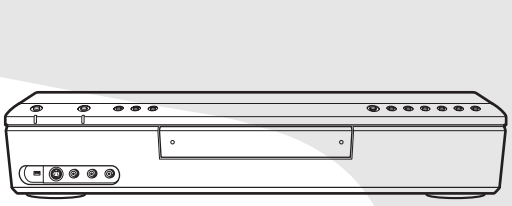
TOSHIBA

FILE NO. 810-200334

SERVICE MANUAL

DVD VIDEO RECORDER

D-R1SU
D-R1SC



DOCUMENT CREATED IN JAPAN, Oct., 2003

LASER BEAM CAUTION LABEL

DANGER	- VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID DIRECT EXPOSURE TO BEAM. (FDA 21 CFR)
CAUTION	- VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO BEAM. (IEC60825-1)
ATTENTION	- RAYONNEMENT LASER VISIBLE ET INVISIBLE EN CAS D'OUVERTURE. EXPOSITION DANGEREUSE AU FAISCEAU.
ADVARSEL	- SYNLIG OG USYNLIG LASERSTRÅLING VED ÅBNING. UNDGÅ UDSÆTTELSE FOR STRÅLING.
VARO!	- AVATTAESSA OLET ALTTIINA NÄKYVÄÄ JA NÄKYMÄTÖN LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.
VARNING	- SYNLIG OCH OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD. BETRAKTA EJ STRÅLEN.
ADVARSEL	- SYNLIG OG USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES. UNNGÅ EKSPONERING FOR STRÅLEN.
VORSICHT	- SICHTBARE UND UNSICHTBARE LASERSTRAHLUNG, WENN ABDECKUNG GEÖFFNET. NICHT DEM STRAHL AUSSETZEN.
注 意	- 打开时有可见及不可见激光辐射。避免激光束照射。
注 意	- ここを開くと可視及び不可視のレーザー光が出ます。ビームを直接見たり、触れたりしないでください。 RQLS0233

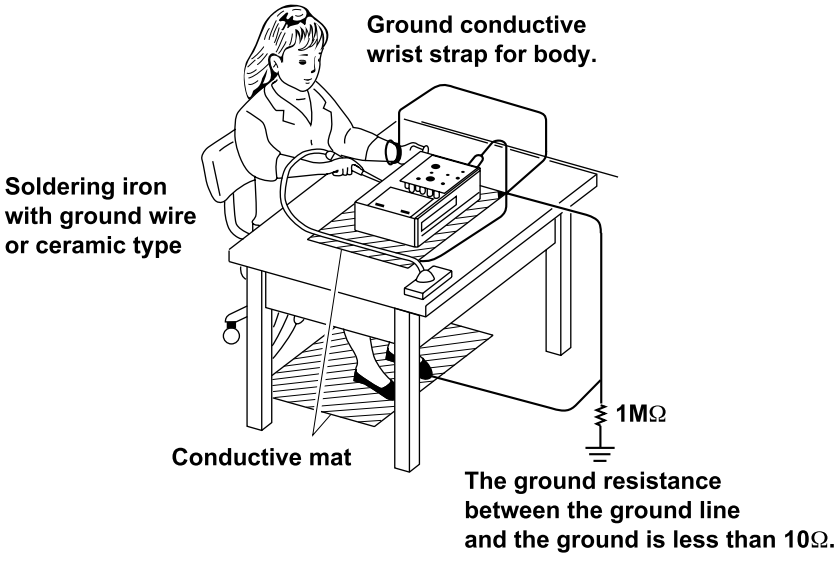
When the power supply is being turned on, you may not remove this laser beam caution label. If it removes, radiation of a laser may be received.

PREPARATION OF SERVICING

Pickup Head consists of a laser diode that is very susceptible to external static electricity.

Although it operates properly after replacement, if it was subject to electrostatic discharge during replacement, its life might be shortened. When replacing, use a conductive mat, soldering iron with ground wire, etc. to protect the laser diode from damage by static electricity.

And also, the LSI and IC are same as above.



SAFETY NOTICE

SAFETY PRECAUTIONS

LEAKAGE CURRENT CHECK

Plug the AC line cord directly into a 120V AC outlet (do not use an isolation transformer for this check). Use an AC voltmeter, having 5000 Ω per volt or more sensitivity.

Connect a 1500 Ω 10 W resistor, paralleled by a 0.15 µF 150V AC capacitor between a known good earth ground (water pipe, conduit, etc.) and all exposed metal parts of cabinet (antennas, handle bracket, metal cabinet screwheads, metal overlays, control shafts, etc.).

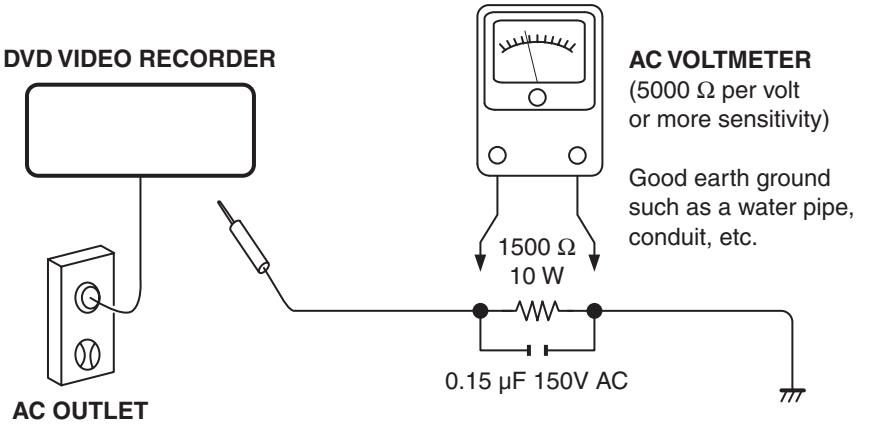
Measure the AC voltage across the 1500 Ω resistor.

The test must be conducted with the AC switch on and then repeated with the AC switch off. The AC voltage indicated by the meter may not exceed 0.3 V. A reading exceeding 0.3 V indicates that a dangerous potential exists, the fault must be located and corrected.

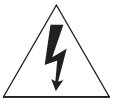
Repeat the above test with the DVD VIDEO RECORDER power plug reversed.

NEVER RETURN A DVD VIDEO RECORDER TO THE CUSTOMER WITHOUT TAKING NECESSARY CORRECTIVE ACTION.

READING SHOULD NOT EXCEED 0.3V



Test all exposed metal.
Voltmeter Hook-up for Leakage Current Check



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

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SECTION 4
PARTS LIST

SAFETY PRECAUTION
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ABBREVIATIONS
   1. Integrated Circuit (IC)
   2. Capacitor (Cap)
   3. Resistor (Res)
4. EXPLODED VIEWS
   4-1. Packing Assembly
   4-2. Chassis Assembly
5. PARTS LIST

SECTION 1
GENERAL DESCRIPTIONS

1. OPERATING INSTRUCTIONS

Please refer to the owner's manual about the contents.

2. LOCATION OF MAIN PARTS

2-1. Location of Main Parts

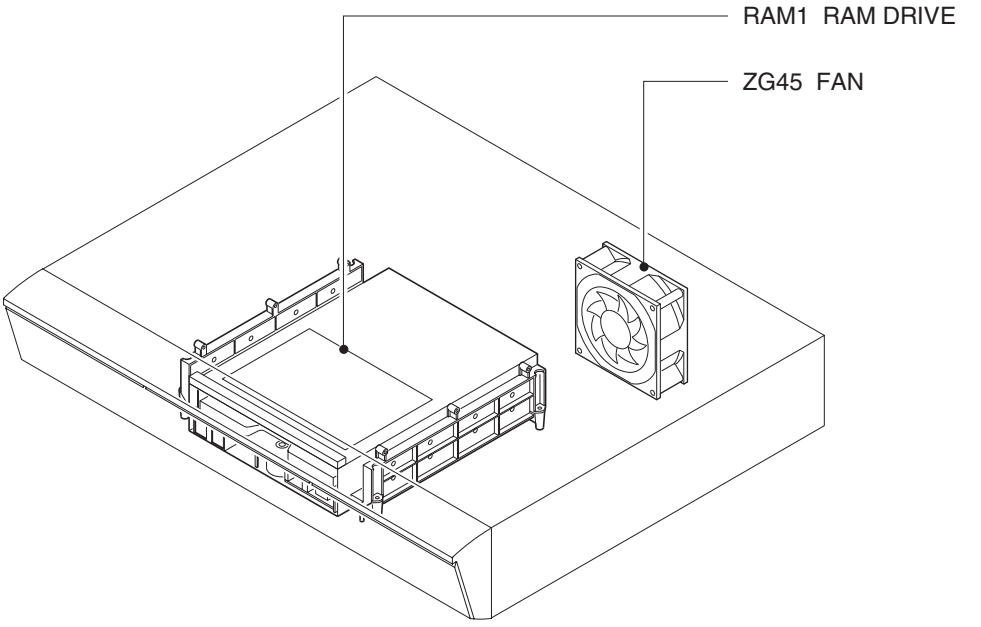


Fig. 1-2-1

2-2. Location of PC Boards

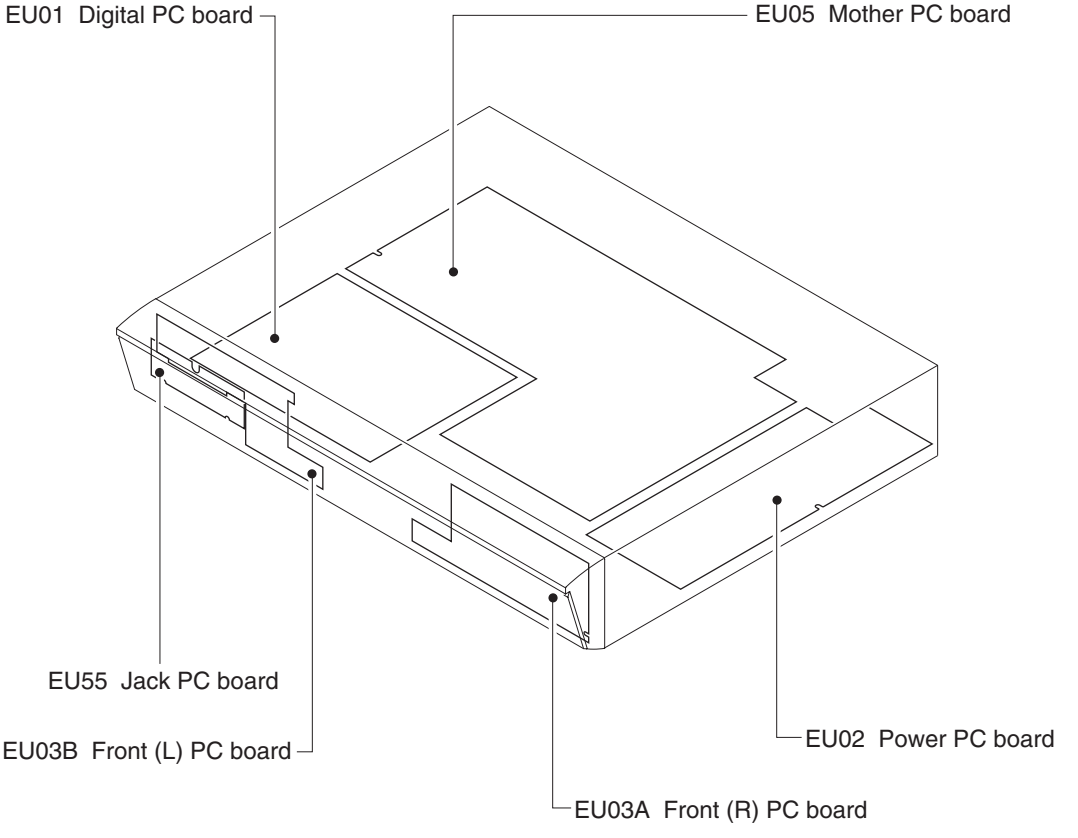


Fig. 1-2-2

SECTION 2
PART REPLACEMENT AND ADJUSTMENT PROCEDURES

CAUTIONS BEFORE STARTING PART REPLACEMENT

Electronic parts are susceptible to static electricity and may be easily damaged, so do not forget to ground as required. Many screws are used inside the unit. To prevent the screws from missing or dropping, etc. always use a magnetized screwdriver in servicing. Several kinds of screws are used and some of them need special cautions. That is, take care of the tapping screws securing molded parts and fine pitch screws used to secure metal parts. If they are used improperly, the screw holes will be easily damaged and the parts can not be fixed.

1. REPLACEMENT OF MECHANICAL PARTS

1-1. Cabinet Replacement

1-1-1. Top Cover

(1) Remove seven screws (1), and then remove the top cover (2).

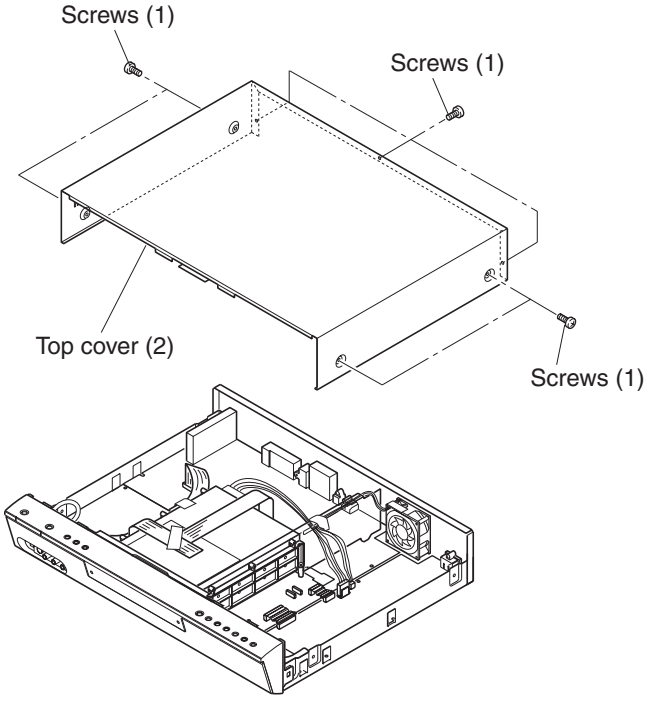


Fig. 2-1-1

1-1-2. Front Panel

(1) Remove the top cover. (Refer to item 1-1-1.)

(2) Disconnect the flexible cable (1).

(3) Disconnect the flexible cable (2) and two connectors (3).

(4) Remove two screws (4) and two ground wires (5) and (6).

(5) Release four claws and remove two screws (7).

(6) Remove the front panel (8).

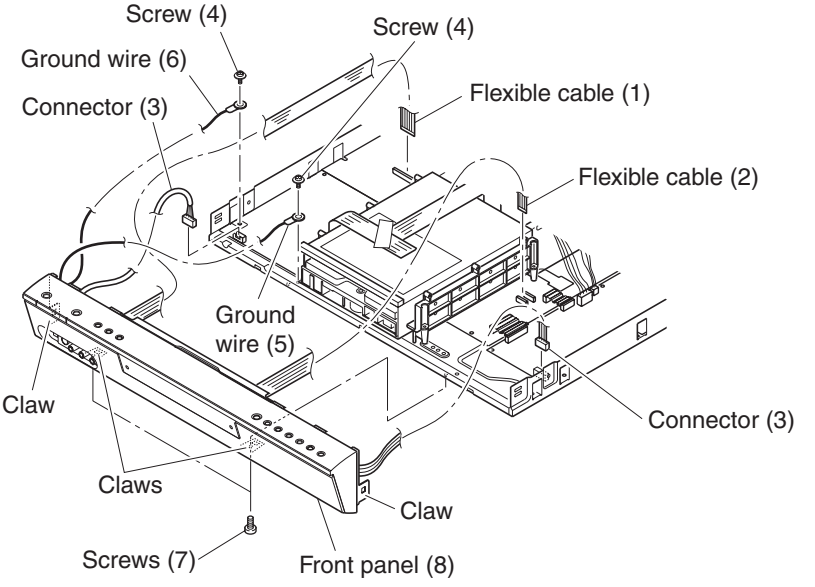


Fig. 2-1-2

1-1-3. Tray Door

(1) Remove the front panel. (Refer to item 1-1-2.)

(2) Remove the Front (R) PC board. (Refer to item 1-2-4 (2) to (4).)

(3) Remove the spring (1).

(4) Remove the tray door (2) while slightly bending it.

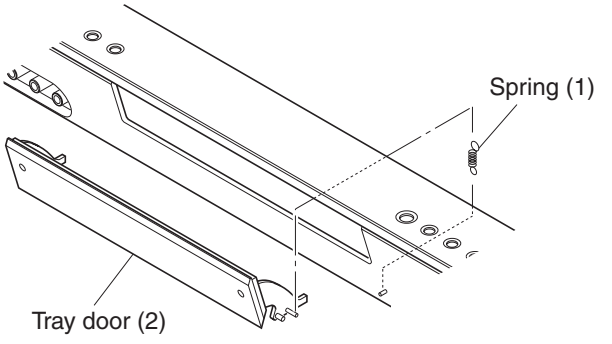


Fig. 2-1-3

1-1-4. RAM Drive

(1) Remove the top cover. (Refer to item 1-1-1.)

(2) Remove the front panel. (Refer to item 1-1-2.)

(3) Disconnect the flexible cable (1).

(4) Remove the piece of tape (2).

(5) Disconnect the connector (3).

(6) Remove two pieces of tape (4).

(7) Remove three screws (5), and then remove the acrylic board (6).

(8) Remove the screw (7) and the ground wire (8).

(9) Remove four screws (9), and then remove the RAM drive (10).

(Note)

After replacing, tape on three points of (2) and (4) as they were.

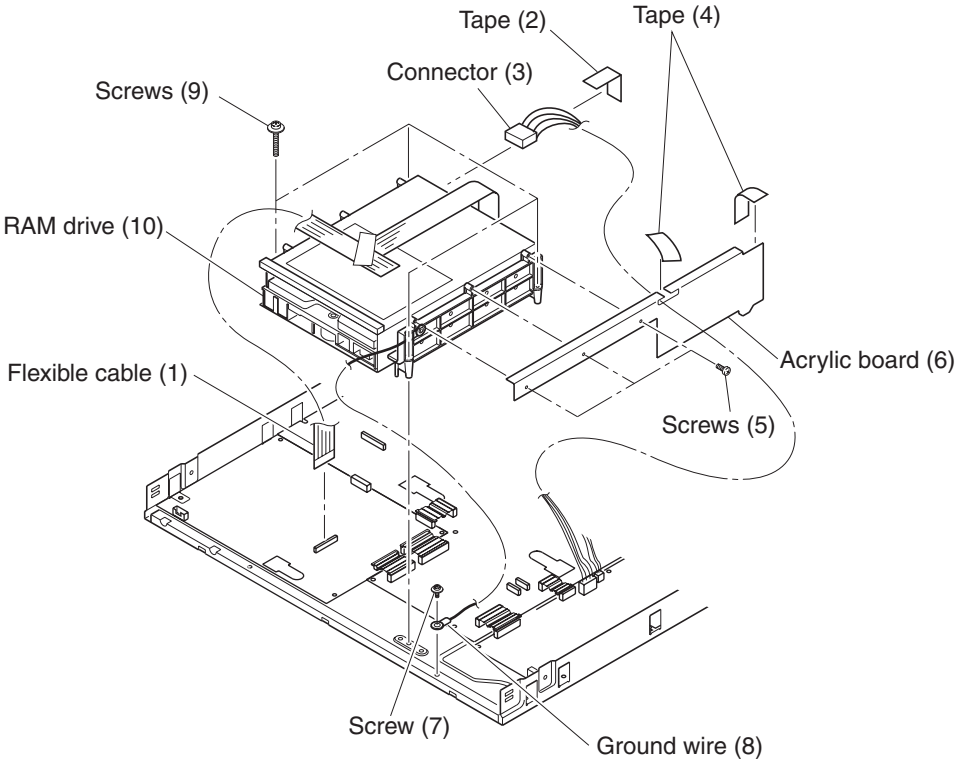


Fig. 2-1-4

1-1-5. Fan

(1) Remove the two pieces of tape (1).

(2) Cut off the binding band (2).

(3) Disconnect the connector (3).

(4) Remove four screws (4), and then remove the fan (5).

(Note)

- After replacing, tape on two points (1) as they were.
- Pass the wire (6) underneath the folded part of the acrylic board.

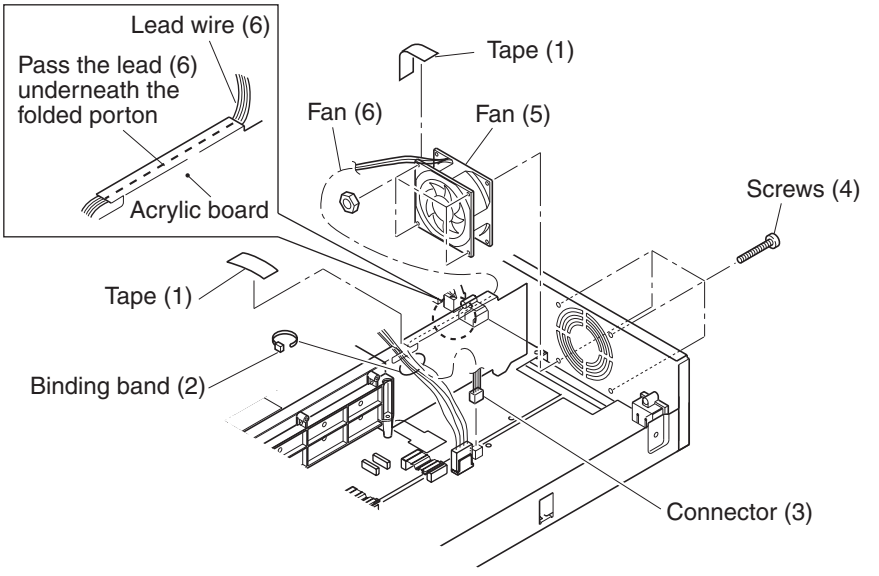


Fig. 2-1-5

1-1-6. Rear Panel

(1) Remove the fan. (Refer to 1-1-5.)

(2) Remove ten screws (1) and the rear panel (2).

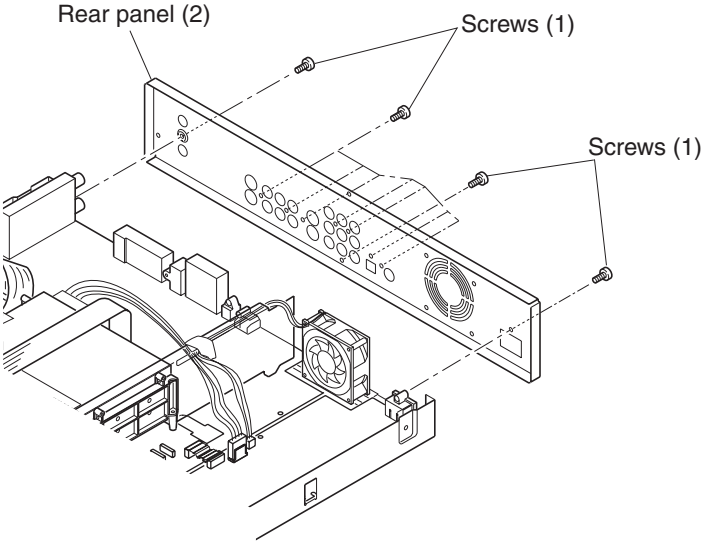


Fig. 2-1-6

1-2. PC Board Replacement

1-2-1. Digital PC Board

(1) Remove the front panel. (Refer item to 1-1-2.)

(2) Remove the RAM drive. (Refer item to 1-1-4.)

(3) Disconnect three connectors (1).

(4) Remove the screw (2) to remove the ground wire (3).

(5) Remove four screws (4), and then remove the digital PC board (5).

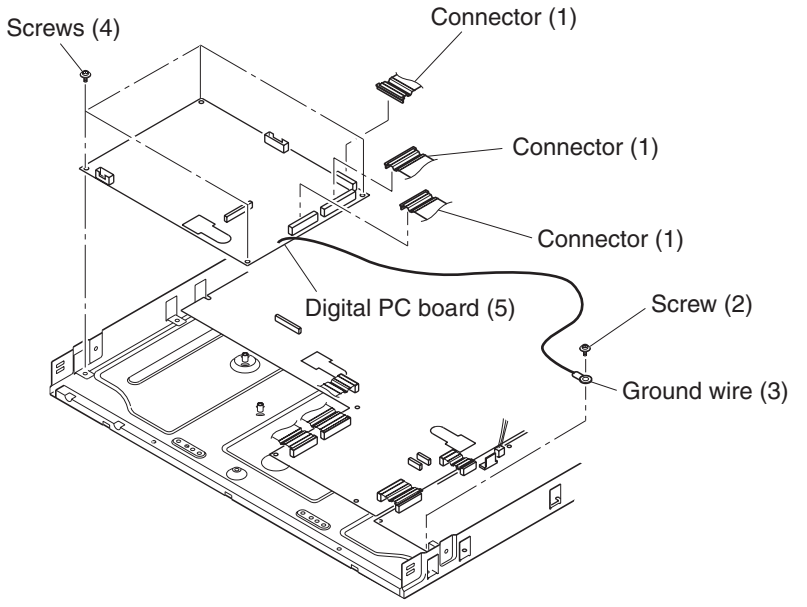


Fig. 2-1-7

1-2-2. Mother PC Board

(1) Remove the front panel. (Refer to item 1-1-2.)

