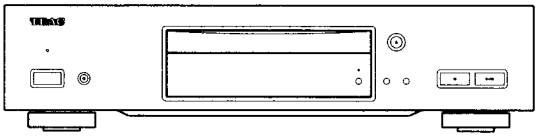
TEAC



SERVICE MANUAL

DV-1000

DVD VIDEO COMPACT disc DIGITAL VIDEO

DVD PLAYER

CONTENTS

目 次

NOTES

- Parts marked with * require longer delivery time.
- The parts with no reference number or no parts number in the exploded views are not supplied.
- As regards the resistors and capacitors, refer to the circuit diagrams contained in this manual.
- ⚠ Parts marked with this sign are safety critical components. They must be replaced with identical components - refer to the appropriate parts list and ensure exact replacement.
- Parts of [ ] mark can be used only with the version designated.
  [J]:JAPAN [US]:U.S.A. [C]:CANADA [E]:EUROPE
  [A]:AUSTRALIA

注 意

- *印の部品は納期が若干かかります。
  あらかじめご了承ください。
- 分解図に部番のない部品および品番のない部品は供給できません。
- 標準の抵抗、コンデンサーは省略してあります。
  回路図を参照してください。
- ⚠印は安全重要部品です。
  交換する時は必ず指定の部品を使用してください。
- 仕向先
  [J]:JAPAN [US]:U.S.A. [C]:CANADA [E]:EUROPE
  [A]:AUSTRALIA

Effective : August, 1999

D00513400A

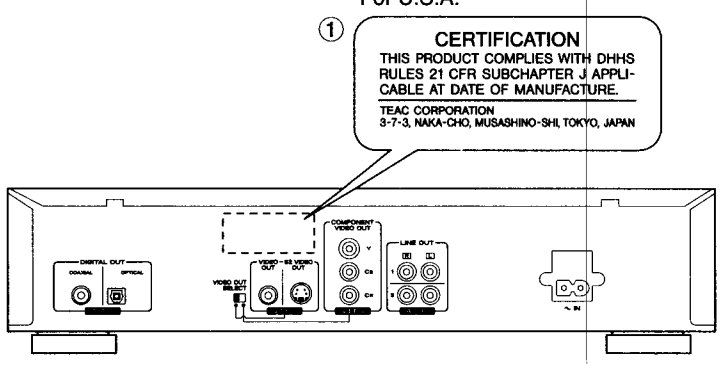
1 SAFETY INFORMATION

This product has been designed and manufactured according to FDA regulations "title 21, CFR, chapter 1, subchapter J, based on the Radiation Control for Health and Safety Act of 1968", and is classified as a class 1 laser product. There is no hazardous invisible laser radiation during operation because invisible laser radiation emitted inside of this product is completely confined in the protective housings. The label required in this regulation is shown ①.

● CAUTION

USE OF CONTROLS OR ADJUSTMENT OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

For U.S.A.



LASER DIODE CHARACTERISTICS		
For DVD	Wavelength	: 650 nm
	Laser output	: 7 mW
For CD	Wavelength	: 780 –785 nm
	Laser output	: 5 mW

2 SPECIFICATIONS
仕 様

General
System .....DVD system and Compact Disc digital audio system
Power requirements
U.S. & Canadian model .....AC 120V, 60Hz
European model .....AC 230V, 50Hz
Austrarian model .....AC 240V, 50Hz
Power consumption
U.S. & Canadian model .....15 W
European & Austrarian model .....17 W
Power consumption in standby mode
U.S. & Canadian model .....1.5 W
European & Austrarian model .....2.0 W
Weight .....2.9 kg
Dimensions .....435 (W) x 287 (D) x 104 (H) mm
(Not including protruding cables, etc.)
Operating temperature .....+5°C to +35°C
Operating humidity .....5% to 85% (no condensation)

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

Video Output
Output level .....1 Vp-p (75 W)
Jacks .....RCA

Audio Output <2 pairs>
Output level .....200 mVrms (1 kHz, –20 dB)
Number of channels 2
Jacks .....RCA

