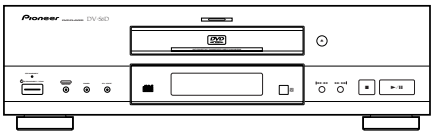
Service Manual



ORDER NO.
RRV2228

DVD PLAYER
DV-S6D

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Type	Model	Power Requirement	Region No.	Remarks
	DV-S6D			
LB	◯	AC110V	3	

CONTENTS

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PIONEER ELECTRONIC (EUROPE) N.V. Haven 1087, Keetberglaan 1, 9120 Melsele, Belgium
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T – ZZE OCT. 1999 Printed in Japan

1. SAFETY INFORMATION

This service manual is intended for qualified service technicians ; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING
This product contains lead in solder and certain electrical parts contain chemicals which are known to the state of California to cause cancer, birth defects or other reproductive harm.

Health & Safety Code Section 25249.6 – Proposition 65

NOTICE
(FOR CANADIAN MODEL ONLY)
Fuse symbols (fast operating fuse) and/or (slow operating fuse) on PCB indicate that replacement parts must be of identical designation.

REMARQUE
(POUR MODÈLE CANADIEN SEULEMENT)
Les symboles de fusible (fusible de type rapide) et/ou (fusible de type lent) sur CCI indiquent que les pièces de remplacement doivent avoir la même désignation.

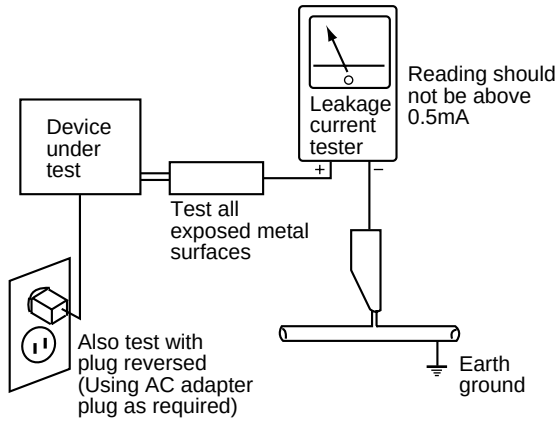
(FOR USA MODEL ONLY)

1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5mA.



AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual.

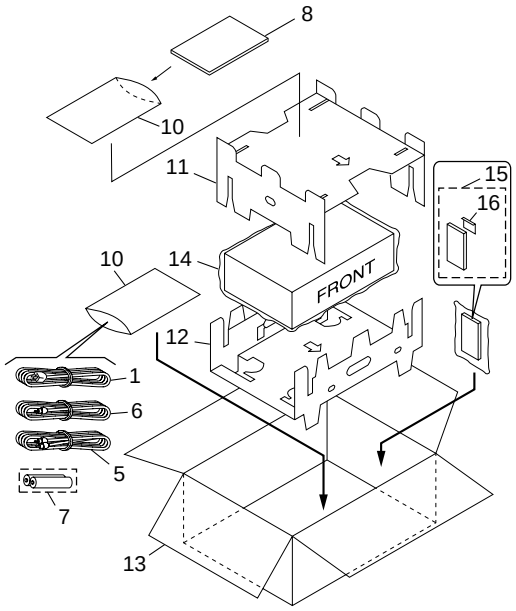
The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

2. EXPLODED VIEWS AND PARTS LIST

NOTES: ● *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
● *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
● *Screws adjacent to ▼ mark on the product are used for disassembly.*

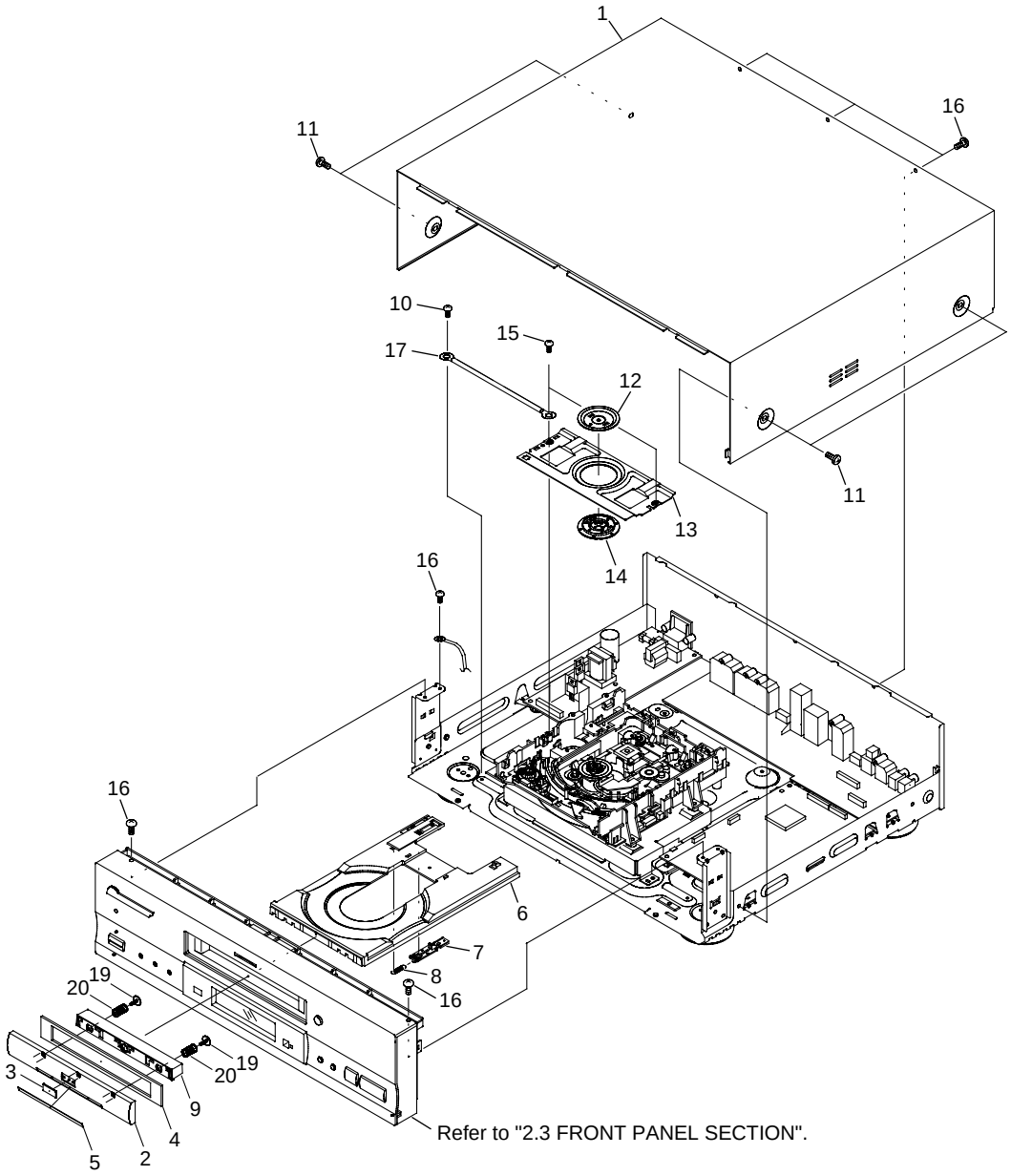
2.1 PACKING



● PACKING PARTS LIST

Mark	No.	Description	Part No.
⚠	1	Power Cord	ADG7006
	2	• • • • •	
	3	• • • • •	
	4	• • • • •	
	5	Audio Cord (L=1.5m)	VDE1033
	6	Video Cord (L=1.5m)	VDE1034
NSP	7	Dry Cell Battery(R6P,AA)	VEM-013
	8	Operating Instructions (English/Trad-Chinese)	VRD1091
	9	• • • • •	
	10	Polyethylene Bag (0.03×200×300)	VHL1051
	11	Protector A	VHB1065
	12	Protector B	VHB1076
	13	Packing Case	VHG1878
	14	Mirror Mat Sheet	VHL1012
	15	Remote Control Unit (CU-DV037)	VXX2628
	16	Battery Cover	VNK4422

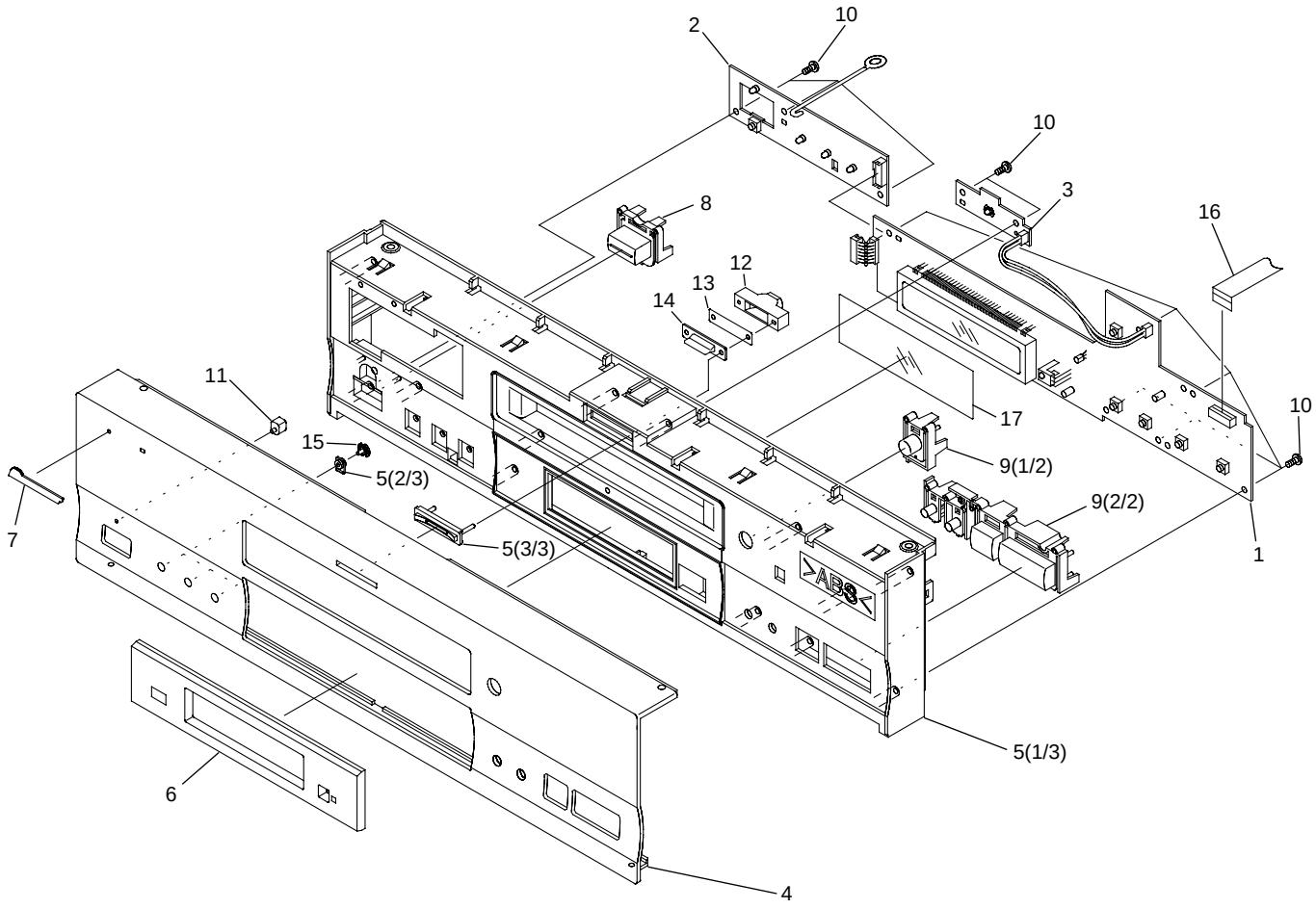
2.2 EXTERIOR SECTION



● EXTERIOR SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	Bonnet S	VXX2617
	2	Door Panel	VNK4524
	3	DVD Plate	VAM1077
	4	Door Cushion	VEC2103
	5	Door Plate	VEC2104
	6	Tray	VNK4333
	7	Tray Stopper	VNL1739
	8	Tray Stopper Spring	VBH1277
	9	Door Holder	VNK4325
	10	Screw	IBZ30P060FCC
	11	Screw	BCZ40P060FNI
	12	Clamper Plate	VNE2068
	13	Bridge	VNE2069
	14	Clamper	VNL1738
	15	Screw	BPZ26P080FZK
	16	Screw	BBZ30P080FMC
NSP	17	Cord with Plug	DE010VF0
	18	• • • • •	
	19	Screw	VBA1057
	20	Door Spring	VBH1305

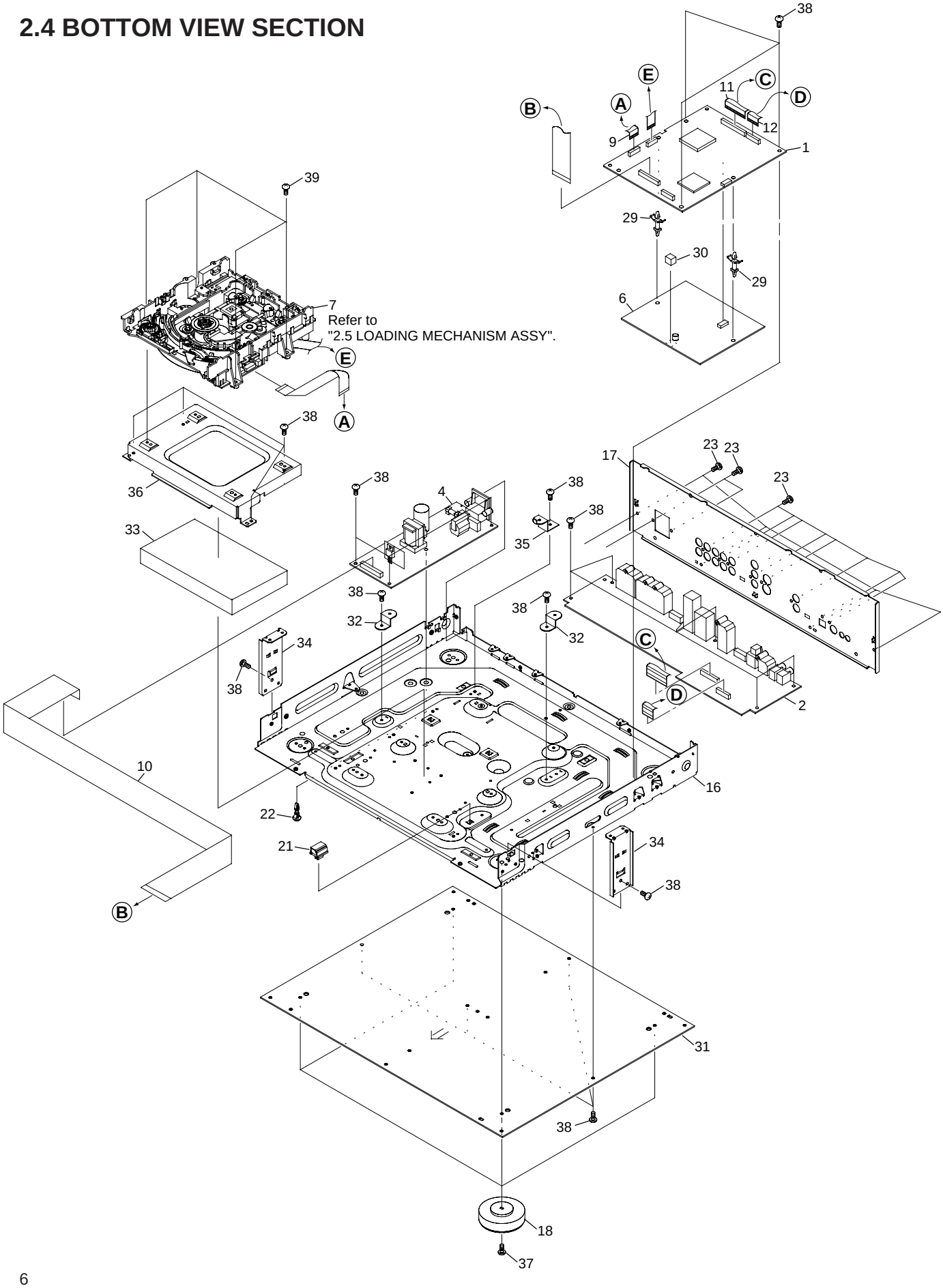
2.3 FRONT PANEL SECTION



● FRONT PANEL SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	FLKY Assy	VWG2093
NSP	2	PWSB Assy	VWG2098
NSP	3	DILB Assy	VWG2100
	4	Front Almi	VAH1328
	5	Panel Base	VNK4323
	6	FL Lens	VEC2089
	7	Name Plate	PAN1377
	8	PW Button (POWER)	VNK4059
	9	Main Key	VNK4095
	10	Screw	BBZ30P080FMC
	11	LED Lens	PNW2019
	12	Illumi Holder	VNK4098
	13	Illumination Filter	VEC1950
	14	Illumination Lens	VNK4168
	15	LED Lens	VNK4326
	16	Flexible Cable (15P) (FLKY CN101 ↔ DVDM CN602)	VDA1728
	17	FL Filter	VEC2016

2.4 BOTTOM VIEW SECTION

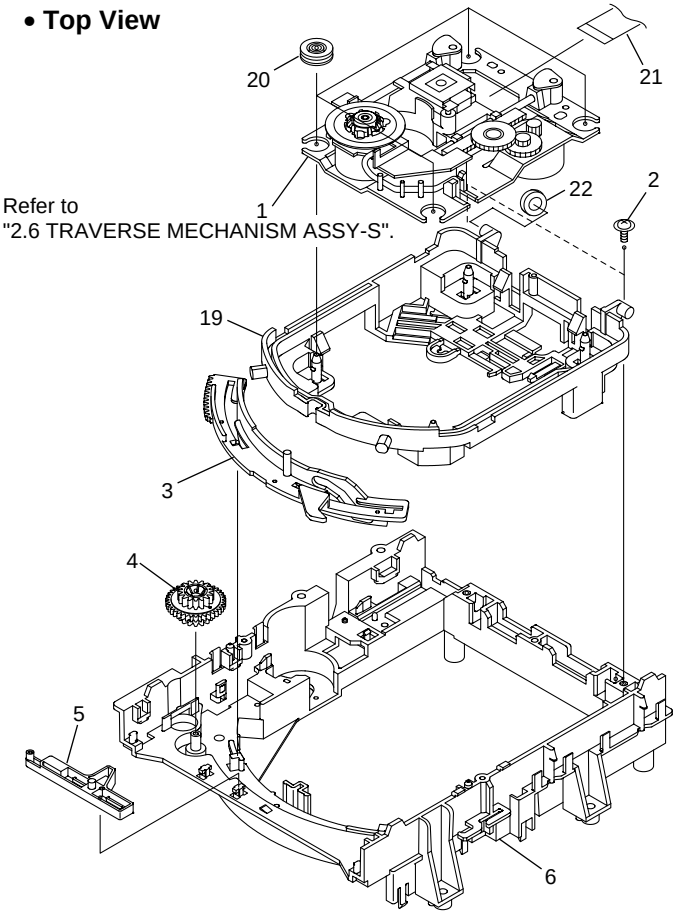


● BOTTOM VIEW SECTION PARTS LIST

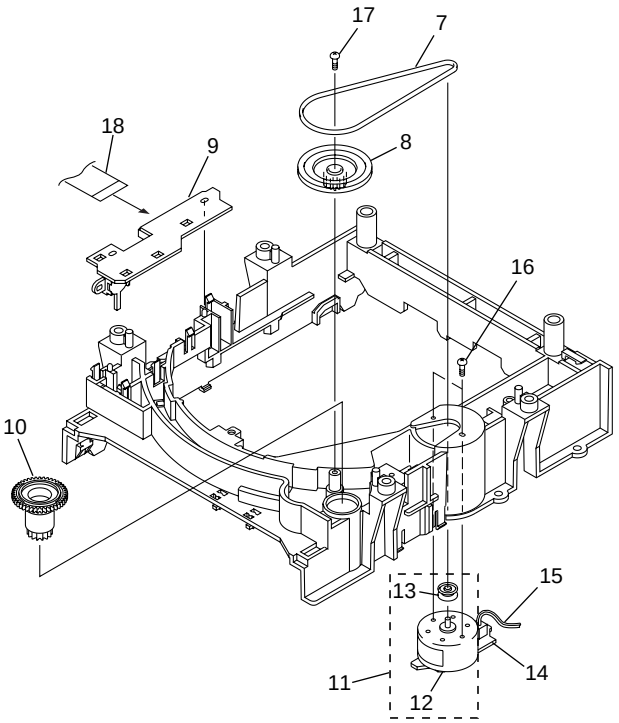
Mark	No.	Description	Part No.
	1	DVDM Assy	VWS1384
	2	JCKB Assy	VWV1682
	3	• • • • •	
⚠	4	POWER SUPPLY Assy	VWR1316
	5	• • • • •	
	6	VQEB Assy	VWV1669
NSP	7	Loading Mechanism Assy	VWT1164
	8	• • • • •	
	9	Flexible Cable (12P) (DVDM CN3 ↔ LOSB CN301)	VDA1692
	10	Flexible Cable (26P) (DVDM CN2 ↔ POWER SUPPLY CN201)	VDA1668
	11	Flexible Cable (29P) (DVDM CN905 ↔ JCKB CN666)	VDA1771
	12	Flexible Cable (15P) (DVDM CN901 ↔ JCKB CN999)	VDA1772
	13	• • • • •	
	14	• • • • •	
	15	• • • • •	
NSP	16	Base Chassis	VNA1979
	17	Rear Panel	VNA2113
	18	Insulator	PNW2766
	19	• • • • •	
	20	• • • • •	
	21	PCB Hinge	VEC1174
NSP	22	PCB Holder	PNW2029
	23	Screw	BBZ30P080FMC
	24	• • • • •	
	25	• • • • •	
	26	• • • • •	
	27	• • • • •	
	28	• • • • •	
	29	PCB Spacer	VEC2077
	30	PCB Support Cushion	VEC2079
NSP	31	Bottom Plate	PNA2376
NSP	32	PCB Base	RNE1221
	33	Mecha Cushion	VEC2011
NSP	34	Panel Stay	VNE2156
NSP	35	Stay	VNE2214
NSP	36	Mecha Holder	VNE2220
	37	Screw	ABZ30P080FMC
	38	Screw	IBZ30P060FCC
	39	Screw	BBZ30P100FMC

2.5 LOADING MECHANISM ASSY

• **Top View**



• **Bottom View**

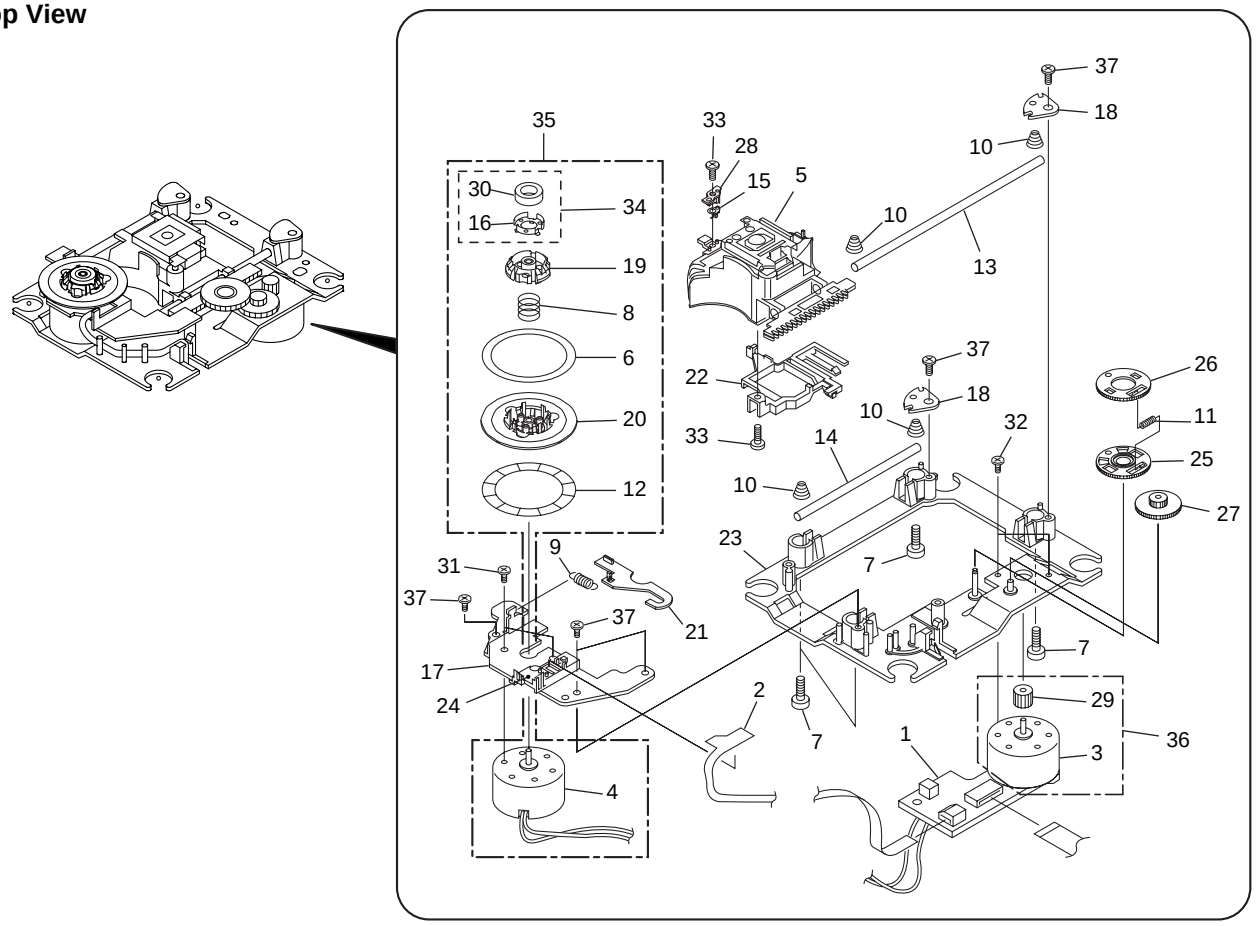


● LOADING MECHANISM ASSY PARTS LIST

Mark	No.	Description	Part No.
	1	Traverse Mechanism Assy-S	VXX2653
	2	Screw	DBA1006
	3	Drive Cam	VNL1736
	4	Drive Gear	VNL1735
	5	Lock Plate	VNL1820
	6	Loading Base	VNL1730
	7	Belt	VEB1260
	8	Gear Pulley	VNL1733
NSP	9	LOSB Assy	VWG1885
	10	Loading Gear	VNL1734
	11	Loading Motor Assy	VXX2505
	12	DC Motor / 0.3W	PXM1027
	13	Motor Pulley	PNW1634
NSP	14	LOMB Assy	VWG1886
	15	Connector Assy (LOMB CN401 ↔ LOSB CN303)	VKP2198
	16	Screw	VBA1055
	17	Screw	Z39-019
	18	Flexible Cable (08P) (LOSB CN302 ↔ SMEB CN202)	VDA1698
	19	Float Base	VNL1815
	20	Floating Rubber	VEB1286
	21	Flexible Cable (24P) (Pickup Assy ↔ DVDM CN4)	VDA1701
	22	Cushion	VEB1312

2.6 TRAVERSE MECHANISM ASSY-S

• **Top View**

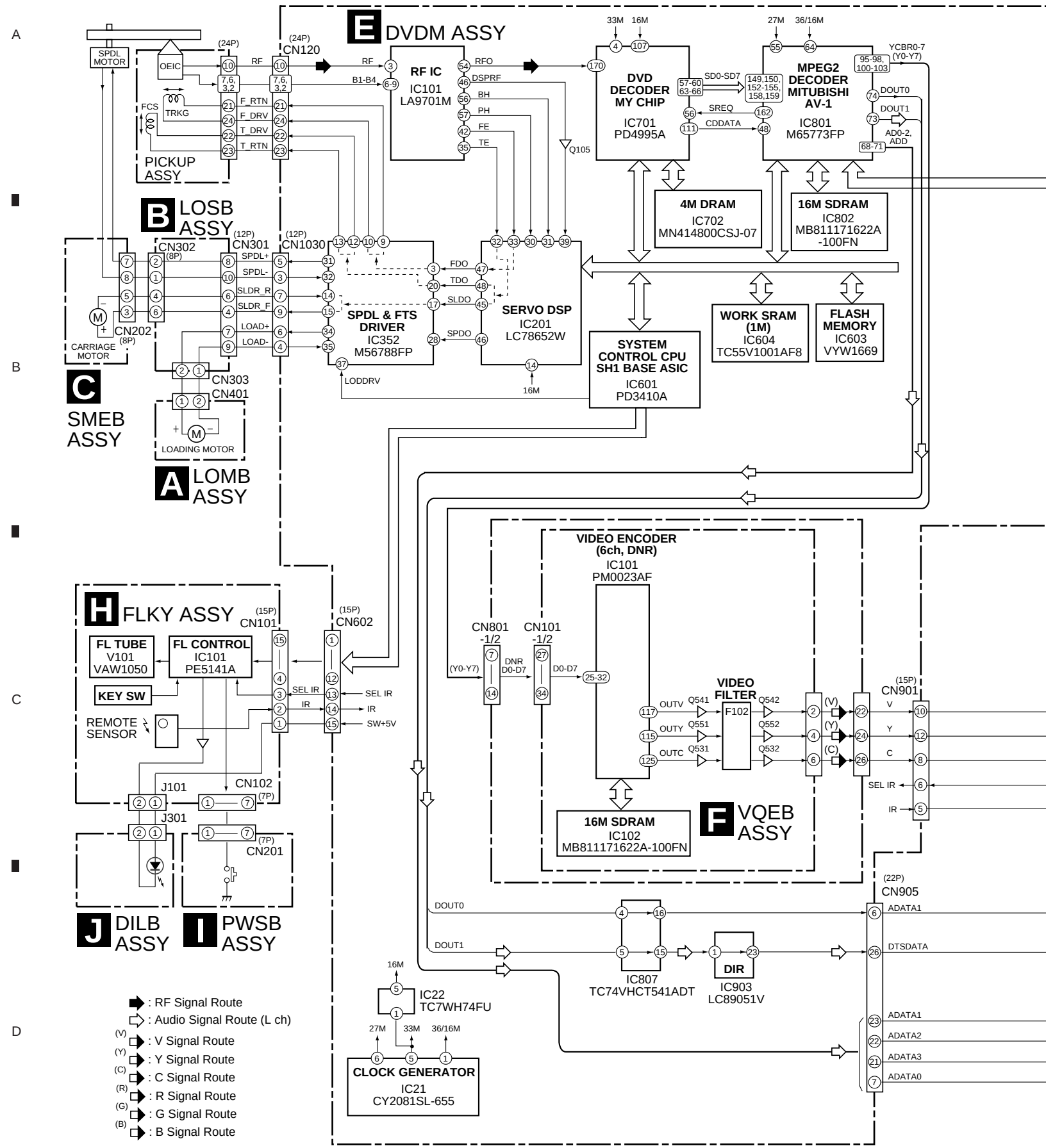


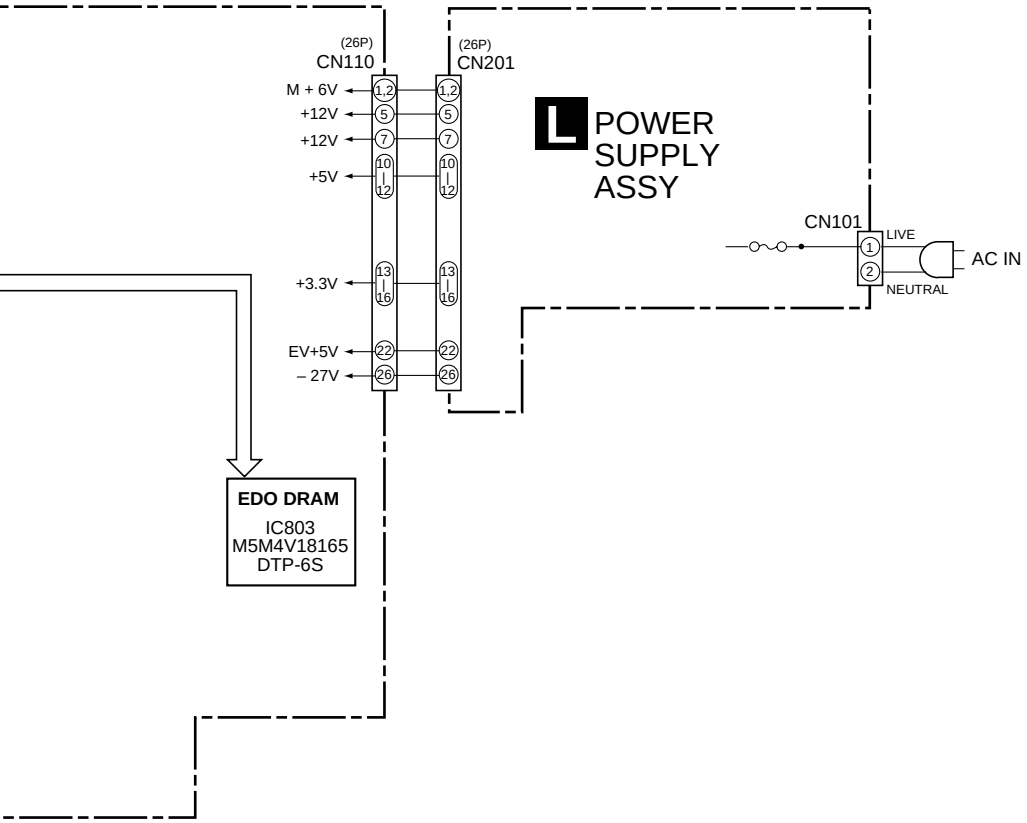
● TRAVERSE MECHANISM ASSY-S PARTS LIST

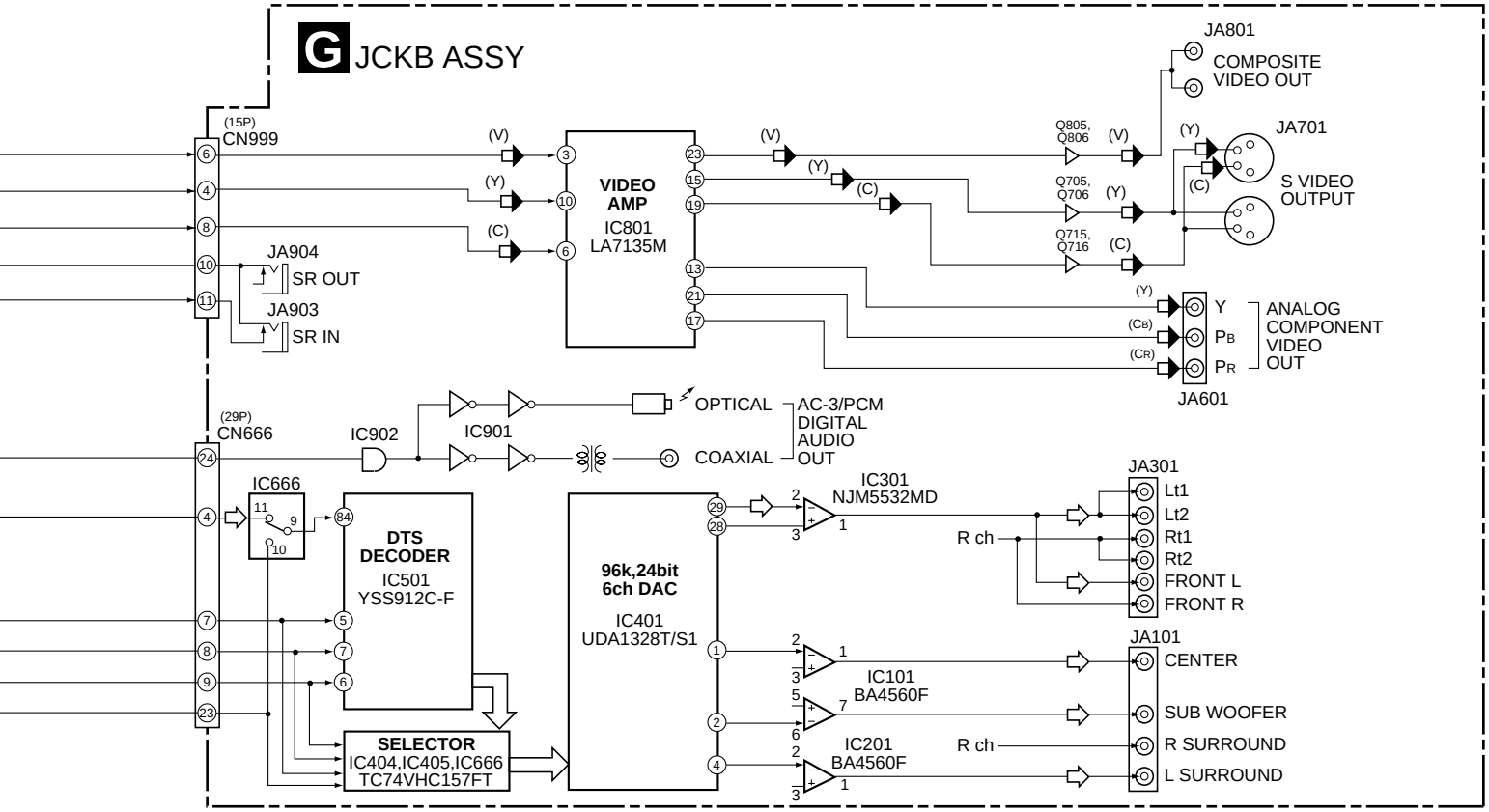
Mark	No.	Description	Part No.
NSP	1	SMEB Assy	VWG2048
NSP	2	FGSB Assy	VWG2009
NSP	3	Motor	VXM1079
NSP	4	Motor	VXM1078
⚠ NSP	5	Pickup Assy	VWY1055
	6	Table Sheet	DEC2040
	7	Screw	VBA1058
	8	Centering Spring	VBH1278
	9	Hook Spring	VBH1317
	10	Skew Spring	VBH1303
	11	Gear Spring	VBH1308
NSP	12	Reflected Sheet	VEC1959
	13	Guide Bar	VLL1504
	14	Sub-guide Bar	VLL1505
	15	Hold Spring	VNC1017
NSP	16	Magnet Holder	VNE2070
NSP	17	Motor Base	VNE2154
NSP	18	Cover	VNE2155
	19	Centering Ring	VNL1746
NSP	20	Disc Table	VNL1747
	21	Hook	VNL1770
	22	FFC Holder	VNL1802
	23	Mechanism Base	VNL1806
	24	FG Holder	VNL1807
	25	Gear A	VNL1808
	26	Gear B	VNL1809
	27	Gear C	VNL1810
	28	Slider	VNL1811
	29	Gear D	VNL1814
NSP	30	Magnet	VYM1024
	31	Screw	JFZ17P025FZK
	32	Screw	JGZ17P028FMC
	33	Screw	VBA1051
	34	Magnet Holder Assy	VXX2507
	35	Spindle Motor Assy	VXX2649
	36	Carriage Motor Assy	VXX2650
	37	Screw	PBA1069