(2) Remove the RAM drive. (Refer to item 1-1-4.)

(3) Remove the rear panel. (Refer to item 1-1-6.)

(4) Disconnect five connectors (1).

(5) Remove six screws (2), and then remove the mother PC board (3).

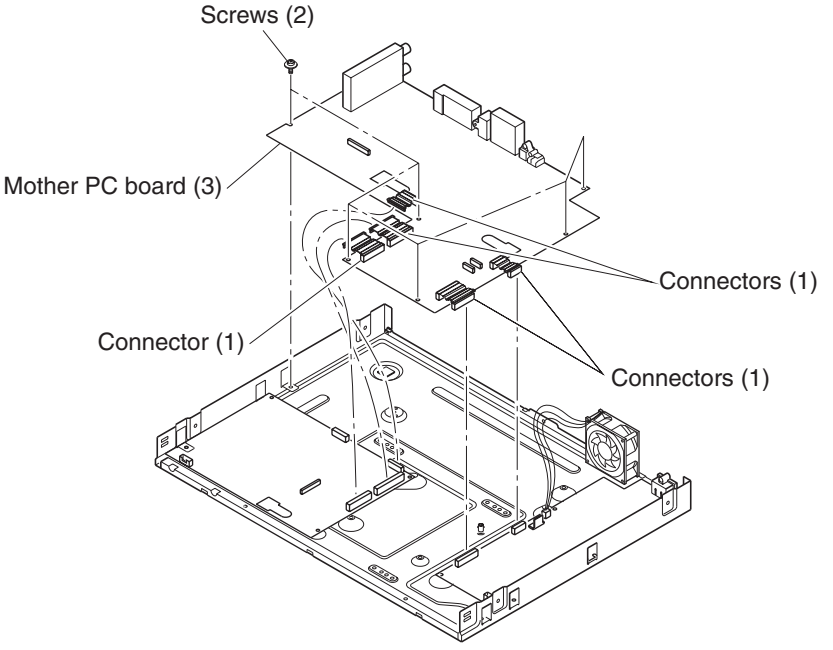


Fig. 2-1-8

1-2-3. Power PC Board

(1) Disconnect three connectors (1).

(2) Disconnect two connectors (2).

(3) Remove the screw (3) and four screws (4).

(4) Remove the power PC board (5).

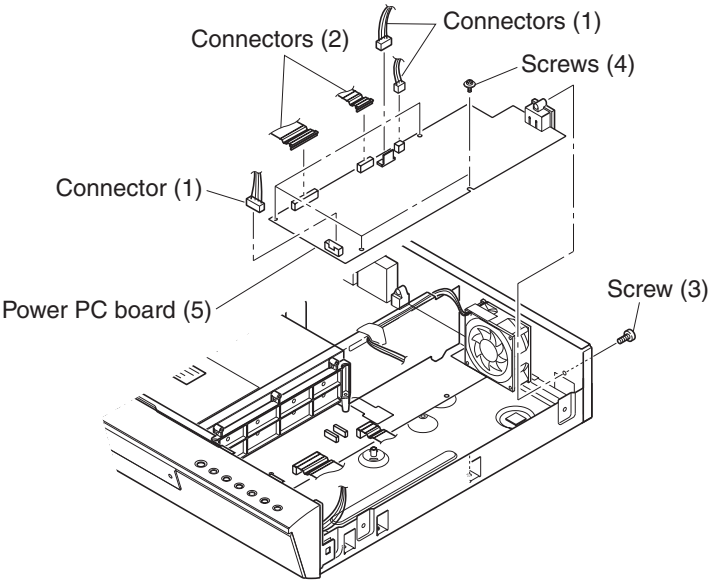


Fig. 2-1-9

1-2-4. Front (R), Front (L) and Jack PC Board

(1) Remove the top cover. (Refer to item 1-1-1.)

(2) Remove front panel. (Refer to item 1-1-2.)

(3) Remove two pieces of tape (1).

(4) Remove six screws (2), four claws and the stay (3).

(5) Remove three screws (4) to remove the front (R) PC board (5).

(6) Remove two screws (6) to remove the front (L) PC board (7).

(7) Remove four screws (8) to remove the jack PC board (9).

(Note)

After replacing, tape on two points (1) as they were.

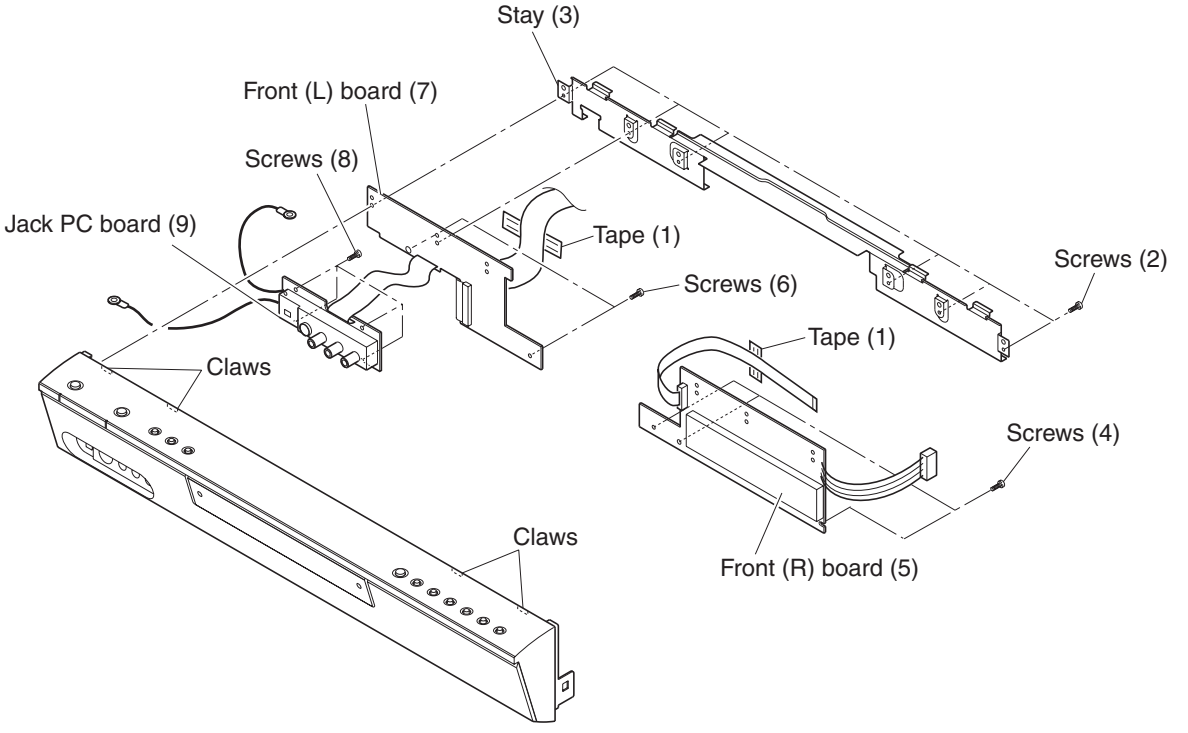


Fig. 2-1-10

SECTION 3
SERVICING DIAGRAMS

1. CIRCUIT SYMBOLS AND SUPPLEMENTARY EXPLANATION

1-1. Circuit Symbols

Solid Resistor Indication

Tab. 3-1-1

Unit	None ..... Ω K ..... kΩ M ..... MΩ
Tolerance	None ..... ±5% B ..... ±0.1% C ..... ±0.25% D ..... ±0.5% F ..... ±1% G ..... ±2% K ..... ±10% M ..... ±20%
Rated Wattage	(1) Chip Parts None ..... 1/16W (2) Other Parts None ..... 1/6W Other than above, described in the Circuit Diagram.
Type	None ..... Carbon film S ..... Solid R ..... Oxide metal film M ..... Metal film W ..... Cement FR ..... Fusible

Eg. 1

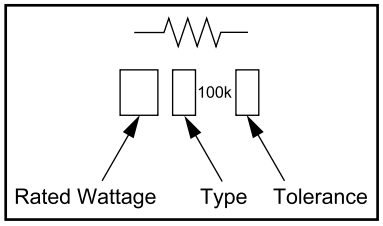


Fig. 3-1-1

Inductor Indication

Tab. 3-1-2

Unit	None ..... H μ ..... μH m ..... mH
Tolerance	None ..... ±5% B ..... ±0.1% C ..... ±0.25% D ..... ±0.5% F ..... ±1% G ..... ±2% K ..... ±10% M ..... ±20%

Eg. 2

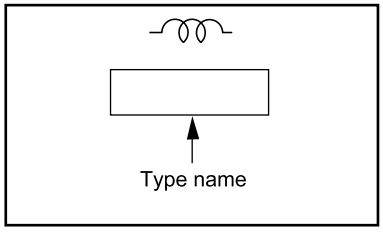


Fig. 3-1-2

Eg. 3

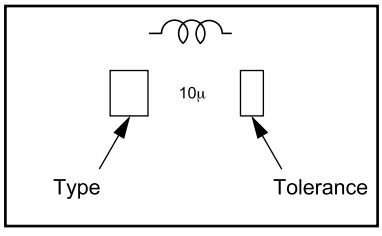


Fig. 3-1-3

Capacitance Indication

Tab. 3-1-3

Symbol	..... Electrolytic, Special electrolytic NP ..... Non polarity electrolytic ..... Ceramic, plastic M ..... Film ..... Trimmer
Unit	None ..... F μ ..... μF p ..... pF
Rated voltage	None ..... 50V For other than 50V and electrolytic capacitors, described in the Circuit Diagram.
Tolerance	(1) Ceramic, plastic, and film capacitors of which capacitance are more than 10 pF. None ..... ±5% or more B ..... ±0.1% C ..... ±0.25% D ..... ±0.5% F ..... ±1% G ..... ±2% (2) Ceramic, plastic, and film capacitors of which capacitance are 10 pF or less. None ..... more than ±5 pF B ..... ±0.1 pF C ..... ±0.25 pF (3) Electrolytic, Trimmer Tolerance is not described.
Temperature characteristic (Ceramic capacitor)	None ..... SL For others, temperature characteristics are described. (For capacitors of 0.01 μF and no indications are described as F.)
Static electricity capacity (Ceramic capacitor)	Sometimes described with abbreviated letters as shown in Eg. 3.

Eg. 4

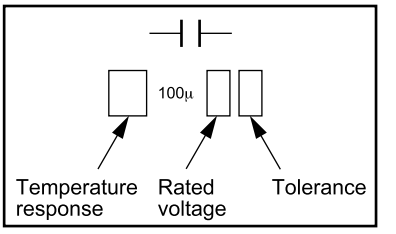


Fig. 3-1-4

Eg. 5

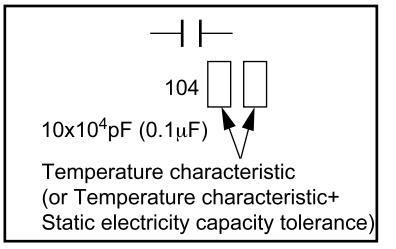


Fig. 3-1-5

Waveform and Voltage Measurement

- The waveforms for CD/DVD and RF shown in the circuit diagrams are obtained when a test disc is played back.
- All voltage values except the waveforms are expressed in DC and measured by a digital voltmeter.

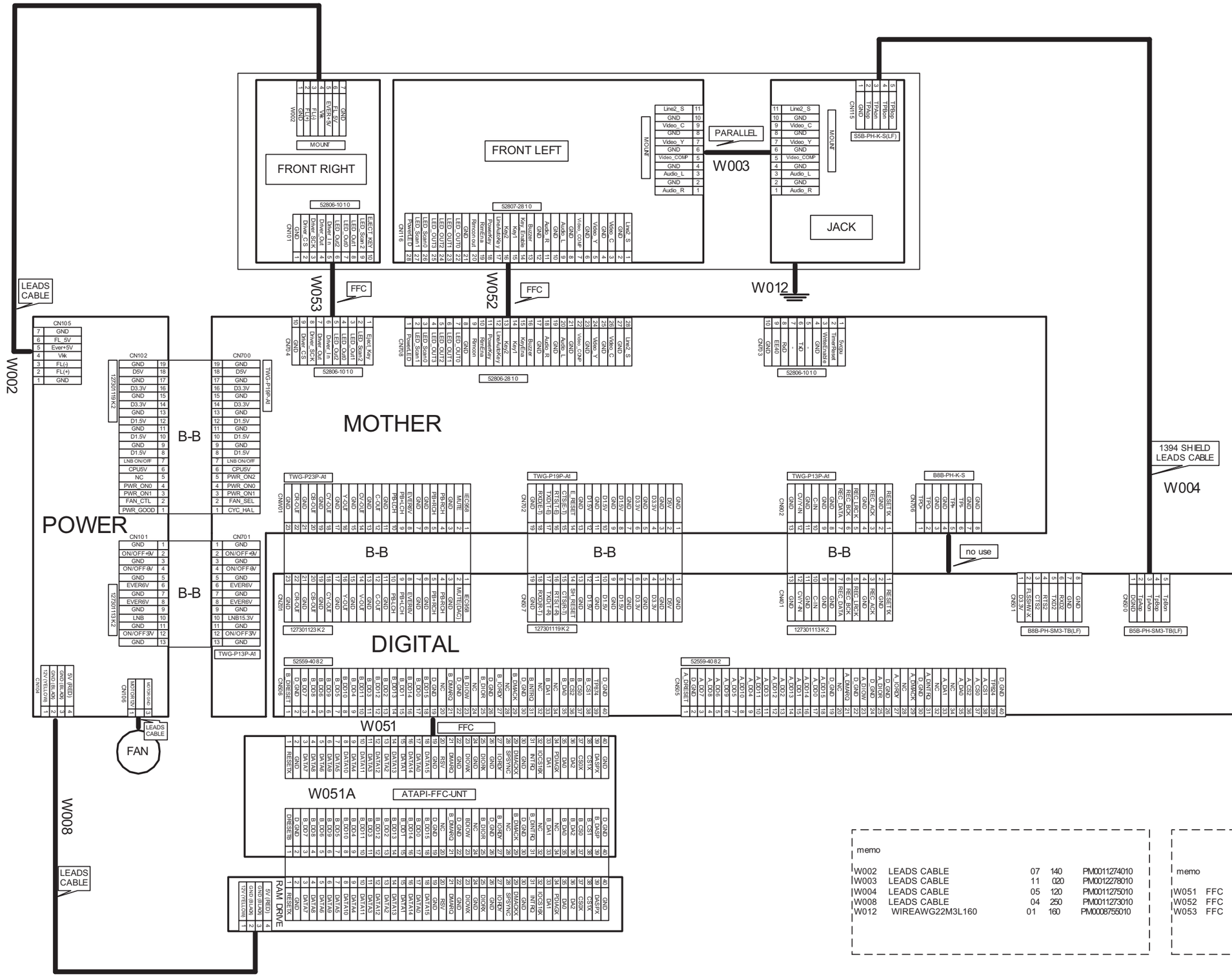
Others

- The parts indicated with "NC" or "KETU" etc. are not used in the circuits of this model.

1-2. Precautions for Part Replacement

- In the schematic diagram, parts marked ⚠ (ex. ⚠ F801) are critical part to meet the safety regulations, so always use the parts bearing specified part codes (SN) when replacing them.
- Using the parts other than those specified shall violate the regulations, and may cause troubles such as operation failures, fire etc.

2. PRINTED WIRING BOARD AND SCHEMATIC DIAGRAM



memo				
W002	LEADS CABLE	07	140	PM0011274010
W003	LEADS CABLE	11	020	PM0012278010
W004	LEADS CABLE	05	120	PM0011275010
W008	LEADS CABLE	04	250	PM0011273010
W012	WIREAWG22M3L160	01	160	PM0008755010