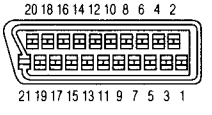
Digital audio characteristics
Frequency response .....4 Hz to 44 kHz (DVD fs: 96 kHz)
S/N ratio .....115 dB
Dynamic range .....102 dB
Total harmonic distortion .....0.002 %
Wow and flutter
.....Limit of measurement (±0.001% W. PEAK) or lower

Other Terminals
Optical digital output .....Optical digital jack
Coaxial digital output .....RCA jack
COMPONENT video output (U.S. & Canadian model) .....RCA jacks
AV connector output (European & Austrarian model)
.....21-pin connector

This connector provides the video and audio signals for connection to a colour video TV monitor (or TV set) which has a "AV CONNECTOR" terminal.

21-pin connector assignment

PIN no. 1	Audio 2/R out	17	GND
3	Audio 1/L out	19	Video out
4	GND	21	GND
8	Status		



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

● Improvements may result in specification or feature changes without notice.

一般
形式..... DVD、ビデオCDおよびコンパクトディスクデジタルオーディオシステム
電源..... AC100V、50/60Hz
消費電力..... 13W
スタンバイ時消費電力..... 1.5W
本体質量..... 2.9kg
外形寸法..... 435(幅)×287×(奥行)×104(高さ)mm
許容動作温度..... +5℃～+35℃
許容動作湿度..... 5%～85%(結露のないこと)

S2映像出力
Y出力レベル..... 1Vp-p(75Ω負荷時、同期負)
C出力レベル..... 286mVp-p(75Ω)
出力端子..... S端子

映像出力
出力レベル..... 1Vp-p(75Ω負荷時、同期負)
出力端子..... ピンジャック

音声出力<2系統>
出力レベル..... 200mVrms(1kHz、−20dB)
チャンネル数..... 2チャンネル
出力端子..... ピンジャック

デジタル音声特性(DVD fs=96 kHz、24bit 時)
周波数特性..... 4Hz～44kHz(DVD)
SN比..... 115dB(EIAJ)
ダイナミックレンジ..... 103dB(EIAJ)
ワウ・フラッター.... 測定限界(±0.001% W.PEAK)以下(EIAJ)

その他の端子
光デジタル出力..... 光コネクター
同軸デジタル出力..... ピンジャック

コンポーネント映像出力<1系統>(Y, C_B, C_R)
出力レベル..... Y:1.0 Vp-p(75Ω)同期負
..... C_B, C_R: 0.7 Vp-p(75Ω)
出力端子..... ピンジャック

付属品
リモコンユニット..... 1
単3形乾電池(R6P)..... 2
オーディオコード..... 1
ビデオコード..... 1
電源コード..... 1
取扱説明書、保証書..... 各1

