic Cap. 0.1 μ F +80% -20% |
| JJ01 | 4822 265 30512 | Terminal, 4P; RCA |
| JJ02 | 4822 265 30512 | Terminal, 4P; RCA |
| JJ03 | 4822 266 30236 | Terminal, 2P; RCA |
| | | PU01-MICOM CIRCUIT BOARD |
| | | PU01-CAPACITORS |
| CU01 | 4822 124 41543 | Elect 1 μ F 50V |
| CU02 | 4822 124 90359 | Elect 10 μ F 16V |
| CU04 | 4822 122 40491 | Ceramic 0.022 μ F +80% -20% |
| CU05 | 4822 124 41592 | Elect, Big 0.1F |
| CU06 | 4822 124 22274 | Elect 4.7 μ F 50V |
| CU07 | 4822 124 41543 | Elect 1 μ F 50V |
| CU08 | 4822 124 90352 | Elect 10 μ F 16V |
| CU09 | 4822 122 40491 | Ceramic 0.022 μ F +80% -20% |
| CU10 | 4822 124 90353 | Elect 100 μ F 10V |
| CU11 | 4822 124 22694 | Elect 1000 μ F 6.3V |
| CU12 | 4822 124 22273 | Elect 0.47 μ F 50V |
| | | PU01-RESISTORS |
| Δ RU44 | 4822 116 60362 | 68 Ω \pm 5% 1W |
| | | PU01-SEMICONDUCTORS |
| DU01 | | L.E.D. CT3D8B |
| DU11 | 4822 130 80326 | |
| DU12 | 4822 130 33305 | Diode 1SS176, etc. |
| DU13 | 4822 130 33305 | Diode 1SS176, etc. |
| DU15 | 4822 130 80839 | Diode S5688G |
| DU17 | 4822 130 33305 | Diode 1SS176, etc. |
| DU18 | 4822 130 80316 | Zener 3.6V |
| DU20 | 4822 130 80839 | Diode S5688G |
| QU01 | 4822 209 73259 | Microprocessor LC6554H |
| QU02 | 4822 209 73287 | IC LB1630 |
| QU04 | 4822 130 60107 | Transistor 2SA1048(Y, GR) |
| QU05 | 4822 130 60839 | Transistor 2SC2458(Y, GR) |
| QU06 | 4822 130 60839 | Transistor 2SC2458(Y, GR) |
| QU07 | 4822 130 60107 | Transistor 2SA1048(Y, GR) |
| QU08 | 4822 130 60839 | Transistor 2SC2458(Y, GR) |
| QU09 | 4822 130 60839 | Transistor 2SC2458(Y, GR) |
| QU10 | 4822 130 60839 | Transistor 2SC2458(Y, GR) |

| REF. DESIG. | PART NO. | DESCRIPTION |
|-------------|----------------|---|
| | | PU01-MISCELLANEOUS |
| JU03 | 4822 265 30641 | Plug, 2P |
| SU01 | | |
| ? | 4822 276 12455 | Push Switch, Tact |
| SU10 | | |
| XU01 | 4822 242 72221 | Ceramic Vibrator, CST4.00MT |
| ZU01 | 4822 130 10009 | Photo Unit |
| | | PUB1-REC SELECTOR CIRCUIT BOARD |
| SU81 | 4822 273 80336 | Rotary Switch, Rec Selector |
| | | PV01-PHONO AMP/INPUT CIRCUIT BOARD |
| | | PV01-CAPACITORS |
| CV01 | | |
| ? | 4822 122 32486 | Ceramic 0.01 μ F +80% -20% |
| CV08 | | |
| CV13 | 4822 124 22274 | Elect 4.7 μ F 50V |
| CV14 | 4822 124 22274 | Elect 4.7 μ F 50V |
| CV15 | 4822 124 22274 | Elect 4.7 μ F 50V |
| CV16 | 4822 124 22274 | Elect 4.7 μ F 50V |
| C401 | 4822 121 42894 | Film 150pF \pm 5% [A,E,W] |
| C402 | 4822 121 42894 | Film 150pF \pm 5% [A,E,W] |
| C407 | 4822 124 22279 | Elect 2200 μ F 6.3V |
| C408 | 4822 124 22279 | Elect 2200 μ F 6.3V |
| C415 | 4822 124 22571 | Elect 10 μ F 50V |
| C416 | 4822 124 22571 | Elect 10 μ F 50V |
| C419 | 4822 124 22274 | Elect 4.7 μ F 50V |
| C420 | 4822 124 22274 | Elect 4.7 μ F 50V |
| C421 | 4822 124 22278 | Elect 51 μ F 10V |
| C422 | 4822 124 22278 | Elect 51 μ F 10V |
| | | PV01-SEMICONDUCTORS |
| D401 | 4822 130 33305 | Diode 1SS176, etc. |
| D402 | 4822 130 33305 | Diode 1SS176, etc. |
| QV01 | 4822 209 72357 | IC LC7821 |
| QV02 | 4822 209 72357 | IC LC7821 |
| QV08 | 4822 130 60839 | Transistor 2SC2458(Y, GR) |
| QV09 | 4822 130 60107 | Transistor 2SA1048(Y, GR) |
| QV10 | 4822 130 60107 | Transistor 2SA1048(Y, GR) |
| QV11 | 4822 209 83804 | IC LC4966 |
| Q401 | | |
| ? | 4822 130 42839 | F.E.T. 2SK369(BL) |
| Q404 | | |
| Q405 | 4822 130 43233 | Transistor 2SC2240(GR, BL) |
| Q406 | 4822 130 43233 | Transistor 2SC2240(GR, BL) |
| Q407 | 4822 209 73064 | IC NJM2068DD |
| | | PV01-MISCELLANEOUS |
| JV01 | 4822 267 20348 | Terminal, 4P; RCA |
| JV02 | 4822 266 30285 | Terminal, 6P; RCA |
| JV04 | 4822 265 30641 | Plug, 2P |
| JV05 | 4822 265 10078 | Plug, 3P |
| JV06 | 4822 265 10078 | Plug, 3P |

| REF. DESIG. | PART NO. | DESCRIPTION |
|--|----------------|--|
| L401 | 4822 156 11019 | Choke Coil, 320 μ H [N] |
| L402 | 4822 156 11019 | Choke Coil, 320 μ H [N] |
| S401 | 4822 276 20468 | Push Switch, MC/MM |
| PW01-SPEAKER TERMINAL CIRCUIT BOARD | | |
| JW01 | 4822 266 30323 | Terminal, Speaker [N] |
| JW02 | 4822 265 20205 | Plug, 3P |
| JW03 | 4822 265 20205 | Plug, 3P |
| JW04 | 4822 265 10093 | Jack, 3P |
| JW05 | 4822 265 10093 | Jack, 3P |
| PW51-HEADPHONE/SPEAKER SWITCH CIRCUIT BOARD | | |
| CW51 | 4822 122 40516 | Ceramic Cap. 0.01 μ F +80% -20% [N] |
| RW51 | 4822 111 50474 | Resistor 330 Ω \pm 5% 1W |
| RW52 | 4822 111 50474 | Resistor 330 Ω \pm 5% 1W |
| JW51 | 4822 264 10132 | Jack, Headphone (GLD) |
| | 4822 267 30617 | Jack, Headphone (BLK) |
| JW52 | 4822 265 10117 | Plug, 5P |
| JW53 | 4822 265 20205 | Plug, 3P |
| SW51 | 4822 276 20467 | Push Switch |
| P101-D/A CONVERTER IN/OUT CIRCUIT BOARD | | |
| P101-CAPACITORS | | |
| C101 | 4822 124 22275 | Elect 47 μ F 10V |
| C102 | 4822 122 40306 | Ceramic 0.047 μ F +80% -20% |
| C103 | 4822 122 32143 | Ceramic 22pF \pm 5% |
| C104 | 4822 124 22275 | Elect 47 μ F 10V |
| C106 | 4822 124 22275 | Elect 47 μ F 10V |
| C108 | 4822 124 22275 | Elect 47 μ F 10V |
| C110 | 4822 122 40306 | Ceramic 0.047 μ F +80% -20% |
| C111 | 4822 124 22275 | Elect 47 μ F 10V |
| C112 | 4822 122 40306 | Ceramic 0.047 μ F +80% -20% |
| C113 | 4822 122 40306 | Ceramic 0.047 μ F +80% -20% |
| C114 | 4822 122 40306 | Ceramic 0.047 μ F +80% -20% |
| C115 | 4822 122 40617 | Ceramic 0.1 μ F +80% -20% |
| C128 | | |
| C130 | 4822 121 42713 | Film 680pF \pm 5% |
| C131 | 4822 124 41539 | Elect 47 μ F 16V |
| C132 | 4822 122 40306 | Ceramic 0.047 μ F +80% -20% |
| C133 | 4822 122 40306 | Ceramic 0.047 μ F +80% -20% |
| C134 | 4822 124 90363 | Elect 220 μ F 10V |
| C135 | 4822 124 41539 | Elect 47 μ F 16V |
| C136 | 4822 124 22275 | Elect 47 μ F 10V |
| C137 | 4822 122 40306 | Ceramic 0.047 μ F +80% -20% |
| C138 | 4822 124 41539 | Elect 47 μ F 16V |
| C139 | 4822 124 22275 | Elect 47 μ F 10V |
| C140 | 4822 122 40306 | Ceramic 0.047 μ F +80% -20% |
| C145 | 4822 121 42713 | Film 6800pF \pm 5% |
| C146 | 4822 121 42713 | Film 6800pF \pm 5% |
| C153 | 4822 124 22571 | Elect 10 μ F 50V |
| C154 | 4822 124 22571 | Elect 10 μ F 50V |
| C155 | 4822 124 22571 | Elect 10 μ F 50V |