memo				
W051	FFC	40	360	PM0011276010
W052	FFC	28	320	PM0011277010
W053	FFC	10	220	PM0012301010

Fig. 3-2-1

3. BLOCK DIAGRAMS

3-1. Overall Block Diagram

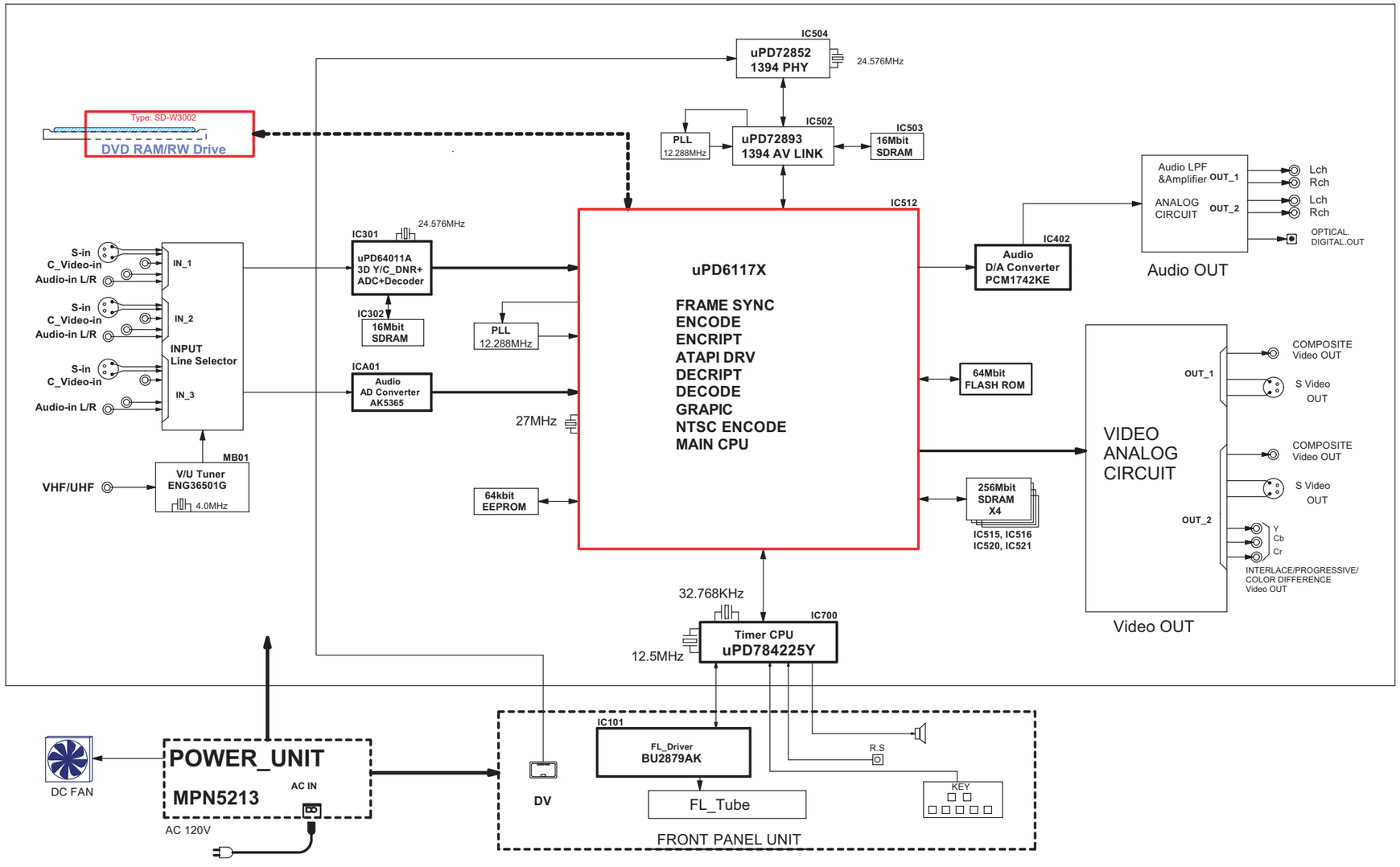


Fig. 3-3-1

3. BLOCK DIAGRAMS

3-1. Overall Block Diagram

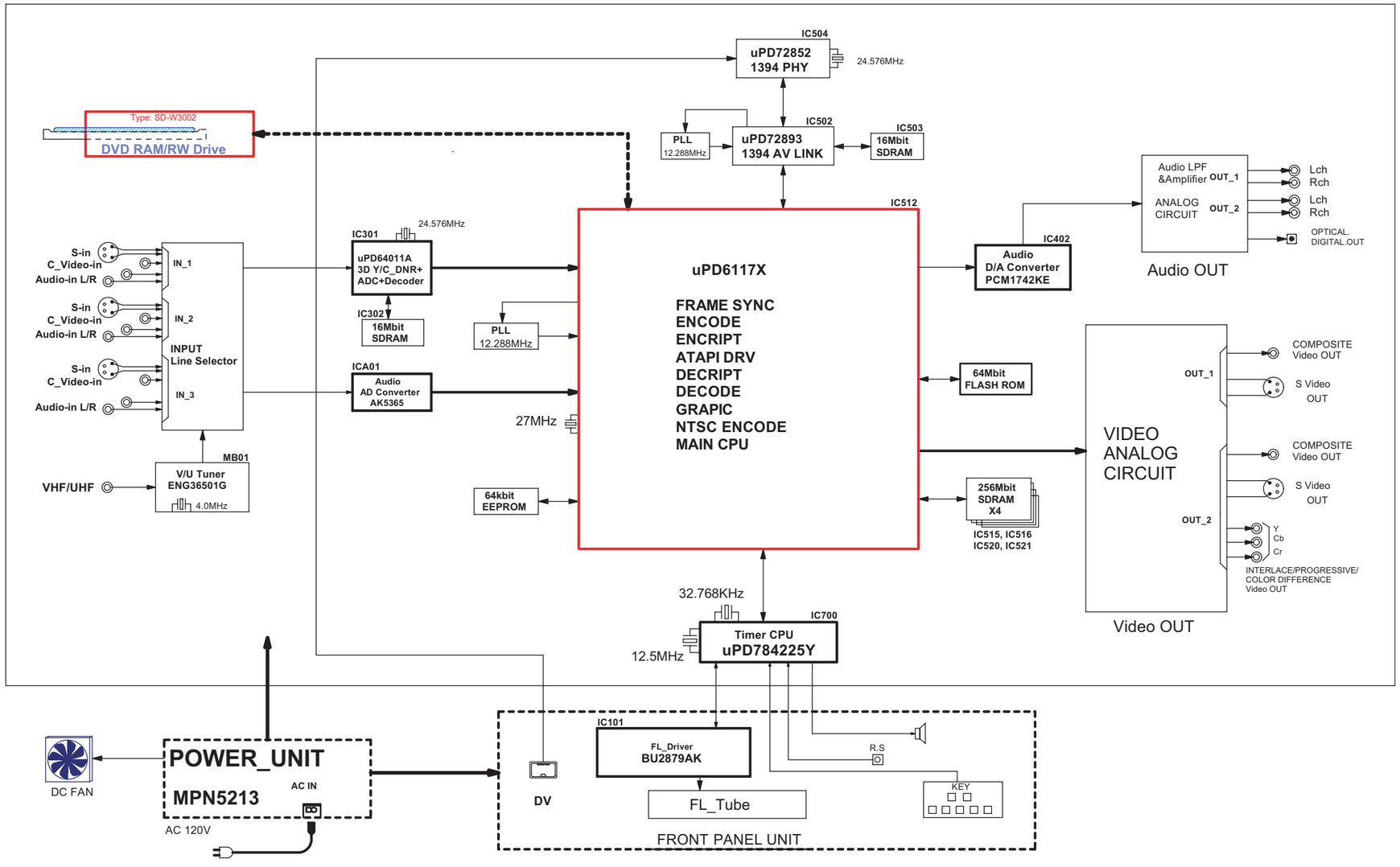


Fig. 3-3-1

4. CIRCUIT DIAGRAMS

4-1. Power Supply Circuit Diagram

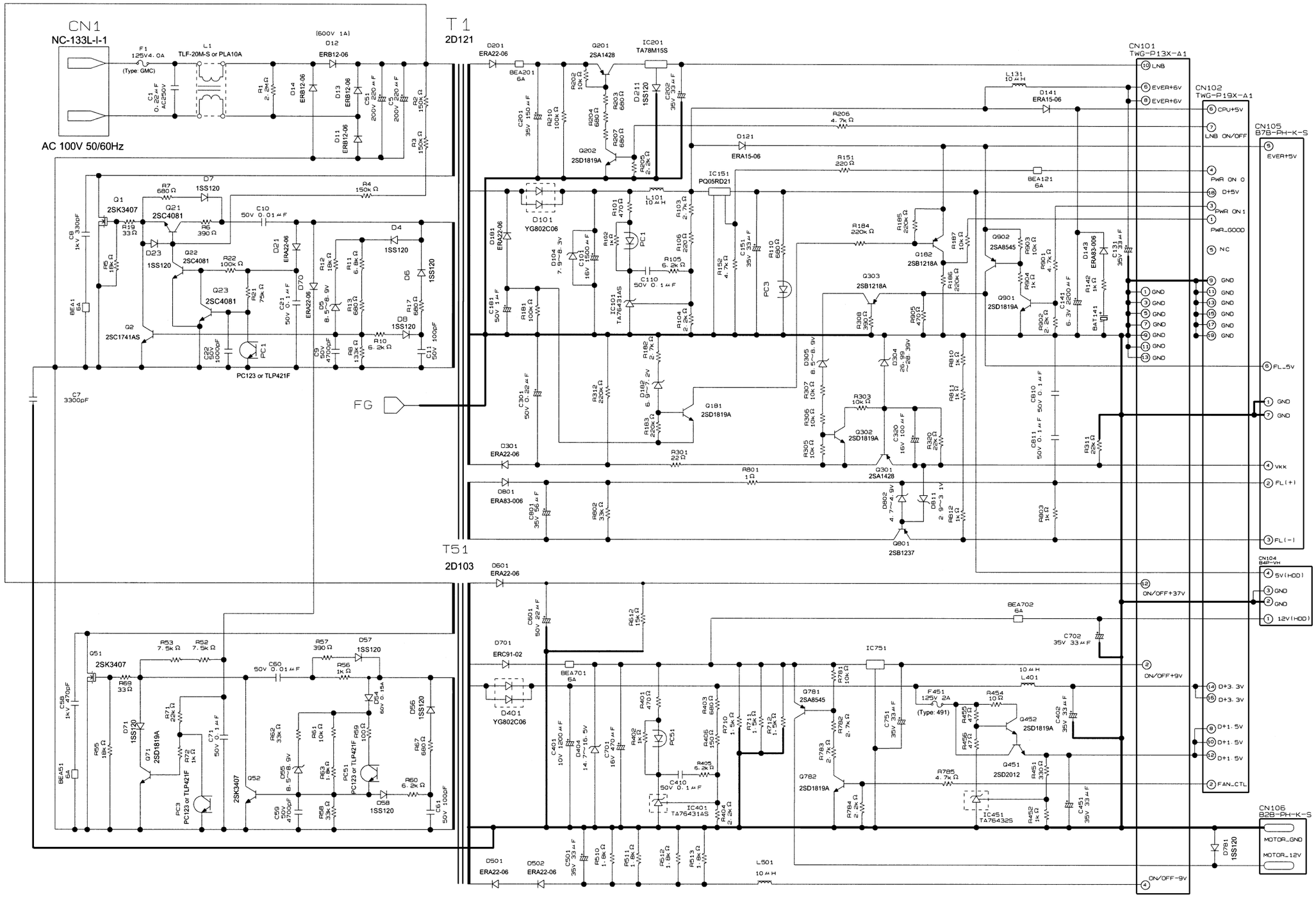


Fig. 3-4-1

4-2. Front Circuit Diagram

4-2-1. Front (Jack) Circuit Diagram

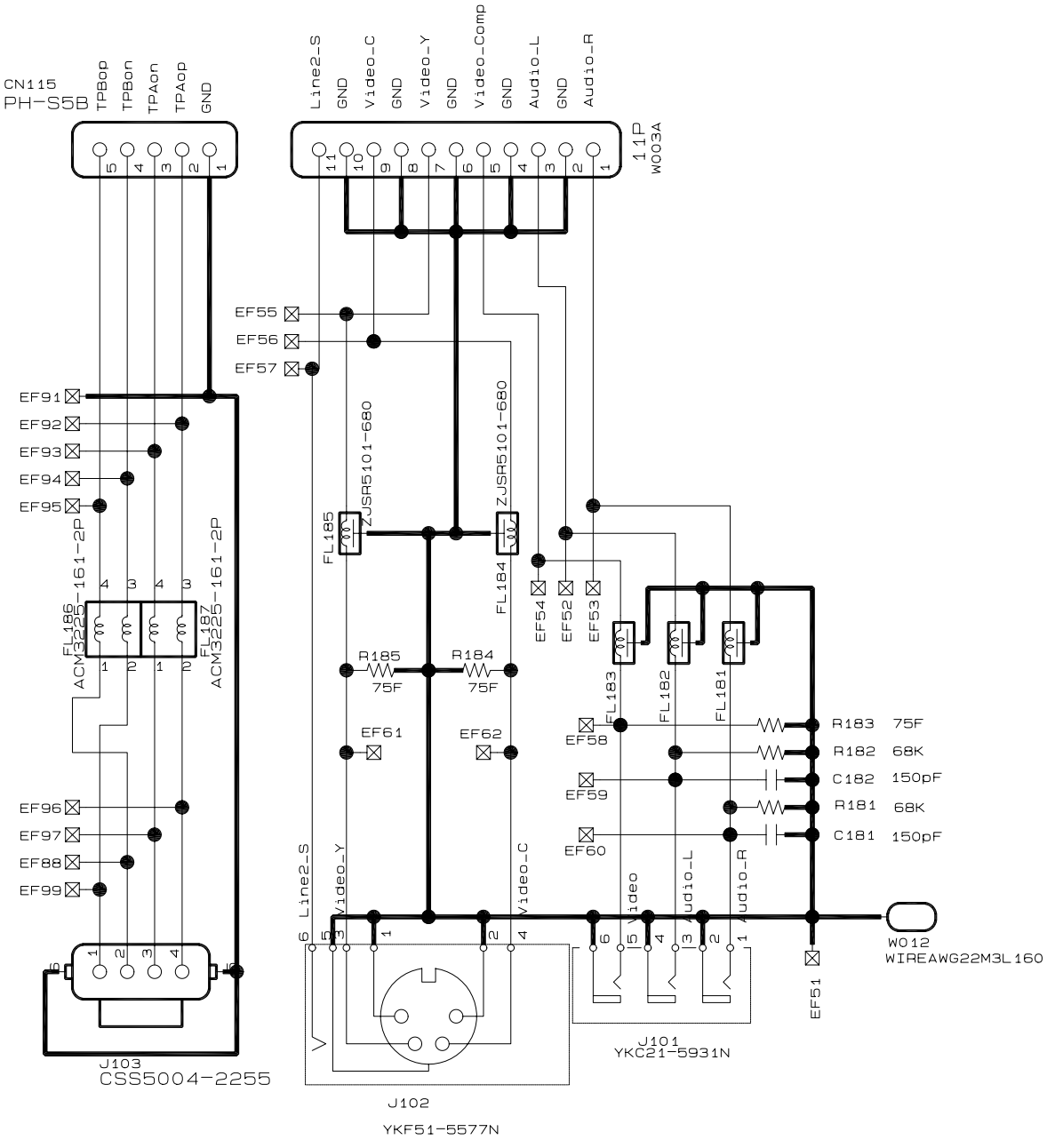


Fig. 3-4-2

4-2-2. Front (L) Circuit Diagram

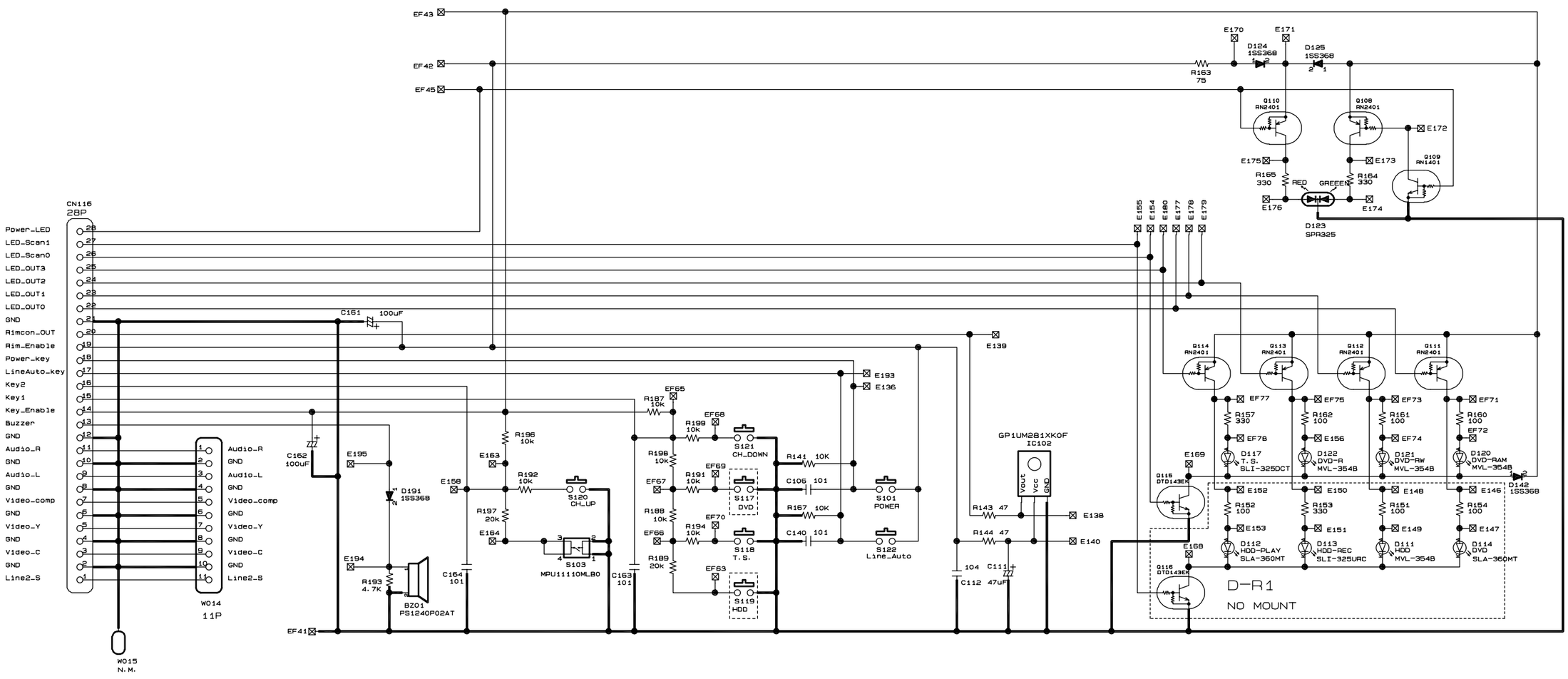


Fig. 3-4-3

4-2-3. Front (R) Circuit Diagram

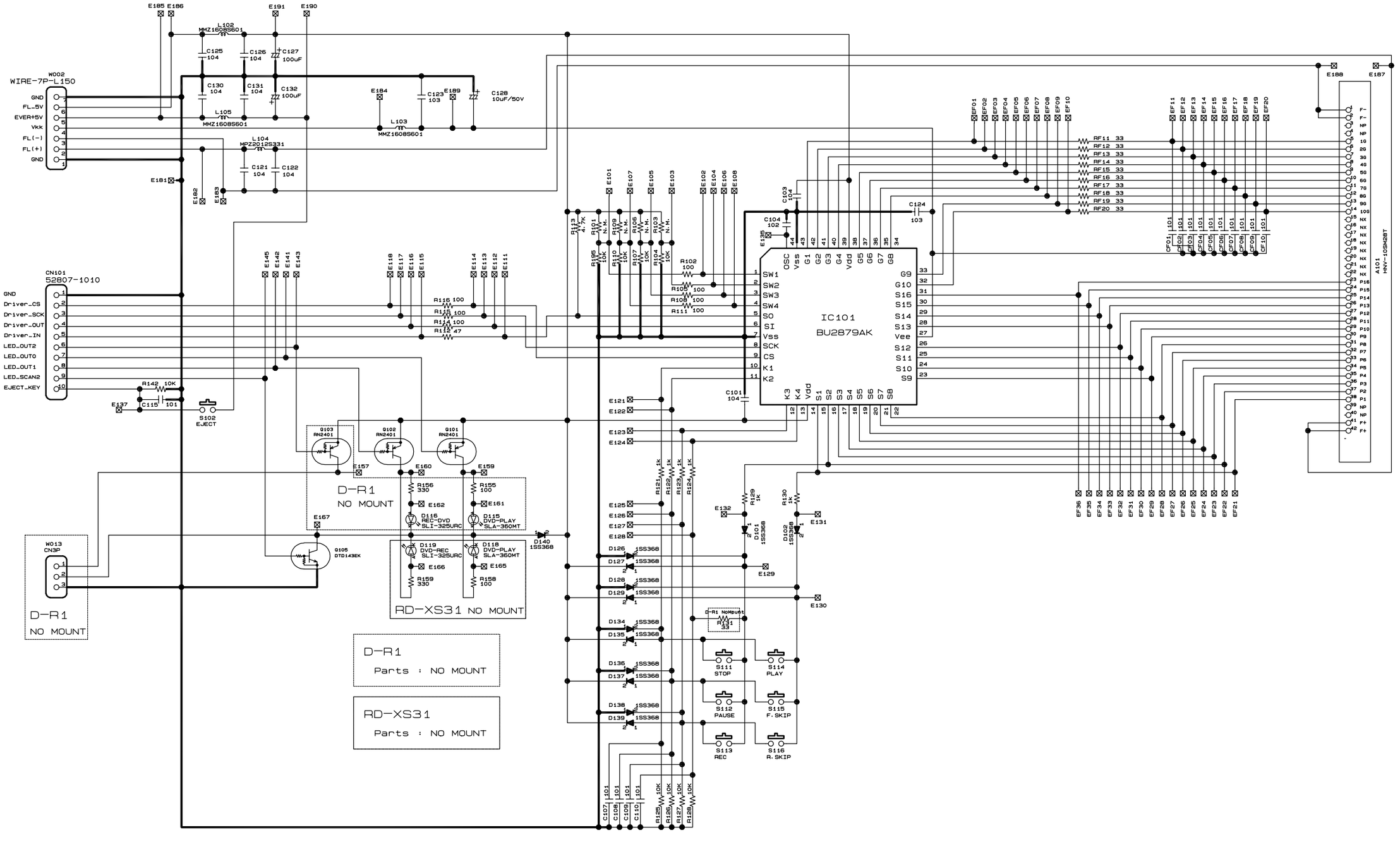
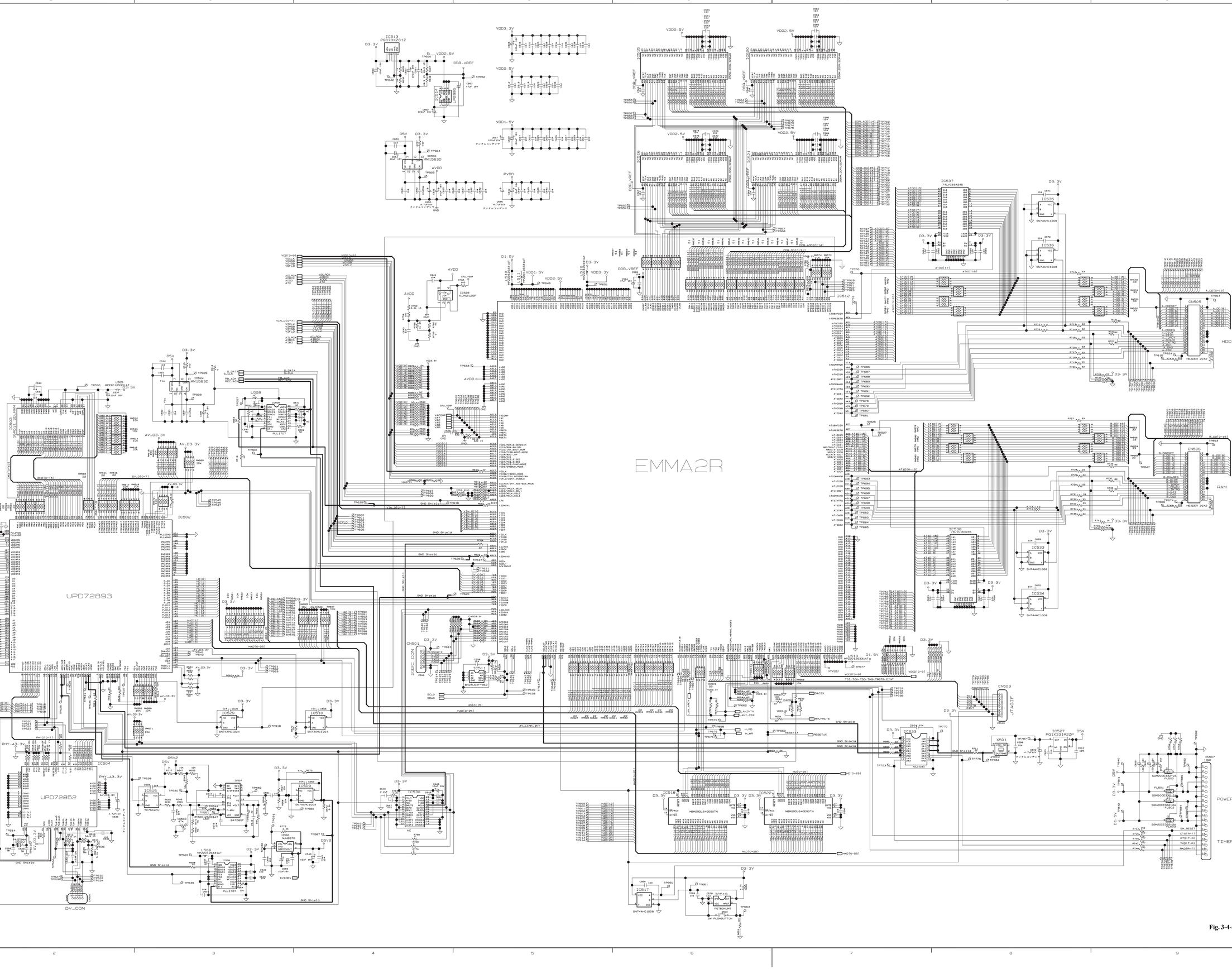


