

Service Manual

VC8100 /U1B

DVD Changer

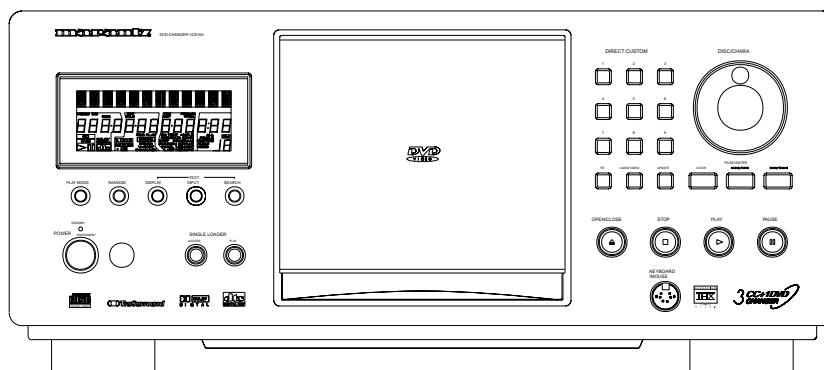


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Please use this service manual with referring to the user guide (D.F.U) without fail.

marantz®

VC8100

MARANTZ DESIGN AND SERVICE

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

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

ORDERING PARTS :

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

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

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

USA

MARANTZ AMERICA, INC.
440 MEDINAH ROAD
ROSELLE, ILLINOIS 60172
USA
PHONE : 630 - 307 - 3100
FAX : 630 - 307 - 2687

EUROPE / TRADING

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THE NETHERLANDS
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BRAZIL

PHILIP DA AMAZONIA IND. ELET. ITDA
CENTRO DE INFORMACOES AO
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PHONE : 0800 - 123123(Discagem Direta Gratuita)
FAX : +55 11 534. 8988

PROFESSIONAL AMERICAS

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MARANTZ PROFESSIONAL PRODUCTS
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PHONE : 630 - 820 - 4800
FAX : 630 - 820 - 8103

PROFESSIONAL AUSTRALIA

TECHNICAL AUDIO GROUP PTY, LTD
558 DARLING STREET,
BALMAIN, NSW 2041,
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PHONE : 61 - 2 - 9810 - 5300
FAX : 61 - 2 - 9810 - 5355

CANADA

LENBROOK INDUSTRIES LIMITED
633 GRANITE COURT,
PICKERING, ONTARIO L1W 3K1
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FAX : 905 - 831 - 6936

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PHONE : +61 - 3 - 9543 - 1522
FAX : +61 - 3 - 9543 - 3677

THAILAND

MRZ STANDARD CO.,LTD
746 - 754 MAHACHAI ROAD.,
WANGBURAPAPIROM, PHRANAKORN,
BANGKOK, 10200 THAILAND
PHONE : +66 - 2 - 222 9181
FAX : +66 - 2 - 224 6795

SINGAPORE

WO KEE HONG (S) PTE LTD
WO KEE HONG CENTRE
NO.23, LORONG 8, TOA PAYOH
SINGAPORE 319257
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FAX : +65 2502213

NEW ZEALAND

WILDASH AUDIO SYSTEMS NZ
14 MALVERN ROAD MT ALBERT
AUCKLAND NEW ZEALAND
PHONE : +64 - 9 - 8451958
FAX : +64 - 9 - 8463554

TAIWAN

PAI- YUING CO., LTD.
6 TH FL NO, 148 SUNG KIANG ROAD,
TAIPEI, 10429, TAIWAN R.O.C.
PHONE : +886 - 2 - 25221304
FAX : +886 - 2 - 25630415

MALAYSIA

WO KEE HONG ELECTRONICS SDN. BHD.
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NO. 33, JALAN SULTAN ISMAIL,
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FAX : +60 3 - 2458180

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東京都渋谷区恵比寿南1-11-9

KOREA

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

SHOCK, FIRE HAZARD SERVICE TEST :

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

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

Ref. UL Standard No. 1492.

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

1. SPECIFICATIONS

General

Power requirements	AC 120 V, 60 Hz
Power consumption	21 W
Power consumption in standby mode	less than 0.9 W
Weight	8.0 kg (17.6 lbs.)
Dimensions	440 (W) x 434 (D) x 193 (H) mm (17 ⁵ / ₁₆ (W) x 17 ¹ / ₈ (D) x 7 ⁵ / ₈ (H) in.)
Operating temperature	+5°C to +35°C (+36°F to +96°F)
Operating humidity	5% to 85% (no condensation)

S-Video input/output

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

Video input/output

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 input/output

Output level	
During audio output	200 mVrms (1 kHz, -20 dB)
Number of channels	2
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 103 dB
Total harmonic distortion	0.002%
Wow and flutter	Limit of measurement (±0.001% W. PEAK) or lower

Digital output

Optical digital output	Optical digital jack
Coaxial digital input/output	RCA jack

Control jacks

MASTER-SLAVE	Minijack (3.5 ø)
REMOTE CONTROL IN/OUT jack	RCA jack

Other jacks

KEYBOARD/MOUSE jack	6-pin DIN connection jack
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Accessories

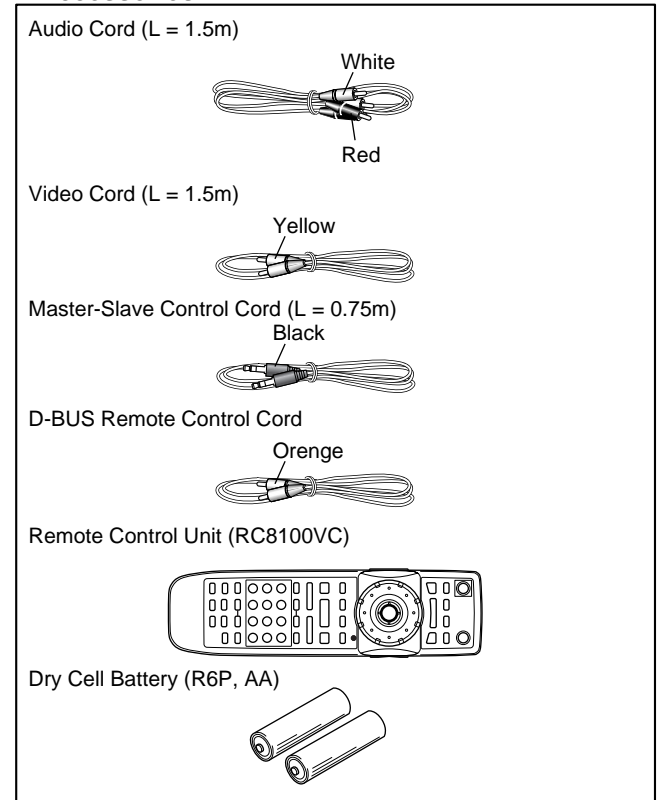
Remote control unit	1
AA (R6P) dry cell batteries	2
Audio cord	1
Video cord	1
D-Bus remote cord	1
Master-Slave control cord	1
User guide (English x 1, French x 1)	2
Warranty Card	(U.S. and Canadian models only)

Note

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

- Manufactured under license from Dolby Laboratories. "Dolby" and the double-D symbol are trademarks of Dolby Laboratories. Confidential unpublished works. © 1992-1997 Dolby Laboratories. All rights reserved.
- "DTS" is a trademark of Digital Theater Systems, Inc. Manufactured under license from Digital Theater Systems, Inc.
- TruSurround and the (●) symbol are trademarks of SRS Labs, Inc. in the United States and selected foreign countries. TruSurround technology is incorporated under license from SRS Labs, Inc.

● Accessories



2. 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.

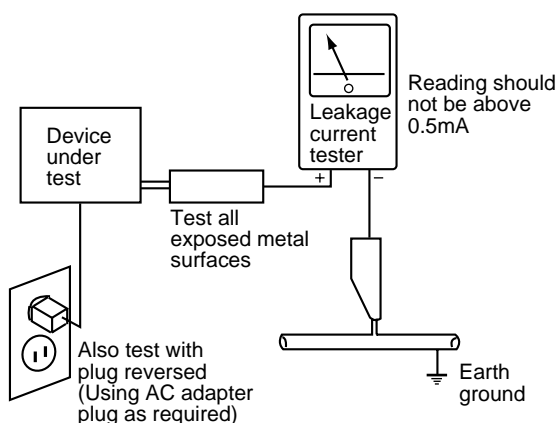
(FOR USA MODEL ONLY)

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 Δ 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 MARANTZ 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 MARANTZ Service Manual. A subscription to, or additional copies of, MARANTZ Service Manual may be obtained at a nominal charge from MARANTZ.

3. SERVICING PRECAUTIONS

CAUTION : Before servicing the DVD covered by this service data and its supplements and ADDENDUMS, read and follow the *SAFETY PRECAUTIONS*. NOTE : if unforeseen circumstances create conflict between the following servicing precautions and any of the safety precautions in this publications, always follow the safety precautions.

Remember Safety First:

General Servicing Precautions

1. Always unplug the DVD AC power cord from the AC power source before:
 - (1) Removing or reinstalling any component, circuit board, module, or any other assembly.
 - (2) Disconnection or reconnecting any internal electrical plug or other electrical connection.
 - (3) Connecting a test substitute in parallel with an electrolytic capacitor.
Caution : A wrong part substitution or incorrect polarity installation of electrolytic capacitors may result in an explosion hazard.
2. Do not spray chemicals on or near this DVD or any of its assemblies.
3. Unless specified otherwise in this service data, clean electrical contacts by applying an appropriate contact cleaning solution to the contacts with a pipe cleaner, cotton-tipped swab, or comparable soft applicator. Unless specified otherwise in this service data, lubrication of contacts is not required.
4. Do not defeat any plug/socket B+ voltage interlocks with which instruments covered by this service manual might be equipped.
5. Do not apply AC power to this DVD and/or any of its electrical assemblies unless all solid-state device heat sinks are correctly installed.
6. Always connect test instrument ground lead to the appropriate ground before connection the test instrument positive lead. Always remove the test instrument ground lead last.

Insulation Checking Procedure

Disconnect the attachment plug from the AC outlet and turn the power on. Connect an insulation resistance meter(500V) to the blades of the attachment plug. The insulation resistance between each blade of the attachment plug and accessible conductive parts (Note 1) should be more than 1M-ohm.

Note 1 : Accessible Conductive Parts including Metal panels, Input terminals, Earphone jacks, etc.

Electrostatically Sensitive (ES) Devices

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field effect transistors and semiconductor chip components.

The following techniques should be used to help reduce the incidence of component damage caused by static electricity.

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging wrist strap device, which should be removed for potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a GROUNDED-tip soldering iron to solder or unsolder ES devices.
4. Use only an anti-static solder removal device. Some solder removal devices not classified a "anti-static" can generate electrical charges sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charge sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil, or comparable conductive material).
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

Caution : Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.

8. Minimize bodily motions when handling unpackaged replacement ES devices. (Normally harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ES device.)




4. INFORMATIONS

REGION CODE

VERSION	REGION CODE	COUNTRY
/UXX	1	USA/CANADA

THE DISCS THAT THE DV8100 CAN HANDLE

The following discs can be played back with a DV8100.

disc	mark	playback capability	size	side
DVD		Audio/Video	12 cm	single/double
CD		Audio	12 cm	single
VCD		Audio/Video	12 cm	single

Note: The regional code of the discs must meet to the regional code of the DV8100.

DVD INFORMATION

Below is a glossary of the new terms related to DVD.

Title:

A disc may have more than one story/movie on it, so each story/movie is called a "title".

For example, if there are 2 movies on the disc, they are separated into Title 1 and Title 2.

Chapter:

A title may also be separated into chapters.

For example, a movie (title) may be separated into 3 scenes (chapters).

Title 1			Title 2		
Chapter 1	Chapter 2	Chapter 3	Chapter 1	Chapter 2	Chapter 3

Subtitles:

DVDs are recorded with up to 32 different subtitle languages.

If a disc has more than one subtitle language, you can select the subtitle language that you want to read.

Soundtrack language:

DVDs are recorded with up to 8 different soundtrack languages.

If a disc has more than one language, you can select the soundtrack language that you want to listen to.

Multi-angles:

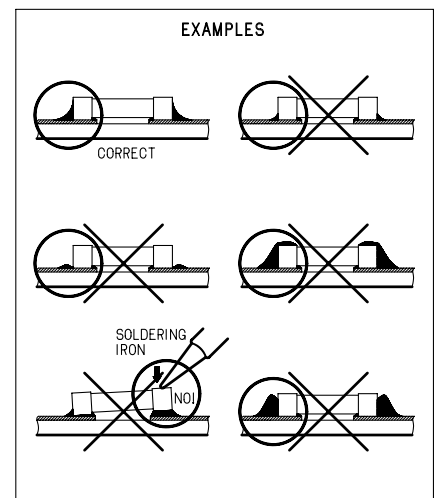
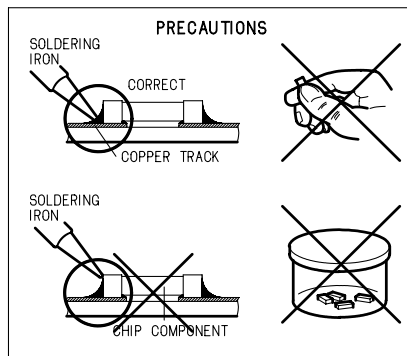
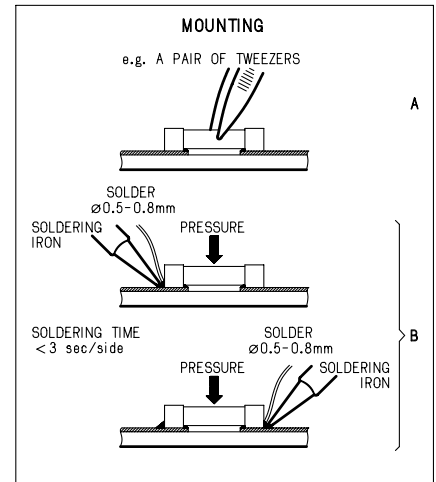
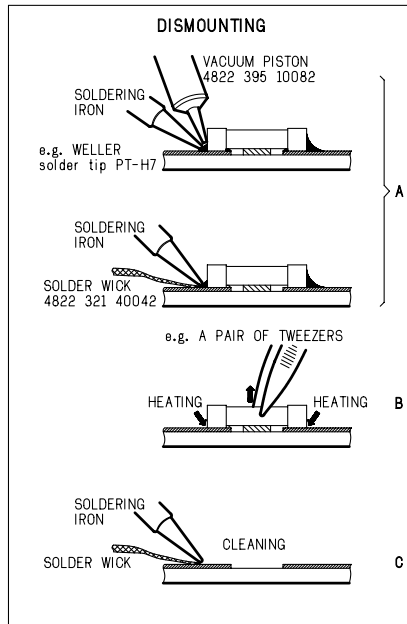
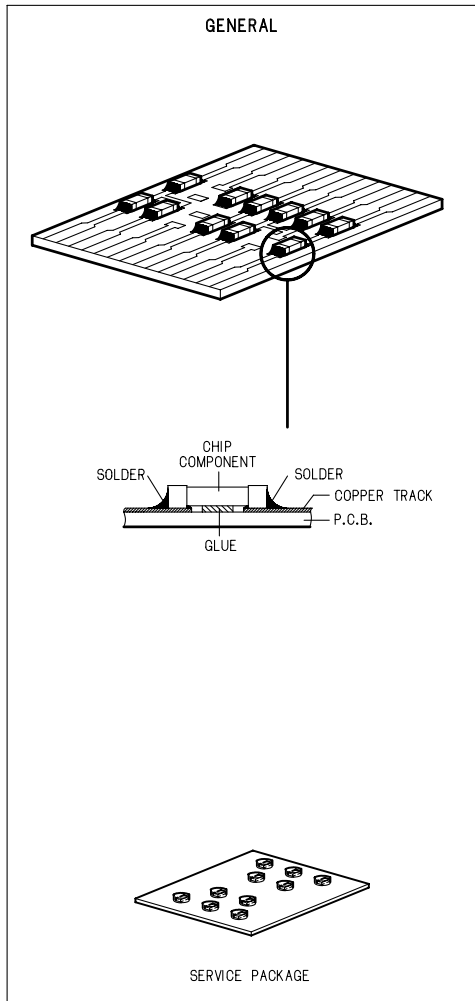
On some DVDs, scenes have been filmed from different angles (up to a maximum of 9). On these discs, you can select the angle that you want to watch. Please refer to the DVD's manual to see which scenes have multi-angles.

Parental guide:

Some discs have restriction levels that allow you to cut scenes or prevent playback of discs that have contents that you do not want children to watch.

5. SERVICING HINT

SERVICE HINTS



SERVICE TOOLS

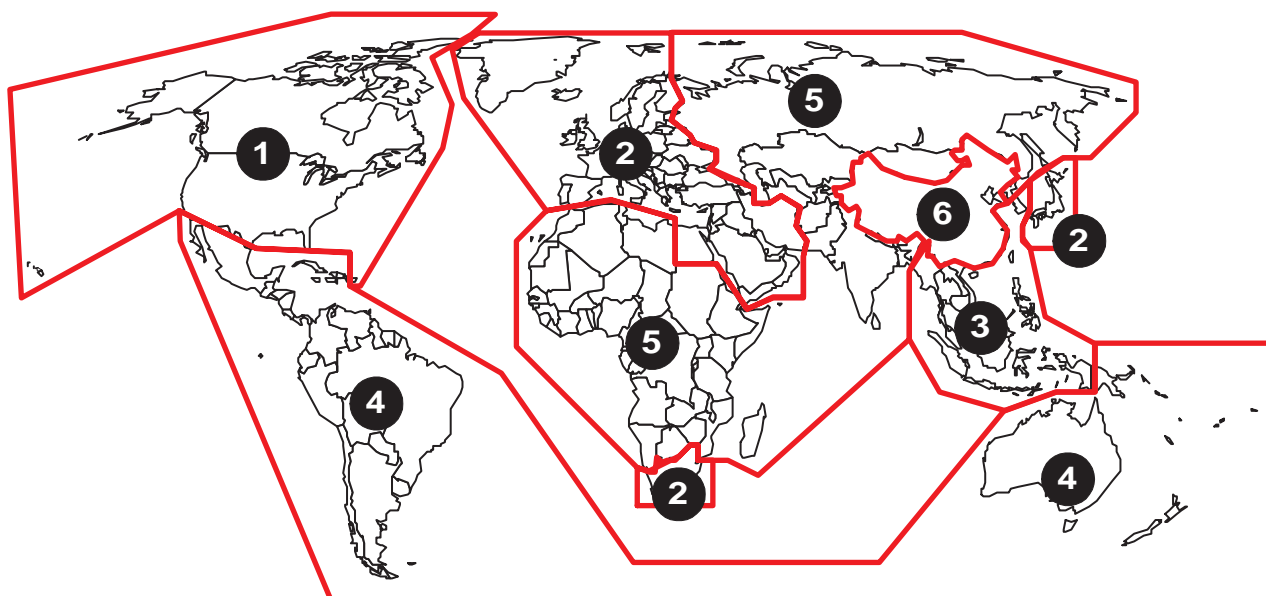
Audio signals disc (SBC429)	4822 397 30184
Disc without errors (SBC444)+	
Disc with DO errors, black spots and fingerprints (SBC444A)	4822 397 30245
Disc (65 min 1kHz) without no pause	4822 397 30155
Max. diameter disc (58.0 mm)	4822 397 60141
Torx screwdrivers	
Set (straight)	4822 395 50145
Set (square)	4822 395 50132
13th order filter	4822 395 30204
DVD test disc	4822 397 10131
Service tool kit	*VC8100JIG
– Test disc (GGV1025)	
– Remote control unit for service (GGF1067)	
– Interface (GGF1348)	
– FFC (VDA1681)	

6. REGIONAL CODES

What are "regional codes"?

Motion picture studios want to control the home release of movies in different countries because theater releases aren't simultaneous (a movie may come out on DVD in the US when it's just hitting screens in Europe). Therefore they have required that the DVD standard include codes which can be used to lock out the playback of certain discs in certain geographical regions. Players sold in each region will have that region's code built into the player. The player will refuse to play these "region coded" discs which are not allowed in the region. However, regional codes are entirely optional. Discs without codes will play on any player in any country. Some studios have already announced that only their new releases will have regional codes. There are six regions:

1. United States and Canada
2. Europe and Japan
3. Far East (except Japan & China)
4. South America and Oceania
5. Africa and the Middle East
6. China (except Hong Kong)

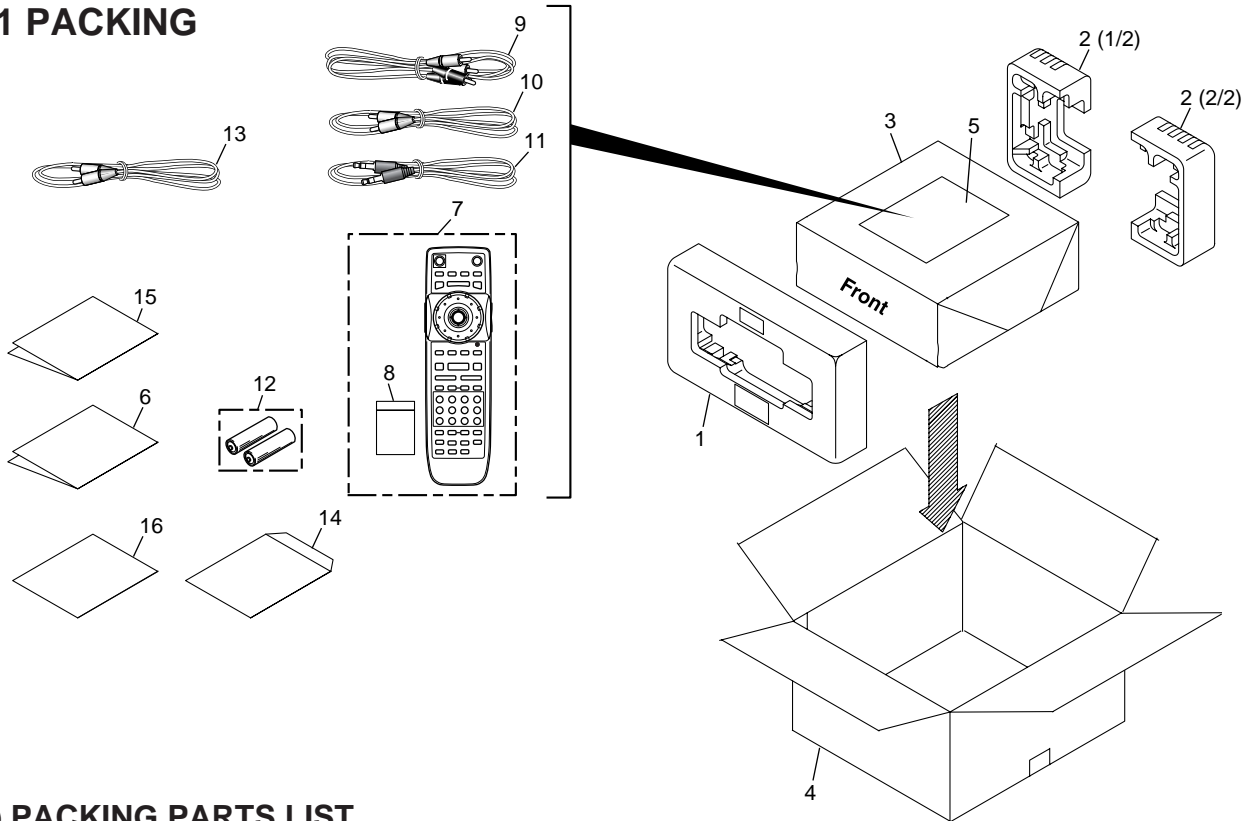


Map of DVD Regions

7. EXPLODED VIEWS AND PARTS LIST

- NOTES:
- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
 - The Δ 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 \blacktriangledown mark on the product are used for disassembly.

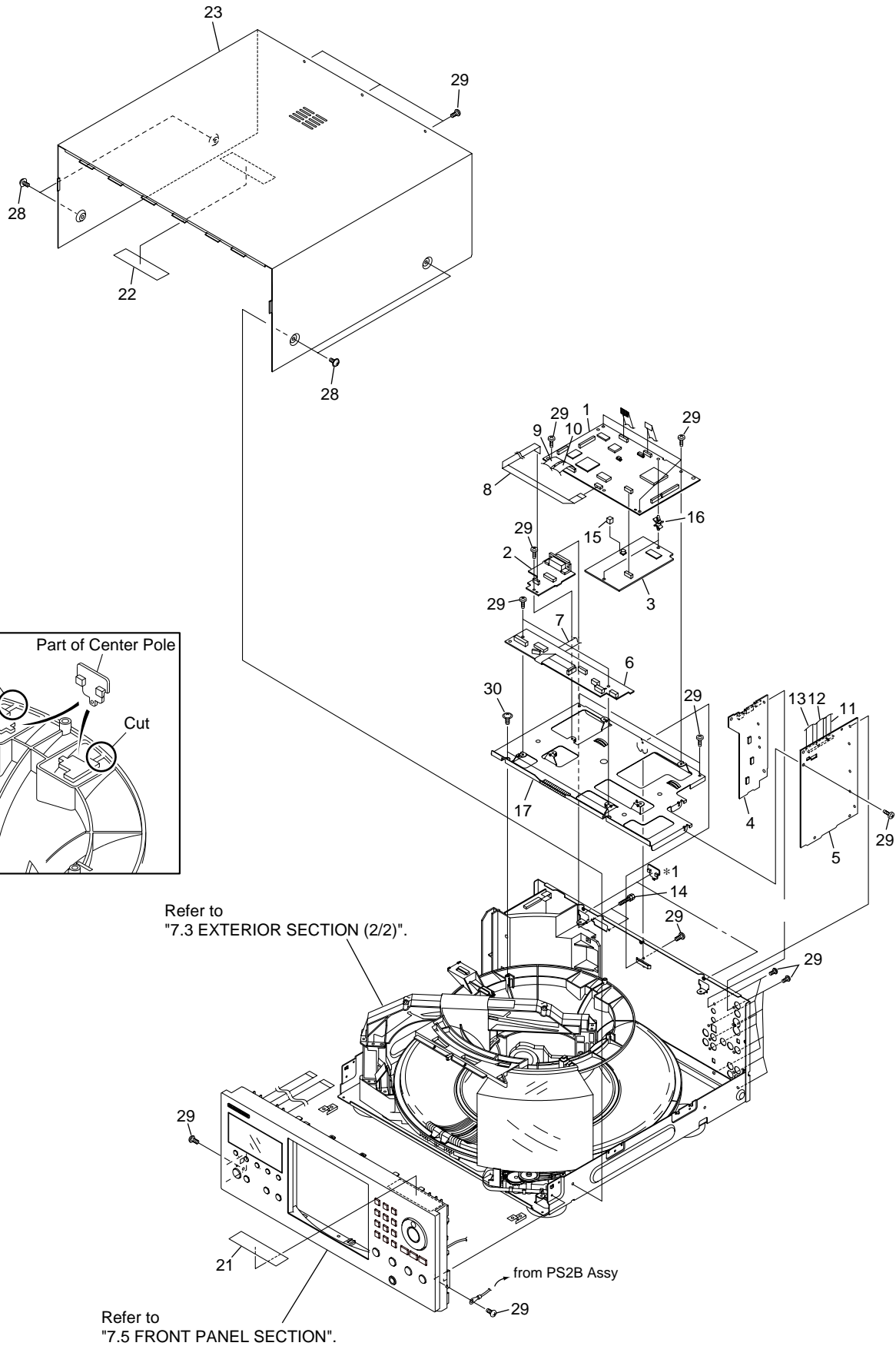
7.1 PACKING



(1) PACKING PARTS LIST

Mark	No.	Description	Part No.
NSP	1	VHA1258, Protector F	—
NSP	2	VHA1259, Protector R	—
NSP	3	RHC1023, Packing Sheet	—
NSP	4	VHG1914, Packing Case	—
NSP	5	Z21-038, Polyethylene Bag B5	—
	6	VRB1254, User Guide (English)	296W851250
	7	VXX2709, Remote Control Unit RC8100VC	ZK296W0010
NSP	8	VNK4423, Battery Cover	—
NSP	9	VDE1033, Audio Cord (L = 1.5m)	—
NSP	10	VDE1034, Video Cord (L = 1.5m)	—
NSP	11	RDE1023, Master-Slave Control Cord (L = 0.75m)	—
NSP	12	VEM-013, Dry Cell Battery (R6P, AA)	—
NSP	13	ZD00900100, D-BUS Remote control Cord	—
NSP	14	183J813502, Envelope Kit (Warranty for CANADA)	—
	15	VRC1119, User Guide (French)	296W851260
NSP	16	092J854113, Warranty for USA	—

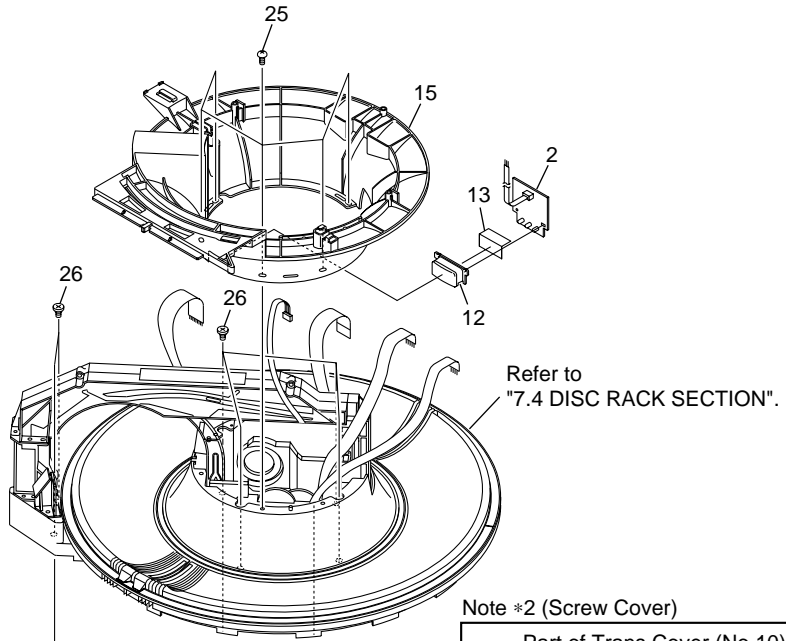
7.2 EXTERIOR SECTION (1/2)



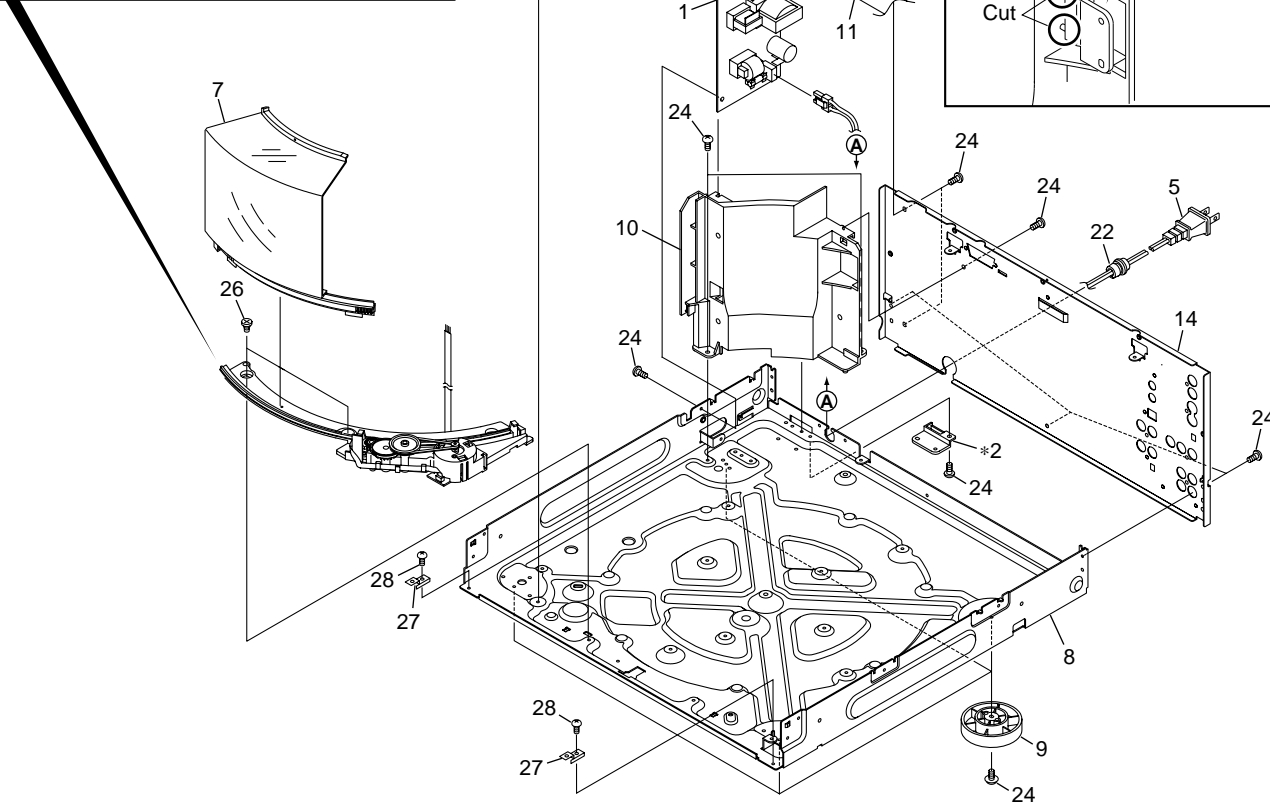
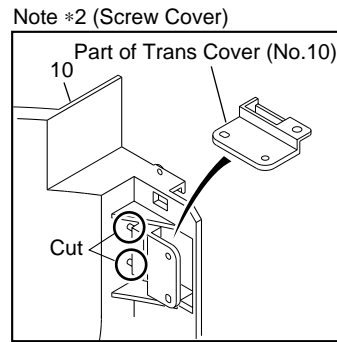
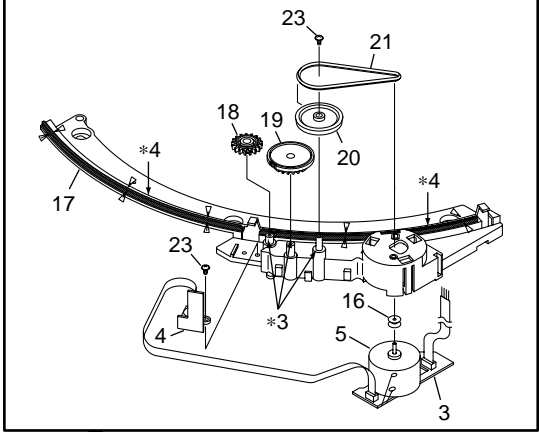
(1) EXTERIOR SECTION (1/2) PARTS LIST

Mark	No.	Description	Part No.
	1	VWS1396, DVDM Assy	*ZZ001510R
NSP	2	VWG2201, 232B Assy	—
NSP	3	VWV1669, VQEB Assy	—
NSP	4	VWG2200, MSJB Assy	—
NSP	5	VWV1720, AVJB Assy	—
NSP	6	VWG2199, MDRB Assy	—
NSP	7	VDA1779, Flexible Cable (12P)	—
NSP	8	VDA1777, Flexible Cable (7P)	—
NSP	9	VDA1781, Flexible Cable (11P)	—
NSP	10	VDA1778, Flexible Cable (12P)	—
NSP	11	VDA1782, Flexible Cable (7P)	—
NSP	12	VDA1707, Flexible Cable (14P)	—
NSP	13	VDA1784, Flexible Cable (15P)	—
NSP	14	DBA1078, Screw (#4-40/M2)	—
NSP	15	VEC2079, PCB Support Cushion	—
NSP	16	VEC2077, PCB Spacer	—
NSP	17	VNE2215, Main Holder	—
NSP	21	VRW1817, Caution Label 301	—
NSP	22	ARW7050, 65 Label	—
NSP	23	VXX2692, Bonnet Case S	—
	28	RBA1099, Screw	51260408M0
NSP	29	BBZ30P080FZK, Screw	—
NSP	30	IPZ30P080FMC, Screw	—

7.3 EXTERIOR SECTION (2/2)



Note *3 :
 KANTO KASEI FROIL PN-397 (for Service) : GYA1001
 Note *4 :
 KANTO KASEI HANARL PN-955R (for Service) : GEM1016