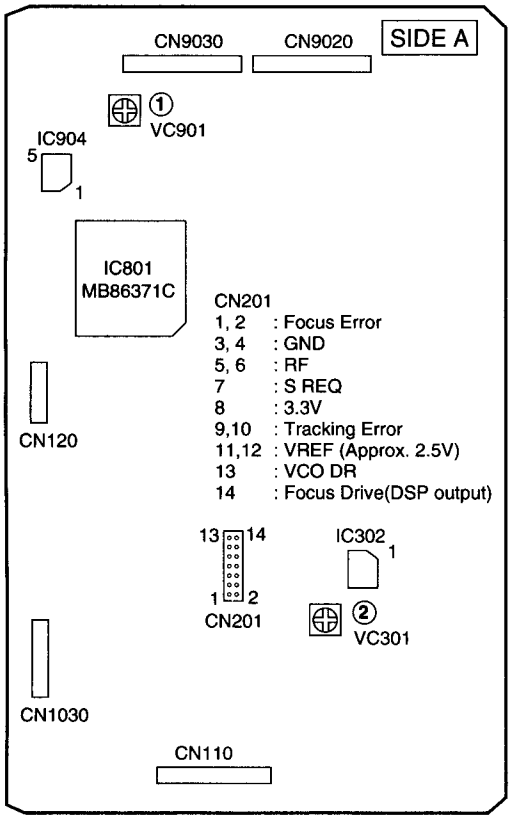
● 仕様および外観は改善のため予告なく変更することがあります。

3 ADJUSTMENTS
調　整

3-1 ADJUSTMENT ITEMS AND LOCATION　調整項目と調整位置

■ Adjustment Points

DVDM ASSY

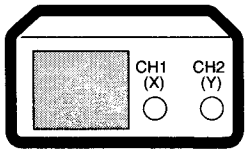
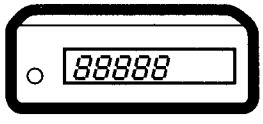


■ Adjustment Items

① 16MHz Master Clock Adjustment
② VCO Offset Adjustment

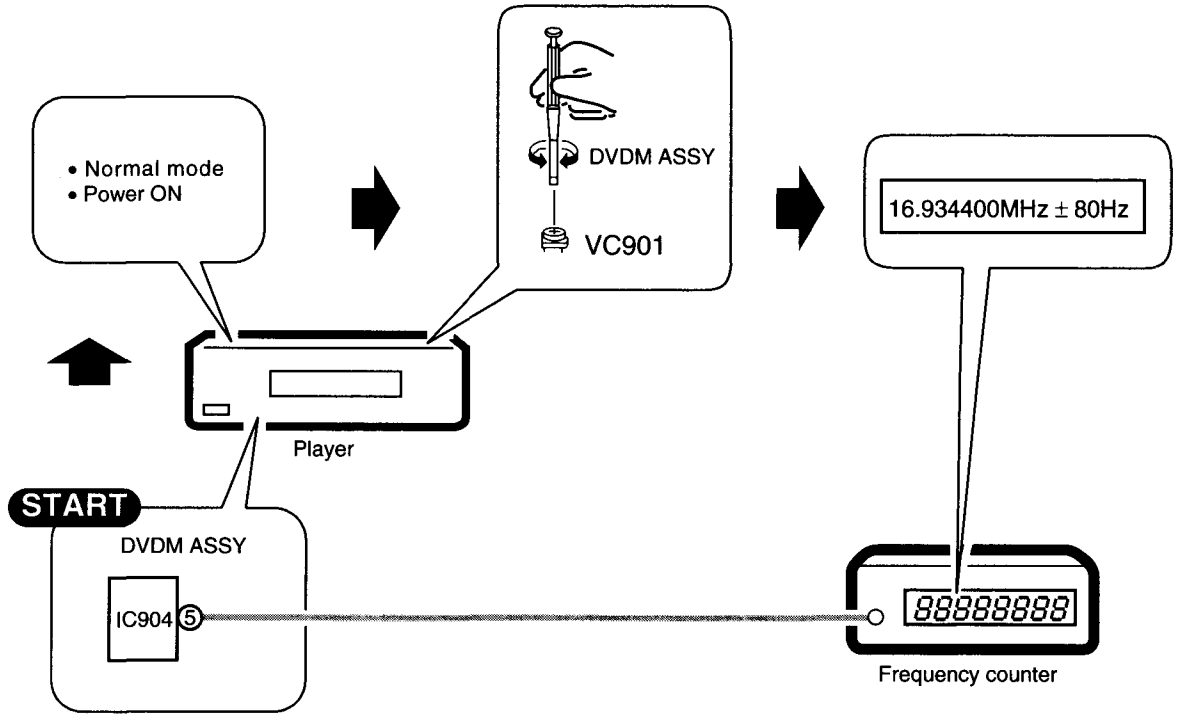
Note:
When you replace a DVDM ASSY, you don't have to adjust it (adjustment is already done).
DVDM ASSYを交換したときは、調整は不要です。（調整済み）