Fig. 3-4-4

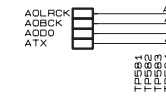
4-3. Digital Circuit Diagram

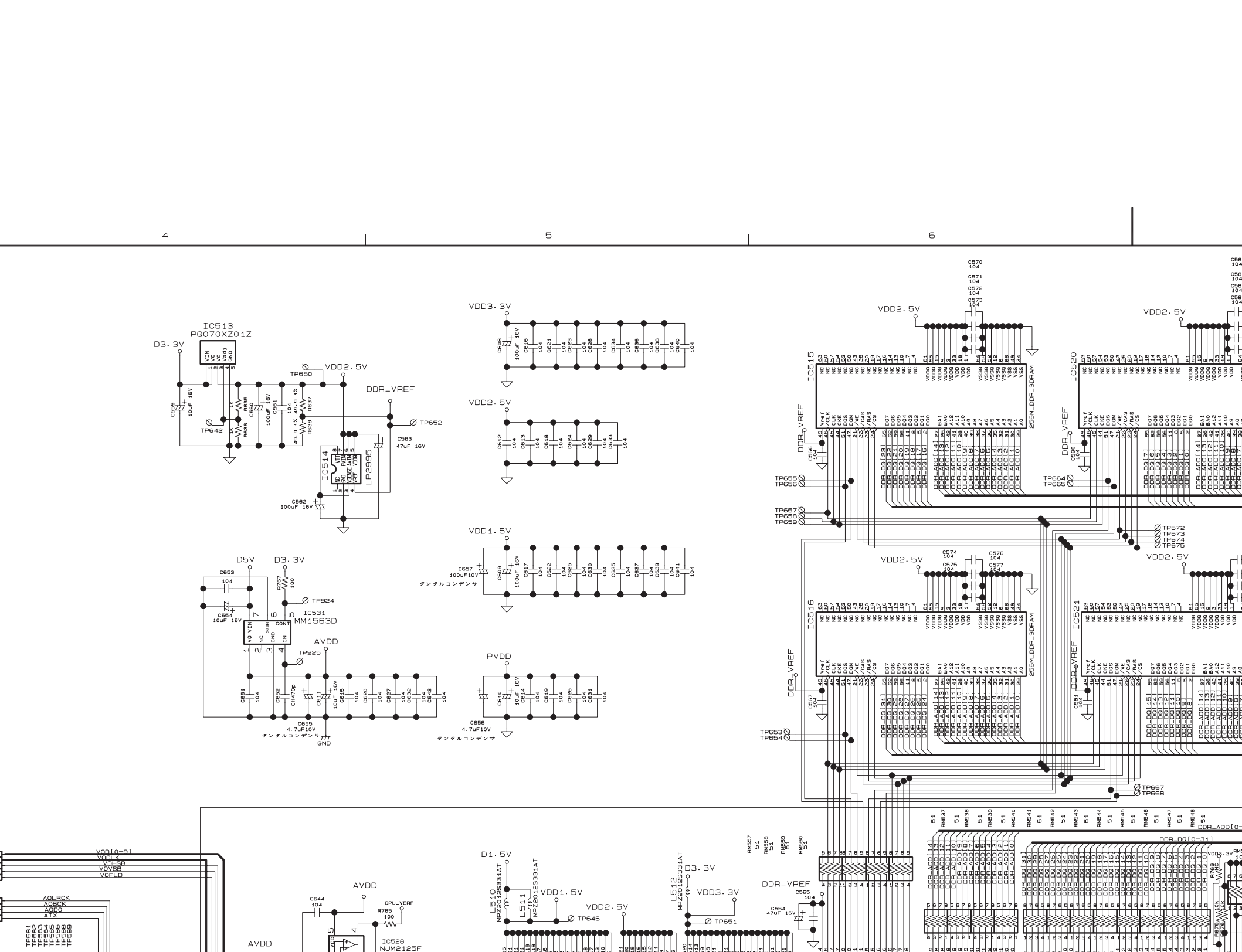
4-3-1. Digital 1 Circuit Diagram

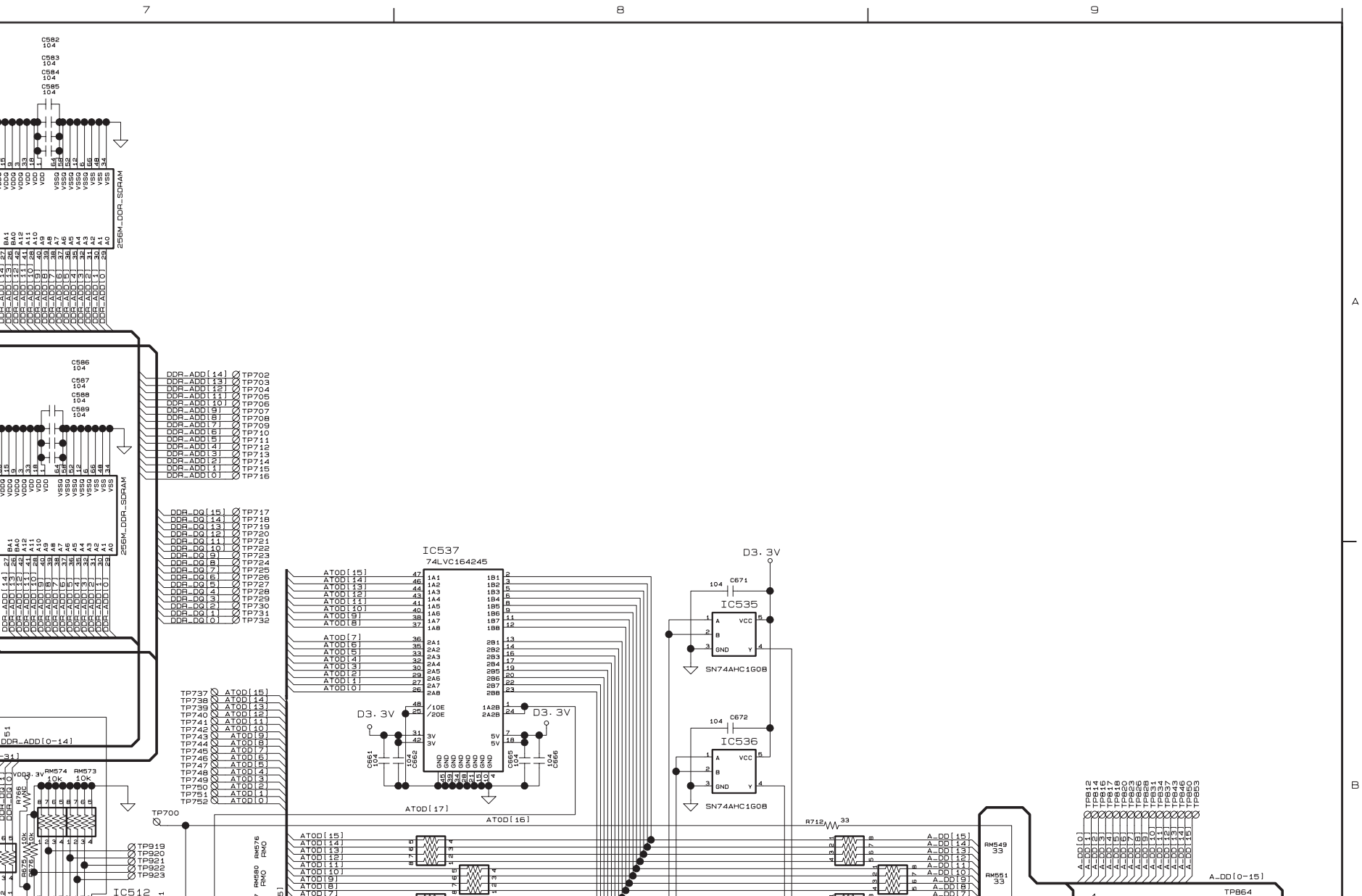


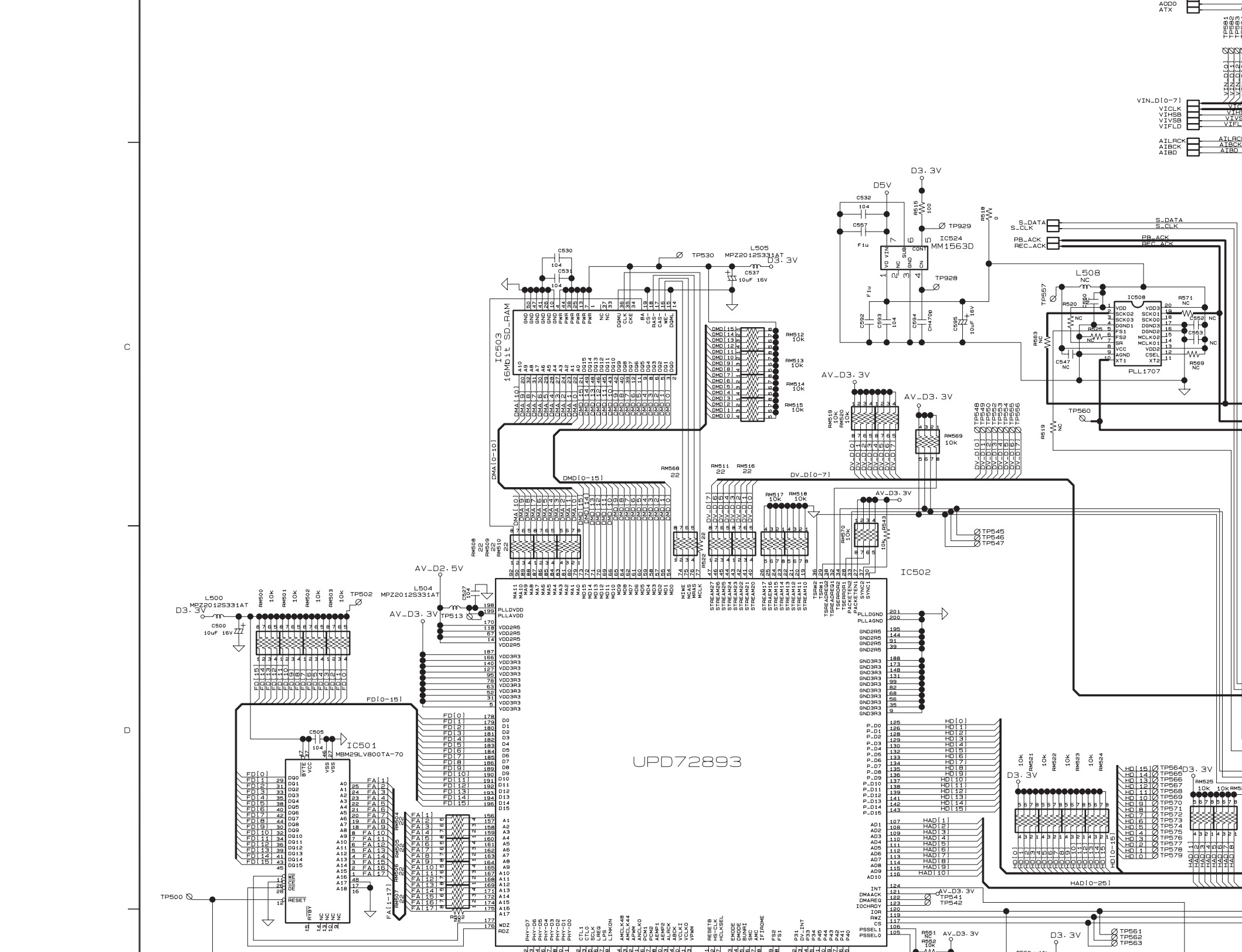
4-3. Digital Circuit Diagram

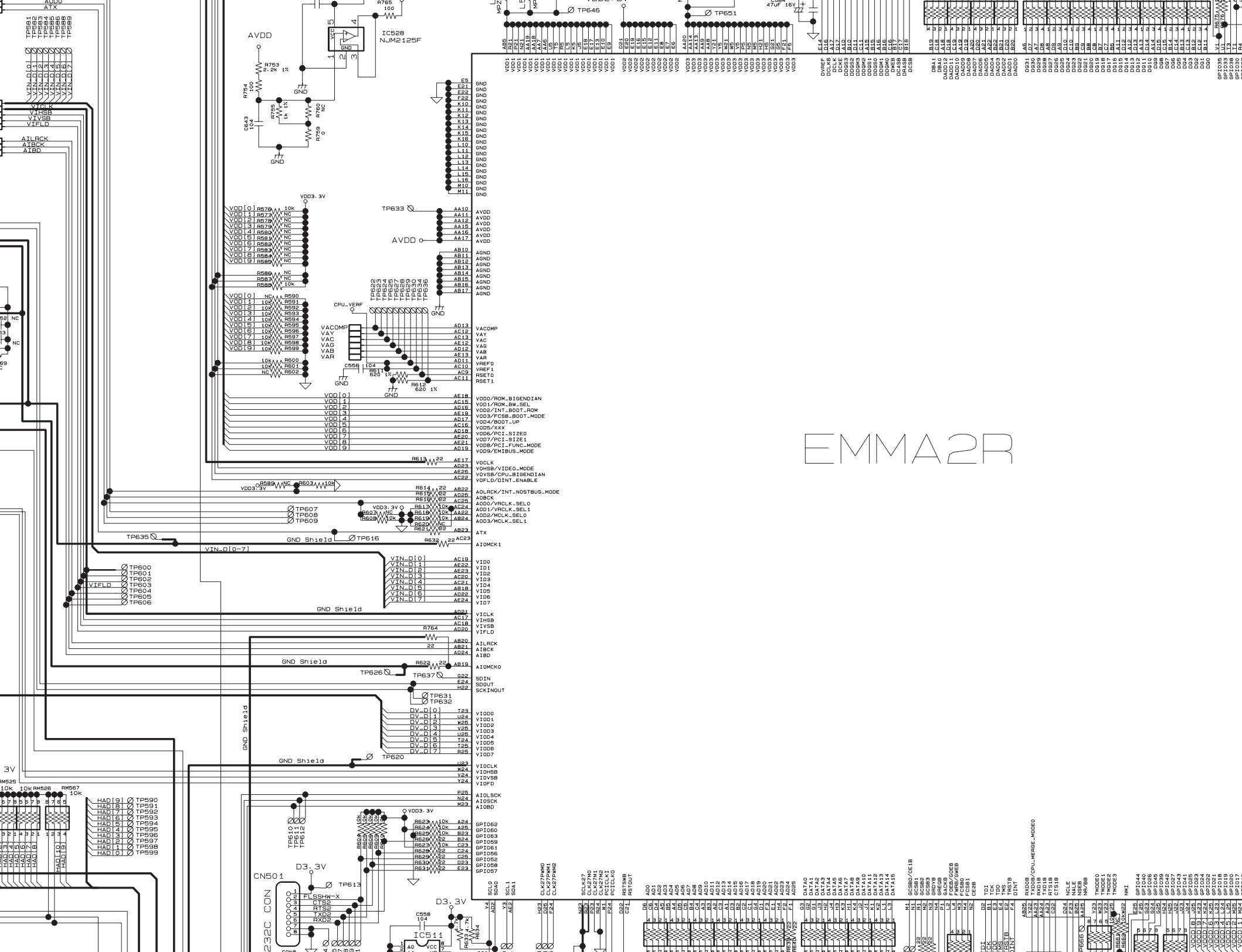
4-3-1. Digiral 1 Circuit Diagram

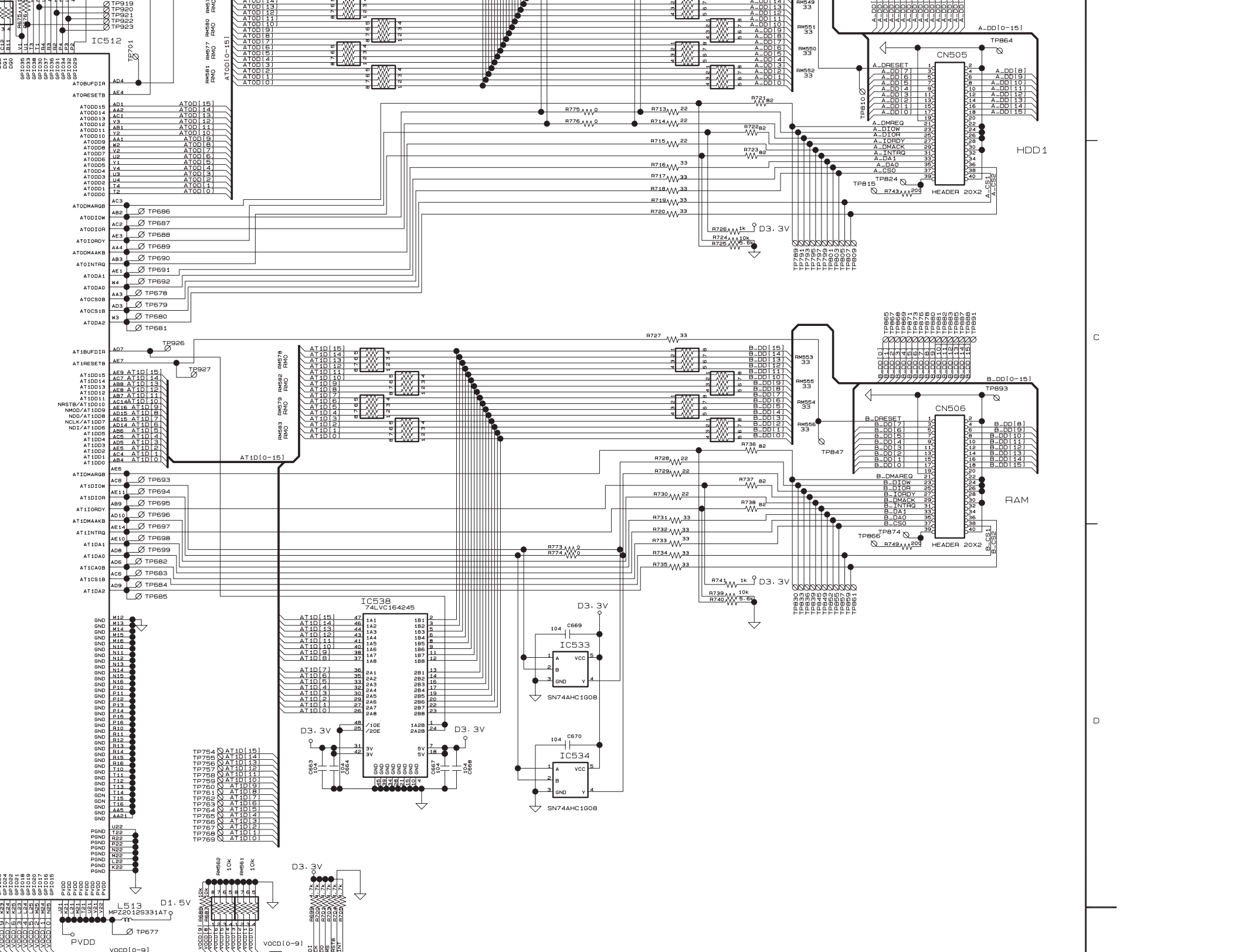


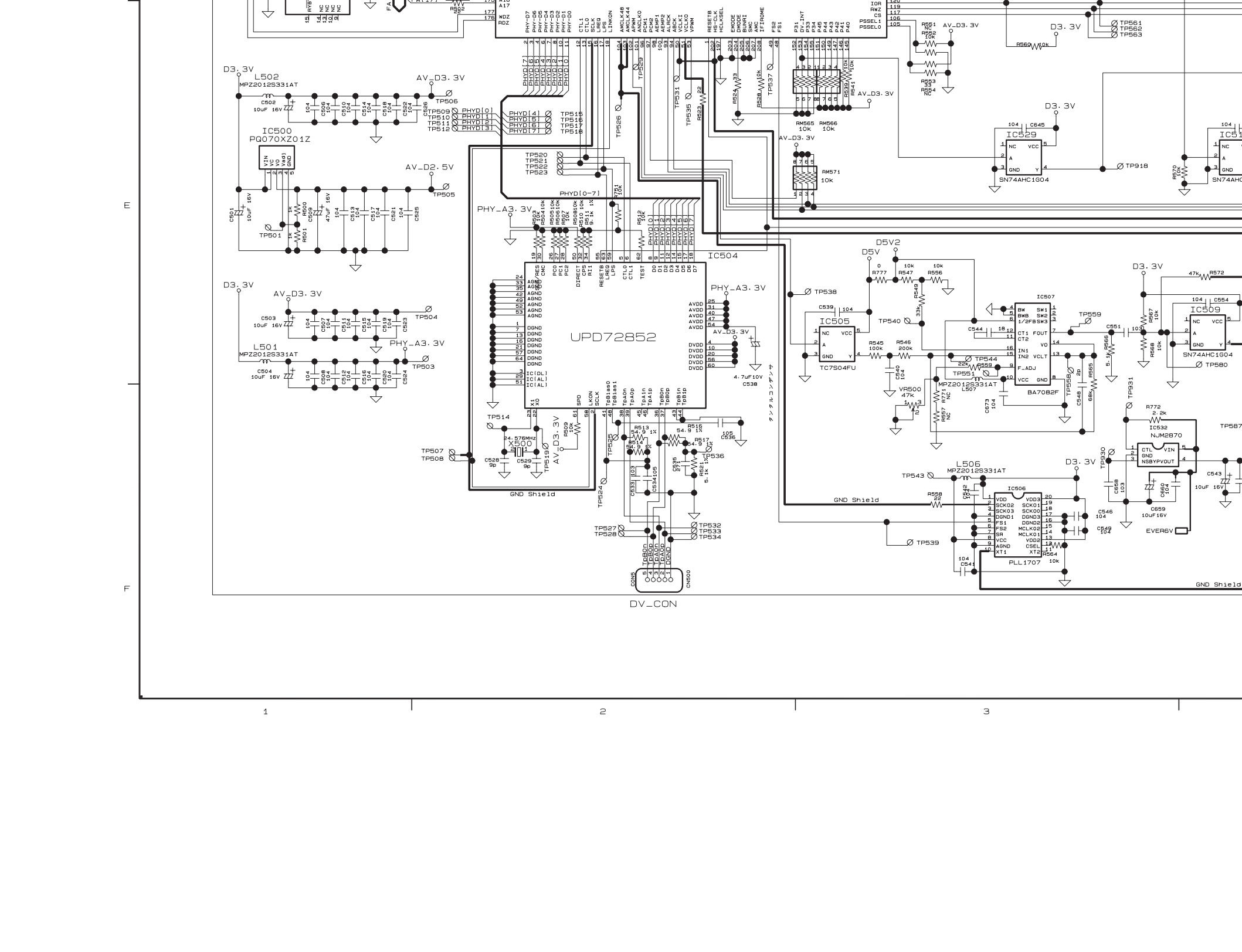

4
5
6
IC513
PQ070XZ01Z
D3.3V
VDD2.5V
DDR_VREF
TP650
TP642
TP652
IC514
LP2995
C562
100uF 16V
C563
47uF 16V
VDD3.3V
VDD1.5V
D5V
IC531
MM1563D
TP924
AVDD
TP925
PVDD
C655
4.7uF10V
タンタルコンデンサ
GND
C656
4.7uF10V
タンタルコンデンサ
IC515
IC516
IC520
IC521
256M-DDR-SDRAM
TP655
TP656
TP657
TP658
TP659
TP664
TP665
TP670
TP673
TP674
TP675
TP653
TP654
TP667
TP668
VOD[0-9]
VOCLK
VOHSB
VOVSB
VOFLD
AOLRCK
AOBCK
AOD0
ATX
IC528
NJM2125F
CPU_VERF
R765
100
L510
MPZ2012S331AT
D1.5V
L511
L512
D3.3V
TP646
TP651
DDR_VREF
C564
47uF 16V
DDR_DQ[0-31]
DDR_ADD[0-14]
VDD3.3V
R766
100
VDD1.5V
R767
100

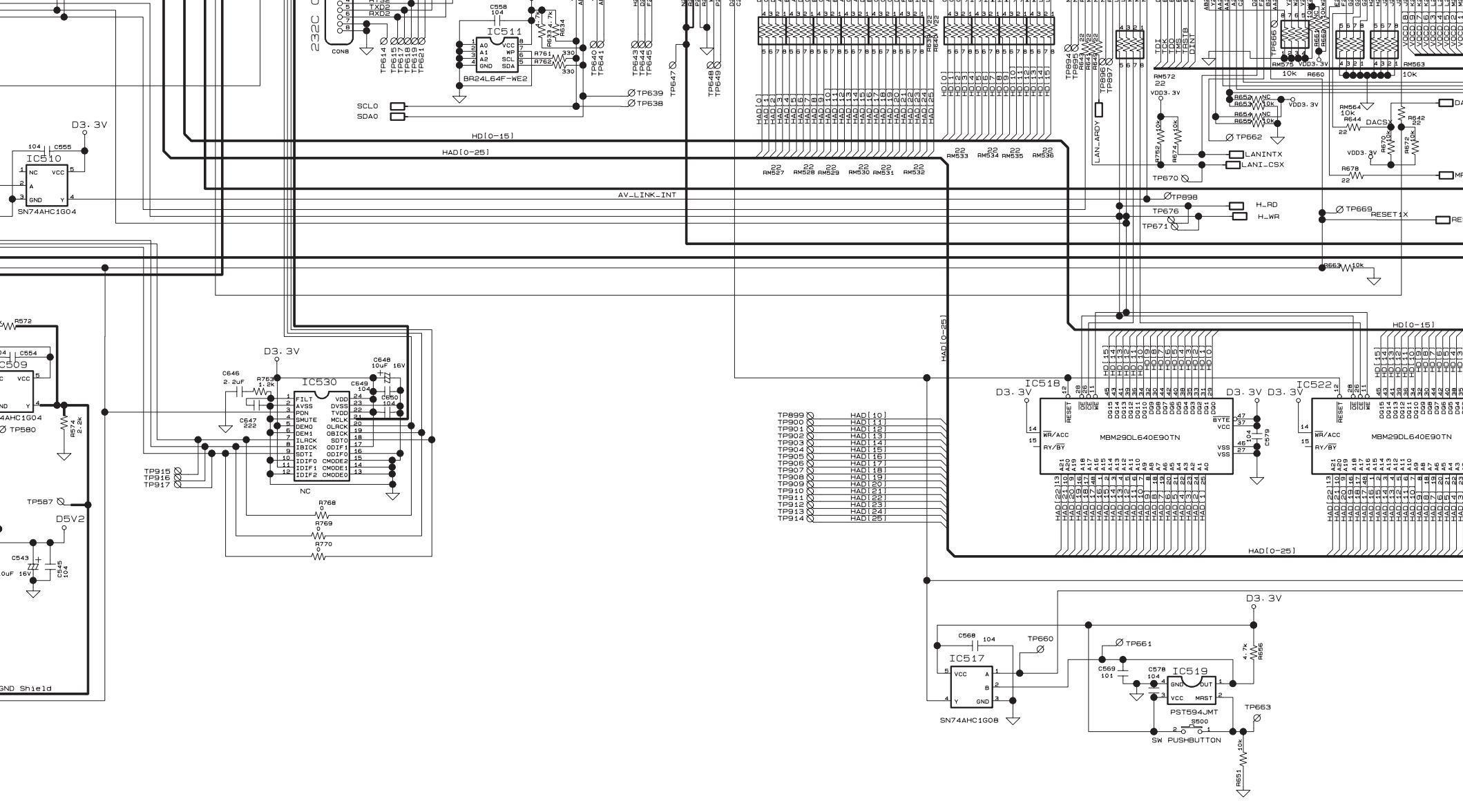

7
8
9
A
B
256M_DDR_SDRAM
IC537
74LVC164245
IC535
SN74AHC1G08
IC536
SN74AHC1G08
IC512
D3.3V
TP700
DDR_ADD[0-14]
ATOD[17]
ATOD[16]
A_DD[0-15]


UPD72893
IC502
IC501
MBM29LV800TA-70
IC503
16Mbit SD_RAM
IC524
MM1563D
IC508
PLL1707
L500
MPZ2012S331AT
L504
MPZ2012S331AT
L505
MPZ2012S331AT
L508
NC
D3.3V
D5V
AV_D3.3V
AV_D2.5V
VIN_D[0-7]
VICLK
VIHSB
VIVSB
VIFLD
AILRCK
AIBCK
AIBD
S_DATA
S_CLK
PB_ACK
REC_ACK
DMA[0-10]
DMD[0-15]
DV_D[0-7]
FD[0-15]
FA[1-17]
HD[0-15]
HAD[0-25]
TP500
TP502
TP513
TP530
TP560
TP929
TP928
TP541
TP542
TP545
TP546
TP547
TP561
TP562
TP563
TP564
TP565
TP566
TP567
TP568
TP569
TP570
TP571
TP572
TP573
TP574
TP575
TP576
TP577
TP578
TP579


EMMA2R


IC512
HDD1
CN505
HEADER 20X2
RAM
CN506
IC538
74LVC164245
IC533
IC534
SN74AHC1G08
L513
MPZ2012S331A
D3.3V
D1.5V
PVDD
VDCD[0-9]
A_DD[0-15]
B_DD[0-15]
AT1D[0-15]
ATOD[0-15]


UPD72852
IC504
IC500
PQ070XZ01Z
IC505
TC7S04FU
IC506
PLL1707
IC507
BA7082F
IC509
SN74AHC1G04
IC529
SN74AHC1G04
IC532
NJM2870
L501
MPZ2012S331AT
L502
MPZ2012S331AT
L505
MPZ2012S331AT
L506
MPZ2012S331AT
L507
MPZ2012S331AT
X500
24.576MHz
AV_D3.3V
D3.3V
AV_D2.5V
PHY_A3.3V
D5V2
D5V
PHYD[0-7]
GND Shield
DV_CON
CN500
CON5


IC511
BR24L64F-WE2
SCL0
SDA0
HD[0-15]
HAD[0-25]
AV_LINK_INT
IC510
SN74AHC1G04
D3.3V
IC530
IC518
IC522
MBM29DL640E90TN
IC517
SN74AHC1G08
IC519
PST594JMT
SW PUSHBUTTON
LANINTX
LANI_CSX
H_RD
H_WR
RESET1X
DACS
LAN_ARDY
D5V2
GND Shield
NC

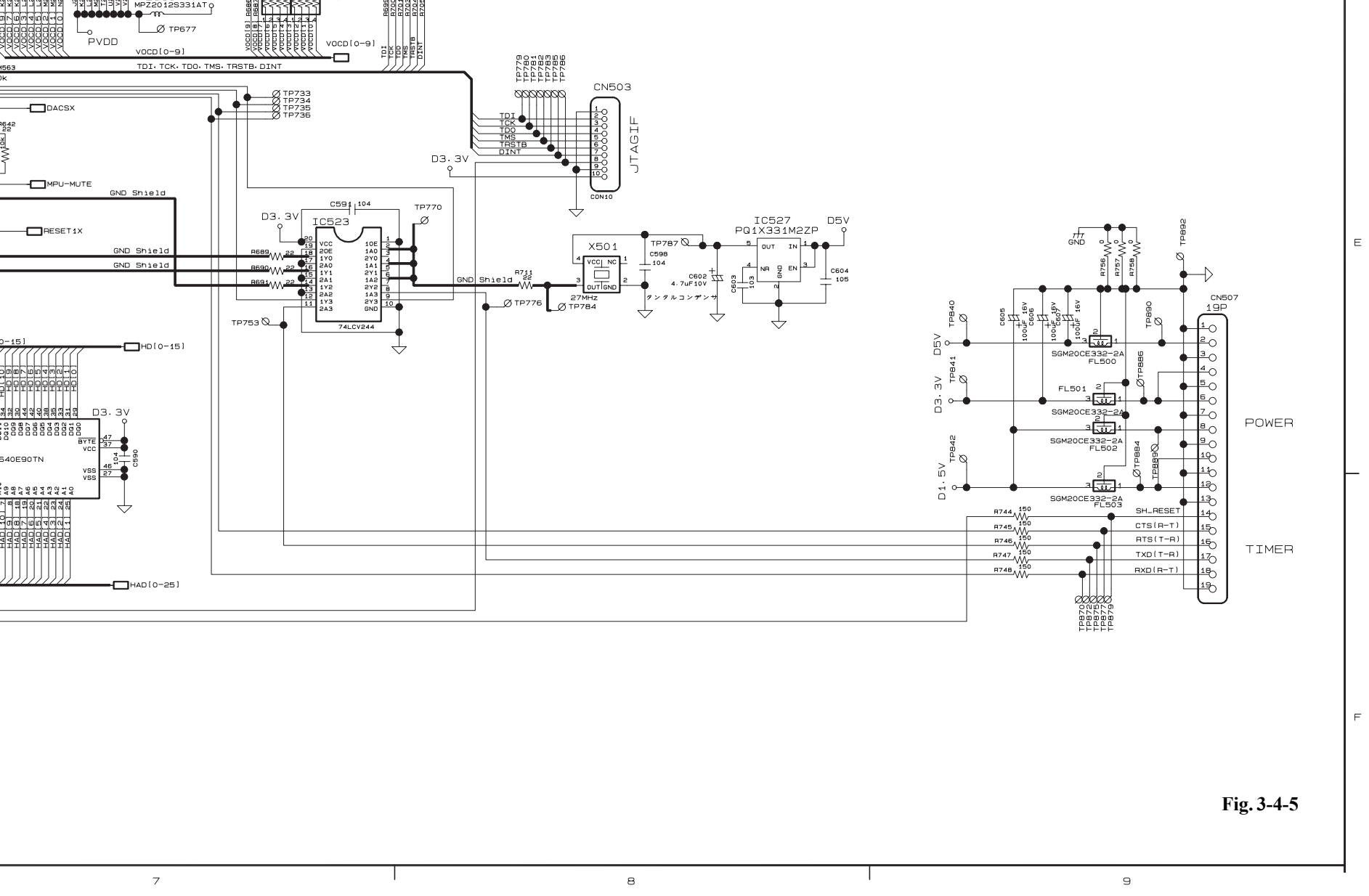

MPZ2012S331AT
TP677
PVDD
VOCD[0-9]
TDI. TCK. TDO. TMS. TRSTB. DINT
DACSX
MPU-MUTE
RESET1X
GND Shield
HD[0-15]
HAD[0-25]
D3.3V
TP733
TP734
TP735
TP736
CN503
JTAGIF
CON10
TDI
TCK
TDO
TMS
TRSTB
DINT
IC523
74LCV244
C591 104
TP770
TP753
TP776
TP784
27MHz
X501
TP787
C598 104
C602 4.7uF10V
タンタルコンデンサ
IC527
PQ1X331M2ZP
D5V
C603 103
C604 105
R711 22
TP892
CN507
19P
TP840
TP841
TP842
TP890
TP886
TP884
TP889
SGM20CE332-2A
FL500
FL501
FL502
FL503
C605 100uF 16V
C606
C607 100uF 16V
C608 100uF 16V
R756 0
R757 0
R758 0
R744 150
R745 150
R746 150
R747 150
R748 150
SH_RESET
CTS(R-T)
RTS(T-R)
TXD(T-R)
RXD(R-T)
POWER
TIMER
TP877
TP878
TP879
TP880
TP881
TP882
TP883
TP885
TP887
TP888
TP891
TP893
TP894
TP895
TP896
TP897
TP898
TP899
TP900
TP901
TP902
TP903
TP904
TP905
TP906
TP907
TP908
TP909
TP910
TP911
TP912
TP913
TP914
TP915
TP916
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TP922
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TP975
TP976
TP977
TP978
TP979
TP980
TP981
TP982
TP983
TP984
TP985
TP986
TP987
TP988
TP989
TP990
TP991
TP992
TP993
TP994
TP995
TP996
TP997
TP998
TP999
TP1000