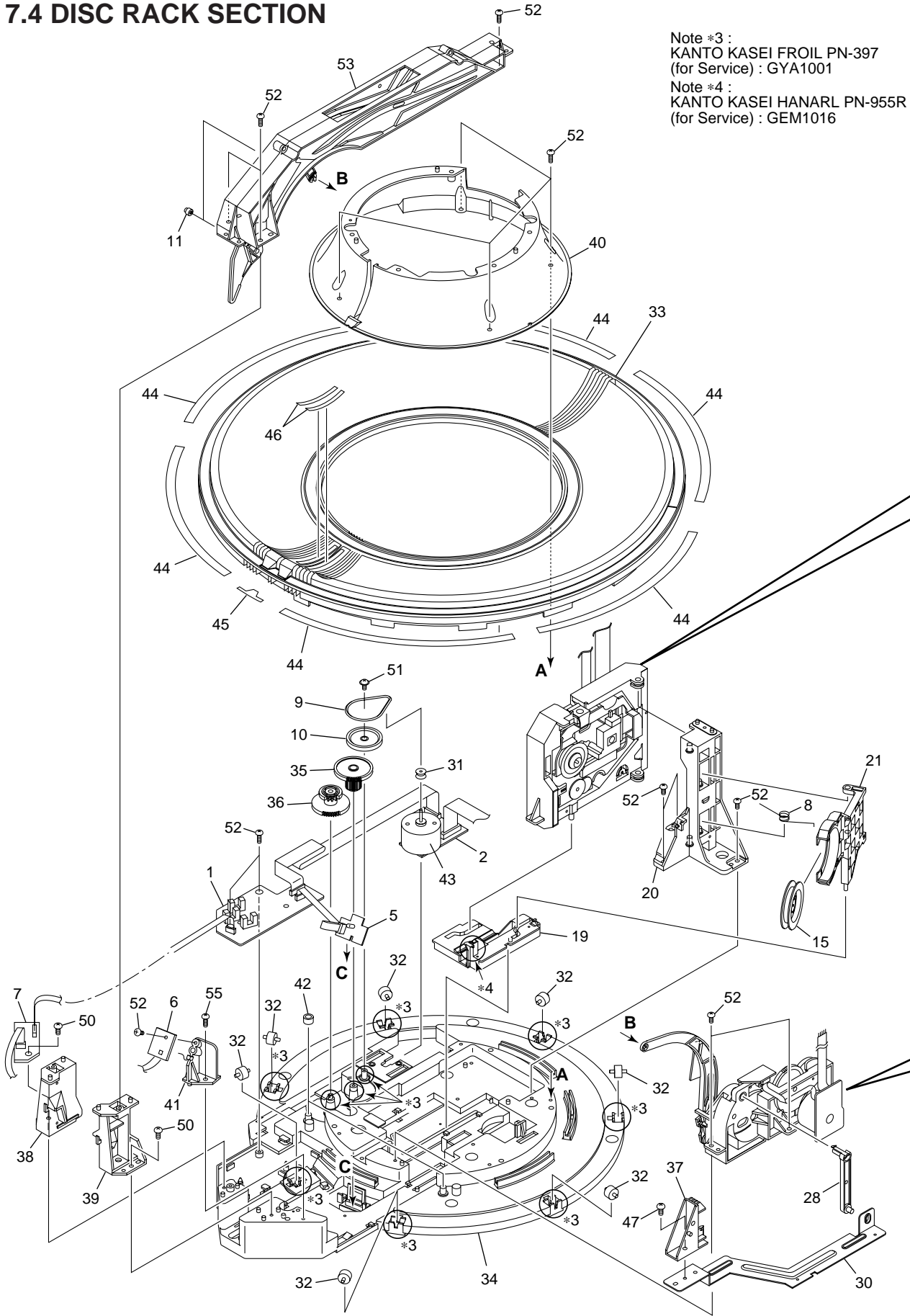


(1) EXTERIOR SECTION (2/2) PARTS LIST

Mark	No.	Description	Part No.
△	1	VWR1317, POWER SUPPLY Assy	*ZZ001520R
NSP	2	VWG2197, LEDB Assy	—
NSP	3	VWG2194, DOMB Assy	—
NSP	4	VWG2195, DOSB Assy	—
△	5	ADG7024, AC Power Cord	*ZC000080R
	6	VXM1033, Carriage Motor (DOOR)	*MM001070R
	7	VNK4630, Hood	296W162010
NSP	8	VNA2125, Under Base DVD	—
	9	PNW2766, Insulator	296W057010
NSP	10	VNK4542, Trans Cover	—
NSP	11	VDA1776, Flexible Cable (26P)	—
NSP	12	PNW2816, CR Lens	—
NSP	13	VEC2113, Dispersion Sheet	—
NSP	14	VNA2178, Rear Base	—
NSP	15	PNW2792, Center Pole 301	—

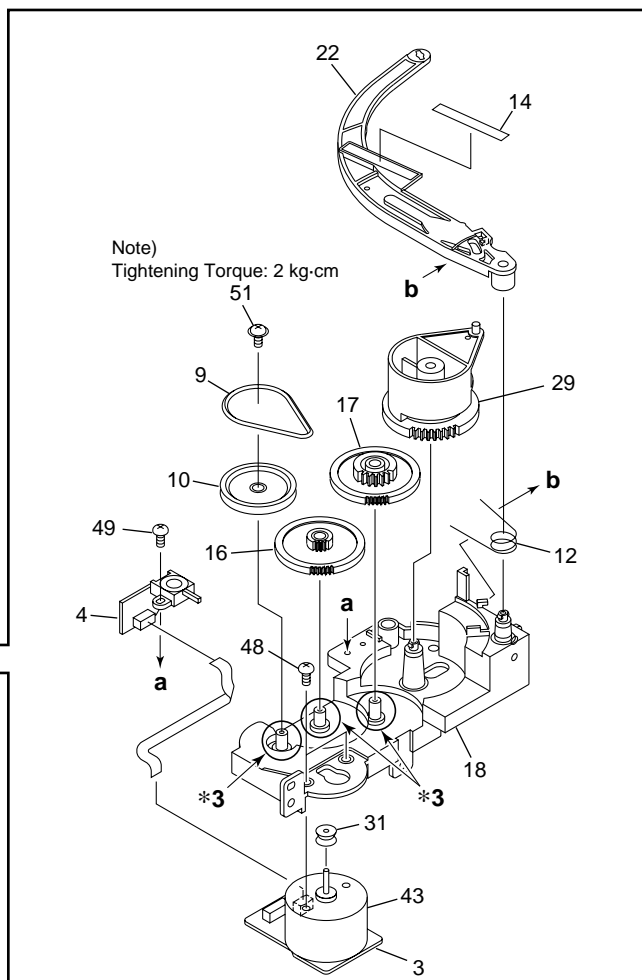
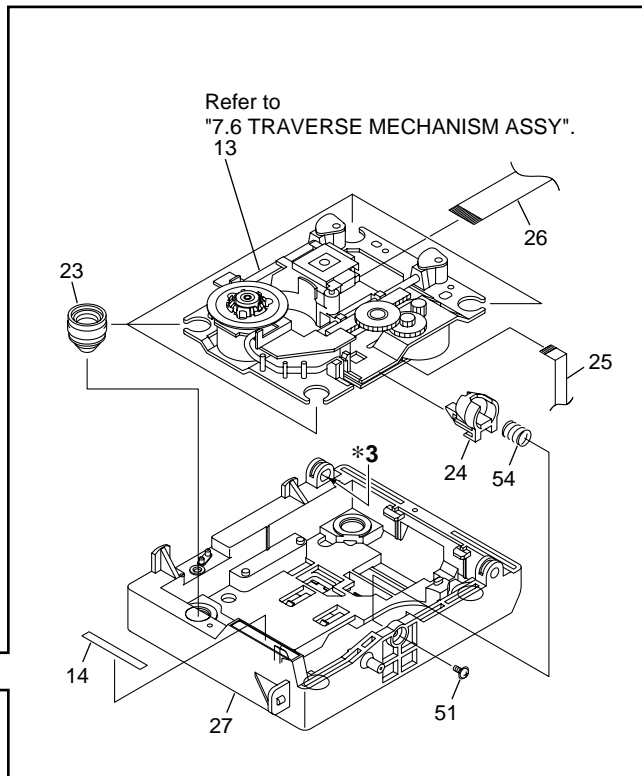
Mark	No.	Description	Part No.
	16	PNW1634, Motor Pulley	296W262010
NSP	17	PNW2791, Hood Base 301	—
	18	PNW2800, Gear M1	296W058010
	19	PNW2906, Gear AW	296W058020
	20	VNL1662, Gear Pulley	296W058030
	21	PEB1300, Belt	296W264010
	22	CM-22C, Cord Stopper	296W259010
NSP	23	IPZ20P080FMC, Screw	—
NSP	24	BBZ30P080FZK, Screw	—
NSP	25	IPZ30P080FMC, Screw	—
NSP	26	PBA1106, Screw C	—
NSP	27	296W160010, Earth Bracket	—
NSP	28	IPZ20P080FMC, Screw	—

7.4 DISC RACK SECTION



Note #3 :
KANTO KASEI FROIL PN-397
(for Service) : GYA1001

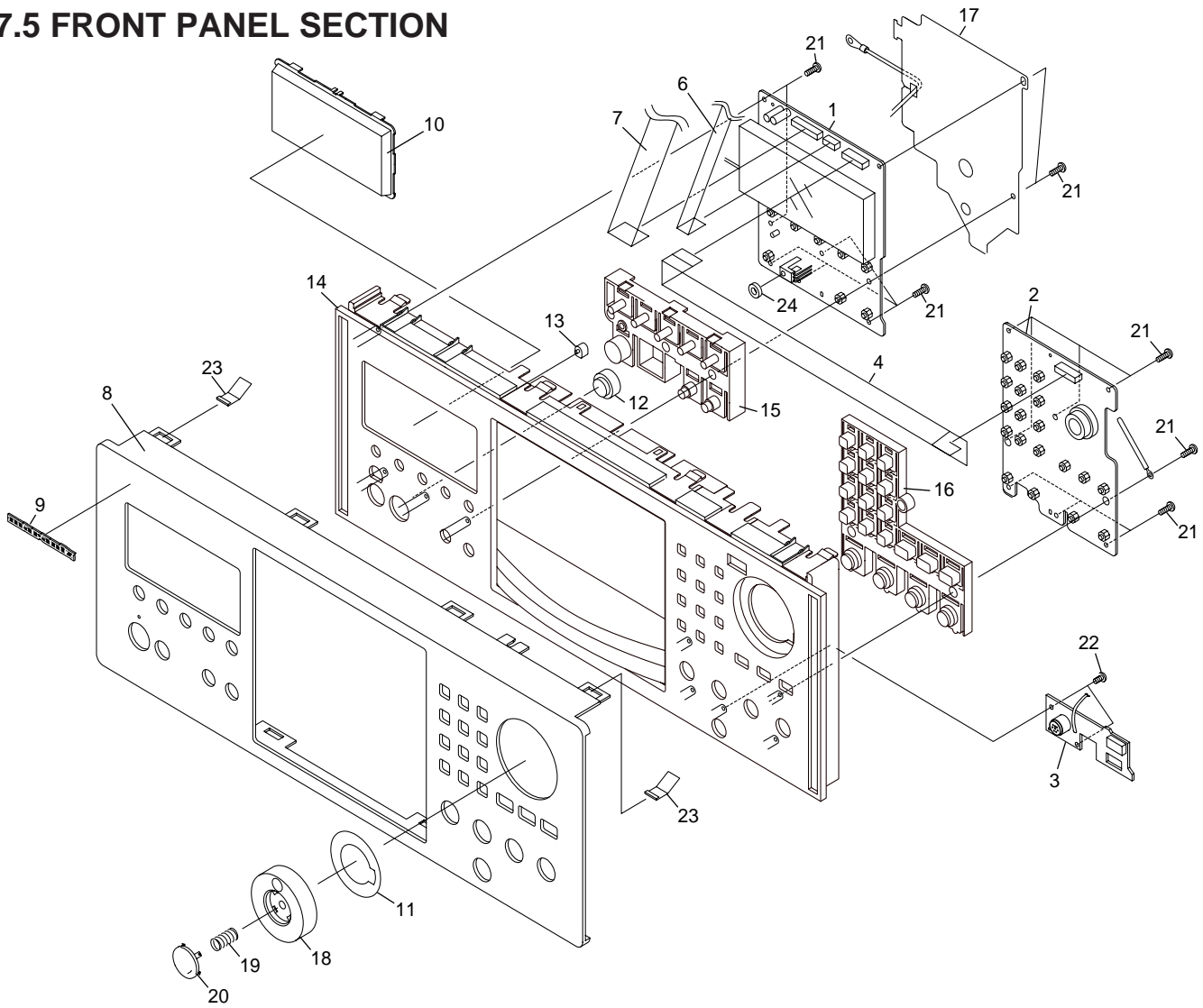
Note #4 :
KANTO KASEI HANARL PN-955R
(for Service) : GEM1016



● DISC RACK SECTION PARTS LIST

Mark	No.	Description	Part No.
NSP	1	VWG2113, SSRB Assy	
NSP	2	VWG2114, SEMB Assy	
NSP	3	VWG2115, LOMB Assy	
NSP	4	VWG2116, LOSB Assy	
NSP	5	VWG2117, RADB Assy	
NSP	6	VWG2118, PHOB Assy	
NSP	7	VWG2196, VOLB Assy	
	8	VBH1318, Clamp Spring	296W115010
	9	AEB7029, Loading Belt	296W264020
	10	ANW7062, Gear Pulley (B)	296W058040
	11	ANW7075, Roller B	296W358010
	12	PBH1226, Drive Arm Spring	296W115020
NSP	13	WVT1161, Traverse Mechanism Assy	
NSP	14	PED1028, Sheet 301	
	15	VXA2382, Clamper Assy 301	296W005500
	16	PNW2819, Gear 1	296W058050
	17	PNW2820, Gear 2	296W058060
NSP	18	PNW2822, Gear Holder	
	19	PNW2823, Slider Cam	296W054010
	20	PNW2826, Clamp Pole"	296W272010
	21	PNW2827, Clamper Holder	296W271010
	22	PNW2829, Drive Arm	296W002010
	23	AEB7063, Float Rubber A	296W130010
NSP	24	VNL1842, Balancer	
NSP	25	VDA1785, Flexible Cable (8P)	
NSP	26	VDA1780, Flexible Cable (24P)	*YU000630R
	27	VNL1841, Float Base	296W004010
	28	PNW2844, Link L	296W121010
	29	PNW2873, Drive Cam	296W054020
NSP	30	PNA2438, Lock Plate	—
	31	PNW1634, Motor Pulley	296W262010
	32	PNW2647, Roller	296W358020
	33	PNW2790, Disc Rack	296W064010
NSP	34	PNW2835, Rack Base	—
	35	PNW2836, ST Gear 0.6	296W058070
	36	PNW2837, ST Gear 1.0	296W058080
NSP	37	PNW2838, Disc Divider	—
NSP	38	PNW2839, Guide Support L	—
NSP	39	PNW2840, Guide Support R	—
NSP	40	PNW2841, Disc Guard	—
NSP	41	PNW2842, Sensor Stay	—
	42	PNW2843, Guide Roller	296W358030
	43	VXM1033, Carriage Motor (SELECT, LOADING)	*MM001070R
	44	PAM1770, Rack Label	296W861020
	45	PAM1771, S Label	296W861030
	46	PRW1507, +1 Label	296W861040
NSP	47	BBZ30P080FZK, Screw	—
NSP	48	BMZ26P040FZK, Screw	—
NSP	49	BPZ26P060FMC, Screw	—
NSP	50	BPZ30P100FCU, Screw	—
NSP	51	IPZ20P080FMC, Screw	—
NSP	52	PPZ30P080FMC, Screw	—
	53	PXA1615, Arm Assy	296W002500
	54	VBH1319, Float Spring	296W115030
NSP	55	IPZ30P080FMC, Screw	—

7.5 FRONT PANEL SECTION

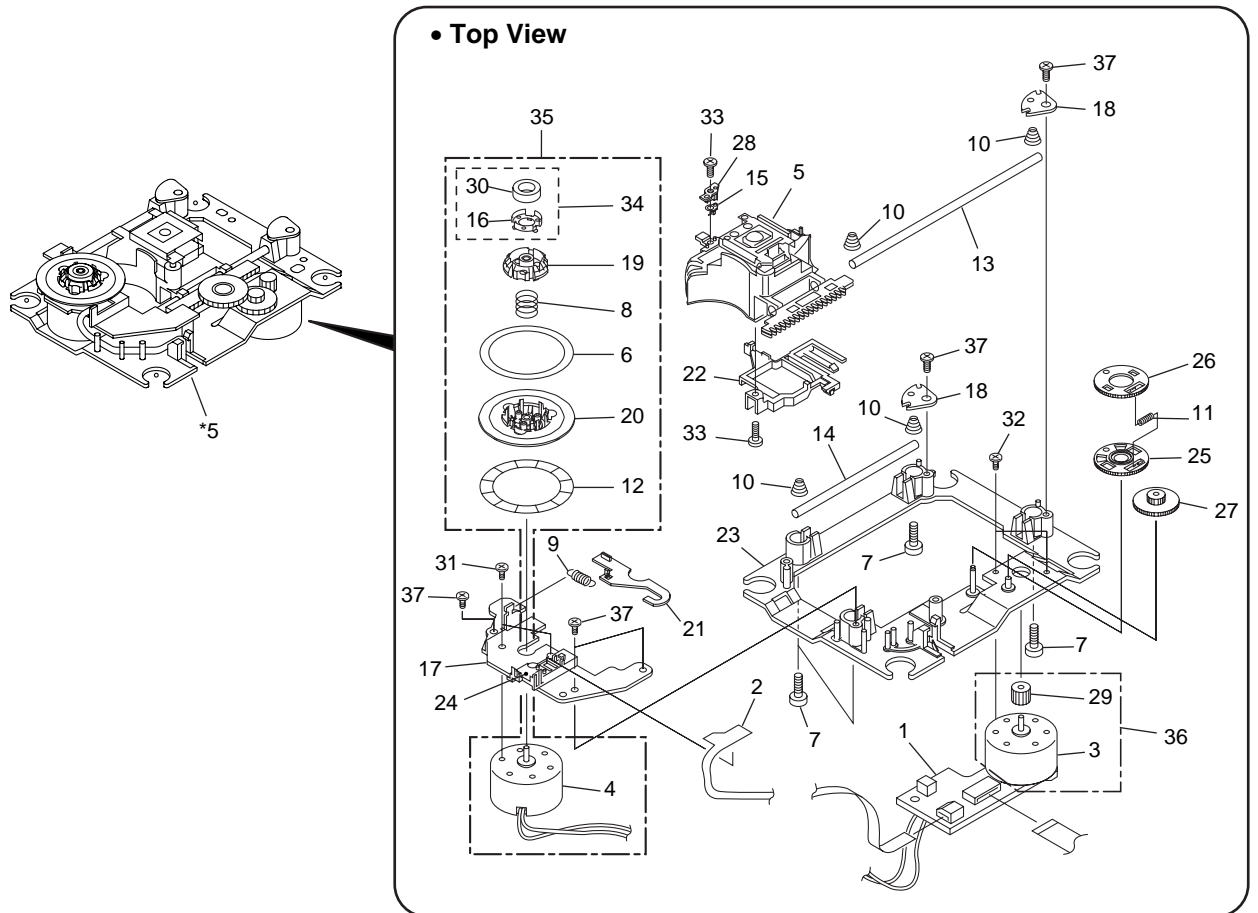


(1) FRONT PANEL SECTION PARTS LIST

Mark	No.	Description	Part No.
NSP	1	VWG2192, FLKY Assy	—
NSP	2	VWG2193, KEYB Assy	—
NSP	3	VWG2198, PS2B Assy	—
NSP	4	VDA1839, Flexible Cable (11P)	—
NSP	5	VDA1792, Flexible Cable (7P)	—
NSP	6	VDA1786, Flexible Cable (7P)	—
NSP	7	VDA1775, Flexible Cable (15P)	—
	8	296W248010, Front Panel	296W248010
	9	185J251012, Marantz Badge	185J251010
	10	296W158010, Display Window	296W158010
NSP	11	PEC1042, JOG Sheet	—
	12	296W355010, IR Lens	296W355010

Mark	No.	Description	Part No.
	13	PNW2019, LED Lens	296W355020
	14	296W105010, Front Chassis	296W105010
	15	296W270010, Mode Button	296W270010
	16	296W270020, Play Button	296W270020
NSP	17	PNM1324, PCB Cover	—
	18	PAC1882, JOG Dial	296W067010
	19	PBH1228, Enter Spring	296W115040
	20	PAC1883, Enter Button	296W270050
NSP	21	PPZ30P080FMC, Screw	—
NSP	22	PPZ30P050FMC, Screw	—
NSP	23	VBK1128, Contactor	—
NSP	24	296W120010, IR Filter	—

7.6 TRAVERSE MECHANISM ASSY



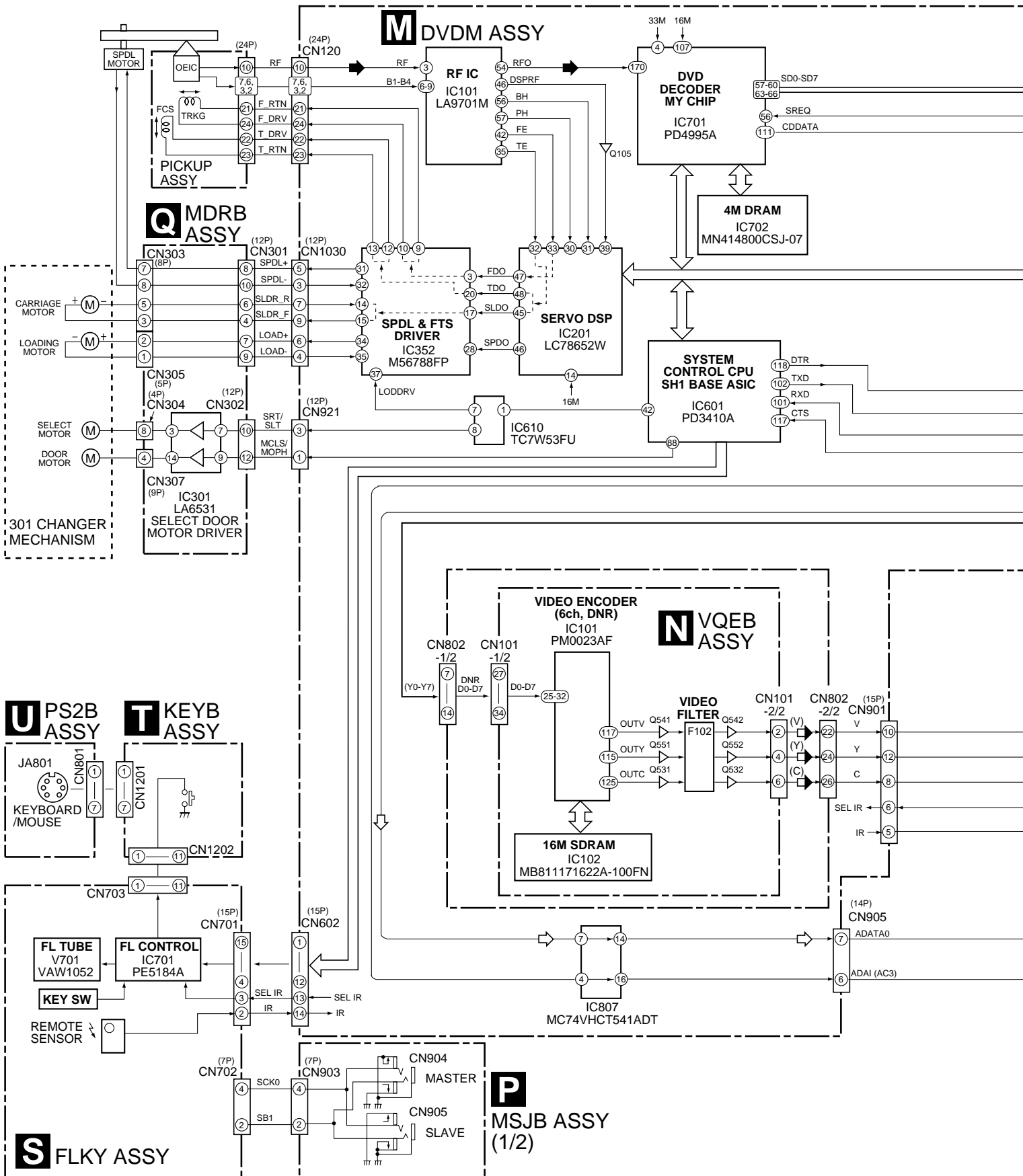
• TRAVERSE MECHANISM ASSY PARTS LIST

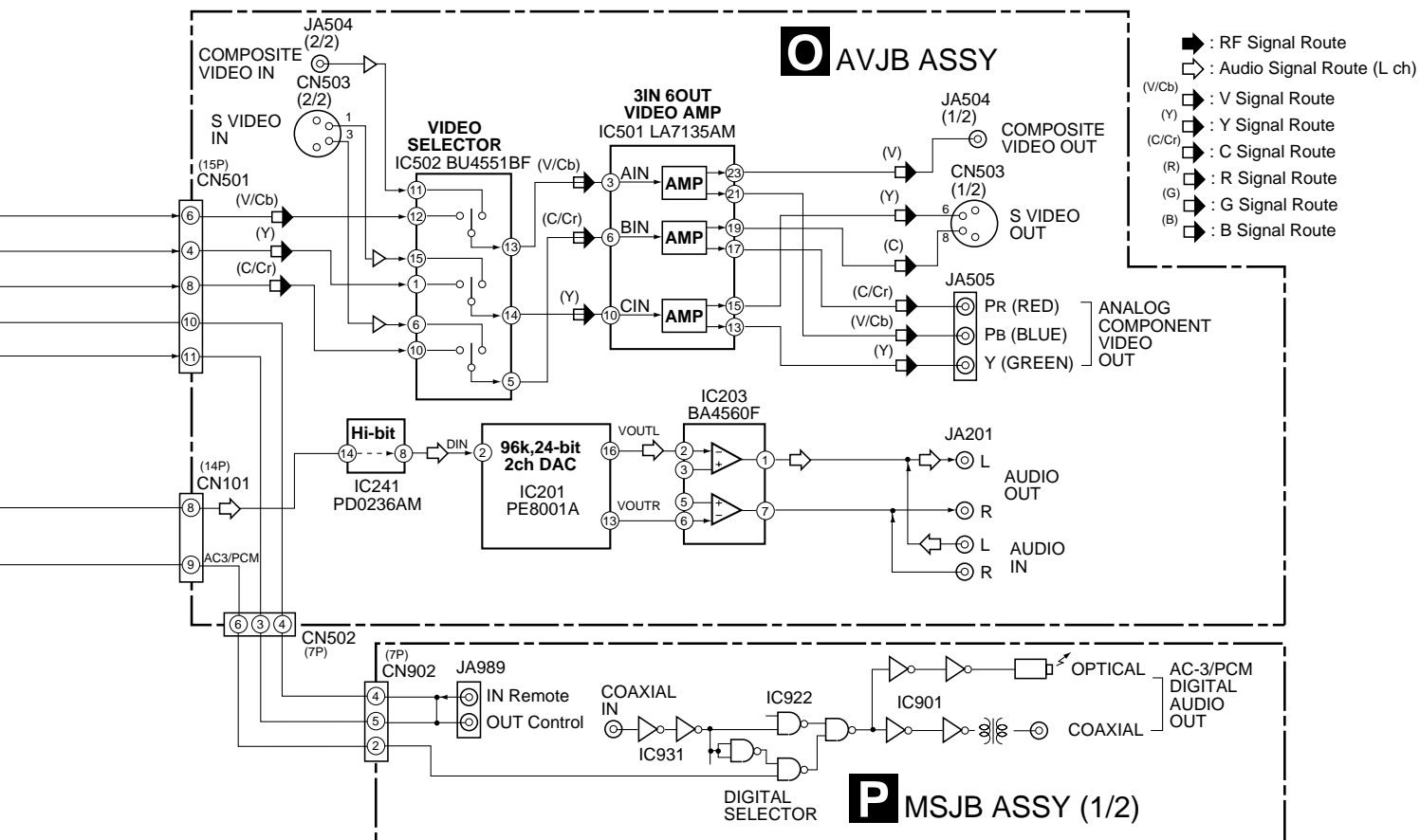
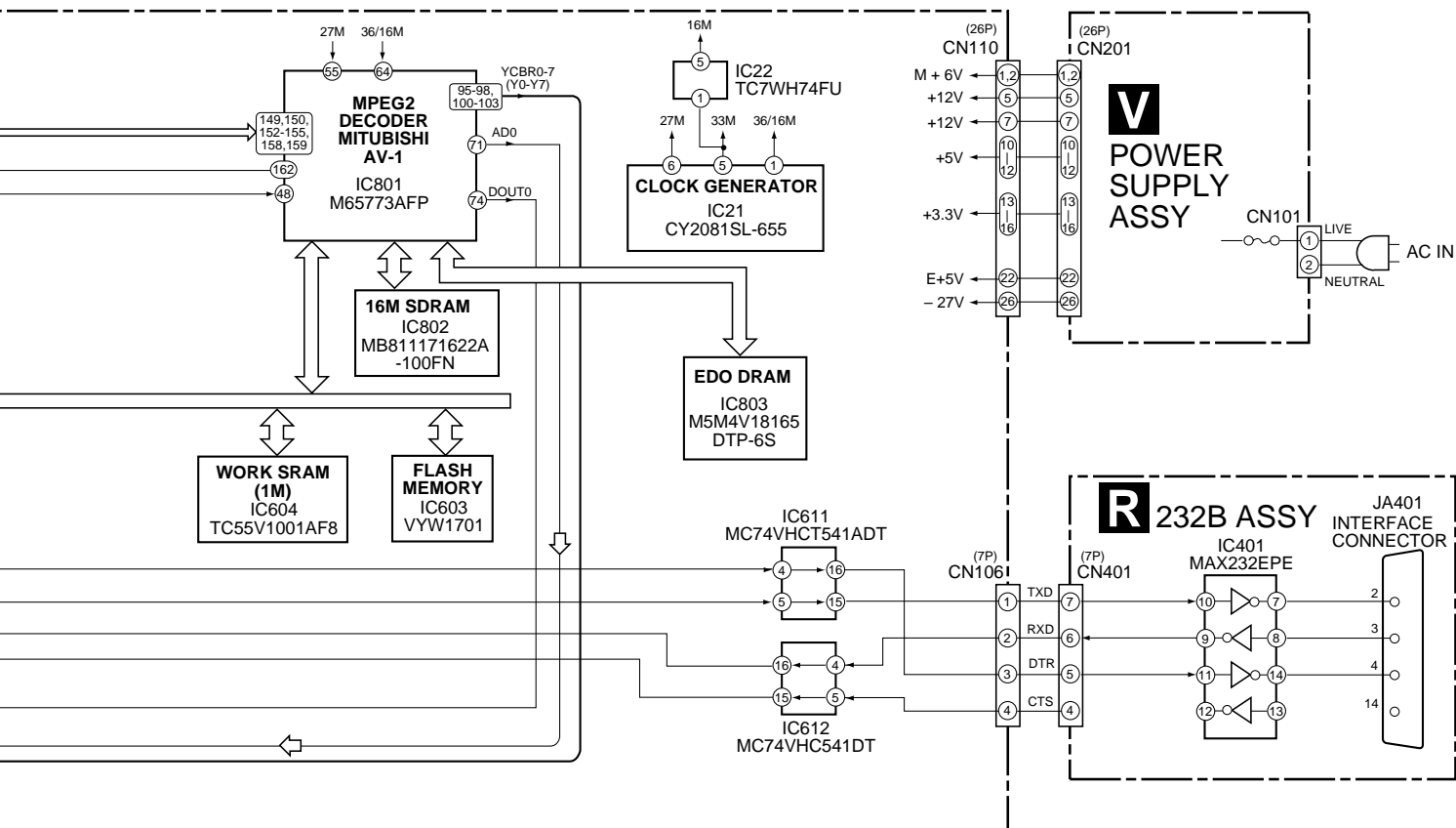
Mark	No.	Description	Part No.
NSP	1	VWG2048, SMEB Assy	—
NSP	2	VWG2009, FGSB Assy	—
NSP	3	VXM1079, Motor	—
NSP	4	VXM1078, Motor	—
△ NSP	5	VWY1055, Pickup Assy	—
NSP	6	DEC2040, Table Sheet	—
NSP	7	VBA1058, Screw	—
NSP	8	VBH1278, Centering Spring	—
	9	VBH1317, Hook Spring	296W115050
	10	VBH1303, Skew Spring	296W115060
	11	VBH1308, Gear Spring	296W115070
NSP	12	VEC1959, Reflected Sheet	—
NSP	13	VLL1504, Guide Bar	—
NSP	14	VLL1505, Sub-guide Bar	—
	15	VNC1017, Hold Spring	296W115080
NSP	16	VNE2070, Magnet Holder	—
NSP	17	VNE2154, Motor Base	—
NSP	18	VNE2155, Cover	—
NSP	19	VNL1746, Centering Ring	—
NSP	20	VNL1747, Disc Table	—

Mark	No.	Description	Part No.
	21	VNL1770, Hook	296W258010
NSP	22	VNL1802, FFC Holder	—
NSP	23	VNL1806, Mechanism Base	—
NSP	24	VNL1807, FG Holder	—
	25	VNL1808, Gear A	296W058090
	26	VNL1809, Gear B	296W058100
	27	VNL1810, Gear C	296W058110
	28	VNL1811, Slider	296W125010
NSP	29	VNL1814, Gear D	—
NSP	30	VYM1024, Magnet	—
NSP	31	JFZ17P025FZK, Screw	—
NSP	32	JGZ17P028FMC, Screw	—
NSP	33	VBA1051, Screw	—
NSP	34	VXX2507, Magnet Holder Assy	—
	35	VXX2649, Spindle Motor Assy	*ZK000290R
	36	VXX2650, Carriage Motor Assy	*ZK000300R
NSP	37	PBA1069, Screw	—
	*5	VXX2653, Traverse Mechanism Assy (for Service)	*ZK000310R

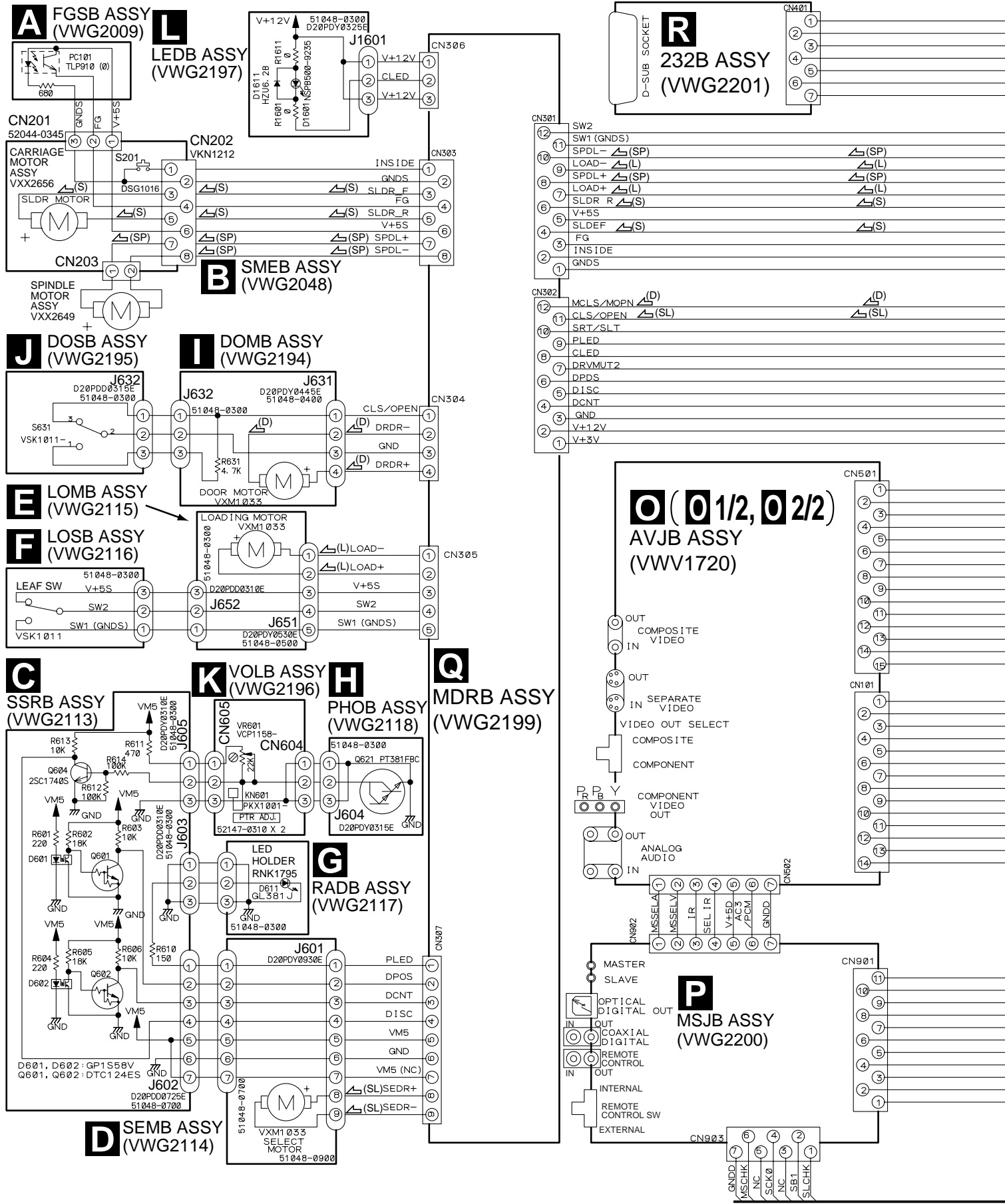
8. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