3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

3.1 BLOCK DIAGRAM

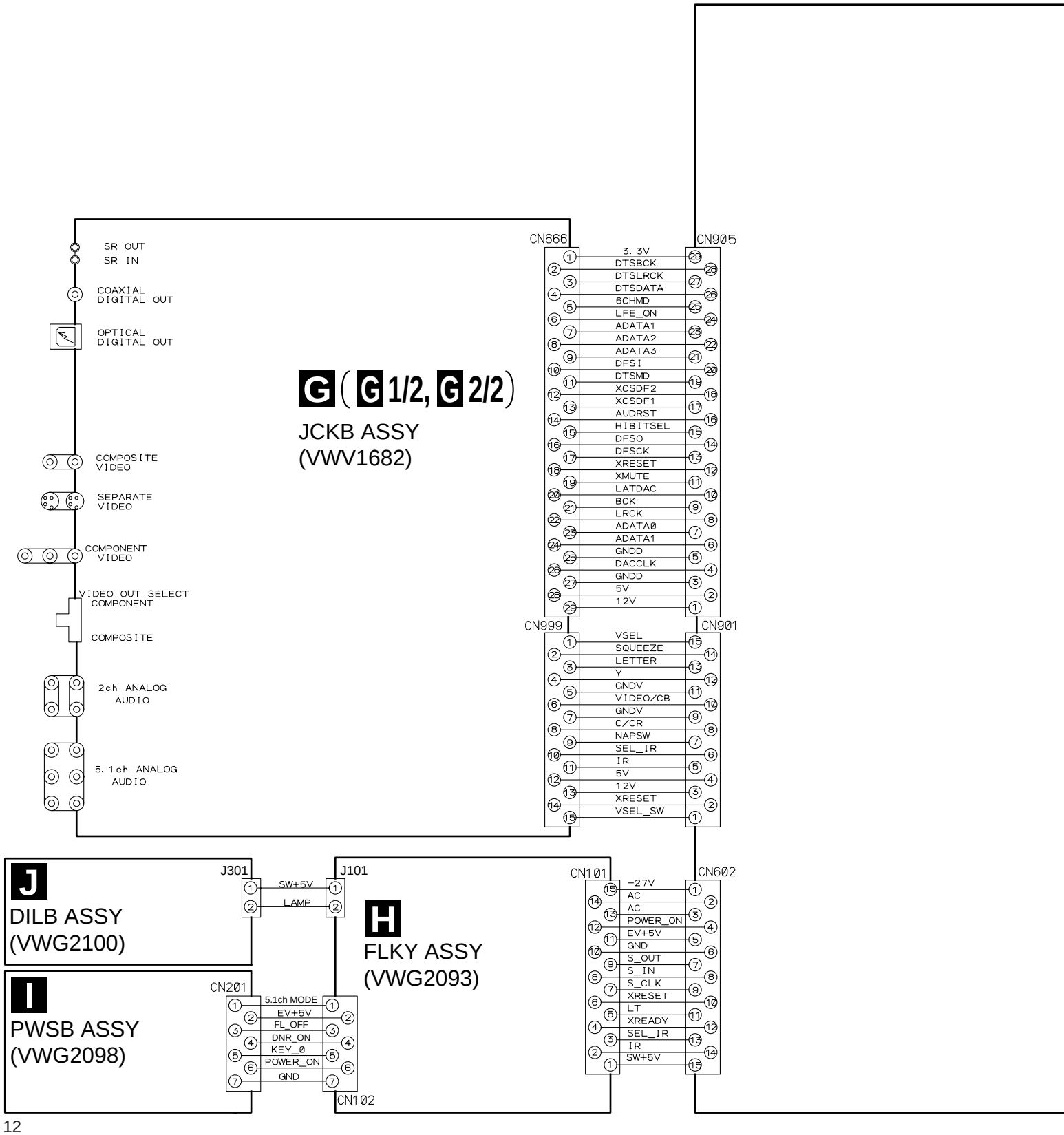


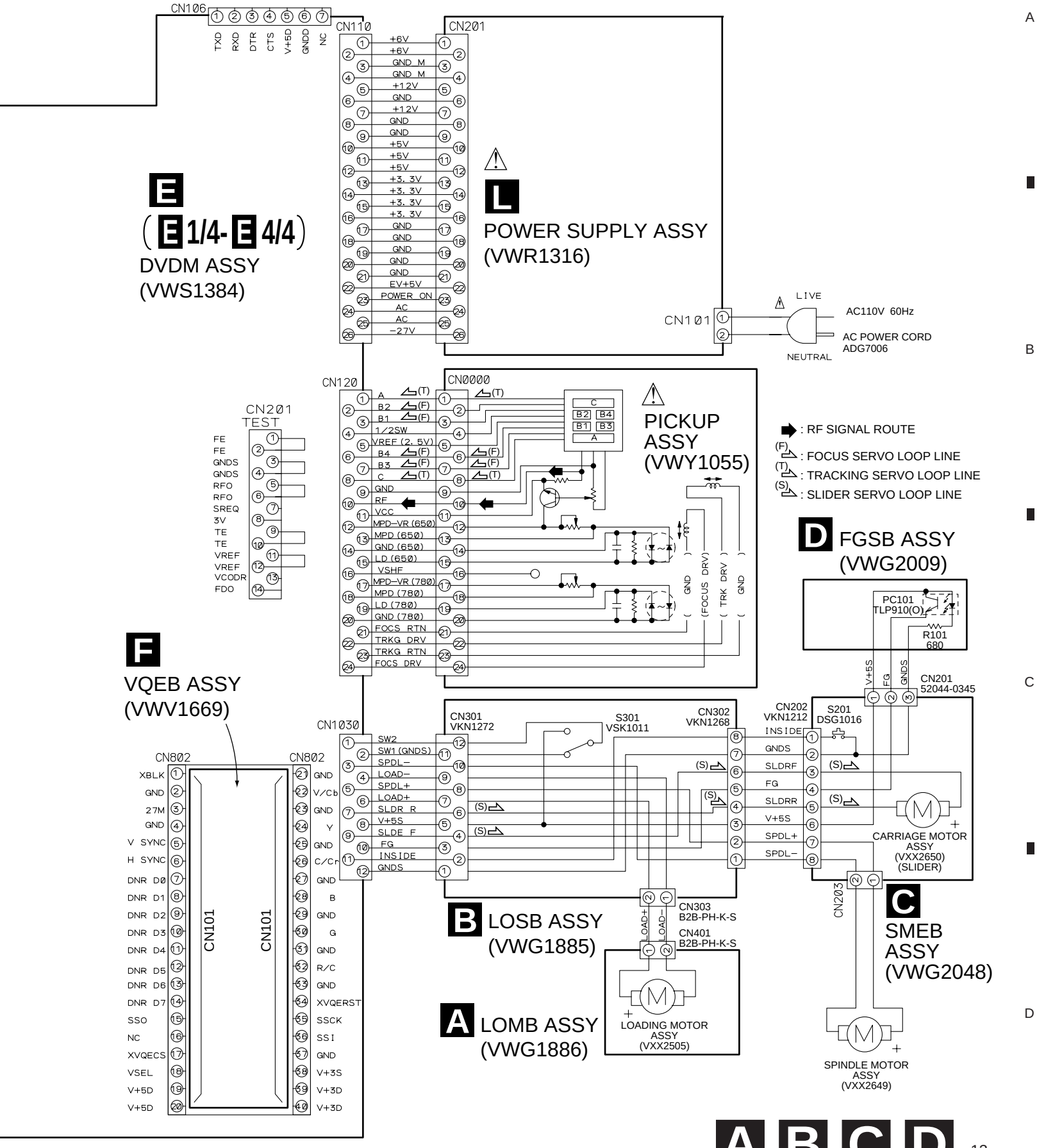

(26P)
CN110
(26P)
CN201
L POWER SUPPLY ASSY
M + 6V
+12V
+12V
+5V
+3.3V
EV+5V
– 27V
CN101
LIVE
NEUTRAL
AC IN
EDO DRAM
IC803
M5M4V18165
DTP-6S


G JCKB ASSY
(15P)
CN999
VIDEO AMP
IC801
LA7135M
JA904
SR OUT
JA903
SR IN
JA801
COMPOSITE VIDEO OUT
JA701
S VIDEO OUTPUT
Q805, Q806
Q705, Q706
Q715, Q716
ANALOG COMPONENT VIDEO OUT
JA601
(29P)
CN666
IC902
IC901
OPTICAL
COAXIAL
AC-3/PCM DIGITAL AUDIO OUT
IC666
DTS DECODER
IC501
YSS912C-F
SELECTOR
IC404,IC405,IC666
TC74VHC157FT
96k,24bit 6ch DAC
IC401
UDA1328T/S1
IC301
NJM5532MD
IC101
BA4560F
IC201
BA4560F
R ch
R ch
JA301
Lt1
Lt2
Rt1
Rt2
FRONT L
FRONT R
JA101
CENTER
SUB WOOFER
R SURROUND
L SURROUND

3.2 LOMB, LOSB, SMEB, FGSB ASSYS and OVERALL WIRING DIAGRAM

Note : When ordering service parts, be sure to refer to "EXPLODED VIEWS and PARTS LIST" or "PCB PARTS LIST".

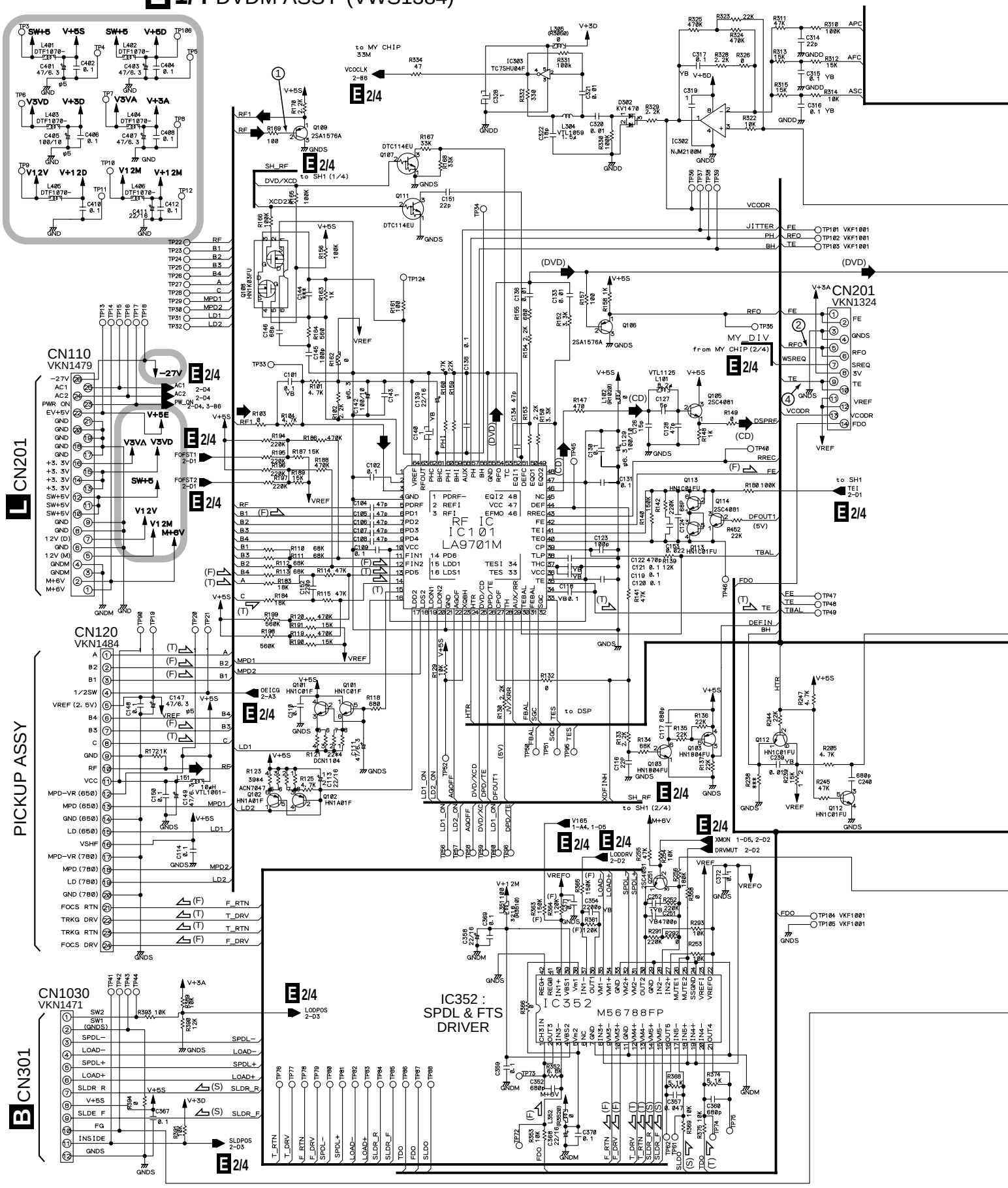



CN106
TXD
RXD
DTR
CTS
V+5D
GNDD
NC
CN110
CN201
+6V
+6V
GND_M
GND_M
+12V
GND
+12V
GND
GND
+5V
+5V
+5V
+3.3V
+3.3V
+3.3V
+3.3V
GND
GND
GND
GND
EV+5V
POWER ON
AC
AC
−27V
E
(E1/4-E4/4)
DVDM ASSY
(VWS1384)
L
POWER SUPPLY ASSY
(VWR1316)
CN101
LIVE
AC110V 60Hz
AC POWER CORD
ADG7006
NEUTRAL
CN120
CN0000
A
B2
B1
1/2SW
VREF (2.5V)
B4
B3
C
GND
RF
VCC
MPD-VR (650)
MPD (650)
GND (650)
LD (650)
VSHF
MPD-VR (780)
MPD (780)
LD (780)
GND (780)
FOCS RTN
TRKG DRV
TRKG RTN
FOCS DRV
PICKUP
ASSY
(VWY1055)
CN201
TEST
FE
FE
GNDS
GNDS
RFO
RFO
SREQ
3V
TE
TE
VREF
VREF
VCODR
FDO
: RF SIGNAL ROUTE
: FOCUS SERVO LOOP LINE
: TRACKING SERVO LOOP LINE
: SLIDER SERVO LOOP LINE
D
FGSB ASSY
(VWG2009)
PC101
TLP910(O)
R101
680
V+5S
FG
GNDS
CN201
52044-0345
F
VQEB ASSY
(VWV1669)
CN1030
CN301
VKN1272
S301
VSK1011
CN302
VKN1268
CN202
VKN1212
S201
DSG1016
SW2
SW1 (GNDS)
SPDL−
LOAD−
SPDL+
LOAD+
SLDR R
V+5S
SLDE F
FG
INSIDE
GNDS
INSIDE
GNDS
SLDRF
FG
SLDRR
V+5S
SPDL+
SPDL−
CARRIAGE MOTOR
ASSY
(VXX2650)
(SLIDER)
CN203
CN802
CN802
XBLK
GND
27M
GND
V SYNC
H SYNC
DNR D0
DNR D1
DNR D2
DNR D3
DNR D4
DNR D5
DNR D6
DNR D7
SSO
NC
XVQECS
VSEL
V+5D
V+5D
CN101
CN101
GND
V/Cb
GND
Y
GND
C/Cr
GND
B
GND
G
GND
R/C
GND
XVQERST
SSCK
SSI
GND
V+3S
V+3D
V+3D
B
LOSB ASSY
(VWG1885)
CN303
B2B-PH-K-S
CN401
B2B-PH-K-S
LOAD+
LOAD−
A
LOMB ASSY
(VWG1886)
LOADING MOTOR
ASSY
(VXX2505)
C
SMEB
ASSY
(VWG2048)
SPINDLE MOTOR
ASSY
(VXX2649)

DV-S6D

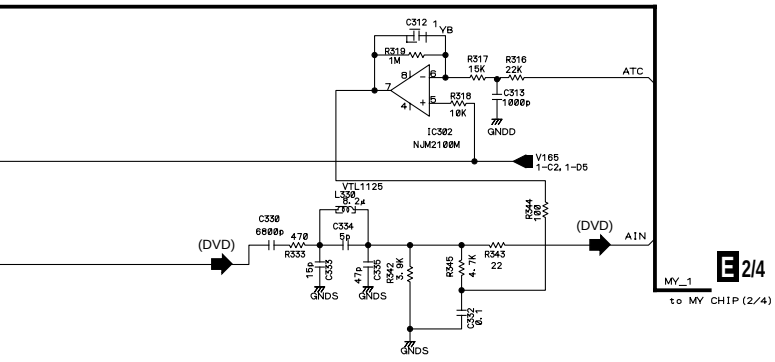
3.3 DVDM ASSY (1/4)

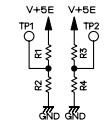
E 1/4 DVDM ASSY (VWS1384)



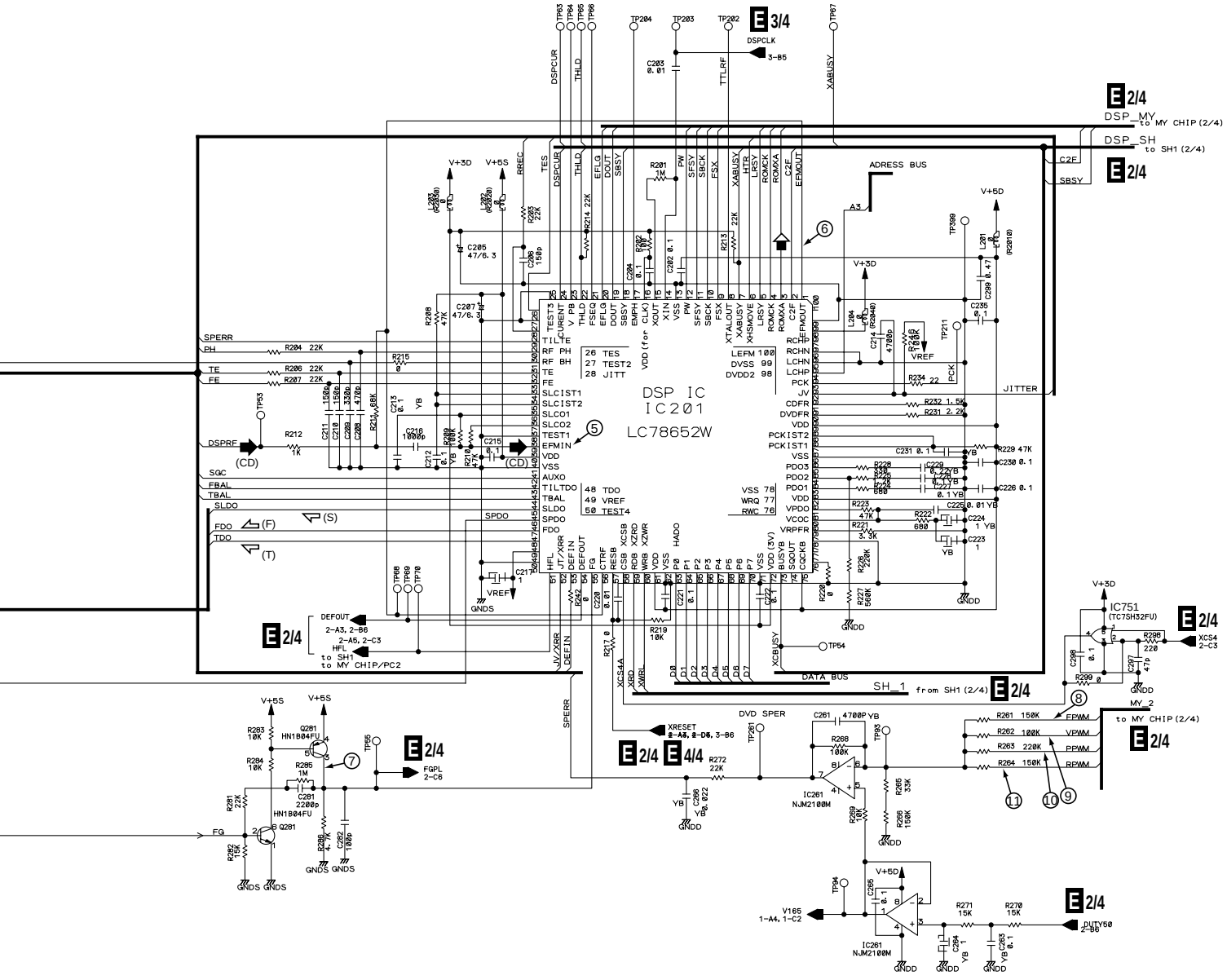
: The power supply is shown with the marked box.

: RF SIGNAL ROUTE
: ROM DATA SIGNAL ROUTE
(F) : FOCUS SERVO LOOP LINE
(T) : TRACKING SERVO LOOP LINE
(S) : SLIDER SERVO LOOP LINE

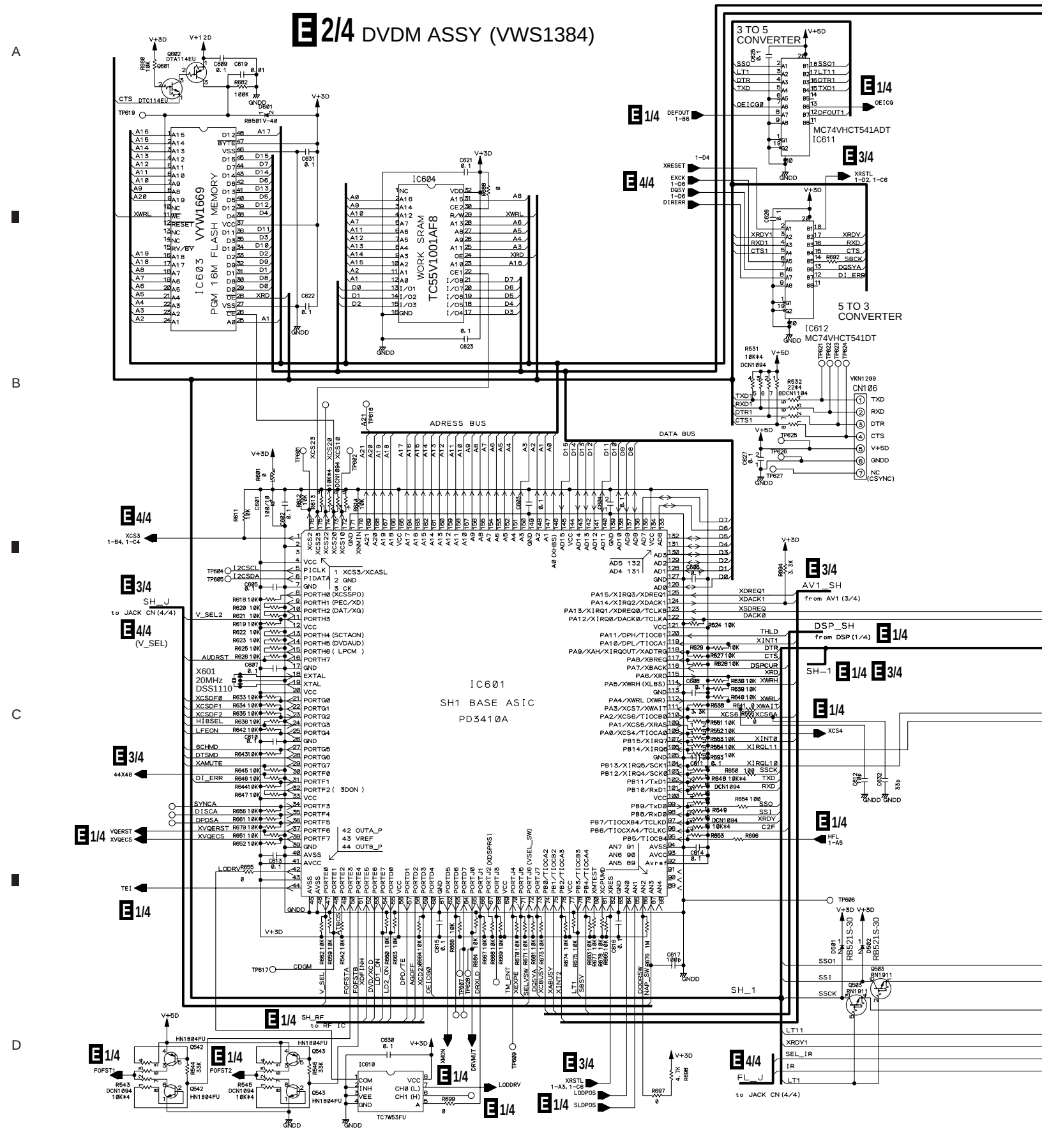




	R1	R2	R3	R4
LB	–	10k	–	10k



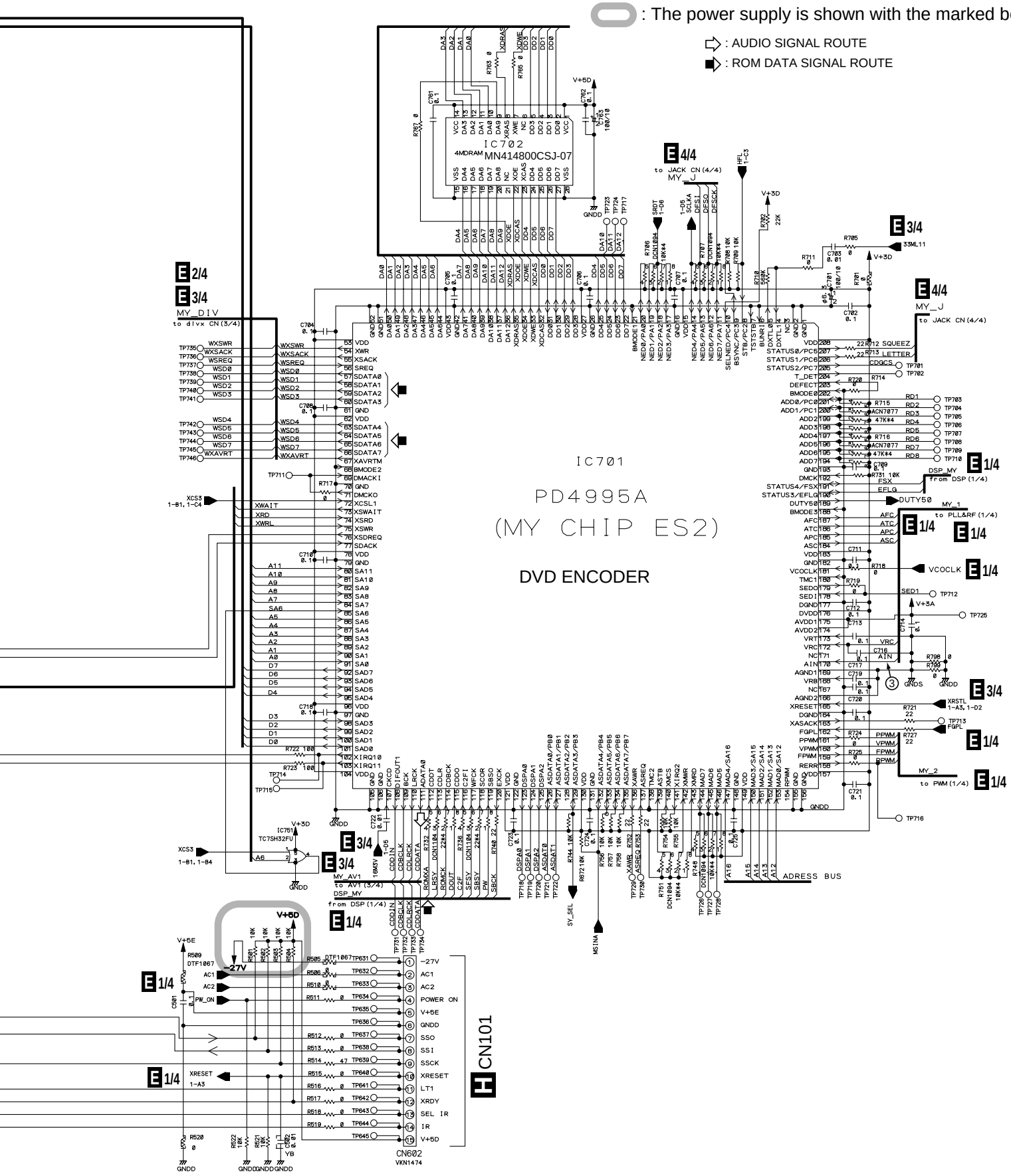
3.4 DVDM ASSY (2/4)



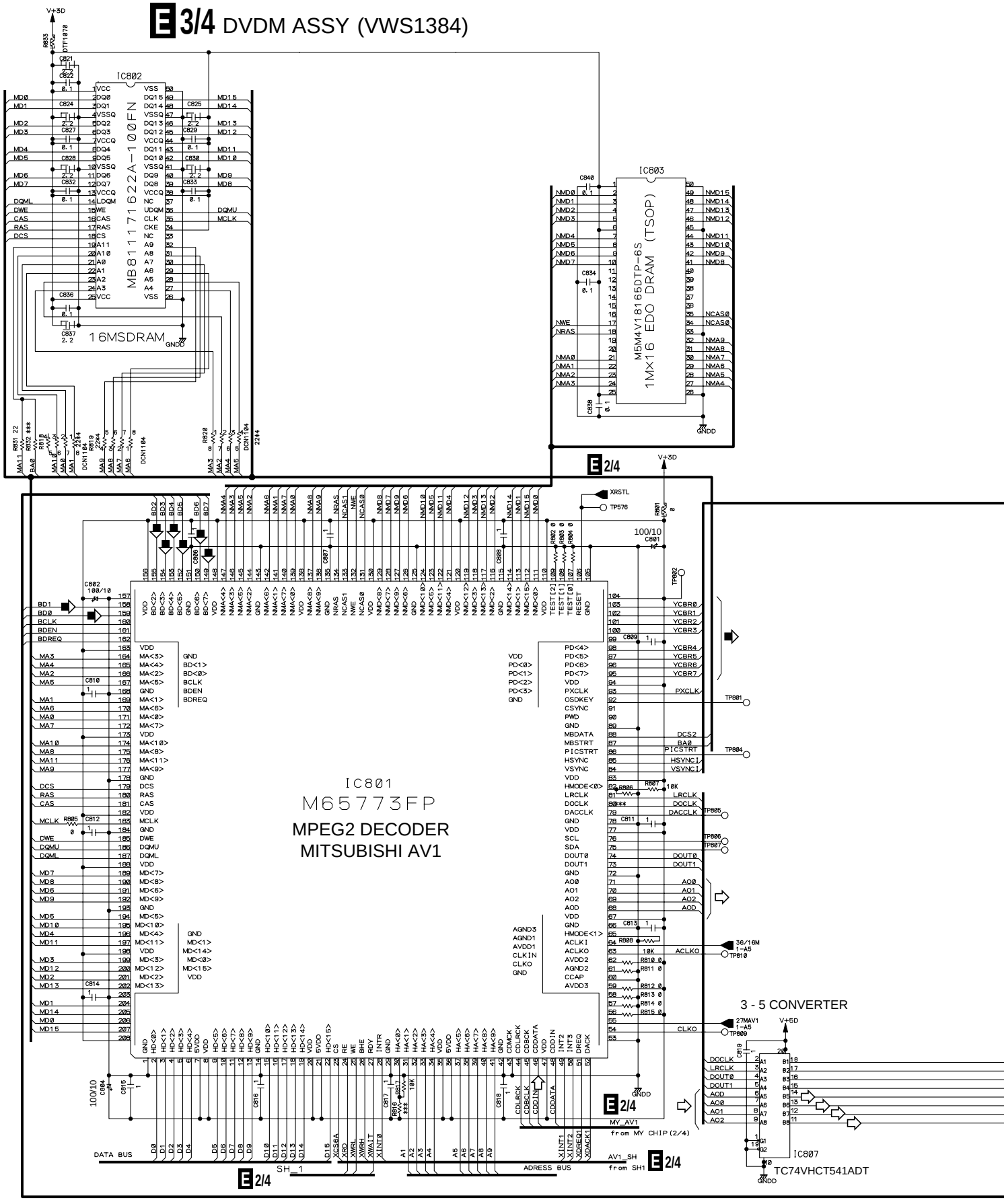
: The power supply is shown with the marked box.