Fig. 3-4-5

4-3-2. Digital 2 Circuit Diagram

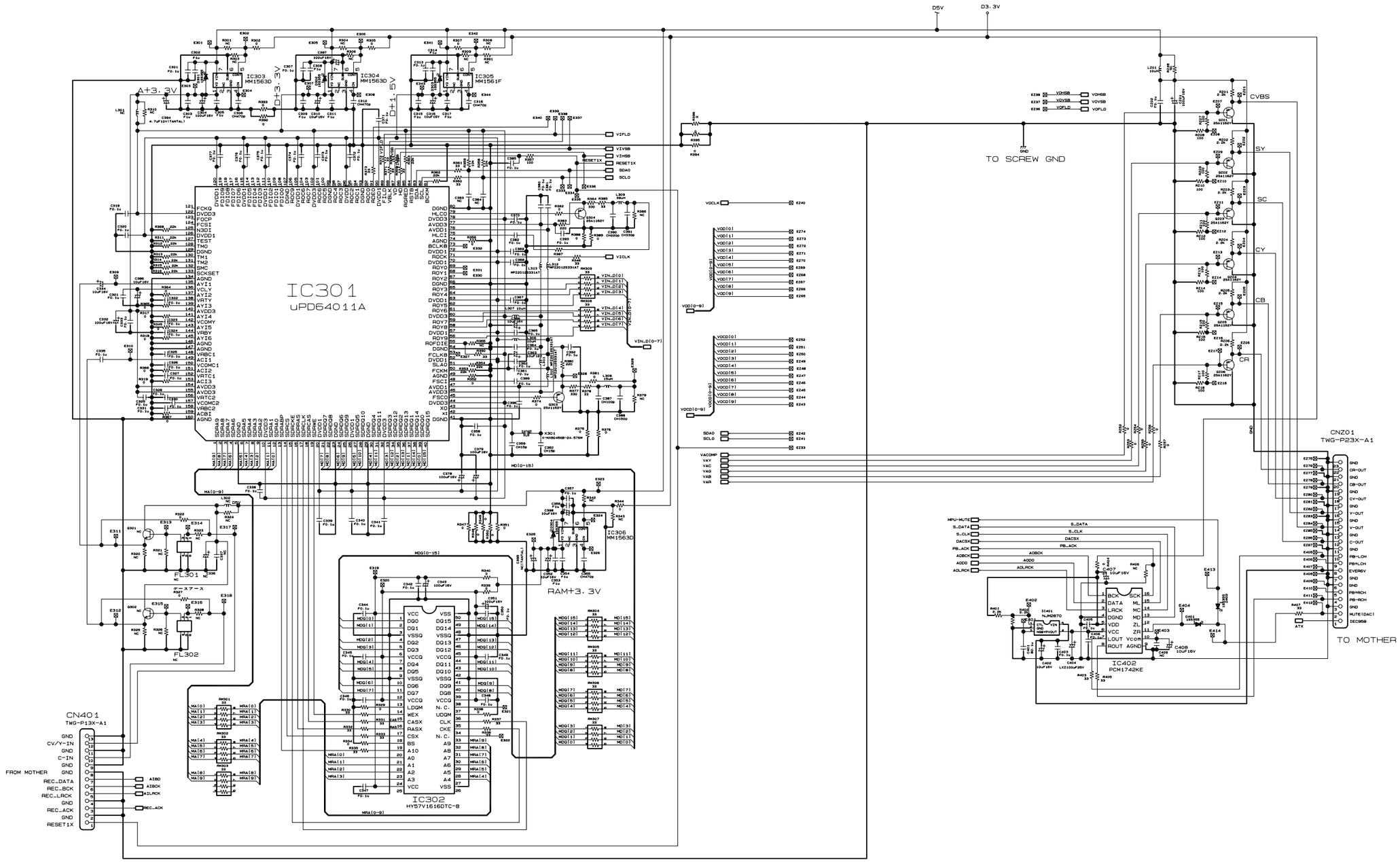


Fig. 3-4-6

4-4. Mother Circuit Diagram

4-4-1. Tuner Circuit Diagram

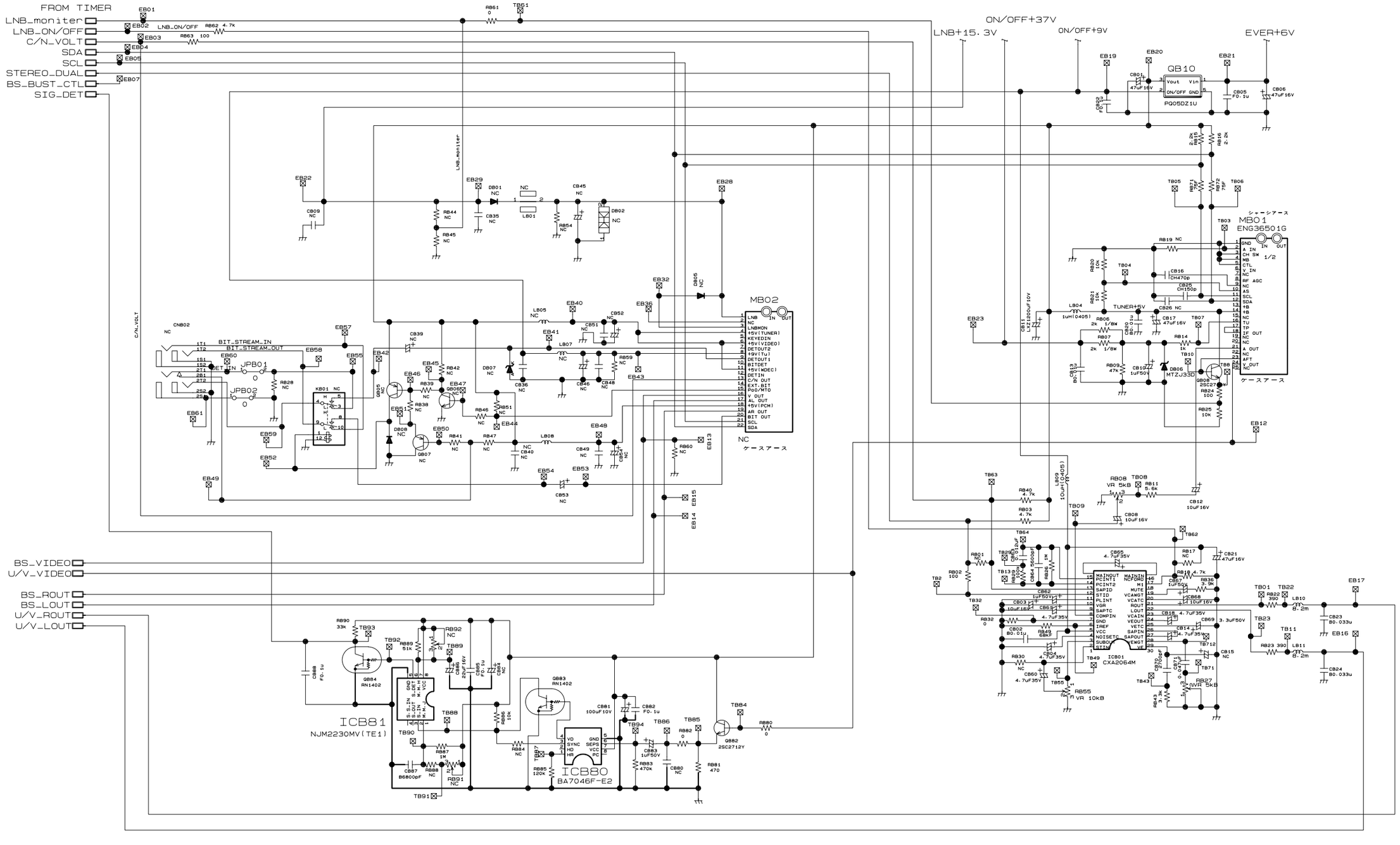


Fig. 3-4-7

4-4-2. Timer Circuit Diagarm

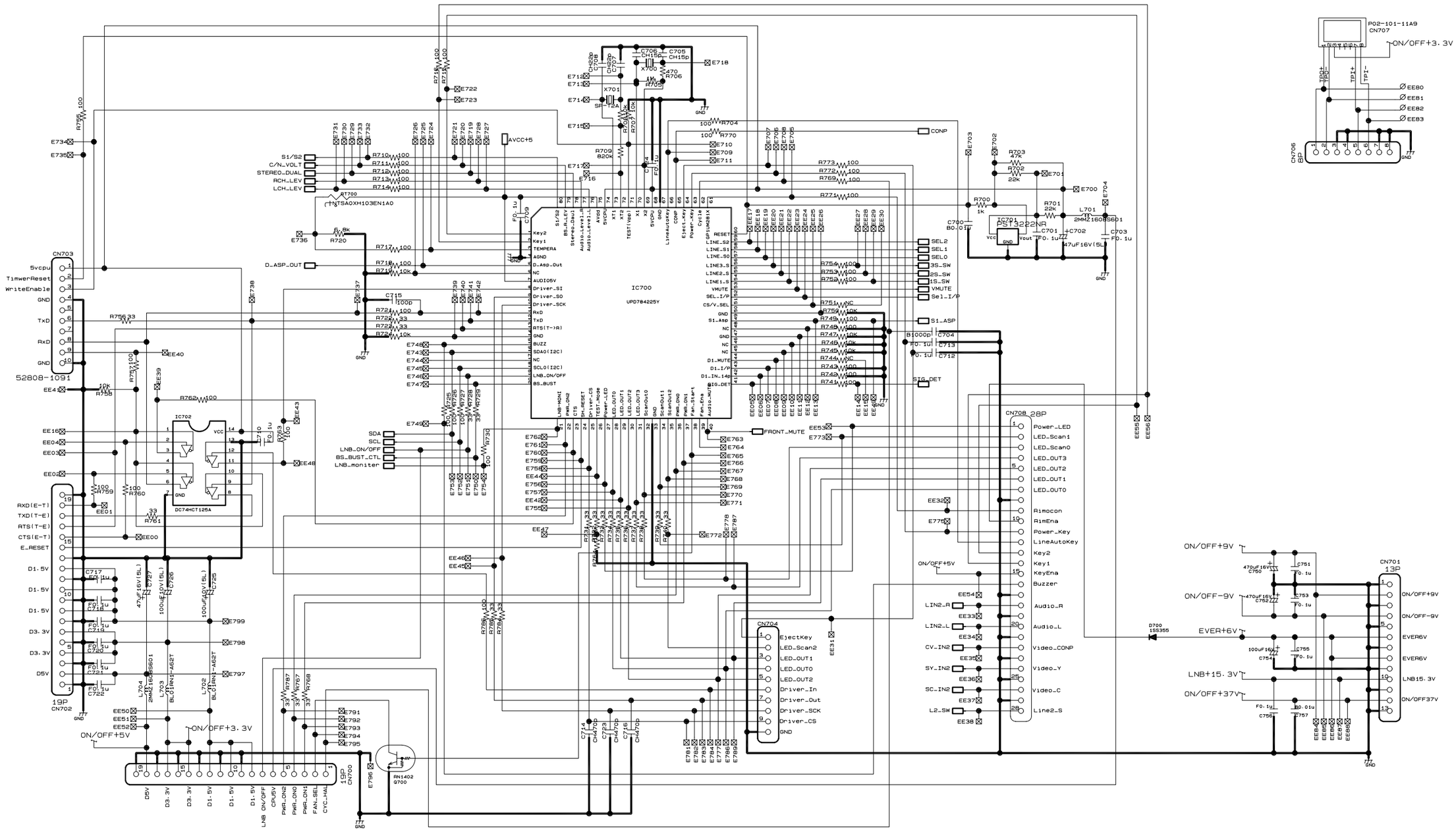


Fig. 3-4-8

4-4-3. Audio Circuit Diagram

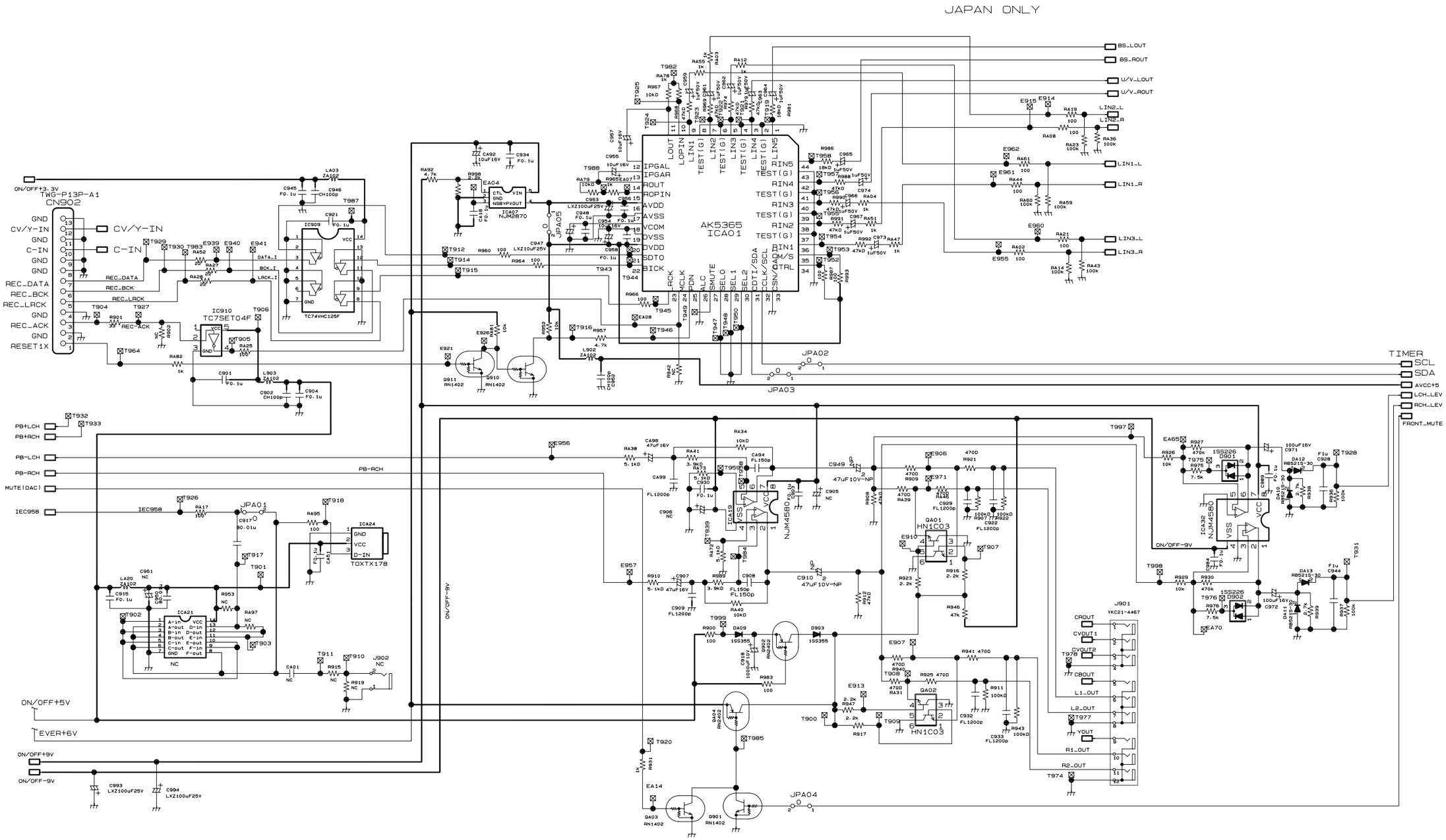


Fig. 3-4-9

4-4-4. Video Circuit Diagram

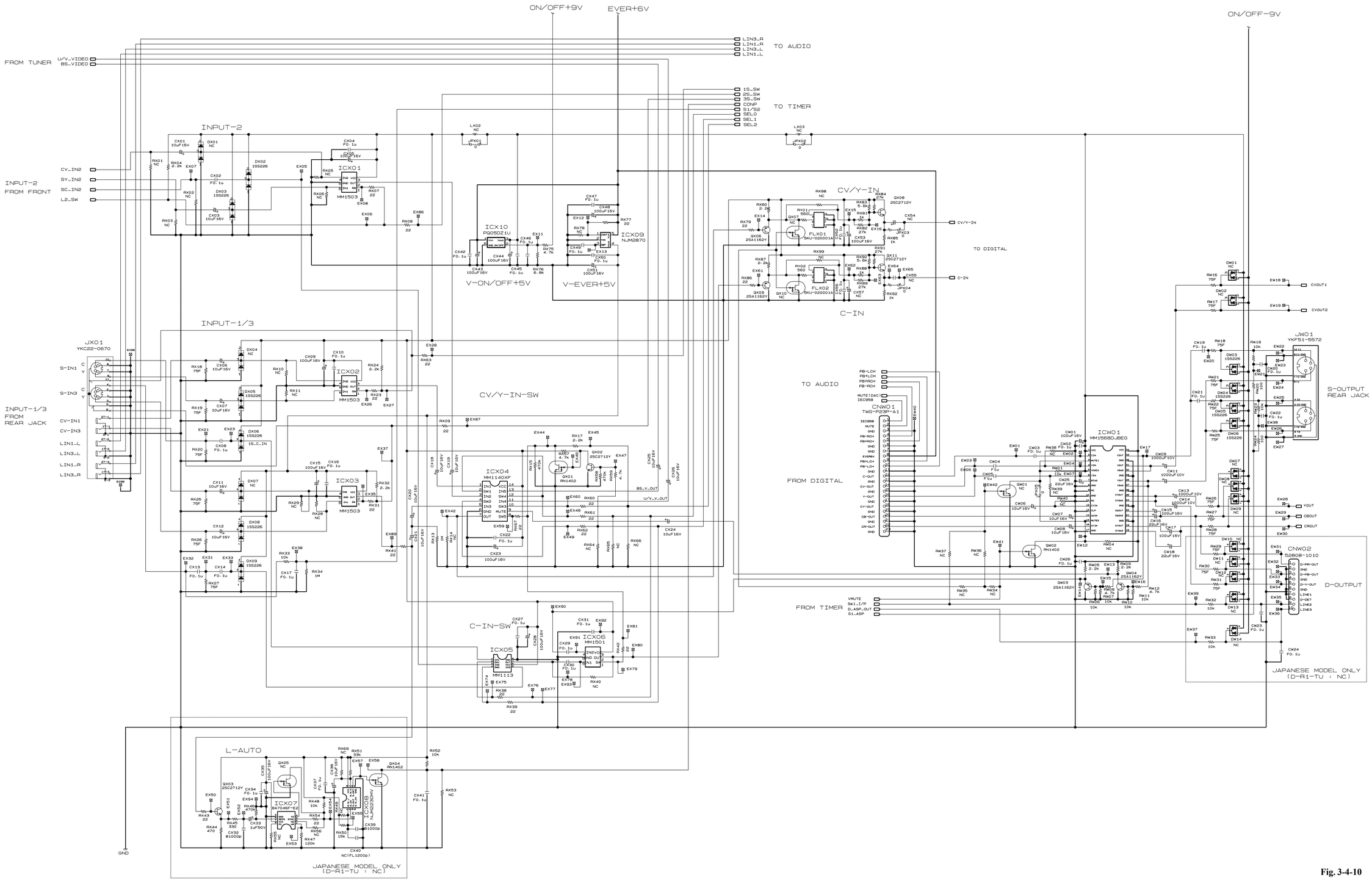
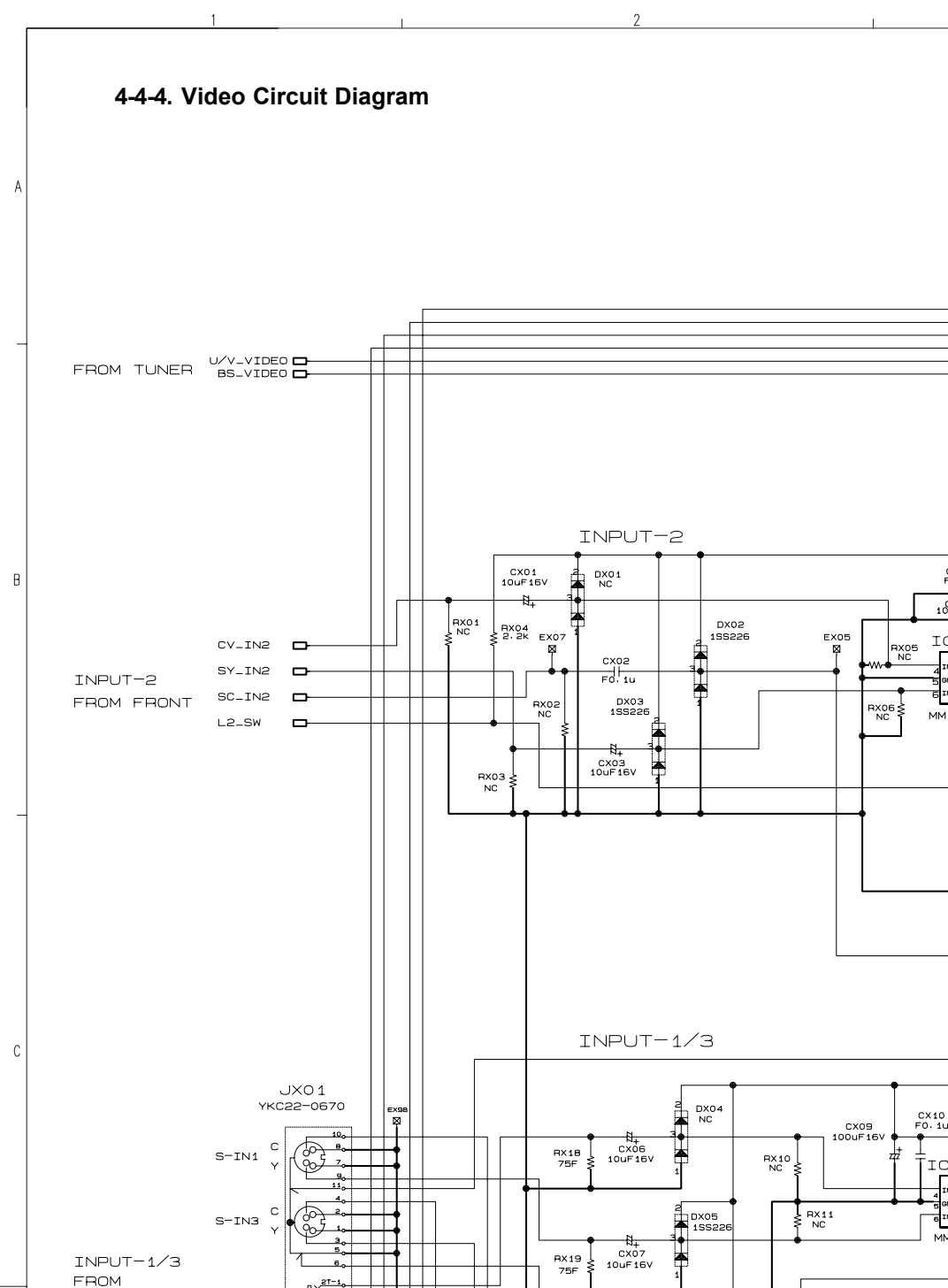
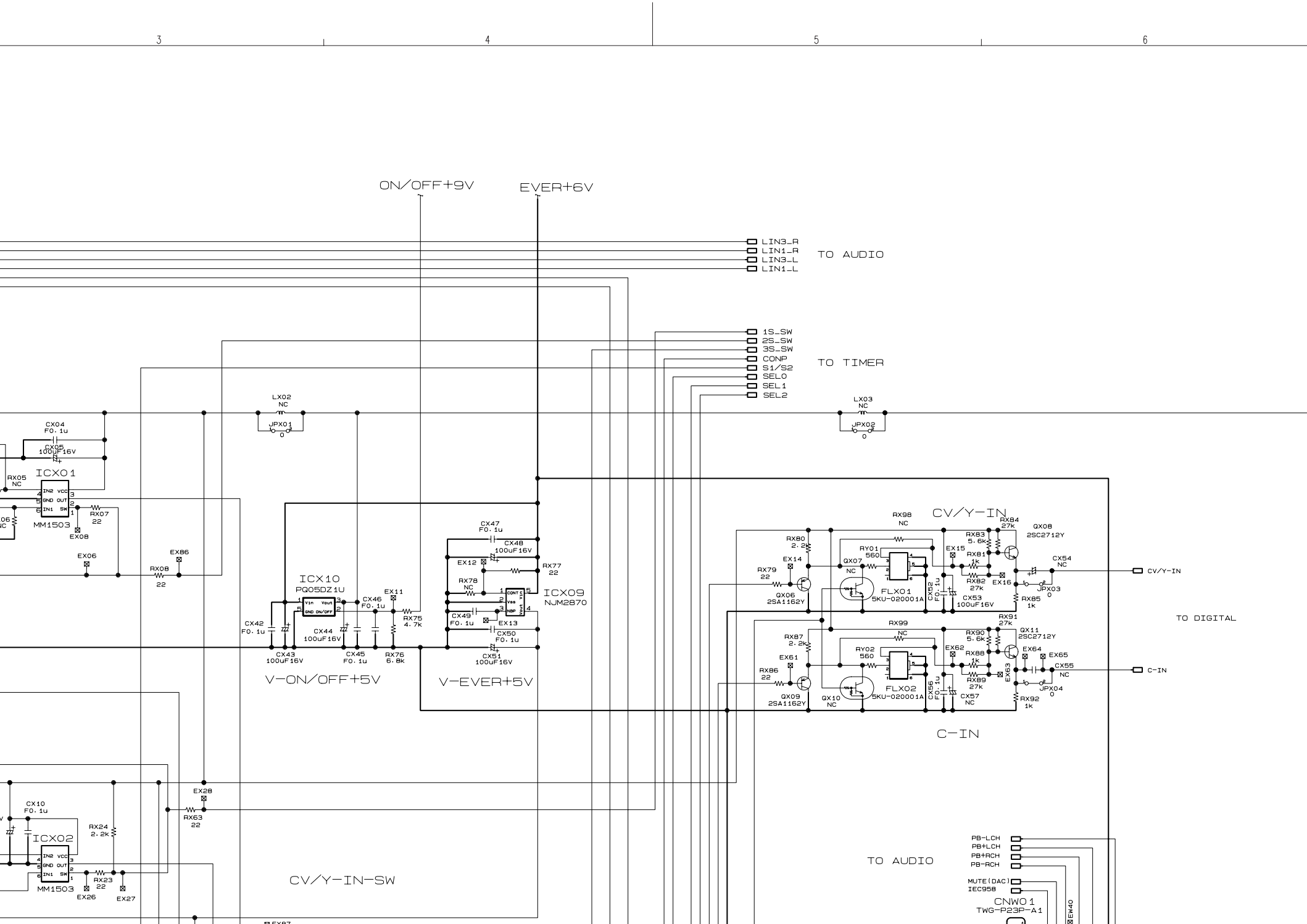
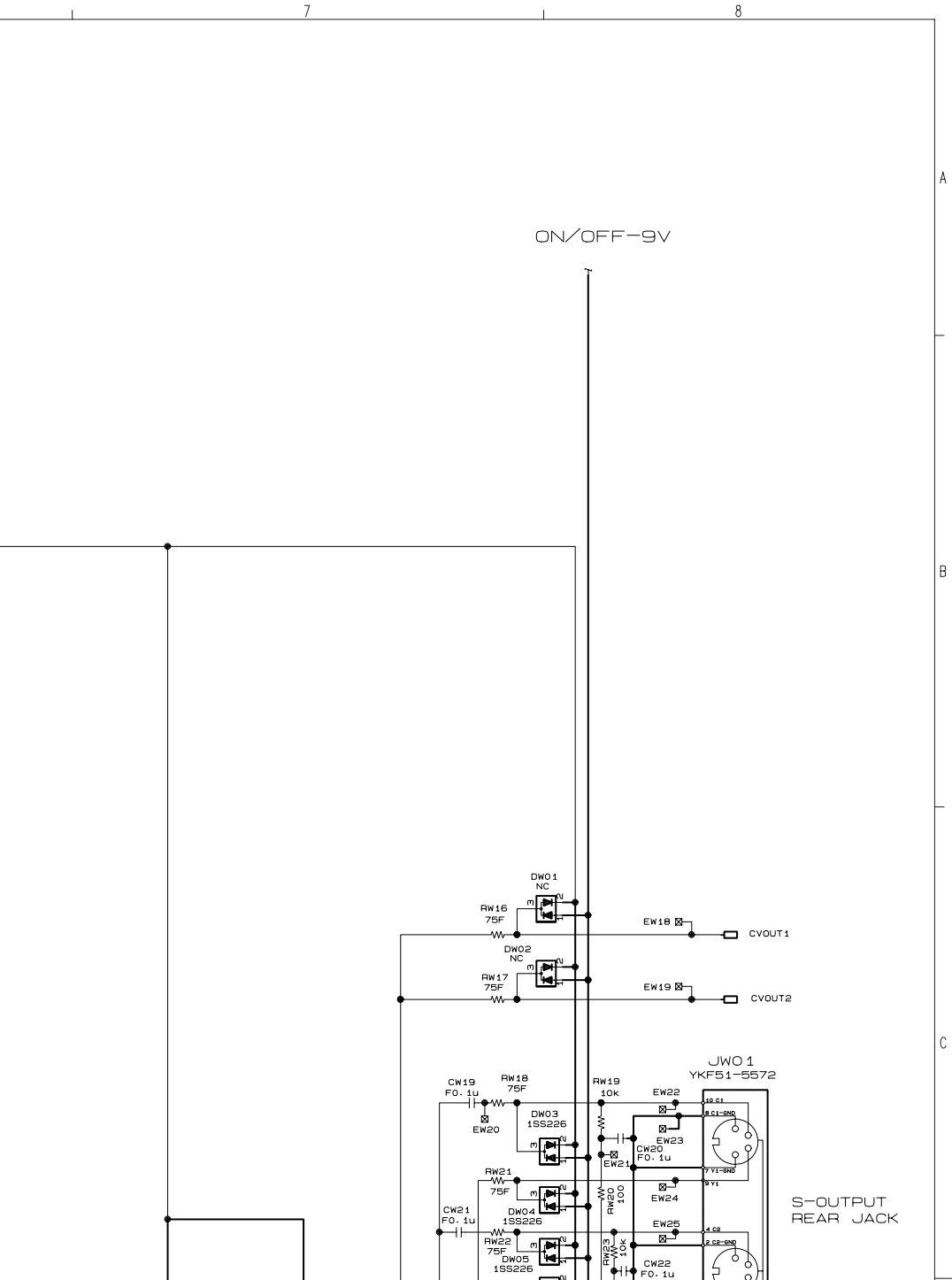


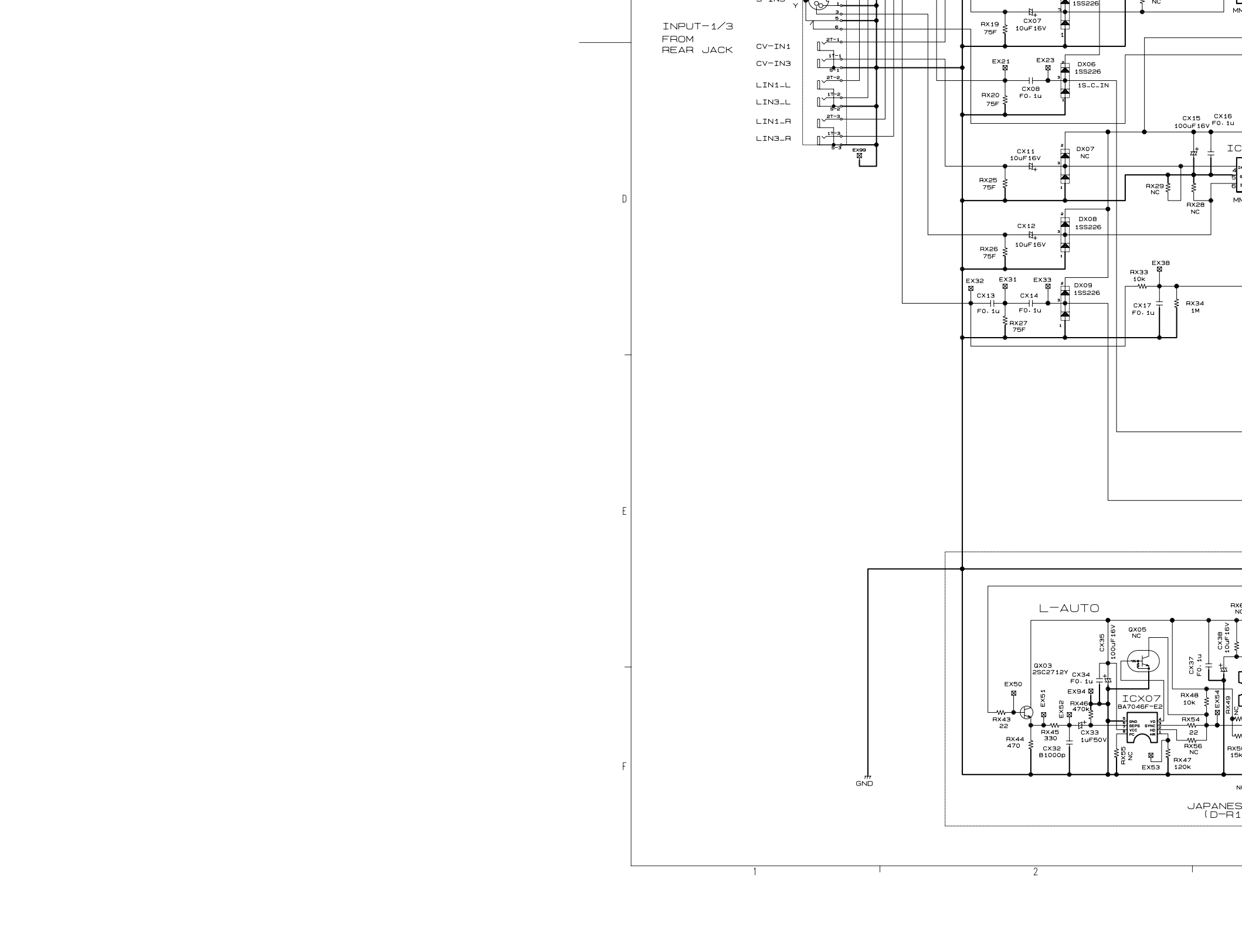
Fig. 3-4-10

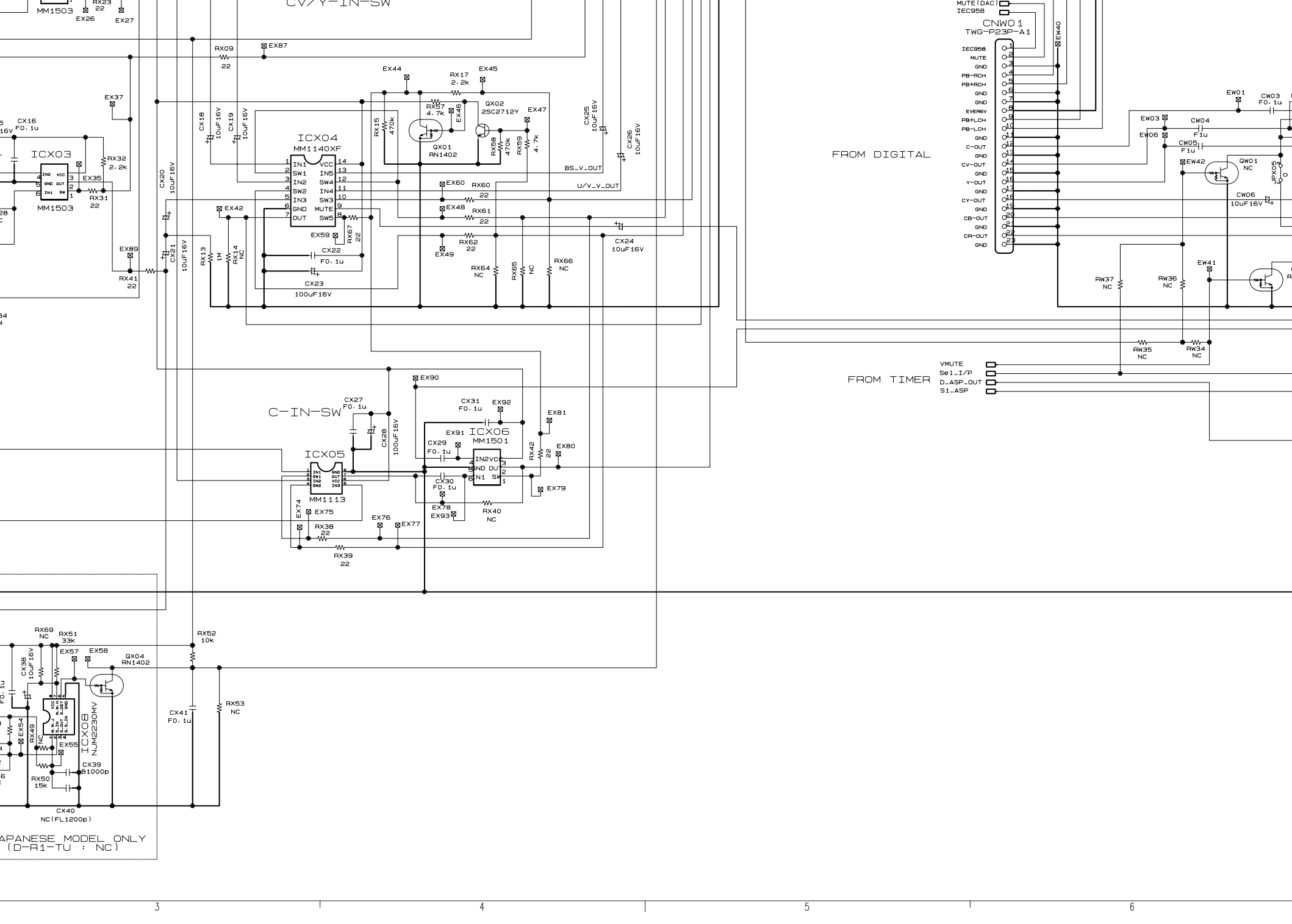
4-4-4. Video Circuit Diagram




3
4
5
6
ON/OFF+9V
EVER+6V
LIN3_R
LIN1_R
LIN3_L
LIN1_L
TO AUDIO
1S_SW
2S_SW
3S_SW
CONP
S1/S2
SELO
SEL1
SEL2
TO TIMER
LX02
NC
JPX01
0
LX03
NC
JPX02
0
CX04
F0.1u
CX05
100uF16V
ICX01
MM1503
RX05
NC
RX07
22
EX08
EX06
EX86
RX08
22
ICX10
PQ05DZ1U
CX42
F0.1u
CX43
100uF16V
CX44
100uF16V
CX45
F0.1u
CX46
F0.1u
EX11
RX75
4.7k
RX76
6.8k
V-ON/OFF+5V
CX47
F0.1u
CX48
100uF16V
EX12
RX77
22
RX78
NC
ICX09
NJM2870
CX49
F0.1u
EX13
CX50
F0.1u
CX51
100uF16V
V-EVER+5V
CV/Y-IN
RX98
NC
RX80
2.2
EX14
RX79
22
QX06
2SA1162Y
RY01
560
QX07
NC
FLX01
5KU-020001A
EX15
RX83
5.6k
RX81
1k
RX82
27k
EX16
RX84
27k
QX08
2SC2712Y
CX54
NC
JPX03
0
RX85
1k
CX52
F0.1u
CX53
100uF16V
CV/Y-IN
TO DIGITAL
RX99
NC
RX87
2.2
EX61
RX86
22
QX09
2SA1162Y
RY02
560
QX10
NC
FLX02
5KU-020001A
EX62
RX88
1k
RX89
27k
EX63
RX90
5.6k
EX64
RX91
27k
QX11
2SC2712Y
EX65
CX55
NC
JPX04
0
RX92
1k
CX56
F0.1u
CX57
NC
C-IN
C-IN
CX10
F0.1u
ICX02
MM1503
RX24
2.2k
RX23
22
EX26
EX27
EX28
RX63
22
CV/Y-IN-SW
TO AUDIO
PB-LCH
PB+LCH
PB+RCH
PB-RCH
MUTE(DAC)
IEC958
CNW01
TWG-P23P-A1
EW40


7
8
A
B
C
ON/OFF-9V
DW01
NC
RW16
75F
EW18
CVOUT1
DW02
NC
RW17
75F
EW19
CVOUT2
JW01
YKF51-5572
CW19
F0.1u
RW18
75F
RW19
10k
EW22
EW20
DW03
1SS226
EW23
CW20
F0.1u
EW21
RW21
75F
RW20
100
EW24
CW21
F0.1u
DW04
1SS226
EW25
RW22
75F
RW23
10k
DW05
1SS226
CW22
F0.1u
S-OUTPUT
REAR JACK


INPUT-1/3
FROM
REAR JACK
CV-IN1
CV-IN3
LIN1_L
LIN3_L
LIN1_R
LIN3_R
EX99
RX19 75F
CX07 10uF16V
DX06 1SS226
EX21
EX23
CX08 F0.1u
RX20 75F
1S_C_IN
CX15 100uF16V
CX16 F0.1u
CX11 10uF16V
DX07 NC
RX25 75F
RX29 NC
RX28 NC
CX12 10uF16V
DX08 1SS226
RX26 75F
EX32
EX31
EX33
CX13 F0.1u
CX14 F0.1u
DX09 1SS226
RX27 75F
EX38
RX33 10k
CX17 F0.1u
RX34 1M
L-AUTO
QX05 NC
CX35 100uF16V