8.1 BLOCK DIAGRAM



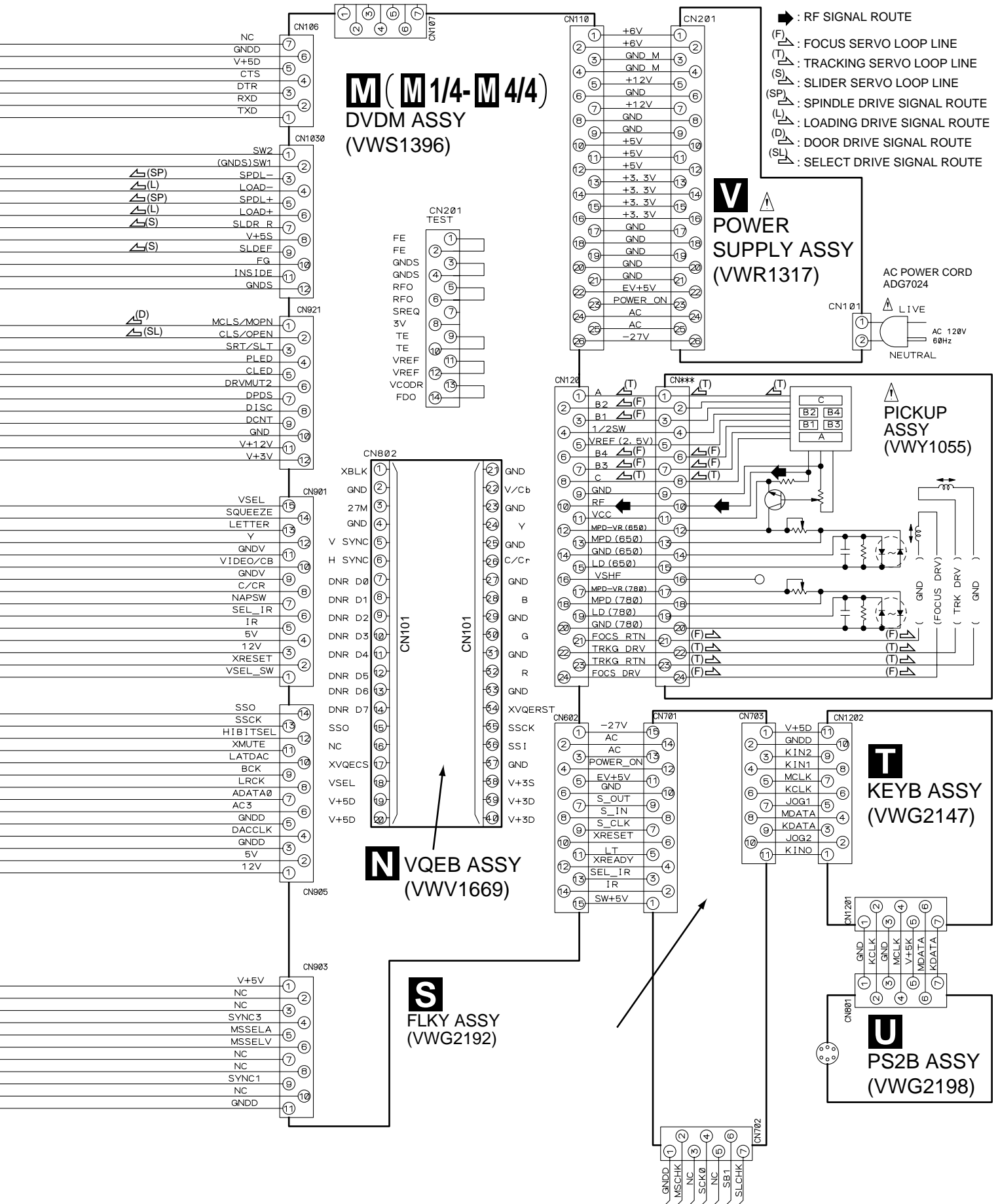


8.2 FGSB, SMEB, SSRB, SEMB, LOMB, LOSB, RADB, PHOB, DOMB, DOSB, VOLB, LEDB, PICKUP ASSYS and OVERALL WIRING DIAGRAM

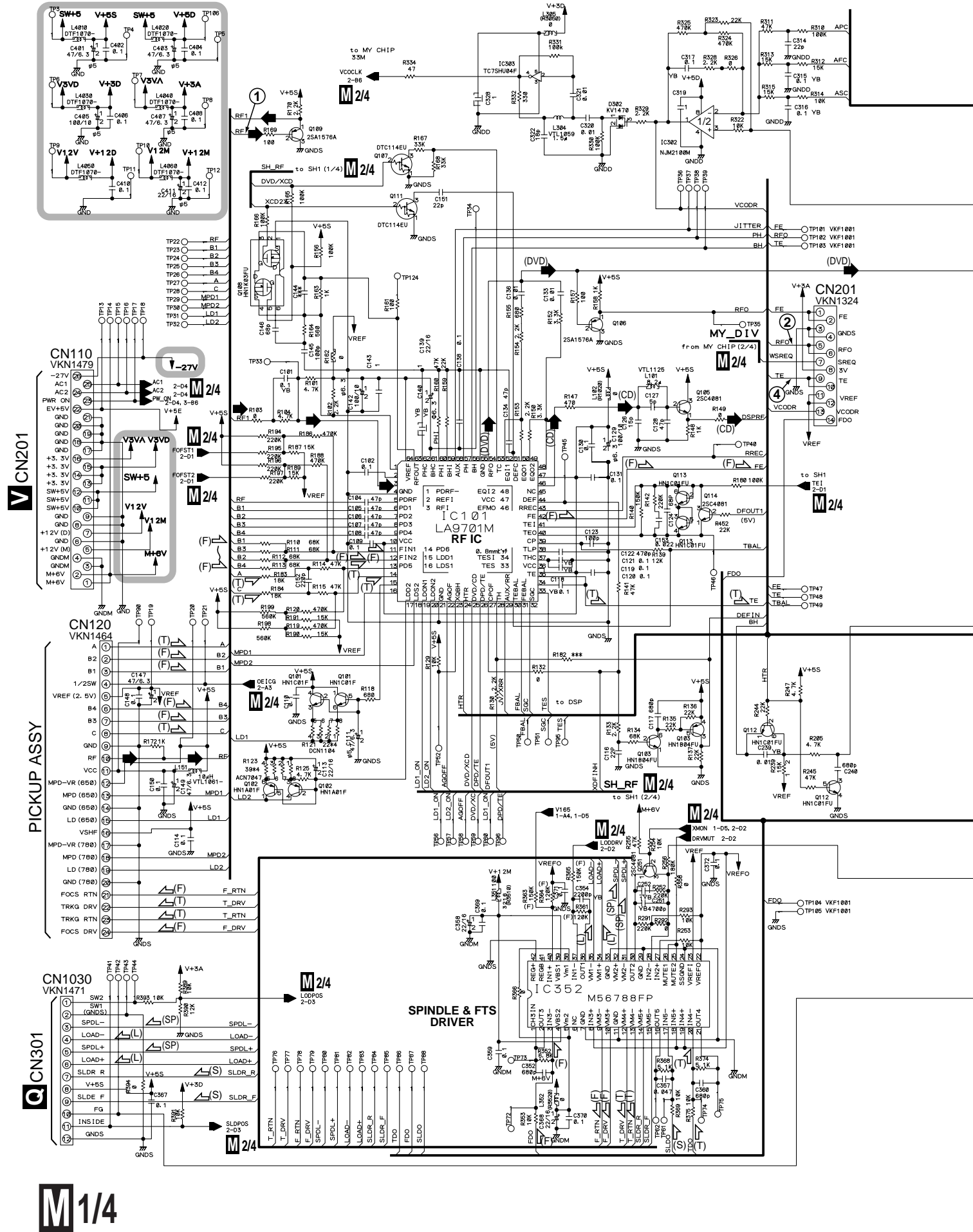


A B C D E F G H I J K L

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



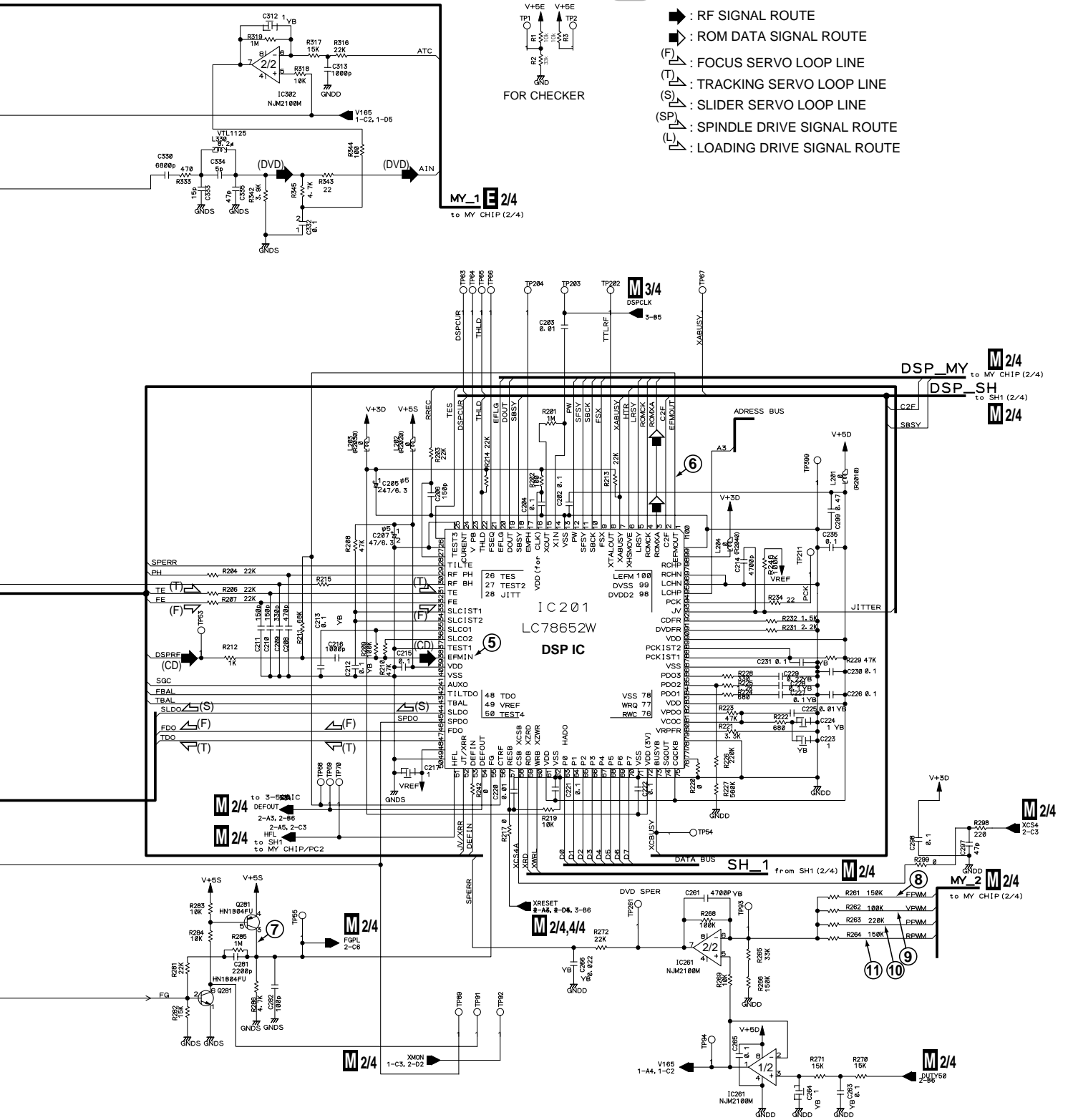
8.3 DVDM ASSY (1/4)



M 1/4 DVDM ASSY (VWS1396)

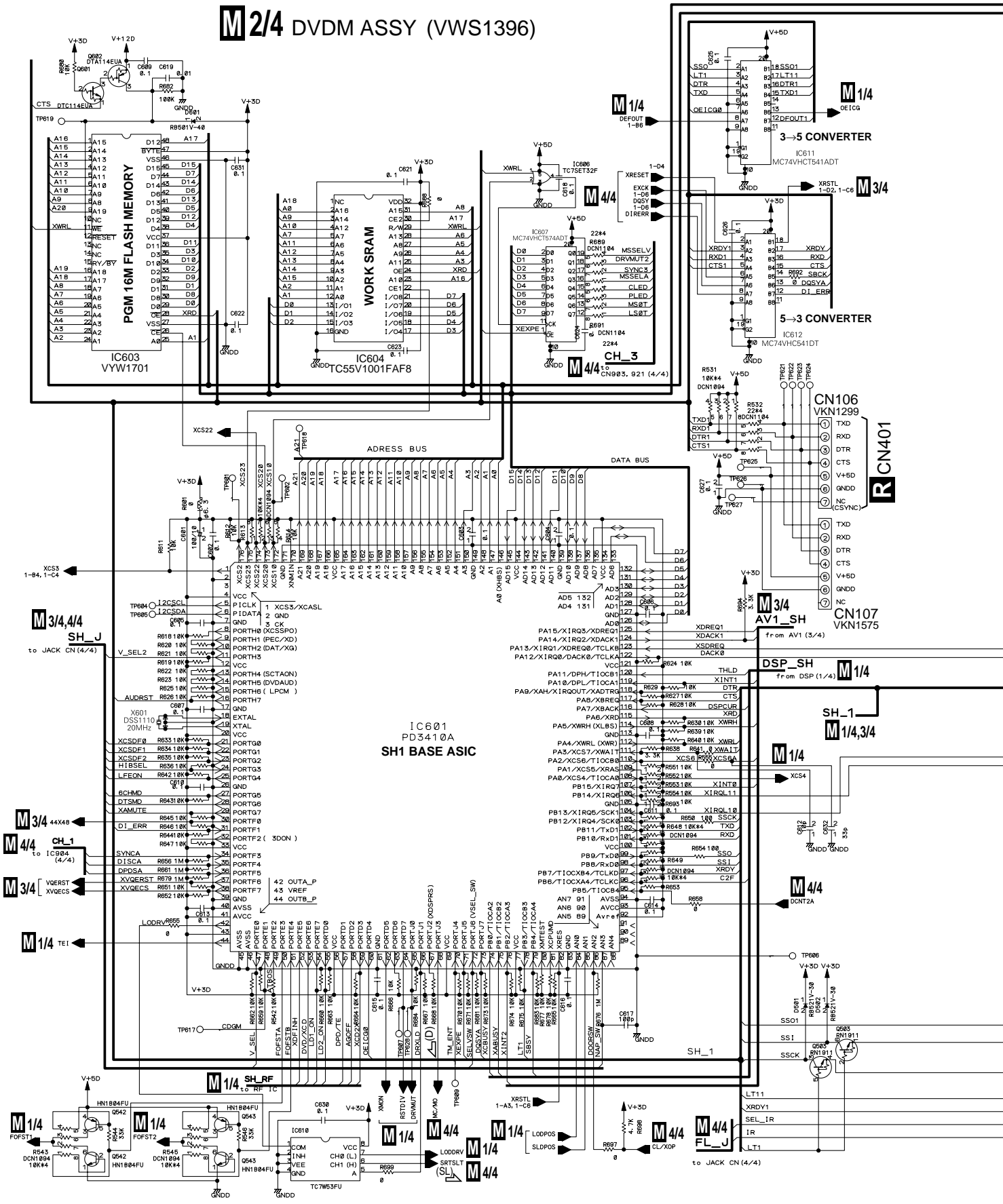
O : The power supply is shown with the marked box.

- : RF SIGNAL ROUTE
- : ROM DATA SIGNAL ROUTE
- : FOCUS SERVO LOOP LINE
- : TRACKING SERVO LOOP LINE
- : SLIDER SERVO LOOP LINE
- : SPINDLE DRIVE SIGNAL ROUTE
- : LOADING DRIVE SIGNAL ROUTE








8.4 DVDMM ASSY (2/4)

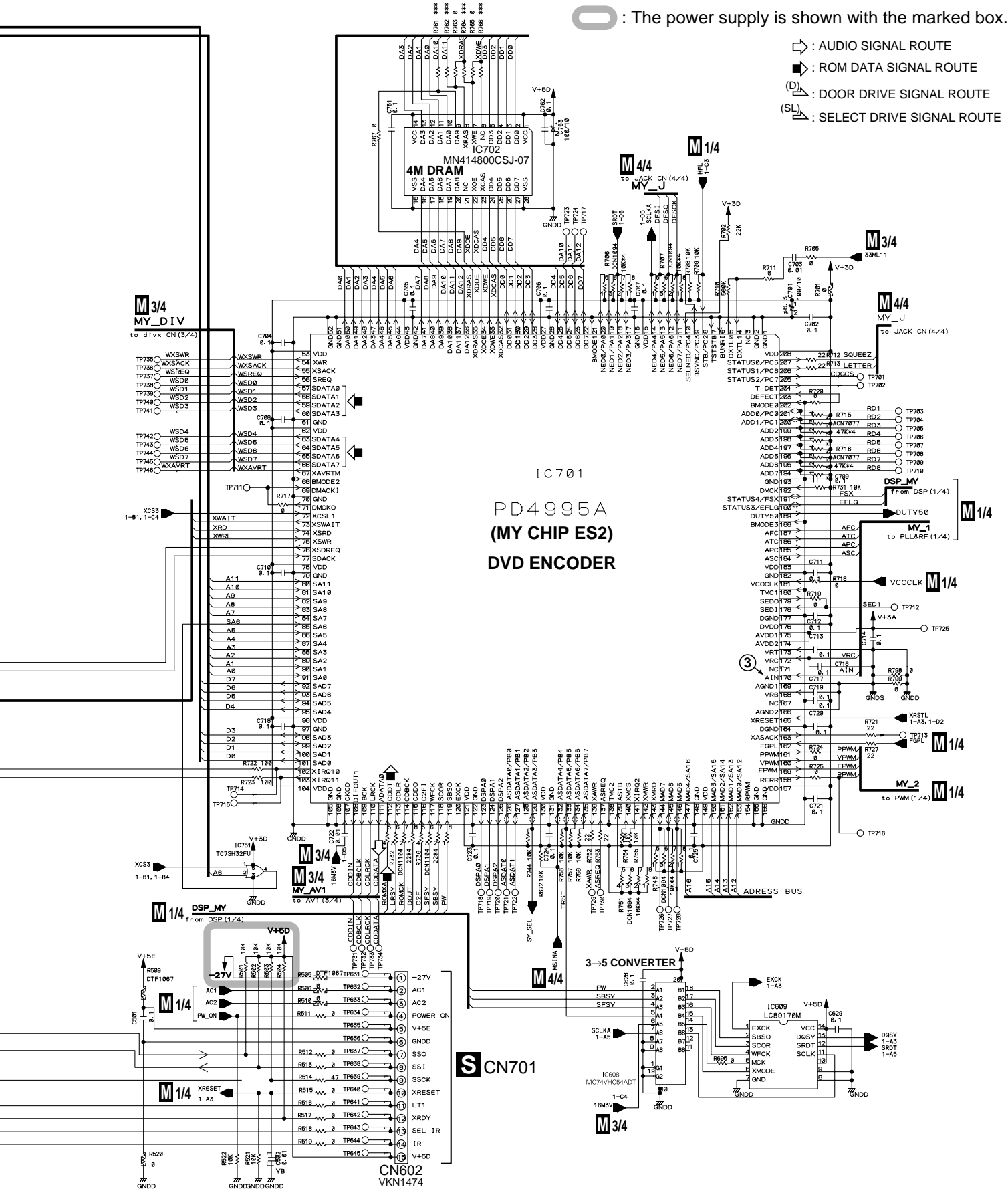
M 2/4 DVDMM ASSY (VWS1396)



M 2/4

 : The power supply is shown with the marked box.

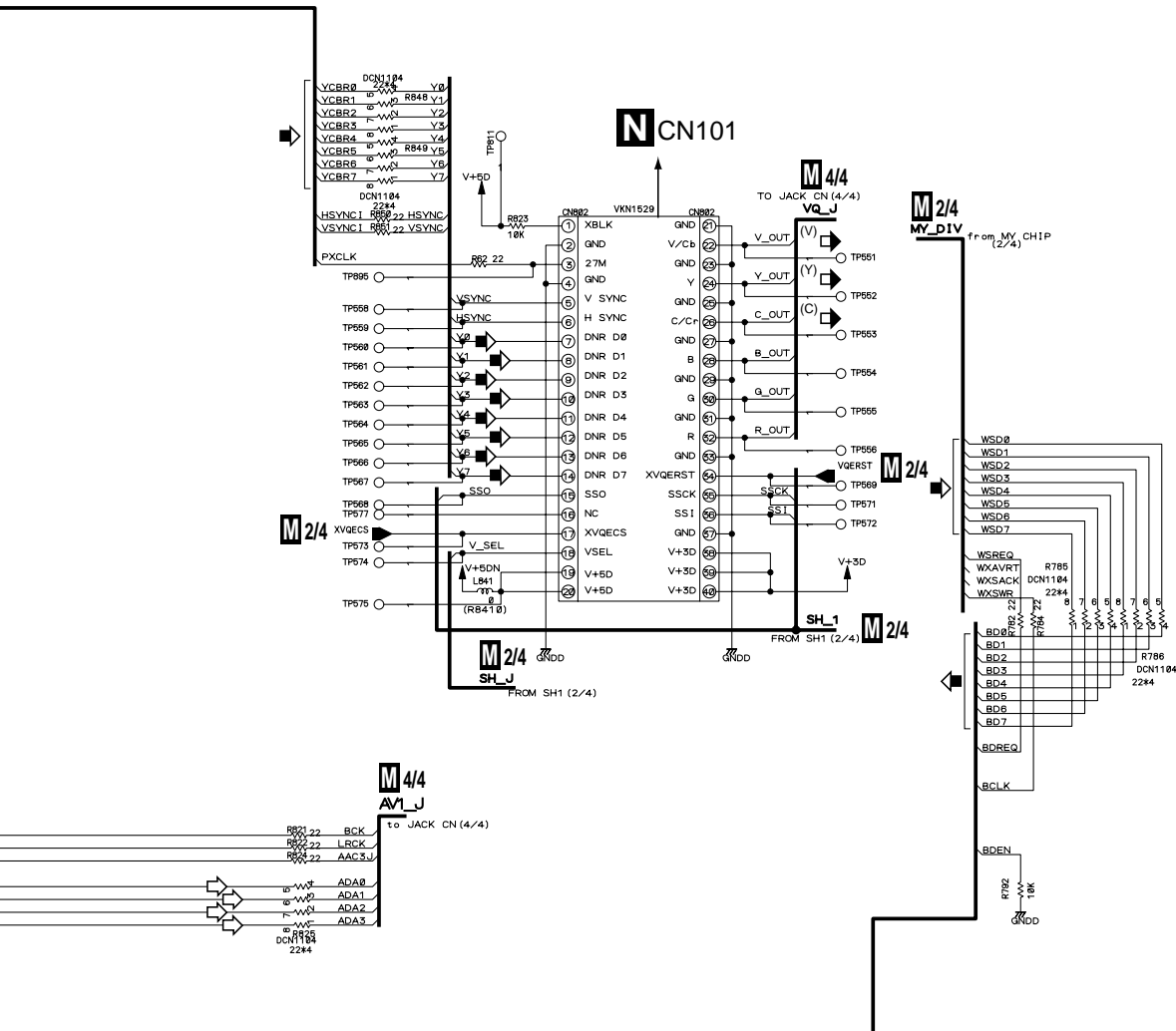
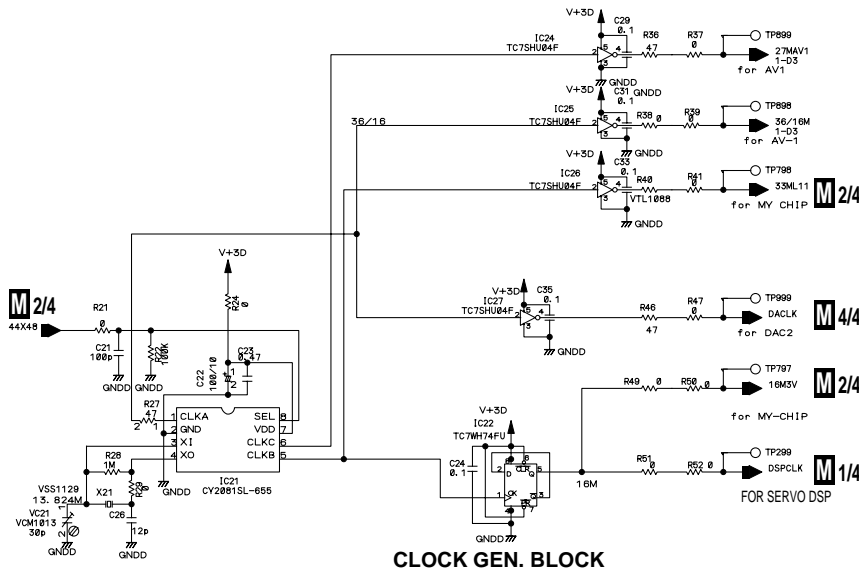
-  : AUDIO SIGNAL ROUTE
-  : ROM DATA SIGNAL ROUTE
-  : DOOR DRIVE SIGNAL ROUTE
-  (SL) : SELECT DRIVE SIGNAL ROUTE



M 2/4

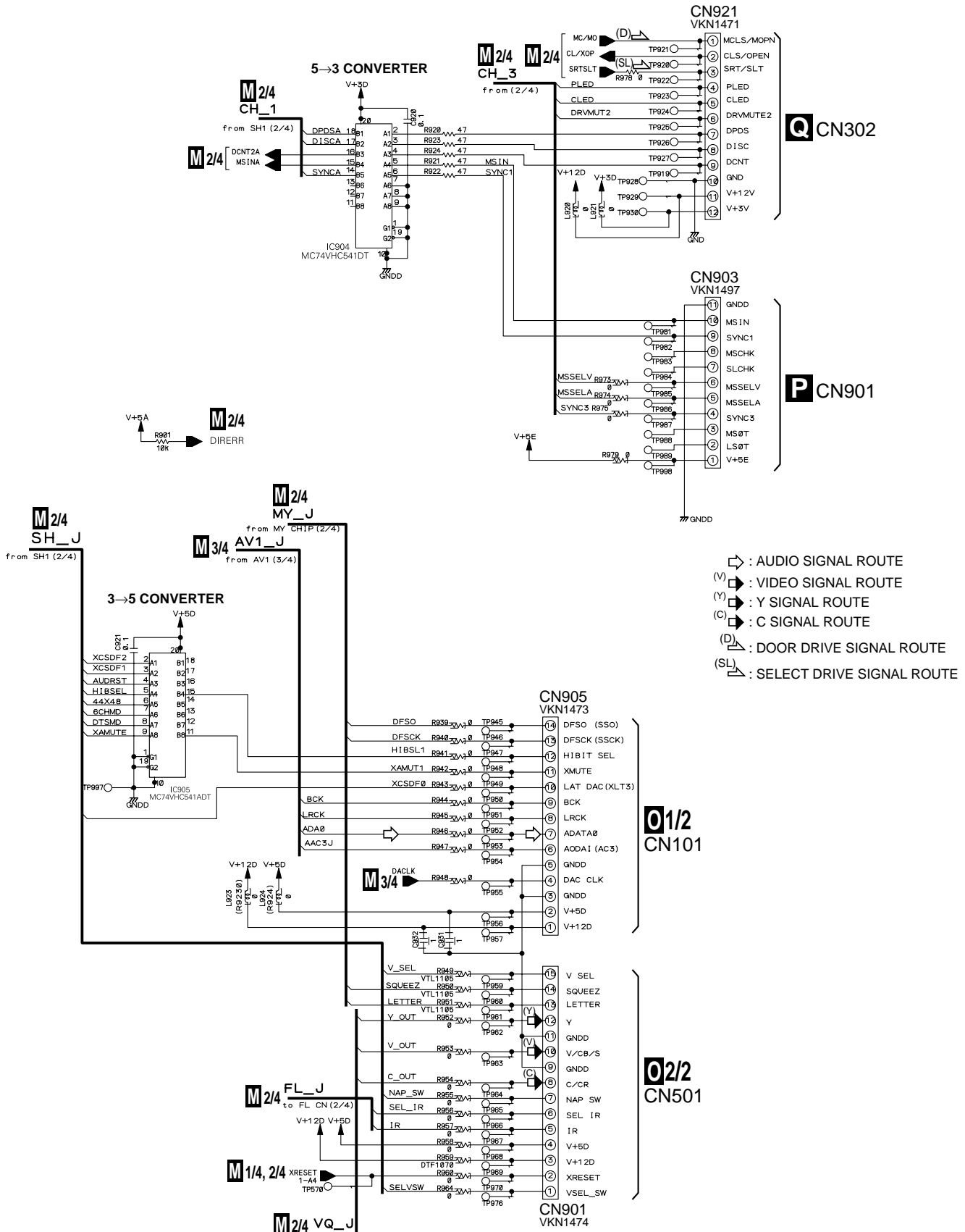
M 3/4 DVDM ASSY (VWS1396)

- ◁ : AUDIO SIGNAL ROUTE
- ▶ : ROM DATA SIGNAL ROUTE
- (V) : VIDEO SIGNAL ROUTE
- (Y) : Y SIGNAL ROUTE
- (C) : C SIGNAL ROUTE



8.6 DVDM ASSY (4/4)

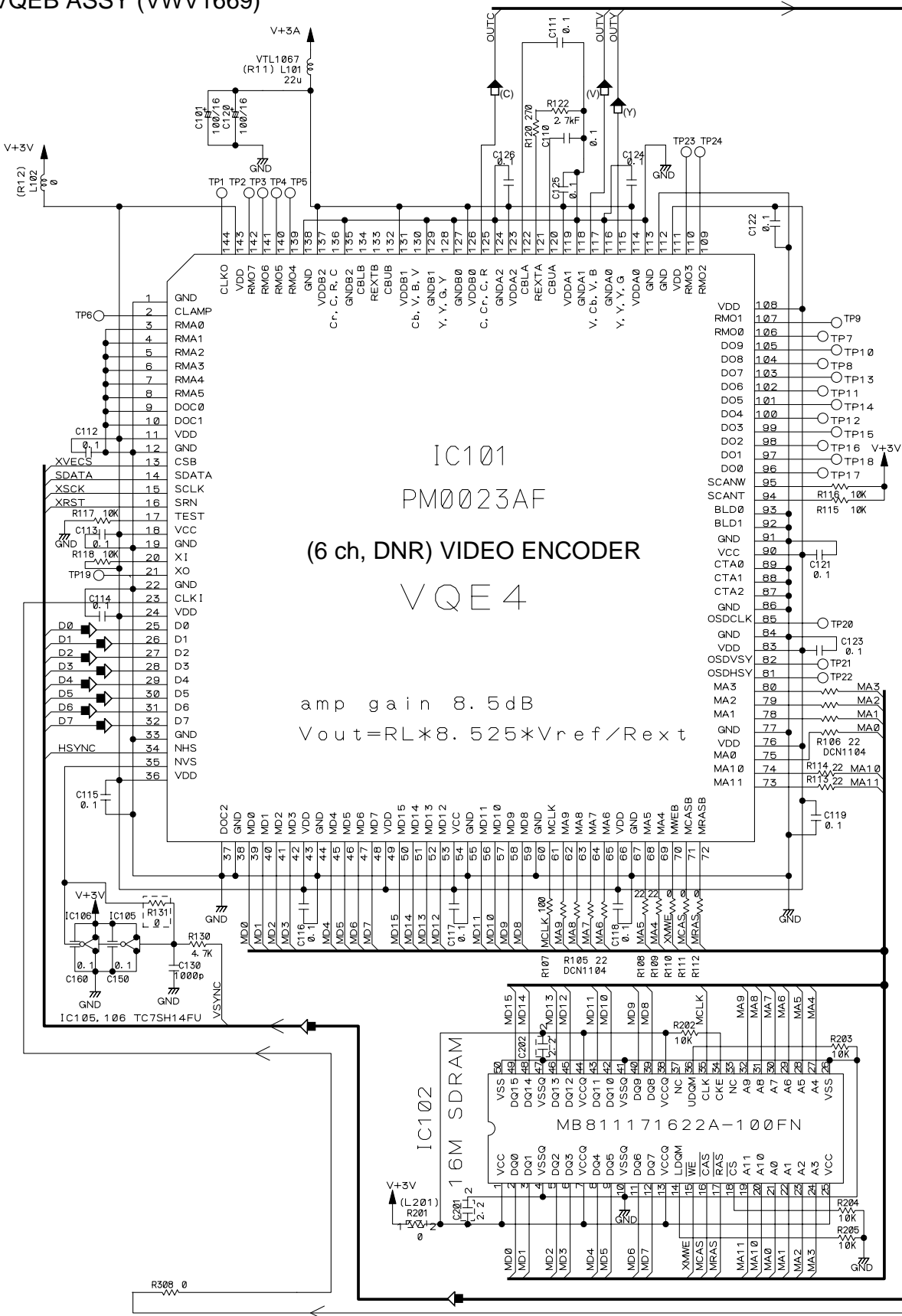
M 4/4 DVDM ASSY (VWS1396)




M 4/4

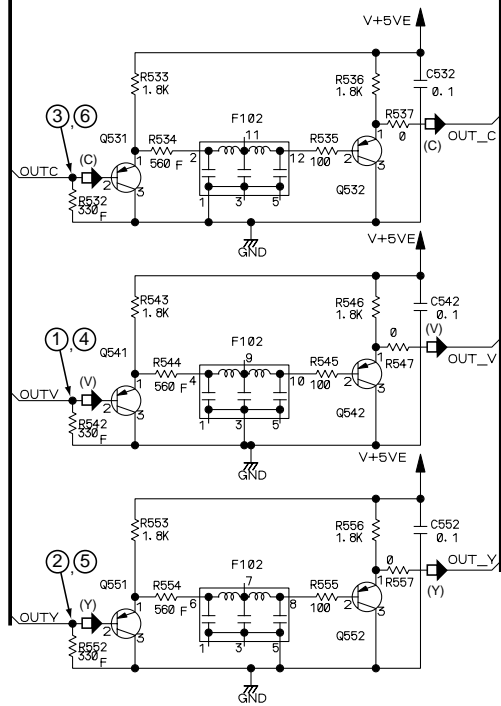
8.7 VQEB ASSY

N VQEB ASSY (VWV1669)

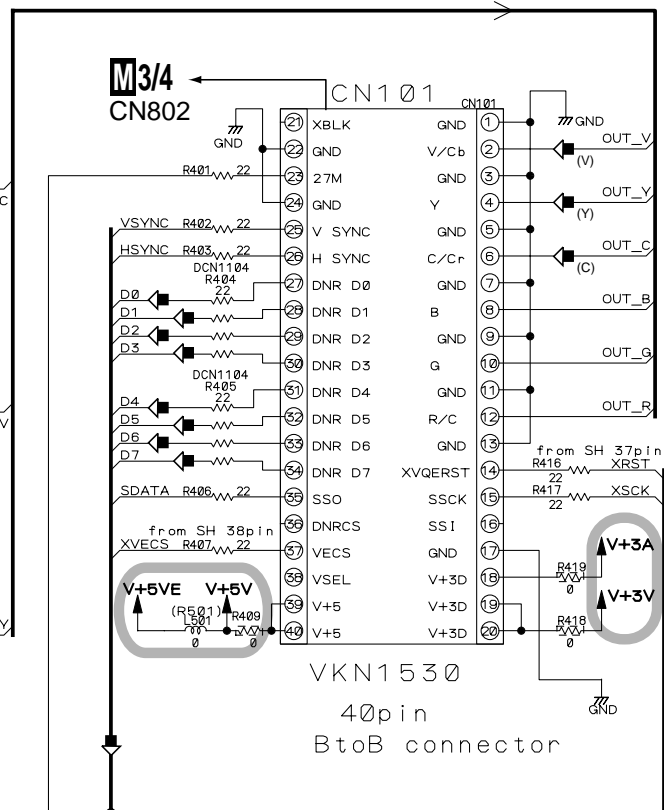


 : The power supply is shown with the marked box.

- ▀ : ROM DATA SIGNAL ROUTE
- (V) : VIDEO SIGNAL ROUTE
- (Y) : Y SIGNAL ROUTE
- (C) : C SIGNAL ROUTE



Q531, Q532, Q541, Q542, Q551, Q552 : 2PB709A (QR)
F102 : VTF1155



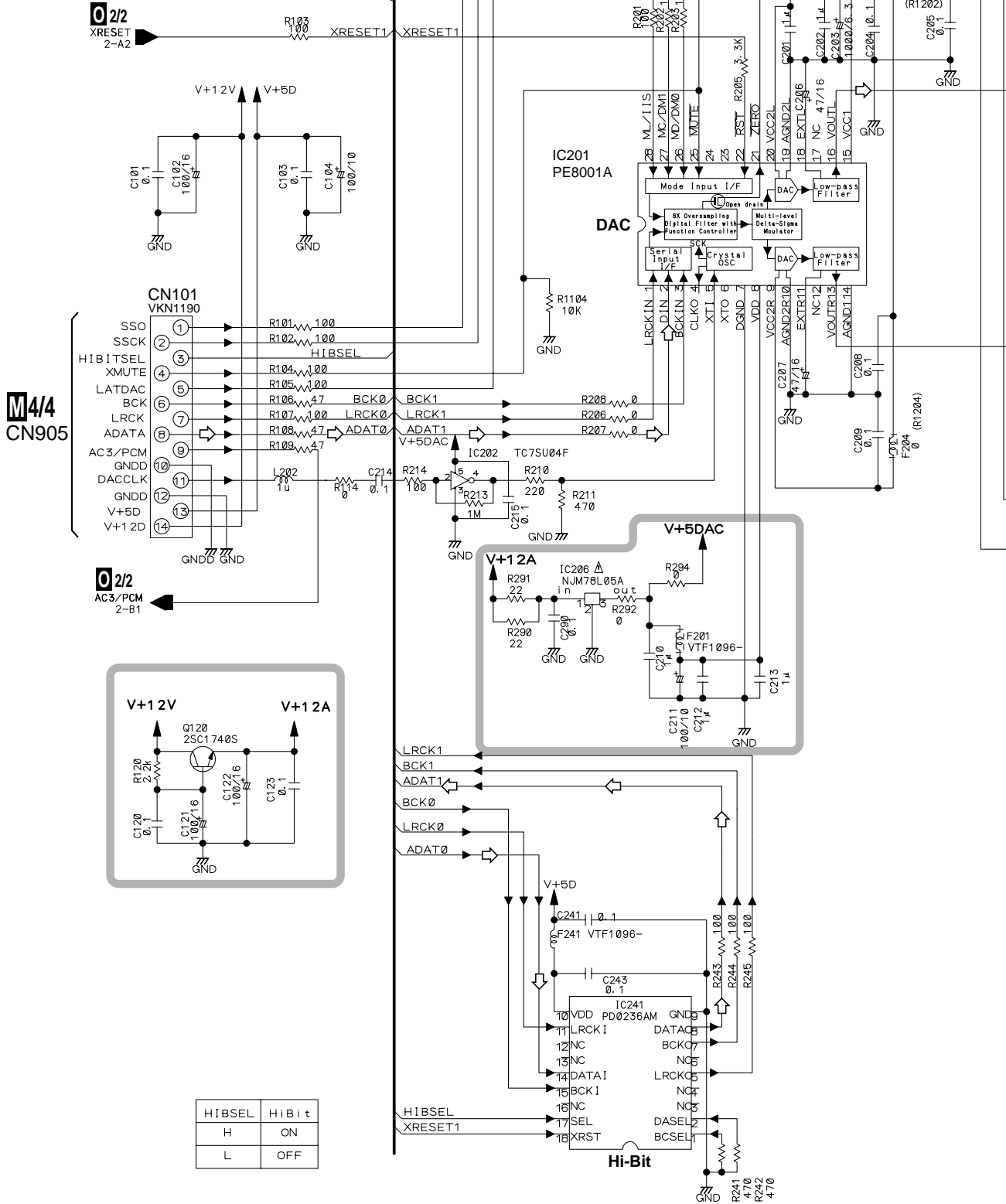
VKN1530
40pin
BtoB connector




8.8 AVJB ASSY (1/2)

0 1/2 AVJB ASSY (VWV1720)

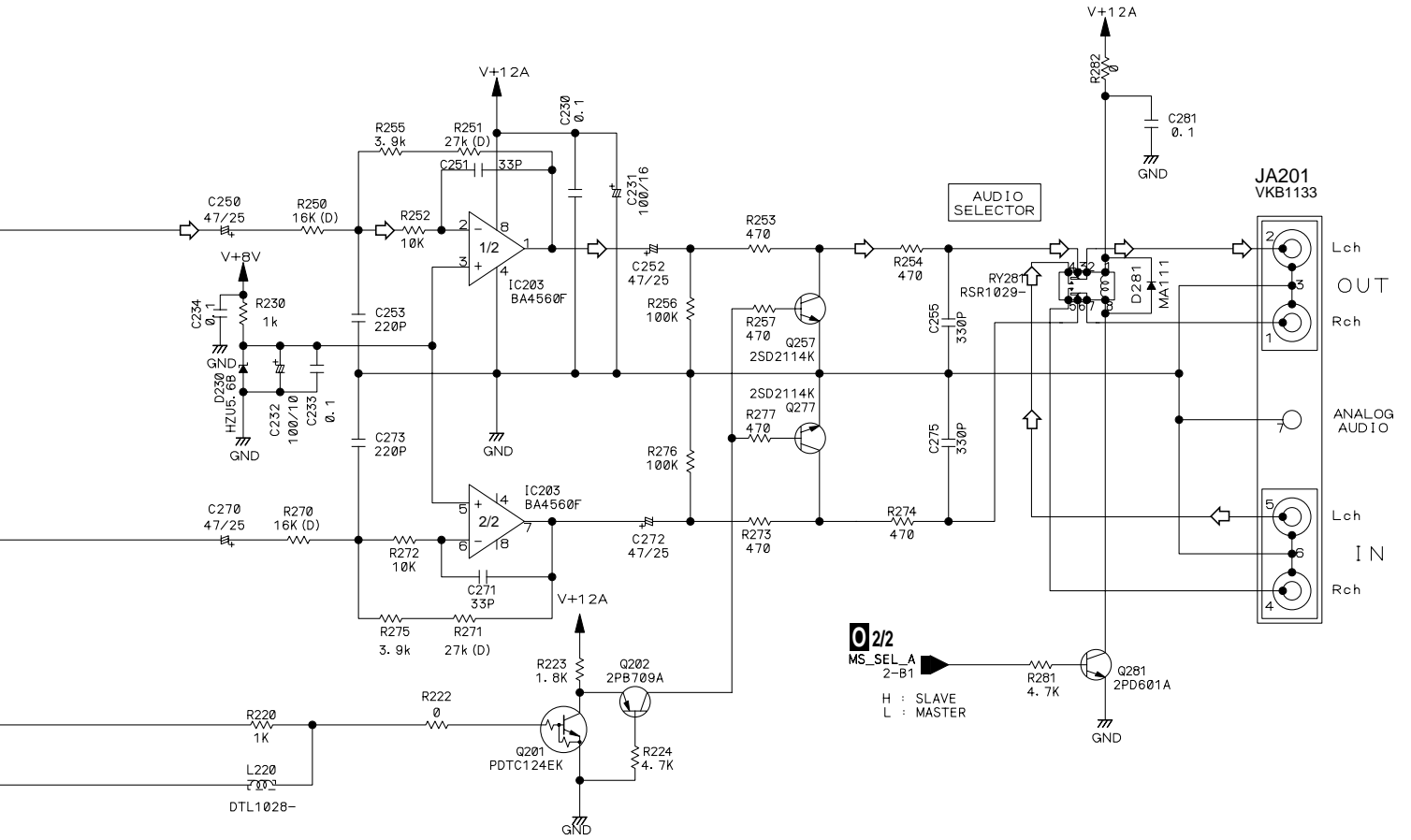
MUTE	H	H	L	L
ZERO	HiZ	L	HiZ	L
AUDIO MUTE	x	o	o	o



0 1/2


 : The power supply is shown with the marked box.