: AUDIO SIGNAL ROUTE

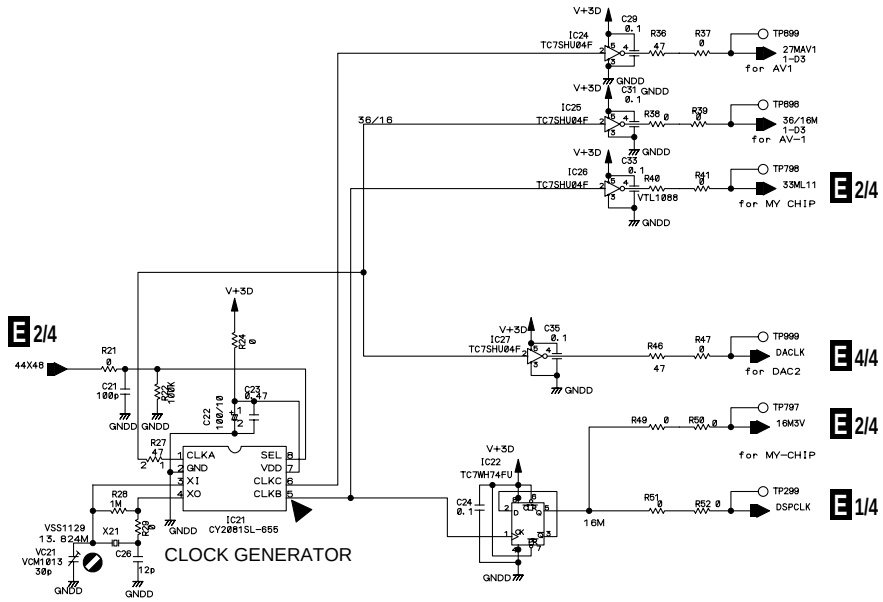
: ROM DATA SIGNAL ROUTE

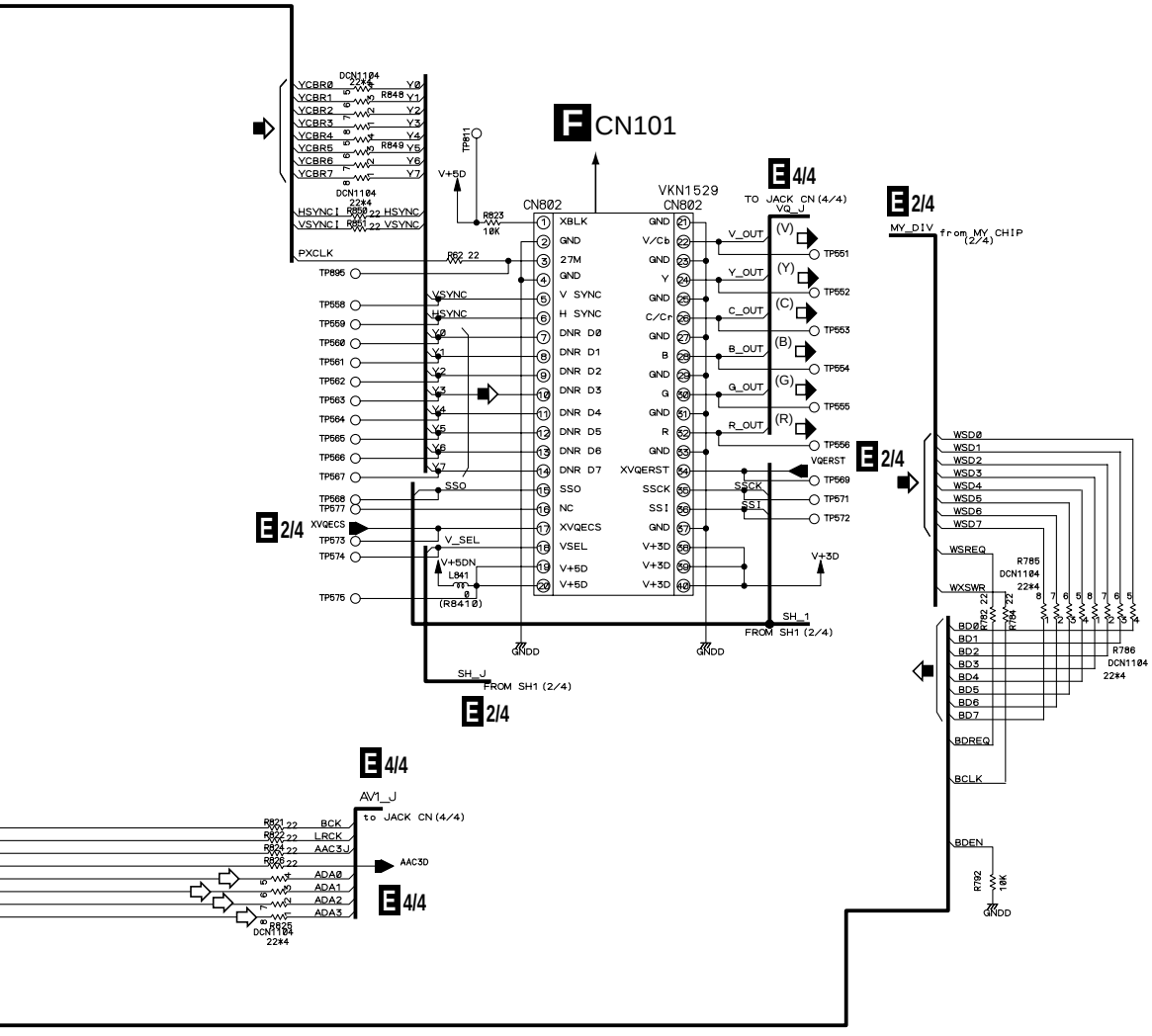


3.5 DVDM ASSY (3/4)



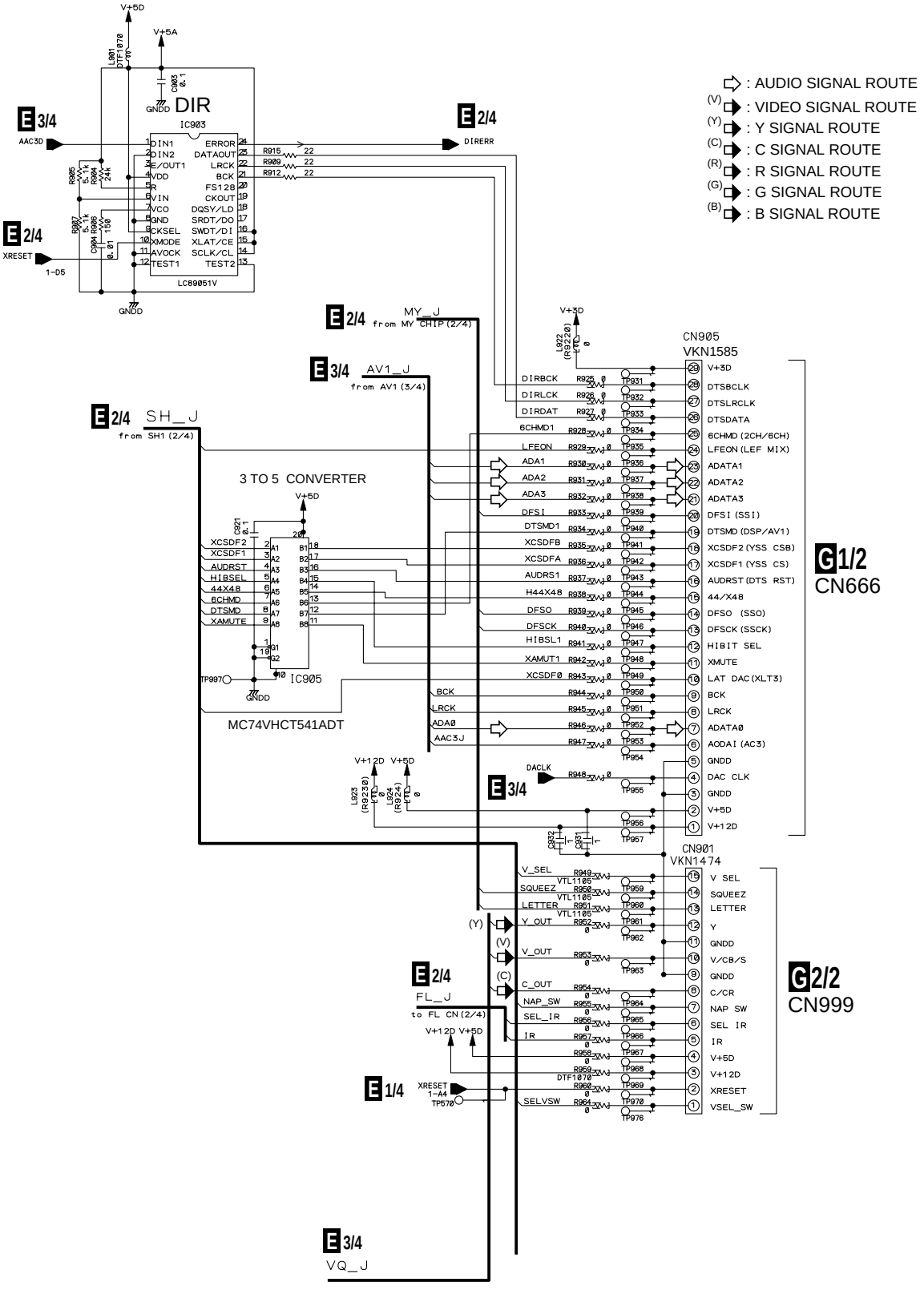
: AUDIO SIGNAL ROUTE
: ROM DATA SIGNAL ROUTE
(V) : VIDEO SIGNAL ROUTE
(Y) : Y SIGNAL ROUTE
(C) : C SIGNAL ROUTE
(R) : R SIGNAL ROUTE
(G) : G SIGNAL ROUTE
(B) : B SIGNAL ROUTE



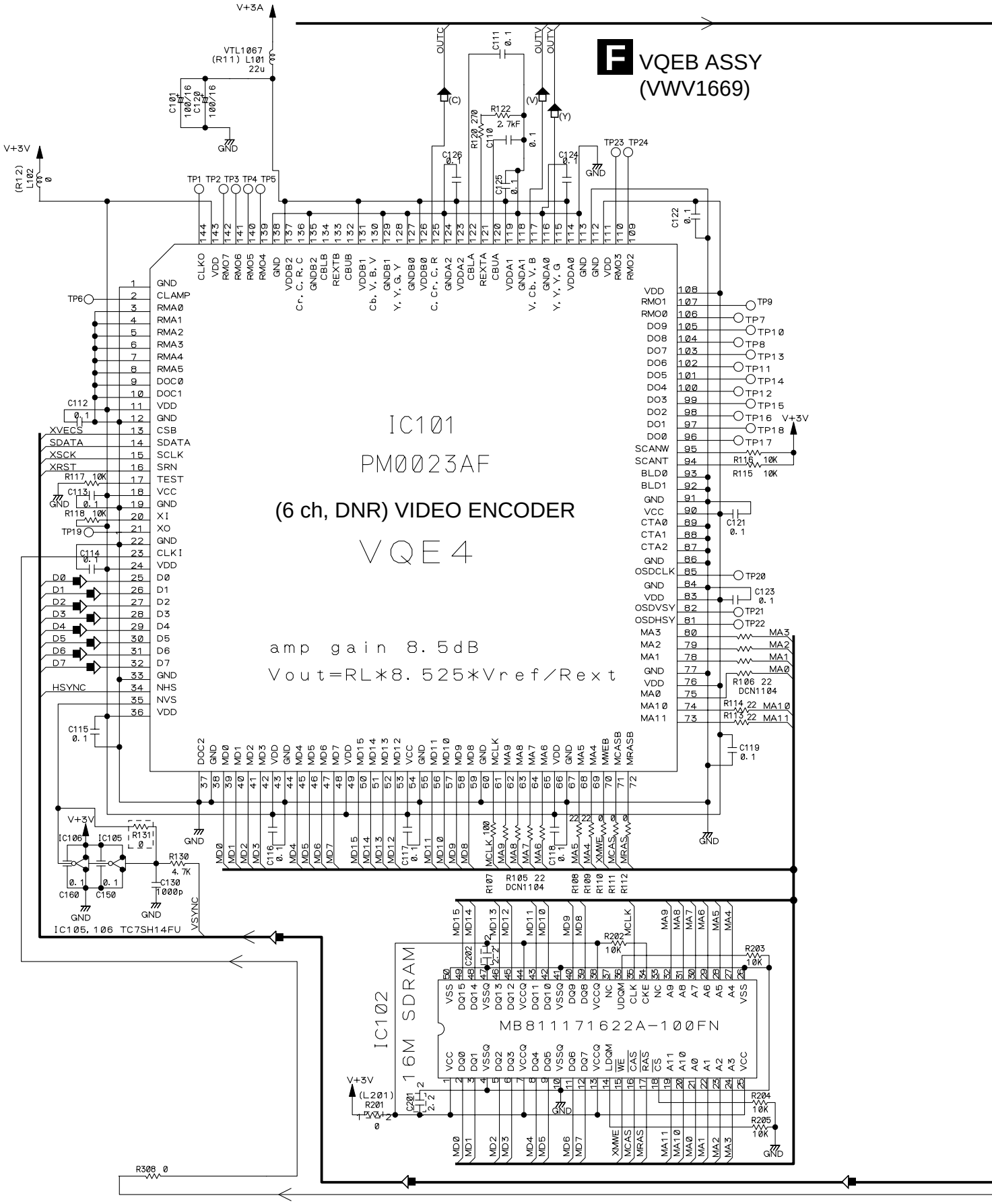


3.6 DVDM ASSY (4/4)

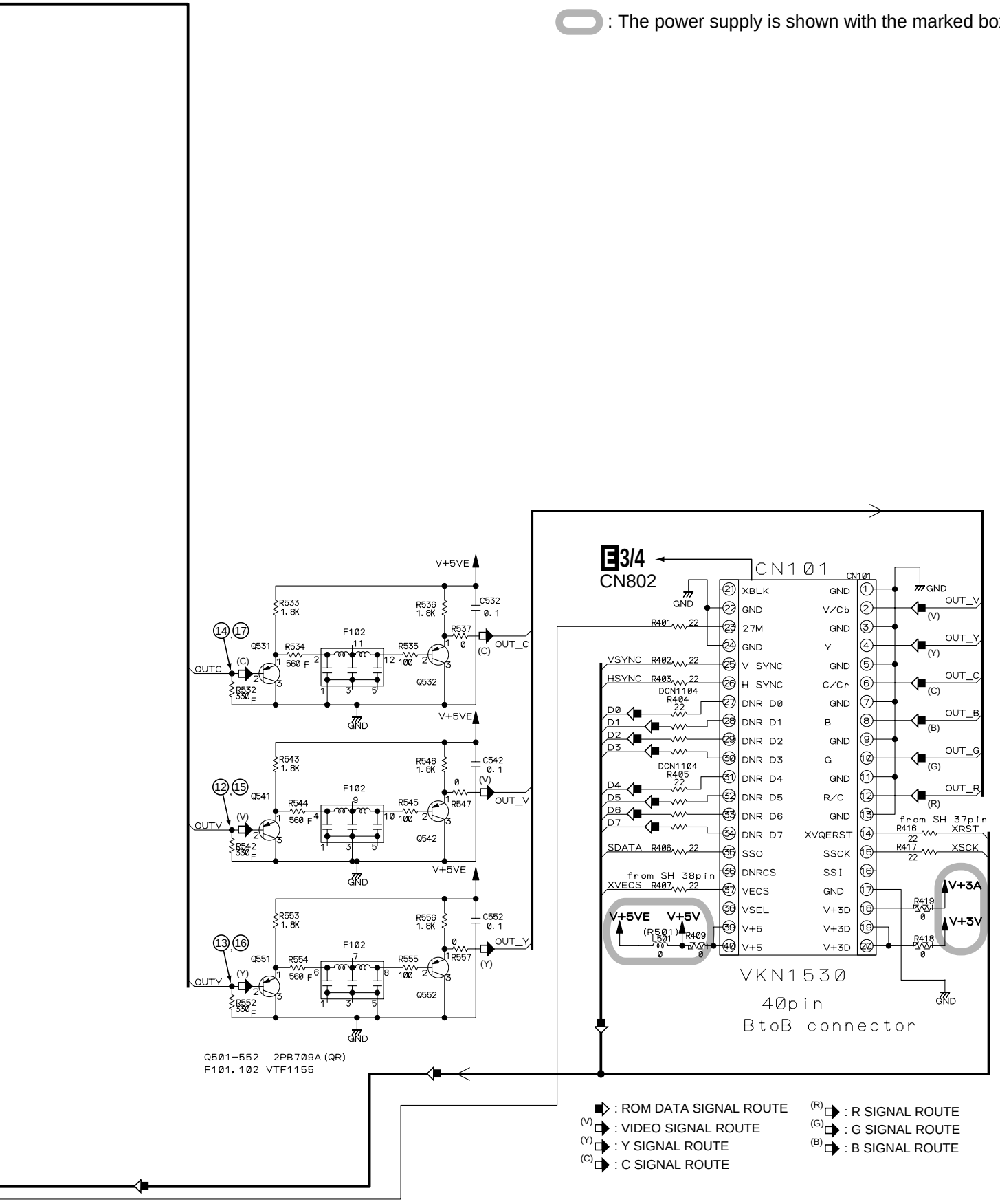
E 4/4 DVDM ASSY (VWS1384)



3.7 VQEB ASSY

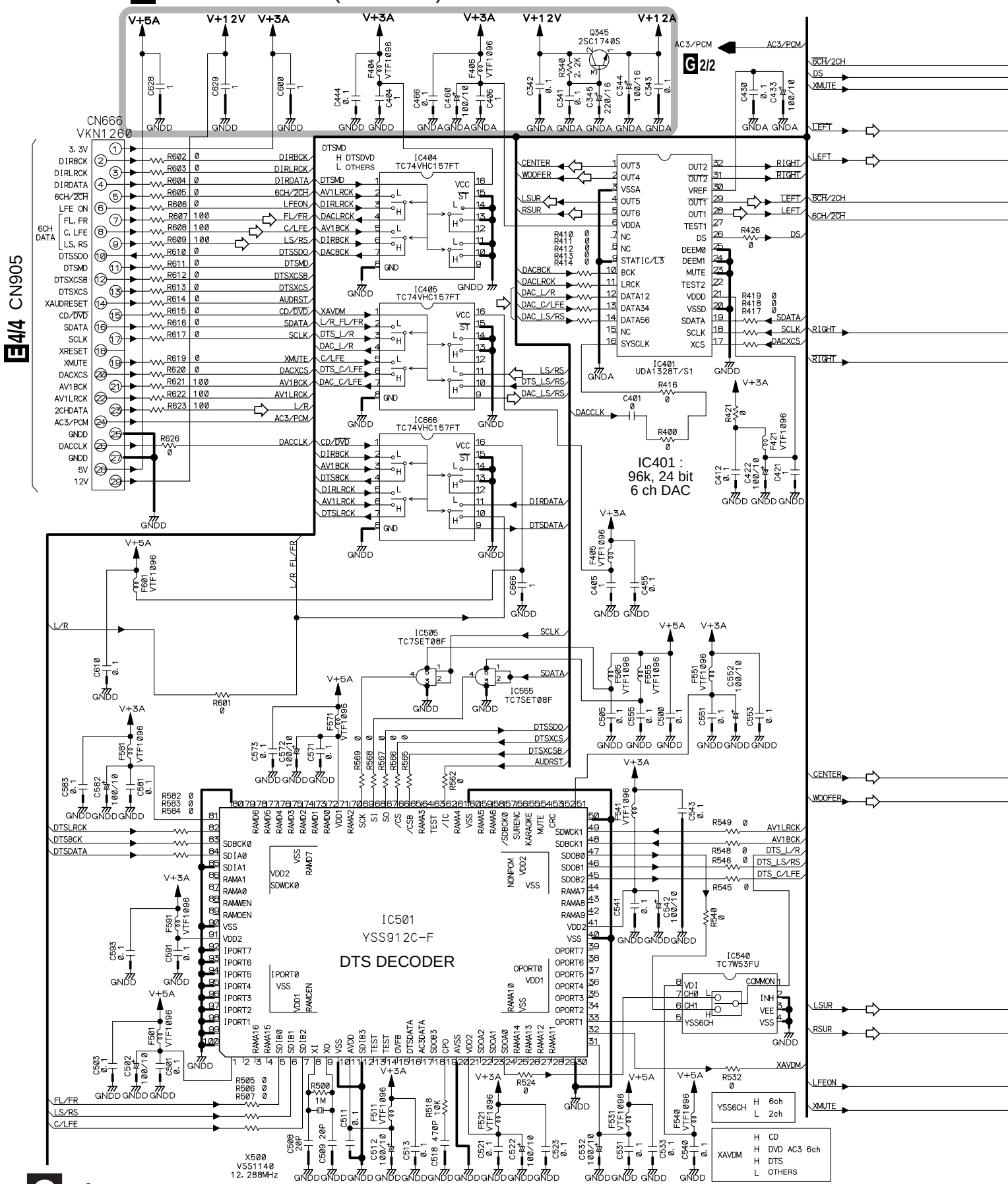

F VQEB ASSY
(VWV1669)
IC101
PM0023AF
(6 ch, DNR) VIDEO ENCODER
VQE4
amp gain 8.5dB
Vout=RL*8.525*Vref/Rext
IC102
16M SDRAM
MB811171622A-100FN
IC105,106 TC7SH14FU
V+3A
V+3V
GND
VSYNC
HSYNC
XVECS
SDATA
XSCK
XRST

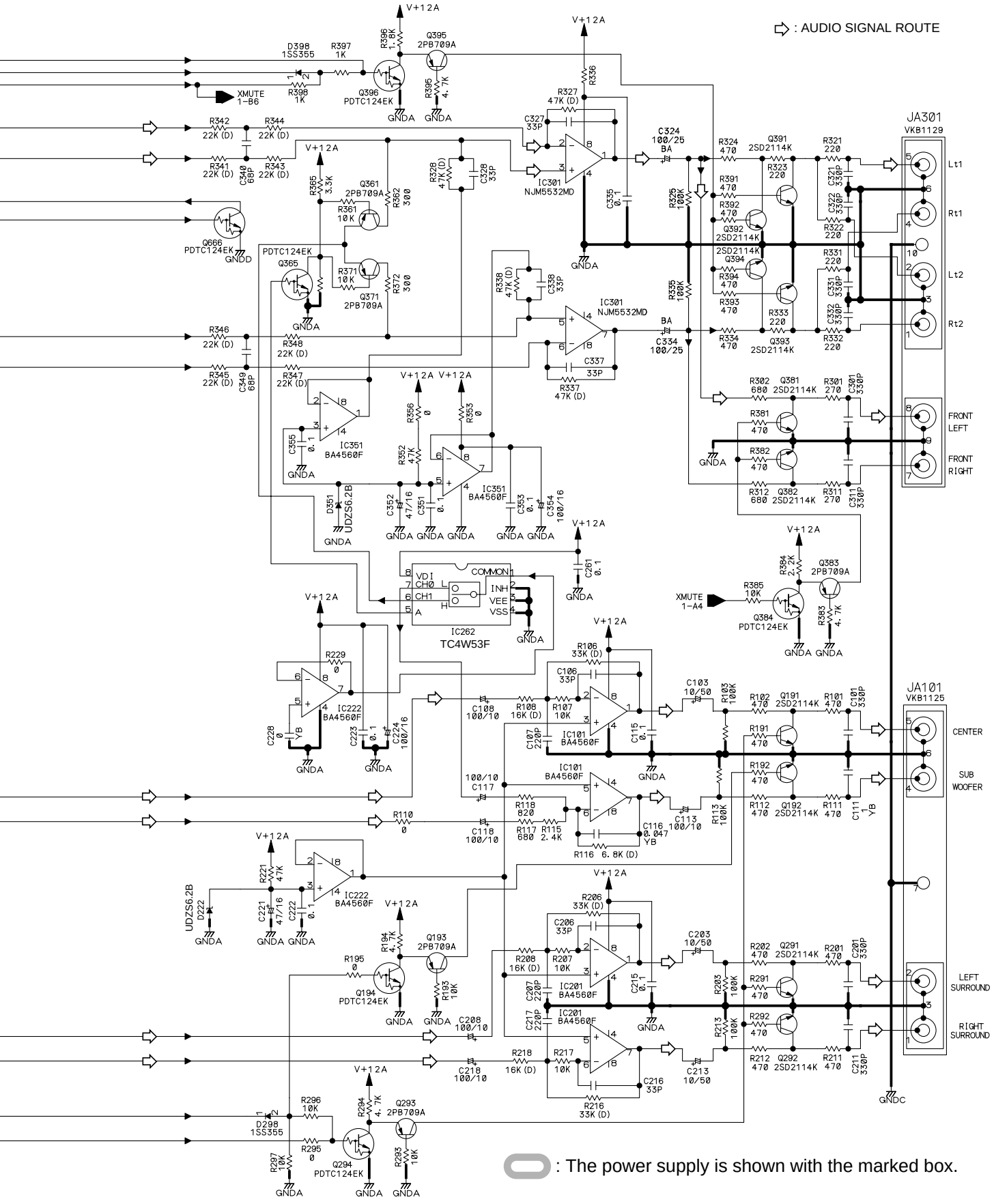
: The power supply is shown with the marked box.



3.8 JCKB ASSY (1/2)

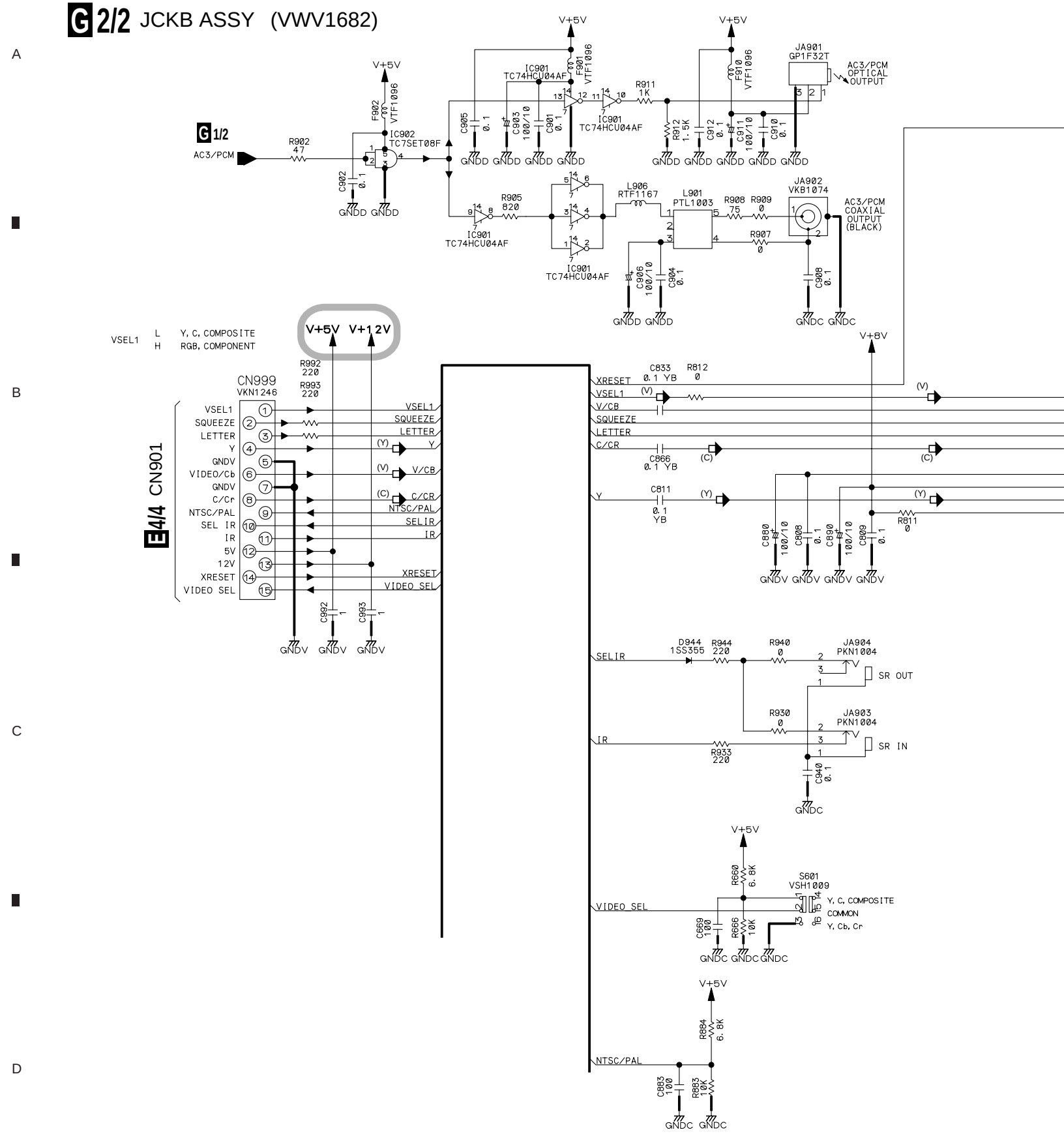
G 1/2 JCKB ASSY (VWV1682)




: AUDIO SIGNAL ROUTE
: The power supply is shown with the marked box.
JA301
VKB1129
Lt1
Rt1
Lt2
Rt2
FRONT LEFT
FRONT RIGHT
JA101
VKB1125
CENTER
SUB WOOFER
LEFT SURROUND
RIGHT SURROUND
IC301 NJM5532MD
IC351 BA4560F
IC222 BA4560F
IC101 BA4560F
IC201 BA4560F
IC262 TC4W53F
V+12A
GNDA
GNDC
GNDD
XMUTE 1-B6
XMUTE 1-A4

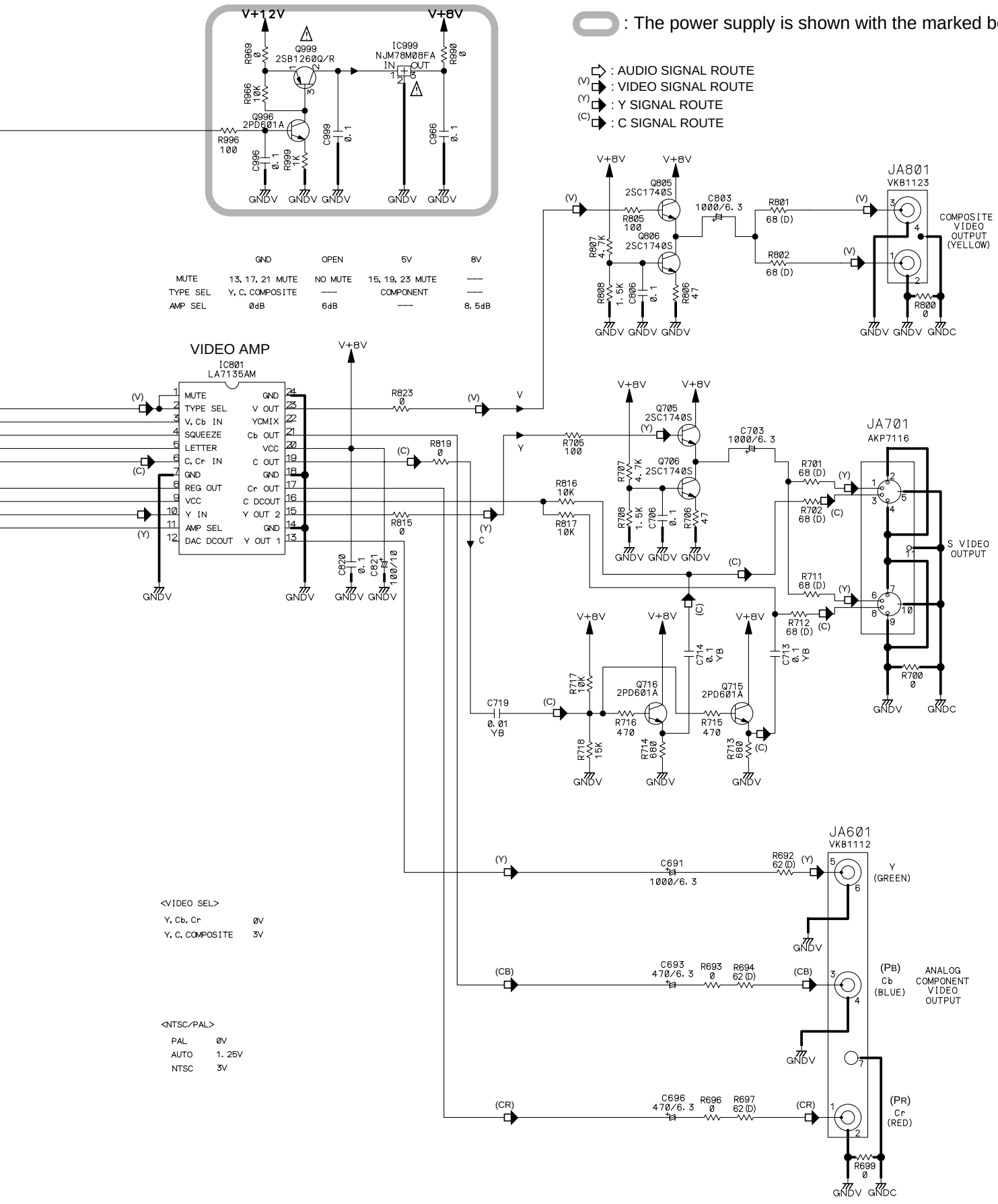
3.9 JCKB ASSY (2/2)

G 2/2 JCKB ASSY (VWV1682)

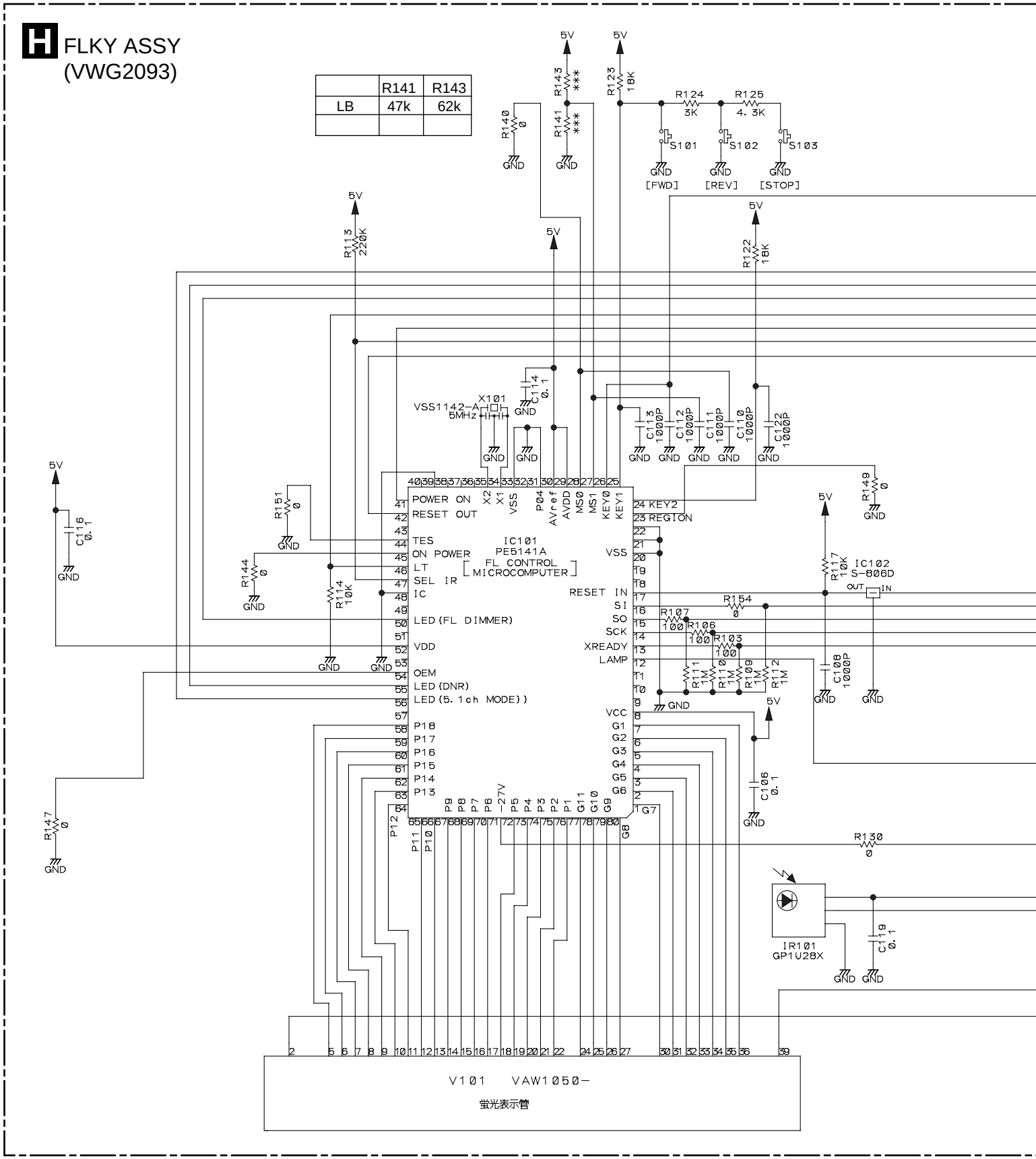


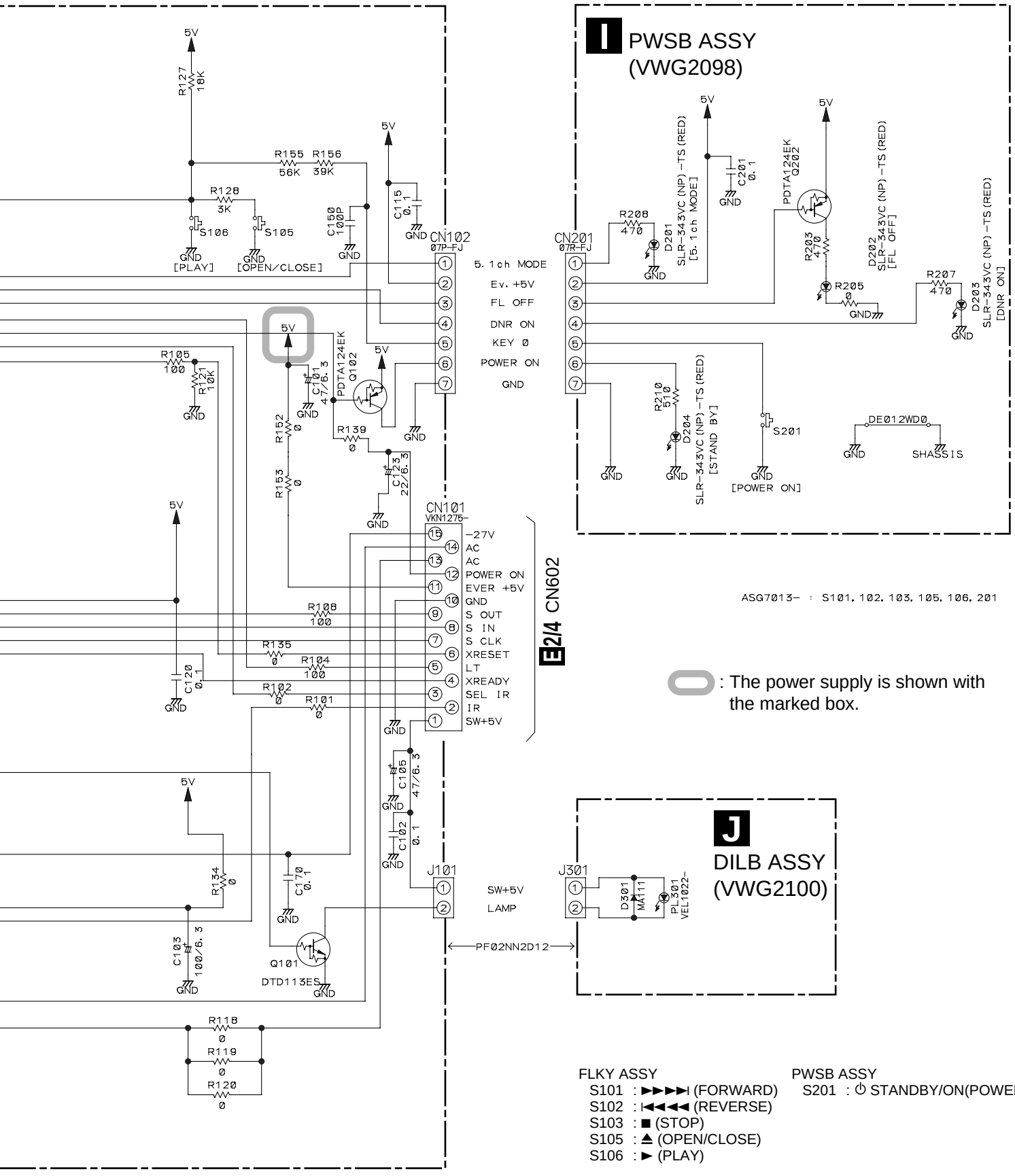
: The power supply is shown with the marked box.