CX38 10uF16V
CX37 F0.1u
QX03 2SC2712Y
CX34 F0.1u
EX50
EX94
EX51
EX52
RX46 470k
ICX07 BA7046F-E2
RX48 10k
EX54
RX49
RX43 22
RX45 330
CX33 1uF50V
RX54 22
RX44 470
CX32 B1000p
RX55 NC
RX56 NC
EX53
RX47 120k
GND
JAPANES
(D-R1
D
E
F
1
2


CV/Y-IN-SW
MM1503
EX26
EX27
RX23
22
RX09
22
EX87
EX37
CX16
F0.1u
ICX03
MM1503
RX32
2.2k
EX35
RX31
22
EX89
RX41
22
EX44
RX17
2.2k
EX45
RX57
4.7k
EX46
QX02
2SC2712Y
EX47
QX01
RN1402
RX58
470k
RX59
4.7k
CX18
10uF16V
CX19
10uF16V
RX15
470k
CX25
10uF16V
CX26
10uF16V
ICX04
MM1140XF
BS_V_OUT
U/V_V_OUT
EX60
RX60
22
EX48
RX61
22
EX42
EX59
RX67
22
CX22
F0.1u
CX23
100uF16V
RX62
22
EX49
CX24
10uF16V
CX20
10uF16V
CX21
10uF16V
RX13
1M
RX14
NC
RX64
NC
RX65
NC
RX66
NC
FROM DIGITAL
MUTE(DAC)
IEC958
CNW01
TWG-P23P-A1
EW40
IEC958
MUTE
GND
PB-RCH
PB+RCH
GND
GND
EVER6V
PB+LCH
PB-LCH
GND
C-OUT
GND
CV-OUT
GND
Y-OUT
GND
CY-OUT
GND
CB-OUT
GND
CR-OUT
GND
EW01
CW03
F0.1u
EW03
CW04
F1u
EW06
CW05
F1u
EW42
QW01
NC
CW06
10uF16V
JPX05
RW37
NC
RW36
NC
EW41
RW35
NC
RW34
NC
FROM TIMER
VMUTE
Sel_I/P
D_ASP_OUT
S1_ASP
C-IN-SW
CX27
F0.1u
CX28
100uF16V
EX90
CX31
F0.1u
EX92
EX91
ICX06
MM1501
CX29
F0.1u
CX30
F0.1u
EX78
EX93
RX42
22
EX81
EX80
EX79
RX40
NC
ICX05
MM1113
EX74
EX75
RX38
22
EX76
EX77
RX39
22
RX69
NC
RX51
33k
EX57
EX58
QX04
RN1402
RX52
10k
CX38
10uF16V
CX41
F0.1u
RX53
NC
ICX08
NJM2230MV
RX49
NC
EX54
EX55
CX39
B1000p
RX50
15k
CX40
NC(FL1200p)
APANESE MODEL ONLY
(D-R1-TU : NC)

3 4 5 6

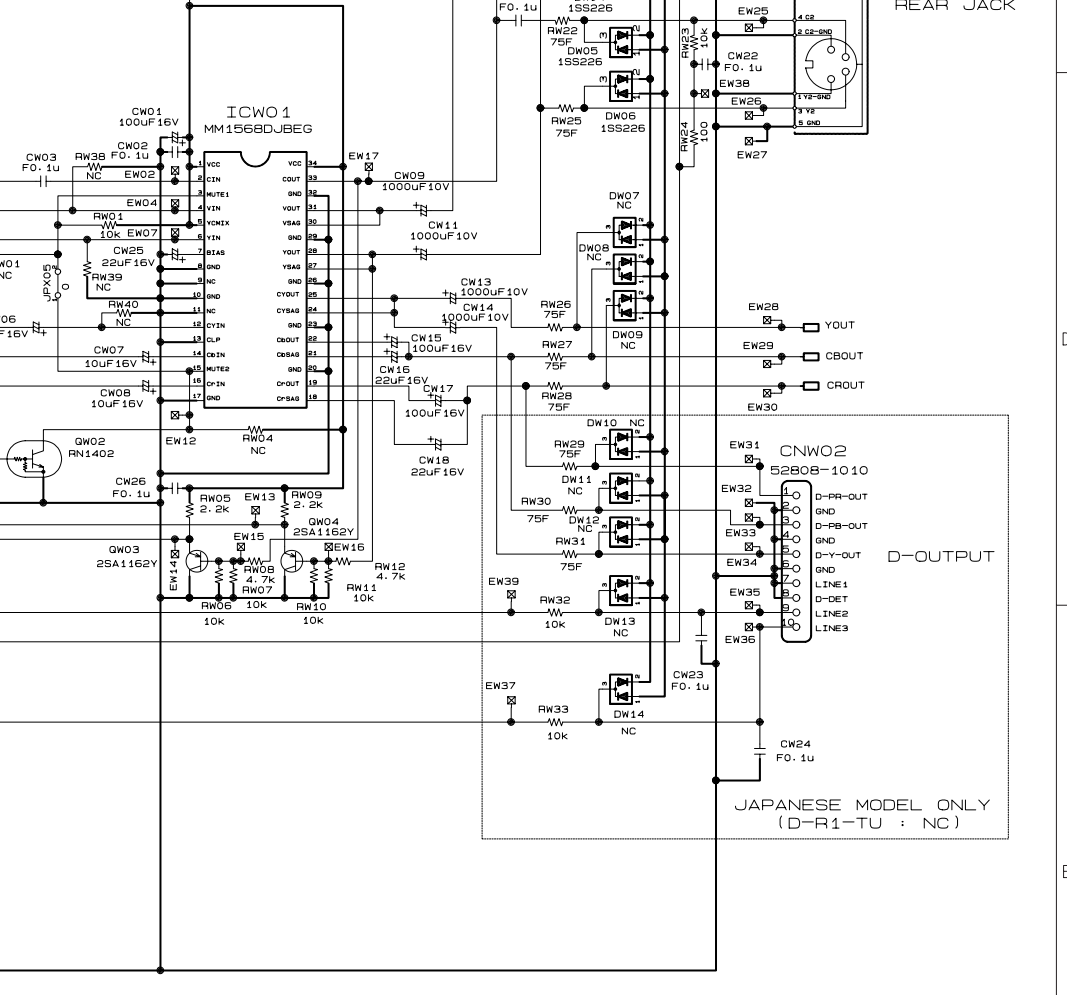

REAR JACK
ICW01
MM1568DJBEG
CW01 100uF16V
CW02 F0.1u
CW03 F0.1u
RW38 NC
EW02
EW04
RW01 10k
EW07
CW25 22uF16V
RW39 NC
RW40 NC
CW07 10uF16V
CW08 10uF16V
EW12
RW04 NC
QW02 RN1402
CW26 F0.1u
RW05 2.2k
EW13
RW09 2.2k
QW04 2SA1162Y
QW03 2SA1162Y
EW15
EW16
EW14
RW08 4.7k
RW07 10k
RW06 10k
RW10 10k
RW11 10k
RW12 4.7k
EW17
CW09 1000uF10V
CW11 1000uF10V
CW13 1000uF10V
CW14 1000uF10V
CW15 100uF16V
CW16 22uF16V
CW17 100uF16V
CW18 22uF16V
JPX05
F0.1u
1SS226
RW22 75F
DW05 1SS226
RW25 75F
DW06 1SS226
RW23 10k
CW22 F0.1u
EW38
EW26
EW27
RW24 100
EW25
4 C2
2 C2-GND
1 Y2-GND
3 Y2
5 GND
DW07 NC
DW08 NC
DW09 NC
RW26 75F
RW27 75F
RW28 75F
EW28
YOUT
EW29
CBOUT
EW30
CROUT
DW10 NC
DW11 NC
DW12 NC
DW13 NC
DW14 NC
RW29 75F
RW30 75F
RW31 75F
RW32 10k
RW33 10k
EW31
CNW02
52808-1010
EW32
EW33
EW34
EW35
EW36
EW37
EW39
D-PA-OUT
GND
D-PB-OUT
GND
D-Y-OUT
GND
LINE1
D-DET
LINE2
LINE3
D-OUTPUT
CW23 F0.1u
CW24 F0.1u
JAPANESE MODEL ONLY
(D-R1-TU : NC)