| REF. DESIG. | PART NO. | DESCRIPTION |
|----------------------------|----------------|---------------------------------|
| C156 | 4822 124 22571 | Elect 10 μ F 50V |
| C171 | 4822 124 22571 | Elect 10 μ F 50V |
| C172 | 4822 124 22571 | Elect 10 μ F 50V |
| C173 | 4822 124 22571 | Elect 10 μ F 50V |
| C174 | 4822 124 22571 | Elect 10 μ F 50V |
| C185 | 4822 124 22571 | Elect 10 μ F 50V |
| C186 | 4822 124 22571 | Elect 10 μ F 50V |
| C187 | 4822 124 22571 | Elect 10 μ F 50V |
| C188 | 4822 124 22571 | Elect 10 μ F 50V |
| C189 | 4822 121 42738 | Film 820pF \pm 5% |
| C190 | 4822 121 42738 | Film 820pF \pm 5% |
| C191 | 4822 124 90371 | Elect 470 μ F 10V |
| C193 | 4822 122 40306 | Ceramic 0.047 μ F +80% -20% |
| C194 | 4822 122 40617 | Ceramic 0.01 μ F +80% -20% |
| C196 | 4822 122 40516 | Ceramic 0.01 μ F +80% -20% |
| P101-RESISTORS | | |
| Δ R128 | 4822 116 60246 | 220 Ω \pm 5% 1W |
| Δ R129 | 4822 116 60246 | 220 Ω \pm 5% 1W |
| Δ R130 | 4822 115 90314 | 68 Ω \pm 2% 1/4W |
| P101-SEMICONDUCTORS | | |
| D101 | 4822 130 80322 | Zener NTJ15B |
| D104 | 4822 130 80132 | Zener 3.9V |
| Q101 | 4822 209 72323 | IC TC74HCU04P |
| Q102 | 4822 209 72323 | IC TC74HCU04P |
| Q103 | 4822 209 72322 | IC TC74HC00P |
| Q104 | 4822 209 72322 | IC TC74HC00P |
| Q105 | 4822 209 72322 | IC TC74HC00P |
| Q106 | 4822 130 42591 | Transistor 2SA1175(FF, EF) |
| Q107 | 4822 130 60839 | Transistor 2SC2458(Y, GR) |
| Q108 | 4822 130 60839 | Transistor 2SC2458(Y, GR) |
| Q109 | 4822 130 42591 | Transistor 2SA1175(FF, EF) |
| Δ Q110 | 4822 209 70082 | IC NJM78L05A |
| Δ Q111 | 4822 209 83825 | IC NJM79L05A |
| Q112 | 4822 209 72969 | IC TDA1541A/N2 |
| Q113 | 4822 130 42842 | F.E.T. 2SK372(GR, BL) |
| Q114 | 4822 130 42842 | F.E.T. 2SK372(GR, BL) |
| Q115 | 4822 209 73064 | IC NJM2068DD |
| Q116 | 4822 209 73064 | IC NJM2068DD |
| Q117 | | |
| Q118 | 4822 209 83274 | IC NJM4560D-D |
| Q122 | | |
| Q123 | 4822 209 73064 | IC NJM2068DD |
| Δ Q124 | 4822 209 83824 | IC NJM7805FA |
| Q125 | 4822 130 43819 | Transistor 2SC2878(A) |
| Q126 | 4822 130 43819 | Transistor 2SC2878(A) |
| Q127 | 4822 130 43819 | Transistor 2SC2878(A) |
| Q128 | 4822 130 43819 | Transistor 2SC2878(A) |
| P101-MISCELLANEOUS | | |
| J101 | 4822 264 30217 | Jack, OPT Connector |
| J102 | 4822 266 30324 | Terminal, Digital Input |
| J105 | 4822 265 10078 | Plug, 3P |
| J106 | 4822 265 30641 | Plug, 2P |
| J107 | 4822 265 30641 | Plug, 2P |
| L101 | 4822 157 53801 | Choke Coil, 47 μ H |
| L102 | 4822 157 53801 | Choke Coil, 47 μ H |
| L103 | 4822 142 60388 | Pulse Transformer |
| L104 | 4822 157 53801 | Choke Coil, 47 μ H |
| S101 | 4822 276 20458 | Push Switch |