: AUDIO SIGNAL ROUTE
(V) : VIDEO SIGNAL ROUTE
(Y) : Y SIGNAL ROUTE
(C) : C SIGNAL ROUTE



3.10 FLKB, PWSB and DILB ASSYS





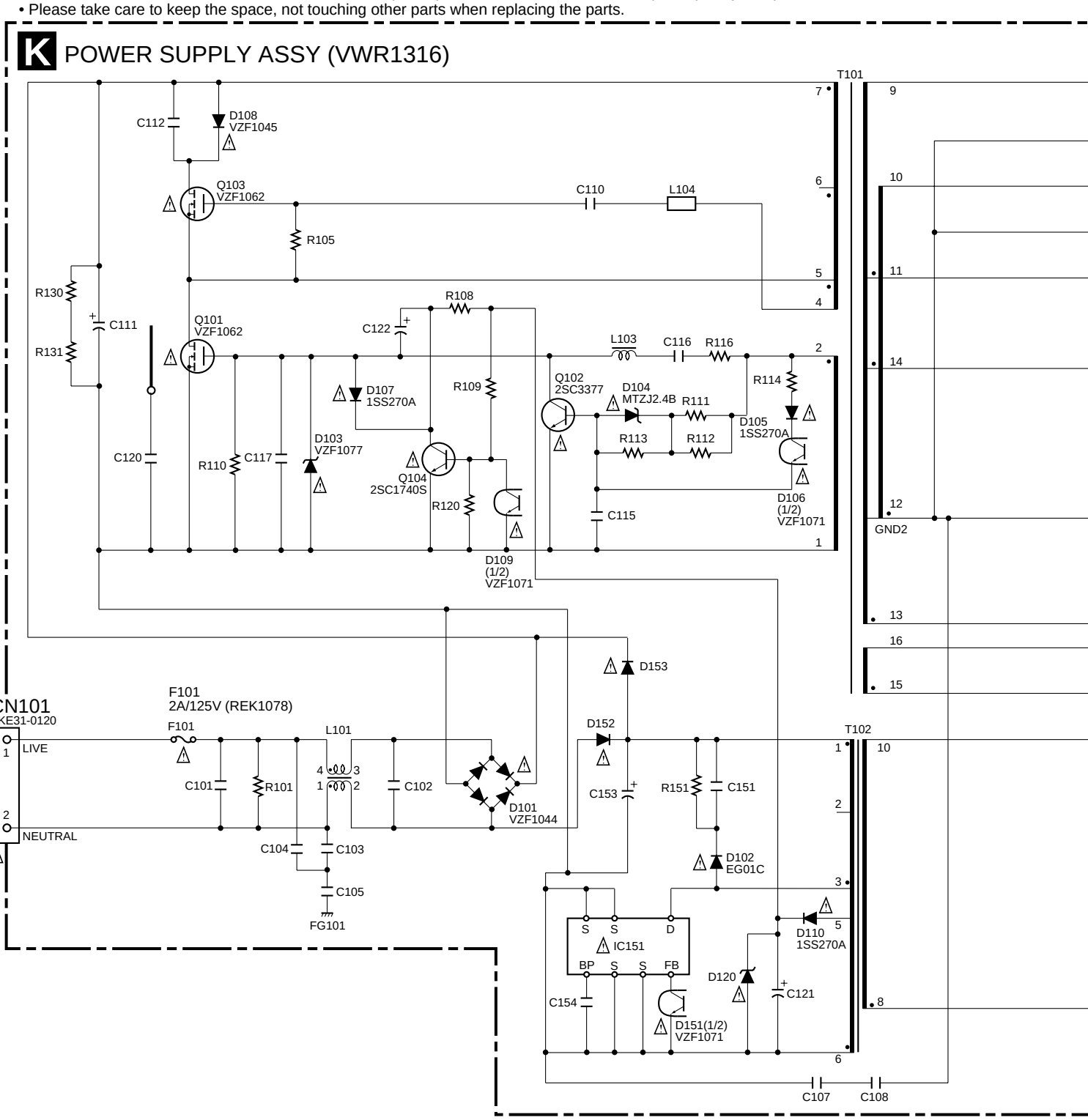
FLKY ASSY
- S101 : ▶▶▶▶I (FORWARD)
- S102 : I◀◀◀◀ (REVERSE)
- S103 : ■ (STOP)
- S105 : ▲ (OPEN/CLOSE)
- S106 : ▶ (PLAY)

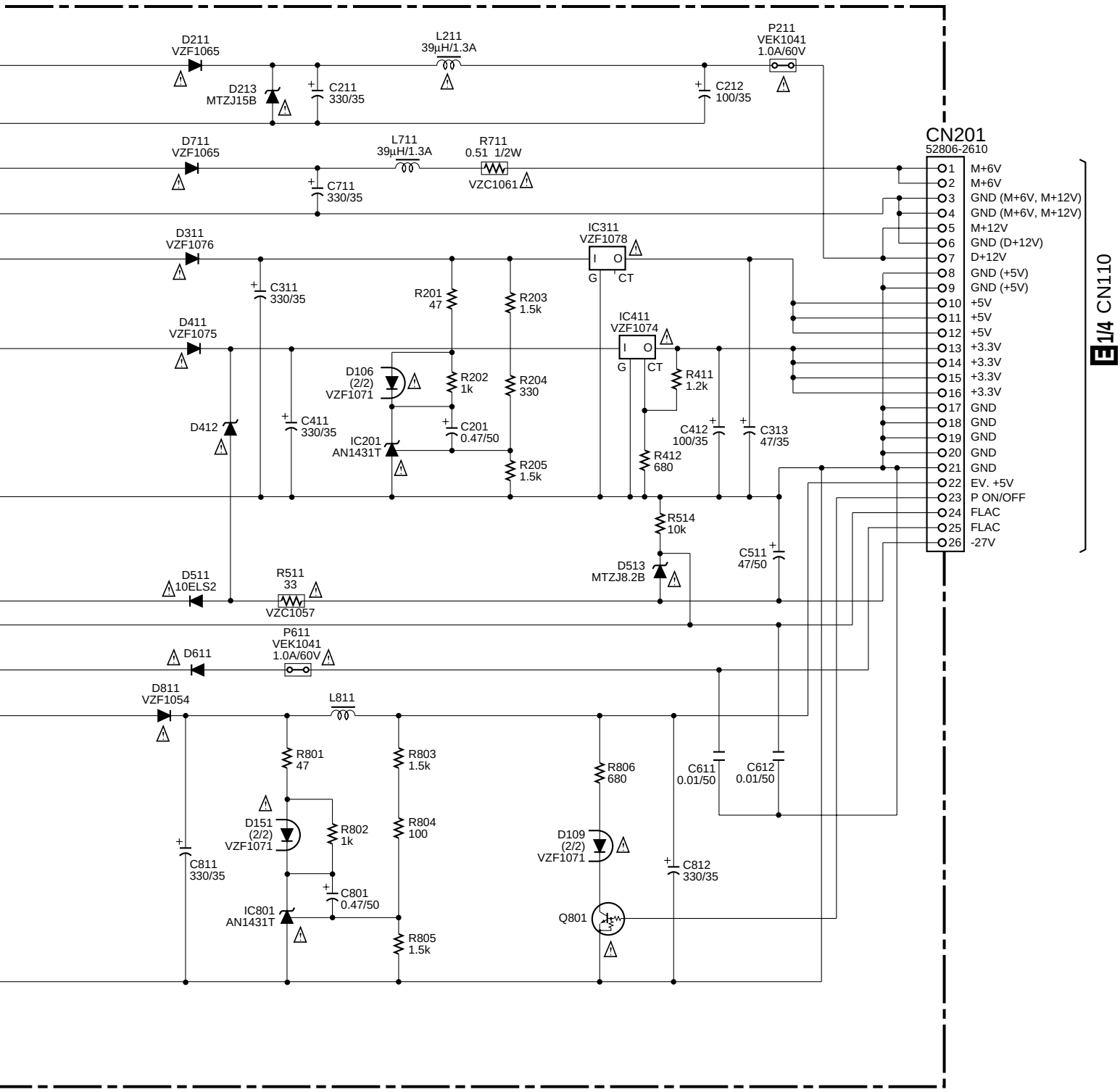
PWSB ASSY
- S201 : ⏻ STANDBY/ON(POWER)

3.11 POWER SUPPLY ASSY

《 NOTE OF SPARE PARTS IN POWER SUPPLY (SYPS) ASSY 》

- In case of repairing, use the described parts only to prevent an accident.
- Please write the red √ mark on the board when the primary section of POWER SUPPLY (SYPS) Assy is repaired.
- Please take care to keep the space, not touching other parts when replacing the parts.




D211
VZF1065
D213
MTZJ15B
C211
330/35
L211
39µH/1.3A
C212
100/35
P211
VEK1041
1.0A/60V
D711
VZF1065
C711
330/35
L711
39µH/1.3A
R711
0.51 1/2W
VZC1061
D311
VZF1076
C311
330/35
R201
47
R203
1.5k
IC311
VZF1078
G
CT
D411
VZF1075
D106
(2/2)
VZF1071
R202
1k
R204
330
IC411
VZF1074
R411
1.2k
D412
C411
330/35
IC201
AN1431T
C201
0.47/50
R205
1.5k
C412
100/35
C313
47/35
R412
680
R514
10k
D513
MTZJ8.2B
C511
47/50
D511
10ELS2
R511
33
VZC1057
P611
VEK1041
1.0A/60V
D611
D811
VZF1054
L811
R801
47
R803
1.5k
D151
(2/2)
VZF1071
R802
1k
R804
100
C811
330/35
C801
0.47/50
IC801
AN1431T
R805
1.5k
R806
680
C611
0.01/50
C612
0.01/50
D109
(2/2)
VZF1071
C812
330/35
Q801
CN201
52806-2610
1 M+6V
2 M+6V
3 GND (M+6V, M+12V)
4 GND (M+6V, M+12V)
5 M+12V
6 GND (D+12V)
7 D+12V
8 GND (+5V)
9 GND (+5V)
10 +5V
11 +5V
12 +5V
13 +3.3V
14 +3.3V
15 +3.3V
16 +3.3V
17 GND
18 GND
19 GND
20 GND
21 GND
22 EV. +5V
23 P ON/OFF
24 FLAC
25 FLAC
26 -27V
E 1/4 CN110

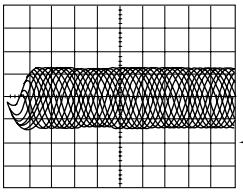
■ WAVEFORMS

Note : The encircled numbers denote measuring point in the schematic diagram.

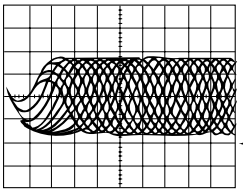
Measurement condition : No. 1 to 4 and 6 to 11 : Disc MA1, Title 1-chp 1
No. 5 : CD, ABEX-784 Track 1
No. 12 to 14 : MJK1, Title 1-chp 4 or T2-1
No. 15 to 17 : MJK1, Title 1-chp 5 or T2-19

● DVDM ASSY

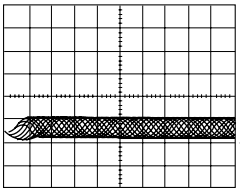
1 **Foot of R169 (RF)**
V: 100mV/div. H: 0.2µsec/div.



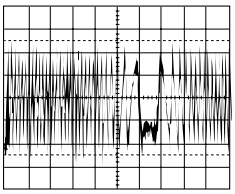
2 **CN201 - pin 5, 6 (RFO)**
V: 500mV/div. H: 0.1µsec/div.



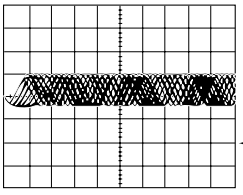
3 **IC701 - pin 170 (MY CHIP input)**
V: 1V/div. H: 0.2µsec/div.



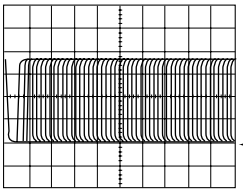
4 **CN201 - pin 9, 10 (Tracking Error) (AI-Inner Tracking Off)**
V: 500mV/div. H: 2msec/div.



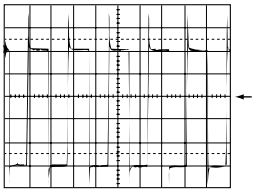
5 **IC201 - pin 39 (EFM before slice)**
V: 1V/div. H: 1µsec/div.



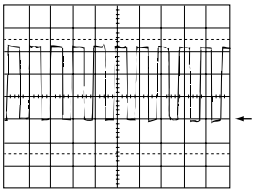
6 **IC201 - pin 1 (EFM)**
V: 1V/div. H: 0.2µsec/div.



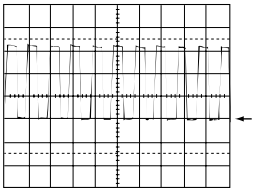
7 **Q281 - Collector (FG)**
V: 1V/div. H: 5msec/div.



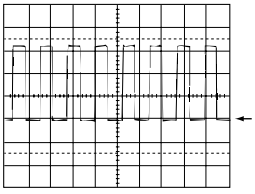
8 **Foot of R261 (FPWM)**
V: 1V/div. H: 5msec/div.



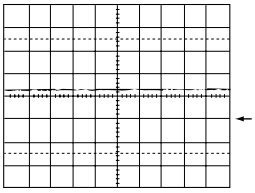
9 **Foot of R262 (VPWM)**
V: 1V/div. H: 5msec/div.



10 **Foot of R263 (PPWM)**
V: 1V/div. H: 5msec/div.

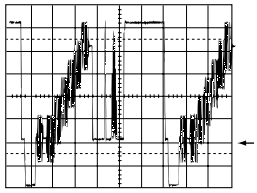


11 **Foot of R264 (RPWM)**
V: 1V/div. H: 5msec/div.

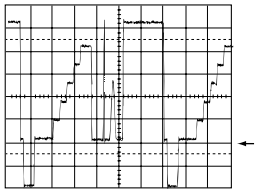


● VQEB ASSY

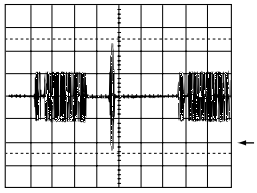
12 **Q541 Base (Composite Video output)**
V: 0.1V/div. H: 10µsec/div.



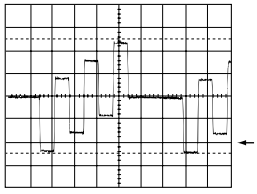
13 **Q551 Base (Y output)**
V: 0.1V/div. H: 10µsec/div.



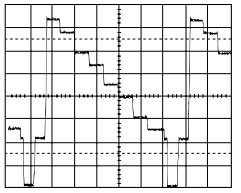
14 **Q531 Base (C output)**
V: 0.1V/div. H: 10µsec/div.



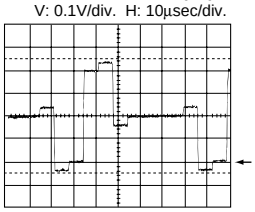
15 **Q541 Base (C_B output when selecting color difference output)**
V: 0.1V/div. H: 10µsec/div.



16 **Q551 Base (Y output when selecting color difference output)**
V: 0.1V/div. H: 10µsec/div.



17 **Q531 Base (C_R output when selecting color difference output)**
V: 0.1V/div. H: 10µsec/div.



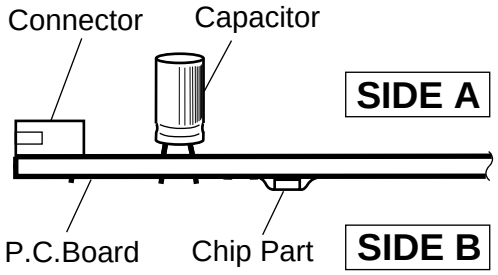
4. PCB CONNECTION DIAGRAM

NOTE FOR PCB DIAGRAMS :

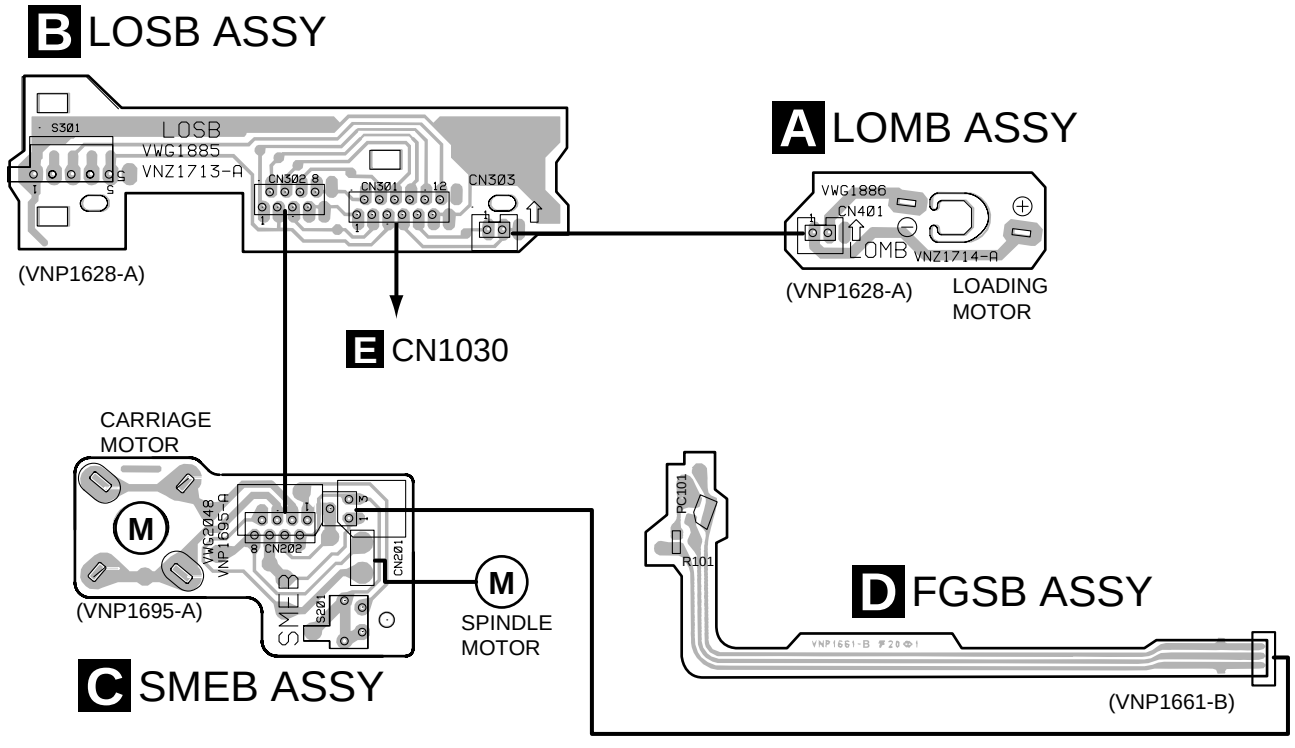
1. Part numbers in PCB diagrams match those in the schematic diagrams.
2. A comparison between the main parts of PCB and schematic diagrams is shown below.

Symbol In PCB Diagrams	Symbol In Schematic Diagrams	Part Name
B C E	B C E B C E	Transistor
B C E	B C E B C E	Transistor with resistor
D G S	D G S D G S	Field effect transistor
		Resistor array
		3-terminal regulator

3. The parts mounted on this PCB include all necessary parts for several destinations.
   For further information for respective destinations, be sure to check with the schematic diagram.
4. View point of PCB diagrams.



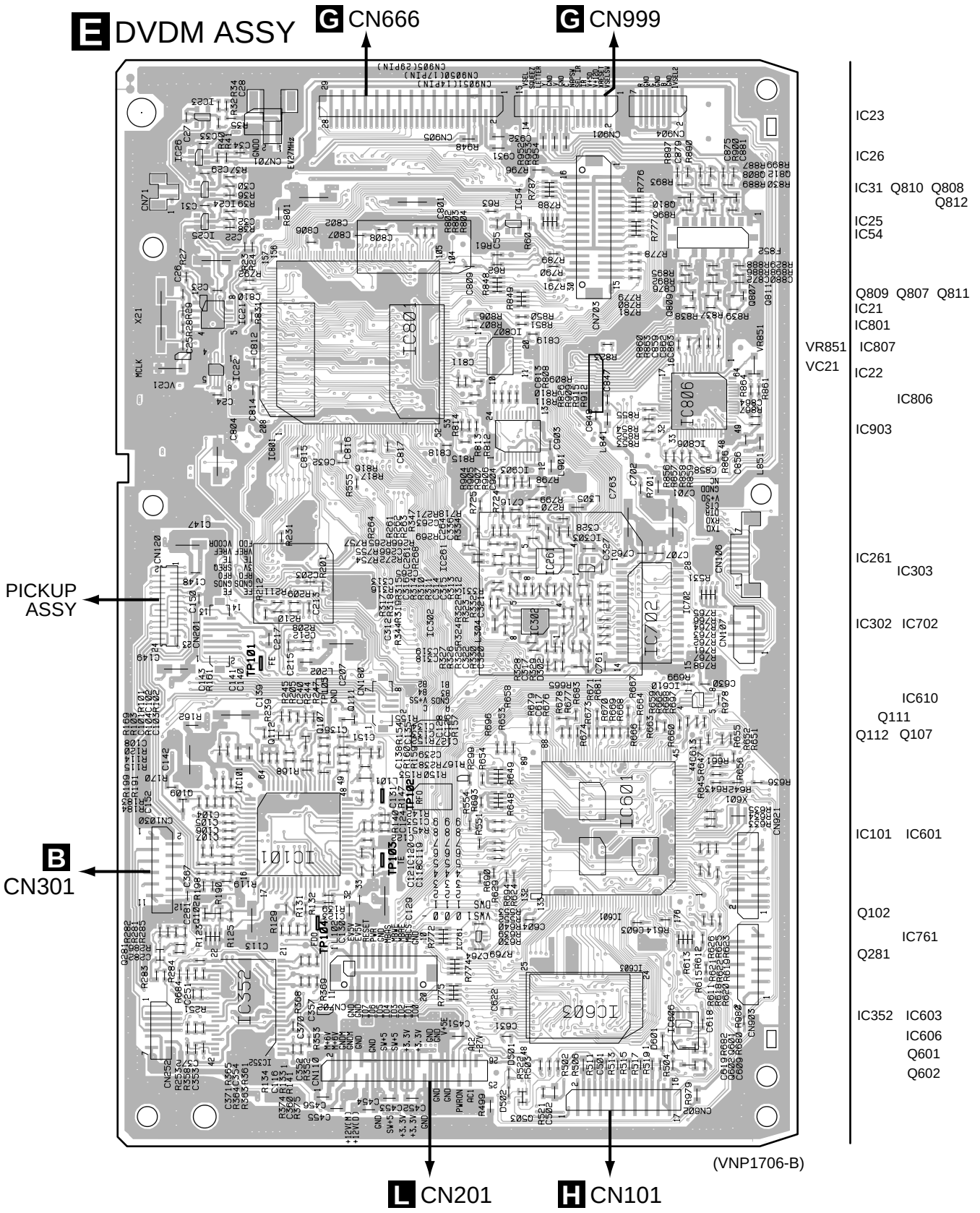
4.1 LOMB, LOSB, SMEB and FGSB ASSYS



SIDE A

4.2 DVDM ASSY

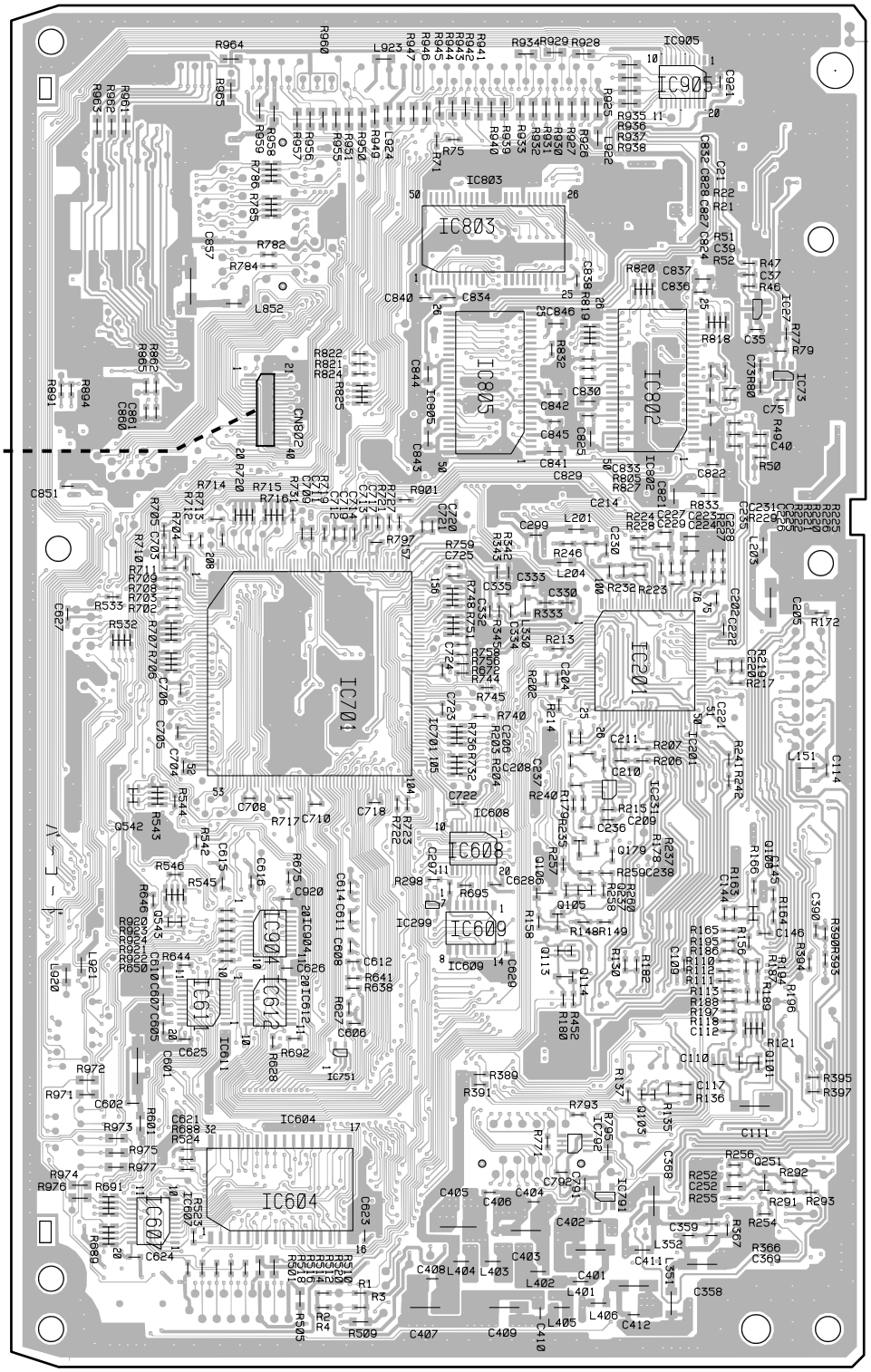
• This PCB is a four-layered board.



SIDE A

• This PCB is a four-layered board.

E DVDM ASSY

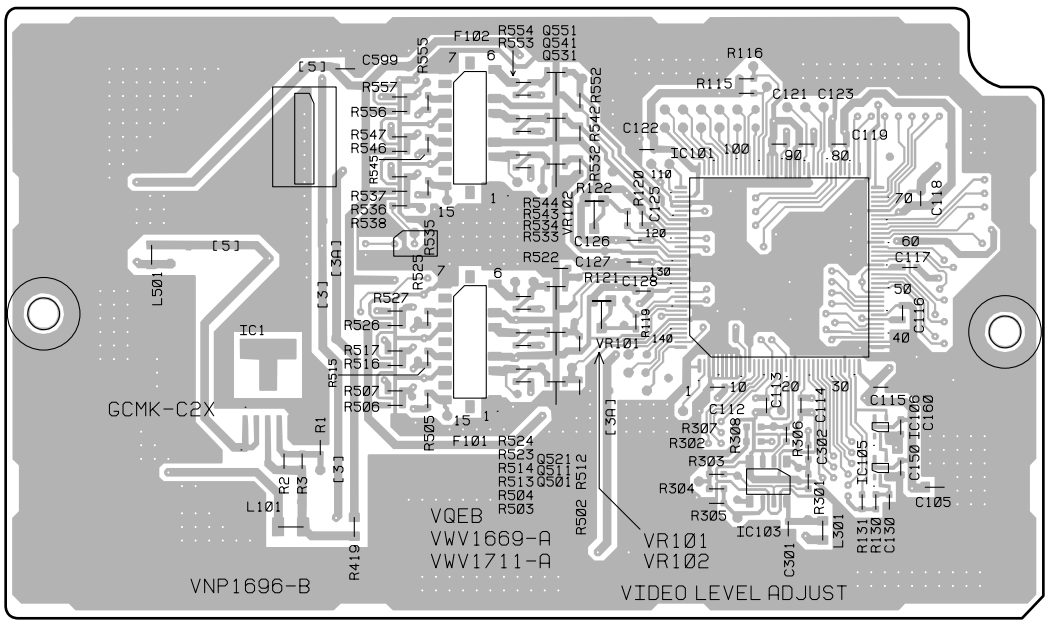


SIDE B

4.3 VQEB ASSY

F VQEB ASSY

SIDE A



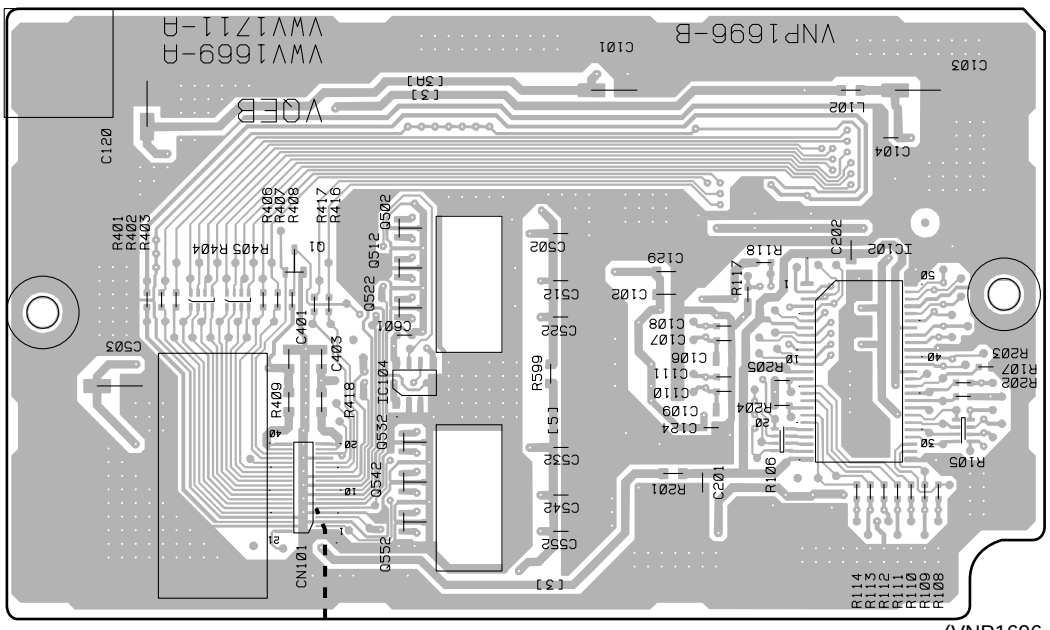
(VNP1696-B)

VR102
VR101

IC1 | Q551 Q541 Q531 Q521 Q511 Q501 | IC103 | IC106 IC105

F VQEB ASSY

SIDE B

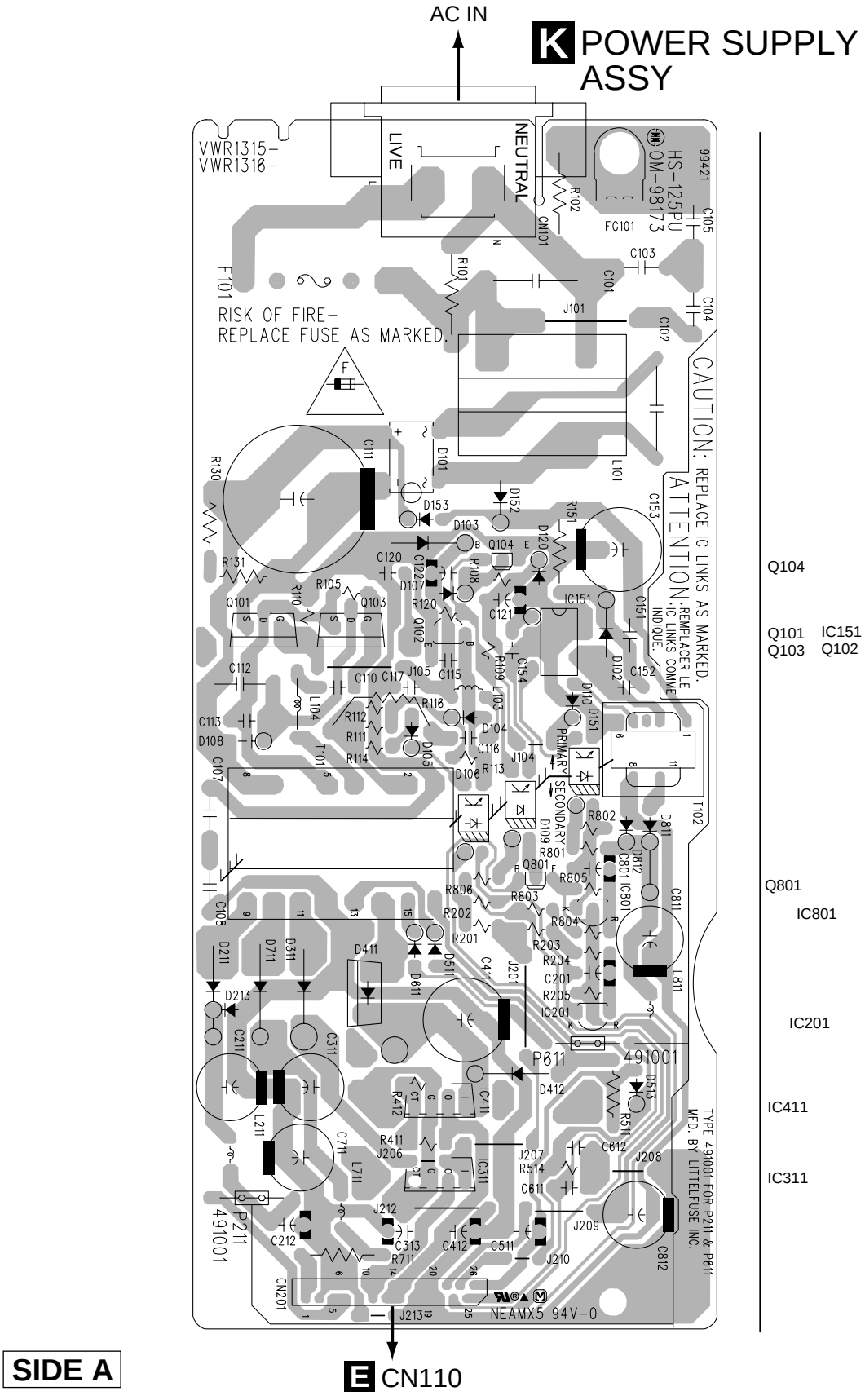


(VNP1696-B)