3-2 JIGS AND MEASURING INSTRUMENTS　調整に必要な治工具類

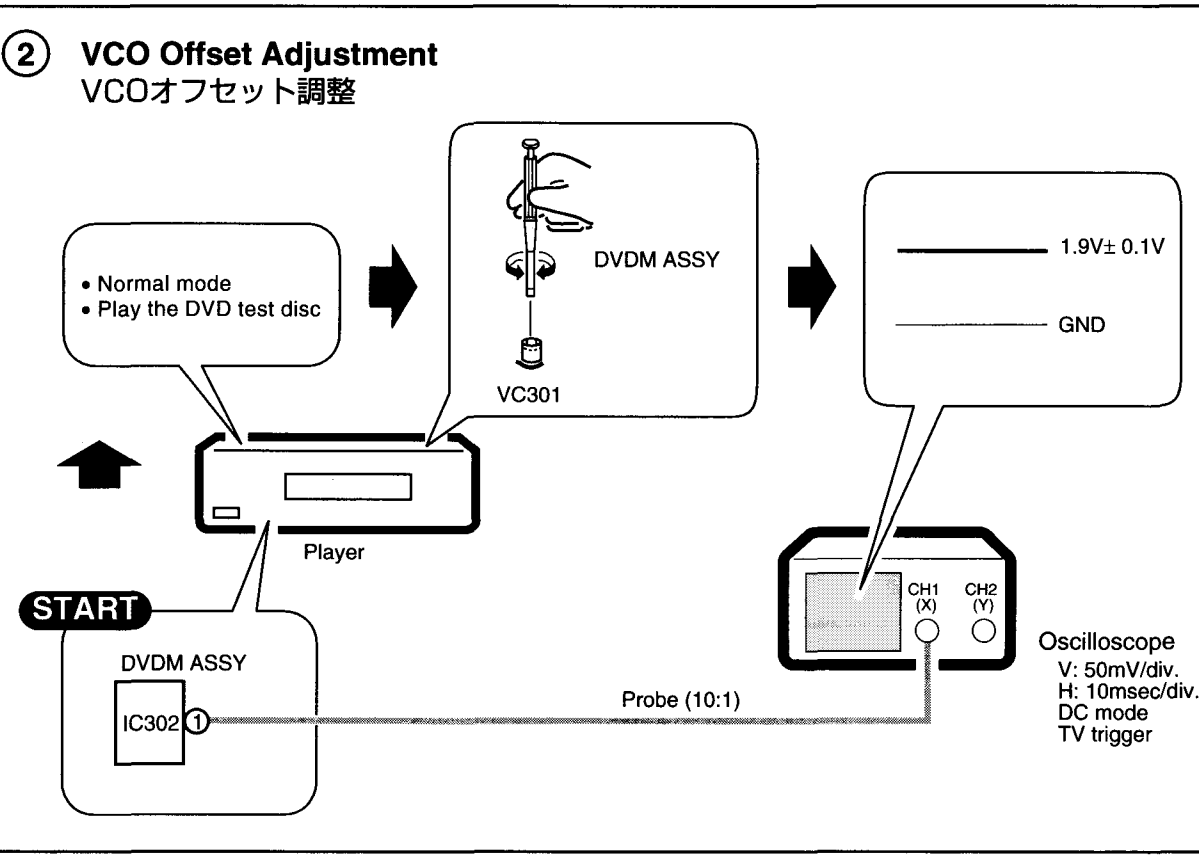
		
Dual-trace oscilloscope (with delay) Frequency band ≥ 40MHz	Frequency counter Display digit ≥ 8-digit	⊖ Screwdriver (small)