| REF. DESIG. | PART NO. | DESCRIPTION |
|-------------|----------------|---|
| | | P201-D/A CONVERTER PLL CIRCUIT BOARD |
| | | P201-CAPACITORS |
| C201 | 4822 122 32143 | Ceramic 22pF ±5% |
| C203 | 4822 122 32143 | Ceramic 22pF ±5% |
| C204 | 4822 122 32143 | Ceramic 22pF ±5% |
| C205 | 4822 124 90352 | Elect 10μF 16V |
| C206 | 4822 124 41543 | Elect 1μF 50V |
| C207 | 4822 124 22273 | Elect 0.47μF 50V |
| C208 | 4822 124 22273 | Elect 0.47μF 50V |
| C209 | 4822 122 33656 | Ceramic 39pF ±5% |
| C210 | 4822 122 33657 | Ceramic 56pF ±5% |
| C211 | 4822 121 42713 | Film 680pF ±5% |
| C212 | 4822 122 32143 | Ceramic 22pF ±5% |
| C213 | 4822 122 32143 | Ceramic 22pF ±5% |
| C215 | 4822 122 40306 | Ceramic 0.047μF +80% -20% |
| C216 | 4822 122 40306 | Ceramic 0.047μF +80% -20% |
| C217 | 4822 121 51382 | Film 560pF ±5% |
| C218 | 4822 124 90352 | Elect 10μF 16V |
| C219 | 4822 122 40306 | Ceramic 0.047μF +80% -20% |
| C221 | 4822 124 41543 | Elect 1μF 50V |
| C222 | 4822 124 90357 | Elect 2.2μF 50V |
| C223 | 4822 122 40306 | Ceramic 0.047μF +80% -20% |
| C224 | 4822 122 40306 | Ceramic 0.047μF +80% -20% |
| C225 | 4822 122 40306 | Ceramic 0.047μF +80% -20% |
| C226 | 4822 122 40306 | Ceramic 0.047μF +80% -20% |
| C228 | 4822 124 41539 | Elect 47μF 16V |
| C229 | 4822 124 22698 | Elect 47μF 25V |
| C230 | 4822 122 40617 | Ceramic 0.1μF +80% -20% |
| C232 | 4822 124 41543 | Elect 1μF 50V |
| C233 | 4822 121 42713 | Film 680pF ±5% |
| C234 | 4822 122 32143 | Ceramic 22pF ±5% |
| C238 | 4822 124 41543 | Elect 1μF 50V |
| C239 | 4822 122 40617 | Ceramic 0.1μF +80% -20% |
| C240 | 4822 122 32832 | Ceramic 1000pF +80% -20% |
| C241 | 4822 124 41543 | Elect 1μF 50V |
| C242 | 4822 122 32486 | Ceramic 0.01μF +80% -20% |
| C243 | 4822 122 40306 | Ceramic 0.047μF +80% -20% |
| C244 | 4822 122 32486 | Ceramic 0.01μF +80% -20% |
| C245 | | |
| } | | |
| C251 | 4822 122 40306 | Ceramic 0.047μF +80% -20% |
| | | P201-RESISTORS |
| R200 | 4822 116 60321 | 1Ω ±5% 1W |
| R220 | 4822 116 80251 | 100KΩ ±1% 1/6W |
| R221 | 4822 116 80959 | 7.5KΩ ±1% 1/6W |
| R223 | 4822 116 80958 | 20KΩ ±1% 1/6W |
| R224 | 4822 116 80957 | 13.3KΩ ±1% 1/6W |
| Δ R251 | 4822 115 90314 | 68Ω ±2% ¼W |
| | | P201-SEMICONDUCTORS |
| D201 | | |
| } | | |
| D207 | 4822 130 33305 | Diode 1SS176, etc. |
| D208 | 4822 130 80302 | Varistor MA27A |
| D209 | 4822 130 80302 | Varistor MA27A |
| D210 | 4822 130 31542 | Varicap SVC321SP |

| REF. DESIG. | PART NO. | DESCRIPTION |
|-------------|----------------|---|
| Q201 | 4822 209 73668 | IC YM3623B |
| Q202 | 4822 209 11767 | IC 4555 |
| Q203 | | |
| } | | |
| Q208 | 4822 130 60839 | Transistor 2SC2458(Y, GR) |
| Q209 | 4822 130 42591 | Transistor 2SA1175(FF, EF) |
| Q210 | 4822 130 42591 | Transistor 2SA1175(FF, EF) |
| Q211 | 4822 130 42591 | Transistor 2SA1175(FF, EF) |
| Q212 | 4822 130 42591 | Transistor 2SA1175(FF, EF) |
| Q213 | 4822 209 73676 | IC TC74HC86P |
| Q214 | 4822 209 72322 | IC TC74HC00P |
| Q215 | 4822 209 73679 | IC HD74HC673 |
| Q216 | 4822 209 73681 | IC HD74HC674 |
| Q217 | 4822 209 73677 | IC TC74HC123P |
| Q218 | 4822 209 72333 | IC TC74HC74P |
| Q219 | 4822 209 72333 | IC TC74HC74P |
| Q220 | 4822 209 73677 | IC TC74HC123P |
| Q221 | 4822 209 73671 | IC TC5081AP |
| Q222 | 4822 209 72545 | IC SAA7220P/B |
| Q223 | 4822 209 73675 | IC TC74HC08P |
| Q224 | 4822 209 72333 | IC TC74HC74P |
| Q225 | 4822 209 72333 | IC TC74HC74P |
| Q226 | 4822 209 73678 | IC TC74HC393P |
| Q227 | 4822 209 73677 | IC TC74HC123P |
| Q228 | 4822 209 72323 | IC TC74HCU04P |
| Q229 | 4822 130 42842 | F.E.T. 2SK372(GR, BL) |
| Q230 | 4822 130 60839 | Transistor 2SC2458(Y, GR) |
| Q231 | 4822 130 61357 | F.E.T. 2SK161(GR) |
| Q232 | 4822 130 60839 | Transistor 2SC2458(Y, GR) |
| | | P201-MISCELLANEOUS |
| J202 | 4822 265 30639 | Plug, 3P |
| L201 | 4822 157 53799 | Choke Coil, 1.5μH |
| L202 | 4822 152 20662 | Choke Coil, 150μH |
| X201 | 4822 242 72334 | Crystal, 16.9344MHz |
| | | P271-D/A CONVERTER FS IND. CIRCUIT BOARD |
| D271 | 4822 130 80326 | L.E.D. LT3D88 |
| D272 | 4822 130 80326 | L.E.D. LT3D88 |
| D273 | 4822 130 80326 | L.E.D. LT3D88 |
| D274 | 4822 130 80326 | L.E.D. LT3D88 |
| | | P701-MAIN AMP CIRCUIT BOARD |
| | | P701-CAPACITORS |
| CN01 | 4822 124 22276 | Elect 47μF 50V |
| CN02 | 4822 124 90361 | Elect 22μF 25V |
| CN04 | 4822 124 41543 | Elect 1μF 50V |
| CN05 | 4822 121 42708 | Film 330pF ±5% |
| C701 | 4822 124 22571 | Elect 10μF 50V |
| C702 | 4822 124 22571 | Elect 10μF 50V |
| C703 | 4822 121 42712 | Film 100pF ±5% |
| C704 | 4822 121 42712 | Film 100pF ±5% |
| C705 | 4822 123 30077 | Mica 15pF ±5% |
| C706 | 4822 123 30077 | Mica 15pF ±5% |
| C707 | 4822 123 30088 | Mica 10pF ±0.5pF |
| C711 | 4822 124 22571 | Elect 10μF 50V |
| C712 | 4822 124 22571 | Elect 10μF 50V |
| C713 | 4822 124 41541 | Elect 470μF 35V |

| REF. DESIG. | PART NO. | DESCRIPTION |
|-----------------------|----------------|--------------------------|
| C714 | 4822 124 41541 | Elect 470μF 35V |
| C715 | 4822 121 42708 | Film 330pF ±5% |
| C716 | 4822 121 42708 | Film 330pF ±5% |
| C717 | 4822 124 22693 | Elect 10μF 63V |
| C718 | 4822 124 22693 | Elect 10μF 63V |
| C719 | 4822 124 22693 | Elect 10μF 63V |
| C720 | 4822 124 22693 | Elect 10μF 63V |
| C721 | 4822 124 22693 | Elect 10μF 63V |
| C722 | 4822 124 22693 | Elect 10μF 63V |
| C723 | 4822 124 22693 | Elect 10μF 63V |
| C724 | 4822 124 22273 | Elect 10μF 63V |
| C733 | 4822 122 31205 | Film 47pF ±5% |
| C734 | 4822 122 31205 | Film 47pF ±5% |
| C735 | 4822 122 31205 | Film 47pF ±5% |
| C736 | 4822 122 31205 | Film 47pF ±5% |
| C738 | 4822 122 32486 | Ceramic 0.01μF +80% -20% |
| C801 | 4822 122 40545 | Ceramic 0.01μF ±10% |
| C802 | 4822 122 40545 | Ceramic 0.01μF ±10% |
| C805 | 4822 124 22695 | Elect 2200μF 35V |
| C806 | 4822 124 22695 | Elect 2200μF 35V |
| C807 | 4822 121 42712 | Film 100pF ±5% |
| C808 | 4822 121 42712 | Film 100pF ±5% |
| C809 | 4822 124 90359 | Elect 100μF 10V |
| C810 | 4822 124 90359 | Elect 100μF 10V |
| C811 | 4822 124 41535 | Elect 100μF 25V |
| C812 | 4822 124 41535 | Elect 100μF 25V |
| C815 | 4822 124 22697 | Elect 3300μF 10V |
| C816 | 4822 124 22275 | Elect 47μF 10V |
| C817 | 4822 124 22275 | Elect 47μF 10V |
| C818 | 4822 124 90361 | Elect 22μF 25V |
| C819 | 4822 124 90361 | Elect 22μF 25V |
| C820 | 4822 121 42643 | Film 0.1μF 10% |
| C821 | 4822 121 42643 | Film 0.1μF 10% |
| P701-RESISTORS | | |
| RN17 | 4822 116 60416 | 1KΩ ±5% ¼W |
| ΔR743 | 4822 115 90198 | 33Ω, Fuse ±2% ¼W |
| ΔR746 | 4822 115 90198 | 33Ω, Fuse ±2% ¼W |
| R751 | 4822 100 11426 | 470Ω, Trimming |
| R752 | 4822 100 11426 | 470Ω, Trimming |
| ΔR753 | 4822 115 90166 | 10Ω ±2% ¼W |
| ΔR754 | 4822 115 90166 | 10Ω ±2% ¼W |
| ΔR755 | 4822 115 90166 | 10Ω ±2% ¼W |
| ΔR756 | 4822 115 90166 | 10Ω ±2% ¼W |
| R759 | 4822 111 91291 | 10Ω ±5% 1/6W |
| R762 | 4822 111 91291 | 10Ω ±5% 1/6W |
| ΔR763 | 4822 116 60319 | 220Ω ±5% ¼W |
| ΔR764 | 4822 116 60319 | 220Ω ±5% ¼W |