E CN802

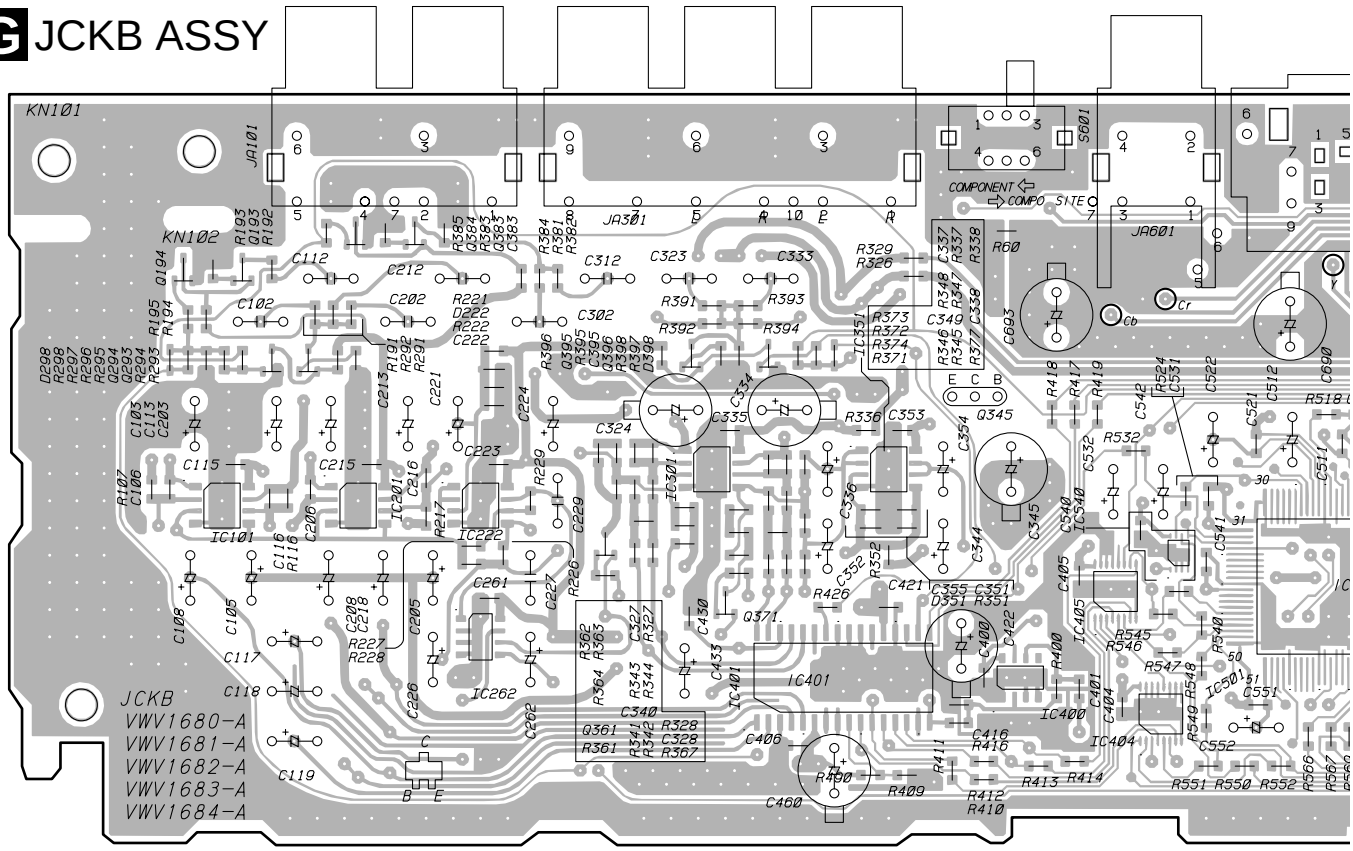
Q1 | Q502 Q512 Q522 IC104 Q532 Q542 Q552 | IC102

4.4 POWER SUPPLY ASSY

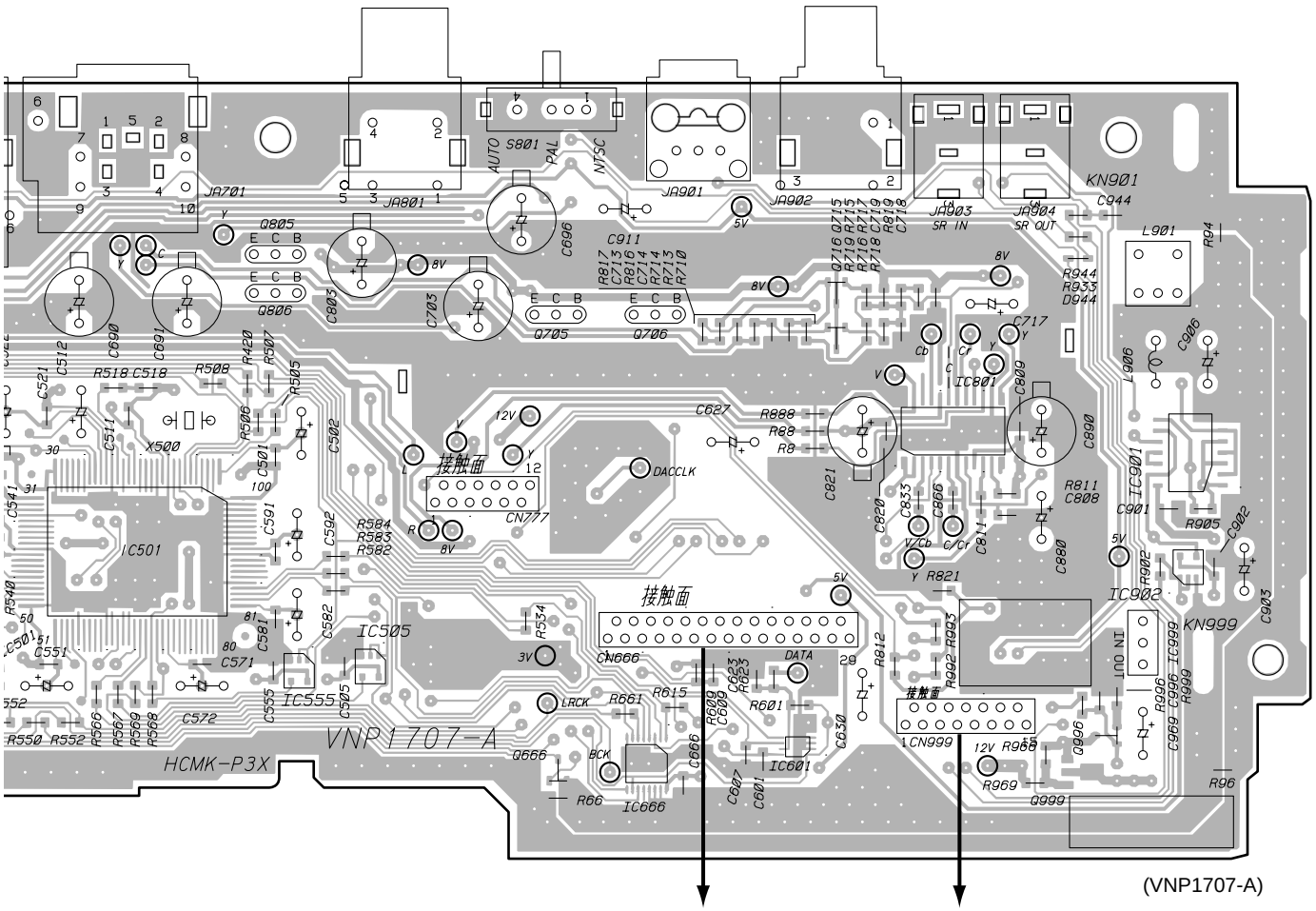


4.5 JCKB ASSY

G JCKB ASSY

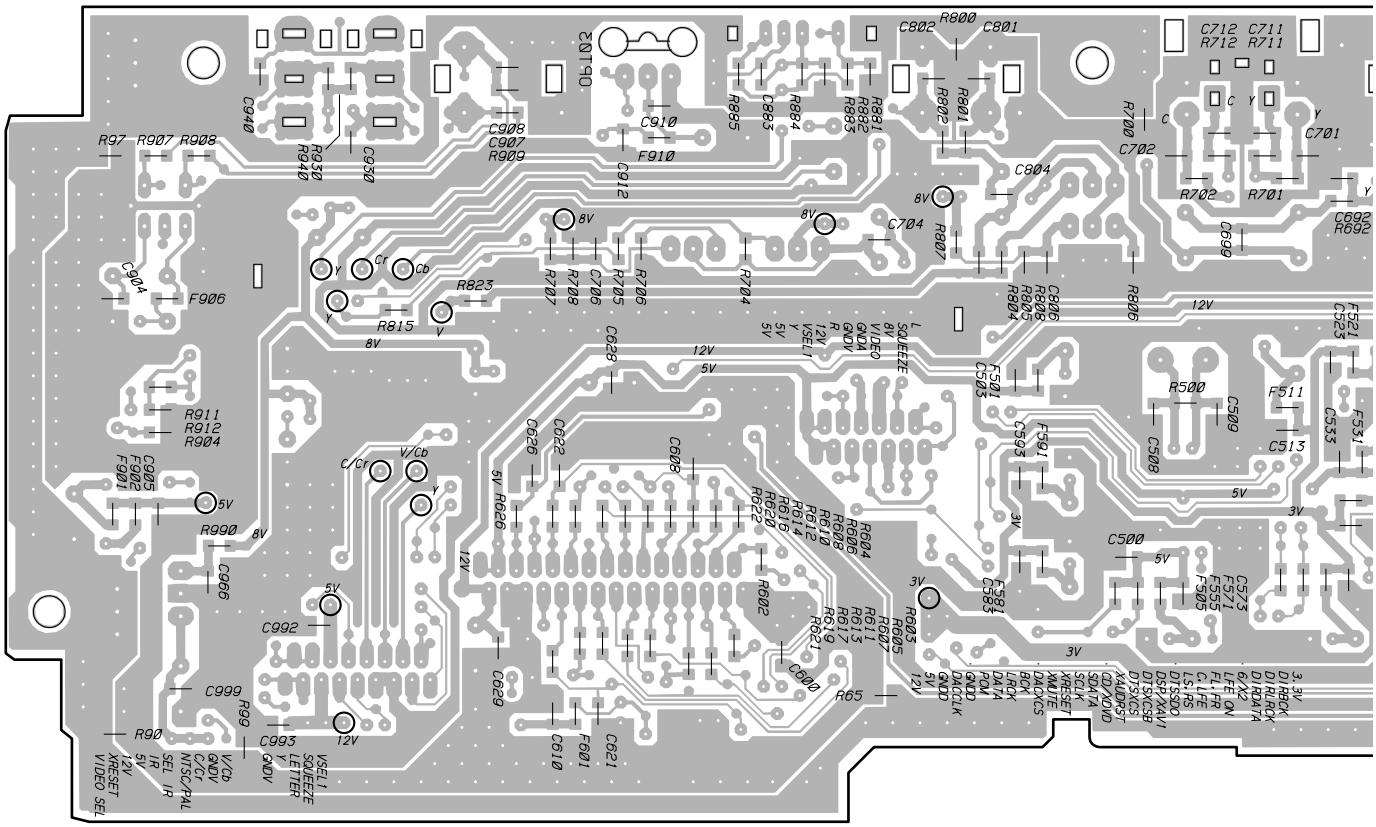


SIDE A

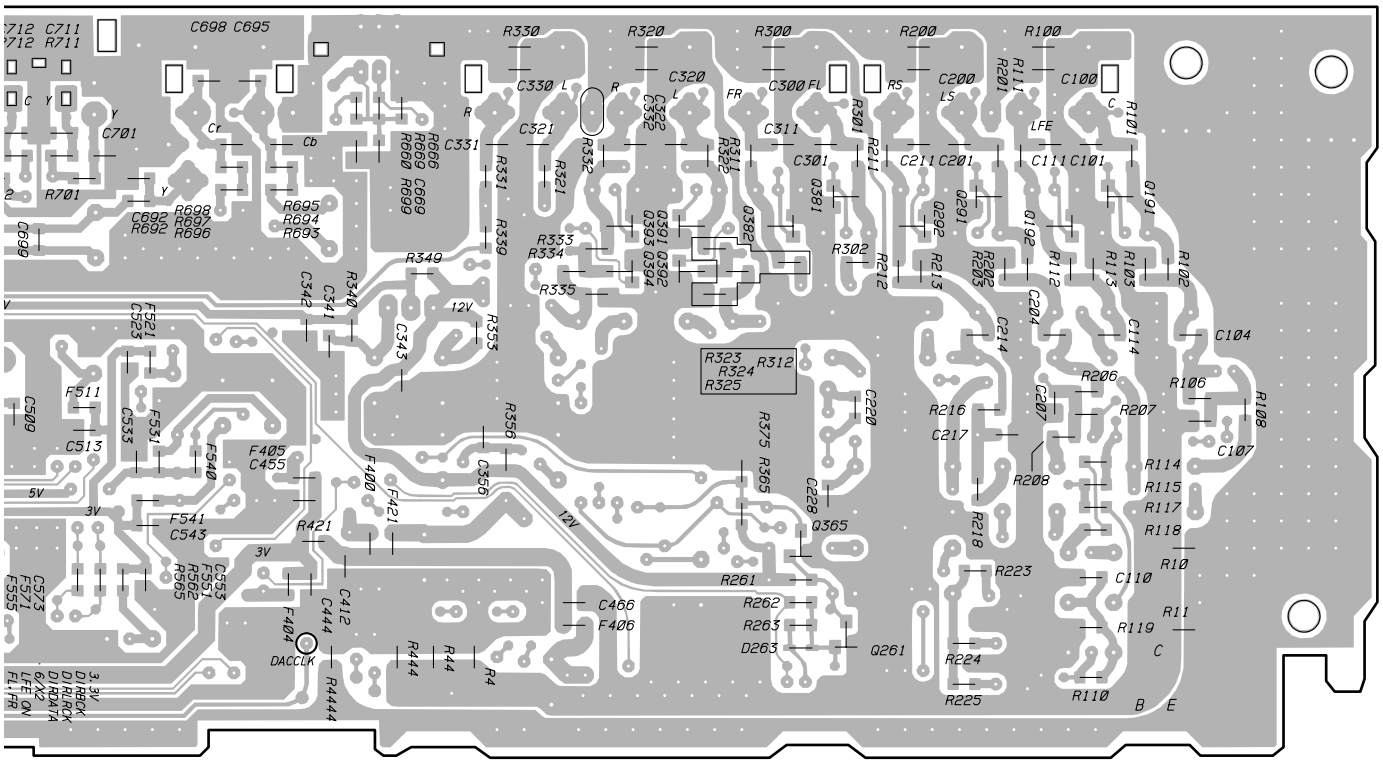


IC501 Q805 Q806 IC555 IC505 Q705 Q706 Q666 IC666 IC601 Q715 Q716 IC901 IC902 IC999 Q996

G JCKB ASSY



SIDE B

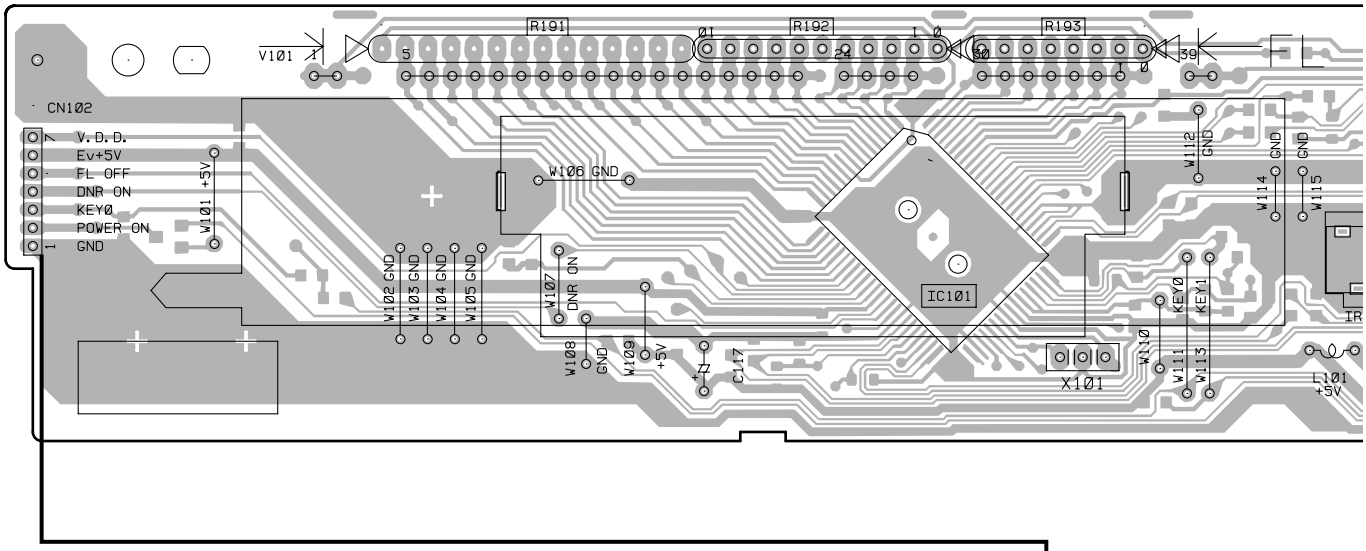


(VNP1707-A)

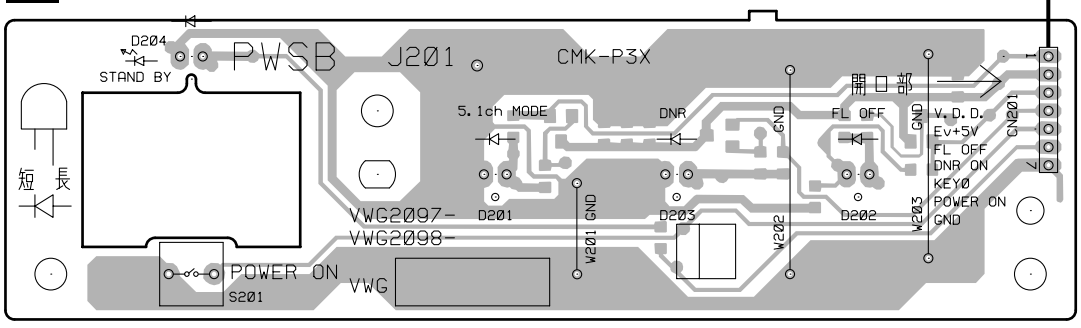
Q393 Q391 Q382 Q381 Q292 Q291 Q192 Q191
Q394 Q392 Q365
Q261

4.6 FLKY, PWSB and DILB ASSYS

H FLKY ASSY

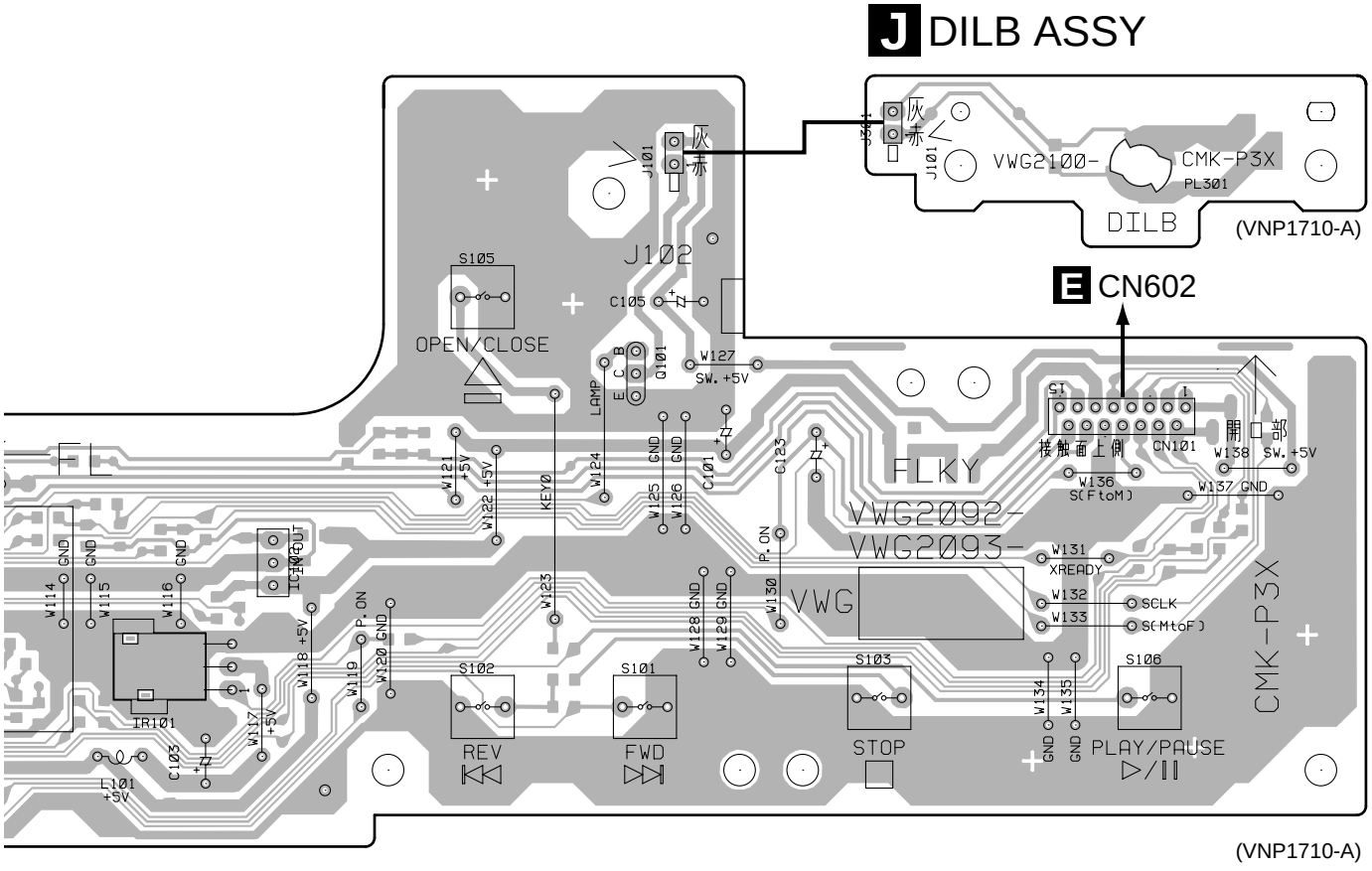


I PWSB ASSY



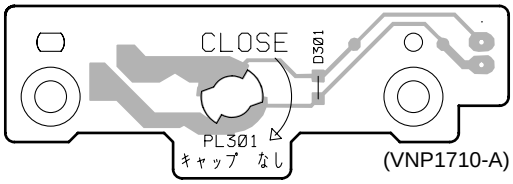
(VNP1710-A)

SIDE A


J DILB ASSY
VWG2100-
CMK-P3X
PL301
DILB
(VNP1710-A)
E CN602
J102
S105
OPEN/CLOSE
C105
Q101
LAMP
W127
SW. +5V
FLKY
VWG2092-
VWG2093-
VWG
CN101
W138 SW. +5V
W136 S(FtoM)
W137 GND
W131 XREADY
W132 SCLK
W133 S(MtoF)
W121 +5V
W122 +5V
KEY0
W124
W125 GND
W126 GND
C101
C123
P. ON
W130
W123
W128 GND
W129 GND
W114 GND
W115 GND
W116 GND
IR101
W118 +5V
W119 P. ON
W120 GND
W117 +5V
C103
L101 +5V
S102
REV
S101
FWD
S103
STOP
S106
PLAY/PAUSE
W134 GND
W135 GND
CMK-P3X
(VNP1710-A)

IC102 Q101

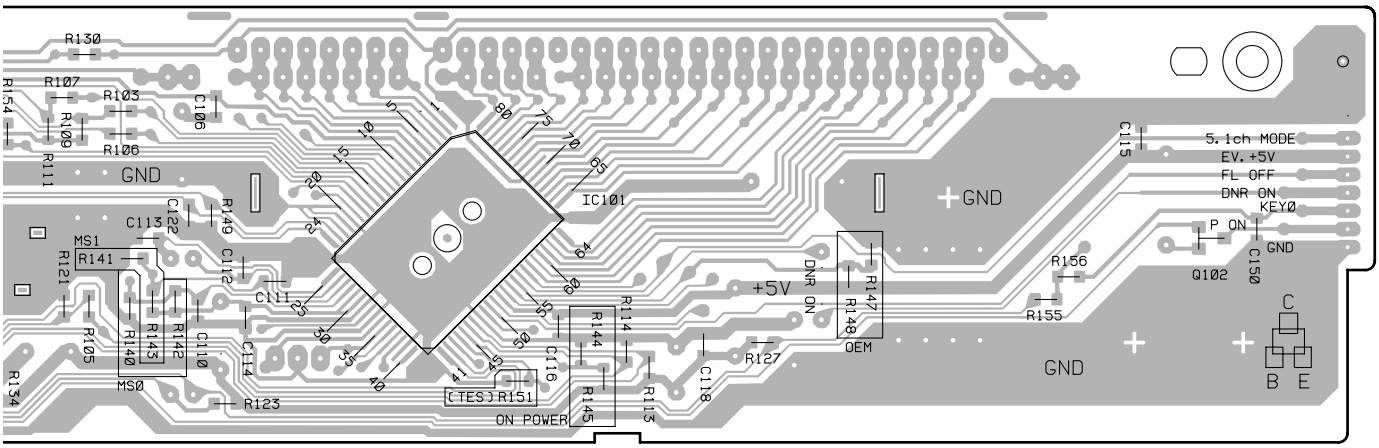
J DILB ASSY



(VNP1710-A)

H FLKY ASSY

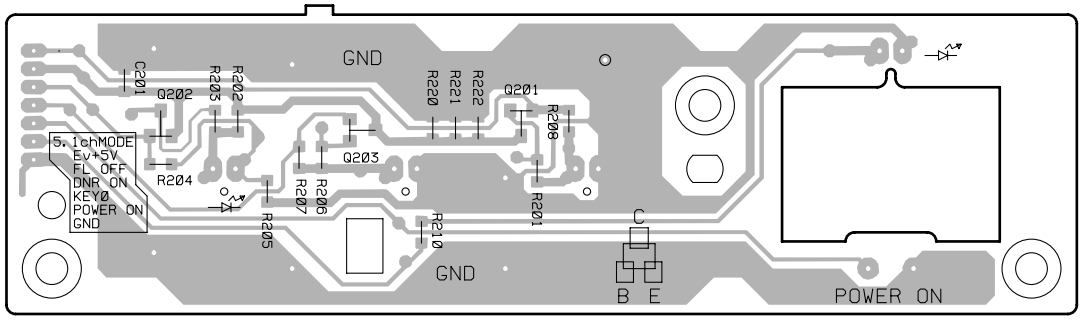
SIDE B



(VNP1710-A)

IC101 Q102

PWSB ASSY



(VNP1710-A)

5. PCB PARTS LIST

NOTES :
- *Parts marked by "* NSP *" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).

560 Ω → 56 × 10¹ → 561 ..... RD1/4PU 5 6 1 J
47k Ω → 47 × 10³ → 473 ..... RD1/4PU 4 7 3 J
0.5 Ω → R50 ..... RN2H R 5 0 K
1 Ω → 1R0 ..... RS1P 1 R 0 K

Ex. 2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k Ω → 562 × 10¹ → 5621 ..... RN1/4PC 5 6 2 1 F

Mark	No.	Description	Part No.

LIST OF WHOLE PCB ASSEMBLIES

NSP	LOAB ASSY	VWM1798
NSP	├ LOMB ASSY	VWG1886
NSP	└ LOSB ASSY	VWG1885
NSP	TRAVERSE MECHANISM ASSY	VWT1161
NSP	├ SMEB ASSY	VWG2048
NSP	└ FGSB ASSY	VWG2009
	DVDM ASSY	VWS1384
	VQEB ASSY	VWV1669
	JCKB ASSY	VWV1682
NSP	FLKB ASSY	VWM1935
	├ FLKY ASSY	VWG2093
NSP	├ PWSB ASSY	VWG2098
NSP	└ DILB ASSY	VWG2100
⚠	POWER SUPPLY ASSY	VWR1316

A LOMB ASSY

OTHERS

CN401	CONNECTOR POST	B2B-PH-K-S

B LOSB ASSY

OTHERS

CN303	CONNECTOR POST	B2B-PH-K-S
CN302	8P CONNECTOR	VKN1268
CN301	12P CONNECTOR	VKN1272
301	REAF SWITCH	VSK1011

C SMEB ASSY

SWITCHES AND RELAYS

S201		DSG1016

OTHERS

CN201	CONNECTOR	52044-0345
CN202	8P CONNECTOR	VKN1212
	PRINTED CIRCUIT BOARD	VNP1695

D FGSB ASSY

SEMICONDUCTORS

PC101	TLP910(O)

RESISTORS

All Resistors	RS1/10S□□□J

E DVDM ASSY

SEMICONDUCTORS

IC21	CY2081SL-655
IC101	LA9701M
IC201	LC78652W
IC903	LC89051V
IC352	M56788FP
IC803	M5M4V18165DTP-6S
IC801	M65773FP
IC802	MB811171622A-100FN
IC612	MC74VHC541DT
IC611, IC807, IC905	MC74VHCT541ADT
IC702	MN414800CSJ-07
IC261, IC302	NJM2100M
IC601	PD3410A
IC701	PD4995A
IC604	TC55V1001AF8
IC751	TC7SH32FU
IC24–IC27, IC303	TC7SHU04F
IC610	TC7W53FU
IC22	TC7WH74FU
IC603	VYW1669

Mark	No.	Description	Part No.
	Q106, Q109		2SA1576A
	Q105, Q114, Q251		2SC4081
	Q602		DTA114EUA
	Q107, Q111, Q601		DTC114EUA
	Q102		HN1A01F
	Q103, Q281, Q542, Q543		HN1B04FU
	Q101		HN1C01F
	Q112, Q113		HN1C01FU
	Q108		HN1K03FU
	Q503		RN1911
	D302		KV1470
	D601		RB501V-40
	D501, D502		RB521S-30

COILS AND FILTERS

	F5050, F5090 CHIP BEADS	DTF1067
	F4010, F4020, F4030 CHIP BEADS	DTF1070
	F4040, F4050, F4060 CHIP BEADS	DTF1070
	F8330, F9010, F9590 CHIP BEADS	DTF1070
	L304 (1.5µH)	VTL1059
	L151 (10µH)	VTL1061
	L1400 CHIP BEADS	VTL1088
	L9490, L9500, L9510 CHIP BEADS	VTL1105
	L101, L330 (8.2µH)	VTL1125

CAPACITORS

	C612	CCSRCH100D50
	C123, C145, C21, C282, C390	CCSRCH101J50
	C617	CCSRCH101J50
	C26	CCSRCH120J50
	C126, C333	CCSRCH150J50
	C206, C210, C211	CCSRCH151J50
	C322	CCSRCH180J50
	C116, C151, C314	CCSRCH220J50
	C152	CCSRCH221J50
	C632	CCSRCH330J50
	C209	CCSRCH331J50
	C104–C108, C128, C134, C297	CCSRCH470J50
	C335	CCSRCH470J50
	C122, C208	CCSRCH471J50
	C127, C334	CCSRCH5R0C50
	C124, C146	CCSRCH680J50
	C117, C240, C352, C360	CCSRCH681J25
	C129, C142, C22, C405, C601	CEV101M10
	C701, C763, C801, C802, C804	CEV101M10
	C113, C139, C358, C368, C411	CEV220M16
	C111, C147, C149, C205, C207	CEV470M6R3
	C401, C403, C407	CEV470M6R3
	C502	CKSQYB103K50
	C140, C223, C224, C252, C264	CKSQYB105K10
	C312	CKSQYB105K10
	C229	CKSQYB224K16
	C217, C451–C456, C931, C932	CKSQYF105Z16
	C216, C313	CKSRYB102K50
	C133, C136, C203, C220, C225	CKSRYB103K50
	C239, C320, C321, C619, C703	CKSRYB103K50
	C722, C904	CKSRYB103K50
	C101, C102, C114, C118, C119	CKSRYB104K16
	C121, C130, C138, C204	CKSRYB104K16
	C212, C213, C227, C228, C231	CKSRYB104K16
	C24, C263, C315–C317, C332	CKSRYB104K16
	C281, C354	CKSRYB222K50
	C153, C266	CKSRYB223K25
	C214, C251, C261	CKSRYB472K50
	C357	CKSRYB473K16
	C330	CKSRYB682K50
	C109, C110, C120, C131, C148	CKSRYF104Z16
	C150, C202, C215, C221, C222	CKSRYF104Z16
	C226, C230, C235, C265, C29	CKSRYF104Z16
	C31, C33, C35, C359, C367	CKSRYF104Z16
	C369–C372, C402, C404, C406	CKSRYF104Z16
	C408, C410, C412, C501	CKSRYF104Z16
	C602–C611, C613–C616	CKSRYF104Z16
	C621–C623, C625–C627	CKSRYF104Z16
	C630, C631, C702, C704–C714	CKSRYF104Z16
	C716–C721, C723–C725	CKSRYF104Z16
	C761, C762, C822, C827, C829	CKSRYF104Z16
	C832–C834, C836, C838, C840	CKSRYF104Z16
	C903, C921	CKSRYF104Z16
	C143, C319, C806–C819	CKSRYF105Z10
	C847, C848	CKSRYF105Z10
	C328, C821, C824, C825 (2.2µF)	VCG1030
	C828, C830, C837 (2.2µF)	VCG1030
	C23, C299 (0.47µF)	VCG1032
	VC21 (30pF)	VCM1013

RESISTORS

	R123 (39Ω×4)	ACN7047
	R715, R716 (47Ω×4)	ACN7077
	R531, R543, R545, R613 (10kΩ×4)	DCN1094
	R648, R649, R706, R707 (10kΩ×4)	DCN1094
	R748, R751 (10kΩ×4)	DCN1094
	R121, R532, R732, R736 (22Ω×4)	DCN1104
	R785, R786, R818–R820 (22Ω×4)	DCN1104
	R825, R848, R849 (22Ω×4)	DCN1104
	R1020, R162, R2010, R2020, R2030	RS1/10S0R0J
	R2040, R3050, R3520, R506, R510	RS1/10S0R0J
	R520, R601, R701, R801, R8410	RS1/10S0R0J
	R9220, R9230, R9240, R925–R948	RS1/10S0R0J
	R952–R958, R960, R964	RS1/10S0R0J
	R361, R364	RS1/16S1203F
	R363, R365	RS1/16S1503F
	R164	RS1/16S5600F
	R3510 (100Ω)	VCN1120
	Other Resistors	RS1/16S□□□J

OTHERS

	X601 (20MHz)	DSS1110
	FLEXIBLE CABLE	VDA1681
	CN106 7P CONNECTOR	VKN1299
	CN201 CONNECTOR	VKN1324
	CN120 24P CONNECTOR	VKN1464

Mark	No.	Description	Part No.
		CN1030 12P CONNECTOR	VKN1471
		CN602, CN901 15P CONNECTOR	VKN1474
		CN110 26P CONNECTOR	VKN1479
		CN802 CONNECTOR	VKN1529
		CN905 29P CONNECTOR	VKN1585
		LABEL	VRW1773
		X21 (13.824MHz)	VSS1129

F VQEB ASSY

SEMICONDUCTORS

	IC102	MB811171622A-100FN
	IC101	PM0023AF
	IC105, IC106	TC7SH14FU
	Q531, Q532, Q541, Q542	2PB709A
	Q551, Q552	2PB709A

COILS AND FILTERS

	F102 VIDEO FILTER	VTF1155
	L101 (22.0µH)	VTL1067

CAPACITORS

	C130	CCSRCH102J50
	C101, C120	CEV101M16
	C110–C119, C121–C126, C150	CKSRYB104K16
	C160, C532, C542, C552	CKSRYB104K16
	C201, C202 (2.2µF)	VCG1031

RESISTORS

	R105, R106, R404, R405 (20Ω)	DCN1104
	R12, R201, R409, R418, R419	RS1/10S0R0J
	R501	RS1/10S0R0J
	R122	RS1/10S2701F
	R532, R542, R552	RS1/16S3300F
	R534, R544, R554	RS1/16S4700F
	Other Resistors	RS1/16S□□□J

OTHERS

	CN101 CONNECTOR	VKN1530

G JCKB ASSY

SEMICONDUCTORS

	IC101, IC201, IC222, IC351	BA4560F
	IC801	LA7135AM
	IC301	NJM5532MD
⚠	IC999	NJM78M08FA
	IC901	TC74HCU04AF
	IC404, IC405, IC666	TC74VHC157FT
	IC505, IC555, IC902	TC7SET08F
	IC540	TC7W53FU
	IC401	UDA1328T/S1
	IC501	YSS912C
	Q193, Q293, Q383, Q395	2PB709A
	Q715, Q716, Q996	2PD601A
⚠	Q999	2SB1260
	Q345, Q705, Q706, Q805, Q806	2SC1740S
	Q191, Q192, Q291, Q292	2SD2114K
	Q381, Q382, Q391–Q394	2SD2114K
	Q194, Q294, Q384, Q396, Q666	PDTC124EK
	D298, D398, D944	1SS355
	D222, D351	UDZS6.2B

COILS AND FILTERS

	L901 COIL	PTL1003
	L906 COIL	RTF1167
	F404–F406, F421 CHIP SOLID INDUCTOR	VTF1096
	F501, F505 CHIP SOLID INDUCTOR	VTF1096
	F511, F521, F531 CHIP SOLID INDUCTOR	VTF1096
	F540, F541 CHIP SOLID INDUCTOR	VTF1096
	F551, F555, F571 CHIP SOLID INDUCTOR	VTF1096
	F581, F591 CHIP SOLID INDUCTOR	VTF1096
	F601, F901 CHIP SOLID INDUCTOR	VTF1096
	F902, F910 CHIP SOLID INDUCTOR	VTF1096