 : AUDIO SIGNAL ROUTE

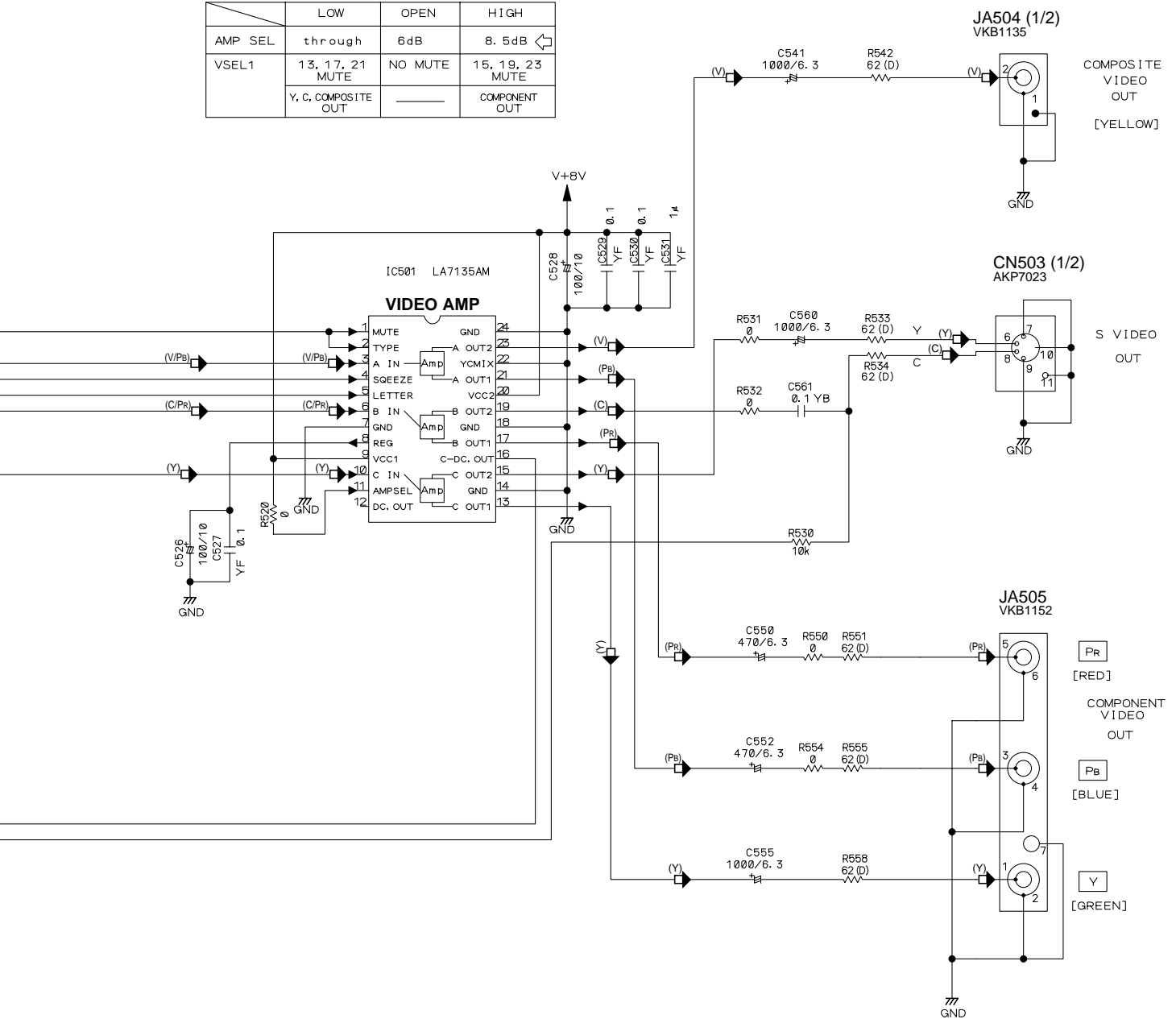



02/2 AVJB ASSY (VWV1720)

- (VPb) : VIDEO/PB SIGNAL ROUTE
- (Y) : Y SIGNAL ROUTE
- (C/Pr) : C/PR SIGNAL ROUTE

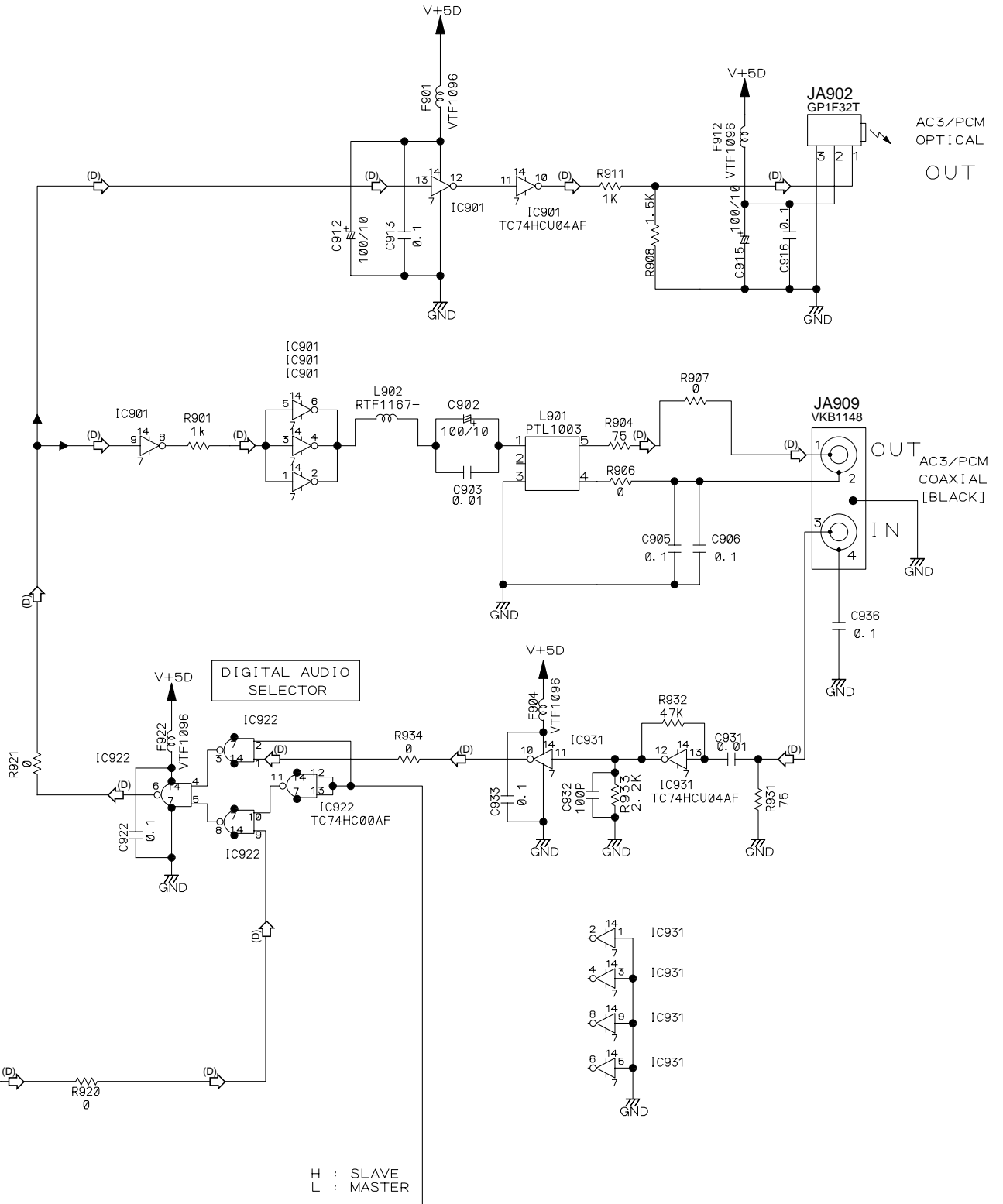
 : The power supply is shown with the marked box.

	LOW	OPEN	HIGH
AMP SEL	through	6dB	8.5dB 
VSEL1	13, 17, 21 MUTE	NO MUTE	15, 19, 23 MUTE
	Y, C, COMPOSITE OUT	—	COMPONENT OUT

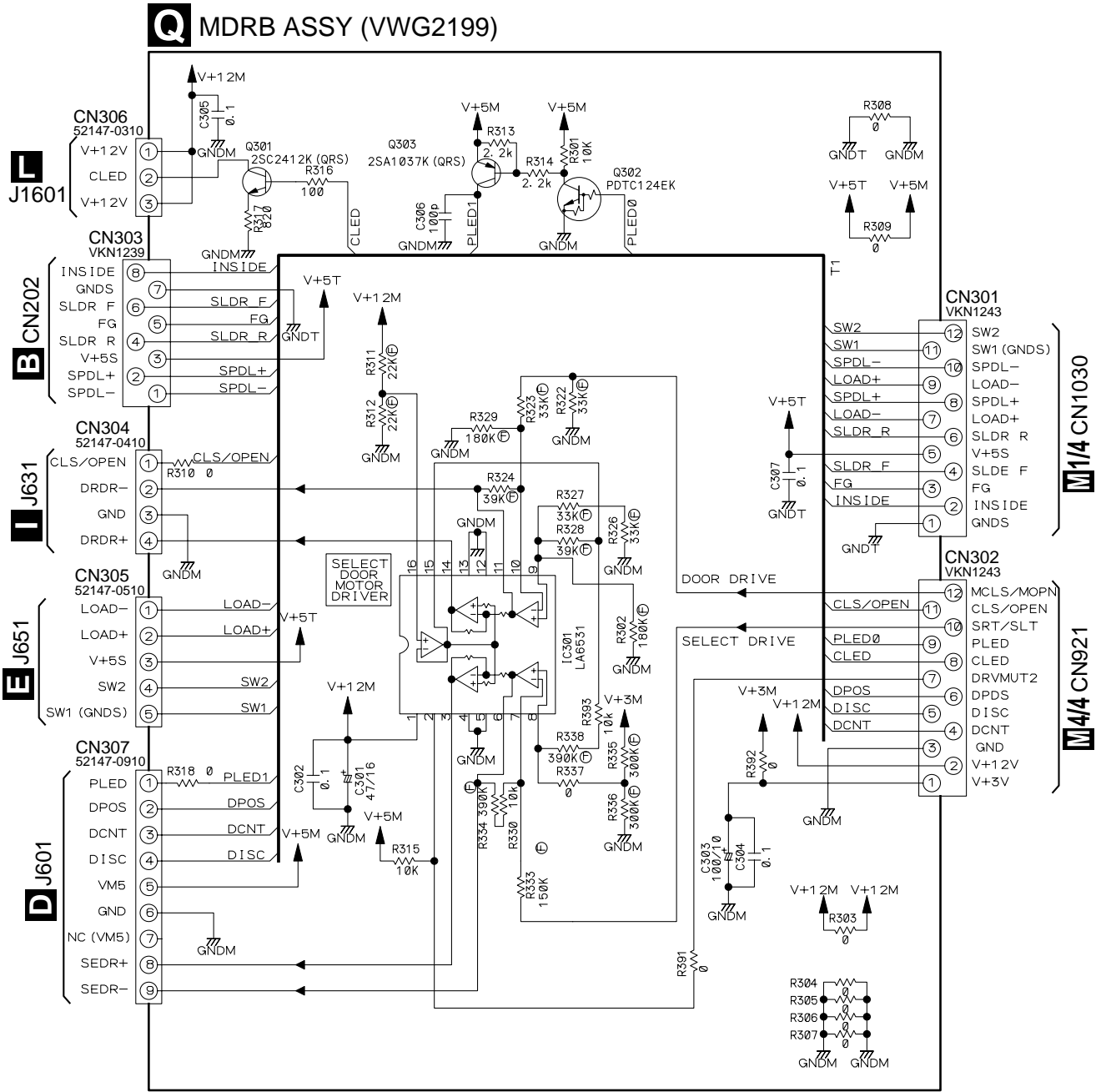


 : The power supply is shown with the marked box.

 : DIGITAL AUDIO SIGNAL ROUTE

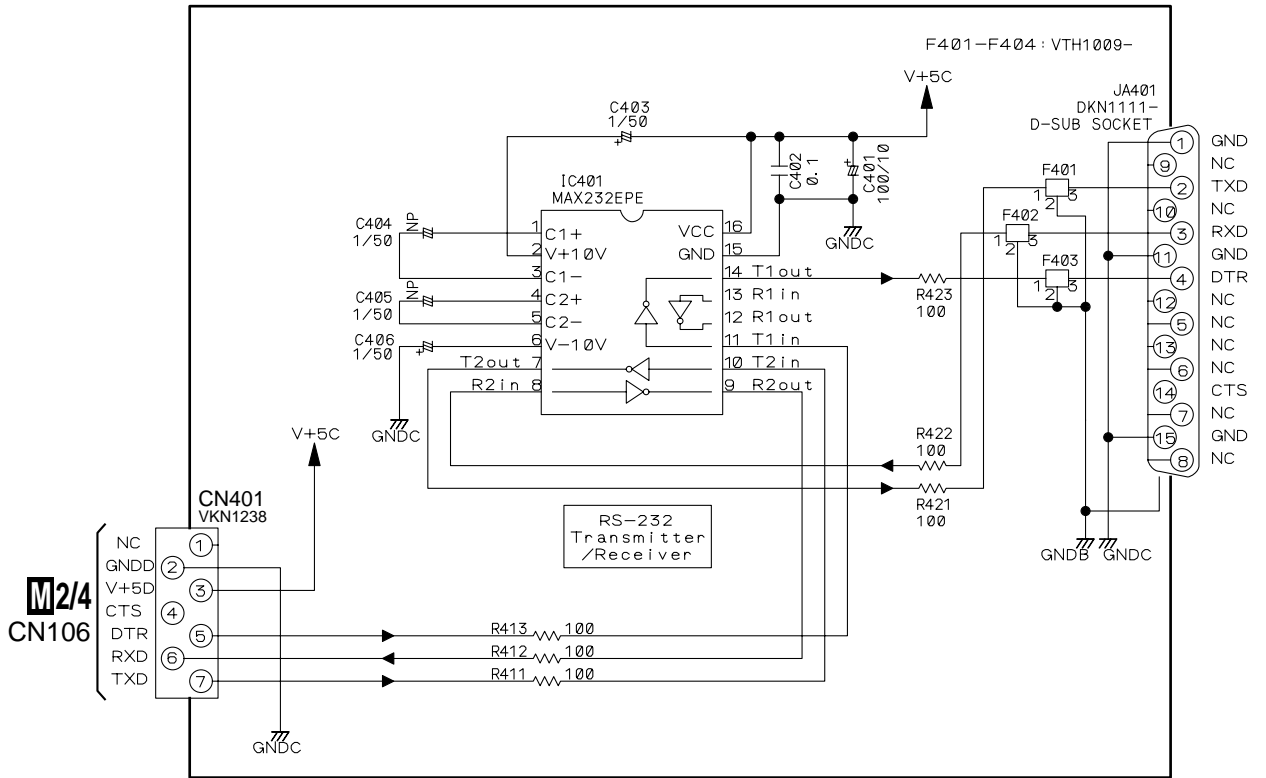



8.11 MDRB ASSY



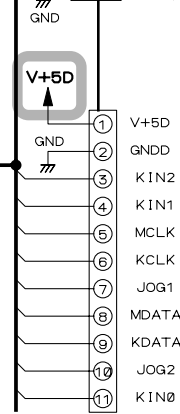
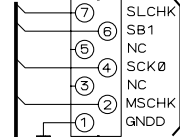
8.12 232B ASSY (DV-F07 ONLY)

R 232B ASSY (VWG2201)



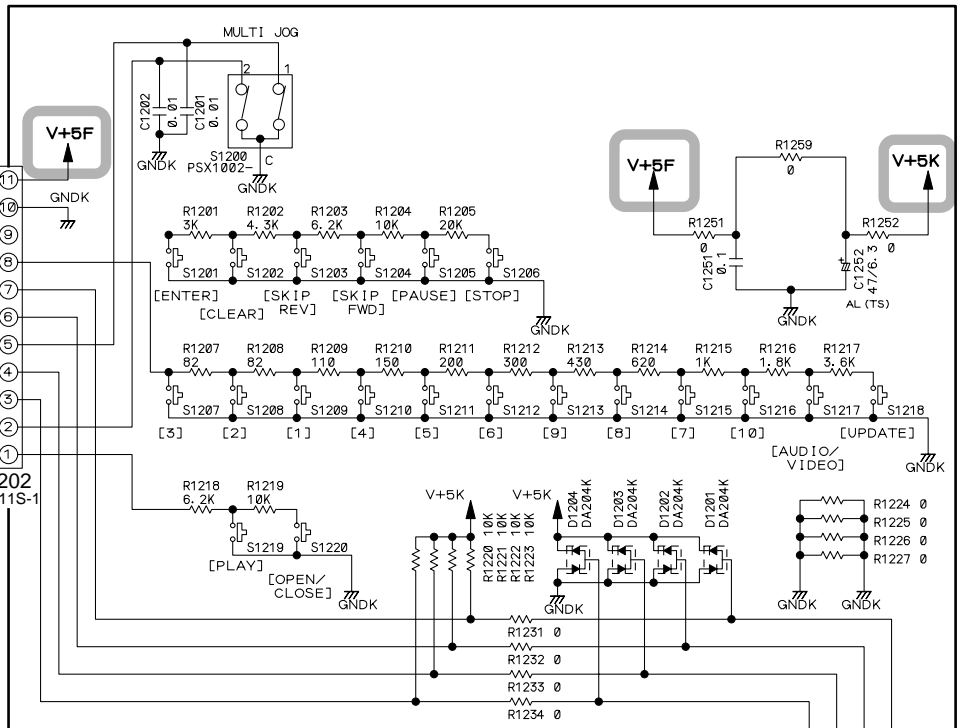
 : The power supply is shown with the marked box.

CN702 VKN1238 MSCHK, SLCHK
Normal : Low
Plug in : High




P CN903







T KEYB ASSY (VWG2193)



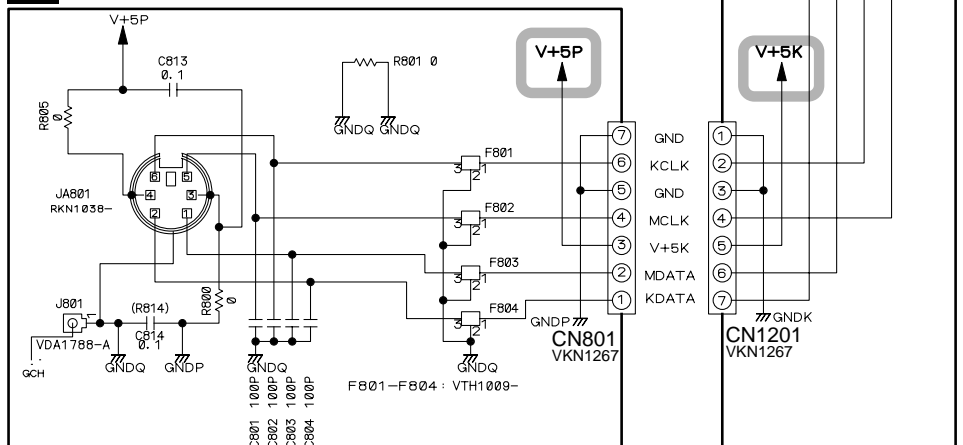
FLKY ASSY

- S701 :  STYANDBY/ON
- S702 : ACCESS] SINGLE LOADER
- S703 : PLAY
- S704 : PLAYMODE
- S705 : RANDOM
- S706 : DISPLAY
- S707 : INPUT] TEXT
- S708 : SEARCH]

KEYB ASSY

- S1200 : DISC CHARA (MULTI JOG)
- S1201 : PUSH ENTER
- S1202 : CLEAR
- S1203 :  (LEFT ARROW)
- S1204 :  (RIGHT ARROW)
- S1205 :  (PAUSE)
- S1206 :  (STOP)
- S1207 : 3
- S1208 : 2
- S1209 : 1
- S1210 : 4
- S1211 : 5 DIRECT CUSTOM
- S1212 : 6
- S1213 : 9
- S1214 : 8
- S1215 : 7
- S1216 : 10
- S1217 : AUDIO/VIDEO
- S1218 : UPDATE
- S1219 :  (PLAY)
- S1220 :  (OPEN/CLOSE)

U PS2B ASSY (VWG2198)

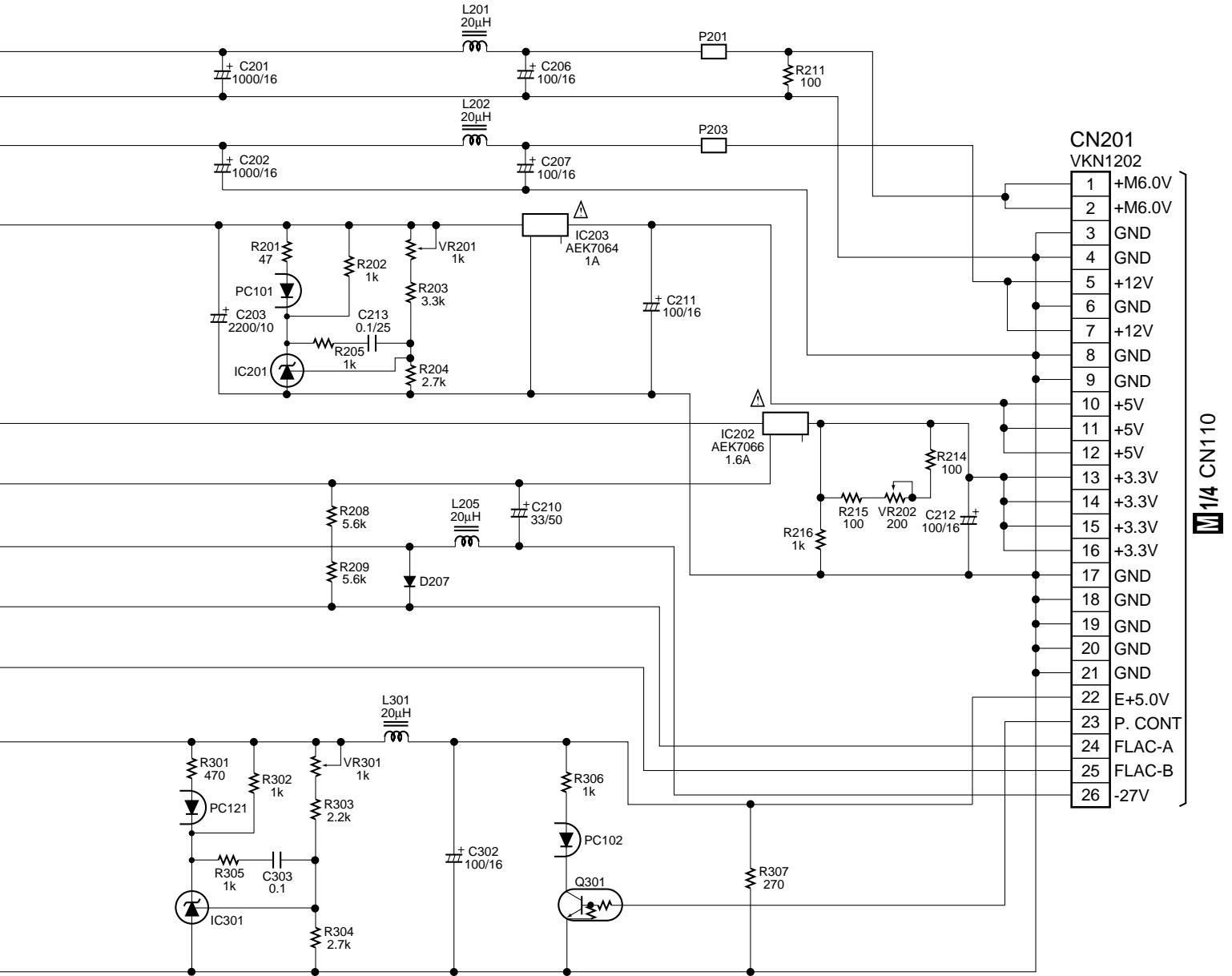


« NOTE OF SPARE PARTS IN POWER SUPPLY (SYPS) ASSY »

- 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.

• NOTE FOR FUSE REPLACEMENT

CAUTION -FOR CONTINUED PROTECTION AGAINST RISK OF FIRE.
REPLACE WITH SAME TYPE AND RATINGS ONLY.



M1/4 CN110

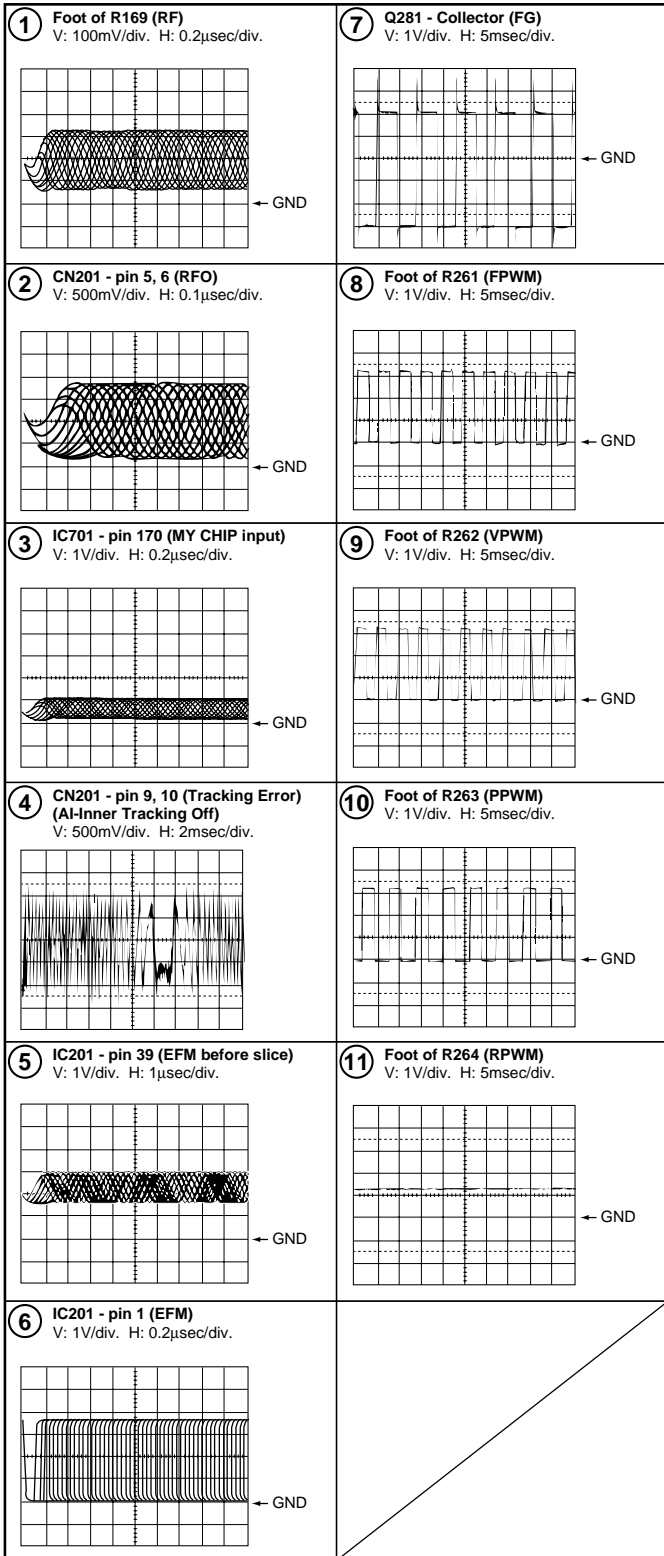


WAVEFORMS

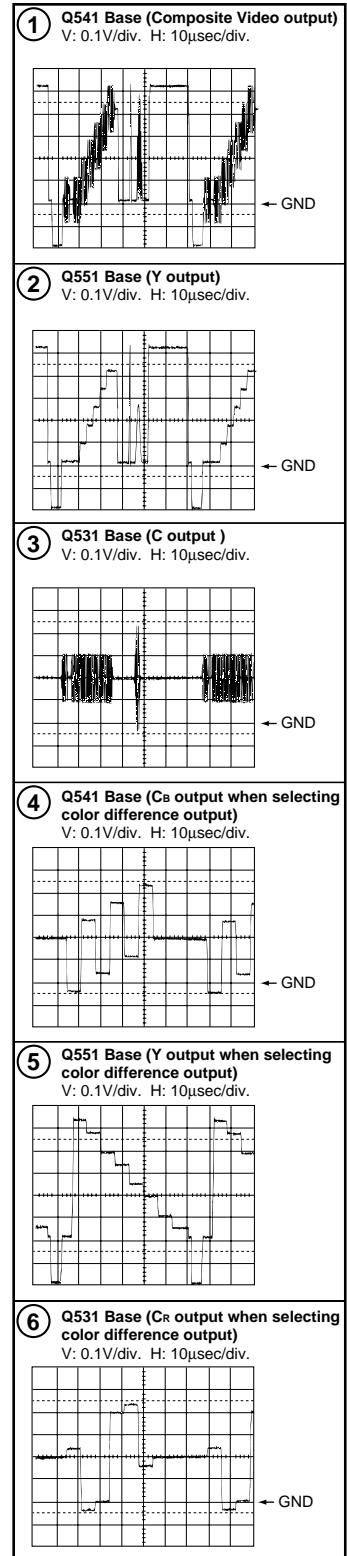
Note : The encircled numbers denote measuring point in the schematic diagram.

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
 No. 18 to 20 : T2-19, Color-bar (WY and WV Types only)

● DVDM ASSY




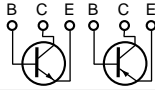

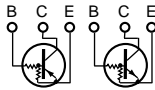

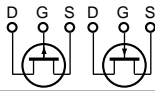
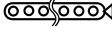
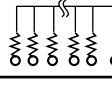


● VQEB ASSY



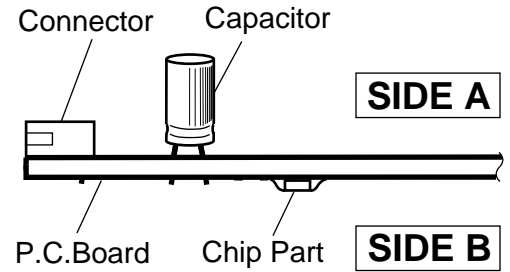
9. PCB CONNECTION DIAGRAM

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.

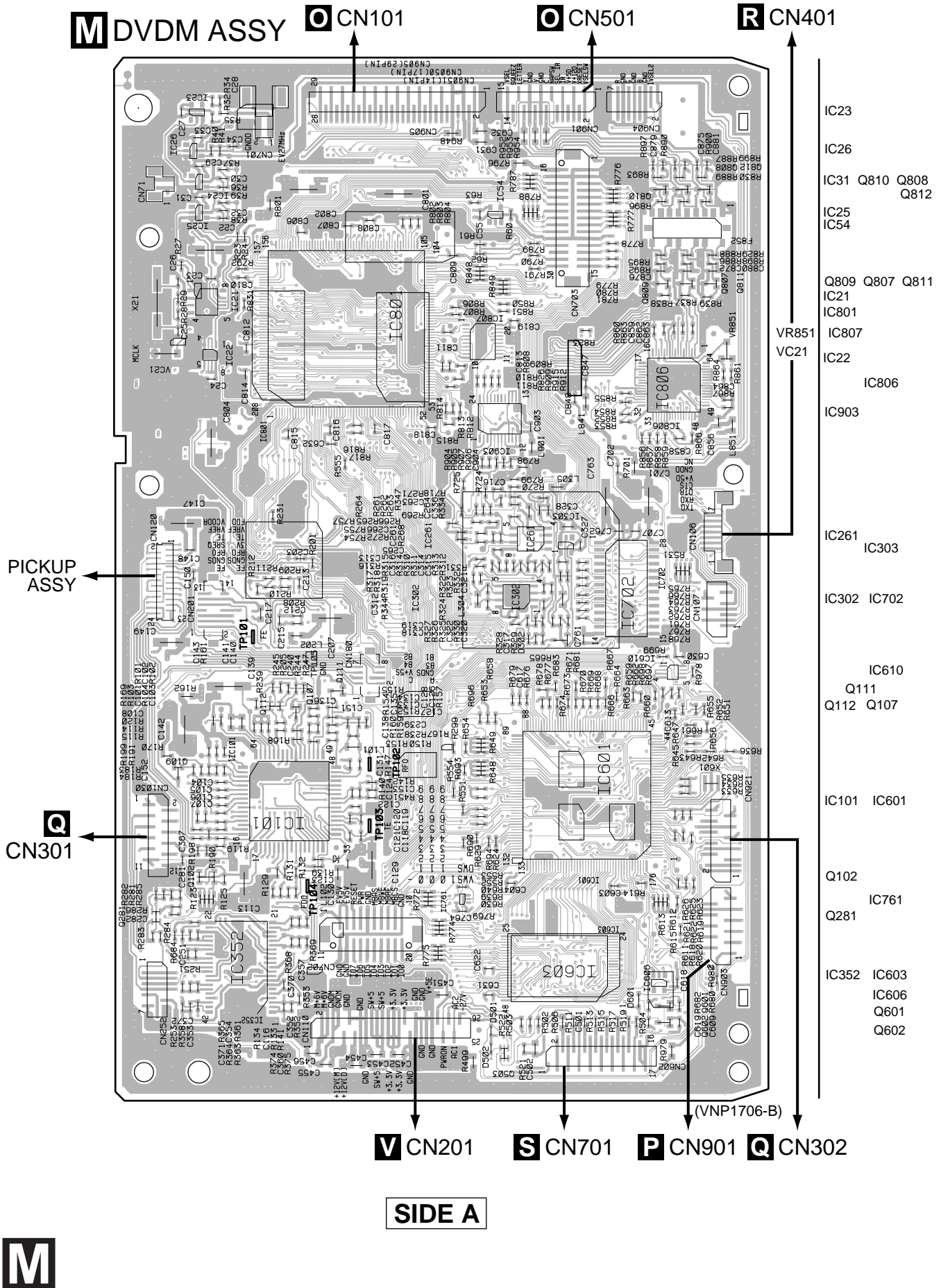
Symbol In PCB Diagrams	Symbol In Schematic Diagrams	Part Name
		Transistor
		Transistor with resistor
		Field effect transistor
		Resistor array
		3-terminal regulator

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.