| REF. DESIG. | PART NO. | DESCRIPTION |
|----------------------------|----------------|---------------------------|
| ΔR769 | 4822 116 80153 | 0.18Ω ±10% 5W |
| ΔR770 | 4822 116 80153 | 0.18Ω ±10% 5W |
| ΔR771 | 4822 116 80153 | 0.18Ω ±10% 5W |
| ΔR772 | 4822 116 80153 | 0.18Ω ±10% 5W |
| ΔR785 | 4822 116 60246 | 220Ω ±5% 1W |
| ΔR786 | 4822 116 60246 | 220Ω ±5% 1W |
| ΔR787 | 4822 111 90726 | 10Ω ±5% 2W |
| ΔR788 | 4822 111 90726 | 10Ω ±5% 2W |
| ΔR793 | 4822 116 80153 | 0.18Ω ±10% 5W |
| ΔR794 | 4822 116 80153 | 0.18Ω ±10% 5W |
| ΔR795 | 4822 116 80153 | 0.18Ω ±10% 5W |
| ΔR796 | 4822 116 80153 | 0.18Ω ±10% 5W |
| ΔR815 | 4822 116 52976 | 1Ω ±5% ¼W |
| ΔR816 | 4822 116 52976 | 1Ω ±5% ¼W |
| ΔR817 | 4822 116 60309 | 2.2Ω ±5% ¼W |
| ΔR818 | 4822 116 60309 | 2.2Ω ±5% ¼W |
| ΔR819 | 4822 116 60307 | 1Ω ±5% ¼W |
| P701-SEMICONDUCTORS | | |
| DN01 | 4822 130 80837 | Diode HSS81TD |
| DN02 | 4822 130 80837 | Diode HSS81TD |
| D701 | 4822 130 80837 | Diode HSS81TD |
| D702 | 4822 130 80837 | Diode HSS81TD |
| ΔD801 | 4822 130 33132 | Diode D5FB20 |
| ΔD802 | 4822 130 32508 | Diode RL103E, etc. |
| ΔD811 | 4822 130 33305 | Diode 1SS176, etc. |
| D813 | 4822 130 33305 | Diode 1SS176, etc. |
| D814 | 4822 130 33305 | Diode 1SS176, etc. |
| D815 | 4822 130 33948 | Zener HZ6LA3 |
| D816 | 4822 130 33948 | Zener HZ6LA3 |
| ΔD818 | 4822 130 32508 | Diode RL103E, etc. |
| ΔD819 | 4822 130 32508 | Diode RL103E, etc. |
| D820 | 4822 130 33305 | Diode 1SS176, etc. |
| D821 | 4822 130 33305 | Diode 1SS176, etc. |
| QN01 | 4822 130 60839 | Transistor 2SC2458(Y, GR) |
| QN02 | 4822 209 83312 | IC TA7317P |
| Q701 | 4822 209 73669 | IC NJM5534DD |
| Q702 | 4822 209 73669 | IC NJM5534DD |
| Q703 | 4822 130 43231 | Transistor 2SC2240(GR) |
| Q704 | 4822 130 43231 | Transistor 2SC2240(GR) |
| Q705 | 4822 130 42949 | Transistor 2SA970(GR) |
| Q706 | 4822 130 42949 | Transistor 2SA970(GR) |
| Q711 | 4822 130 42999 | Transistor 2SA1145(O, Y) |
| Q712 | 4822 130 42999 | Transistor 2SA1145(O, Y) |
| Q713 | 4822 130 43283 | Transistor 2SC2705(O, Y) |
| Q714 | 4822 130 43283 | Transistor 2SC2705(O, Y) |
| Q715 | 4822 209 73673 | IC LA2500 |
| Q716 | 4822 209 73673 | IC LA2500 |
| ΔQ717 | 4822 130 60117 | Transistor 2SC3419(Y) |
| ΔQ718 | 4822 130 60117 | Transistor 2SC3419(Y) |
| ΔQ719 | 4822 130 43283 | Transistor 2SC2705(O, Y) |
| ΔQ720 | 4822 130 43283 | Transistor 2SC2705(O, Y) |
| ΔQ721 | 4822 130 42999 | Transistor 2SA1145(O, Y) |
| ΔQ722 | 4822 130 42999 | Transistor 2SA1145(O, Y) |
| ΔQ723 | 4822 130 43311 | Transistor 2SC3298(O, Y) |
| ΔQ724 | 4822 130 43311 | Transistor 2SC3298(O, Y) |

| REF. DESIG. | PART NO. | DESCRIPTION |
|--|----------------|---------------------------|
| ΔQ725 | 4822 130 43023 | Transistor 2SA1306(O, Y) |
| ΔQ726 | 4822 130 43023 | Transistor 2SA1306(O, Y) |
| ΔQ727 | 4822 130 43306 | Transistor 2SC3182(R, O) |
| ΔQ728 | 4822 130 43306 | Transistor 2SC3182(R, O) |
| ΔQ729 | 4822 130 43019 | Transistor 2SA1265(R, O) |
| ΔQ730 | 4822 130 43019 | Transistor 2SA1265(R, O) |
| ΔQ731 | 4822 130 43306 | Transistor 2SC3182(R, O) |
| ΔQ732 | 4822 130 43306 | Transistor 2SC3182(R, O) |
| ΔQ733 | 4822 130 43019 | Transistor 2SA1265(R, O) |
| ΔQ734 | 4822 130 43019 | Transistor 2SA1265(R, O) |
| ΔQ735 | 4822 130 43231 | Transistor 2SC2240(GR) |
| ΔQ736 | 4822 130 43231 | Transistor 2SC2240(GR) |
| ΔQ737 | 4822 130 42951 | Transistor 2SA970(GR, BL) |
| ΔQ738 | 4822 130 42951 | Transistor 2SA970(GR, BL) |
| ΔQ801 | 4822 130 61363 | Transistor 2SD1913(Q, R) |
| ΔQ802 | 4822 130 61359 | Transistor 2SB1274(Q, R) |
| ΔQ805 | 4822 130 60107 | Transistor 2SA1048(Y, GR) |
| ΔQ806 | 4822 130 60839 | Transistor 2SC2458(Y, GR) |
| ΔQ807 | 4822 130 60107 | Transistor 2SA1048(Y, GR) |
| ΔQ808 | 4822 130 60839 | Transistor 2SC2458(Y, GR) |
| ΔQ810 | 4822 209 73674 | IC NJM7806FA |
| ΔQ811 | 4822 130 60107 | Transistor 2SA1048(Y, GR) |
| ΔQ812 | 4822 130 60839 | Transistor 2SC2458(Y, GR) |
| P701-MISCELLANEOUS | | |
| J701 | 4822 265 30473 | Plug, 6P |
| J702 | 4822 265 20205 | Plug, 3P |
| J703 | 4822 265 10093 | Jack, 3P |
| J801 | 4822 265 30641 | Plug, 2P |
| J802 | 4822 265 30639 | Plug, 3P |
| J804 | 4822 265 30641 | Plug, 2P |
| J805 | 4822 265 30641 | Plug, 2P |
| J806 | 4822 265 30641 | Plug, 2P |
| J807 | 4822 265 20205 | Plug, 3P |
| J808 | 4822 265 20205 | Plug, 3P |
| J809 | 4822 265 20205 | Plug, 3P |
| J810 | 4822 290 40296 | Terminal, Earth |
| J811 | 4822 265 10093 | Jack, 3P |
| J812 | 4822 265 10093 | Jack, 3P |
| J813 | 4822 265 20205 | Plug, 3P |
| J814 | 4822 265 10093 | Plug, 3P |
| J815 | 4822 265 10093 | Plug, 3P |
| ΔLN01 | 4822 280 91103 | Relay |
| L701 | 4822 157 51739 | Coil |
| L702 | 4822 157 51739 | Coil |
| P901-POWER SWITCH CIRCUIT BOARD | | |
| ΔC901 | 4822 122 40305 | Ceramic Cap. 0.01μF 250V |
| ΔS901 | 4822 276 12505 | Push Switch, Power |