Fig. 3-4-10

5. PC BOARDS

5-1. Front (L) PC Board

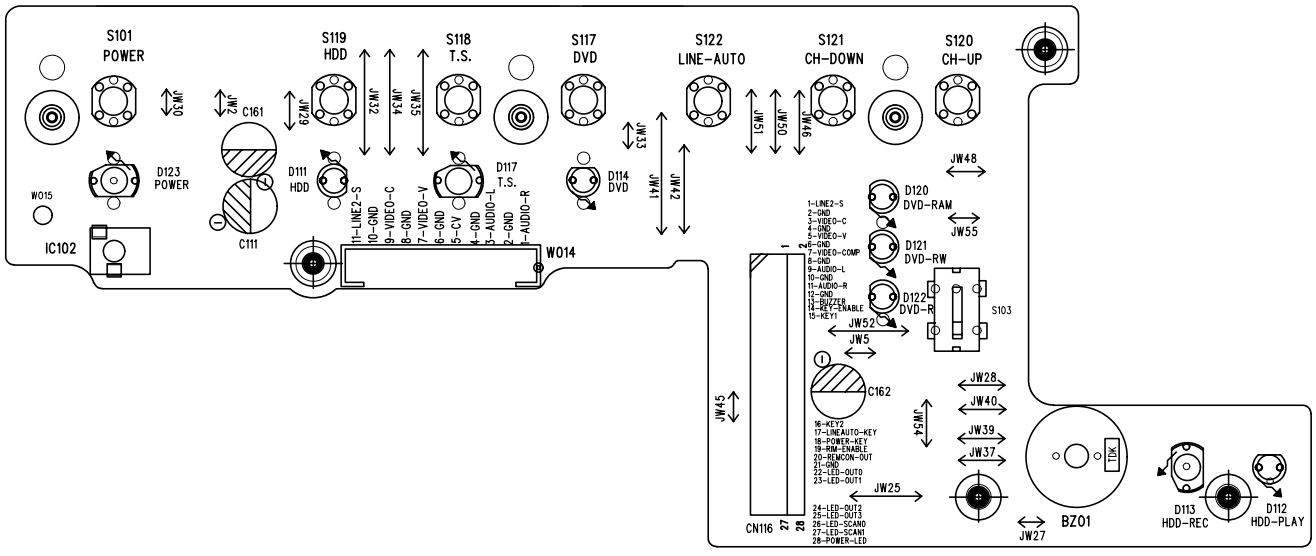


Fig. 3-5-1 EU03B Front (L) PC Board (Top side)

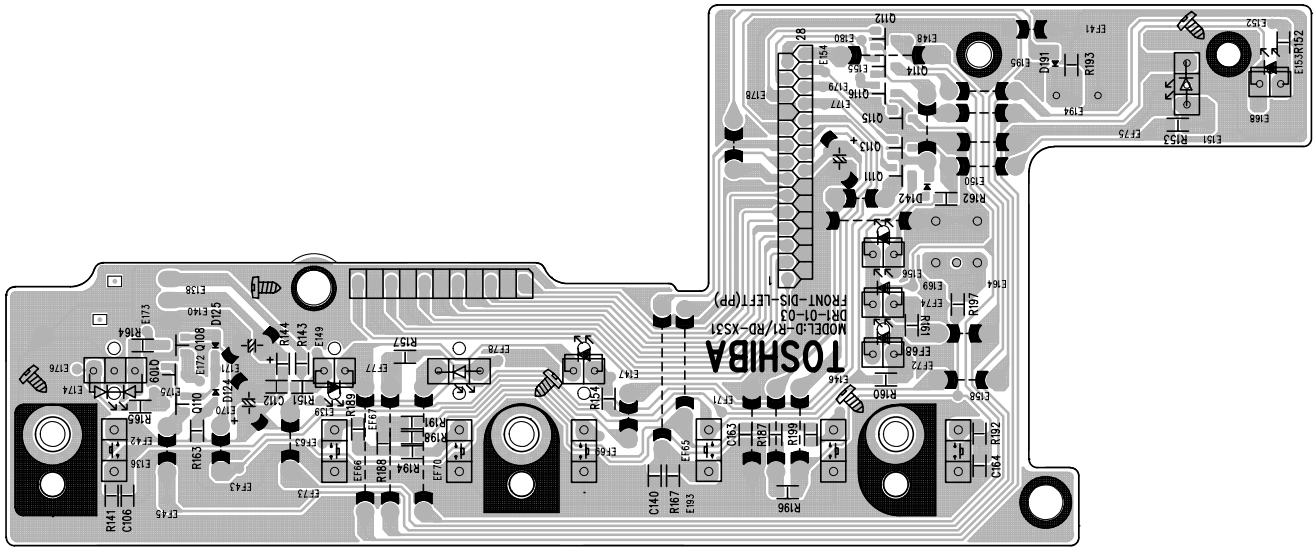


Fig. 3-5-2 EU03B Front (L) PC Board (Bottom side)

5-2. Front (R) PC Board

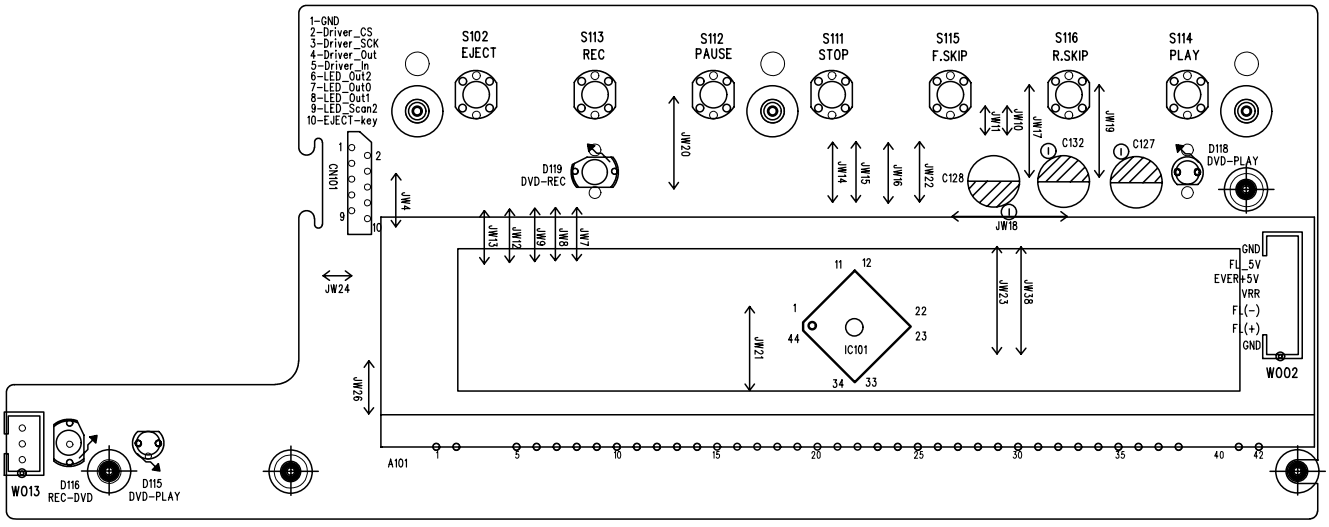


Fig. 3-5-3 EU03A Front (R) PC Board (Top side)

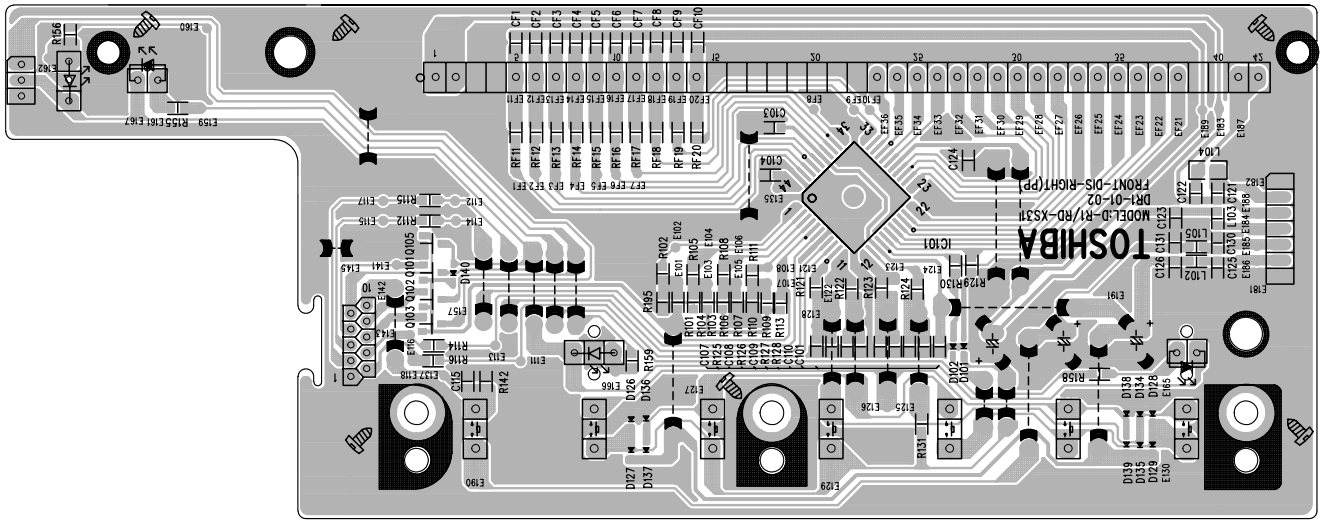


Fig. 3-5-4 EU03A Front (R) PC Board (Bottom side)

5-3. Front (Jack) PC Board

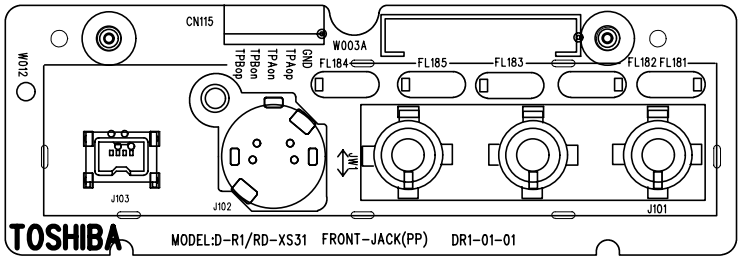


Fig. 3-5-5 EU55 Front (Jack) PC Board (Top side)

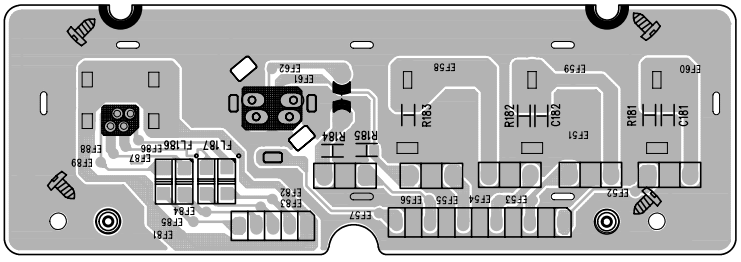


Fig. 3-5-6 EU55 Front (Jack) PC Board (Bottom side)

5-4. Digital PC Board

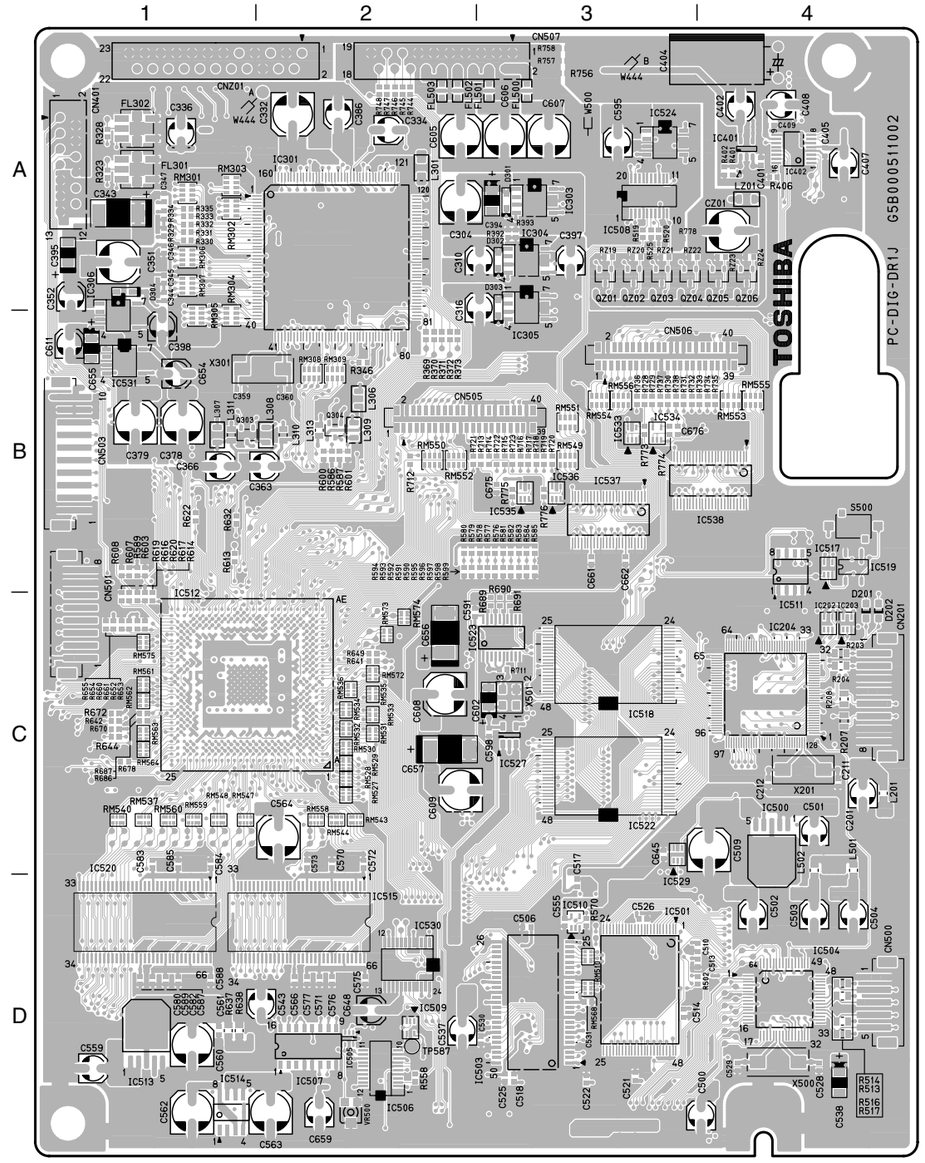


Fig. 3-5-7 EU01 Digital PC Board (Top side)

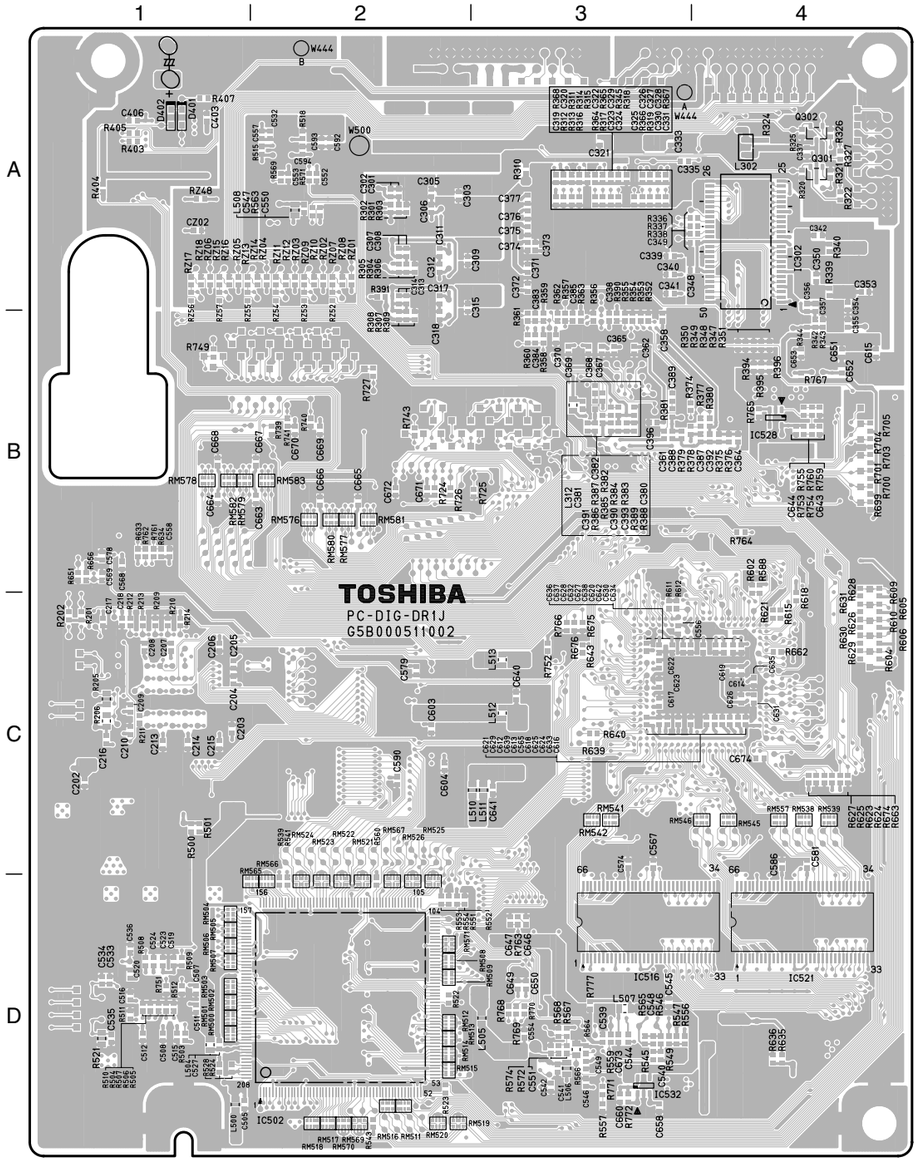


Fig. 3-5-8 EU01 Digital PC Board (Bottom side)

5-5. Mother PC Board

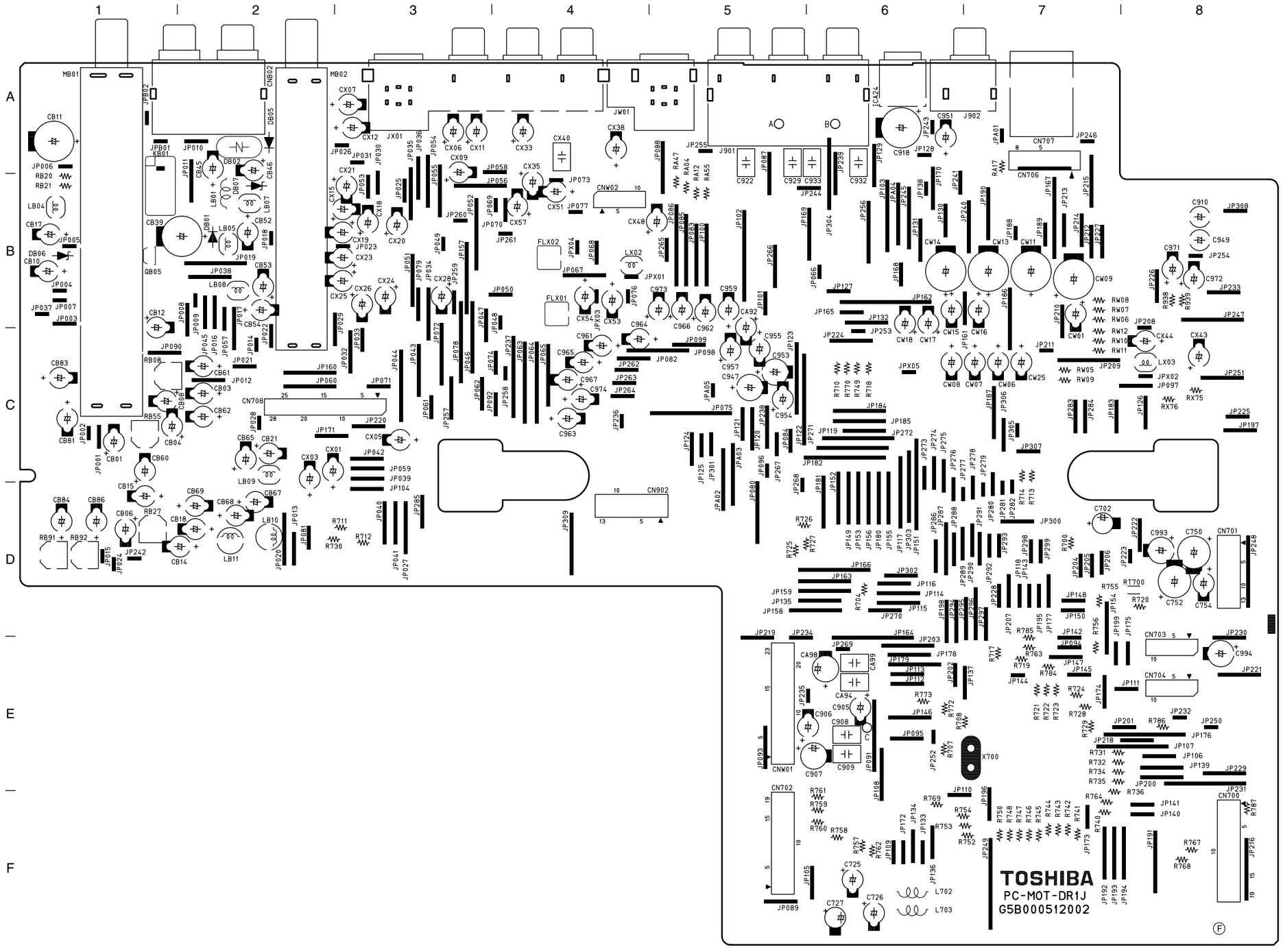


Fig. 3-5-9 EU05 Mother PC Board (Top side)

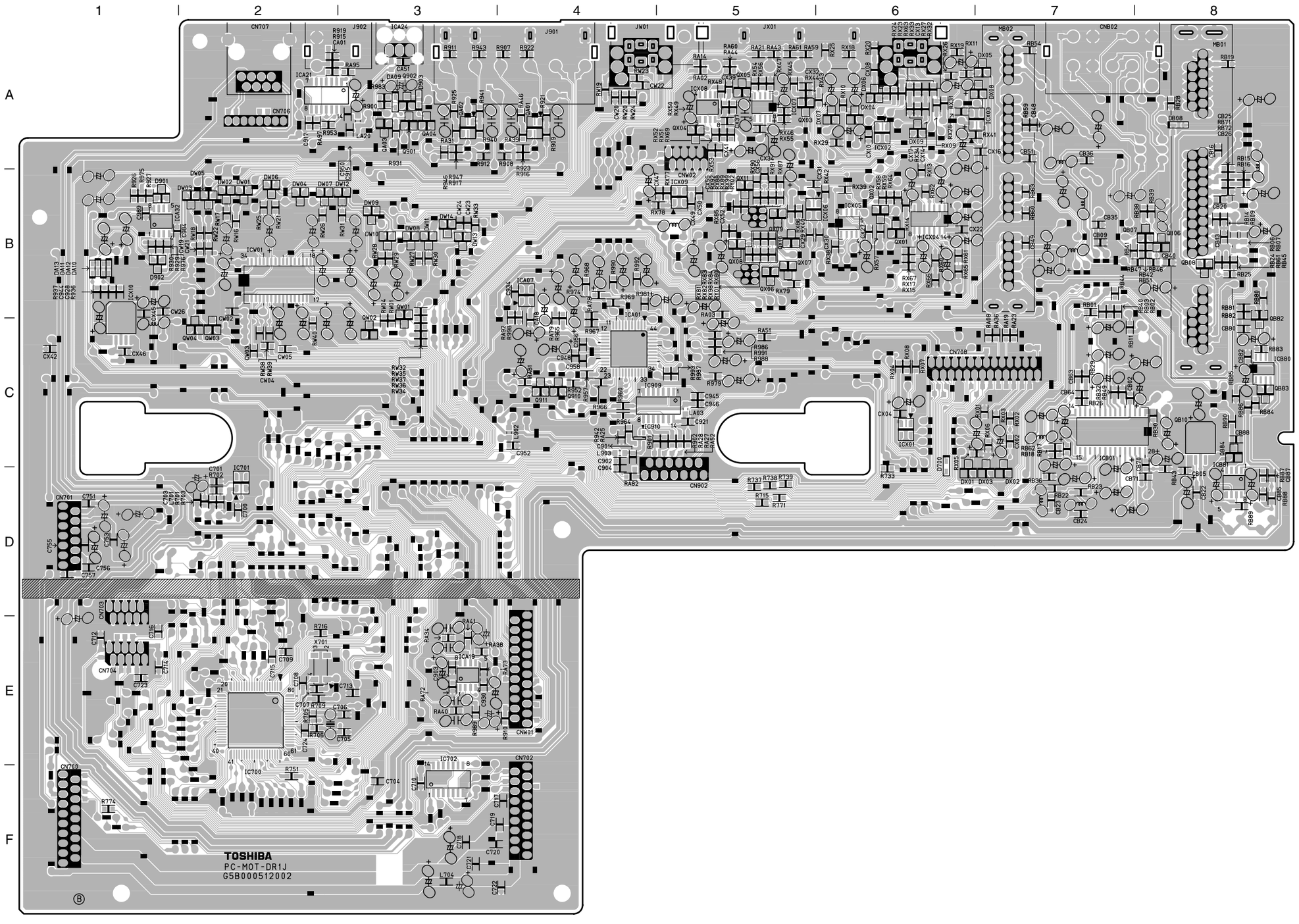


Fig. 3-5-10 EU05 Mother PC Board (Bottom side)

SECTION 4
PARTS LIST

SAFETY PRECAUTION

The parts identified by ! (⚠) mark are critical for safety. Replace only with part number specified.