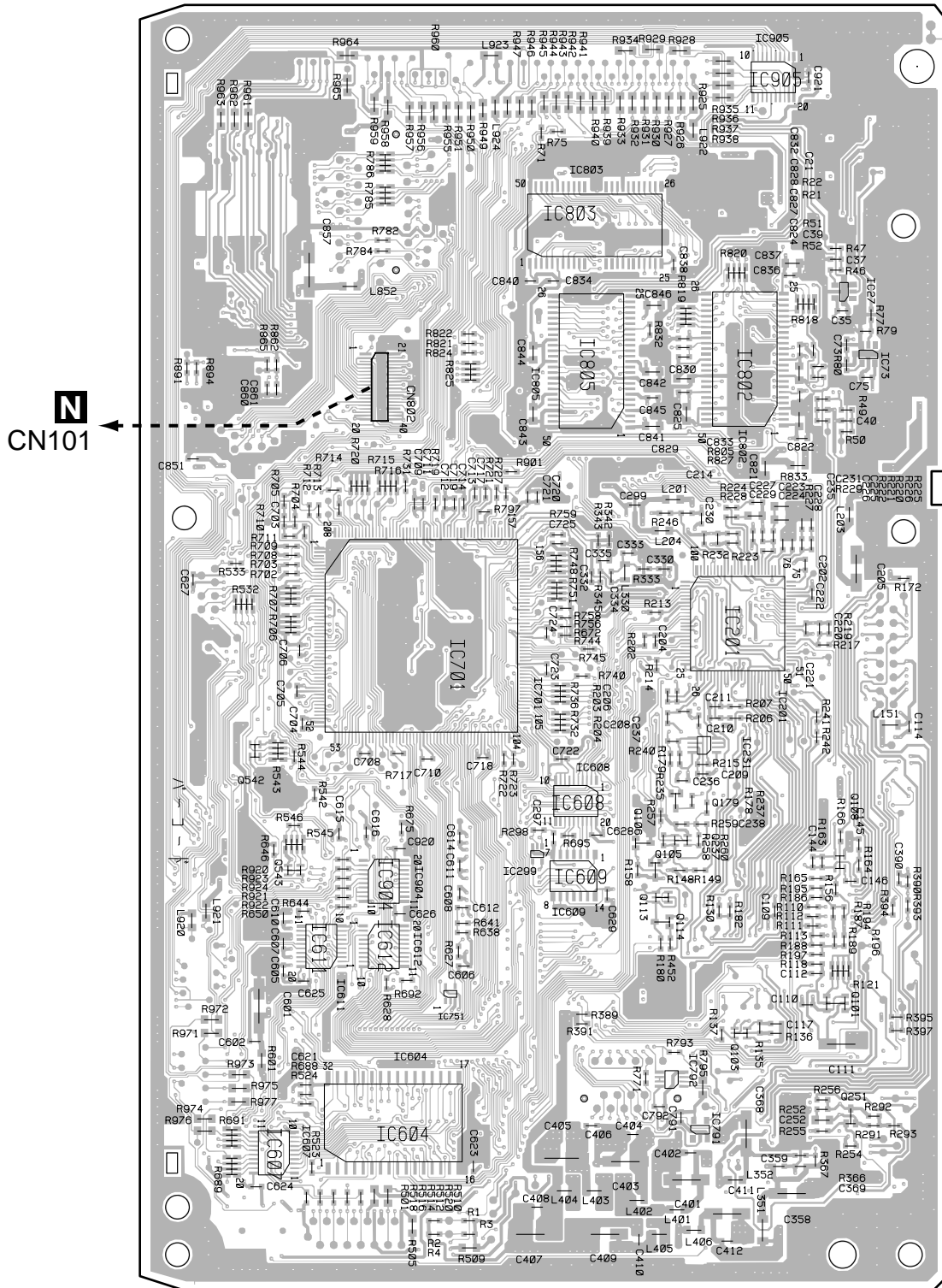
9.2 DVDM ASSY

• This PCB is a four-layer board.



• This PCB is a four-layer board.

M DVDM ASSY



- IC905
- IC803
- IC27
- IC805
- IC802
- IC73
- IC201
- IC701
- IC231
- Q542
- IC608
- Q179
- Q106
- Q105
- Q237
- IC299
- Q543
- Q113
- Q106
- IC904
- IC609
- Q114
- IC611
- IC612
- IC751
- Q101
- Q103
- IC792
- IC604
- Q251
- IC791
- IC607

N
CN101

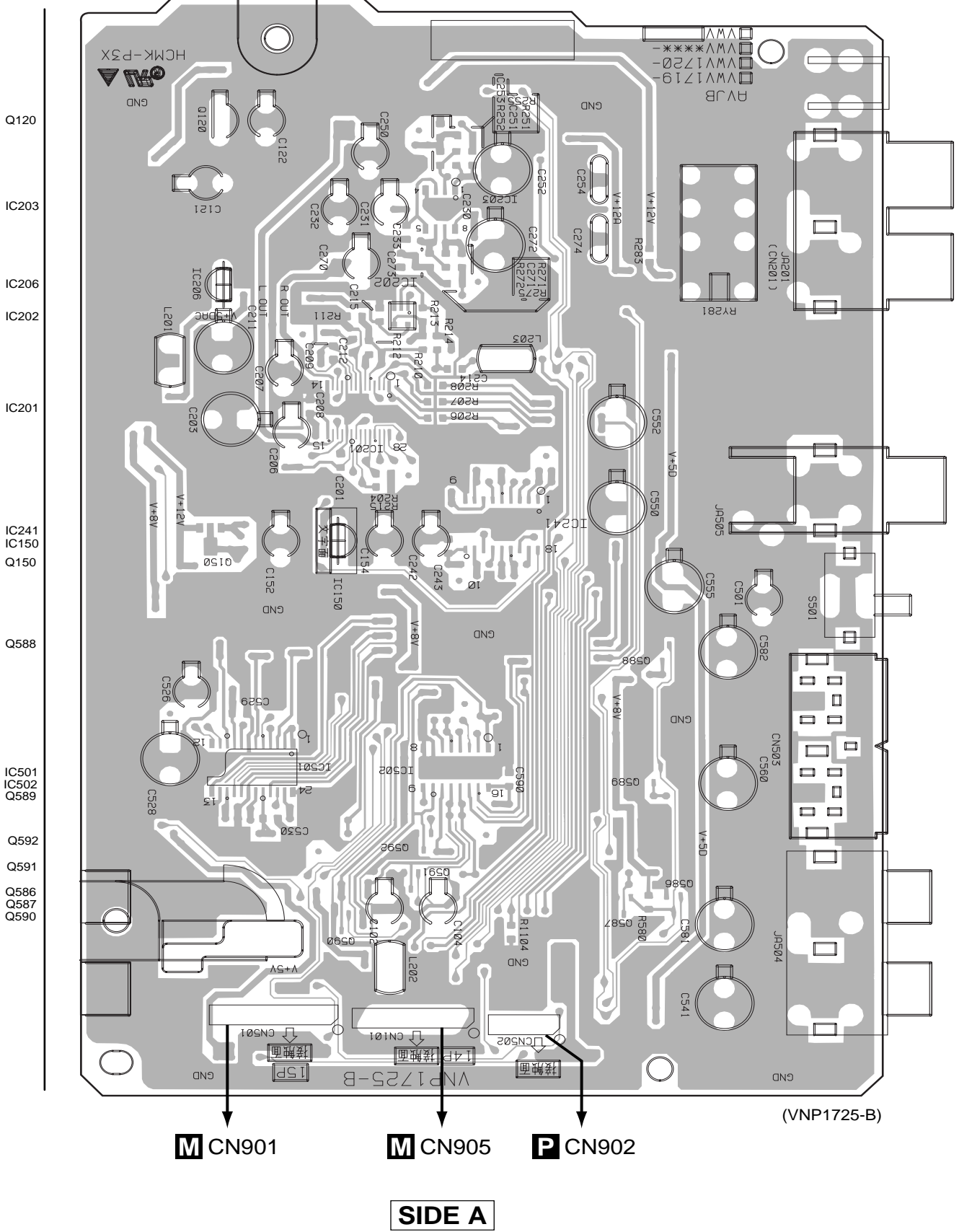
(VNP1706-B)

SIDE B



9.3 AVJB ASSY

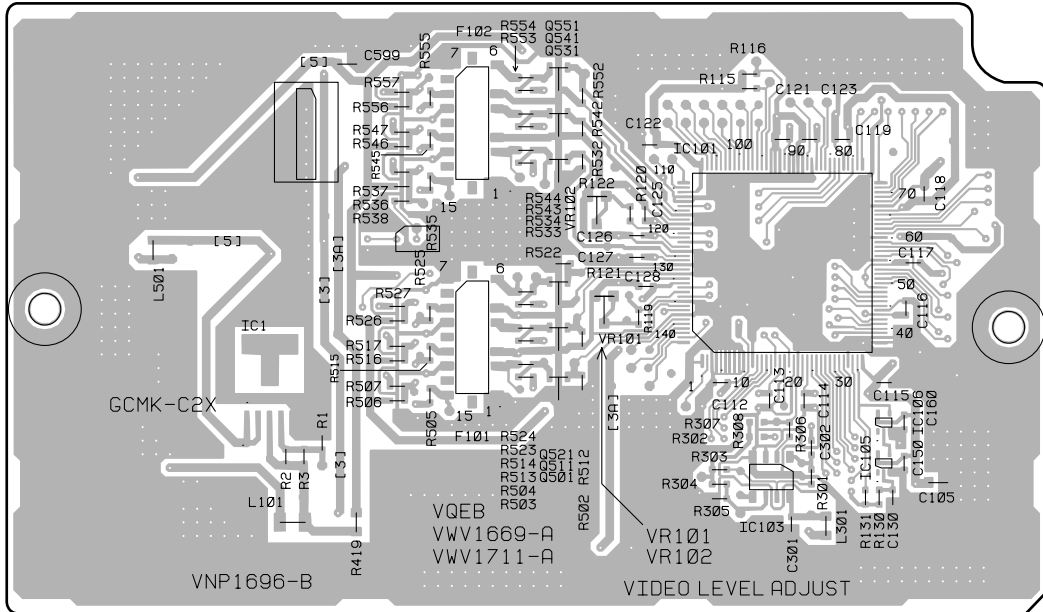
AVJB ASSY



9.4 VQEB ASSY

N VQEB ASSY

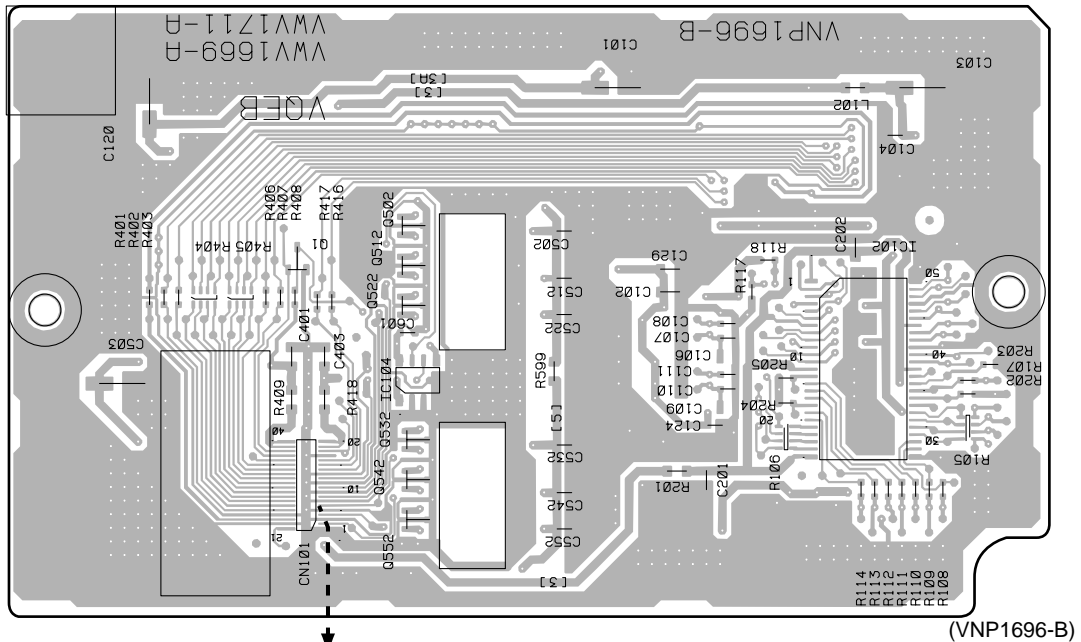
SIDE A



	VR102		
	VR101		(VNP1696-B)
IC1	Q551	Q541	IC106
	Q531		IC105
	Q521	Q511	
	Q501		

N VQEB ASSY

SIDE B

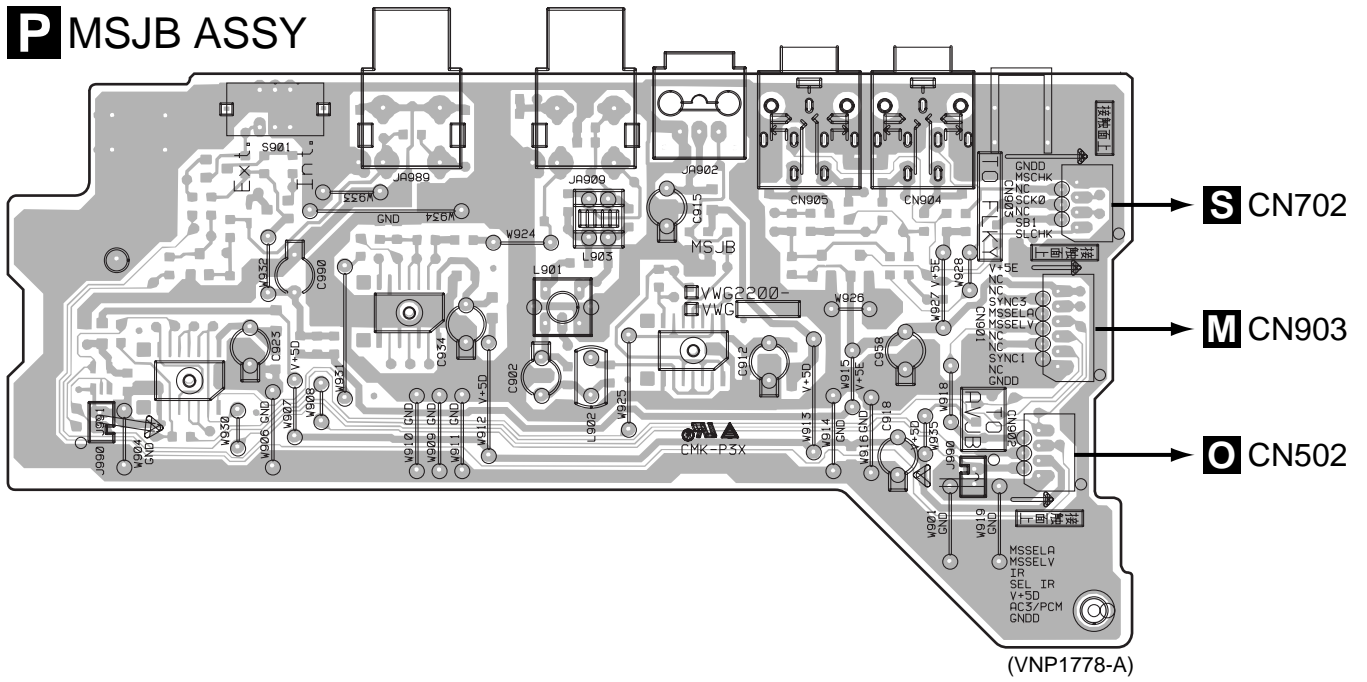


	M CN802		
Q1	Q502	Q512	IC102
	Q522	IC104	
	Q532	Q542	
	Q552		



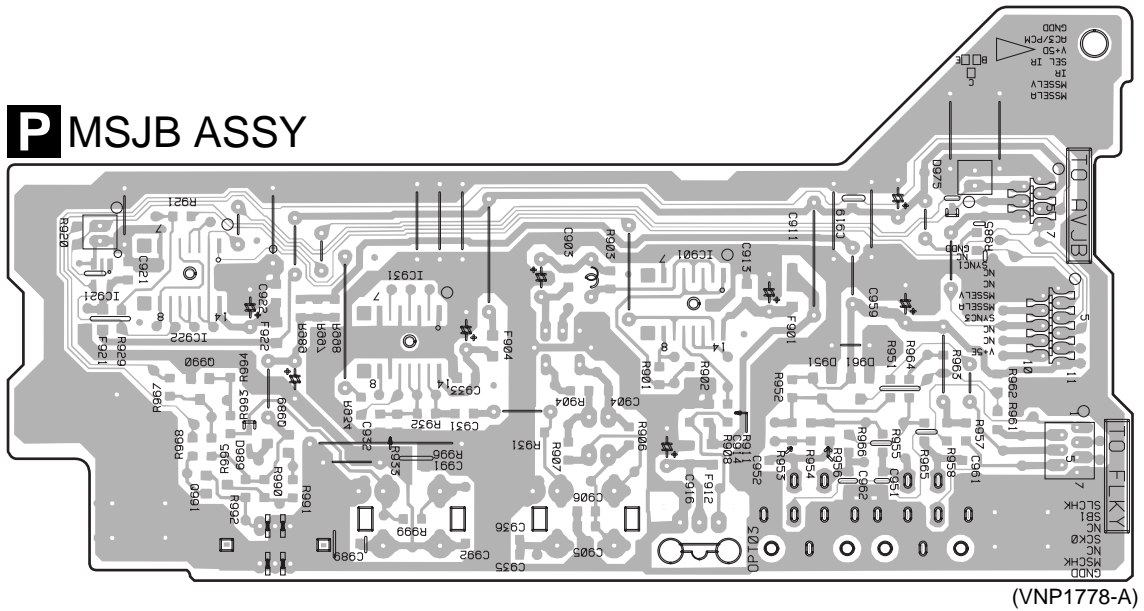
9.5 MSJB ASSY

P MSJB ASSY



SIDE A

P MSJB ASSY



IC921 IC922 Q989 IC931 IC901

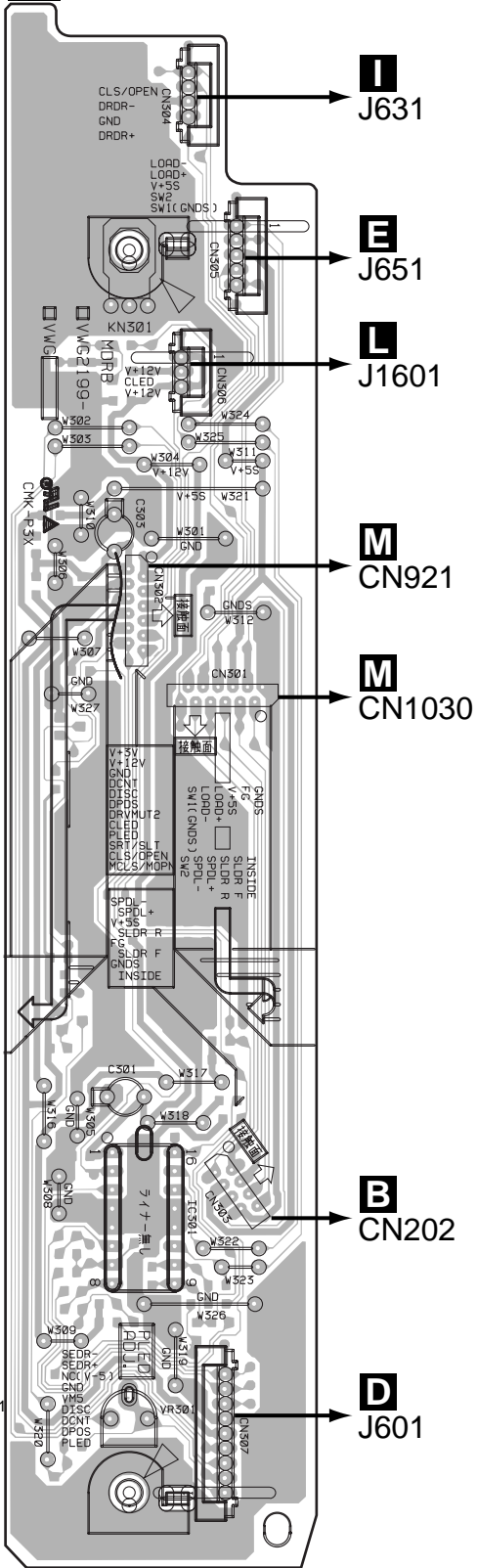
Q990

SIDE B

P

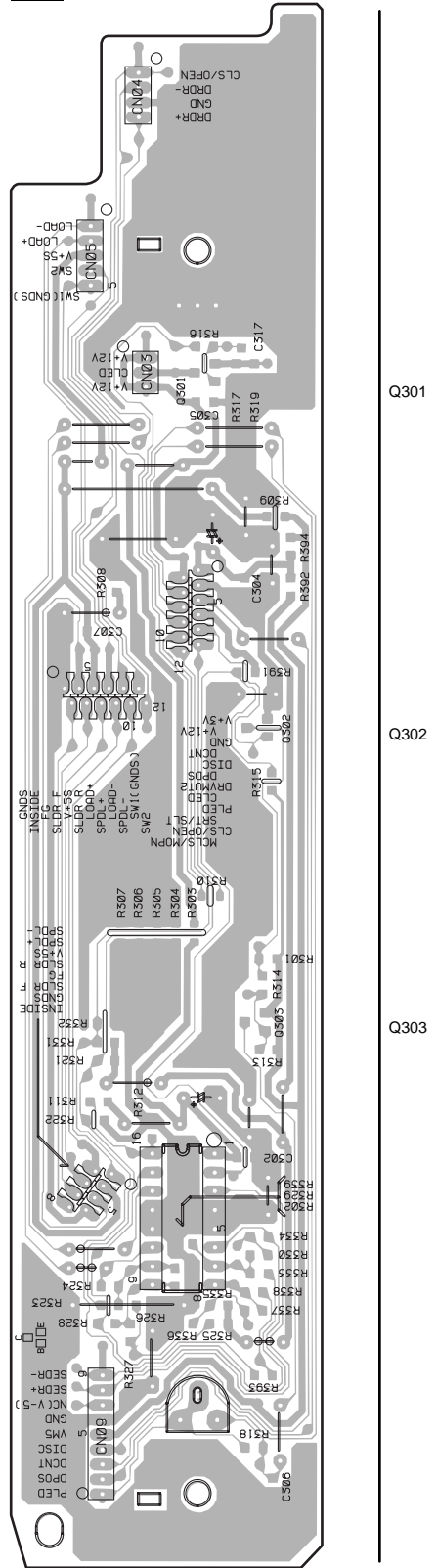
9.6 MDRB ASSY

Q MDRB ASSY



SIDE A

Q MDRB ASSY



SIDE B

(VNP1778-A)

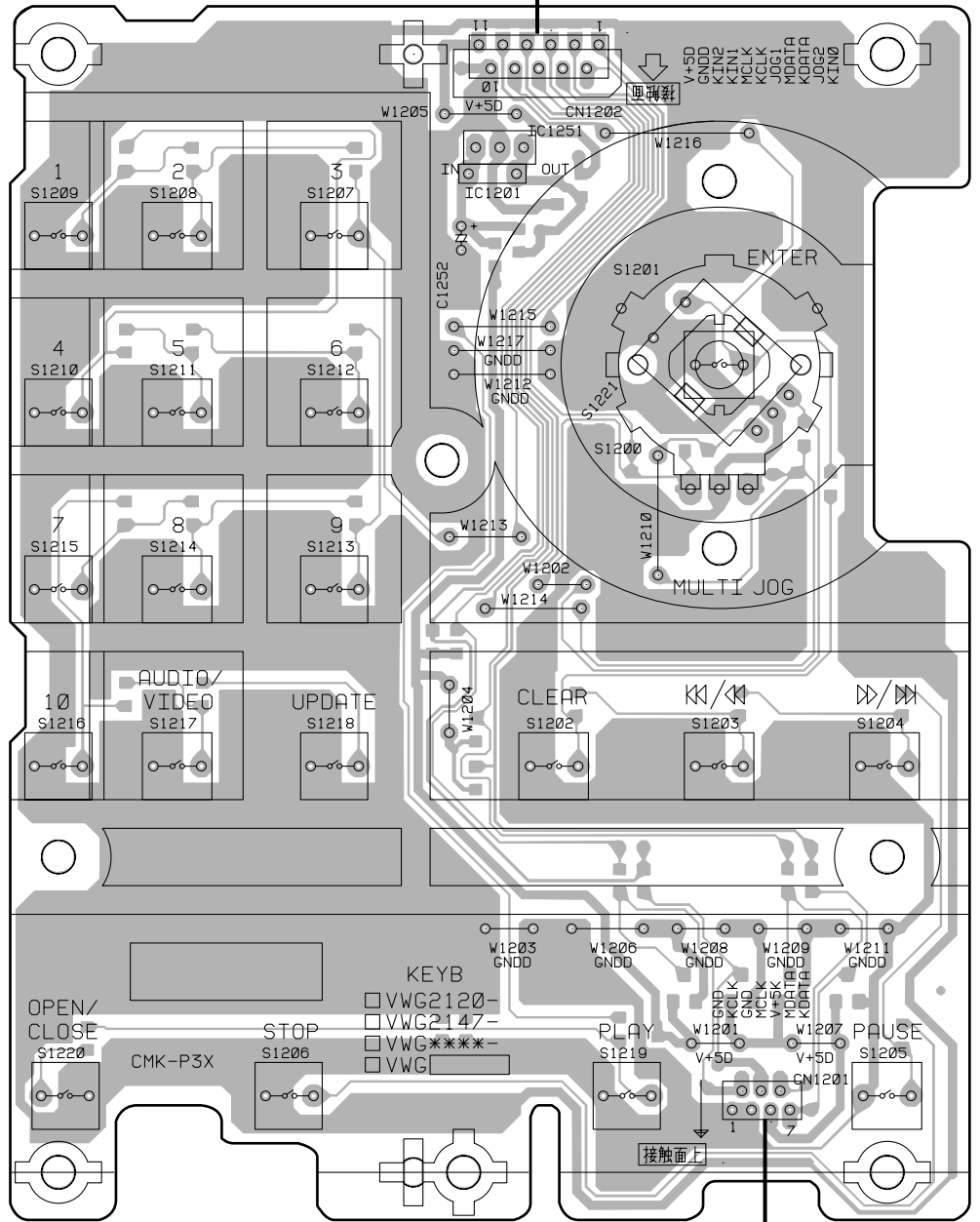
IC301

VR301



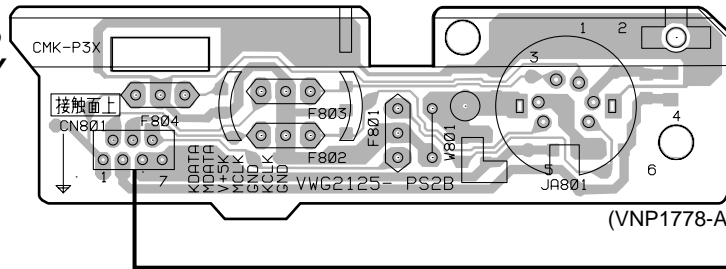
T KEYB ASSY

IC1251
IC1201



(VNP1778-A)

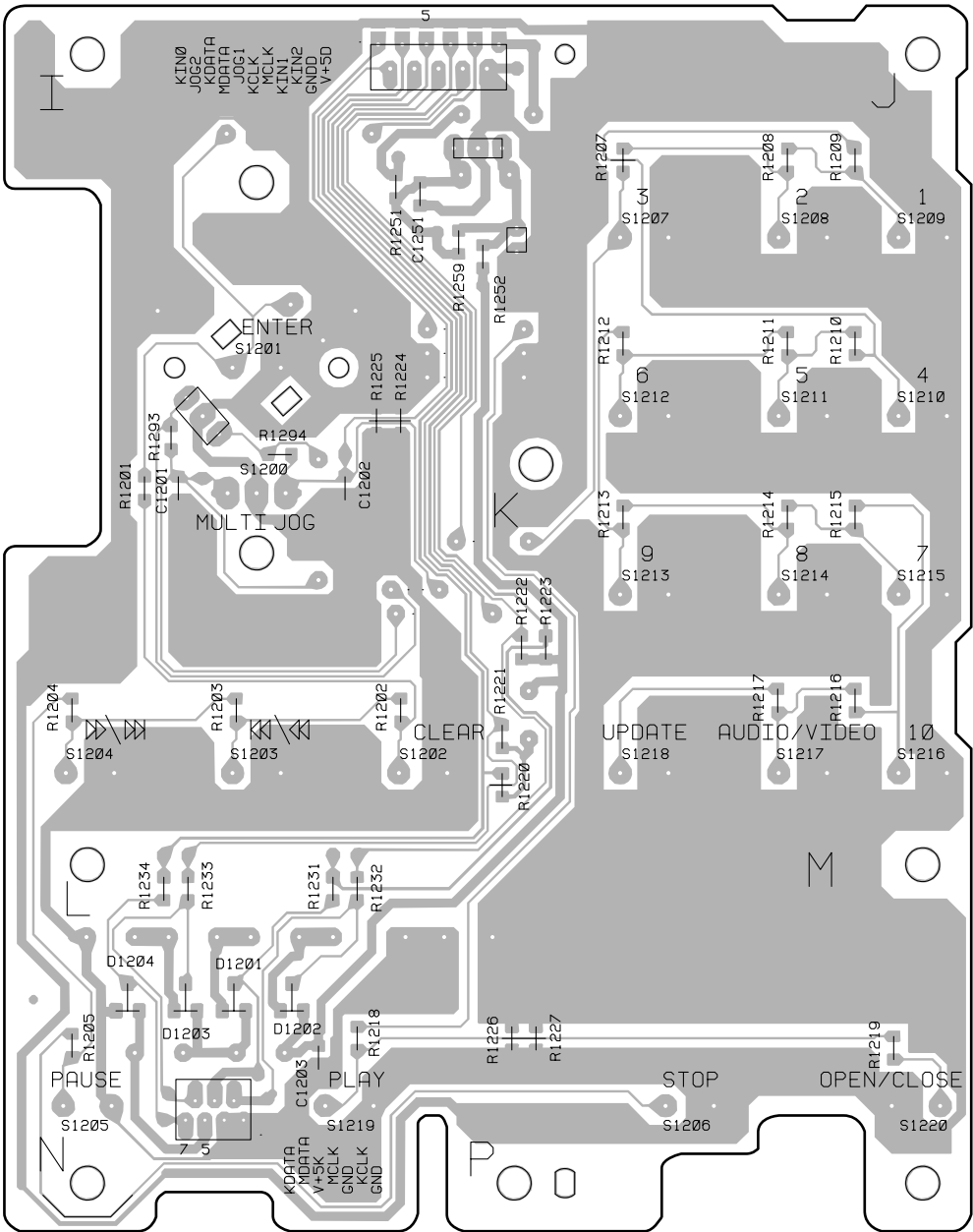
U PS2B ASSY



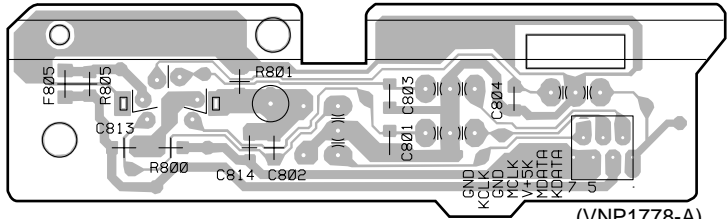
(VNP1778-A)



T KEYB ASSY



(VNP1778-A)



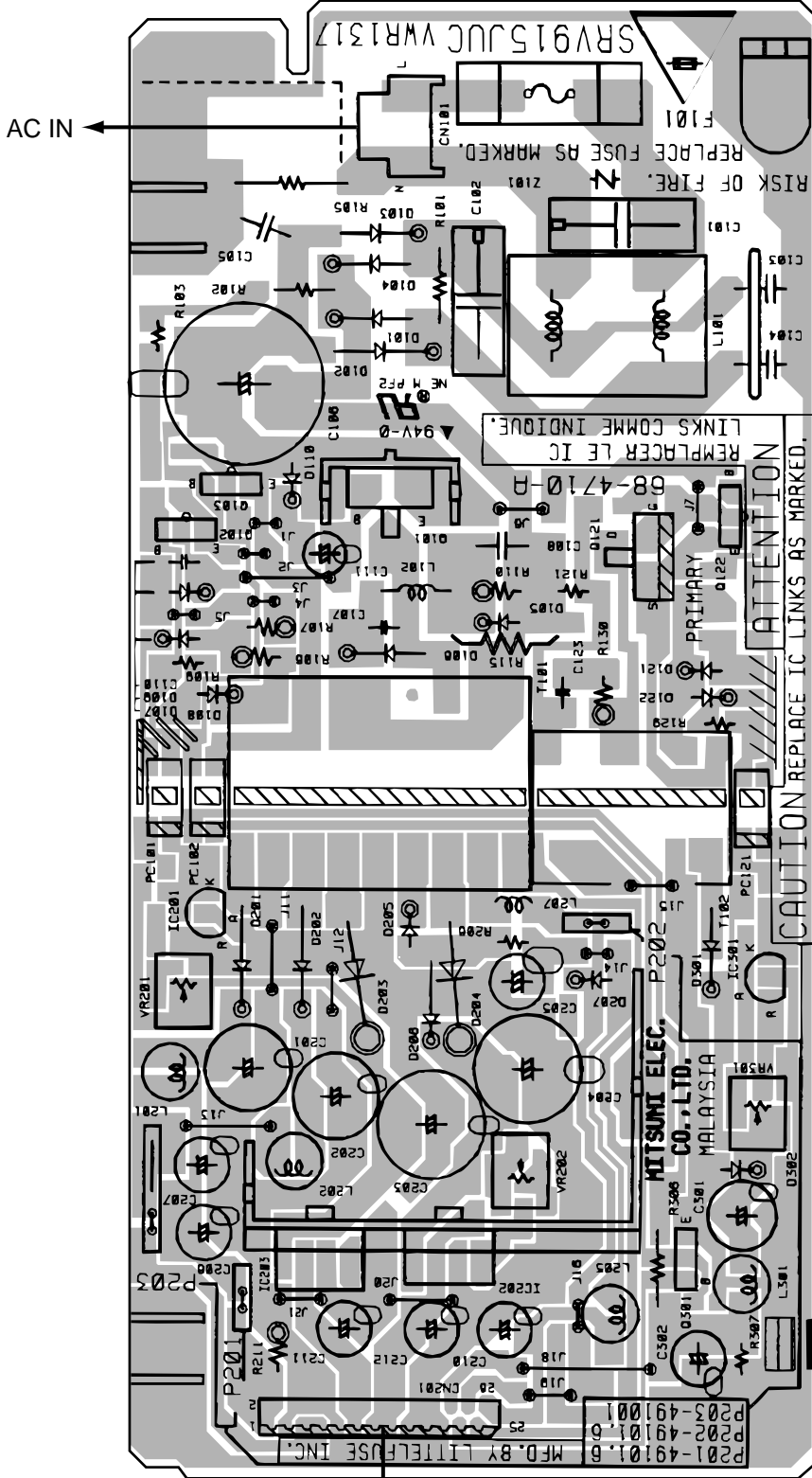
(VNP1778-A)

U PS2B ASSY



9.9 POWER SUPPLY ASSY

V POWER SUPPLY ASSY



- Q103 Q101
- Q102 Q122
- Q121
- IC201
- VR201 IC301
- VR301
- VR202
- IC203 IC202 Q301

M CN110

SIDE A



10. PCB PARTS LIST

NOTES: ●Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.