| REF. DESIG. | PART NO. | DESCRIPTION |
|---|----------------|------------------------------|
| P951-POWER TRANSFORMER CIRCUIT BOARD | | |
| C951 | 4822 122 30043 | Ceramic 0.01μF +80% -20% [N] |
| C952 | 4822 122 30043 | Ceramic 0.01μF +80% -20% [N] |
| ΔF001 | 4822 253 30027 | Fuse 3.15A 250V |
| J951 | 4822 256 30329 | Jack, Fuse Clip |
| J952 | 4822 267 30978 | Jack, Fuse Clip |
| ΔL001 | 4822 146 21377 | Power Transformer |

| | |
|----------|---------------------|
| (W01-99) | Assembly and Wiring |
| (T01-99) | Adjustment |
| (X01-00) | Correction |

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

10. TECHNICAL SPECIFICATIONS (DIN)

Audio Section

IHF Dynamic Power

| | |
|--------------|-------|
| 2 Ohms | 220 W |
| 4 Ohms | 160 W |
| 8 Ohms | 125 W |

Power Output per Channel

| | |
|---------------------------|-------|
| DIN 4 Ohms at 1 kHz | 130 W |
| RMS 4 Ohms | 120 W |
| DIN 8 Ohms at 1 kHz | 110 W |
| RMS 8 Ohms | 100 W |

Total Harmonic Distortion at RMS 8 Ohms 0.02%

I.M. Distortion 0.02%

Damping Factor 8 Ohms (1 kHz) 100

MM Cartridge Input

| | |
|--|----------|
| Frequency Response (IEC RIAA) | ±0.5 dB |
| Signal To Noise Ratio (A weighted) | 86 dB |
| Input Impedance | 47 kOhms |
| Input Sensitivity | 2.5 mV |

MC Cartridge Input

| | |
|--|----------|
| Input Sensitivity | 250 μV |
| Input Impedance | 100 Ohms |
| Signal To Noise Ratio (A weighted) | 72 dB |

CD-Tuner-Tape Input

| | |
|---|----------------|
| Input Impedance | 20 kOhms |
| Input Sensitivity | 150 mV |
| Frequency Response | 10 Hz – 70 kHz |
| Signal To Noise Ratio (A weighted, IHF 202) | 88 dB |
| (A weighted, VR MAX) | 103 dB |

Output Voltage and Impedance

Tape Out [Phono (M) 5.0 mV 1 kHz Input] 300 mV/1 kOhms

Channel Separation [CD Input]. (IHF 202, 1 kHz) >70 dB

Digital Section

| | |
|--|---------|
| Frequency Response (10 Hz – 20 kHz) | ±1.0 dB |
| Total Harmonic Distortion | 0.0035% |
| Signal To Noise Ratio (A weighted at TAPE OUT) | 103 dB |
| Dynamic Range | 96 dB |

General

| | |
|--|--------------------------------|
| Power Requirements N and T versions | 220/240 V AC, 50/60 Hz |
| E version | 110/120/220/240 V AC, 50/60 Hz |
| Power Consumption at Rated Output, both channels operating | 200 W |
| Dimensions (W × H × D) | 420 × 132 × 334 mm |
| Weight | 13 kg |

“SERVICE INFORMATION IS FOR USE BY QUALIFIED PERSONNEL ONLY — ANY MISADJUSTMENT OR MISALIGNMENT MAY BE TREATED AS A NON-WARRANTY REPAIR BY ANY MARANTZ SERVICE CENTRE —”

Kind of Common Parts

RESISTOR

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

C*** : CERAMIC CAP.

- (1) DD1 370, Ceramic condenser, disc type (titan condenser)
 Temp. coeff. P350 to N1000 50V

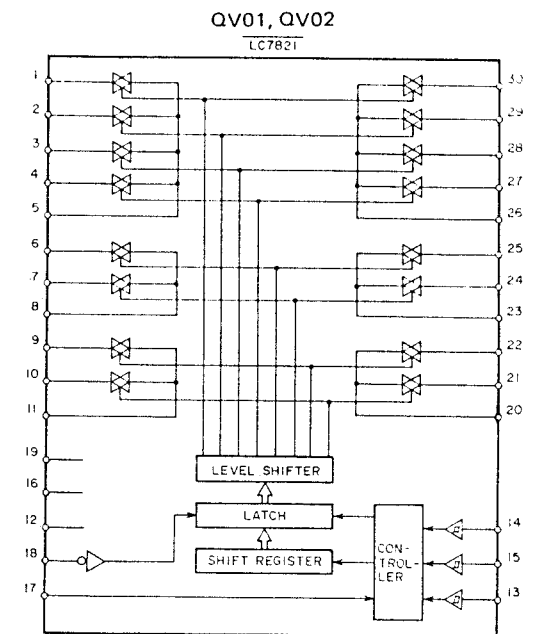
C*** : CERAMIC CAP.

- (1) DK16 300, High dielectric constant ceramic condenser, disc type (titan variable)
 Temp. chara. 2B4 50V

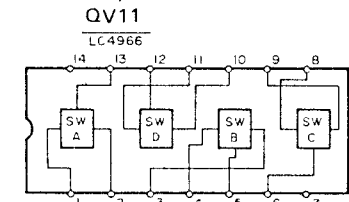
C*** : ELECTROLY CAP. ()/FILM CAP. ()

- (1) EA 10, Electrolytic condenser, one-way lead type, tolerance ±20%
 (2) DF15 350, Plastic film condenser, one-way type, Mylar, ±5% 50V

* In case of ordering the common parts, please establish the correct parts number of 10 figures by the procedure “ASSIGNMENT OF COMMON PARTS CODES”