SWITCHES AND RELAYS

	S601	VSH1009

CAPACITORS

	C669, C883	CCSQCH101J50
	C508, C509	CCSQCH200J50
	C107, C207, C217	CCSQCH221J50
	C106, C206, C216, C327, C328	CCSQCH330J50
	C337, C338	CCSQCH330J50
	C101, C201, C211, C301, C311	CCSQCH331J50
	C321, C322, C331, C332	CCSQCH331J50
	C518	CCSQCH471J50
	C340, C349	CCSQCH680J50
	C103, C203, C213	CEAT100M50
	C108, C113, C118, C208, C218	CEAT101M10
	C502, C512, C522, C532, C542	CEAT101M10
	C552, C572, C582, C821, C880	CEAT101M10
	C890, C903, C906, C911	CEAT101M10
	C224, C344, C354	CEAT101M16
	C691, C703, C803	CEAT102M6R3
	C345	CEAT221M16
	C221, C352	CEAT470M16
	C693, C696	CEAT471M6R3
	C627, C630	CEHAZA101M25
	C719	CKSQYB103K50
	C713, C714, C811, C833, C866	CKSQYB104K25
	C111	CKSQYB105K10
	C116	CKSQYB473K50
	C115, C215, C222, C223, C335	CKSQYF104Z25
	C341–C343, C351, C353, C355	CKSQYF104Z25
	C412, C430, C444, C455, C466	CKSQYF104Z25
	C500, C501, C503, C505, C511	CKSQYF104Z25
	C513, C521, C523, C531, C533	CKSQYF104Z25
	C540, C541, C543, C551, C553	CKSQYF104Z25

Mark	No.	Description	Part No.
	C555, C571, C573, C581, C583		CKSQYF104Z25
	C591, C593, C610, C706, C806		CKSQYF104Z25
	C808, C809, C820, C901, C902		CKSQYF104Z25
	C904, C905, C908, C910, C912		CKSQYF104Z25
	C940, C966, C996, C999		CKSQYF104Z25
	C404–C406, C421, C600		CKSQYF105Z16
	C628, C629, C666, C992, C993		CKSQYF105Z16
	C422, C433, C460 (100µF/10V)		VCH1192
	C324, C334 (100µF/25V)		VCH1193
	RESISTORS		
	R692, R694, R697		RN1/10SC62R0D
	R701, R702, R711, R712		RN1/10SC68R0D
	R801, R802		RN1/10SC68R0D
	R108, R208, R218		RN1/10SE1602D
	R341–R348		RN1/10SE2202D
	R106, R206, R216		RN1/10SE3302D
	R327, R328, R337, R338		RN1/10SE4702D
	R116		RN1/10SE6801D
	Other Resistors		RS1/10S□□□J
	OTHERS		
	JA701	SOCKET	AKP7116
	JA901	OPTICAL LINK OUT	GP1F32T
	JA903, JA904	JACK/12V	PKN1004
	JA902	JACK	VKB1074
	JA601	JACK	VKB1112
	JA801	JACK	VKB1123
	JA101	JACK	VKB1125
	JA301	JACK	VKB1129
	CN999	15P CONNECTOR	VKN1246
	CN666	29P CONNECTOR	VKN1260
	KN101, KN102	EARTH METAL FITTING	VNF1084
	KN901, KN999	EARTH METAL FITTING	VNF1084
		PRINTED CIRCUIT BOARD	VNP1707
	X500 (12.288MHz)		VSS1140

H FLKY ASSY

SEMICONDUCTORS

IC101		PE5141A
IC102		S-806D
Q101		DTD113ES
Q102		PDTA124EK

SWITCHES AND RELAYS

S101–S103, S105, S106		ASG7013

CAPACITORS

C150		CCSQCH101J50
C103		CEJA101M6R3
C123		CEJA220M6R3
C101, C105		CEJA470M6R3
C108, C110–C113, C122		CKSQYB102K50
C102, C106, C114–C116		CKSQYF104Z25
C119, C120		CKSQYF104Z25
C170		CKSQYF104Z50

Mark	No.	Description	Part No.
	RESISTORS		
	All Resistors		RS1/10S□□□J
	OTHERS		
	CN102	CONNECTOR 7P	07P-FJ
		REMOTE RECEIVER UNIT	GP1U28X
	J101	CONNECTOR ASSY	PF02NN2D12
	V101	FL TUBE	VAW1050
		SPACER	VEC1599
	CN101	15P CONNECTOR	VKN1275
		HOLDER	VNF1087
	X101 (5MHz)		VSS1142

I PWSB ASSY

SEMICONDUCTORS

Q202		PDTA124EK
D201–D204		SLR-343VC(NP)

SWITCHES AND RELAYS

S201		ASG7013

CAPACITORS

C201		CKSQYF104Z25

RESISTORS

All Resistors		RS1/10S□□□J

OTHERS

CN201	CONNECTOR 7P	07R-FJ

J DILB ASSY

SEMICONDUCTORS

D301		MA111

OTHERS

PL301	LAMP	VEL1022

K POWER SUPPLY ASSY

SEMICONDUCTORS

⚠	IC201, IC801	AN1431T
⚠	IC311	VZF1078
⚠	IC411	VZF1074
⚠	Q101, Q103	VZF1062
⚠	Q102	2SC3377
⚠	Q104	2SC1740S
⚠	D101	VZF1044
⚠	D102	EG01C
⚠	D103	VZF1077
⚠	D104	MTZJ2.4B

Mark	No.	Description	Part No.
⚠	D105, D107, D110, D514		1SS270A
⚠	D108		VZF1045
⚠	D211, D711		VZF1065
⚠	D213		MTZJ15B
⚠	D311		VZF1076
⚠	D411		VZF1075
⚠	D511		10ELS2
⚠	D513		MTZJ8.2B
⚠	D811		VZF1054
⚠	D812		MTZJ6.8B

RESISTORS

⚠	R511 (33Ω)	VZC1057
⚠	R611	VZC1060
⚠	R711 (0.51Ω, 1/2W)	VZC1061

OTHERS

⚠	FU101 (2A/125V)	REK1078
⚠	P211 (1A/60V)	VEK1041
	PC106 PHOTOCUPLER(TLP721F)	VZF1071
	PC109 PHOTOCUPLER(TLP721F)	VZF1071
	PC151 PHOTOCUPLER(TLP721F)	VZF1071

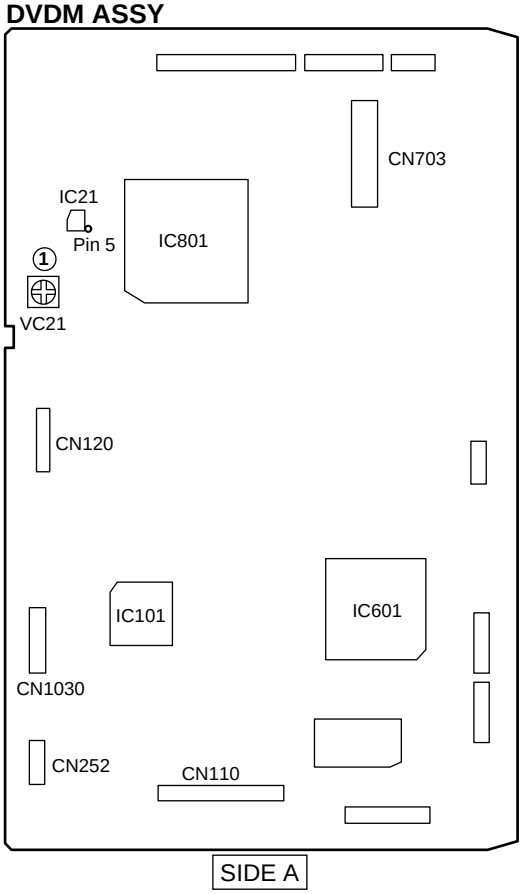
6. ADJUSTMENT

6.1 ADJUSTMENT ITEMS AND LOCATION

Note : When the Traverse mechanism adjustment is not properly adjusted, jitter, error rate and playability are defective. The noise may come out by the case.

■ **Adjustment Points (PCB Part)**

DVDM ASSY

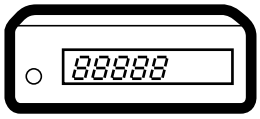


■ **Adjustment Items**

[Electrical Part]

① Master Clock Adjustment

6.2 JIGS AND MEASURING INSTRUMENTS

 Frequency counter Display digit ≥ 8-digit	 ⊖ Screwdriver (small)

6.3 NECESSARY ADJUSTMENT POINTS

When → Adjustment Points

■ **EXCHANGE PCB ASSY**

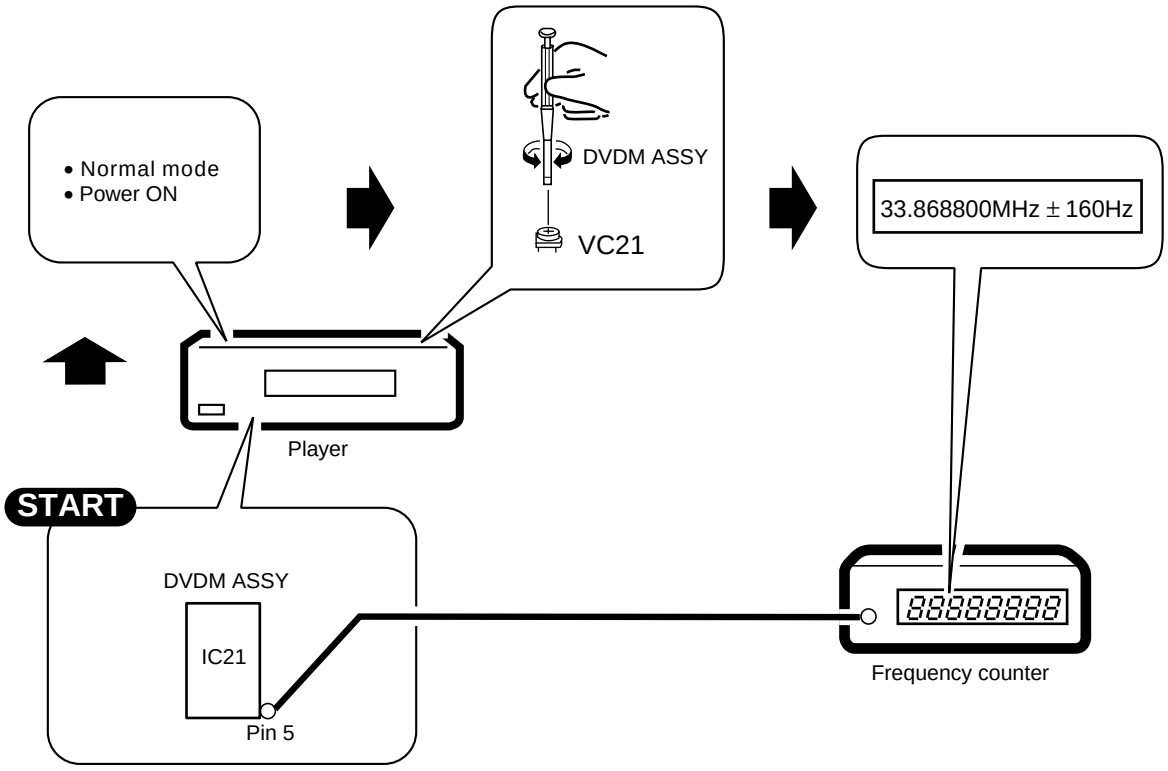
When	Adjustment Points	
Exchange board JCKB ASSY	**Mechanical point**	_____
	Electric point	_____
Exchange board DVDM ASSY	**Mechanical point**	_____
	Electric point	_____

Note : ① is adjusted already.

6.4 ELECTRICAL ADJUSTMENT

① Master Clock Adjustment

• When not properly adjusted : Uneven color



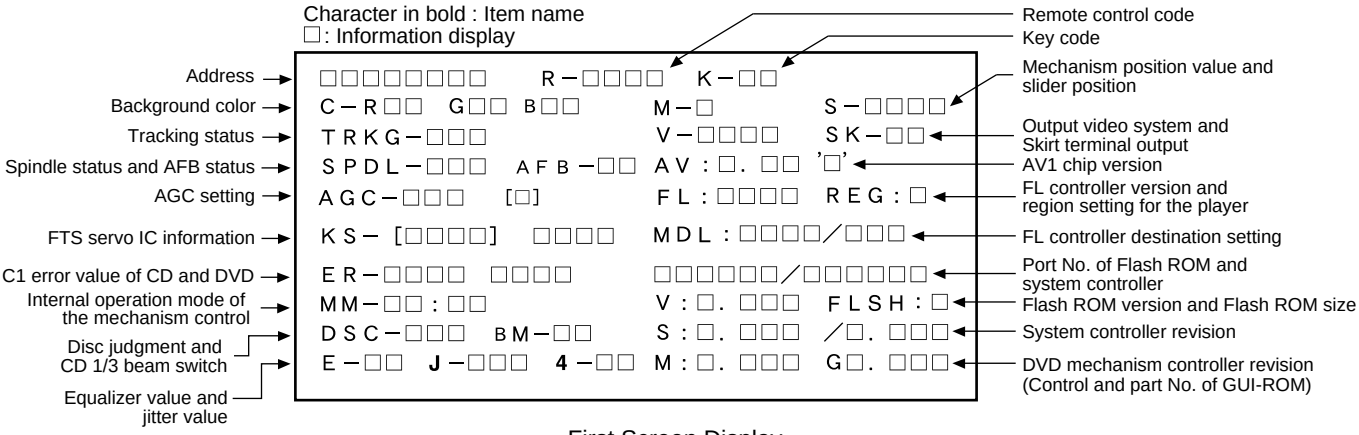
7. GENERAL INFORMATION

7.1 DIAGNOSIS

7.1.1 TEST MODE SCREEN DISPLAY

Consecutive double-OSD display is supported during test mode. The screen is composed 10 lines with a maximum of 32 characters per line. It can't be used with the debugging display mode together.

• Screen Composition



First Screen Display

Caution :
The first screen and second screen switch by pressing [DISPLAY] key of the remote control unit.
It is only a version display part on the lower right of the screen those contents of display change.
ATB : ON/OFF information display and AGC manual setting display deleted with the second generation.
The displays of Tilt error value, Tilt servo status and pickup DVD/CLD display deleted with the third generation becomes LD part is deleted.

• Description of Each Item on the Display

(1) Address indication

The address being traced is displayed in number.

DVD : ID indication (hexadecimal number, 8 digits) [＊＊＊＊＊＊＊＊]
CD : A-TIME (min. sec.) [0 0 0 0 ＊＊＊＊]

(Note : For DVDs, decimal-number indication is possible.)

(2) Code indication of the remote control unit [R – ＊＊＊＊]

The code for the key pressed on the remote control unit, which is received by the FL controller, is displayed while the key is pressed. In the case of the double code, the second code will be displayed.

(3) Key code indication for the main unit [K – ＊＊]

The code for the key pressed on the main unit, which is received by the system controller, is displayed while the key is pressed.

(4) Background color indication [C – R＊＊ G＊＊ B＊＊]

(5) Tracking status [TRKG – ＊＊＊]

Tracking on	[ON]
Tracking off	[OFF]

(6) ① Spindle status [SPDL – ＊＊＊]

Spindle accelerator and brake, free-runnimg	[A/B]
FG servo	[FG]
Rough, velocity phase servo	[SRV]
Offset addition, rough, velocity phase servo	[O_S]

② AFB status [AFB – ＊＊]

ON	[ON]
OFF	[OFF]

(7) Mechanism position value [M – ＊]

Position code	[1] to [3]

(8) Slider position [S – ＊＊＊＊]

CD TOC area	[IN]
CD active area	[CD]

(9) AGC setting [AGC – ＊＊]

AGC on	[AGC-ON]
AGC off	[AGC-OFF]

(10) Output video system [V – ＊＊＊＊]

NTSC system [NTSC]
PAL system [PAL]
Auto-setting [AUTO]

Skirt terminal output [SK – ＊＊]

VIDEO [00]
S-VIDEO [01]
RGB [02]

＊: Display only the model which can do the output setting of skirt terminal.

(11) FTS servo IC information

DSP coefficient indication [KS – [＊＊＊＊] ＊＊＊＊]
Displays the address (four digits) of the specified coefficient and the setting value (four digits) with [TEST] and [9] keys.

(12) Error rate indication

① C1 error value of CD [ER – C1 ＊＊＊＊]
② C1 error value of DVD [ER – ＊＊＊＊ ＊＊＊＊]

(13) Internal operation mode of mechanism controller [MM – ＊＊ : ＊＊]

Internal mechanism mode (2 digits) and internal mechanism step (2 digits) of the mechanism controller

(14) ① Disk sensing [DSC – ＊＊＊]

The type of discs loaded is displayed.
[DVD], [CD], [VCD], [ ]

② CD 1/3 beam switch [BM – ＊＊]

(15) ① Equalizer value [E – ＊＊]

② Jitter value [J – ＊＊]

nake the jitter four times, and renew it in every one second.
[4 – ＊＊]
CD is effective only in the jitter value.

(16) Version of the AV-1 chip [AV : ＊.＊＊' ＊']

(17) ① Version of the FL controller [FL : ＊＊＊＊]

② Region setting of the player [REG : ＊]

Setting value [1] to [6]

(18) Destination setting of the FL controller [MDL : ＊＊＊＊ / ＊＊＊]

For charactors in front represent the type of model :
There charactors that follow represent the destination code.
J : /J, K : /KU, /KC, /KU/KC, R : /RAM, /RL, /RD, /LB,
WY : /WY

(19) The part number of the flash ROM and system controller [＊＊＊＊＊＊ / ＊＊＊＊＊＊＊]

① Part number of the flash ROM <Front>
(Example) VYW1536-A → W1536A
(Example) PD6256A9 → 6256A9
② Part number of the system controller <Rear>
(Example) PD3381T1 → 3381T1

(20) ① Version of the flash ROM [V : ＊.＊＊＊]

② Flash ROM size [FLSH = ＊]

(21) Revision of the system controller [S : ＊.＊＊＊ / ＊.＊＊]

① Revision number of the external ROM part (flash ROM) of the system controller <Front>
② Revision of the internal ROM part of the system controller <Rear>

(22) Revision of the DVD mechanism controller [M : ＊.＊＊＊]

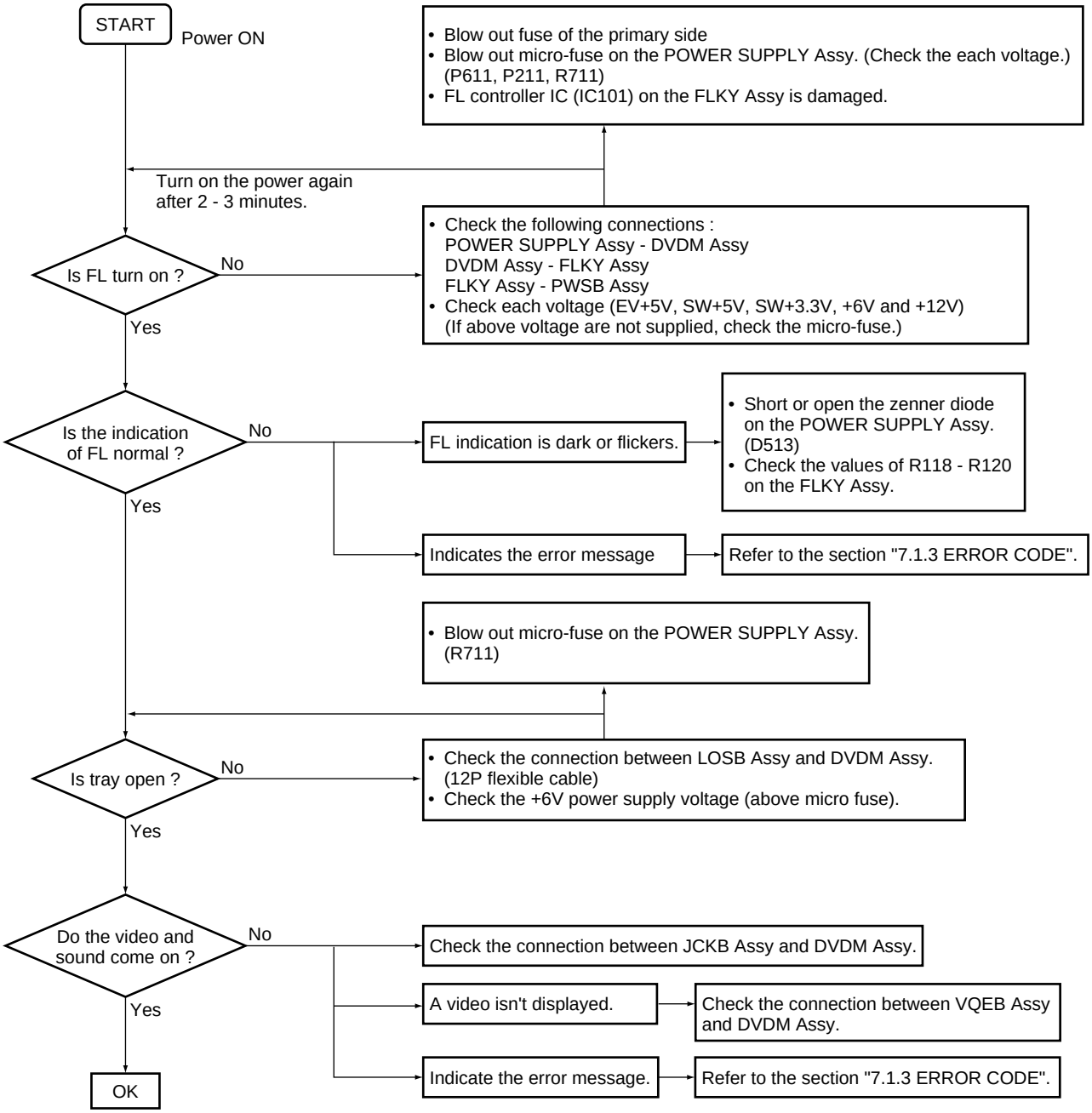
Revision number of the external ROM part (flash ROM) of the DVD mechanism controller

(23) Control and part numbers of the GUI-ROM [GUI : ＊＊＊＊]

No GUI model displays as "—— / ——".
OEM model displays the part number of GUI-ROM [GUI : ＊＊＊＊]

7.1.2 TROUBLE SHOOTING

- No Power ON
- FL is not turned ON
- FL indication is unusual



7.1.3 ERROR CODE

Error codes that are displayed on the FL display without using the remote control unit

FL Display	Possible causes	Operation of the unit
AV1 VER	AV-1 chip is not a match with the program of system controller	The sound may not out with the specific audio.
CPU AERR	CPU address error (Hardware is unusual.)	No operation
DMA AERR	DMA address error (Hardware is unusual.)	No operation
FLASH ID	Difference in versions of the internal ROM of the system controller and of the flash ROM, or bus line failure or reverse installation	No operation
FLASH WRP	Write protect error of the flash ROM	No operation
FLASH SIG	Difference in part number of the flash ROM (When the ROM which could't be used was used.)	No operation
FLASH SUM	Check sum error of the flash ROM (It exceeds the regular size.) or reverse installation (Hardware is unusual.)	No operation
FLASH SIZE	Size error of the flash ROM (Use 4 or 8 M-bit.)	No operation
ILLGAL	The system controller fetched a code other than an operation code (Hardware is unusual.)	No operation
RESERVE	Undefined interrupt (Hardware is unusual.)	No operation
SLOT	Inappropriate slot command issued (Hardware is unusual.)	No operation

Error codes that are displayed on the FL display by using the remote control unit (Mechanism controller error)
To display: ESC + DISPLAY + DISPLAY; Location of the display: At the two digits of center of the FL display
To display the error history: ESC + DISPLAY + One shot; Location of the display: TV screen

FL	Description of Error	Causes if with a DVD	Causes if with a CD	Operation of the Unit
11	Search timeout	Search could not be complete within 7 seconds.	Search could not be complete within 7 seconds, and it could not enter the target area within 7 seconds by VCD scan.	CD : Stops, DVD: Continues operation
12	Search retry error	A search could not be completed after 3 retries, search backup was executed 4 times, or in a case of timeout (6 seconds) while the unit was tracing 11 tracks or more beyond the target while the search operation was converging.	Backup against slider skip was executed 4 times during a search, or slider skip twice resulted in starting from the read-in point.	CD: Stops, DVD: Continues operation
19	Tracing timeout while converging	Timeout (10.5 seconds) while tracing at the stage of convergence of a search.		Stop
1B	Index 0 search error		During Track (Index) Search, the search for the beginning of a program could not be completed within 3 seconds (20 seconds in the case of Index Search) after positioning based on the TOC data was completed.	Stop
22	Timeout of slider inner circumference	Inside switch could not ON within 3 seconds.		Stop
23	Timeout of slider outer circumference	Inside switch could not OFF within 2 seconds.		Stop
33	No FOK pulse during playback CLVA	When the focus was deviated continuously 20 times.		Adjusts focus at the innermost circumference and tries to return to its position where the error was generated (for 3 times),then opens. If the same error persists after one retry, the tray opens. (No FOK pulse)
38	Disc-type-sensing error	If normal starting was impossible in the following three cases, disc-type sensing will be retried if other errors occure excepting C5 error. However, when the focus error "33" was occured continuously 3 times, it is finished as "38 error" at the moment: (1) startup with the first disc-type-sensing result, (2) forced startup with another disc by designating the disc type, (3) forced startup with the original disc by designating the disc type.		Open

FL	Description of Error	Causes if with a DVD	Causes if with a CD	Operation of the Unit
39	SGC converge timeout	SGC could not converge during detects the peak		Open
41	Spindle timeout	The unit did not enter Stop mode within 10 seconds of issuance of a Stop command.		Stop
48	Spindle FG transition timeout	The spindle could not converge into within ± 12% of the target FG rotation speed within 10 seconds after spindle kick. The first time after startup (the first time after disc distinction), it doesn't become the number of the target rotation within five seconds. The first time after startup, detects the abnormal rotation number of high-speed continuously 3 loops. DVD: 5 to 9 mS , CD: 40 to 60 mS		Stops. (FG timeout)
49	Spindle PLL transition timeout	After the second times after startup, it doesn't become the number of the target rotation within five seconds. Detects the abnormal high-speed or low-speed rotations. DVD: 5 to 9 mS , CD: 40 to 60 mS		Stops. ("73" is displayed during starting process.)
4A	Spindle lock timeout	Spindle could not lock more than 1.5 seconds before start the AFB.		Stops. ("73" is displayed during starting process.)
51	Auto sequence timeout of peak detection	ABUSY did not return within 1 second after the DDTCT (peak detection) command was sent.		Stop
52	Auto sequence timeout of focus jump down	ABUSY did not return within 30 mS after the FJMPD (Focus jump 1 to 0) command was sent.		Stop
53	Auto sequence timeout of focus jump up	ABUSY did not return within 30 mS after the FJMPU (Focus jump 0 to 1) command was sent.		Stop
54	Auto sequence timeout of play AGC	ABUSY did not return within 50 mS after the GSUMON (play-AGC-measuring) command was sent.		Stop
55	Auto sequence timeout of disc-type-sensing	ABUSY did not return within 2 seconds after the DJSRT (disc-sensing) command was sent.		Stop
56	Auto sequence timeout of ATB2	ABUSY did not return within 1 second after the TBLOFS (Internal ATB after the completion of external ATB) command was sent.		Stop
57	Auto sequence timeout of tracking servo ON	ABUSY did not return within 500 mS after the TSON (tracking servo ON) command was sent.		Stop
58	Auto sequence timeout of ATB1	ABUSY did not return within 200 mS after the TBL (external ATB) command was sent.		Stop
59	Auto sequence timeout of focus gain adjustment	ABUSY did not return within 2 seconds after the FGN (focus gain adjustment) command was sent.		Stop
5A	Auto sequence timeout of tracking gain adjustment	ABUSY did not return within 2 seconds after TGN (tracking gain adjustment) command was sent.		Stop
5B	Auto sequence timeout of offset adjustment	ABUSY did not return within 1 second after the CMDAVE (offset adjustment) command was sent.		Stop
5C	Auto sequence timeout of modulation factor measurement	ABUSY did not return within 200 mS after the ADJMIR (modulation factor measurement) command was sent.		Stop
5D	Auto sequence timeout of auto focus bias	ABUSY did not return within 2 seconds after the AFB (auto focus bias) command was sent.		Stop
5F	Auto sequence already busy	A command could not be sent because ABUSY was low. ABUSY did not return within 200 mS after TLV command was sent.		Stop
62	Pause retry error	Pause mode could not be restored within three retries after it had been released.		Continues operation

FL	Description of Error	Causes if with a DVD	Causes if with a CD	Operation of the Unit
71	ID can not read during tracing	An ID could not be read for 1 second or more.		Stop
72	Subcode check failure during playback		No frame could be read for 3 seconds or more.	Stop
73	ID can not read at the startup	An ID could not be read within 1 second after the AFB adjustment had been finished.		Opens (ID readout failure)
74	Subcode check failure during startup		No subcode could be read within 3 seconds after AFB adjustment had been finished.	Opens (Subcode readout failure).
81	Timeout for reading TOC of the mechanism controller		TOC readout took 30 seconds or more.	Stop
82	Timeout for reading TOC of the system controller		Reading TOC of the system controller took 30 seconds or more.	Stop
A1	Communication timeout of DSP command	A command could not be issued to DSP because Command Busy (XCBUSY) was in force (XCBUSY = L) for a specified time (about 200 µS).		No operation
A2	Communication timeout for reading DSP coefficient	Command Busy (XCBUSY) was in force for a specified time (about 200 µS) before and after a coefficient read command was issued to DSP, or the address echo-back after command issuance did not match the setup address.		No operation
A3	Communication timeout for writing DSP coefficient	Command Busy (XCBUSY) was in force for a specified time (about 1024 mS) before and after the coefficient write command was issued to DSP.		No operation
A4	Communication timeout for continuously writing DSP coefficient	Command Busy (XCBUSY) was in force for 200 µS during continuous coefficient writing, or before and after a continuous write command was issued to DSP.		No operation
B1	Timeout error for backup	In the tracing state during the backup sequence, codes could not be read for 1 second or more. In the backup sequence, tracking ON sequence of the servo DSP could not be completed even if more than 500 mS after the tracking ON command was issued.		Stops
B2	Retry error for backup	Tracing impossible after retring the tracking ON for 3 times in the backup sequence.		Stops
B3	Retry error for trace	During tracing, runaway was detected after three iterations of backup operations for detecting runaway.		Stops
C3	Detection of tracking overcurrent	During playback, the overcurrent detection port was at L for 300 ms or more continuously.		Stops (the mechanical controller operates independently).
(C5)	Short-circuit test corresponding error	While the power was on, the overcurrent detection port was at L for 40 ms or more continuously.		Turns off the power instantly (No indication on the FL display and no writing to flash memory)
E3	Violation against digital copy guard			Stops
F5	Tray being pushed	The tray switch that had been Open mode was forcibly changed to a mode other than Open by an external force.		Closes
F8	Loading timeout	Loading, unloading or clamping could not be completed within a specified time (about 5 seconds).		Reverses the loading direction. It timeout is repeated upon retry, the unit stops.
FC	Focus	The following error occured eight times. (1) Focus ON sequence could not be completed even if more than two seconds after the focus ON command (to the servo DSP) was sent. (2) Focus IN sequence was finished, actually focus IN was not completed.		Stops wherever possible then opens (stops in the case of side B).

Error codes that are displayed on the FL display by using the remote control unit (Device error)

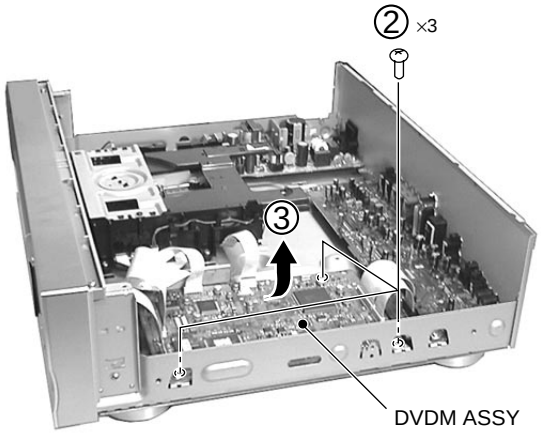
To display: ESC + DISPLAY + DISPLAY; Location of the display: At the two digits of left of the FL display

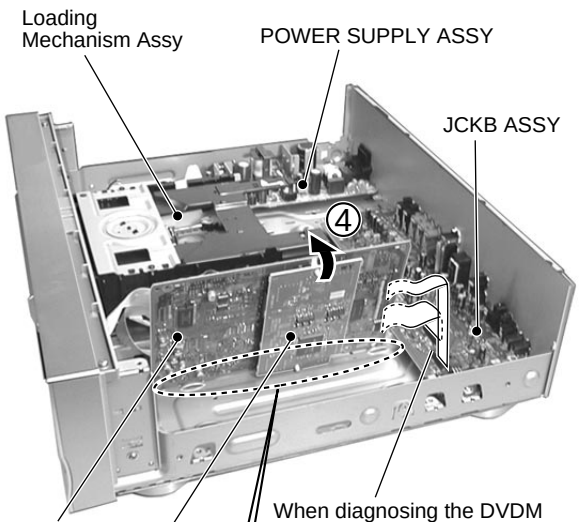
FL	Description of Error	Causes if with a DVD	Causes if with a CD	Operation of the Unit
bit3=1 08 etc.	AV1 access error (read, write NG)			No operation or it becomes debugging indication if the power is able to ON.
bit2=1 04 etc.	MY CHIP access error			
bit1=1 01 etc.	SRAM access error			

7.1.4 DISASSEMBLY

■ DVDM ASSY

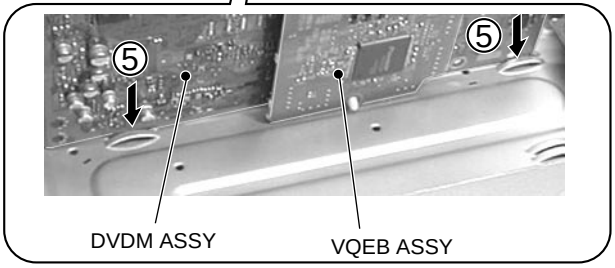
① Remove a Bonnet (Seven screws).





When diagnosing the DVDM ASSY and VQEB ASSY, use the following Flexible Cable for service.

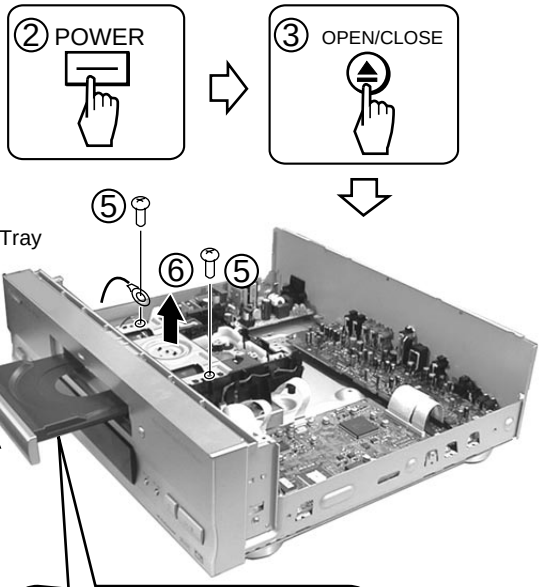
- DVDM CN905 ↔ JCKB CN666 Flexible Cable (29P): VDA1752
- DVDM CN901 ↔ JCKB CN999 Flexible Cable (15P): VDA1751

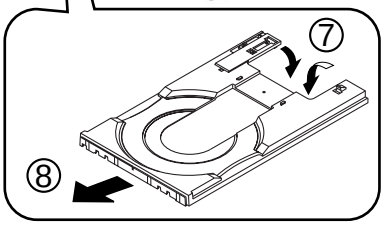


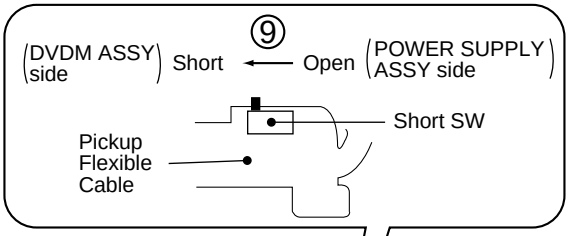
- Remove the VQEB Assy when diagnosing the circuit under the VQEB ASSY of DVDM ASSY.
  There is no hindrance in other actuation though the picture stops appearing when VQEB ASSY is removed.

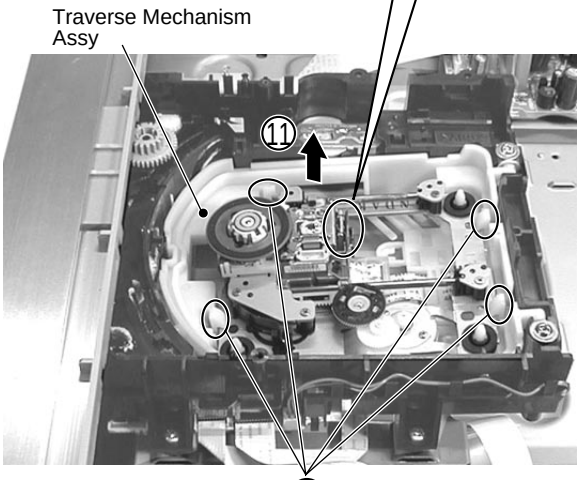
■ TRAVERSE MECHANISM ASSY-S

① Remove a Bonnet (Seven screws).









7.2 PARTS

7.2.1 IC

• The information shown in the list is basic information and may not correspond exactly to that shown in the schematic diagrams.