●The Δ 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 RNI/4PC 5 6 2 1 F

A FGSB ASSY

Mark	No.	Description	Part No.
	PC101	SEMICONDUCTOR TLP910(O)	*HW100480R
		RESISTORS	
NSP	All Resistors	RS1/10SxxxJ	—

B SMEB ASSY

Mark	No.	Description	Part No.
	S201	SWITCH DSG1016	*SP001020R
		OTHERS	
NSP	CN201	52044-0345, 3P FFC CONNECTOR	—
NSP	CN202	VKN1212, 8P FFC CONNECTOR	—
NSP	—	VNP1695, PC BOARD SMEB	—

C SSRB ASSY

Mark	No.	Description	Part No.
		SEMICONDUCTORS	
	Q604	2SC1740S	HT317402F0
	Q601,Q602	DTC124ES	BA20003000
	D601,D602	GP1S58V	HW10036320
		RESISTORS	
NSP	All Resistors	RD1/4PUxxxJ	—
		OTHERS	
NSP	—	51048-0300, 3P CABLE HOLDER	—
NSP	—	51048-0700, 7P CABLE HOLDER	—
NSP	J603	D20PDD0310E, JUMPER WIRE 3P	—
NSP	J602	D20PDD0725E, JUMPER WIRE 7P	—
NSP	J605	D20PDY0310E, JUMPER WIRE 3P	—

D SEMB ASSY

Mark	No.	Description	Part No.
		OTHERS	
NSP	—	51048-0700, 7P CABLE HOLDER	—
NSP	—	51048-0900, 9P CABLE HOLDER	—
NSP	J601	D20PDY0930E, JUMPER WIRE 9P	—

E LOMB ASSY

Mark	No.	Description	Part No.
		OTHERS	
NSP	—	51048-0300, 3P CABLE HOLDER	—
NSP	—	51048-0500, 5P CABLE HOLDER	—
NSP	J652	D20PDD0310E, JUMPER WIRE 3P	—
NSP	J651	D20PDY0530E, JUMPER WIRE 5P	—

F LOSB ASSY

Mark	No.	Description	Part No.
		SWITCH	
	—	VSK1011, LEAF SWITCH	*SM000340R
		OTHERS	
NSP	—	51048-0300, 3P CABLE HOLDER	—

G RADB ASSY

Mark	No.	Description	Part No.
	D611	SEMICONDUCTOR GL381J	*HI100870R
		OTHERS	
NSP	—	51048-0300, 3P CABLE HOLDER	—
NSP	—	RNK1795, LED HOLDER	—

H PHOB ASSY

Mark	No.	Description	Part No.
		SEMICONDUCTOR	
	Q621	PT381FBC	*HF000050R
		OTHERS	
NSP	—	51048-0300, 3P CABLE HOLDER	—
NSP	J604	D20PDY0315E, JUMPER WIRE 3P	—

I DOMB ASSY

Mark	No.	Description	Part No.
		RESISTORS	
NSP	All Resistors	RS1/10SxxxJ	—
		OTHERS	
NSP	—	51048-0300, 3P CABLE HOLDER	—
NSP	—	51048-0400, 4P CABLE HOLDER	—
NSP	J631	D20PDY0445E, JUMPER WIRE 4P	—

J

DOSB ASSY

Mark	No.	Description	Part No.
	S631	SWITCH VSK1011, LEAF SWITCH	*SM000340R
		OTHERS	
NSP	—	51048-0300, 3P CABLE HOLDER	—
NSP	J632	D20PDD0315E, JUMPER WIRE 3P	—

K

VOLB ASSY

Mark	No.	Description	Part No.
	VR601	RESISTOR VCP1158 (22kW)	*RA000970R
		OTHERS	
NSP	CN604,CN605	52147-0310, 3P JUMPER CONNECTOR	—
NSP	KN601	PKX1001, JUMPER TERMINAL	—

L

LEDB ASSY

Mark	No.	Description	Part No.
		SEMICONDUCTORS	
	D1611	HZU6.2B	*HZ300030R
	D1601	NSPB500-9235	*HI100880R
		RESISTORS	
NSP	All Resistors	RS1/10SxxxJ	—
		OTHERS	
NSP	—	51048-0300, 3P CABLE HOLDER	—
NSP	J1601	D20PDY0325E, JUMPER WIRE 3P	—

M

DVDM ASSY

Mark	No.	Description	Part No.
		SEMICONDUCTORS	
	IC21	CY2081SL-655	*HC105840R
	IC101	LA9701M	*HC105850R
	IC201	LC78652W	*HC105860R
	IC609	LC89170M	HC10390030
	IC352	M56788FP	*HC105870R
	IC801	M65773AFP	*HC105880R
	IC802	MB811171622A-100FN	*HC105890R
	IC803	M5M4V18165DTP-6S	*HC106040R
	IC612,IC904	MC74VHC541DT	*HC700230R
	IC608,IC611, IC807,IC905	MC74VHCT541ADT	*HC700240R
	IC607	MC74VHCT574ADT	*HC700250R
	IC702	MN414800CSJ-07	*HC105900R
	IC261,IC302	NJM2100M	HC10085090
	IC601	PD3410A	*HU100400R
	IC701	PD4995A	*HU100410R
	IC604	TC55V1001AF8	*HC105910R
	IC606	TC7SET32F	*HC105920R
	IC751	TC7SH32FU	*HC105930R
	IC24-IC27,IC303	TC7SHU04F	*HC105940R
	IC610	TC7W53FU	HC007105K0
	IC22	TC7WH74FU	*HC105950R
	IC603	VYW1701	*HC105960R
	Q106,Q109	2SA1576A	HX100012A0
	Q105,Q114,Q251	2SC4081	HX300012A0
	Q602	DTA114EUA	*BA000900R
	Q107,Q111,Q601	DTC114EUA	*BA000910R

Mark	No.	Description	Part No.
	Q102	HN1A01F	BA10011050
	Q103,Q281, Q542,Q543	HN1B04FU	*BA000920R
	Q101	HN1C01F	*BA000930R
	Q112,Q113	HN1C01FU	*BA000940R
	Q108	HN1K03FU	*BA000950R
	Q503	RN1911	*BA000960R
	D302	KV1470	*HZ400010R
	D601	RB501V-40	*HZ200100R
	D501,D502	RB521S-30	*HZ200110R
		COILS AND FILTERS	
	F5050,F5090	DTF1067, CHIP BEAD	*FC900220R
	F4010,F4020, F4030,F4040, F4050	DTF1070, CHIP BEAD	*FC900230R
	F4060,F8330, F9590	DTF1070, CHIP BEAD	*FC900230R
NSP	L304	VTL1059, CHIP COIL (1.5mH)	—
	L151	VTL1061, CHIP COIL (10mH)	*LU000130R
	L47	VTL1084, CHIP BEAD	*FC900240R
	L1400	VTL1088, CHIP BEAD	*FC900250R
	L9490,L9500, L9510	VTL1105, CHIP BEAD	*FC900260R
NSP	L101,L330	VTL1125, CHIP COIL (8.2mH)	—
		CAPACITORS	
NSP	C612	CCSRCH100D50	—
NSP	C123,C145,C21, C282,C617	CCSRCH101J50	—
NSP	C26	CCSRCH120J50	—
NSP	C126,C333	CCSRCH150J50	—
NSP	C206,C210,C211	CCSRCH151J50	—
NSP	C322	CCSRCH180J50	—
NSP	C116,C151,C314	CCSRCH220J50	—
NSP	C152	CCSRCH221J50	—
NSP	C632	CCSRCH330J50	—
NSP	C209	CCSRCH331J50	—
NSP	C104-C108, C128,C134,C297	CCSRCH470J50	—
NSP	C335	CCSRCH470J50	—
NSP	C122,C208	CCSRCH471J50	—
NSP	C127,C334	CCSRCH5R0C50	—
NSP	C124,C146	CCSRCH680J50	—
NSP	C117,C240, C352,C360	CCSRCH681J25	—
NSP	C129,C142, C22,C405,C601	CEV101M10	—
NSP	C701,C763, C801,C802,C804	CEV101M10	—
NSP	C113,C139, C358,C368,C411	CEV220M16	—
NSP	C111,C147, C149,C205,C207	CEV470M6R3	—
NSP	C401,C403,C407	CEV470M6R3	—
NSP	C502	CKSQYB103K50	—
NSP	C140,C223, C224,C252,C264	CKSQYB105K10	—
NSP	C312	CKSQYB105K10	—
NSP	C229	CKSQYB224K16	—
NSP	C217	CKSQYF105Z16	—
NSP	C216,C313	CKSRYB102K50	—
NSP	C133,C136, C203,C220,C225	CKSRYB103K50	—
NSP	C239,C320, C321,C619,C703	CKSRYB103K50	—
NSP	C722	CKSRYB103K50	—

Mark	No.	Description	Part No.
NSP	C101,C102, C114,C118,C119	CKSRYB104K16	—
NSP	C121,C130, C138,C204	CKSRYB104K16	—
NSP	C212,C213, C227,C228,C231	CKSRYB104K16	—
NSP	C24,C263, C315-C317,C332	CKSRYB104K16	—
NSP	C281,C354	CKSRYB222K50	—
NSP	C153,C266	CKSRYB223K25	—
NSP	C214,C251,C261	CKSRYB472K50	—
NSP	C357	CKSRYB473K16	—
NSP	C330	CKSRYB682K50	—
NSP	C109,C110, C120,C131,C148	CKSRYF104Z16	—
NSP	C150,C202, C215,C221,C222	CKSRYF104Z16	—
NSP	C226,C230, C235,C265,C29	CKSRYF104Z16	—
NSP	C31,C33, C35,C359,C367	CKSRYF104Z16	—
NSP	C369-C372, C402,C404,C406	CKSRYF104Z16	—
NSP	C408,C410, C412,C501	CKSRYF104Z16	—
NSP	C602-C611, C613-C616,C618	CKSRYF104Z16	—
NSP	C621-C631, C702,C704-C714	CKSRYF104Z16	—
NSP	C716-C721, C723-C725	CKSRYF104Z16	—
NSP	C761,C762, C822,C827,C829	CKSRYF104Z16	—
NSP	C832,C833, C836,C920,C921	CKSRYF104Z16	—
NSP	C834,C838,C840	CKSRYF104Z16	—
NSP	C143,C319, C806-C819	CKSRYF105Z10	—
NSP	C328,C821, C824,C825,C828	VCG1030 (2.2mF)	—
NSP	C830,C837	VCG1030 (2.2mF)	—
NSP	C23,C299	VCG1032 (0.47mF)	—
NSP	VC21	VCM1013 (30pF)	—
RESISTORS			
NSP	R123	ACN7047 (39W±4)	—
NSP	R715,R716	ACN7077 (47W±4)	—
NSP	R531,R543, R545,R613	DCN1094 (10kW±4)	—
NSP	R648,R649, R706,R707,R748	DCN1094 (10kW±4)	—
NSP	R751	DCN1094 (10kW±4)	—
NSP	R121,R532, R689,R691,R732	DCN1104 (22W±4)	—
NSP	R736,R785, R786,R818-R820	DCN1104 (22W±4)	—
NSP	R825,R848,R849	DCN1104 (22W±4)	—
NSP	R1020,R162, R2010,R2020,R2030	RS1/10S0R0J	—
NSP	R2040,R3050, R3520,R506,R510	RS1/10S0R0J	—
NSP	R520,R601, R701,R801,R8410	RS1/10S0R0J	—
NSP	R9200,R9210, R9230,R9240	RS1/10S0R0J	—
NSP	R939-R948, R952-R958,R960	RS1/10S0R0J	—

Mark	No.	Description	Part No.
NSP	R964,R973-R975, R979	RS1/10S0R0J	—
NSP	R361,R364	RS1/16S1203F	—
NSP	R363,R365	RS1/16S1503F	—
NSP	R164	RS1/16S5600F	—
NSP	R3510	VCN1120 (100W)	—
NSP	Other Resistors	RS1/16SxxxJ	—
OTHERS			
	X601	DSS1110, CHIP CERAMIC (20MHz)	*FQ000450R
NSP	—	VDA1681, FLEXIBLE CABLE 7P	—
NSP	CN106	VKN1299, 7P FFC CONNECTOR	—
NSP	CN201	VKN1324, B TO B CONNECTOR 14P	—
NSP	CN120	VKN1464, 24P FFC CONNECTOR	—
NSP	CN1030,CN921	VKN1471, 12P FFC CONNECTOR	—
NSP	CN905	VKN1473, 14P FFC CONNECTOR	—
NSP	CN602,CN901	VKN1474, 15P FFC CONNECTOR	—
NSP	CN110	VKN1479, 26P FFC CONNECTOR	—
NSP	CN903	VKN1497, 11P FFC CONNECTOR	—
NSP	CN802	VKN1529, B TO B CONNECTOR 40P	—
NSP	CN107	VKN1575, 7P FFC CONNECTOR	—
NSP	—	VRW1773, BARCODE LABEL	—
	X21	VSS1129, CRYSTAL RESONATOR (13.824MHz)	*JX000670R

N VQEB ASSY

Mark	No.	Description	Part No.
SEMICONDUCTORS			
	IC102	MB811171622A-100FN	*HC105890R
	IC101	PM0023AF	*HC105970R
	IC105,IC106	TC7SH14FU	*HC105980R
	Q531,Q532, Q541,Q542	2PB709A	*HX200080R
	Q551,Q552	2PB709A	*HX200080R
COIL AND FILTER			
NSP	F102	VTF1155, VIDEO FILTER	—
NSP	L101	VTL1067, CHIP COIL	—
CAPACITORS			
NSP	C130	CCSRCH102J50	—
NSP	C101,C120	CEV101M16	—
NSP	C110-C119, C121-C126,C150	CKSRYB104K16	—
NSP	C160,C532, C542,C552	CKSRYB104K16	—
NSP	C201,C202 (2.2mF)	VCG1031	—
RESISTORS			
NSP	R105,R106, R404,R405	DCN1104 (22W±4)	—

Mark	No.	Description	Part No.
NSP	R12,R201, R409,R418,R419	RS1/10S0R0J	—
NSP	R501	RS1/10S0R0J	—
NSP	R122	RS1/10S2701F	—
NSP	R532,R542,R552	RS1/16S3300F	—
NSP	R534,R544,R554	RS1/16S4700F	—
NSP	Other Resistors	RS1/16SxxxJ	—
OTHERS			
NSP	CN101	B TO B CONNECTOR 40P	—



AVJB ASSY

Mark	No.	Description	Part No.
SEMICONDUCTORS			
	IC203	BA4560F	*HC105990R
	IC502	BU4551BF	HC10180210
	IC501	LA7135AM	*HC106000R
	IC241	PD0236AM	*HC106060R
△	IC206	NJM78L05A	HC38105090
△	IC150	NJM78M08FA	*HC300270R
	IC201	PE8001A	*HC106050R
	IC202	TC7SU04F	HC700405Z0
	Q202,Q581-Q584	2PB709A	*HX200080R
	Q151,Q281,Q585	2PD601A	*HX400120R
	Q150	2SB1260	*HT200240R
	Q120	2SC1740S	HT317402F0
	Q257,Q277	2SD2114K	HX421141V0
	Q201,Q561, Q586-Q589	PDTC124EK	*BA000970R
	D230	HZU5.6B	*HZ300040R
	D281	MA111	*HZ200120R
COILS AND FILTER			
NSP	L220	DTL1028, CHIP INPEDER	—
NSP	L202	LAU1R0J-TA	—
	F201,F241	VTF1096, CHIP SOLID INDUCTOR	*LU000140R
SWITCH AND RELAY			
	S501	VSH1009	*SS000630R
	RY281	RSR1029	*LY000240R
CAPACITORS			
NSP	C253,C273	CCSQCH221J50	—
NSP	C251,C271	CCSQCH330J50	—
NSP	C523-C525	CCSQCH470J50	—
NSP	C255,C275	CCSQSL331J50	—
NSP	C104,C154, C211,C232,C501	CEAT101M10	—
NSP	C526,C528, C581,C582	CEAT101M10	—
NSP	C102,C121, C122,C152,C231	CEAT101M16	—
NSP	C203,C541, C555,C560	CEAT102M6R3	—
NSP	C206,C207	CEAT470M16	—
NSP	C250,C252, C270,C272	CEAT470M25	—
NSP	C550,C552	CEAT471M6R3	—
NSP	C150	CKSQYB103K50	—
NSP	C520-C522, C561,C585	CKSQYB104K25	—
NSP	C587	CKSQYB222K50	—
NSP	C583	CKSQYB473K50	—

Mark	No.	Description	Part No.
NSP	C101,C103, C120,C123,C151	CKSQYF104Z25	—
NSP	C153,C204, C205,C208,C209	CKSQYF104Z25	—
NSP	C214,C215, C230,C233,C234	CKSQYF104Z25	—
NSP	C241,C243	CKSQYF104Z25	—
NSP	C281,C290, C502,C527	CKSQYF104Z25	—
NSP	C529,C530,C590	CKSQYF104Z25	—
NSP	C201,C202, C210,C212,C213	CKSQYF105Z16	—
NSP	C531	CKSQYF105Z16	—
RESISTORS			
NSP	R597-R599	RN1/10SC18R0D	—
NSP	R533,R534, R542,R551,R555	RN1/10SC62R0D	—
NSP	R558,R581, R585,R589	RN1/10SC62R0D	—
NSP	R250,R270	RN1/10SE1602D	—
NSP	R251,R271	RN1/10SE2702D	—
NSP	Other Resistors	RS1/10SxxxJ	—
	CN503	AKP7023, DUAL 4P MINI DIN SOCKET	*YT002030R
	JA505	VKB1152, 3P PIN JACK	*YT002040R
	JA201	VKB1133, 4P PIN JACK	*YT002050R
	JA504	VKB1135, 2P PIN JACK	*YT002060R
NSP	CN502	VKN1183, 7P FFC CONNECTOR	—
NSP	CN101	VKN1190, 14P FFC CONNECTOR	—
NSP	CN501	VKN1191, 15P FFC CONNECTOR	—
NSP	—	VNE1948, SCREW TERMINAL	—



MSJB ASSY

Mark	No.	Description	Part No.
SEMICONDUCTORS			
	IC922	TC74HC00AF	HC700000Z0
	IC901,IC931	TC74HCU04AF	HC700400Z0
	Q989	2SA1037K	HX110373A0
	Q990,Q991	2SC2412K	HX324121M0
	D989	1SS355	*HZ200130R
COILS AND FILTERS			
NSP	L901	PTL1003, PULSE TRANS.	*TP000040R
	L902	RTF1167, NOISE FILTER	—
	F901,F904, F912,F922	VTF1096, CHIP SOLID INDUCTOR	*LU000140R
SWITCH AND RELAY			
	S901	VSH1009	*SS000630R
CAPACITORS			
NSP	C932	CCSQCH101J50	—
NSP	C902,C912, C915,C958	CEAT101M10	—
NSP	C903,C931	CKSQYF103Z50	—
NSP	C905,C906, C913,C916,C922	CKSQYF104Z25	—
NSP	C933,C936, C959,C989,C991	CKSQYF104Z25	—

Mark	No.	Description	Part No.
NSP	C990	CEAT470M10	—
NSP	All Resistors	RESISTORS RS1/10SxxxJ	—
		OTHERS CN904,CN905 AKN1028, MINI JACK *YT002090R JA902 GP1F32T, OPTICAL LINK OUT YJ15000090 JA909 VKB1148, 2P PIN JACK *YT002070R JA989 VKB1149, 2P PIN JACK *YT002080R	—
NSP	CN902,CN903	VKN1267, 7P FFC CONNECTOR	—
NSP	CN901	VKN1271, 11P FFC CONNECTOR	—
NSP	—	VNE1948, SCREW TERMINAL	—

Q MDRB ASSY

Mark	No.	Description	Part No.
		SEMICONDUCTORS IC301 LA6531 *HC106010R Q303 2SA1037K HX110373A0 Q301 2SC2412K HX324121M0 Q302 PDTC124EK *BA000970R	—
		CAPACITORS NSP C306 CCSQCH101J50 — NSP C303 CEAT101M10 — NSP C301 CEAT470M16 — NSP C302,C304, C305,C307 CKSQYF104Z25 —	—
		RESISTORS NSP R333 RS1/10S1503F — NSP R302,R329 RS1/10S1803F — NSP R311,R312 RS1/10S2202F — NSP R335,R336 RS1/10S3003F — NSP R322,R323, R326,R327 RS1/10S3302F — NSP R324,R328 RS1/10S3902F — NSP R334,R338 RS1/10S3903F — NSP Other Resistors RS1/10SxxxJ —	—
		OTHERS NSP CN306 52147-0310, 3P JUMPER CONNECTOR — NSP CN304 52147-0410, 4P JUMPER CONNECTOR — NSP CN305 52147-0510, 5P JUMPER CONNECTOR — NSP CN307 52147-0910, 9P JUMPER CONNECTOR — NSP CN303 VKN1239, 8P FFC CONNECTOR — NSP CN301,CN302 VKN1243, 12P FFC CONNECTOR —	—

R 232B ASSY

Mark	No.	Description	Part No.
	IC401	SEMICONDUCTOR MAX232EPE	*HC106020R
	F401-F403	FILTERS VTH1009, EMI FILTER	*FM100080R

Mark	No.	Description	Part No.
NSP	C404,C405	CAPACITORS CEANP1R0M50	—
		C401 CEAT101M10	—
		C403 CEAT1R0M50	—
		C402 CKSQYF104Z25	—
		C406 CEAL1R0M50	—
		NSP	All Resistors
NSP	JA401 CN401	OTHERS DKN1111, 15P D-SUB SOCKET *YT002100R VKN1238, 7P	—
		FFC CONNECTOR	—

S FLKY ASSY

Mark	No.	Description	Part No.
		SEMICONDUCTORS IC701 PE5184A *HC106030R IC702 S-806D HC10077530 Q701-Q704 PDTC124EK *BA000970R D701 SLR-343VC(NP) *HI100890R	—
		COILS L721,L722 VTL1105, CHIP BEAD *FC900260R SWITCHES S701-S708 ASG7013 *SP001010R	—
		CAPACITORS NSP C710 CEAL100M50 — NSP C701,C703,C709 CEAL470M6R3 — NSP C740-C743, C751,C753 CKSQYB102K50 — NSP C707 CKSQYF102Z50 — NSP C702,C704-C706, C708,C714 CKSQYF104Z25 — NSP C711 CKSQYF104Z50 —	—
		RESISTORS NSP R791 RA10T104J — NSP R792 RA13T104J — NSP R794 RA4T104J — NSP R741 RN1/10SE1001D — NSP Other Resistors RS1/10SxxxJ —	—
NSP	—	OTHERS 51048-1300, 13P CABLE HOLDER — NSP CN703 HLEM1LS-1, 11P FFC CONNECTOR — IR701 GP1U28XP, REMOTE RECEIVER UNIT *HW000110R V701 VAW1052, FL TUBE *HQ300430R NSP CN702 VKN1238, 7P FFC CONNECTOR — NSP CN701 VKN1246, 15P FFC CONNECTOR — X701 VSS1142, CERAMIC RESONATOR (5MHz) *FQ000460R	—

T**KEYB ASSY**

Mark	No.	Description	Part No.
	D1201-D1204	SEMICONDUCTORS DA204K	*HZ200140R
	SWITCHES S1201-S1220 S1200	ASG7013 PSX1002	*SP001010R *SR000140R
		CAPACITORS	
NSP	C1252	CEAL470M6R3	—
NSP	C1201,C1202	CKSQYF103Z50	—
NSP	C1203,C1251	CKSQYF104Z25	—
		RESISTORS	
NSP	All Resistors	RS1/10SxxxJ	—
		OTHERS	
NSP	CN1202	HLEM1LS-1, 11P FFC CONNECTOR	—
NSP	CN1201	VKN1267, 7P FFC CONNECTOR	—

U**PS2B ASSY**

Mark	No.	Description	Part No.
	F801-F804	FILTERS VTH1009, EMI FILTER	*FM100080R
		CAPACITORS	
NSP	C801-C804	CCSQCH101J50	—
NSP	C813,C814	CKSQYF104Z25	—
		RESISTORS	
NSP	All Resistors	RS1/10SxxxJ	—
		OTHERS	
	JA801	RKN1038, MINI DIN 6P SOCKET	*YT002110R
NSP	CN801	VKN1267, 7P FFC CONNECTOR	—

V**POWER SUPPLY ASSY**

Mark	No.	Description	Part No.
		SEMICONDUCTORS	
△	IC203	AEK7064 (1A)	*HC300280R
△	IC202	AEK7066 (1.6A)	*HC300290R
	—	VZF1092, VARISTOR	*HV000030R
		OTHERS	
△	F101	FUSE (2A)	*FS000750R
NSP	CN201	26P FFC CONNECTOR	—

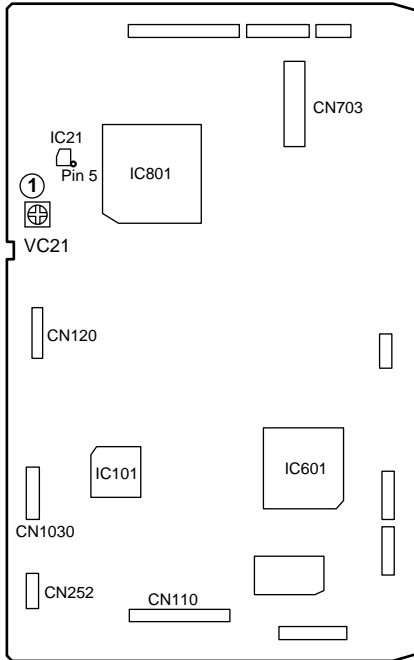
11. ADJUSTMENT

11.1 ADJUSTMENT ITEMS AND LOCATION

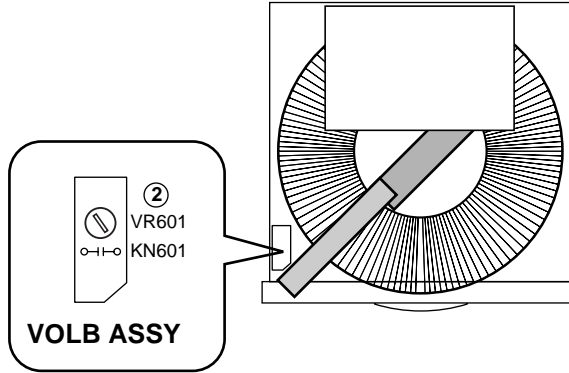
Note : When the Traverse mechanism adjustment is not properly adjusted, jitter, error rate and play ability are defective.
The noise may come out by the case.

■ Adjustment Points (PCB Part)

DVDM ASSY



SIDE A


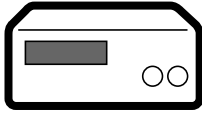
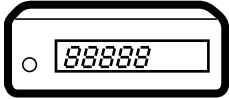
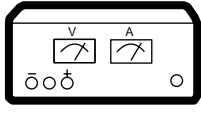
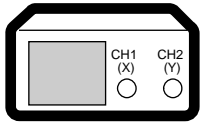


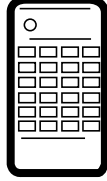
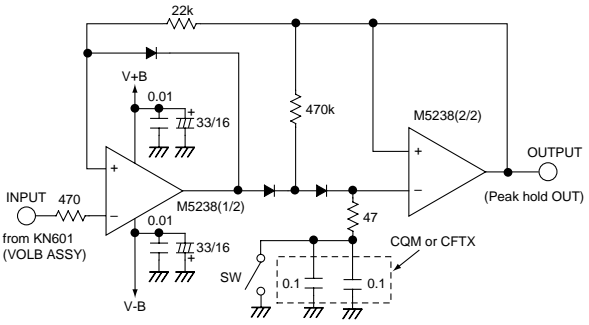


■ Adjustment Items

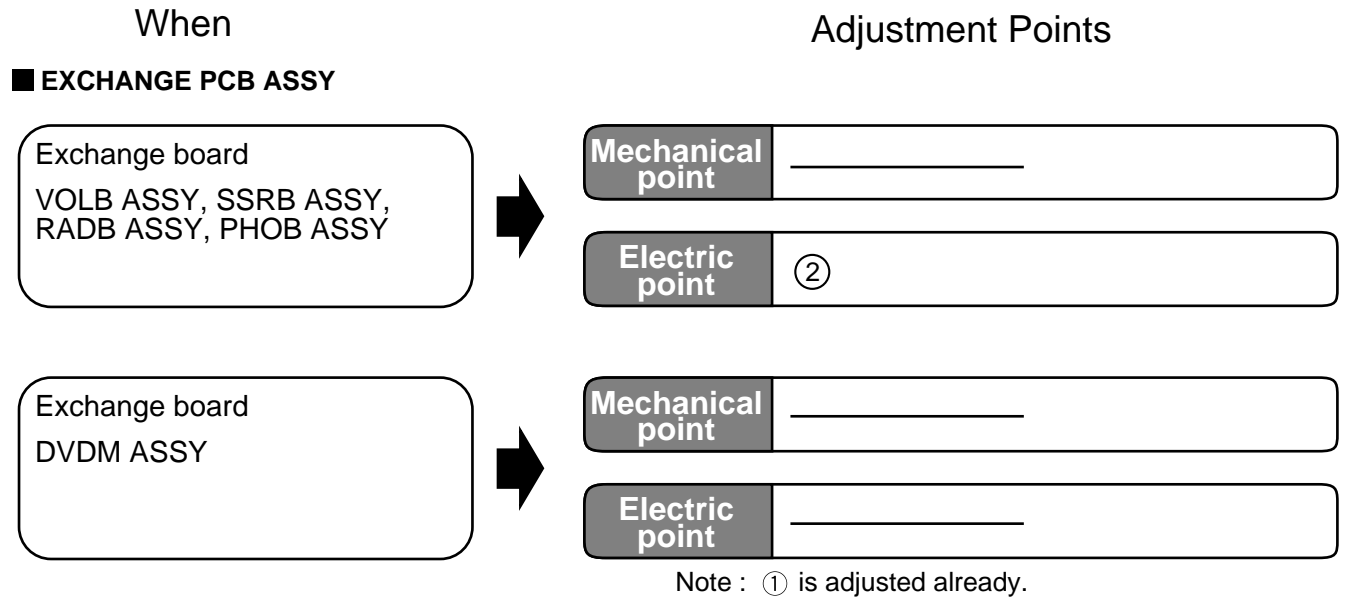
[Electrical Part]

- ① Master Clock Adjustment
- ② Disc-select Rotation Adjustment

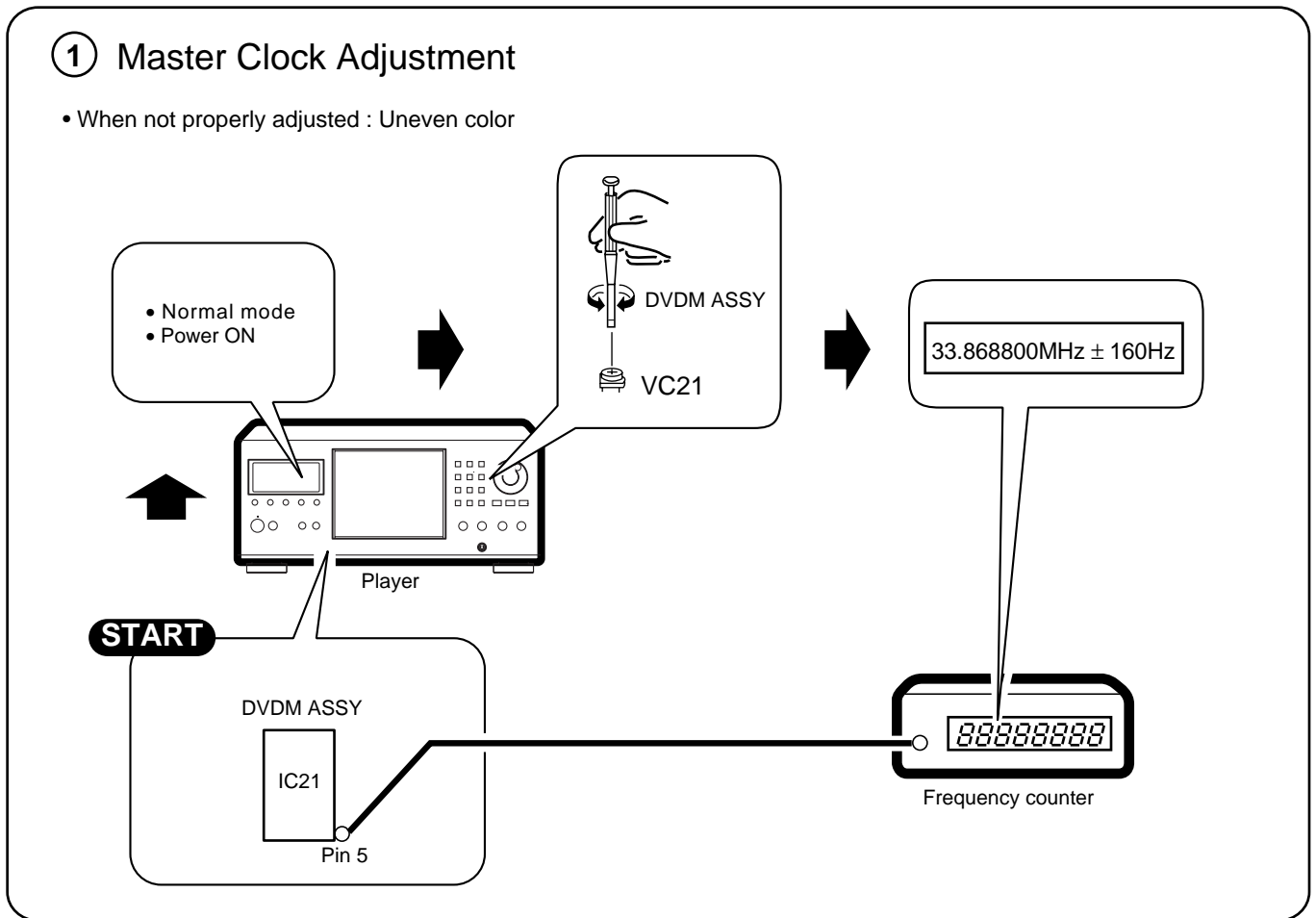
11.2 JIGS AND MEASURING INSTRUMENTS

 <p>CD TEST DISC PHILIPS SBC429</p>	 <p>Digital multi meter</p>	 <p>Frequency counter Display digit ≥ 8-digit</p>	 <p>DC power supply</p>	 <p>Oscilloscope</p>
 <p>⊖ Screwdriver (small)</p>	 <p>⊖ Precise screwdriver</p>	 <p>Test mode remote control unit (GGF1067)</p>	<p>Jig (Peak hold circuit)</p> 	

11.3 NECESSARY ADJUSTMENT POINTS

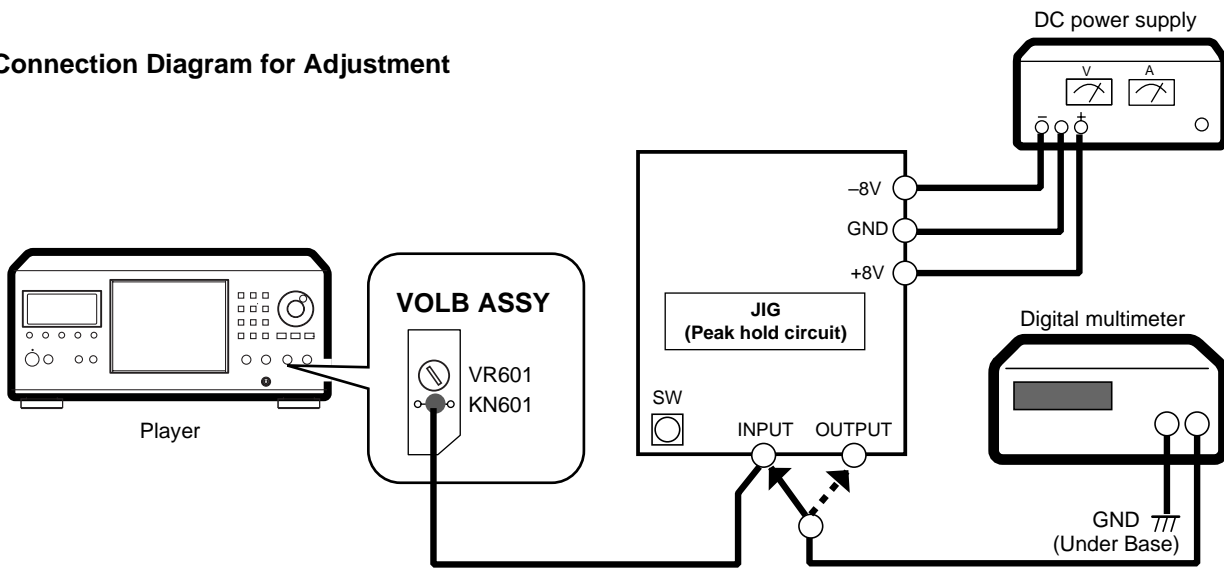


11.4 ELECTRICAL ADJUSTMENT



② Disc-select Rotation Adjustment

● Connection Diagram for Adjustment



● Adjustment Procedure

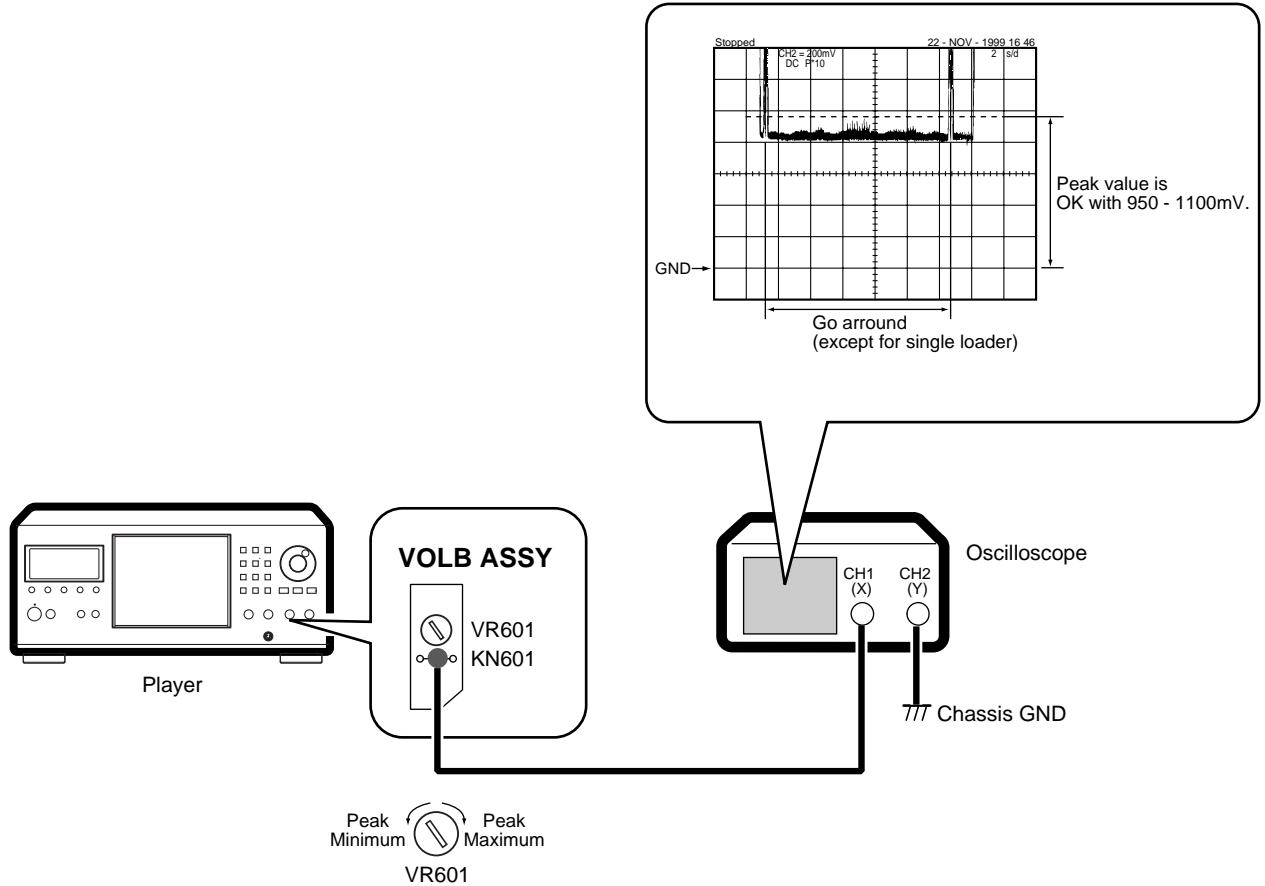
1. Connect all equipment as shown in the diagram.
2. Turn on the power (Normal mode) and put the test disc in the No. 1 disc slot.
3. Enter the Test mode by pressing the "ESC" → "TEST" button of the test mode remote control unit.
4. Press the "DIG/ANA" button of the test mode remote control unit. (Disc 1 is clamped.)
5. Adjust VR601 on the VOLB Assy so that the voltage becomes $830 \pm 5\text{mV}$.
6. Switch the connection of Digital multimeter from INPUT to OUTPUT of the Jig.
7. Press the "DIG/ANA" button of the test mode remote control unit. (Starts the disc detection and peak hold.)
8. Confirm the voltage during the disc detection.
If voltage is between 920 to 1170mV, go to step 13. If not, go to step 9.
9. Switch the connection of Digital multimeter from OUTPUT to INPUT of the Jig.
10. Press the "DIG/ANA" button of the test mode remote control unit. (Disc 1 is clamped.)
11. Adjust VR601 to become the value for addition (or subtraction) that to have an adjustment voltage.
(Refer to the following table.)
12. Perform steps 6 to 8 again and confirm the voltage during the disc detection.
If voltage is between 920 to 1170mV, go to step 13. If not, repeat steps 9 to 12.
13. Confirm that Disc No. display doesn't become "1" others when you turn the Jog dial.
14. Release the Test mode by pressing the "ESC" button or turn off the power.