QG01, QG02

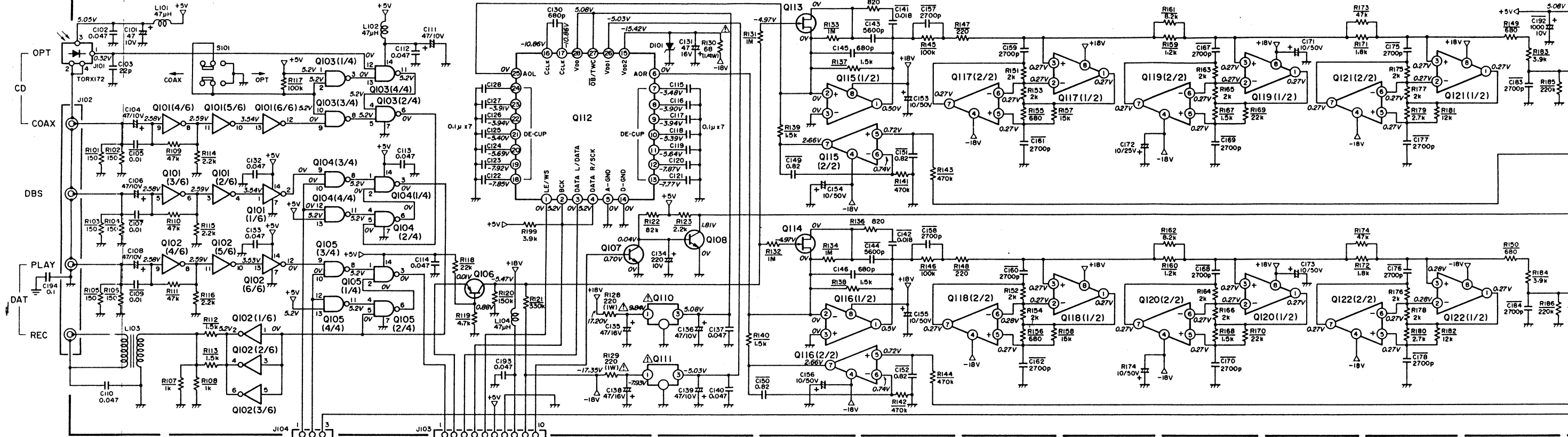


Components and wiring are subject to change for modification without notice.

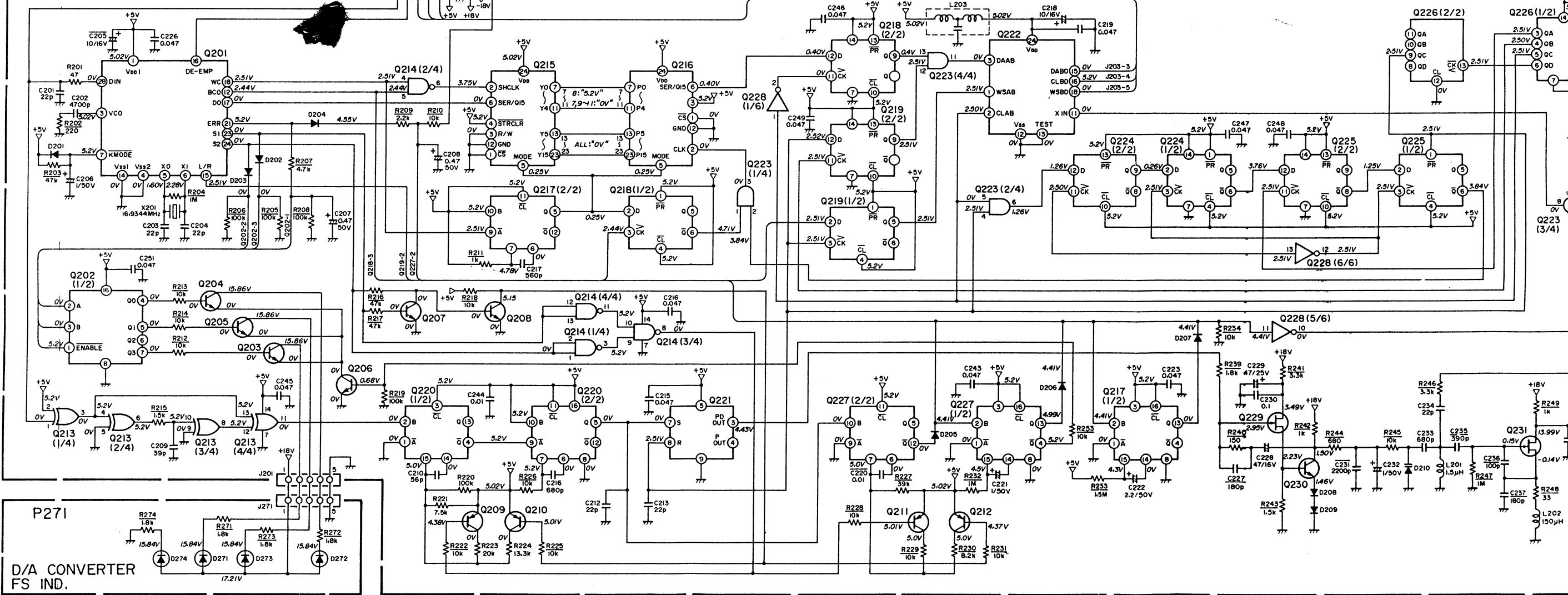
NOTE ON SAFETY:

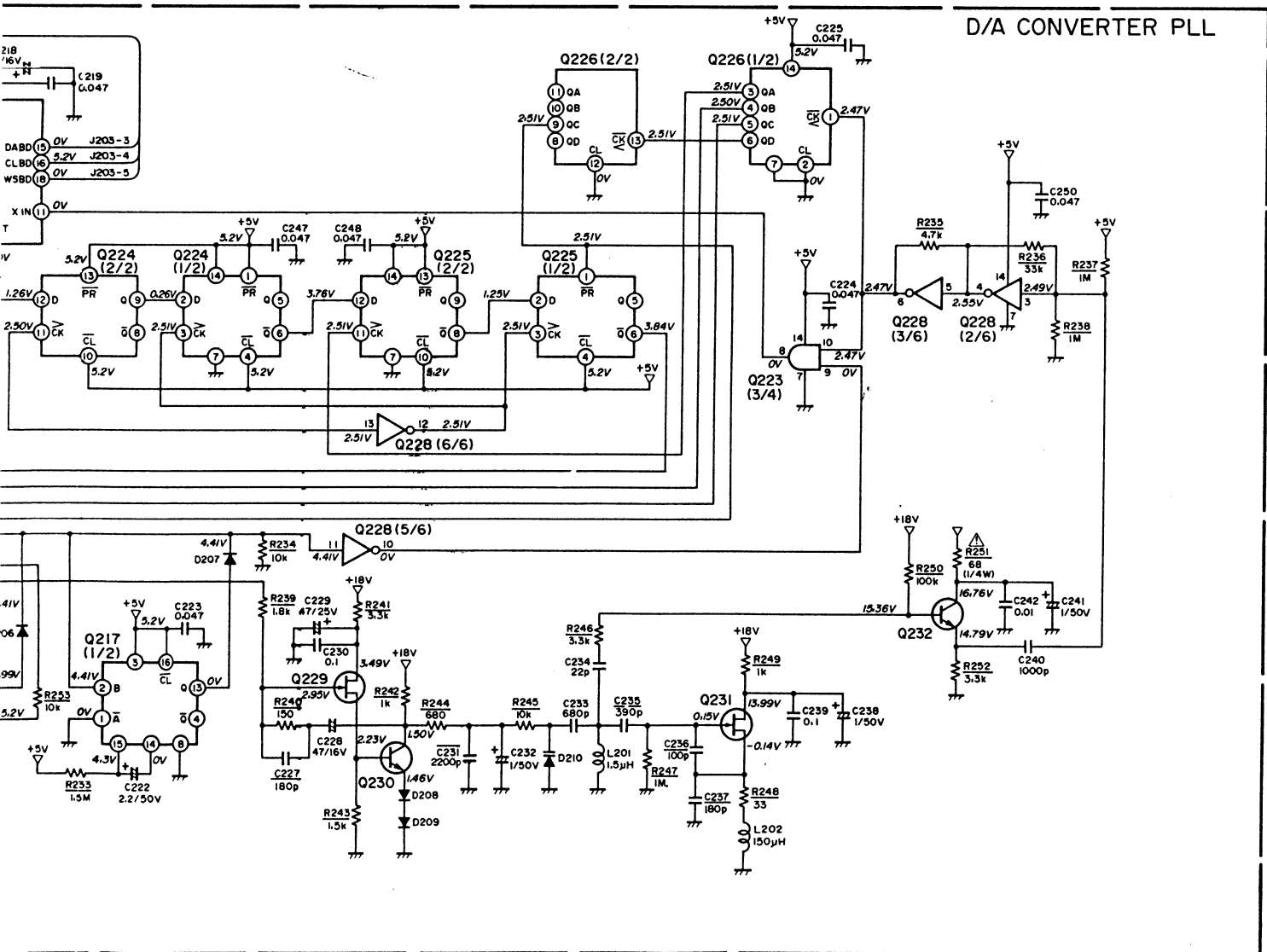
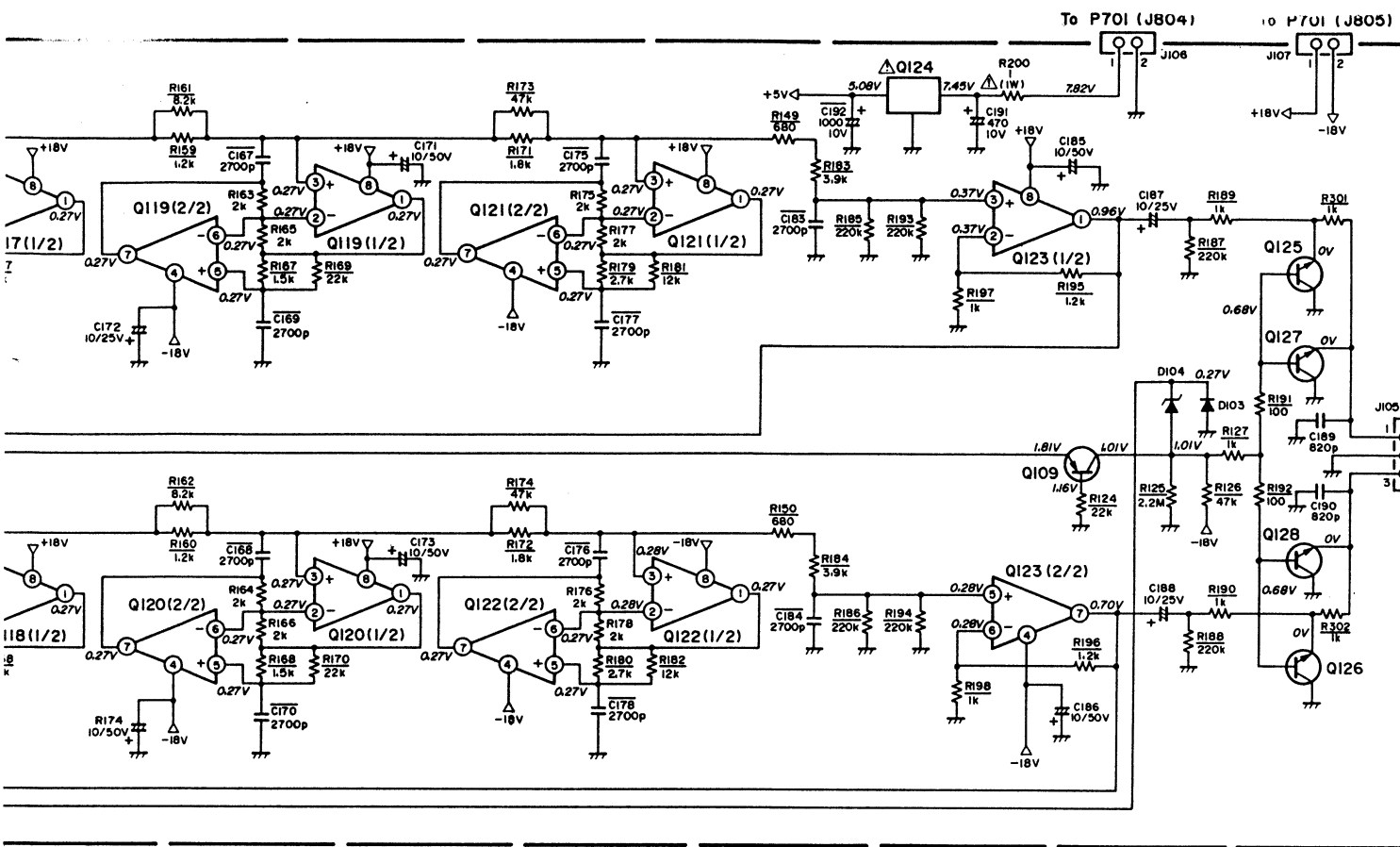
Symbol  Fire or electrical shock hazard. Only original parts should be used to replace any part marked with symbol . Any other component substitution (other than original type), may increase risk of fire or electrical shock hazard.