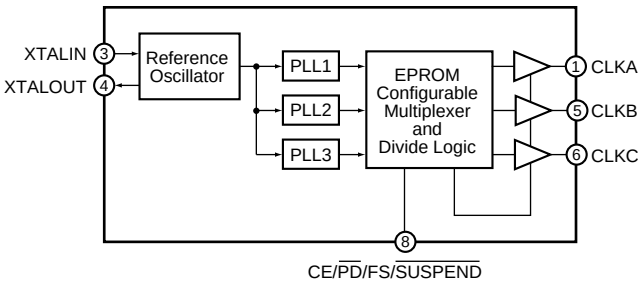
●List of IC

CY2081SL-655, PD3410A, VYW1669, M65773FP, LC89051V, YSS912C, PM0023AF

■ CY2081SL-655 (DVDM ASSY : IC21)

• Clock Generate IC

● Block Diagram



● Pin Function

No.	Pin Name	Pin Function
1	CLKA	Configurable clock output
2	GND	Ground
3	XTALIN	Reference crystal input of external reference clock input
4	XTALOUT	Reference crystal feedback
5	CLKB	Configurable clock output
6	CLKC	Configurable clock output
7	VDD	Voltage supply
8	OE/PD/FS/ SUSPEND	Output control pin; either active-HIGH output enable, active-LOW power down, CLKA frequency select, or active-LOW suspend input

■ PD3410A (DVDM ASSY : IC601)

• System Control IC

● Pin Function

No.	Mark	Pin Name	I/O	Function
1	XCS3/XCASL	XCS3	O	PD4995A (MY CHIP) chip select signal output
2	GND	GND	–	GND
3	CK	HCPUCK	O	
4	VCC	V+3D	–	V+3D
5	PICLK	–	I/O	N.C.
6	PIDATA	–	I/O	N.C.
7	GND	GND	–	GND
8	PORTH0	XCSSP0	O	HC74VHCT595FT (Shift register with output latch)
9	PORTH1	33MVH	O	CY2071ASL-371 (Clock generator)
10	PORTH2	36MVH	O	BU2185F (Clock generator)
11	PORTH3	V_SEL2	O	Composite/S switching signal output of the skirt terminal
12	VCC	V+3D	–	V+3D
13	PORTH4	SCTAON	O	
14	PORTH5	27MVH	O	27MHz oscillation control circuit
15	PORTH6	XCSSPD	O	HC74VHCT595FT (Shift register with output latch)
16	PORTH7	XAUDRST/ VPOFF/ ECHO	O	YSS922 (Dolby AC-3/Pro logic, audio DSP built-in DTS decoder) Video system
17	GND	GND	–	GND
18	EXTAL	EXTAL	I	Connect a ceramic resonator
19	XTAL	XTAL	O	
20	VCC	V+3D	–	V+3D
21	PORTG0	XCSDF0	O	DAC chip select signal output
22	PORTG1	XCSDF1/ XCSDASP	O	YSS912 (Dolby AC-3/Pro logic, audio DSP built-in DTS decoder) AD1853 (3D audio processor) TC74VHC595FT (Serial/parallel) → SM5847AF (DAC for Mch) YSS922 (DASP)
23	PORTG2	XCSDF2/ DFRST1/ XMIC_ON	O	YSS912 (Dolby AC-3/Pro logic, audio DSP built-in DTS decoder) SM5847AF (DAC for Mch)
24	PORTG3	HIBSEL	O	PD00236AM
25	PORTG4	LFEON/ DFRST0	O	Buffer → Audio amp SM5847AF (DAC for Mch)
26	GND	GND	–	GND
27	PORTG5	6CHMD/ XMAOFF	O	Buffer → Front DAC selector
28	PORTG6	DTSMD/ XMRST/ XDASP	O	SW (Switch circuit)
29	PORTG7	XAMUTE/ XMUTM	O	Last stage mute signal output of the audio
30	PORTF0	44X48	O	DAC 44/48 FS switching signal output
31	PORTF1	DI_ERR/ XDIGIO	I	DIR1700 (Digital audio interface receiver)
32	PORTF2	3DON/ XMMUTE/ 48X44	O	3D audio ON/bypass switching signal output
33	VCC	V+3D	–	V+3D
34	PORTF3	XCSADSP0/ SYNC1	O	DSP56362 (Audio DSP)
35	PORTF4	XCSADSP1/ XAVS_RT/ DISC	O	DSP56362 (Audio DSP)
36	PORTF5	XCSADSP2/ DPOS/ODD	O	DSP56362 (Audio DSP)

No.	Mark	Pin Name	I/O	Function
37	PORTF6	XVQERST/ XANR	O	Analog NR ON/OFF switching signal output
38	PORTF7	XCSVE/ XCSVQE	O	Serial communication enable signal output of the video encoder
39	GND	GND	–	GND
40	AVSS	GND	–	GND
41	AVCC	V+3D	–	V+3D
42	OUTA_P	LODRV	O	Loading drive output
43	VREF	V+3D	–	V+3D
44	OUTB_P	TEI	O	Tracking offset signal output
45	AVSS	GND	–	GND
46	AVSS	GND	–	GND
47	PORTE0	V_SEL	O	Component/composite switching signal output
48	PORTE1	CDGM	I	PDC016A (Graphic IC)
49	PORTE2	OEM???	I	
50	PORTE3	FOFST1	I/O	Focus offset adjustment output 1
51	PORTE4	FOFST2	I/O	Focus offset adjustment output 2
52	PORTE5	XDFINH	I/O	Defect shunt signal output
53	PORTE6	DVD/XCD	O	DVD/CD switching signal output
54	PORTE7	LD1_ON	O	650 nm laser diode ON signal output
55	PORTD0	LD2_ON	O	780 nm laser diode ON signal output
56	VCC	V+3D	–	V+3D
57	PORTD1	DPD/TE	O	1 beam/3 beams switching signal output
58	PORTD2	AGOFF	O	AGC ON/OFF switching signal output of RF IC
59	PORTD3	XCD2X	O	Signal output for switching the double speed playback
60	PORTD4	OEICG	O	OEIC gain switching signal output
61	GND	GND	–	GND
62	PORTD5	XMON	O	Control output ON/OFF switching output of the spindle motor
63	PORTD6	XBCA	O	
64	PORTD7	OPEN_SW/ X???RST	I	Mechanism connector
65	PORTJ0	XDRVMUT	O	Driver mute output
66	PORTJ1	DR/XLD	O	TC7W53F (Analog SW)
67	PORTJ2	XDSPRST	O	LC78652W (Servo DSP)
68	PORTJ3	MNJACK/ MC_MO	I	Mini jack connection check pin
69	VCC	V+3D	–	V+3D
70	PORTJ4	TM_ENT	I	Test mode input
71	PORTJ5	XEXPE	O	TC74VHCT574F/FS (3-state buffer)
72	PORTJ6	VSEL_SW	I	Component/composite SW input
73	PORTJ7	DQSY	I	
74	PB0/TIOCA2	XCBUSY	I	Command busy input
75	PB1/TIOCB2	XABUSY	I	Auto-sequence busy input
76	PB2/TIOCA3	XINT2/ XAVIRQ2	I	Interrupt input 2 (AV-1)
77	VCC	V+3D	–	V+3D
78	PB3/TIOCB3	LT1	O	Communication response signal output to the FL controller
79	PB4/TIOCA4	SBSY	I	Subcode block sync. input
80	XMTEST	–	I	V+3D
81	XCPUMD	–	I	V+3D
82	XRES	XRESET	I	Reset input

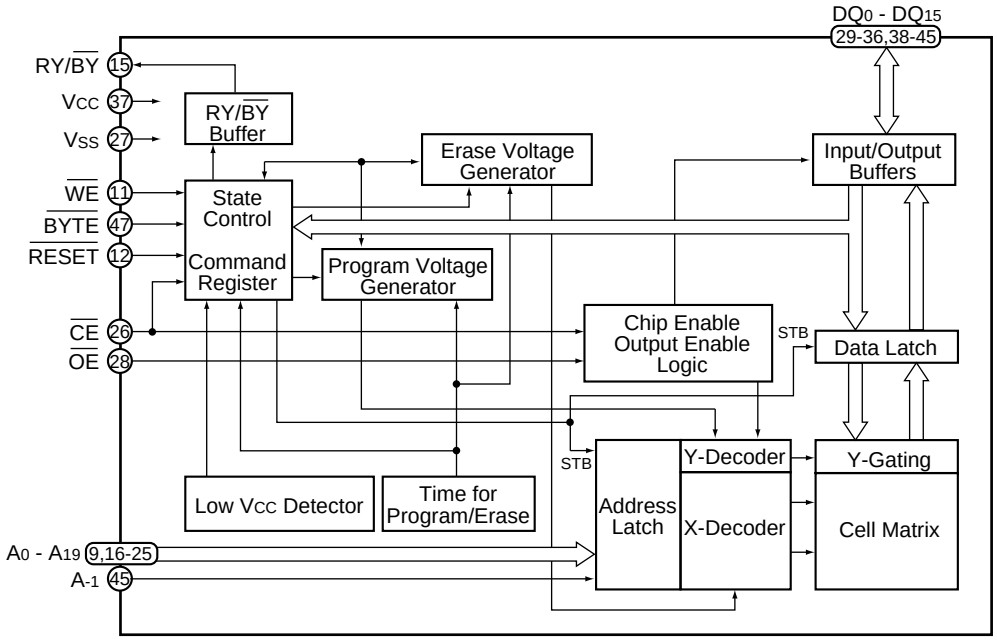
No.	Mark	Pin Name	I/O	Function
83	GND	GND	–	GND
84	AN0	LODPOS	I	Loading position input
85	AN1	SLDPOS	I	Slider position input
86	AN2	DOORSW	I	Mecha. connector
87	AN3	NAP_SW	I	NTSC/AUTO/PAL SW input
88	AN4		I	
89	AN5		I	
90	AN6		I	
91	AN7	525IP_SW	I	
92	Avref	V+3D	–	V+3D
93	AVCC	V+3D	–	V+3D
94	AVSS	GND	–	GND
95	PB5/TIOCB4	DIBLK/HFL/ DCNT2	I	DIR1700 (Digital audio interface receiver) LC78652W (Servo DSP)
96	PB6/TIOCXA4/TCLKC	C2F	I	C2 error input
97	PB7/TIOCXB4/TCLKD	XRDY	I	Communicatio request input from the FL controller
98	PB8/RxD0	SSI	I	Serial data input (FL controller)
99	PB9/TxD0	SSO	O	Serial data output (FL controller, DAC)
100	VCC	V+3D	–	V+3D
101	PB10/RxD1	RXD	I	Data input of the RS-232C
102	PB11/TxD1	TXD	O	Data output of the RS-232C
103	PB12/XIRQ4/SCK0	SSCK	I/O	Serial clock output (FL controller, DAC)
104	PB13/XIRQ5/SCK1	XIRQL10	I	Interrupt input 1 (MY CHIP)
105	GND	GND	–	GND
106	PB14/XIRQ6	XIRQL11	I	Interrupt input 2 (MY CHIP)
107	PB15/XIRQ7	XINT0/ XAVIRQ0	I	Interrupt input 0 (AV-1)
108	PA0/XCS4/TIOCA0	XCS4	O	Servo DSP chip select signal output
109	PA1/XCS5/XRAS	N.C.	O	Non connection
110	PA2/XCS6/TIOCB0	XCS6	O	AV-1 chip select signal output
111	XWAIT	XWAIT	I	Wait signal input
112	XWRL	XWRL	O	Write pulse output L
113	GND	GND	–	GND
114	XWRH	XWRH	O	Write pulse output H
115	XRD	XRD	O	Read pulse output
116	PA7/XBACK	XCURDET	I	Over-current detection signal input
117	PA8/XBREQ	CTS	I	RS-232C transfer permit input
118	PA9/XAH/XIRQOUT/ XADTRG	DTR	O	RS-232C transfer permit output
119	PA10/DPL/TIOCA1	XAVIRQ1/ XINT1	I	Interrupt input 1 (AV-1)
120	PA11/DPH/TIOCB1	THLD	I	Tracking hold signal input
121	VCC	V+3D	–	V+3D
122	PA12/XIRQ0/DACK0/ TCLKA	DACK0	O	DMA response output (MY CHIP)
123	PA13/XIRQ1/ XDREQ0/TCLKB	XDREQ0	I	DMA request input (MY CHIP)
124	PA14/XIRQ2/XDACK1	XDACK1	O	DMA response output (AV-1)
125	PA15/XIRQ3/XDREQ1	XDREQ1	I	DMA request input (AV-1)
126	AD0	D0	I/O	Data bus 0

No.	Mark	Pin Name	I/O	Function
127	GND	GND	–	GND
128	AD1	D1	I/O	Data bus 1
129	AD2	D2	I/O	Data bus 2
130	AD3	D3	I/O	Data bus 3
131	AD4	D4	I/O	Data bus 4
132	AD5	D5	I/O	Data bus 5
133	AD6	D6	I/O	Data bus 6
134	VCC	V+3D	–	V+3D
135	AD7	D7	I/O	Data bus 7
136	AD8	D8	I/O	Data bus 8
137	AD9	D9	I/O	Data bus 9
138	AD10	D10	I/O	Data bus 10
139	GND	GND	–	GND
140	AD11	D11	I/O	Data bus 11
141	AD12	D12	I/O	Data bus 12
142	AD13	D13	I/O	Data bus 13
143	AD14	D14	I/O	Data bus 14
144	VCC	V+3D	–	V+3D
145	AD15	D15	I/O	Data bus 15
146	A0 (XHBS)	A0	O	Address bus 0
147	A1	A1	O	Address bus 1
148	A2	A2	O	Address bus 2
149	GND	GND	–	GND
150	A3	A3	O	Address bus 3
151	A4	A4	O	Address bus 4
152	A5	A5	O	Address bus 5
153	A6	A6	O	Address bus 6
154	A7	A7	O	Address bus 7
155	A8	A8	O	Address bus 8
156	A9	A9	O	Address bus 9
157	A10	A10	O	Address bus 10
158	A11	A11	O	Address bus 11
159	A12	A12	O	Address bus 12
160	A13	A13	O	Address bus 13
161	A14	A14	O	Address bus 14
162	A15	A15	O	Address bus 15
163	A16	A16	O	Address bus 16
164	A17	A17	O	Address bus 17
165	VCC	V+3D	–	V+3D
166	A18	A18	O	Address bus 18
167	A19	A19	O	Address bus 19
168	A20	A20	O	Address bus 20
169	A21	A21	O	N.C.
170	XNMI	XNMI	I	V+3D
171	GND	GND	–	GND
172	XCS10	XCS10	O	VHCT574F/FS (3-state buffer)
173	XCS20	XCS20	O	Chip select signal output of the flash ROM
174	XCS22	XCS22	O	(GUI ROM)
175	XCS23	XCS23	O	Chip select signal output of the SRAM
176	XCS2		O	N.C.

■ VYW1669 (DVDM ASSY : IC603)

- **16M bit Flash Memory IC**

● Block Diagram



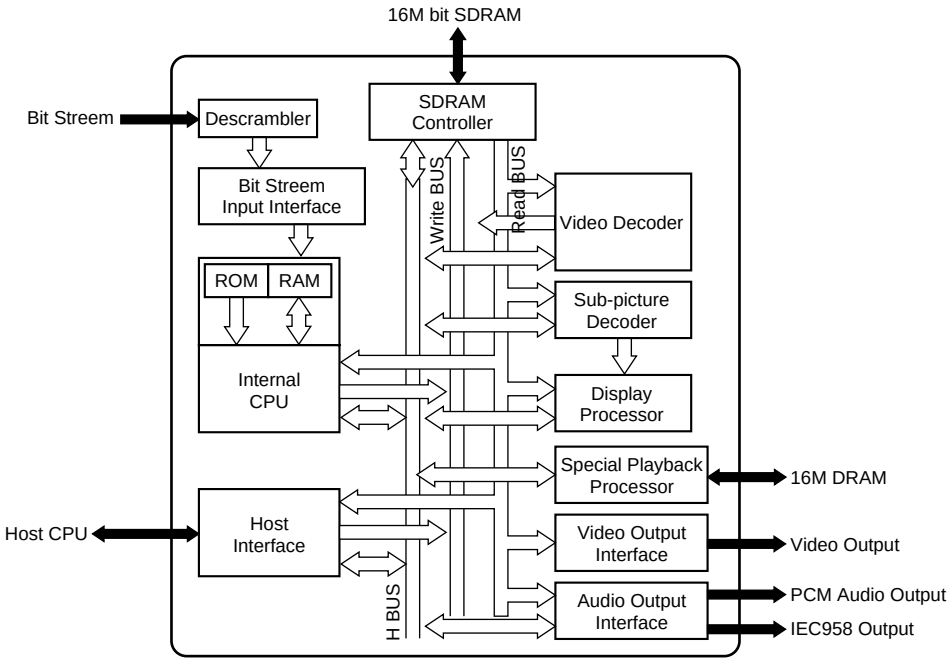
● Pin Function

No.	Pin Name	I/O	Pin Function	No.	Pin Name	I/O	Pin Function
1	A15	I	Address inputs	25	A0	I	Address input
2	A14			26	$\overline{CE}$	I	Chip enable
3	A13			27	VSS	–	Ground
4	A12			28	$\overline{OE}$	I	Output enable
5	A11			29	DQ0	I/O	Data inputs/outputs
6	A10			30	DQ8		
7	A9			31	DQ1		
8	A8			32	DQ9		
9	A19			33	DQ2		
10	N.C.	–	Non connection	34	DQ10		
11	$\overline{WE}$	I	Write enable	35	DQ3		
12	$\overline{RESET}$	I	Hardware reset pin/Temporary sector unprotection	36	DQ11		
13	N.C.	–	Non connection	37	VCC	–	Power supply
14	N.C.	–	Non connection	38	DQ4	I/O	Data inputs/outputs
15	RY/$\overline{BY}$	O	Ready/Busy output	39	DQ12		
16	A18	I	Address inputs	40	DQ5		
17	A17			41	DQ13		
18	A7			42	DQ6		
19	A6			43	DQ14		
20	A5			44	DQ7		
21	A4			45	DQ15/A-1	I/O	Data inputs/outputs / Address input
22	A3			46	VSS	–	Ground
23	A2			47	$\overline{BYTE}$	I	Selects 8-bit or 16-bit mode
24	A1			48	A16	I	Address input

■ M65773FP (DVDM ASSY : IC801)

- **MPEG2 Decoder IC**

● Block Diagram



● Pin Function

No.	Pin Name	I/O	Pin Function	No.	Pin Name	I/O	Pin Function
1	GND	I	Ground	21	5VDD	I	5V power supply
2	HD0	I/O	Data input and output port	22	HD15	I/O	Data input and output port
3	HD1			23	CS	I	Chip select signal input
4	HD2			24	RE	I	Read Enable signal input
5	HD3			25	WE	I	Write Enable signal input
6	HD4			26	BHE	I	Byte High Enable signal input
7	5VDD	I	5V power supply	27	RDY	O	Acknowledge signal which is indicated the finish of data reading or writing via the host bus
8	VDD	I	Power supply	28	INTR	O	Interrupt request signal against to the external CPU from M65773FP
9	HD5	I/O	Data input and output port	29	GND	I	Ground
10	HD6			30	HA0	I	Address input port
11	HD7			31	HA1		
12	HD8			32	HA2		
13	HD9			33	HA3		
14	GND	I	Ground	34	HA4		
15	HD10	I/O	Data input and output port	35	VDD	I	Power supply
16	HD11			36	5VDD	I	5V power supply
17	HD12			37	HA5	I	Address input port
18	HD13			38	HA6		
19	HD14			39	HA7		
20	VDD	I	Power supply	40	HA8		

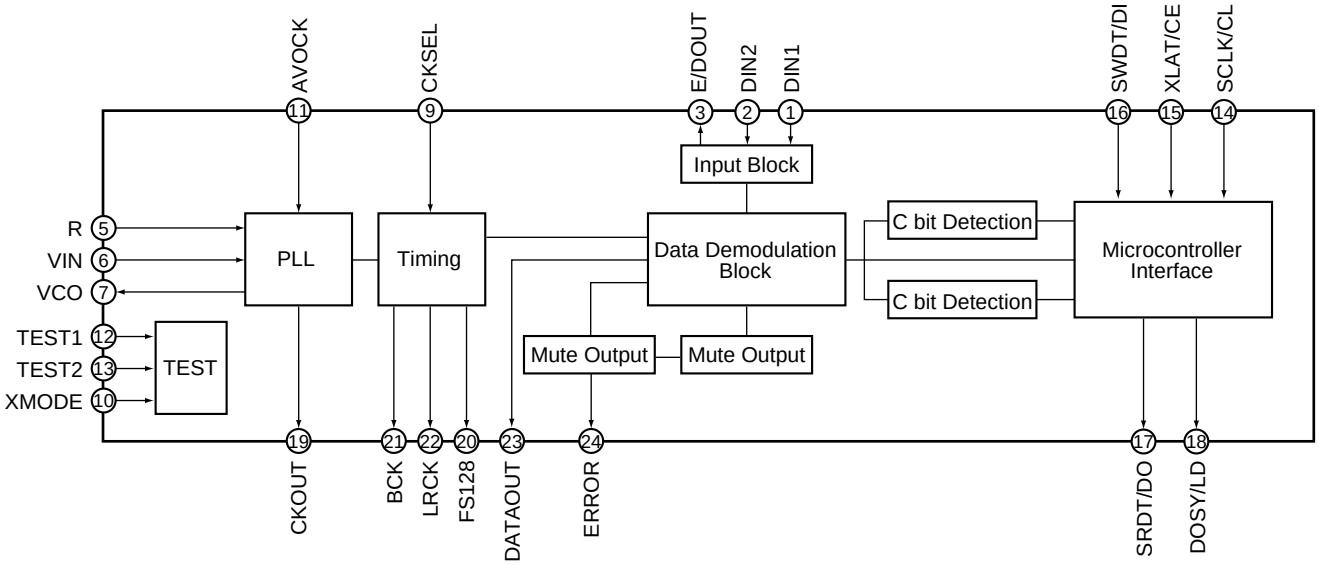
No.	Pin Name	I/O	Pin Function	No.	Pin Name	I/O	Pin Function
41	HA9	I	Address input port	83	VDD	I	Power supply
42	GND	I	Ground	84	VSYNC	O	Vertiacl sync. signal output
43	CDMCK	I	Connect to ground	85	HSYNC	O	Horizontal sync. signal output
44	CDLRCK	I	L/R clock clock input from CDDSP	86	PICSTRT		
45	CDBCK	I	PCM bit clock input from CDDSP	87	MBSTRT		
46	CDDATA	I	Digital audio interface input	88	MBDATA		
47	VDD	I	Power supply	89	GND	I	Ground
48	CDDIN	I	PCM audio data input from CDDSP	90	PWD	O	Phase comparator output for external sync. operation
49	INT2	O	Interrupt request signal against to the external CPU from M65773FP	91	CSYNC	I	Composite SYNC signal input
50	INT3			92	OSDKEY	O	OSD key flag output
51	DREQ	O	DMA request signal for OSD bitmap transfer	93	PXCLK	O	Pixel clock (27MHz free-running clock)
52	DACK	I	DMA acknowledge signal for OSD bitmap transfer	94	VDD	I	Power supply
53	GND	I	Ground	95	PD7	O	Digital pixel data
54	CLKO	O	27MHz clock output	96	PD6		
55	CLKIN	I	System clock input	97	PD5		
56	AVDD1	I	Analog power supply	98	PD4		
57	AGND1	I	Analog ground	99	GND	I	Ground
58	AGND3			100	PD3	O	Digital pixel data
59	AVDD3	I	Analog power supply	101	PD2		
60	CCAP	I	Connect to ground	102	PD1		
61	AGND2	I	Analog ground	103	PD0		
62	AVDD2	I	Analog power supply	104	VDD	I	Power supply
63	ACLKO	–	Open	105	GND	I	Ground
64	ACLKI	I	Audio clock input	106	RESET	I	Hardware reset input
65	HMODE1	I	Setting pin of host interface operating mode	107	TEST0	I	Connect to ground normally
66	GND	I	Ground	108	TEST1		
67	VDD	I	Power supply	109	TEST2		
68	AOD	O	PCM output of audio data	110	VDD	I	Power supply
69	AO2			111	NMD0	I/O	Data transfer line with DRAM
70	AO1			112	NMD15		
71	AO0			113	NMD1		
72	GND	I	Ground	114	NMD14		
73	DOUT1	O	Digital audio interface output	115	GND	I	Ground
74	DOUT0			116	NMD2	I/O	Data transfer line with DRAM
75	SDA	–	Open	117	NMD13		
76	SCL	–	Open	118	NMD3		
77	VDD	I	Power supply	119	NMD12		
78	GND	I	Ground	120	VDD	I	Power supply
79	DACCLK	O	Over-sampling operating clock output	121	NMD4	I/O	Data transfer line with DRAM
80	DOCLK	O	PCM bit clock output	122	NMD11		
81	LRCLK	O	Clock output for discriminating the channel (L/R) of PCM audio data	123	NMD5		
82	HMODE0	I	Setting pin of host interface operating mode	124	NMD10		

No.	Pin Name	I/O	Pin Function	No.	Pin Name	I/O	Pin Function
125	GND	I	Ground	167	MA5	O	Address line with SDRAM
126	NMD6	I/O	Data transfer line with DRAM	168	GND	I	Ground
127	NMD9			169	MA1	O	Address line with SDRAM
128	NMD7			170	MA6		
129	NMD8			171	MA0		
130	VDD	I	Power supply	172	MA7		
131	NCAS0	O	CAS (Column Address Strobe) control line of DRAM	173	VDD	I	Power supply
132	NWE	O	WE control line of DRAM	174	MA10	O	Address line with SDRAM
133	NCAS1	O	CAS (Column Address Strobe) control line of DRAM	175	MA8		
134	NRAS	O	RAS (Row Address Strobe) control line of DRAM	176	MA11		
135	GND	I	Ground	177	MA9		
136	NMA9	O	Address line with DRAM	178	GND	I	Ground
137	NMA8			179	DCS	O	Chip select of SDRAM
138	VDD	I	Power supply	180	RAS	O	RAS (Row Address Strobe) control line of SDRAM
139	NMA0	O	Address line with DRAM	181	CAS	O	CAS (Column Address Strobe) control line of SDRAM
140	NMA7			182	VDD	I	Power supply
141	NMA1			183	MCLK	O	Operation clock of SDRAM
142	NMA6			184	GND	I	Ground
143	GND	I	Ground	185	DWE	O	WE control line of SDRAM
144	NMA2	O	Address line with DRAM	186	DQMU	O	DQM control line of SDRAM Use for mask of upper byte output.
145	NMA5			187	DQML	O	DQM control line of SDRAM Use for mask of lower byte output.
146	NMA3			188	VDD	I	Power supply
147	NMA4			189	MD7	I/O	Data transfer line with SDRAM
148	VDD	I	Power supply	190	MD8		
149	BD7	I	Bit stream input port	191	MD6		
150	BD6			192	MD9		
151	GND	I	Ground	193	GND	I	Ground
152	BD5	I	Bit stream input port	194	MD5	I/O	Data transfer line with SDRAM
153	BD4			195	MD10		
154	BD3			196	MD4		
155	BD2			197	MD11		
156	VDD	I	Power supply	198	VDD	I	Power supply
157	GND	I	Ground	199	MD3	I/O	Data transfer line with SDRAM
158	BD1	I	Bit stream input port	200	MD12		
159	BD0			201	MD2		
160	BCLK	I	Strobe signal (clock) of BD port	202	MD13		
161	BDEN	I	Indicates the effective or invalid data which is sampled from BD port	203	GND	I	Ground
162	BDREQ	O	Output permission signal against to the device (channel decoder) which connecting to BD port	204	MD1	I/O	Data transfer line with SDRAM
163	VDD	I	Power supply	205	MD14		
164	MA3	O	Address line with SDRAM	206	MD0		
165	MA4			207	MD15		
166	MA2			208	VDD	I	Power supply

■ LC89051V (DVDM ASSY : IC903)

• Digital Audio IC

● Block Diagram



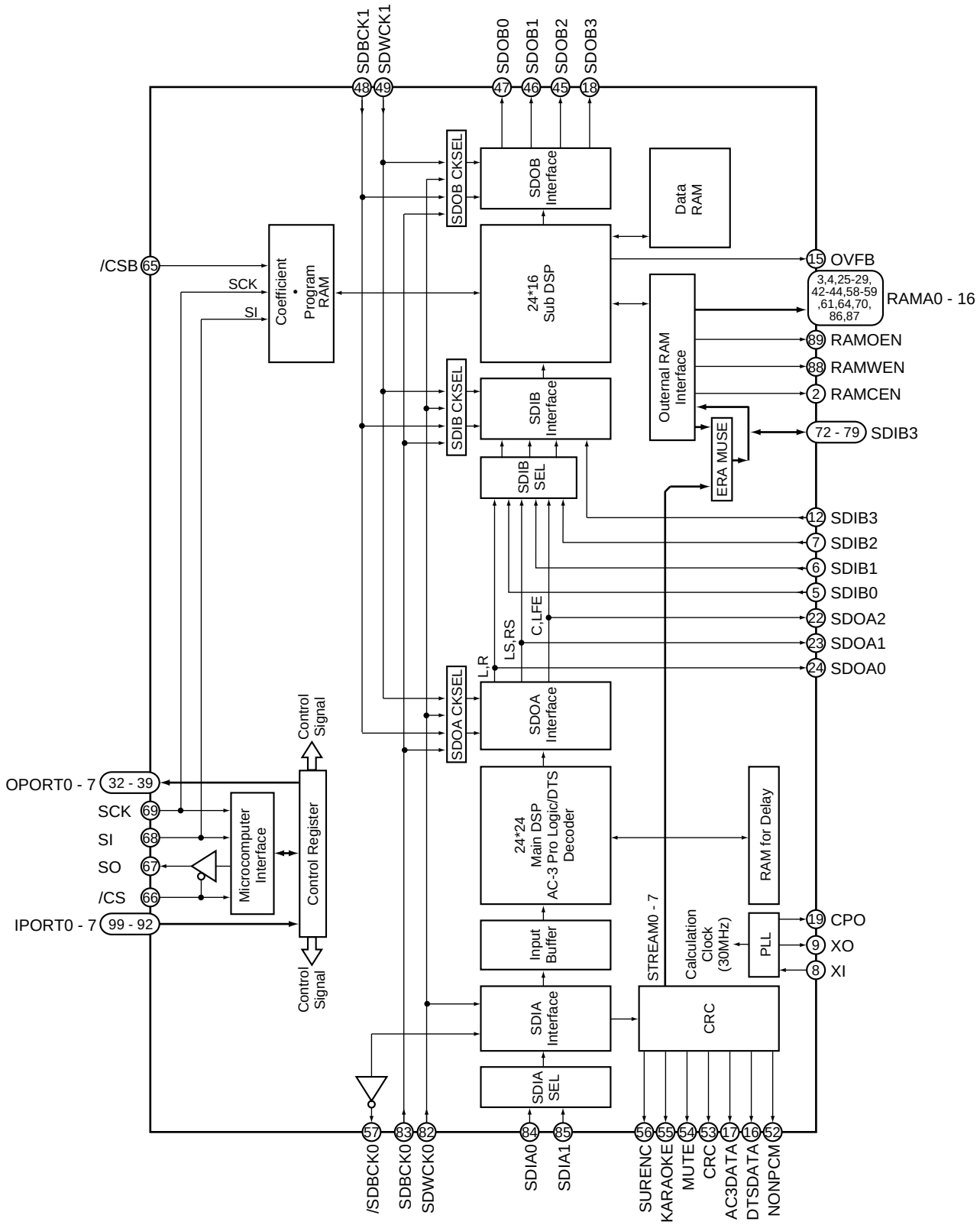
● Pin Function

No.	Pin Name	I/O	Pin Function
1	DIN1	I	Data input with built-in amplifier (for coaxial or optical module input)
2	DIN2	I	Data input (for optical module input)
3	E/DOUT	O	Emphasis, input bi-phase, and validity flag output
4	VDD	–	Power supply
5	R	I	VCO gain control input
6	VIN	I	VCO free-running setting input
7	VCO	O	PLL low-pass filter setting
8	GND	–	Ground
9	CKSEL	I	System clock selection input (384fs or 512fs)
10	XMODE	I	Reset input
11	AVOCK	I	PLL error lock avoidance clock input
12	TEST1	I	Test input (Must be connected to ground in normal operation)
13	TEST2	I	Test input (Must be connected to ground in normal operation)
14	SCLK/CL	I	Microcomputer interface clock input
15	XLAT/CE	I	Microcomputer interface latch/chip enable input
16	SWDT/DI	I	Microcomputer interface write data input
17	SRDT/DO	O	Microcomputer interface read data output
18	DOSY/LD	O	Microcomputer interface subcode Q and ID synchronization output
19	CKOUT	O	VCO clock output (free running, 384fs, or 512fs)
20	FS128	O	128fs clock output
21	BCK	O	Bit clock output
22	LRCK	O	L/R clock output (left channel=high, right channel=low)
23	DATAOUT	O	Audio data output
24	ERROR	O	PLL lock error mute output

YSS912C (JCKB ASSY : IC501)

- **DTS Decoder**

- **Block Diagram**



● Pin Function

No.	Pin Name	I/O	Pin Function
1	VDD1	–	+5V power supply for the terminal block
2	RAMCEN	O	Chip enable for external SRAM
3	RAMA16	O	Address pin 16 for external SRAM
4	RAMA15	O	Address pin 15 for external SRAM
5	SDIB0	I+	PCM input pin 0 to Sub-DSP
6	SDIB1	I+	PCM input pin 1 to Sub-DSP
7	SDIB2	I+	PCM input pin 2 to Sub-DSP
8	XI	I	Connect a crystal oscillator (12.288MHz(
9	XO	O	
10	VSS	–	Ground
11	AVDD	–	+3.3V power supply for PLL circuit
12	SDIB3	I+	PCM input pin 3 to Sub-DSP
13	TEST	–	Test pin Non connection
14	TEST	–	Test pin Non connection
15	OVFB	O	Over-flow detection pin of Sub-DSP
16	DTSDATA	O	DTS data detection pin
17	AC3DATA	O	AC-3 data detection pin
18	SDOB3	O	PCM output pin from Sub-DSP
19	CPO	A	Output for PLL Connect the external analog filter circuit.
20	AVSS	–	Ground for PLL circuit
21	VDD2	–	+3.3V power supply for the internal circuit
22	SDOA2	O	PCM output pin from Main-DSP (C, LFE output)
23	SDOA1	O	PCM output pin from Main-DSP (LS, RS output)
24	SDOA0	O	PCM output pin from Main-DSP (L, R output)
25	RAMA14	O	Address pin 14 for external SRAM
26	RAMA13	O	Address pin 13 for external SRAM
27	RAMA12	O	Address pin 12 for external SRAM
28	RAMA11	O	Address pin 11 for external SRAM
29	RAMA10	O	Address pin 10 for external SRAM
30	VSS	–	Ground
31	VDD1	–	+5V power supply for terminal block
32	OPORT0	O	General-purpose output pin
33	OPORT1		
34	OPORT2		
35	OPORT3		
36	OPORT4		
37	OPORT5		
38	OPORT6		
39	OPORT7		
40	VSS	–	Ground
41	VDD2	–	+3.3V power supply for internal circuit
42	RAMA9	O	Address pin 9 for external SRAM
43	RAMA8	O	Address pin 8 for external SRAM
44	RAMA7	O	Address pin 7 for external SRAM
45	SDOB2	O	PCM output pin from SUb-DSP
46	SDOB1		
47	SDOB0		
48	SDBCK1	I+	Bit clock input for SDOA, SDIB and SDOB signals
49	SDWCK1	I+	Word clock input for SDOA, SDIB and SDOB signals
50	VSS	–	Ground

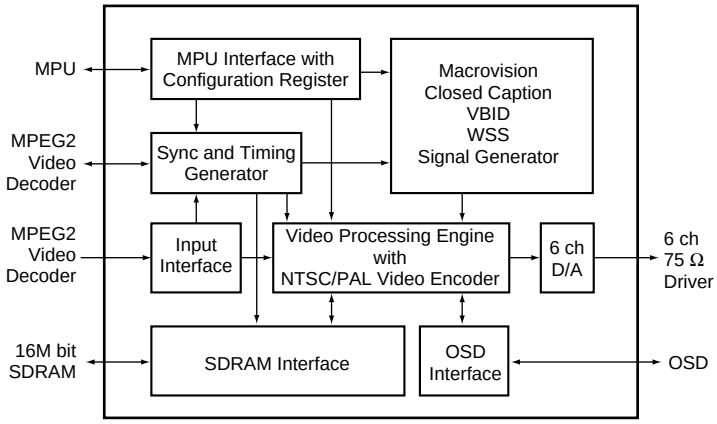
No.	Pin Name	I/O	Pin Function
51	VDD2	–	+3.3V power supply for internal circuit
52	NONPCM	O	Non-PCM data detection pin
53	CRC	O	AC-3 CRC error detection pin
54	MUTE	O	Auto mute detection pin
55	KARAOKE	O	AC-3 karaoke data detection pin
56	SURENC	O	Dolby surround encode input detection pin of AC-3 2/0 mode
57	/SDBCK0	O	Inverting clock output of SDBCK0
58	RAMA6	O	Address pin 6 for external SRAM
59	RAMA5	O	Address pin 5 for external SRAM
60	VSS	–	Ground
61	RAMA4	O	Address pin 4 for external SRAM
62	/IC	Is	Initial clear pin
63	TEST	–	Test pin Non connection
64	RAMA3	O	Address pin 3 for external SRAM
65	/CSB	IS+	Chip select input pin for Sub-DSP
66	/CS	Is	Chip select input pin of the microcomputer interface
67	SO	Ot	Data output pin of the microcomputer interface
68	SI	Is	Microcomputer interface and data input pin for Sub-DSP
69	SCK	Is	Microcomputer interface and clock input pin for Sub-DSP
70	RAMA2	O	Address pin 2 for external SRAM
71	VDD1	–	+5V power supply for the terminal block
72	RAMD0	I+/O	Data pin for external SRAM (STREAM 0 output when external SRAM is not used.)
73	RAMD1		
74	RAMD2		
75	RAMD3		
76	RAMD4		
77	RAMD5		
78	RAMD6		
79	RAMD7		
80	VSS	–	Ground
81	VDD2	–	+3.3V power supply for the internal circuit
82	SDWCK0	I	Word clock input pin for SDIA, SDOA, SDIB and SDOB signals
83	SDBCK0	I	Bit clock input pin for SDIA, SDOA, SDIB and SDOB signals
84	SDIA0	I	AC-3/DTS bitstream (or PCM) data input pin to Main-DSP
85	SDIA1	I	
86	RAMA1	O	Address pin 1 for external SRAM
87	RAMA0	O	Address pin 0 for external SRAM
88	RAMWEN	O	Write enable pin for external SRAM
89	RAMOEN	O	Output enable pin for external SRAM
90	VSS	–	Ground
91	VDD2	–	+3.3V power supply for the internal circuit
92	IPORT7	I+	General-purpose input pin
93	IPORT6		
94	IPORT5		
95	IPORT4		
96	IPORT3		
97	IPORT2		
98	IPORT1		
99	IPORT0		
100	VSS	–	Ground

Note) Is: Schmitt trigger input , I+: Input with pull-up resistor , O: Digital output , Ot: 3-state digital output , A: Analog

■ PM0023AF (VQEB ASSY : IC101)

• **VQE4 IC**

● **Block Diagram**



● **Pin Function**

No.	Pin Name	I/O	Pin Function
1	GND_00	–	Ground Connect to reference voltage (0V).
2	CLAMP	O	Clamp pulse output
3	RMA0	I	Register monitor address input
4	RMA1		
5	RMA2		
6	RMA3		
7	RMA4		
8	RMA5		
9	DOC0	I	Output data control input
10	DOC1		
11	VDD_00	–	Power supply Connect to 3.3V.
12	GND_01	–	Ground Connect to reference voltage (0V).
13	CSB	I	Chip select input for microcomputer interface L: select Schmitt input
14	SDATA	I	Serial data input for microcomputer interface Schmitt input
15	SCLK	I	Serial clock input for microcomputer interface Lead in SDATA at rising edge. Schmitt input
16	SRN	I	System reset input L: reset Schmitt input
17	TEST	I	Test mode cntrol input Connect to GND.
18	VCC_S0	–	Power supply Connect to 3.3V.
19	GND_S0	–	Ground Connect to reference voltage (0V).
20	XI	I	Connect a crystal resonator (27MHz) Connect to VCC (+3.3V) when using CLK (pin 23).
21	XO	O	Connect a crystal resonator (27MHz) Set to open when using CLK (pin 23).
22	GND_02	–	Ground Connect to reference voltage (0V).
23	CLKI	I	External clock (27MHz) input
24	VDD_01	–	Power supply Connect to 3.3V.