The mounting position of replacement is to be identical with originals.

The substitute replacement parts which do not have the same safety characteristics as specified in the parts list may create shock, fire or other hazards.

NOTICE

The part number must be used when ordering parts in order to assist in processing, be sure to include the model number and description.

ABBREVIATIONS

1. Integrated Circuit (IC)

2. Capacitor (Cap)

- **Capacitance Tolerance (for Nominal Capacitance more than 10pF)**

Table 4-2-1

Symbol	B	C	D	F	G	J	K	M	N
Tolerance %	± 0.1	± 0.25	± 0.5	± 1	± 2	± 5	± 10	± 20	± 30

Symbol	P	Q	T	U	V	W	X	Y	Z
Tolerance %	+ 100 0	+ 30 – 10	+ 50 – 10	+ 75 – 10	+ 20 – 10	+ 100 – 10	+ 40 – 20	+ 150 – 10	+ 80 – 20

Ex. 10µF J = 10µF ± 5%

- **Capacitance Tolerance (for Nominal Capacitance 10pF or less)**

Table 4-2-2

Symbol	B	C	D	F	G
Tolerance pF	± 0.1	± 0.25	± 0.5	± 1	± 2

Ex. 10pF G = 10pF ± 2pF

3. Resistor (Res)

- **Resistance tolerance**

Table 4-3-1

Symbol	B	C	D	F	G	J	K	M
Tolerance %	± 0.1	± 0.25	± 0.5	± 1	± 2	± 5	± 10	± 20

Ex. 470ΩJ = 470Ω± 5%

4. EXPLODED VIEWS

4-1. Packing Assembly

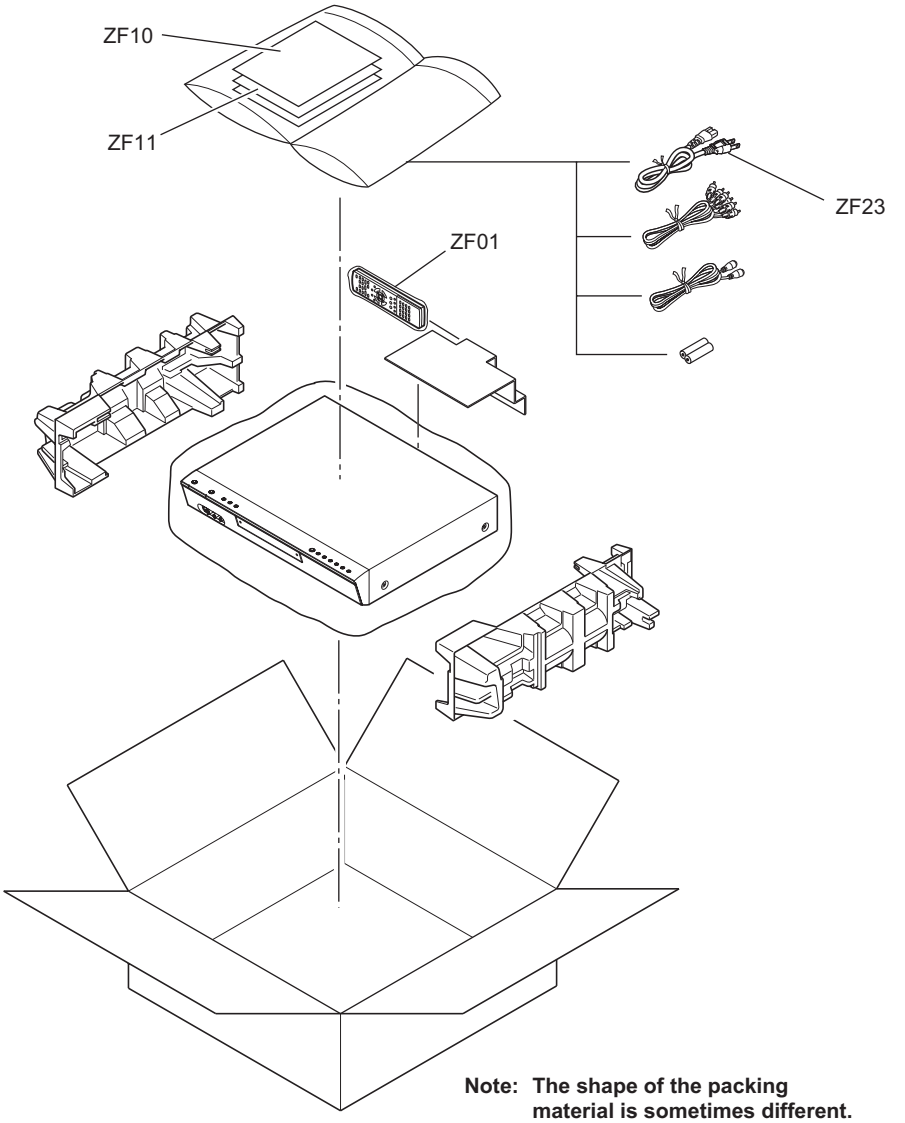


Fig. 4-4-1

4-2. Chassis Assembly

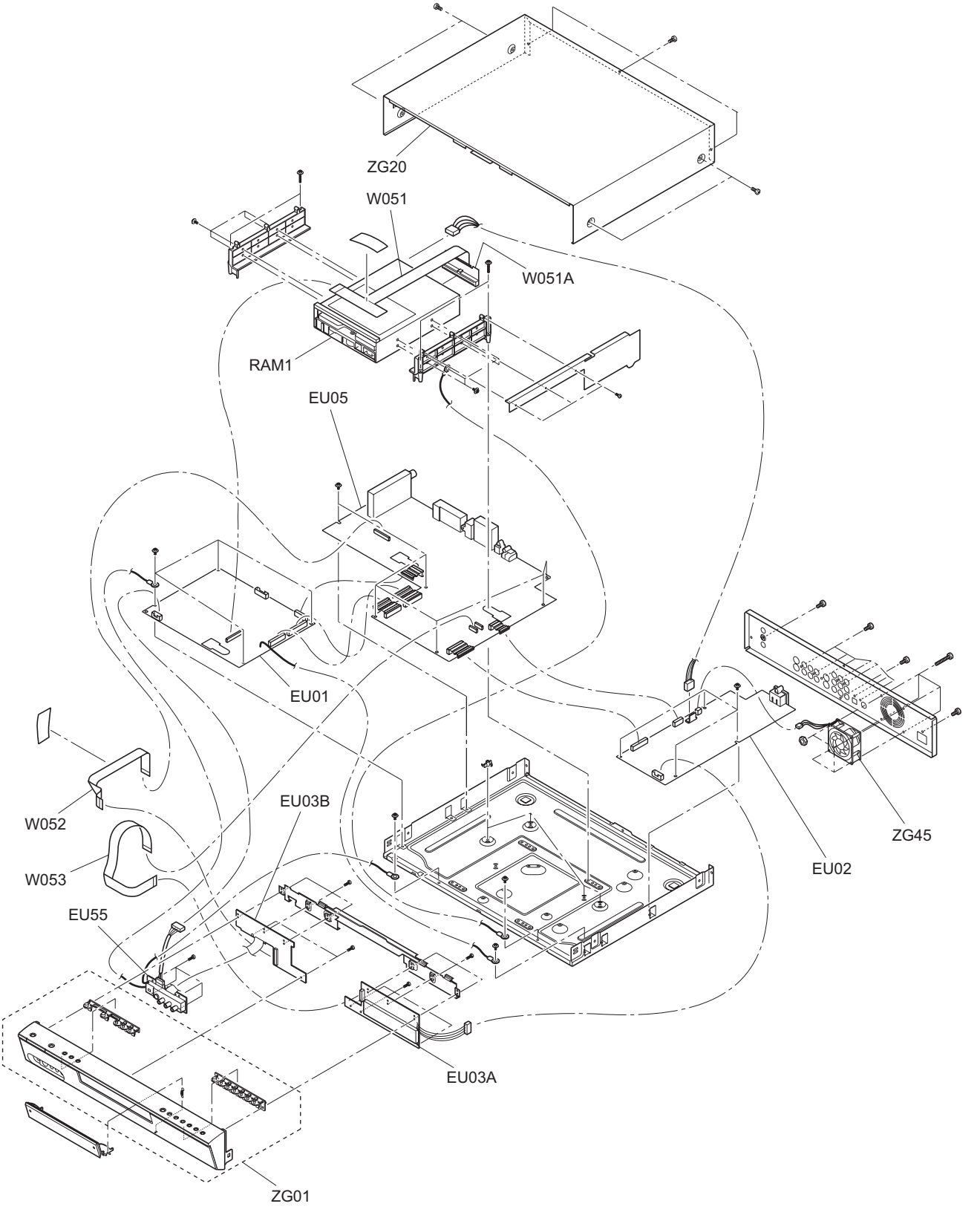


Fig. 4-4-2

5. PARTS LIST

	LOCATION NUMBER	PART NUMBER	DESCRIPTION	
			- MECHANICAL PARTS -	
!	RAM1	P000391340	DVD-RAM	SD-W3002-TC
	W051	P000387340	Cable,Flexible	FFC,40P,L360
	W051A	P000391300	CONV Unit,ATAPI-FFC	
	W052	P000387350	Cable,Flexible	FFC,28P,L320
	W053	P000387360	Cable,Flexible	FFC,10P,L220
	ZF01	P000387370	Remote Control Unit	SE-0105
!	ZF10	P000376390	Owners Manual,OP	English
!	ZF10	P000376480	Owners Manual,OP	French,DR1SC
!	ZF11	P000376380	Owners Manual,ST	English
!	ZF11	P000376470	Owners Manual,ST	French,DR1SC
!	ZF12	P000384770	Owners Manual,Q	English,DR1SU
!	ZF23	79088007	Power Cord	
	ZG01	P000387400	Front Panel	
	ZG20	P000387330	Cover,Top	
	ZG45	P000387390	Fan,DC	D06T12TS901

LOCATION NUMBER	PART NUMBER	DESCRIPTION	
		- ELECTRICAL PARTS -	
EU01	P000387260	PC Board Assy	Digital,D-R1SU
EU01	P000391330	PC Board Assy	Digital,D-R1SC
		- INTEGRATED CIRCUITS -	
IC301	P000391200	IC	UPD64011AGM-8ED-Y
IC302	P000391160	IC	K4S161622D-TC80000
IC303	P000377900	IC	MM1563DFBE
IC304	P000377900	IC	MM1563DFBE
IC305	P000391250	IC	MM1561FFBE
IC306	P000377900	IC	MM1563DFBE
IC401	79040379	IC	NJM2870F05
IC402	79040396	IC	PCM1742KE2K
IC500	P000391280	IC	PQ070XZ01ZPH
IC502	P000391220	IC	UPD72893AGD
IC503	79040163	IC	MT48LC1M16A1TG
IC504	P000391230	IC	UPD72852AGB-8EU
IC505	P000391130	IC	TC7S04FU
IC506	P000391190	IC	PLL1707DBQ
IC507	P000391270	IC	BA7082F
IC509	P000378050	IC	SN74AHC1G04HDCKR
IC510	P000378050	IC	SN74AHC1G04HDCKR
IC513	P000391280	IC	PQ070XZ01ZPH
IC515	P000391210	IC	K4H560838D-TCB000
IC516	P000391210	IC	K4H560838D-TCB000
IC517	P000378040	IC	SN74AHC1G08HDCKR
IC518	P000391170	IC	MBM29DL640E90TN
IC519	79040306	IC	PST594JMT
IC520	P000391210	IC	K4H560838D-TCB000
IC521	P000391210	IC	K4H560838D-TCB000
IC523	P000378030	IC	SN74LVC244APWR
IC527	P000391290	IC	PQ1X331M2ZPH
IC528	P000391240	IC	NJM2125F
IC529	P000378050	IC	SN74AHC1G04HDCKR
IC531	P000377900	IC	MM1563DFBE
		- TRANSISTORS -	
Q303	79050018	Transistor,Chip	2SA1162
Q304	79050018	Transistor,Chip	2SA1162
QZ01	79050018	Transistor,Chip	2SA1162
QZ02	79050018	Transistor,Chip	2SA1162
QZ03	79050018	Transistor,Chip	2SA1162
QZ04	79050018	Transistor,Chip	2SA1162
QZ05	79050018	Transistor,Chip	2SA1162
QZ06	79050018	Transistor,Chip	2SA1162
		- DIODES -	
D301	79060019	Diode,Chip	1SS355
D302	79060019	Diode,Chip	1SS355
D303	79060019	Diode,Chip	1SS355
D304	79060019	Diode,Chip	1SS355
D401	79060019	Diode,Chip	1SS355
D402	79060019	Diode,Chip	1SS355
		- MISCELLANEOUS -	
X301	79089168	Oscillator,Crystal	
X500	79089168	Oscillator,Crystal	
X501	P000377990	Crystal	27.0M
! EU02	P000387380	PC Board Assy	Power
EU03A	P000387290	PC Board Assy	Front(R),Display
		- INTEGRATED CIRCUITS -	
IC101	P000377960	IC	BU2879AK
		- TRANSISTORS -	
Q101	79050089	Transistor	RN2401
Q102	79050089	Transistor	RN2401
Q105	P000391100	Transistor	DTD143EK
		- DIODES -	
D101	79060022	Diode,Chip	1SS368
D102	79060022	Diode,Chip	1SS368
D118	79060077	Diode,LED	SLA-360MT
D119	79060100	Diode,LED	SLI-325URCT31
D126	79060022	Diode,Chip	1SS368
D127	79060022	Diode,Chip	1SS368
D128	79060022	Diode,Chip	1SS368
D129	79060022	Diode,Chip	1SS368
D134	79060022	Diode,Chip	1SS368
D135	79060022	Diode,Chip	1SS368
D136	79060022	Diode,Chip	1SS368
D137	79060022	Diode,Chip	1SS368
D138	79060022	Diode,Chip	1SS368
D139	79060022	Diode,Chip	1SS368
D140	79060022	Diode,Chip	1SS368
		- MISCELLANEOUS -	
A101	P000391090	Display FL	HNV-10SM28T
S102	P000391050	Switch,Tact	
S111	P000391050	Switch,Tact	
S112	P000391050	Switch,Tact	
S113	P000391050	Switch,Tact	
S114	P000391050	Switch,Tact	
S115	P000391050	Switch,Tact	
S116	P000391050	Switch,Tact	
EU03B	P000387410	PC Board Assy	Front(L)
		- INTEGRATED CIRCUITS -	
IC102	P000391110	Module,IR	GP1UM281RK
		- TRANSISTORS -	
Q108	79050089	Transistor	RN2401
Q109	79050009	Transistor,Chip	RN1401
Q110	79050089	Transistor	RN2401
Q111	79050089	Transistor	RN2401
Q112	79050089	Transistor	RN2401
Q113	79050089	Transistor	RN2401
Q114	79050089	Transistor	RN2401
Q115	P000391100	Transistor	DTD143EK
		- DIODES -	
D117	79060099	Diode,LED	SLI-325DCT31
D120	79060091	Diode,LED	LED, MVL-354B-T
D121	79060091	Diode,LED	LED, MVL-354B-T
D122	79060091	Diode,LED	LED, MVL-354B-T
D123	79060033	Diode,LED	
D124	79060022	Diode,Chip	1SS368
D125	79060022	Diode,Chip	1SS368
D142	79060022	Diode,Chip	1SS368
D191	79060022	Diode,Chip	1SS368
		- MISCELLANEOUS -	
BZ101	P000377950	Buzzer	PS1240P02AT
S101	P000391050	Switch,Tact	
S103	P000377940	Switch,Push-Lever	
S118	P000391050	Switch,Tact	
S120	P000391050	Switch,Tact	
S121	P000391050	Switch,Tact	
S122	P000391050	Switch,Tact	
EU05	P000387270	PC Board Assy	Mother
		- INTEGRATED CIRCUITS -	
IC700	79040330	IC	UPD78F4225YGC-8
IC701	P000391180	IC	PST3222NR
IC702	P000391150	IC	DC74HCT125M
IC909	P000391140	IC	TC74VHC125F
IC910	P000391120	IC	TC7SET04F
ICA01	P000377930	IC	AK5365VQ
ICA07	79040379	IC	NJM2870F05
ICA19	79040044	IC	NJM4580E
ICA21	79040074	IC	TC74HCU04AF
ICA24	79089024	Terminal,Optical	TOTX178
ICA32	79040044	IC	NJM4580E
ICB01	P000363360	IC	CXA2064M
ICB80	79040371	IC	BA7046F
ICB81	P000363370	IC	NJM2330MV
ICW01	P000391260	IC	MM1568DJBEG
ICX01	79040381	IC	MM1503XNRE
ICX02	79040381	IC	MM1503XNRE
ICX03	79040381	IC	MM1503XNRE
ICX04	79040382	IC	MM1140XFFE
ICX05	79040369	IC	MM1113XFBE
ICX06	P000377890	IC	MM1501XNRE
ICX09	79040379	IC	NJM2870F05
ICX10	79040374	IC	PQ05DZ1U
		- TRANSISTORS -	
Q901	79050100	Transistor,Chip	RN1402
Q902	79050001	Transistor,Chip	RN2402
Q910	79050100	Transistor,Chip	RN1402
Q911	79050100	Transistor,Chip	RN1402
QA01	79050014	Transistor,Chip	HN1C03F
QA02	79050014	Transistor,Chip	HN1C03F
QA03	79050100	Transistor,Chip	RN1402
QA04	79050001	Transistor,Chip	RN2402
QB08	79050016	Transistor,Chip	2SC2712
QB10	79040374	IC	PQ05DZ1U
QB82	79050016	Transistor,Chip	2SC2712
QB83	79050100	Transistor,Chip	RN1402
QB84	79050100	Transistor,Chip	RN1402

LOCATION NUMBER	PART NUMBER	DESCRIPTION	
QW02	79050100	Transistor,Chip	RN1402
QW03	79050018	Transistor,Chip	2SA1162
QW04	79050018	Transistor,Chip	2SA1162
QX01	79050100	Transistor,Chip	RN1402
QX02	79050016	Transistor,Chip	2SC2712
QX03	79050016	Transistor,Chip	2SC2712
QX06	79050018	Transistor,Chip	2SA1162
QX08	79050016	Transistor,Chip	2SC2712
QX09	79050018	Transistor,Chip	2SA1162
QX11	79050016	Transistor,Chip	2SC2712
		- DIODES -	
D700	79060019	Diode,Chip	1SS355
D901	79060028	Diode,Chip	1SS226
D902	79060028	Diode,Chip	1SS226
D903	79060019	Diode,Chip	1SS355
DA09	79060019	Diode,Chip	1SS355
DA10	79060098	Diode	RB521S-30TE-61
DA11	79060098	Diode	RB521S-30TE-61
DA12	79060098	Diode	RB521S-30TE-61
DA13	79060098	Diode	RB521S-30TE-61
DB06	79060096	Diode,Zener	MTZJT-7733D
DW03	79060028	Diode,Chip	1SS226
DW04	79060028	Diode,Chip	1SS226
DW05	79060028	Diode,Chip	1SS226
DW06	79060028	Diode,Chip	1SS226
DX02	79060028	Diode,Chip	1SS226
DX03	79060028	Diode,Chip	1SS226
DX05	79060028	Diode,Chip	1SS226
DX06	79060028	Diode,Chip	1SS226
DX08	79060028	Diode,Chip	1SS226
DX09	79060028	Diode,Chip	1SS226
		- RESISTORS -	
		- MISCELLANEOUS -	
J901	P000391070	Jack Board	9P
J902	P000391320	Jack Board	D-Audio Out
JW01	P000391060	Jack,S	
JX01	P000391080	Jack Board,S+6P	
! MB01	P000363390	Tuner,V/U	ENG36501G
RT700	P000377860	Thermister	NTSA0XH103EE1A0
X700	P000391040	Crystal	
X701	P000363400	Oscillator,Crystal	
EU55	P000387280	PC Board Assy	Jack
		- MISCELLANEOUS -	
J101	P000387310	Jack,Pin	
J102	P000387320	Jack,S	
J103	P000387300	Jack,DV	

LOCATION NUMBER	PART NUMBER	DESCRIPTION

SPECIFICATIONS

Power requirement during operation	33W
Power requirement at standby	2.7W or below (Eco mode: off) 0.8W or below (Eco mode: on)
Power supply	120V AC, 60 Hz
Mass	4.2kg
External dimension	Width 430 x Height 78 x Depth 325mm
Incoming channels	TV : 2-69CH, CATV : 1-125CH
Antenna input/output terminal	VHF/UHF : 75Ω, F Connector
Demodulation input/output terminal	0.67Vp-p (75Ω) Unbalanced, Pin jack
Signal system	Standard NTSC Color TV system
Laser	Semiconductor laser, Wavelength : 650nm/780nm
Format	DVD-VR format DVD-Video format
Image recording system	MPEG2
Sound recording system	Dolby digital, M1, M2, Linear PCM
VIDEO input	1.0Vp-p (75Ω), Sync signal negative, Pin jack x 2 systems, 2 at rear, 1 in front
VIDEO output	1.0Vp-p (75Ω), Sync signal negative, Pin jack x 2 systems, 2 at rear
S-VIDEO input	(Y) 1.0Vp-p (75Ω), Sync signal negative, Mini DIN4 Pin x 3 systems (C) 0.286Vp-p (75Ω), 2 at rear, 1 in front
S-VIDEO output	(Y) 1.0Vp-p (75Ω), Sync signal negative, Mini DIN4 Pin x 2 systems (C) 0.286Vp-p (75Ω), 2 at rear
COMPONENT output (Y, P_B, P_R)	Y output (green), 1.0Vp-p (75Ω), Sync signal negative, Pin jack x 1 system P_B, P_R output (blue, red), 0.7Vp-p (75Ω), Pin jack x 1 system each
AUDIO input	2.0V (rms), 50kΩ or below, pin jack (L, R) x 3 systems 2 at rear, 1 in front
AUDIO output	2.0V (rms), 200Ω or above, pin jack (L, R) x 2 systems 2 at rear
DIGITAL AUDIO output BITSTREAM/PCM (Optical terminal)	Optical connector x 1 system
DIGITAL AUDIO output BITSTREAM/PCM (Coaxial terminal)	0.5Vp-p (75Ω), pin jack x 1 system
DV input	4-pin x 1 in front
Remote control	Wireless remote control (SE-R0105)
Operating conditions	Temperature : 41°F to 95°F (5°C to 35°C), Position: Horizontal
Clock display	24 hour digital display
Clock accuracy	Quartz (monthly deviation : approximately ±30 seconds)

- The design and specifications may change without prior notice.
- The Illustrations and screens described in this manual may be exaggerated or simplified for easy recognition and may be slightly different from the actual unit.

TOSHIBA CORPORATION
1-1, SHIBAURA 1-CHOME, MINATO-KU, TOKYO 105-8001, JAPAN