PIQ1 D/A CONVERTER IN/OUT



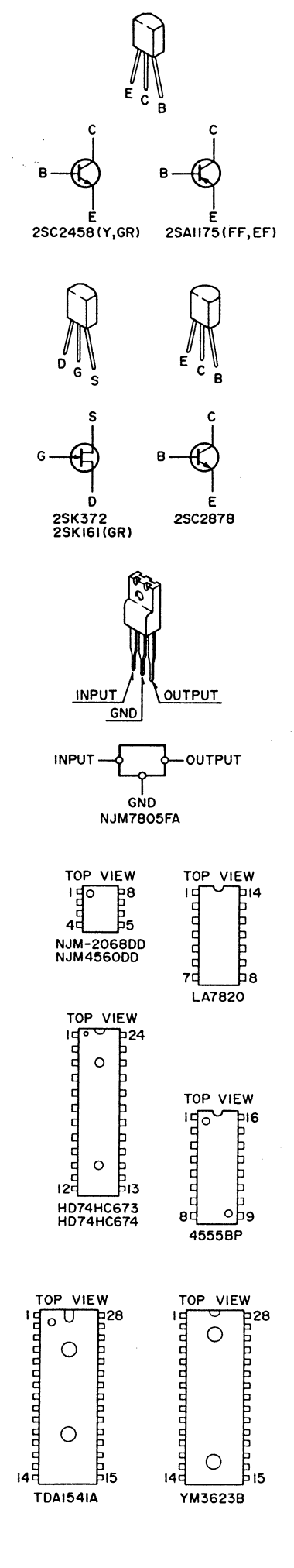
P201

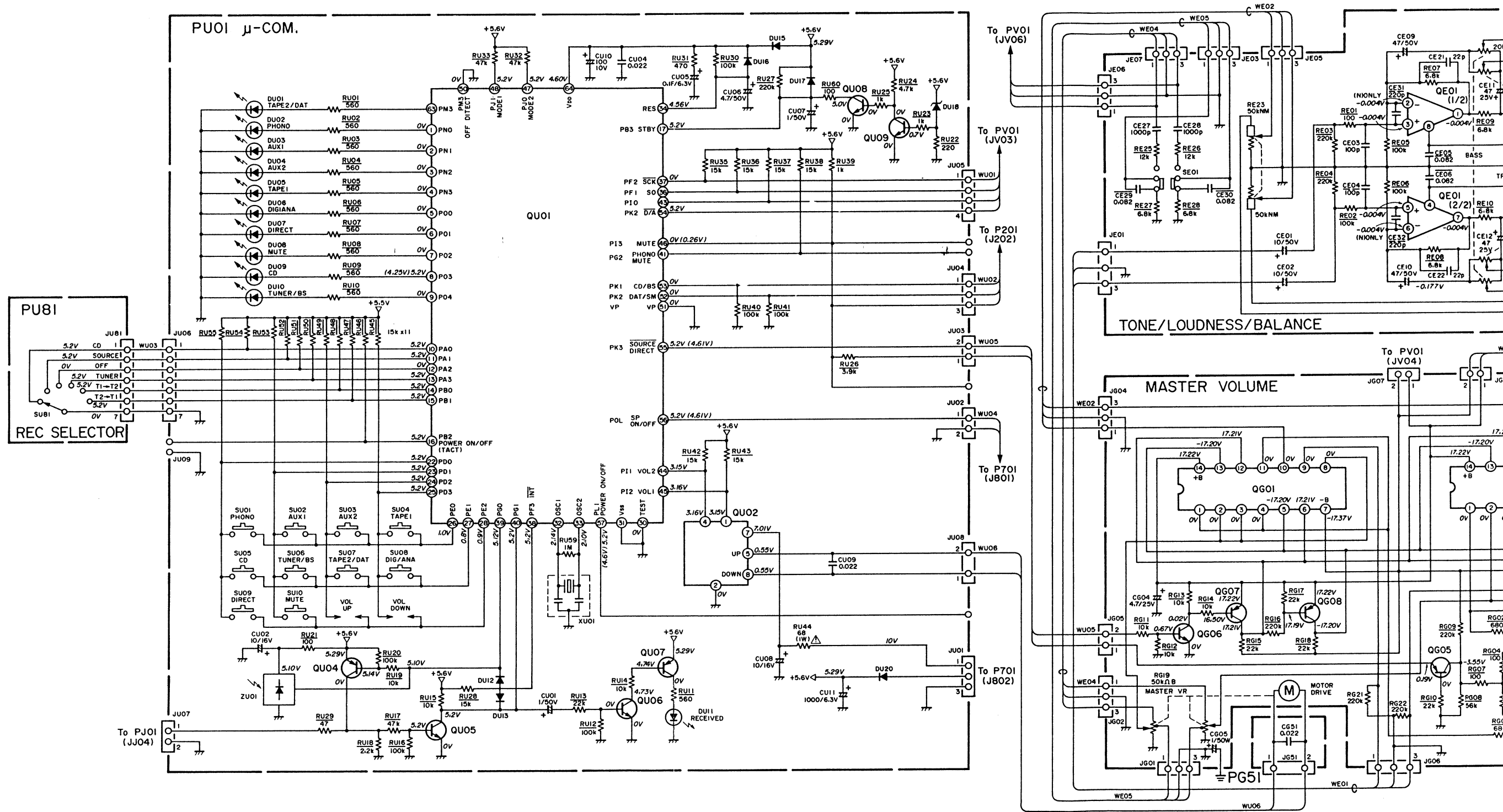


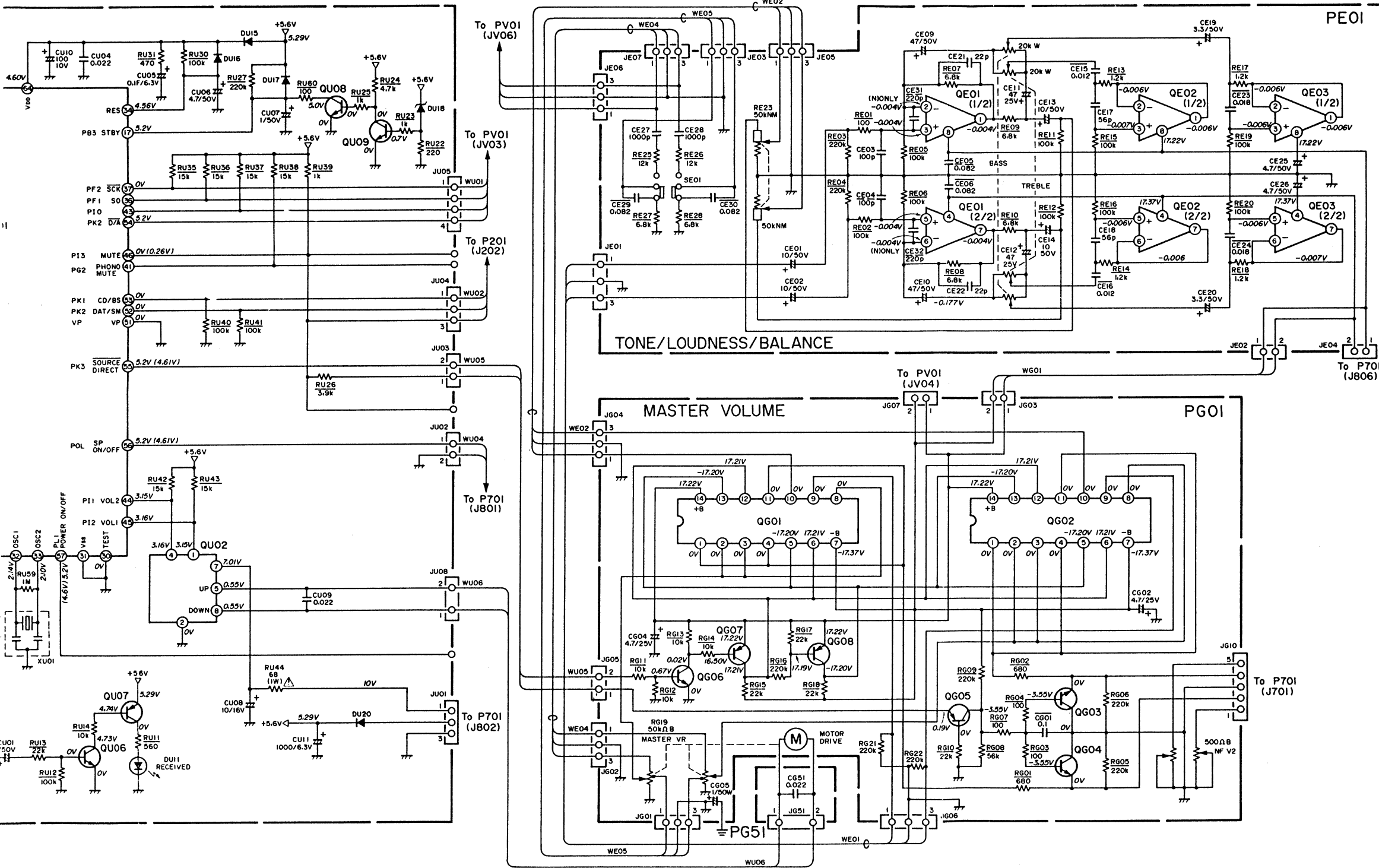


- Q101, Q102, Q228 TC74HC04P
- Q103, Q104, Q105, Q214 TC74HC00P
- Q106, Q109, Q209~Q212 2SA1175 (FF,EF)
- Q107, Q108, Q203~Q208, Q230, Q232 2SC2458 (Y,GR)
- Q110 NJM78L05A
- Q111 NJM79L05A
- Q112 TDA1541A
- Q113, Q114, Q229 2SK372 (GR,BL)
- Q115, Q116, Q123 NJM-2068DD
- Q117~Q122 NJM4560DD
- Q124 NJM7805FA
- Q125, Q126, Q127, Q128 2SC2878
- Q201 YM3623B
- Q202 4555BP
- Q213 TC74HC86P
- Q215 HD74HC673
- Q216 HD74HC674
- Q217, Q220, Q227 TC74HC123P
- Q218, Q219, Q224, Q225 TC74HC74P
- Q221 TC5081AP
- Q222 SAA7220P/B

- Q226 TC74HC393P
- Q231 2SK161 (GR)
- D101 15V
- D102, D103, D201~D207 ISSI76, etc.
- D104 3.9V
- D208, D209 MA27A
- D210 SVC321SP
- D271~D274 LT3D8B







- QE01~QE03
NJM4558DD
 - QG01, QG02
LC4966
 - QG03, QG04
2SC2878
 - QG05, QG07, QG08
QU04, QU07
2SA1048 (Y, GR)
 - QG06, QU05, QU06
QU08, QU09
2SC2458 (Y, GR)
 - QU01
LC6554H
 - QU02
LB1630
 - DU01~DU11
LT3D88
 - DUI2, DUI3, DUI6, DUI7
ISSI76, etc.
 - DUI8
3.6V
 - DUI5, DU20
S5688G
-
- TOP VIEW
1 8
4 5
LB1630
NJM4558DD
- TOP VIEW
1 14
7 8
LC4966
- TOP VIEW
1 64
32 33
LC6554H