Adjustment voltage value

Peak hold voltage (mV)	Adjustment voltage (mV)
to 859	+20
859 to 879	+10
879 to 920	+ 5
920 to 1170	OK
1170 to 1309	- 5
1309 to 1520	-10
1520 to 1840	-20
1840 to 2220	-30
2220 to	-40

● Simple Adjustment of Disc Detection

● Connection Diagram for Adjustment



● Adjustment Procedure

1. Connect an oscilloscope.
2. Turn the POWER SW to ON.
3. Open the Food.
4. Press the "SINGLE LOADER PLAY" button of the player without putting a disc.
Start the disc detection if loading is come and there is no disc.
5. If the peak value is 950 - 1100mV while a disc detection goes around the disc, is OK.
6. When peak value is except for OK range, adjust VR601 and repeat steps 3 - 5.

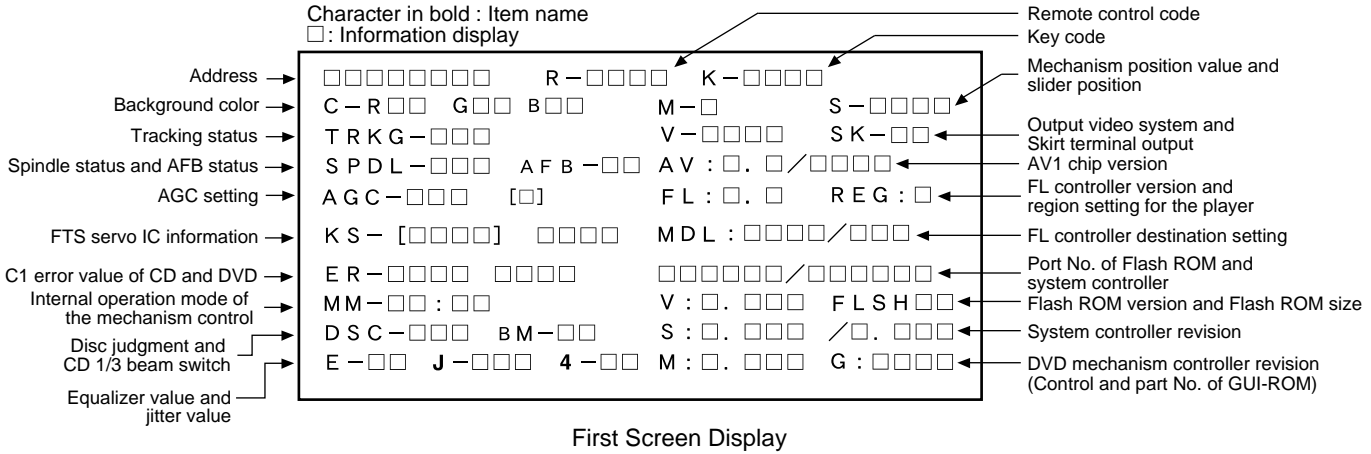
12. GENERAL INFORMATION

12.1 DIAGNOSIS

12.1.1 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



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.
At keyboard code input
K-KBD * * * * :
At mouse code input
K-MS * * * *

(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-running [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 - * *]**

Make 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 characters in front represent the type of model :
 There characters 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

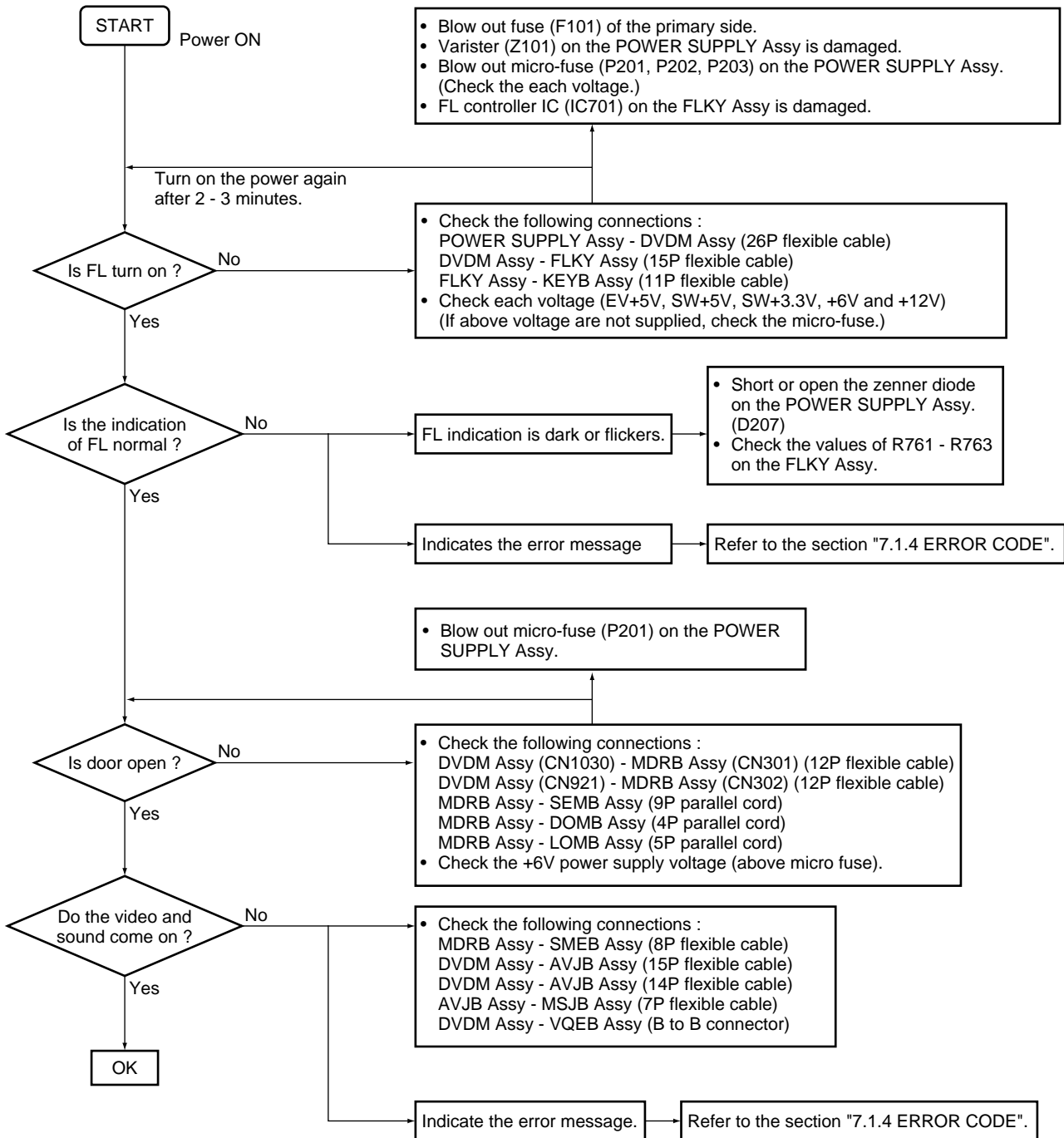
(23) Control and part numbers of the GUI-ROM**[G : * * * *]**

No GUI model displays as "— / —".

OEM model displays the part number of GUI-ROM [G : * * * *]

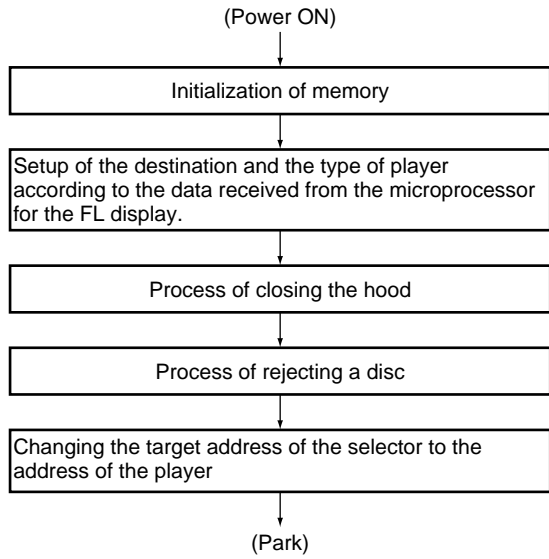
12.1.2 TROUBLE SHOOTING

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

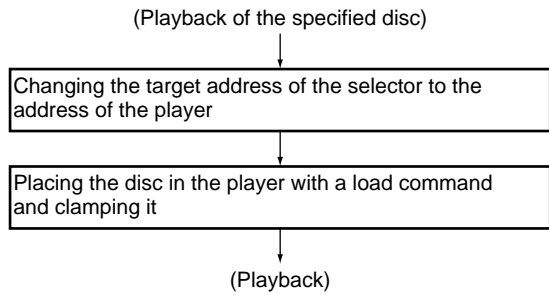


12.1.3 OPERATION FLOWCHART

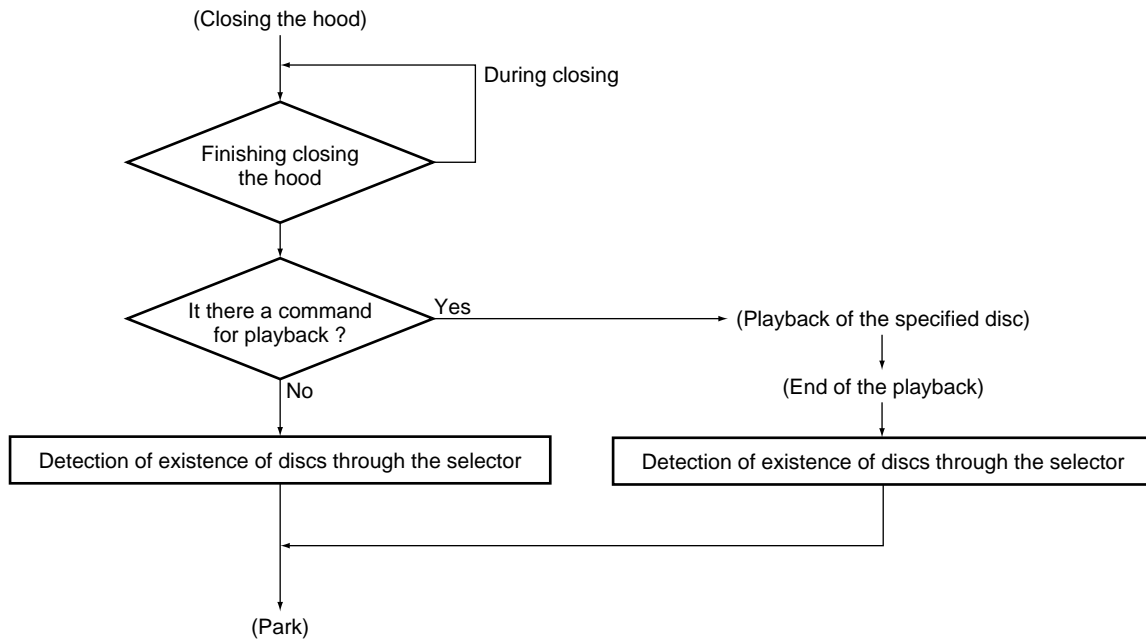
• From power-on till the end of initialization



•Until start of playback of the specified disc



•Closing the hood



12.1.4 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 occur excepting C5 error. However, when the focus error "33" was occurred 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	<p>The spindle could not converge into within $\pm 12\%$ of the target FG rotation speed within 10 seconds after spindle kick.</p> <p>The first time after startup (the first time after disc distinction), it doesn't become the number of the target rotation within five seconds.</p> <p>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</p>		Stops. (FG timeout)
49	Spindle PLL transition timeout	<p>After the second times after startup, it doesn't become the number of the target rotation within five seconds.</p> <p>Detects the abnormal high-speed or low-speed rotations. DVD: 5 to 9 mS , CD: 40 to 60 mS</p>		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 μ S).		No operation
A2	Communication timeout for reading DSP coefficient	Command Busy (XCBUSY) was in force for a specified time (about 200 μ S) 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 μ S 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 retrying 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. If timeout is repeated upon retry, the unit stops.
FC	Focus	The following error occurred 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).

E00, E04-E06, E11, E16, E17, E90-E92, E99

: Refer to page 76.

**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			

12.1.5 INTERFACE CONNECTOR

• Communication control

The protocol system is based on a system in which the computer gives commands and the player returns statuses. The communication protocol used conforms to that used by industrial and educational equipment (changers, drives, LD players for educational use, etc.) of our company, and supports Communication Mode 7 (CM 7).

CM 7 uses a method of proceeding a program by issuing each execution command and confirming the execution status with a request command.

First, the controller sends an execution command, and the player returns the status of having received the command. Then, the controller sends a request command, and the player returns the corresponding status data. The controller repeats this operation until it receives the status data required.

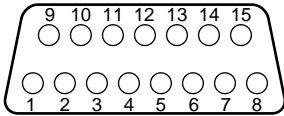
In CM 7, neither Completion of Execution Status nor error messages are returned. Statuses returned in response to execution commands are the End of Receive message <R> and Communication Errors <E 00>. To confirm Completion of Execution or occurrence of errors, use the request command “?J.” However, note that some commands have restrictions or conditions, and that some commands cannot be executed or may not be executed as they should be.

• Format

Serial control interface in conformance with the RS-232C Standards

• Connector

15-pin, D-sub connector



• Signal Line

No.	Name	I/O	Function
1	GND	–	Ground
2	TxD	O	Transmission output
3	RxD	I	Receiving input
4	DTR	O	Transmission permission
5	Reserved	–	————
6	Reserved	–	————
7	Reserved	–	————
8	Reserved	–	————
9	Reserved	–	————
10	Reserved	–	————
11	GND	–	Ground
12	Reserved	–	————
13	Reserved	–	————
14	Reserved	–	————
15	GND	–	Ground

• Specifications of Interface

Signal level : RS-232C level

Data format

Data length : 8 bits

Stop bit : 1 bit

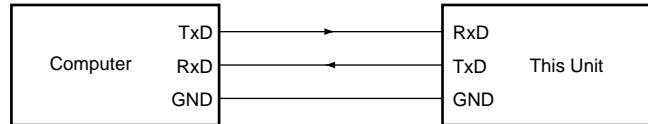
Parity : none

Transmission speed (baud rate):

Selectable between 9600 and 19200 bps, by exclusive command of the player. Every time the power is turned on, the baud rate is reset to 9600 bps.

Connection:

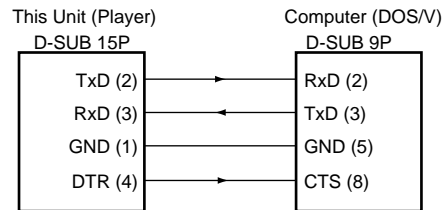
The computer and this unit are connected through three lines, as shown below:



The player can receive commands any time as long as the power is on. So, even when the RS-232C port of the computer is used, connection of any control lines other than TxD and RxD is NOT necessary.

However, some computers need physical CTS input for operation. In this case, the DTR output, which always outputs positive electric potential as long as transmission is possible, can be used. Connect the DTR output to the CTS input of the computer as shown below:

Example of connection (connection with a DOS/V computer)



• List of Commands

Mnemonic	Command Name	Argument	Job
OP	OPEN	–	Opens the hood.
UL	UNLOAD	0 - 300	Moves the specified disc to the front and opens the hood.
CO	CLOSE	–	Closes the hood and detects the existence of discs.
ZS	DISC SELECT	0 - 300 (600)	Executes playback of the specified disc.
RJ	REJECT	–	1st time: Stops playback. 2nd time: Returns the disc to the rack.
ZR	DISC RETURN	–	Returns disc being played to the rack.
PL	PLAY	–	Executes playback.
KP	1 TRACK PLAY	–	During one-track playback, the status becomes busy.
PA	PAUSE	–	Pauses playback temporarily and displays a still picture.
ST	STILL	–	Pauses the playback temporarily.
SF	STEP FORWARD	–	Plays back picture forward frame by frame.
SR	STEP REVERSE	–	Plays back picture in reverse frame by frame.
NF	SCAN FORWARD	–	Scans picture forward (scanning mode is locked).
NR	SCAN REVERSE	–	Scans picture in reverse (scanning mode is locked).
NS	SCAN STOP	–	Stops scanning and returns to the normal playback mode.
SE	SEARCH	See below.	Executes search. (Arguments differ from mode to mode.)
TM	TIME MODE SET	MMMSS	Sets search by time (M: minute, S: second).
CH	CHAPTER MODE SET	1 - 99	Sets search by chapter.
TI	TITLE MODE SET	1 - 99	Sets search by title.
TR	TRACK MODE SET	1 - 99	Sets search by track.
SU	SELECT SUBTITLE	0 - 32, None	Switches to the specified subtitle. (0 or none: OFF)
AU	SELECT AUDIO	1 - 8	Switches to the specified audio.
AG	SELECT ANGLE	0 - 9	Switches to the specified angle.
AP	SELECT ASPECT	1 - 3	Switches aspects either to 1 (Pan & Scan), 2 (Letter Box), or 3 (wide).
RP	REPEAT MODE SET	0 - 3	Execute Repeat mode of the following: 0 (OFF), 1 (TRACK), 2 (DISC), or 3 (FUNCTION).
DS	DISPLAY CONTROL	0 -5, None	Displays the specified OSD. (0: OSD OFF, none: equivalent to key input from the remote control unit)
CL	CLEAR	–	Cancels the function input, Repeat mode, and Function mode in this order.
PM	PLAY MODE SET	0 - 1	Sets the playback mode to 0 (All Discs) or 1 (Single Disc).
CP	CUSTOM PLAY SET	1 - 20	1-10: Audio 1-10 mode, 11-20: Video 1-10 mode
UD	AUTO UPDATE	1 - 2	Executes the following: 0 (Additional Update) or 1 (All Update)
BC	BAUD RATE CHANGE	0 -1	Switches the transmission speed to 0 (9600 bps) or 1 (19200 bps).
ID	DISC-ID OUTPUT	1 - 300 (600)	Outputs distinction data for the specified disc.
KO	DISC TYPE OUTPUT	1 - 300 (600)	Outputs disc type data for the specified disc.
NI	DISC TEXT INPUT	1 - 300 (600)	Inputs title data for the specified disc.
AI	ARTIST TEXT INPUT	1 - 300 (600)	Inputs artist's name data for the specified disc.
NO	DISC TEXT OUTPUT	1 - 300 (600)	Outputs title data for the specified disc.
AO	ARTIST TEXT OUTPUT	1 - 300 (600)	Outputs artist's name data for the specified disc.
?J	JOB STATUS REQUEST		Returns the operational status of the execution command (R: finished, B: busy, EXX: error).
?P	PLAYER AVTIVE STATUS REQUEST		Returns the operational status of the player (PXX: XX = operational status).
?Z	DISC NUMBER REQUEST		Returns the number of the disc being played back.
?E	ERROR REQUEST		Returns the latest error code (EXX: XX = Error code).
?T	TIME CODE REQUEST		Returns the time from the beginning of the TITLE/DISC to the current point (MMMSS: M = minute, S = second).
?R	TITLE/TRACK NUMBER REQUEST		Returns the TITLE/TRACK No. being played back.
?C	CHAPTER REQUEST		Returns the chapter No. being played back.
?A	PLAY TIME REQUEST		Returns the current playback time (TTCCMMSSS: T = title, C = chapter).
?K	DISC TYPE REQUEST		Returns the disc type (00: unknown, 01: none, 02: CD, 10: DVD, 40: VCD)
?H	PLAYER MODE REQUEST		Returns the player mode (XX: second digit = Play mode, first digit = Repeat mode).
?M	COMMUNICATION MODE REQUEST		Returns the communication mode (CM 7 : always Mode 7).
?X	PLAYER MODEL NAME REQUEST		Returns the player model distinction number (P1560XX: XX = version)

Argument: Argument of a command. The values in parentheses are those when the slave player(s) is(are) connected, and "0" stands for a single loader.

• Error List

Error Code	Error Name	Meaning	Circumstance when an error occurs
E00	Communication Error	A communication error was generated between the player and the host computer.	A string of commands exceeded the defined buffer size.
E04	Command Error	An inappropriate command string was detected.	An undefined command was issued or a command was issued at inappropriate timing.
E05	Request Error	A request command was detected at inappropriate timing.	A request command was issued in circumstances where a status signal could not be returned.
E06	Argument Error	Inappropriate argument, or argument missing	The argument was out of range or missing
E11	No Disc Error	No disc	No disc in the specified location, or a command was issued without a disc present.
E16	Key Input Error	There was key input at inappropriate timing.	Because of a key input through the remote control unit, for example, during execution of a command, the execution of the command was interrupted.
E17	GUI Menu Error	The GUI menu is displayed, or the unit entered GUI Menu mode during execution of a command.	The normal command was issued while the GUI Menu was already on-screen, or the GUI Menu was being output to the screen during execution of a command.
E90	Connect Error	Connection error of the master and slave players	Connections are not correct.
E91	Slave Player Error	A direct command from the host computer to a slave player was detected.	The host computer is connected to the slave player.
E92	Master-Slave Error	Communication error between the master player and the slave player(s)	Whether a command to the slave player(s) was issued correctly or not could not be confirmed.
E99	Panic Error	An error was generated, and playback could not be continued.	An error in the mechanical control system or the servo system was generated, and continuation of playback became impossible.

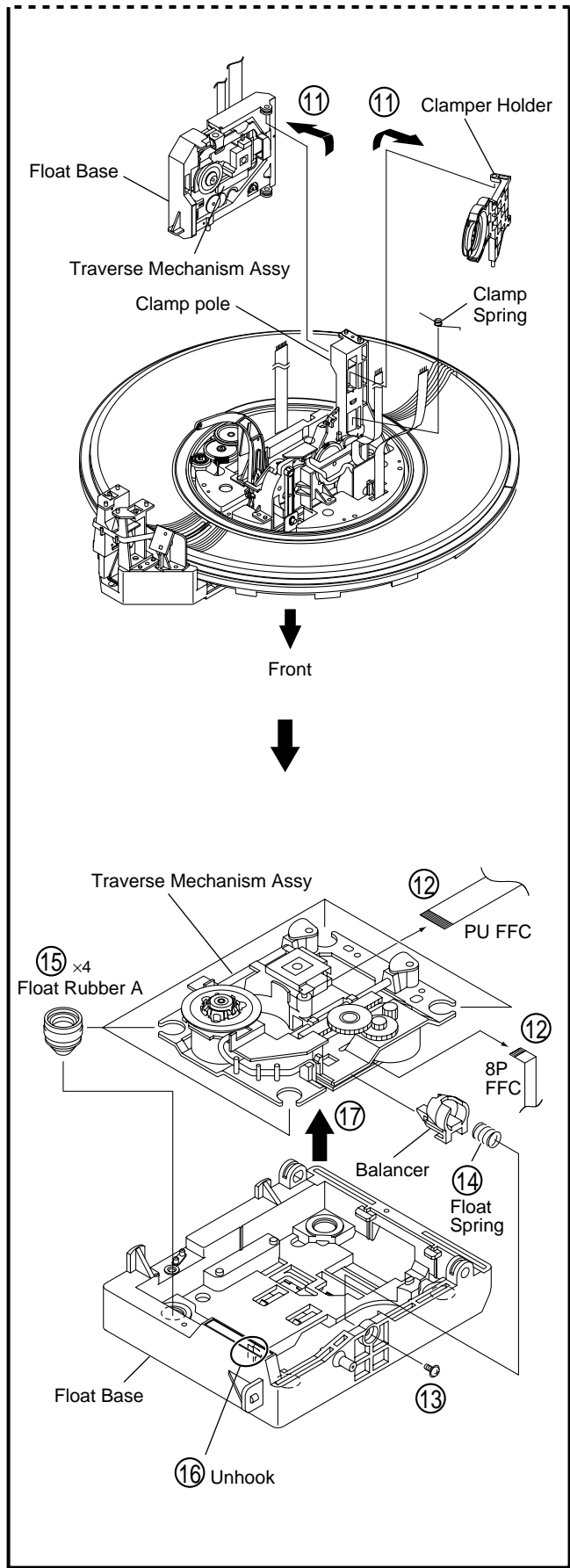
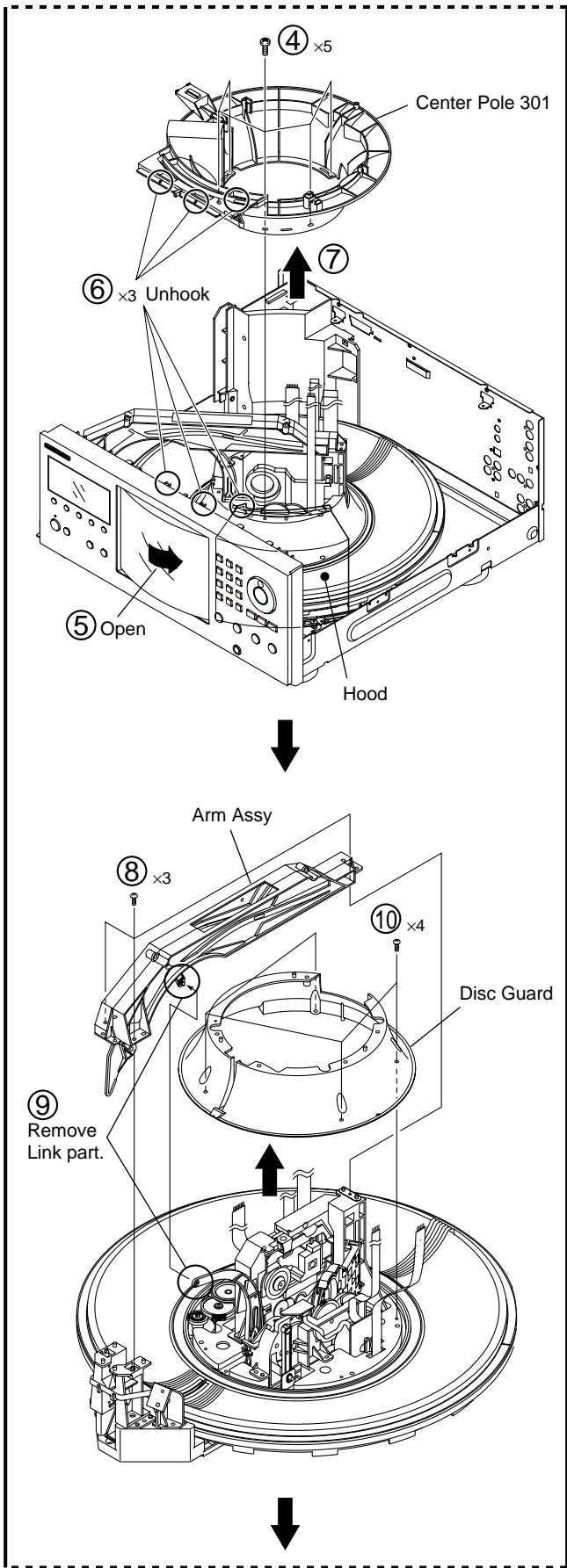
• Notes

Normal operation

- Some operations in Search mode are prohibited for some discs. In such a case, an error is not generated when the mode is specified, but an error is generated when execution of the SE command is attempted.
- Always use the ZS command at the beginning of a command string.
- To use the ZS command during setup (PLAYER ACTIVE STATUS = P03,) always use the ZR command before the ZS command.
- If a disc does not exist at the location specified by the ZS command, playback of the disc in the next location in numerical sequence is executed if it is before the location of no-disc detection. If it is after the location of no-disc detection, a “No Disc Error” (E11) is generated.
- If an RJ command is issued during startup of the disc, the disc is returned to the rack, as with the ZR command.
- During GUI Menu mode (during Setup or Sub-Set-up mode,) normal commands, the NI command, or AI command cannot be accepted. If GUI Menu mode is entered during execution of a command, only normal commands are canceled. Other commands can be accepted during GUI Menu mode.
- Repeat mode is canceled if the SE command is executed.
- If the KO command is issued before location of no-disc detection, an error is generated, and the error code is displayed.
- The setting of Repeat mode is disabled in playback mode (Status is P1X with ?P).
- If an impossible OSD display item is specified (for example, if time display is specified for a DVD for which time data are not available) with the DS command, an error is generated, and the error code is displayed.
- The NI and AI commands are effective only when the disc type has been detected (except for NO DISC and UNKNOWN). disc type can be checked using the KO command.

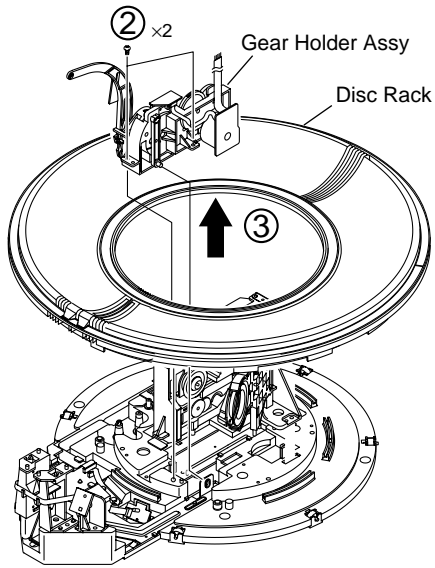
Operation with master-slave communication

- If the disc is being returned to the rack with the ZS command, etc., while a slave player is operating, the master player will assume success of the operation.
- The “End of Receive” Status (R) is generated by the master player. If a communication error is generated between the master and a slave player, only the error data item “E92” is stored, and the error code “E00” will not be returned to the host computer.
- The OP, UL, and CO commands apply to only the master player even during Slave Player Operation mode. That is, opening/closing of the hood of a slave player cannot be controlled with RS-232C commands.
- Any part of a command string after the ZR and RJ commands sent to a slave player is ignored.
- A request command to the slave player(s) takes 0.5 seconds at maximum. The ?T and ?A commands are exceptions, and return status data immediately.
- The ?T and ?A commands during Stop mode, etc., will generate errors if issued to the master player. But this is not the case for the slave player(s), and time data are always transmitted.
- If any connection error is detected between the master and slave players, the player returns a “E92” code once in response to any command. Afterwards, the players will not accept any commands.
- If the host computer is connected to the slave player, the player returns a “E92” code once in response to any command. Afterwards, the players will not accept any commands.
- Allow at least 0.5 second (1 second recommended) between commands to the slave player(s), except for the ?A, ?T, NI, AI, NO, AO, KO, and ID commands.
- No command can be accepted during the first approximately 3 seconds after the power is turned on.



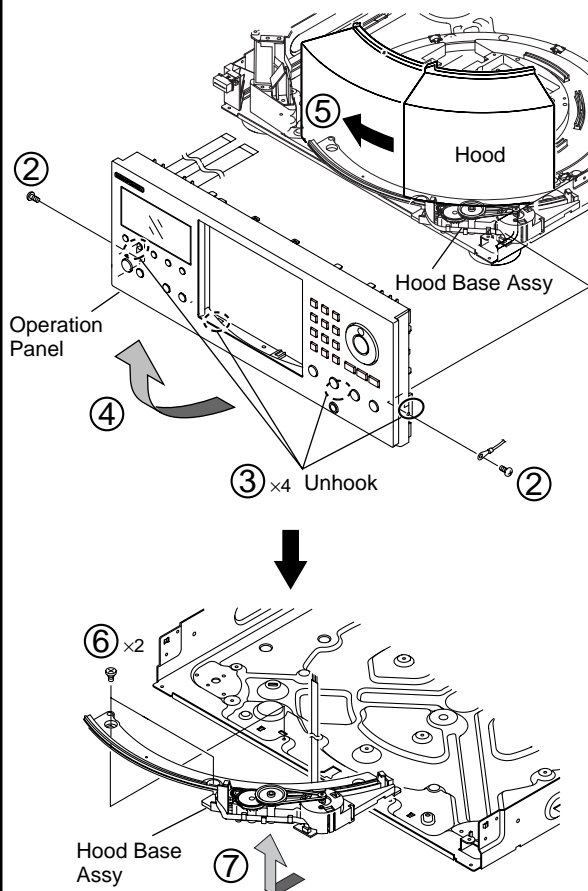
■ Gear Holder Assy and Disc Rack

① Perform the steps ① to ⑩ of the Traverse Mechanism Assy.



■ Hood and Hood Base Assy

① Perform the steps ① to ⑩ of the Traverse Mechanism Assy, and steps ② and ③ of the Gear Holder Assy and Disc Rack.



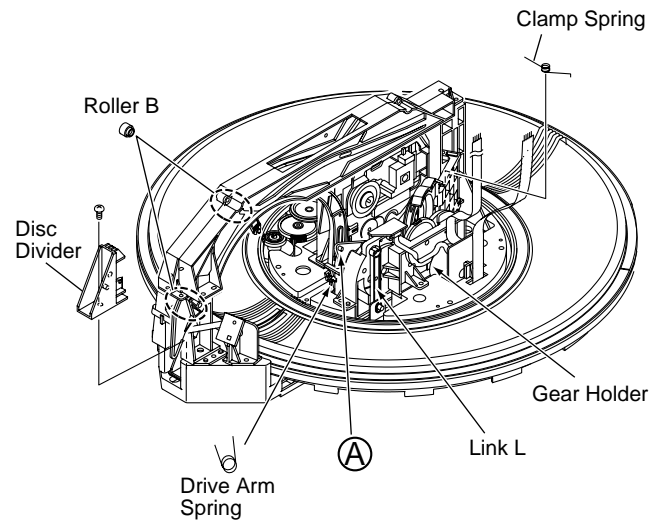
12.1.7 ABOUT SERVICE IN THE MECHANISM FAILURE

- Draw two discs of CD
- Pin of (A) portion in the figure deviates from the groove of cam
- Arm comes off

When a symptom of the above (mechanism failure, etc.) was occurred, perform the check of following items in the Check Table with repair of failure section simultaneously.

Check Table

	Item	Check
1	Does Roller B installs it justly?	
2	Does Disc Divider installs it justly?	
3	Does Clamp Spring installs it justly or hang it?	
4	Does Drive Arm Spring installs it justly or hang it?	
5	Does hook of Link L installs to the Gear Holder justly?	



● Pin Function

No.	Pin Name	I/O	Function
1	EFMOUT	O	Output the state that was binary-stated value EFM
2	C2F	O	C2 flag output
3	ROMXA	O	CD-ROM data output
4	ROMCK	O	Shift clock output for CD-ROM data output
5	LRSY	O	L/R clock output for CD-ROM data output
6	PP3	I/O	General-purpose port input/output / DVD sync. signal input N ch-OD output
7	FBUSYB	O	Busy signal output of DSP process operation N ch-OD output
8	XTALOUT	O	External system clock output
9	FSX	O	CD 1 frame sync. signal output
10	SBCK	I	Subcode reading out clock input
11	SFSY	O	Frame sync. signal output of subcode
12	PW	O	Subcode P, Q, R, S, T, U, V and W output
13	VSS	-	GND pin
14	XIN	I	Connect a crystal resonator (16.9344MHz)
15	XOUT	O	Connect a crystal resonator
16	DVDD1	-	3.3V power supply of the oscillation circuit
17	EMPH	O	Monitor pin of the deemphasis
18	SBSY	O	Sync. signal output of the subcode block
19	DOUT	O	Audio EIAJ data output
20	EFLG	O	Error correction state monitor of the error correction C1 and C2
21	FSEQ	O	Detection monitor of the CD/DVD frame sync. signal
22	FAST	O	Playback speed monitor N ch-OD output
23	V_PB	O	Monitor output of the rough servo/CLV control
24	DRF	O	In focus monitor
25	TEST3	I	Test input 3
26	TES	I	Tracking error signal input
27	TEST2	I	Test input 2
28	JITT	I	Jitter quantity detecting signal input of EFM PLL
29	TILTE	I	Tilt error signal input
30	RF_PH	I	RF peak hold signal input
31	RF_BH	I	RF bottom hold signal input
32	TE	I	Tracking error signal input
33	FE	I	Focus error signal input
34	SLCIST1	-	Current setting pin 1 of the constant current charge pump for SLC
35	SLCIST2	-	Current setting pin 2 of the constant current charge pump for SLC
36	SLCO1	O	Control output 1 for SLC
37	SLCO2	O	Control output 2 for SLC
38	TEST1	I	Test input 1
39	EFMIN	I	EFM/EFM + input
40	AVDD	-	5V power supply of A/D and D/A for servo
41	AVSS	-	GND of A/D and D/A for servo
42	AUXO	O	DA auxiliary output
43	TILTDO	O	Tilt control signal output
44	TBAL	O	Tracking balance control signal output
45	SLDO	O	Sled control signal output
46	SPDO	O	Spindle control signal output
47	FDO	O	Focus control signal output
48	TDO	O	Tracking control signal output
49	VREF	-	Reference level of D/A for servo
50	TEST4	I	Test input 4

No.	Pin Name	I/O	Pin Function
51	HFLIO	I/O	Mirror detection signal input/output
52	LASER	O	Output pin for laser ON/OFF control
53	PP0/DVD_CDB	I/O	General-purpose port input/output / Disc discrimination signal output
54	PP1/CRCERRB	I/O	General-purpose port input/output / Subcode CRC result signal output
55	FG	I	FG counter input
56	PP2/EVENT	I/O	General-purpose port input/output / Event counter input
57	RESB	I	Reset input
58	CSB	I	Chip select input
59	RDB	I	Internal state reading signal input
60	WRB	I	Command / data writing signal input
61	DVDD2	-	5V power supply
62	VSS	-	GND
63	P0	I/O	Command / data input/output
64	P1		
65	P2		
66	P3		
67	P4		
68	P5		
69	P6		
70	P7		
71	VSS	-	GND
72	DVDD1	-	3.3V power supply for internal
73	BUSYB	O	Busy signal output of command process
74	SQOUT	O	Serial output of subcode Q
75	CQCKB	I	Shift clock input for subcode Q data output
76	RWC	I	Update permission input of subcode Q
77	WRQ	O	Read out ready monitor of subcode Q
78	AVSS	-	PLL GND for internal system clock
79	VRPFR	-	VCO oscillation range setting of PLL for system clock
80	VCOC	I	Connect a PLL filter for system clock
81	VPDO	O	
82	AVDD	-	PLL 5V power supply for system clock
83	PDO1	I/O	PLL filter connection pin 1 for EFM playback
84	PDO2	I/O	PLL filter connection pin 2 for EFM playback
85	PDO3	I/O	PLL filter connection pin 3 for EFM playback
86	AVSS	-	PLL GND for EFM playback
87	PCKIST1	-	Current setting 1 of PLL constant current charge pump for EFM playback
88	PCKIST2	-	Current setting 2 of PLL constant current charge pump for EFM playback
89	AVDD	-	PLL 5V power supply for EFM playback
90	DVDFR	-	VCO oscillation range setting of PLL for EFM playback 1
91	CDFR	-	VCO oscillation range setting of PLL for EFM playback 2
92	JV	O	Jitter output of PLL clock for EFM playback
93	PCK	O	Bit clock output for EFM playback
94	ADRAO	I	Address input
95	DVDSYEQ	I	DVD synchronize pulse input
96	DVDSYNC	I	DVD synchronous signal input
97	LEFM2	O	Output the state that cut and out a signal which was binary-stated value EFM with PCK 2
98	DVDD1	-	3.3V power supply for I/O
99	VSS	-	GND
100	LEFM	O	Output the state that cut and out a signal which was binary-stated value EFM with PCK 1

■ 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	
9	PORTH1	33MVH	O	
10	PORTH2	36MVH	O	
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	
15	PORTH6	XCSSPD	O	
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	XCSDFO	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	PD0236AM
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	
33	VCC	V+3D	-	V+3D
34	PORTF3	XCSADSP0/ SYNC1	I	CD deck synchronous input
35	PORTF4	XCSADSP1/ XAVS_RT/ DISC	I	Disc detection input
36	PORTF5	XCSADSP2/ DPOS/ODD	I	Disc position detection input

No.	Mark	Pin Name	I/O	Function
37	PORTF6	XVQERST/ XANR	O	VQE4 reset 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/O	LA6531
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	Timing input of CD TEXT DAT
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

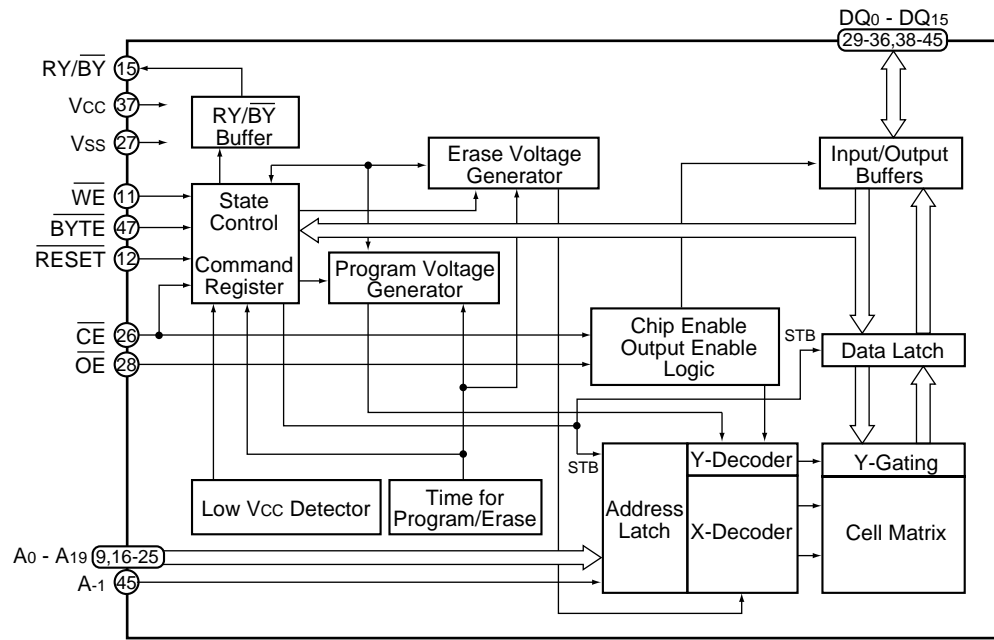
No.	Mark	Pin Name	I/O	Function
83	GND	GND	–	GND
84	AN0	LODPOS	I	Loading position input
85	AN1	SLDPOS	I	Slider position input
86	AN2	DOORSW	I	Mecha. connector
87	AN3	NAP_SW	I	NTSC/AUTO/PAL SW input
88	AN4		I	
89	AN5		I	
90	AN6		I	
91	AN7	525IP_SW	I	
92	Avref	V+3D	–	V+3D
93	AVCC	V+3D	–	V+3D
94	AVSS	GND	–	GND
95	PB5/TIOCB4	DIBLK/HFL/ DCNT2	I	Disc count input
96	PB6/TIOCXA4/TCLKC	C2F	I	C2 error input
97	PB7/TIOXB4/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.