No.	Pin Name	I/O	Pin Function
25	VI0	I	(LSB)
26	VI1		
27	VI2		
28	VI3		Video data input Input 8-bit parallel signal of CCIR-601 or CCIR-656 systems.
29	VI4		
30	VI5		
31	VI6		
32	VI7		(MSB)
33	GND_03	–	Ground Connect to reference voltage (0V).
34	NHS	I/O	Horizontal sync. signal input Outputs at Master mode and inputs at Slave mode (set with the register). Negative polarity
35	NVS	I/O	Vertical sync. signal input Outputs at Master mode and inputs at Slave mode (set with the register). Negative polarity
36	VDD_02	–	Power supply Connect to 3.3V.
37	DOC2	I	Output data control input
38	GND_04	–	Ground Connect to reference voltage (0V).
39	MD00	I/O	(LSB)
40	MD01		Data input and output for external memory with pull-up
41	MD02		
42	MD03		
43	VDD_03	–	Power supply Connect to 3.3V.
44	GND_05	–	Ground Connect to reference voltage (0V).
45	MD04	I/O	Data input and output for external memory with pull-up
46	MD05		
47	MD06		
48	MD07		
49	VDD_04	–	Power supply Connect to 3.3V.
50	MD15	I/O	Data input and output for external memory with pull-up (MSB)
51	MD14	I/O	Data input and output for external memory with pull-up
52	MD13		
53	MD12		
54	VCC_S1	–	Power supply Connect to 3.3V.
55	GND_S1	–	Ground Connect to reference voltage (0V).
56	MD11	I/O	Data input and output for external memory with pull-up
57	MD10		
58	MD09		
59	MD08		
60	GND_06	–	Ground Connect to reference voltage (0V).
61	MCLK	O	Clock output for external memory
62	MA09	O	Address output for external memory
63	MA08		
64	MA07		
65	MA06		
66	VDD_05	–	Power supply Connect to 3.3V.
67	GND_07	–	Ground Connect to reference voltage (0V).
68	MA05	O	Address output for external memory
69	MA04		
70	MWEB	O	Writing control output for external memory
71	MCASB	O	CAS output for external memory
72	MRASB	O	RAS output for external memory
73	MA11	O	Address output for external memory (MSB)
74	MA10	O	Address output for external memory
75	MA00	O	Address output for external memory (LSB)

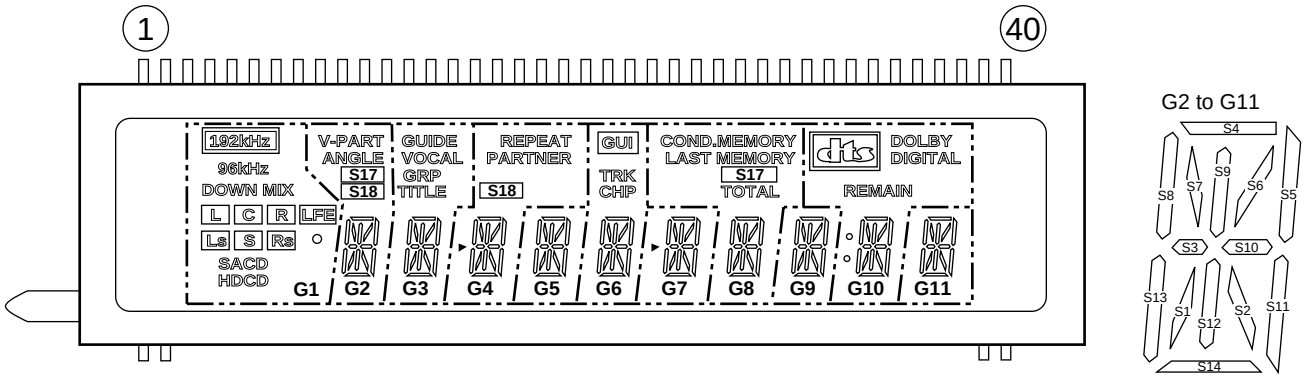
No.	Pin Name	I/O	Pin Function
76	VDD_06	–	Power supply Connect to 3.3V.
77	GND_08	–	Ground Connect to reference voltage (0V).
78	MA01	O	Address output for external memory
79	MA02		
80	MA03		
81	OSDHSY	O	Horizontal sync. signal output for external OSD Negative polarity
82	OSDVSY	O	Vertical sync. signal output for external OSD Negative polarity
83	VDD_07	–	Power supply Connect to 3.3V.
84	GND_09	–	Ground Connect to reference voltage (0V).
85	OSDCLK	O	Clock output for external OSD
86	GND_10	–	Ground Connect to reference voltage (0V).
87	CTA2	I	OSD data input
88	CTA1		
89	CTA0		
90	VCC_S2	–	Power supply Connect to 3.3V.
91	GND_S2	–	Ground Connect to reference voltage (0V).
92	BLD1	I	OSD blend control input
93	BLD0		
94	SCAN_T	I	Control input for scan test Connect to 3.3V.
95	SCAN_W		
96	DO0	O	Data output
97	DO1		
98	DO2		
99	DO3		
100	DO4		
101	DO5		
102	DO6		
103	DO7		
104	DO8		
105	DO9		
106	RMO0	O	Register monitor output
107	RMO1		
108	VDD_08	–	Power supply Connect to 3.3V.
109	RMO2	O	Register monitor output
110	RMO3		
111	VDD_09	–	Power supply Connect to 3.3V.
112	GND_11	–	Ground Connect to reference voltage (0V).
113	GND_AGB0	A	Ground for Guard band Connect to reference voltage (0V).
114	VDDDA_A0	A	Power supply for A0 channel DAC Connect to 3.3V.
115	DAO_A0	A	DAC output of A0 channel Current output Connect a 330Ω resistor to GND.
116	GNDDA_A0	A	DAC ground of A0 channel Connect to reference voltage (0V).
117	DAO_A1	A	DAC output of A1 channel Current output Connect a 330Ω resistor to GND.
118	GNDDA_A1	A	DAC ground of A1 channel Connect to reference voltage (0V).
119	VDDDA_A1	A	Power supply for A1 channel DAC Connect to 3.3V.
120	CBU_A	A	Connect a phase compensation capacitor for Group_A_DAC Connect a 0.1μF capacitor to GND.

No.	Pin Name	I/O	Pin Function
121	REXT_A	A	Connect a reference resistor for Group_A_DAC Connect a 3.1 (3.0) kΩ resistor to GND>
122	CBL_A	A	Connect a by-pass capacitor for Group_A_DAC Connect a 0.1μF capacitor to GND.
123	VDDDA_A2	A	Power supply for A2 channel DAC Connect to 3.3V.
124	GNDDA_A2	A	DAC ground of A2 channel Connect to reference voltage (0V).
125	DAO_A2	A	DAC output of A2 channel Current output Connect a 330Ω resistor to GND.
126	VDDDA_B0	A	Power supply for B0 channel DAC Connect to 3.3V.
127	GNDDA_B0	A	DAC ground of B0 channel Connect to reference voltage (0V).
128	DAO_B0	A	DAC output of B0 channel Current output Connect a 330Ω resistor to GND.
129	GNDDA_B1	A	DAC ground of B1 channel Connect to reference voltage (0V).
130	DAO_B1	A	DAC output of B1 channel Current output Connect a 330Ω resistor to GND.
131	VDDDA_B1	A	Power supply for B1 channel DAC Connect to 3.3V.
132	CMU_B	A	Connect a phase compensation capacitor for Group_B_DAC Connect a 0.1μF capacitor to GND.
133	REXT_B	A	Connect a reference resistor for Group_B_DAC Connect a 3.1 (3.0) kΩ resistor to GND>
134	CBL_B	A	Connect a by-pass capacitor for Group_B_DAC Connect a 0.1μF capacitor to GND.
135	GNDDA_B2	A	DAC ground of B2 channel Connect to reference voltage (0V).
136	DAO_B2	A	DAC output of B2 channel Current output Connect a 330Ω resistor to GND.
137	VDDDA_B2	A	Power supply for B2 channel DAC Connect to 3.3V.
138	GND_AGB1	A	Ground for Guard band Connect to reference voltage (0V).
139	RMO4	O	Register monitor output
140	RMO5		
141	RMO6		
142	RMO7		
143	VDD_10	–	Power supply Connect to 3.3V.
144	CLKO	O	Clock (27MHz) output

7.2.2 DISPLAY

■ VAW1050 (FLKY ASSY : V101)

• FL DISPLAY



• ANODE AND GRID ASSIGNMENT

	G1	G2	G3	G4	G5	G6	G7	G8	G9	G10	G11
S1	192kHz	S1	S1	S1	S1	S1	S1	S1	S1	S1	S1
S2	96kHz	S2	S2	S2	S2	S2	S2	S2	S2	S2	S2
S3	DOWN MIX	S3	S3	S3	S3	S3	S3	S3	S3	S3	S3
S4	L	S4	S4	S4	S4	S4	S4	S4	S4	S4	S4
S5	C	S5	S5	S5	S5	S5	S5	S5	S5	S5	S5
S6	R	S6	S6	S6	S6	S6	S6	S6	S6	S6	S6
S7	LFE	S7	S7	S7	S7	S7	S7	S7	S7	S7	S7
S8	Ls	S8	S8	S8	S8	S8	S8	S8	S8	S8	S8
S9	S	S9	S9	S9	S9	S9	S9	S9	S9	S9	S9
S10	Rs	S10	S10	S10	S10	S10	S10	S10	S10	S10	S10
S11	○	S11	S11	S11	S11	S11	S11	S11	S11	S11	S11
S12	SACD	S12	S12	S12	S12	S12	S12	S12	S12	S12	S12
S13	HDCD	S13	S13	S13	S13	S13	S13	S13	S13	S13	S13
S14		S14	S14	S14	S14	S14	S14	S14	S14	S14	S14
S15		V-PART	GUIDE	▷		GUI	▷	COND MEMORY		○ ○	
S16		ANGLE	VOCAL	REPEAT		TRK		LAST MEMORY		dts	
S17		S17	GRP	PARTNER		CHP		S17		DOLBY DIGITAL	
S18		S18	TITLE	S18				TOTAL		REMAIN	

• PIN ASSIGNMENT

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Assignment	NL	F1	NL	NL	S18	S17	S16	S15	S14	S13	S12	S11	S10	S9	S8	S7	S6	S5	S4	S3

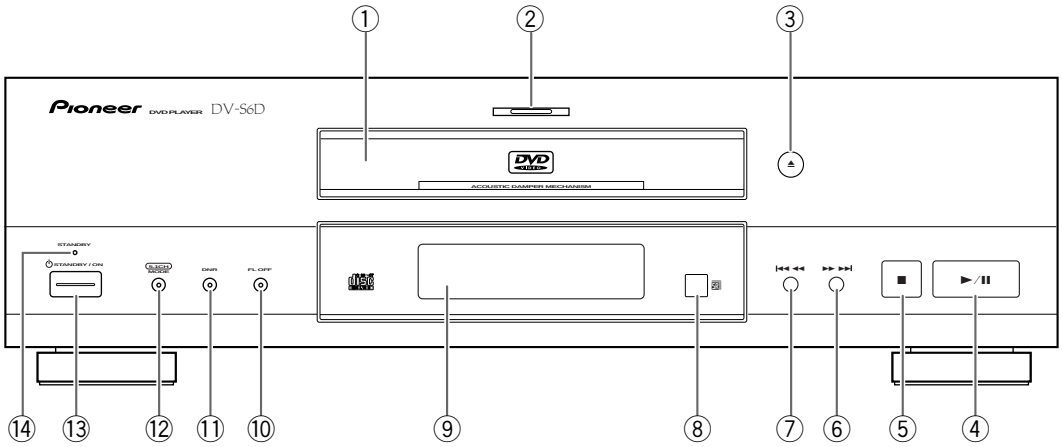
Pin No.	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Assignment	S2	S1	NL	G11	G10	G9	G8	NL	NL	G7	G6	G5	G4	G3	G2	G1	NL	NL	F2	NL

F1, F2 : Filament G1~G11 : Grid S1~S18 : Anode NL : No Lead

8. PANEL FACILITIES AND SPECIFICATIONS

8.1 PANEL FACILITIES

Front Panel



① **Disc tray**
When loading a disc, place in the disc tray with the label side facing up.

② **Disc illumination**
Lights when a DVD is loaded and when no disc is loaded. Turns off when a disc format other than DVD is loaded in the player.

③ **⏏ (open/close) button**
Press to open and close the disc tray.

④ **►/II (play/pause) button**
Press to start or resume playback. Press during playback to pause.

⑤ **■ (stop) button**
Press to stop playback. Pressing once enables playback to resume from a point shortly before the location where it stopped. Pressing twice causes the disc to return to the beginning of the disc if playback starts again.

⑥ **►► ►►| (forward) button**
Press to advance to chapters/tracks. Press and hold to perform fast-forward scanning.

⑦ **|◄◄ ◄◄ (reverse) button**
Press to go back to previous chapters/tracks. Press and hold to perform reverse playback scanning.

⑧ **Remote sensor**
Point the remote control toward the remote sensor to operate the player.

⑨ **Display window**
Displays system information.

⑩ **FL OFF indicator**
When the FL display is turned off using **DIMMER (FL)** on the remote control, the FL OFF indicator lights.

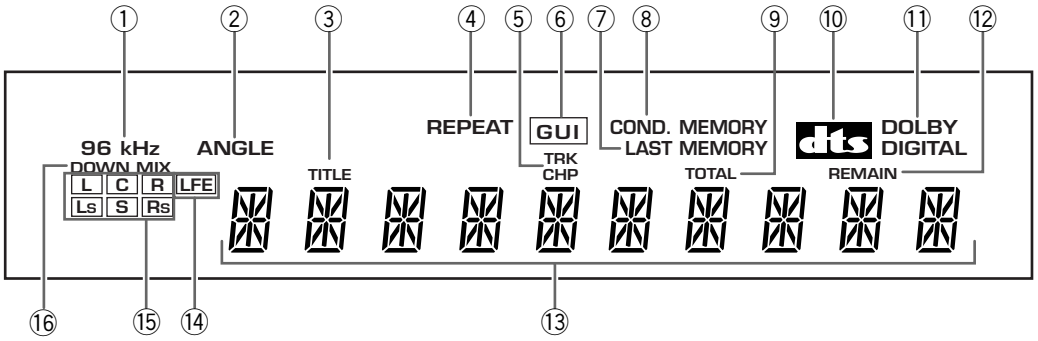
⑪ **DNR indicator**
Lights when the digital noise reduction function is on.

⑫ **5.1 CH MODE indicator**
Lights when 5.1 channel audio is selected.

⑬ **⏻ STANDBY/ON button**
Press to switch the player on or to put in standby.

⑭ **STANDBY indicator**
Indicates that the player is in standby, using a minimum amount of power to maintain system settings.

Display Window



① **96 kHz indicator**
Indicates that the currently loaded disc contains an audio signal with a sampling frequency of 96 kHz.

② **ANGLE indicator**
Indicates Multi-Angle playback is in progress.

③ **TITLE indicator**
Indicates a title number is being displayed.

④ **REPEAT indicator**
Indicates that the Repeat function is on and that the current title, chapter, or track is being repeated.

⑤ **TRK and CHP indicator**
Indicates a chapter or track number is being displayed.

⑥ **GUI indicator**
Indicates an on-screen menu operation is being performed.

⑦ **LAST MEMORY indicator**
Indicates the Last Memory location is registered in memory for the currently loaded DVD or Video CD.

⑧ **COND. MEMORY indicator**
Indicates that Condition Memory settings are memorized for the currently loaded DVD.

⑨ **TOTAL indicator**
Indicates that the disc in the player is stopped and **DISPLAY** has been pressed.

⑩ **DTS indicator**
Indicates DTS audio playback.

⑪ **DOLBY DIGITAL indicator**
Indicates Dolby Digital audio playback.

⑫ **REMAIN indicator**
Indicates that the remaining playback time of a title or chapter/track is being displayed.

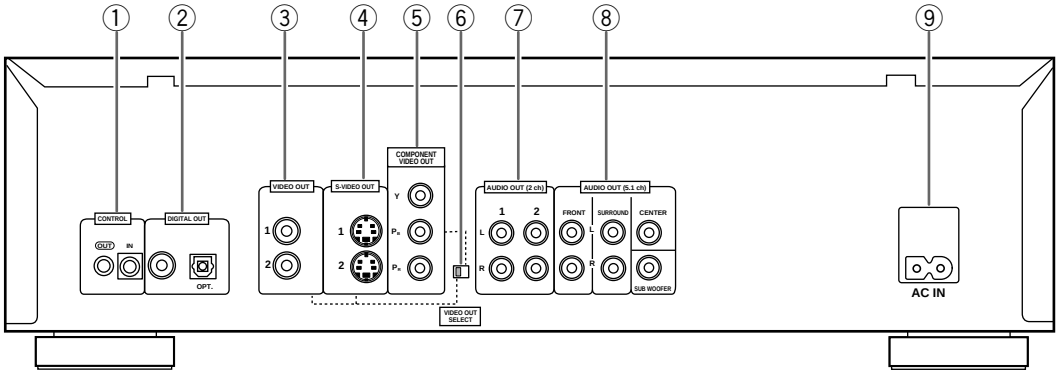
⑬ **Counter display**
Displays the playback mode, type of disc, title and chapter/track numbers, playback time, etc.

⑭ **LFE channel indicator**
The LFE (low frequency effects) channel indicator indicates 5.1 channel audio that contains a channel for low frequency sounds that are used by the sub woofer.

⑮ **Program Format indicators**
Depending on the audio format recorded on the disc loaded in the player, the following indicators light to show the channels being played back.
L : Left front *1*2, **C** : Center *1, **R** : Right front *1*2,
LS : Left surround*1, **S** : Surround (mono) *2,
RS : Right surround*1
*1 : Lights to indicate playback of a 5.1 ch Dolby Digital source.
*2 : Lights to indicate playback of a Dolby Surround source.

⑯ **DOWNMIX indicator**
During multichannel audio playback, indicates that the output signal has been "downmixed" from the original audio source. This is an automatic function performed by the player in order to present the most appropriate audio mix to the speakers present in your system.

Rear Panel



① **CONTROL jacks**

Use to connect this player to another component bearing the Pioneer ⅀R mark. This lets you control this unit as though it were a component in a system. Player operations are then performed by pointing the remote control at the component that the player is connected to.

② **DIGITAL OUT jacks (coaxial, optical (OPT.))**

Use to output the digital audio signal recorded on discs. You can output the digital signal via either coaxial or optical output jack to an AV amplifier or receiver.

③ **VIDEO OUT jacks**

Connect to the video input on a TV or monitor or AV amplifier or receiver with video input capability. When using this output, be sure to set VIDEO OUT SELECT to the left position.

④ **S-VIDEO OUT jacks**

If your TV or monitor has an S-video input, clear picture reproduction is possible by connecting the player to your TV or monitor via the S-video jack When using this output, be sure to set VIDEO OUT SELECT to the left position.

⑤ **COMPONENT VIDEO OUT jacks**

If your projection monitor, projector or similar component has component video inputs, you can produce a higher quality picture on your projection monitor or projector by connecting to the component video outputs on this unit. When using these jacks, be sure to set VIDEO OUT SELECT to the right position.

⑥ **VIDEO OUT SELECT switch**

Use to set which output is used to output the video signals. Select either video/S-video or component video signal output depending on the connections you make.

⑦ **AUDIO OUT (2 ch) jacks**

Use to output two-channel audio (analog) to the audio stereo inputs on a TV or stereo amplifier. If you are connecting to a receiver that has both digital and analog input jacks for DVD player connection, it may be beneficial to make both connections.

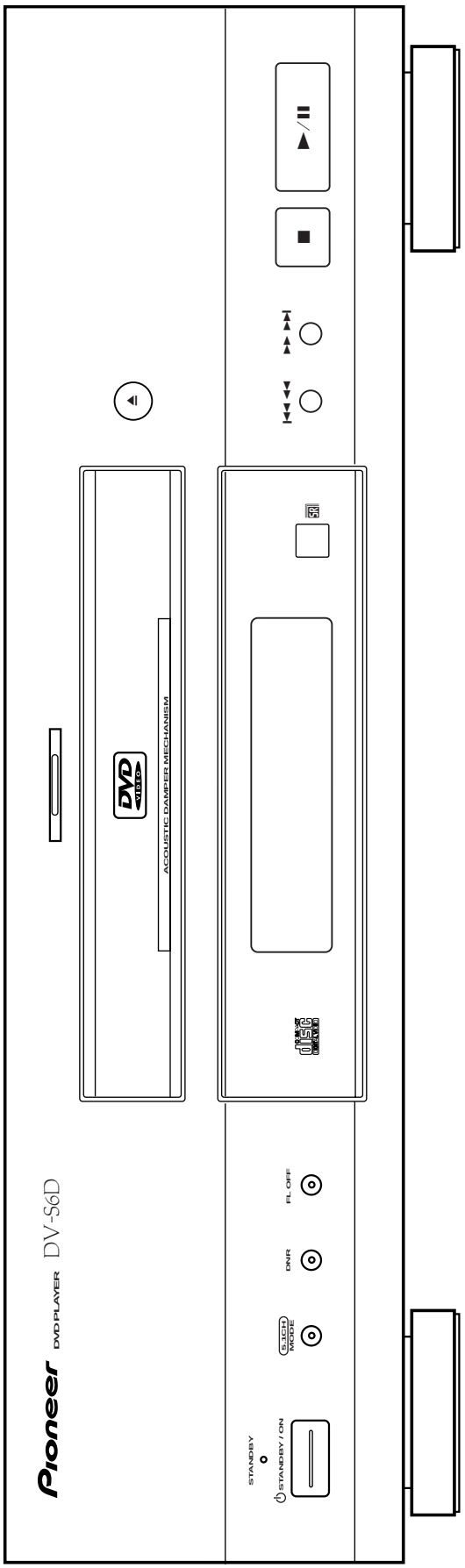
⑧ **AUDIO OUT (5.1 ch) jacks**

Use to output 6 discrete audio channels of decoded digital audio to a receiver or amplifier with discrete audio inputs.

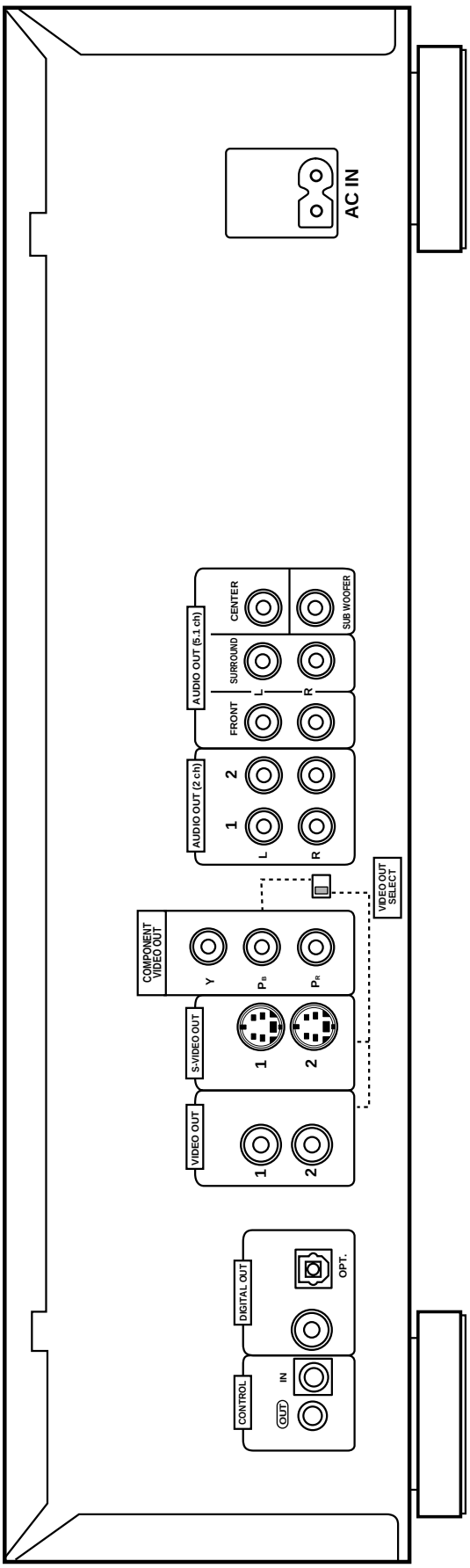
⑨ **AC IN power cord connection terminal**

Use to connect the power cord to the wall outlet.

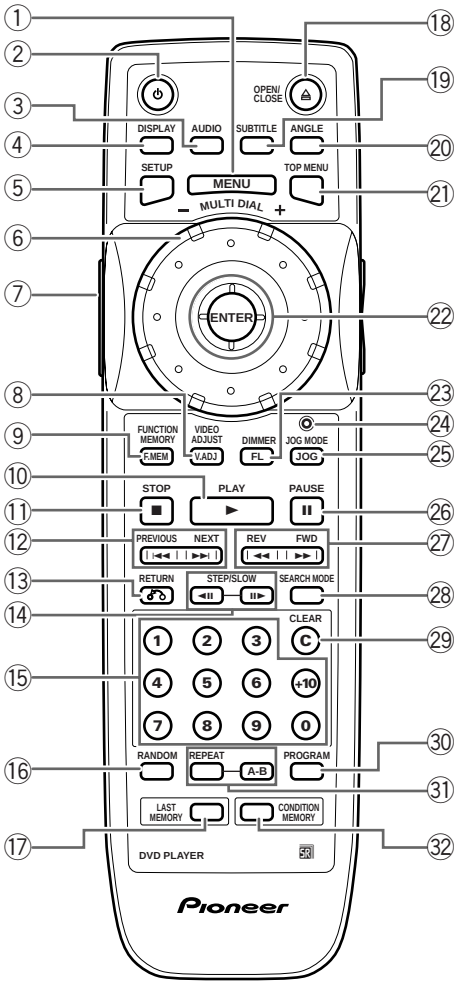
■ Front View



■ Rear View



Remote Control



(Buttons indicated with * are used for menu operation.)

① **MENU button***

Use to display or close the DVD menu screen.

② **⏻ (standby/on) button**

Press to switch the player on or to put in standby.

③ **AUDIO button**

Press repeatedly to select one of the audio languages and/or audio formats programmed on a DVD.

For Video CD and CD, each press changes the audio output as follows.

Stereo → 1/L (Left) → 2/R (Right)

④ **DISPLAY button**

Press during playback to display statistical disc information. Press repeatedly to display different information.

⑤ **SETUP button***

Press when the player is in either play or stop mode to open and close the Setup screen.

⑥ **MULTI DIAL**

Use to control the rate of playback according to the speed at which **MULTI DIAL** is turned. When the Jog Mode is on, frame by frame scanning in both forward and reverse directions is possible.

⑦ **Light button (side panel)**

Use to illuminate the main operation buttons on the remote control. When pressed, the buttons light for approximately 3 seconds. This function is convenient for locating the command buttons when the room is dark.

⑧ **VIDEO ADJUST (V.ADJ) button**

Various attributes of the video presentation can be adjusted to suit the program type or personal preferences. Press **VIDEO ADJUST (V.ADJ)** to display the on-screen options.

⑨ **FUNCTION MEMORY (F.MEM) button**

Press to incorporate a menu item into a shortcut list that is stored in memory and can be called up at any time.

⑩ **PLAY ► button**

Press to start disc playback.

⑪ **STOP ■ button**

Press to stop playback. Pressing once enables playback to resume from a point shortly before the location where it was stopped. Pressing twice causes the disc to return to the beginning of the disc when playback starts again.

⑫ **PREVIOUS ⏮/NEXT ⏭ buttons**

During playback, press **PREVIOUS ⏮** to go back to a previous chapter/track and **NEXT ⏭** to advance to the next chapter/track.

⑬ **RETURN ↶ button***

Use to go one menu back (current settings are maintained). Use **RETURN** ↶ when you do not want to change the option setting in a menu.

⑭ **STEP/SLOW ◄II/II► buttons**

Press **STEP/SLOW II►** during playback to view slow playback. In pause mode, press **STEP/SLOW II►** to advance DVDs and Video CDs frame by frame and **STEP/SLOW ◄II** to back up a DVD a few frames at a time.

⑮ **Number buttons (1-9, 0, +10)***

Use to perform direct title and chapter/track searches, and to input numerical values.

⑯ **RANDOM button**

Press to play chapters/tracks in random order.

⑰ **LAST MEMORY button**

You can resume DVD or Video CD playback from the point you last watched even if the disc is removed from the player. Press **LAST MEMORY** during playback to set a Last Memory point. When you want to resume playback of that disc, press **LAST MEMORY** in the stop mode and playback starts from the memorized point. Last Memory locations can be stored for up to 5 DVDs (or 4 DVDs and 1 Video CD).

⑱ **OPEN/CLOSE ≜ button**

Press to open or close the disc tray.

⑲ **SUBTITLE button**

Press repeatedly to select one of the subtitle languages programmed on a DVD or to turn the subtitles off.

⑳ **ANGLE button**

Some DVDs are recorded with various camera angle playback options. Press **ANGLE** repeatedly to display different camera angles.

㉑ **TOP MENU button***

Press to call up the top menu programmed on the DVD. Depending on the DVD, the top menu may be identical to the DVD menu.

㉒ **Cursor control joystick***

Use to move the cursor through the options on menu screens and to change settings.

ENTER button*

Press to implement settings selected with the cursor control joystick or to set items highlighted in a menu.

㉓ **DIMMER (FL) button**

Press to change the brightness of the FL display and disc illumination in four steps: maximum brightness, medium brightness, minimum brightness, and off. When the FL display is turned off, the FL OFF indicator on the front panel lights.

㉔ **JOG MODE indicator**

Lights red when the player is in the Jog Mode.

㉕ **JOG MODE (JOG) button**

Press to put the player in the Jog Mode. When this mode is on, rotate **MULTI DIAL** clockwise to scan frame by frame in the forward direction and counterclockwise to scan frame by frame in the reverse direction.

㉖ **PAUSE II button**

Press to pause playback of a disc. Press again to resume playback.

㉗ **REV ◄◄/FWD ►► (fast reverse/ fast forward) buttons**

During playback of DVD and Video CD, press **FWD ►►** to perform fast forward scanning. Press **REV ◄◄** to perform fast reverse scanning of DVD and Video CD. When a CD is loaded, audio scanning is performed.

㉘ **SEARCH MODE button**

Press to perform a title, chapter/track or elapsed time search.

㉙ **CLEAR button**

Works in conjunction with a number of player functions. Use to cancel repeat and random playback, and to edit programs.

㉚ **PROGRAM button**

You can program titles, chapters, or tracks to play back in a desired order. Programs can be a maximum of 24 steps. Additionally, DVD programs for up to 24 discs can be stored in the player's memory for future use.

㉛ **REPEAT button**

Press once to repeat playback of current chapter/ track. Press twice to repeat playback of current title.

A-B button

Press at the beginning and end of the section you want to repeat or to mark a location you want to return to.

㉜ **CONDITION MEMORY button**

You can store in memory the settings for up to 15 DVDs. Press **CONDITION MEMORY** during DVD playback to memorize the settings.

8.2 SPECIFICATIONS

General

System .. DVD system and Compact Disc digital audio system
Power requirements ..... AC 110 V, 60 Hz
Power consumption ..... 18 W
Power consumption in standby mode .... less than 0.5 W
Weight ..... 6.4 kg
Dimensions ..... 420 (W) x 371 (D) x 128 (H) mm
(Not including protruding cables, etc.)
Operating temperature ..... +5°C to +35°C
Operating humidity ..... 5% to 85% (no condensation)

S-Video output (2 individual outputs)

Y (luminance) - Output level ..... 1 Vp-p (75 Ω)
C (color) - Output level ..... 286 mVp-p (75 Ω)
Jacks ..... S-VIDEO jack

Video output (2 individual outputs)

Output level ..... 1 Vp-p (75 Ω)
Jacks ..... RCA jack

Component video output

(Y, P_B, P_R)
Output level ..... Y: 1.0 Vp-p (75 Ω)
P_B, P_R: 0.7 Vp-p (75 Ω)
Jacks ..... RCA jack

Audio output (2 pairs)

Output level
During audio output ..... 200 mVrms (1 kHz, –20 dB)
Number of channels 2
Jacks ..... RCA jack

Audio output (5.1 CH)

Output level
During audio output ..... 200 mVrms (1 kHz, –20 dB)
Number of channels 6
Jacks ..... RCA jack

Digital audio characteristics

Frequency response ..... 4 Hz to 44 kHz (DVD fs: 96 kHz)
S/N ratio ..... more than 115 dB
Dynamic range ..... more than 106 dB
Total harmonic distortion 0.0018%
Wow and flutter ..... Limit of measurement
(±0.001% W. PEAK) or lower

Digital output

Optical digital output ..... Optical digital jack
Coaxial digital output ..... RCA jack

Other terminals

CONTROL IN ..... Minijack (3.5 ø)
CONTROL OUT ..... Minijack (3.5 ø)

Accessories

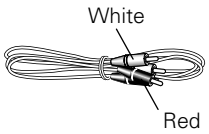
Remote control unit 1
AA (R6P) dry cell batteries 2
Audio cord 1
Video cord 1
Power cord 1
Operating Instructions 1

Note

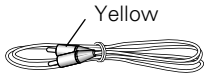
The specifications and design of this product are subject to change without notice, due to improvement.

Accessories

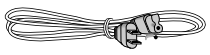
Audio Cord (L=1.5m): VDE1033



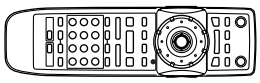
Video Cord (L=1.5m): VDE1034



Power Cord: ADG7006



Remote Control Unit (CU-DV037): VXX2628



Dry Cell Battery (R6P,AA): VEM-013