■ VYW1701 (DVDM ASSY : IC603)

• 16M bit Flash Memory IC

• Block Diagram



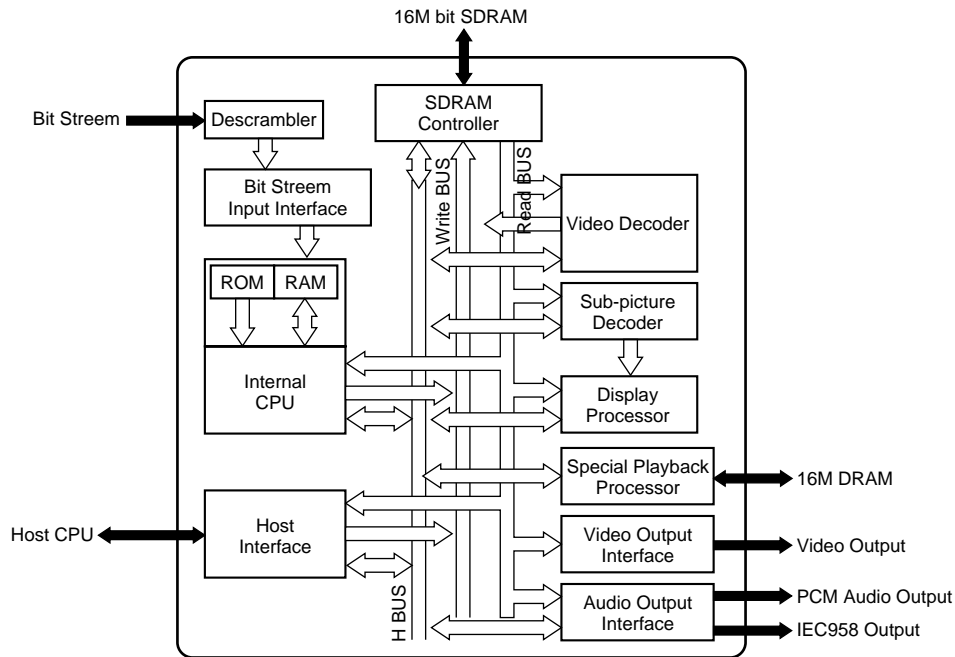
• Pin Function

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	$\overline{\text{CE}}$	I	Chip enable		
3	A13			27	VSS	-	Ground		
4	A12			28	$\overline{\text{OE}}$	I	Output enable		
5	A11			I/O	Data inputs/outputs	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	$\overline{\text{WE}}$	I	Write enable			35	DQ3		
12	$\overline{\text{RESET}}$	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	$\overline{\text{RY/BY}}$	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	$\overline{\text{BYTE}}$	I	Selects 8-bit or 16-bit mode		
24	A1			48	A16	I	Address input		

■ M65773AFP (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		

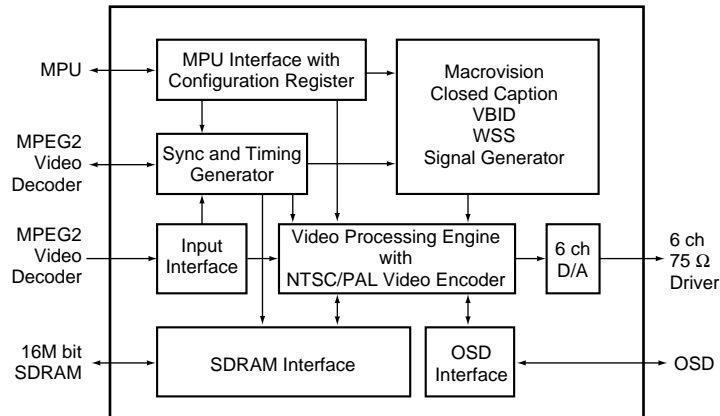
No.	Pin Name	I/O	Pin Function	No.	Pin Name	I/O	Pin Function		
41	HA9	I	Address input port	83	VDD	I	Power supply		
42	GND	I	Ground	84	VSYNC	O	Vertical sync. signal output		
43	CDMCK	I	Connect to ground	85	HSYNC	O	Horizontal sync. signal output		
44	CDLRCK	I	L/R clock input from CDDSP	86	PICSTRT				
45	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	O	Digital pixel data		
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	O	Digital pixel data		
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			I/O	Data transfer line with DRAM	111	NMD0		
70	AO1					112	NMD15		
71	AO0					113	NMD1		
72	GND	I	Ground	114	NMD14	I	Ground		
73	DOUT1	O	Digital audio interface output	115	GND				
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	I	Power supply		
78	GND	I	Ground	120	VDD				
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			O	Address line with SDRAM		
128	NMD7						
129	NMD8						
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			I/O	Data transfer line with SDRAM		
148	VDD	190	MD8				
149	BD7	191	MD6				
150	BD6	I	Bit stream input port	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

■ 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	Video data input Input 8-bit parallel signal of CCIR-601 or CCIR-656 systems.
26	VI1		
27	VI2		
28	VI3		
29	VI4		
30	VI5		
31	VI6		
32	VI7		
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) Data input and output for external memory with pull-up
40	MD01		
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)

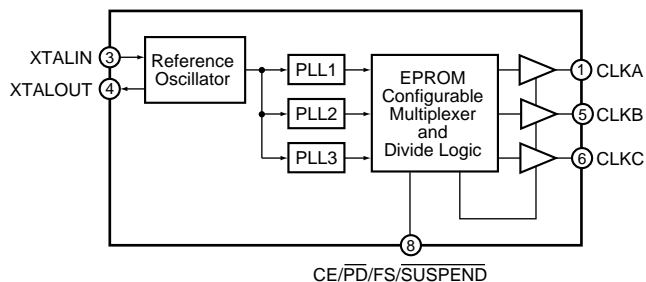
No.	Pin Name	I/O	Pin Function
76	VDD_06	–	Power supply Connect to 3.3V.
77	GND_08	–	Ground Connect to reference voltage (0V).
78	MA01	O	Address output for external memory
79	MA02		
80	MA03		
81	OSDHSY	O	Horizontal sync. signal output for external OSD Negative polarity
82	OSDVSY	O	Vertical sync. signal 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

■ CY2081SL-655 (DVDM ASSY : IC21)

• Clock Generate IC

• Block Diagram



• Pin Function

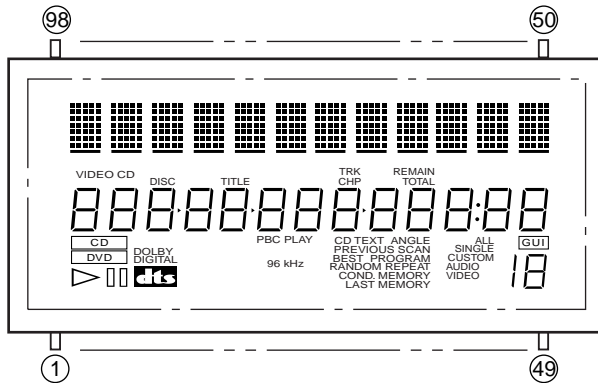
No.	Pin Name	Pin Function
1	CLKA	Configurable clock output
2	GND	Ground
3	XTALIN	Reference crystal input of external reference clock input
4	XTALOUT	Reference crystal feedback
5	CLKB	Configurable clock output
6	CLKC	Configurable clock output
7	VDD	Voltage supply
8	OE/PD/FS/SUSPEND	Output control pin;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

12.2.2 DISPLAY

■ VAW1052 (FLKY ASSY : V701)

- FL Display

● Pin Assignment

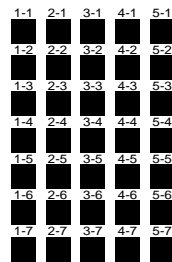


● Pin Connection

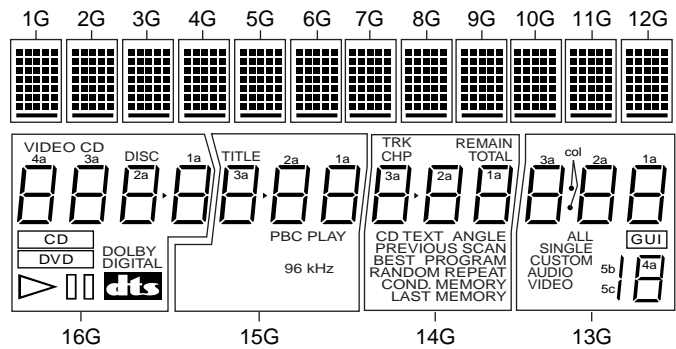
Pin No.	98	97	96	95	94	93	92	91	90	89	88	87	86
Connection	F1	F1	F1	F1	NP	NP	13G	12G	11G	10G	9G	8G	7G
Pin No.	85	84	83	82	81	80	79	78	77	76	75	74	73
Connection	6G	5G	4G	3G	2G	1G	NX	NX	NX	NX	NX	NX	NX
Pin No.	72	71	70	69	68	67	66	65	64	63	62	61	60
Connection	NX	NX	NX	P37	P36	P35	P34	P33	P32	P31	P30	P29	P28
Pin No.	59	58	57	56	55	54	53	52	51	50	49	48	47
Connection	P27	P26	P25	P24	NP	NP	F2	F2	F2	F2	F2	F2	F2
Pin No.	46	45	44	43	42	41	40	39	38	37	36	35	34
Connection	F2	NP	NP	P23	P22	P21	P20	P19	P18	P17	P16	P15	P14
Pin No.	33	32	31	30	29	28	27	26	25	24	23	22	21
Connection	P13	P12	P11	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX
Pin No.	20	19	18	17	16	15	14	13	12	11	10	9	8
Connection	P10	P9	P8	P7	P6	P5	P4	P3	P2	P1	16G	15G	14G
Pin No.	7	6	5	4	3	2	1						
Connection	IC	NP	NP	F1	F1	F1	F1						

Note (1) F1, F2 : Filament (4) DL : Datum Line
 (2) NP : No pin (5) 1G to 16G : Grid
 (3) NX : No extend pin (6) IC : Internal connection

● Grid Assignment



(1G to 12G)



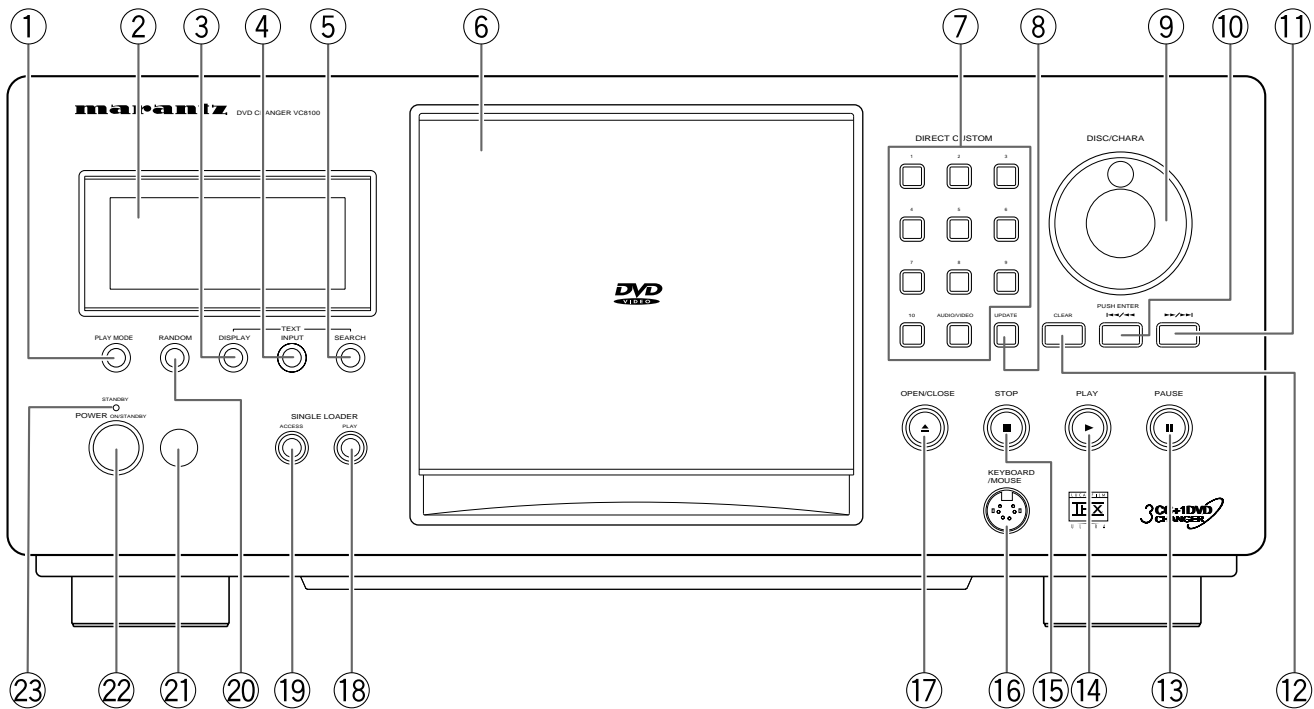
● Anode Connection

	1G to 12G	13G	14G	15G	16G
P1	1-1	VIDEO	LAST MEMORY	DOWN MIX	
P2	2-1	AUDIO	COND. MEMORY		
P3	3-1	CUSTOM	REPEAT		
P4	4-1	SINGLE	RANDOM	V-PART	
P5	5-1	5d	PROGRAM		
P6	1-2	3d	BEST		4d
P7	2-2	3e	SCAN		4e
P8	3-2	3c	PREVIOUS		4c
P9	4-2	3g	ANGLE		4g
P10	5-2	3f	TEXT		4f
P11	1-3	3b	CD	96kHz	4b
P12	2-3	3a	REMAIN	192kHz	4a
P13	3-3	col	TOTAL	PBC PLAY	DOLBY DIGITAL
P14	4-3	2d	3d	3d	3d
P15	5-3	2e	3e	3e	3e
P16	1-4	2c	3c	3c	3c
P17	2-4	2g	3g	3g	3g
P18	3-4	2f	3f	3f	3f

	1G to 12G	13G	14G	15G	16G
P19	4-4	2b	3b	3b	3b
P20	5-4	2a	3a	3a	3a
P21	1-5	5b, 5c			VIDEO CD
P22	2-5	1d	2d	2d	2d
P23	3-5	1e	2e	2e	2e
P24	4-5	1c	2c	2c	2c
P25	5-5	1g	2g	2g	2g
P26	1-6	1f	2f	2f	2f
P27	2-6	1b	2b	2b	2b
P28	3-6	1a	2a	2a	2a
P29	4-6		CHP	TITLE	
P30	5-6	4d	1d	1d	1d
P31	1-7	4e	1e	1e	1e
P32	2-7	4c	1c	1c	1c
P33	3-7	4g	1g	1g	1g
P34	4-7	4f	1f	1f	1f
P35	5-7	4b	1b	1b	1b
P36	—	4a	1a	1a	1a
P37	—	ALL	TRK	GRP	DISC

13. PANEL FACILITIES

■ Front Panel



① PLAY MODE button

Press repeatedly to select one of the player's play modes. You can select either single play, ALL play, or custom play.

② Display window

Displays system information.

③ TEXT DISPLAY button

Press repeatedly to display the disc title or artist name in the display window. When text information is included on the disc, this information will also be displayed.

④ TEXT INPUT button

Press to start text input.

⑤ TEXT SEARCH button

Press to search for a disc loaded in the rack by format, disc title, or artist .

⑥ Hood

The hood can be opened and closed by pressing **OPEN/CLOSE**.

⑦ DIRECT CUSTOM buttons

Number buttons

Press the number button of the custom file you want to play. Playback of the discs in the selected custom file begins automatically.

AUDIO/VIDEO button

Press repeatedly to select the audio or video custom file bank.

⑧ UPDATE button

Use to update information on the discs loaded in the rack.

⑨ Selection dial

Rotate to select a disc number. When inputting text, rotate to select a character.

Enter button

Press to select the disc or enter text that has been selected using the selection dial.

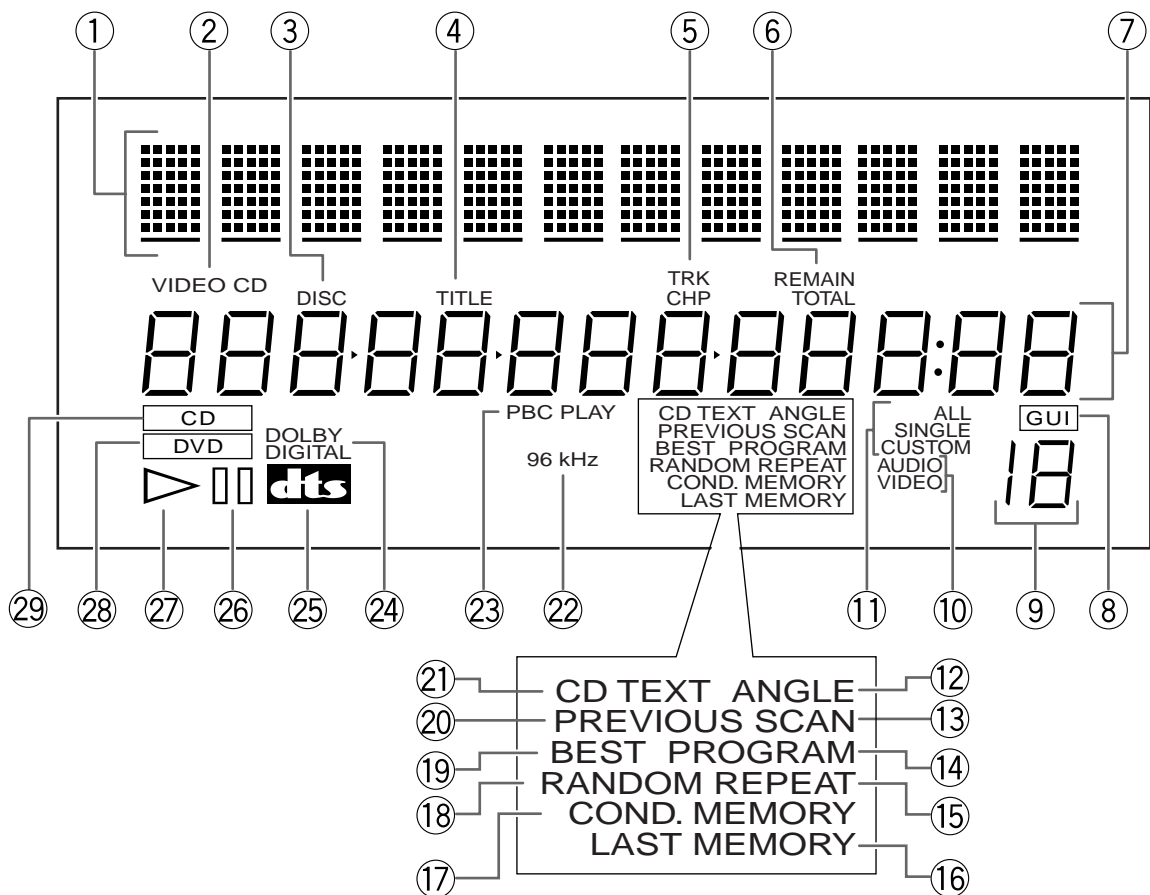
⑩ ⏮⏮ (reverse) button

Press to go back to previous chapters/tracks. Press and hold to perform reverse playback scanning. When using the front panel to edit input text, use to move the position of the cursor.

- ⑪ **▶▶▶▶ (forward) button**
Press to advance to chapters/tracks. Press and hold to perform fast-forward scanning. When using the front panel to edit input text, use to move the position of the cursor.
- ⑫ **CLEAR button**
Use to cancel repeat and random playback, edit programs, and clear text entries.
- ⑬ **⏸ (pause) button**
Press during playback to pause. Press again to continue playback.
- ⑭ **▶ (play) button**
Press to start disc playback.
- ⑮ **■ (stop) button**
Press to stop playback.
- ⑯ **KEYBOARD/MOUSE connection jack**
A PS/2 compatible keyboard or mouse can be connected to this jack for easy entry and editing of text information.

- ⑰ **OPEN/CLOSE button**
Press to open and close the hood.
- ⑱ **SINGLE LOADER PLAY button**
Press to play the disc loaded in the single loader slot. This button can be used at any time, even if another disc is being played.
- ⑲ **SINGLE LOADER ACCESS button**
Press to have the hood open and the single loader slot brought to the front position.
- ⑳ **RANDOM button**
Press to start random playback.
- ㉑ **Remote sensor**
Point the remote control toward the remote sensor to operate the player.
- ㉒ **POWER ON/STANDBY button**
Press to switch the player on or to put in standby.
- ㉓ **STANDBY indicator**
Indicates that the player is in standby, using a minimum amount of power to maintain system settings.

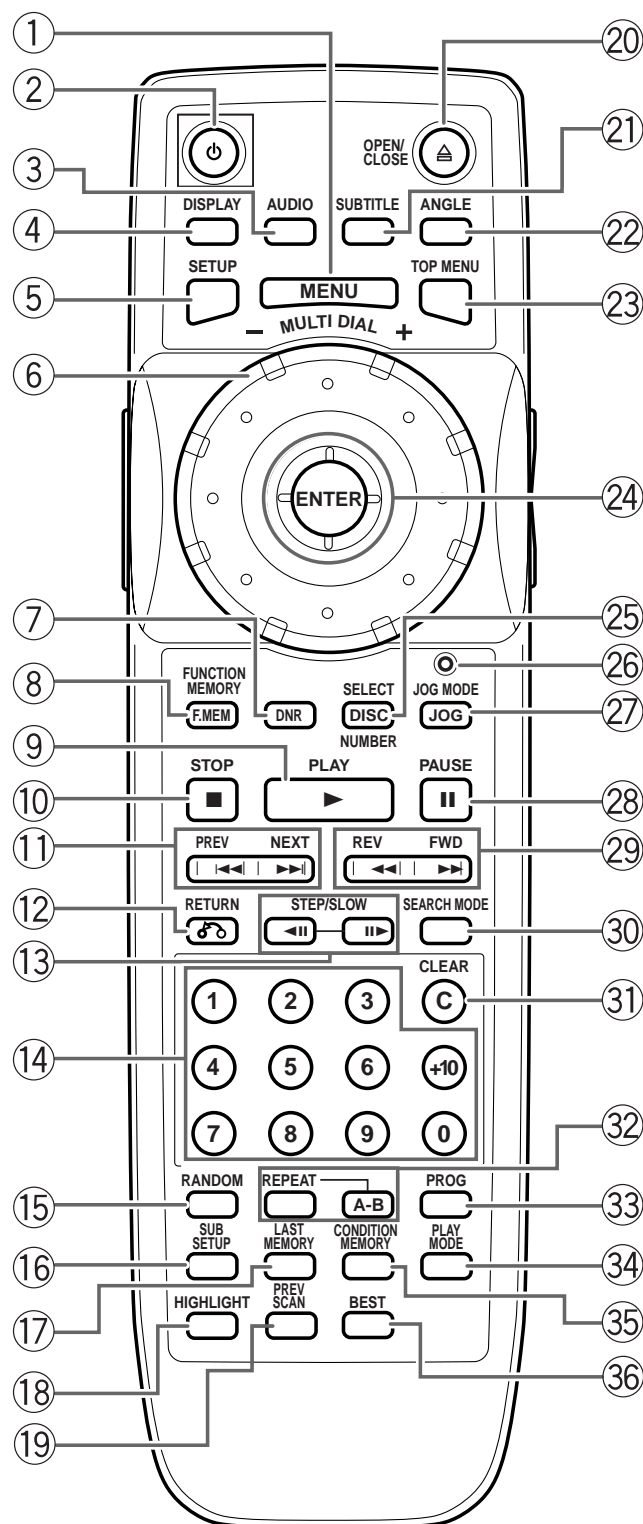
■ Display Window



- ① **Character display**
Displays text information already recorded on the disc such as CD TEXT or DVD text, and also text manually input into the player.
- ② **VIDEO CD indicator**
Indicates a Video CD is currently selected in the player.
- ③ **DISC indicator**
Indicates the disc number.
- ④ **TITLE indicator**
Indicates a title number is being displayed.
- ⑤ **TRK and CHP indicators**
Indicates a chapter or track number is being displayed.
- ⑥ **REMAIN and TOTAL indicators**
REMAIN indicates the remaining playback time of a title or chapter/track is being displayed. TOTAL indicates the disc in the player is stopped and **DISPLAY** has been pressed.
- ⑦ **Counter display**
Displays title and chapter/track numbers, playback time, etc.
- ⑧ **GUI indicator**
Indicates an on-screen menu operation is being performed.
- ⑨ **Custom file indicator**
Indicates the number of the currently selected custom audio or video file.
- ⑩ **AUDIO and VIDEO indicators**
During custom play, indicate whether the current custom file is an audio (CD) or video (DVD or Video CD) custom file.
- ⑪ **ALL, SINGLE, and CUSTOM indicators**
Indicates the current play mode.
- ⑫ **ANGLE indicator**
Indicates Multi-Angle playback is in progress.
- ⑬ **SCAN indicator**
Indicates a Hi-Lite scan is being performed.
- ⑭ **PROGRAM indicator**
Indicates program playback is being performed.
- ⑮ **REPEAT indicator**
Indicates repeat playback is being performed.
- ⑯ **LAST MEMORY indicator**
Indicates the Last Memory location is registered in memory for the DVD currently playing.
- ⑰ **COND. MEMORY indicator**
Indicates Condition Memory settings are memorized for the DVD currently playing.
- ⑱ **RANDOM indicator**
Indicates random playback is being performed.
- ⑲ **BEST indicator**
Indicates Best play is being performed.
- ⑳ **PREVIOUS SCAN indicator**
Indicates Previous scan is being performed.
- ㉑ **CD TEXT indicator**
Indicates the CD is recorded with CD TEXT information. When a DVD recorded with text is encountered, only the TEXT indicator lights.
- ㉒ **96 kHz indicator**
Indicates the DVD currently playing contains an audio signal with a sampling frequency of 96 kHz.
- ㉓ **PBC PLAY indicator**
Indicates PBC (playback control) playback of a Video CD.
- ㉔ **DOLBY DIGITAL indicator**
Indicates Dolby Digital audio playback.
- ㉕ **DTS indicator**
Indicates DTS audio playback.
- ㉖ **⏸ (pause) indicator**
Indicates playback is paused.
- ㉗ **▶ (play) indicator**
Indicates a disc is playing.
- ㉘ **DVD indicator**
Indicates a DVD is currently selected in the player.
- ㉙ **CD indicator**
Indicates a CD is currently selected in the player.

Remote Control Unit

All of the command buttons on the remote control glow in the dark for easy control of the player even in the dark. Hold the unit under a light for optimal results.

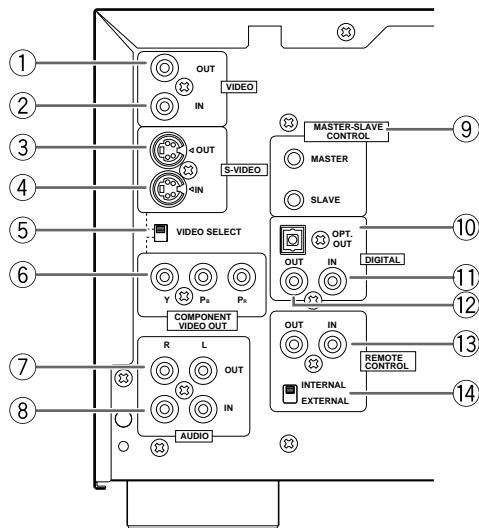


(Buttons indicated with * are used for menu operation.)

- ① **MENU button***
Use to display or close the DVD menu screen .
- ② **⏻ (POWER ON/STANDBY) 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 to open and close the Setup screen.
- ⑥ **MULTI DIAL**
In Select Disc Number Mode, use to select one of the discs in the rack. In Jog Mode, use to control the rate and direction of playback.
- ⑦ **DNR button**
Press **DNR** to select a preprogrammed picture quality setting or to adjust various attributes of the video picture.
- ⑧ **FUNCTION MEMORY button***
Press to incorporate a menu item into a shortcut list that is stored in memory and can be called up at any time.
- ⑨ **PLAY ► button**
Press to start disc playback.
- ⑩ **STOP ■ button**
Press to stop playback.
- ⑪ **PREVIOUS ◀◀/NEXT ▶▶ buttons***
During playback, press **PREV(ious) ◀◀** to go back to a previous chapter/track and **NEXT ▶▶** to advance to the next chapter/track. Also use to display different sets of information in on-screen displays.
- ⑫ **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.
- ⑬ **STEP/SLOW ◀◀/▶▶ buttons**
Press **STEP/SLOW ▶▶** during playback to view slow playback. In pause mode, press **STEP/SLOW ▶▶** to advance DVDs and Video CDs frame by frame and **STEP/SLOW ◀◀** to back up a DVD a few frames at a time.

- ⑭ **Number buttons (1-9, 0, +10)***
Use to select a disc, perform direct title and chapter/track searches, and to input numerical values.
- ⑮ **RANDOM button**
Press to start random playback.
- ⑯ **SUB SETUP button***
Press to open and close the player's Sub Setup screen.
- ⑰ **LAST MEMORY button**
Press **LAST MEMORY** during playback to set a Last Memory point .
- ⑱ **HIGH LIGHT button**
Press to perform a highlight scan of all of the discs included in the current play mode.
- ⑲ **PREV(ious) SCAN button**
Press to a play highlight from up to 20 previously played discs in order from the most recently played disc.
- ⑳ **OPEN/CLOSE ▲ button**
Press to open or close the hood.
- ㉑ **SUBTITLE button**
Press repeatedly to select one of the subtitle languages programmed on a DVD or to turn the subtitles off.
- ㉒ **ANGLE button**
Press repeatedly to display different camera angles as recorded on some DVDs.
- ㉓ **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.
- ㉔ **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.
- ㉕ **SELECT DISC NUMBER button**
Press to turn on the Select Disc Number Mode. The dial mode indicator lights green and turning **MULTI DIAL** selects the number of a disc loaded in the rack.
- ㉖ **Dial mode indicator**
Lights red when the player is in the Jog Mode and green when the player is in the Select Disc Number mode.
- ㉗ **JOG MODE button**
Press to put the player in the Jog Mode. The dial mode indicator lights red, and turning **MULTI DIAL** controls the playback of DVDs and Video CDs in both forward and reverse directions.
- ㉘ **PAUSE II button**
Press to pause playback of a disc. Press again to continue playback.
- ㉙ **REV ◀◀/FWD ▶▶ (fast reverse/ fast forward) buttons**
During playback, press **FWD ▶▶** to perform fast forward scanning and **REV ◀◀** to perform fast reverse scanning.
- ㉚ **SEARCH MODE button***
Press to perform a title, chapter/track or elapsed time search.
- ㉛ **CLEAR button**
Press to cancel repeat and random playback, edit programs, and clear text entries.
- ㉜ **REPEAT button**
Press to repeat playback.
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.
- ㉝ **PROG(ram) button**
You can program discs, titles, chapters, or tracks to play back in a desired order.
- ㉞ **PLAY MODE button**
Press repeatedly to select one of the player's playback modes. You can select either single play, ALL play, or custom play mode.
- ㉟ **CONDITION MEMORY button**
Press **CONDITION MEMORY** during DVD playback to memorize playback settings.
- ㊱ **BEST button**
Press during playback to add tracks or chapters to the Best play program. Press when the player is stopped to begin Best play.

Rear Panel



① VIDEO OUT jack

Connect the VIDEO OUT jack to the video input on a TV or monitor or to an AV component with video input capability. When using this jack, be sure to set VIDEO SELECT to the top position.

② VIDEO IN jack

Connect the VIDEO IN jack to the video output of another VC8100 player or another component with video output capability.

③ S-VIDEO OUT jack

If your TV or monitor has an S-video input, clear picture reproduction is possible by connecting the S-VIDEO OUT jack to your TV or monitor using a commercially available S-video cable. When using this jack, be sure to set VIDEO SELECT to the top position.

④ S-VIDEO IN jack

Connect the S-VIDEO IN jack to another VC8100 player or component with S-video output capability.

⑤ VIDEO SELECT switch

Use to set which output is used to output the video signals. Set to the top position for composite video and S-video output and to the bottom position for component video output.

⑥ COMPONENT VIDEO OUT jacks

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

⑦ AUDIO OUT jacks

Connect to the stereo audio inputs of a TV or stereo AV component. If you are connecting to an AV component that has both digital and analog input jacks for DVD player connection, it may be beneficial to make both connections.

⑧ AUDIO IN jacks

Connect to the analog audio outputs of another VC8100 or component with audio output capability.

⑨ MASTER-SLAVE CONTROL jacks

Connect two VC8100 players for singular control of both players and a total of 601 discs. Connect the MASTER jack on the player to be used as the "Master" to the SLAVE jack of a second "Slave" player using the supplied Master-Slave control cord. Do not attempt to make connections to other components using this jack.

⑩ DIGITAL OPT. OUT (optical) jack

Connect the DIGITAL OPT. OUT (optical) to the digital optical input of an AV component with a built-in decoder, etc. to output the digital audio signal recorded on discs.

⑪ DIGITAL IN (coaxial) jack

Connect the DIGITAL IN (coaxial) jack of another VC8100 player or another component with digital output (coaxial) capability.

⑫ DIGITAL OUT (coaxial) jack

Connect the DIGITAL OUT (coaxial) to the digital coaxial input of an AV component to output the digital audio signal recorded on discs.

⑬ REMOTE CONTROL IN/OUT jacks

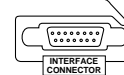
By connecting this DVD player to another Marantz audio component using a D-BUS remote control cable, you can operate the components remotely as a single system. When connecting to a component with a remote sensor, connect the REMOTE CONTROL IN jack of the component with the remote sensor.

When connecting to a component which is not equipped with a remote sensor, connect the component to the REMOTE CONTROL OUT jack of this unit.

For the D-BUS cable connection, use a commercially available RCA-type pin lead.

⑭ INTERNAL/EXTERNAL (REMOTE) jack

When using this unit independently, set this switch to INTERNAL. When using this unit in a system incorporating a Marantz AV surround receiver, tuner or timer equipped with a remote sensor, set the switch to EXTERNAL (page 19).



INTERFACE CONNECTOR jack

This jack is intended for use by a system commander in the integration of some systems. Normally, this jack is not used.