3-3 ELECTRICAL ADJUSTMENT　電気系の調整

① 16MHz Master Clock Adjustment
16MHzマスタークロック調整



② VCO Offset Adjustment
VCOオフセット調整

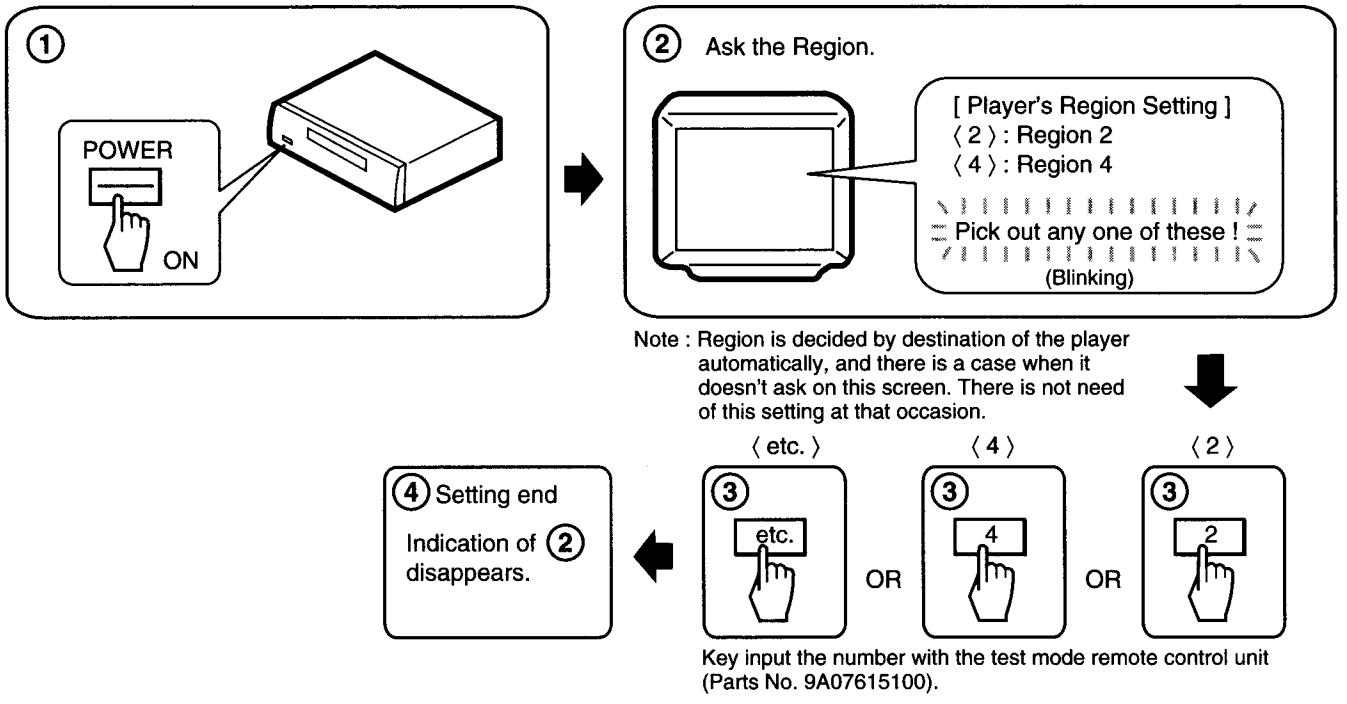


3-4 REGION SETTING

This procedure requires when DVDM PCB Assy is replaced newly, in the unit for the following destination:

Destination	Selective Resion	Original Resion
EUR	2, 4, 5	2
AUS	2, 4, 5	4
EX	1, 2, 3, 4, 6	3

Region number decided once can be changed never again.



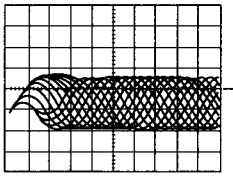
Key input the number with the test mode remote control unit (Parts No. 9A07615100).

• WAVEFORMS OF DVDM ASSY　DVDM ASSYの波形

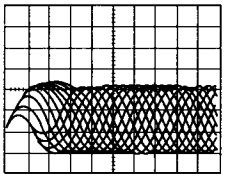
Note : The encircled numbers denote measuring point in the schematic diagram.
注意：○で囲まれた数字は回路図の各測定ポイントの番号を示します。

Measurement condition : No. 1 to 4 and 6 to 11 : Disc GGV1025, Title 1-chp 1
No. 5 : CD, ABEX-784 Track 1
No. 12 to 14 : GGV1025, Title 1-chp 4
No. 15 to 17 : GGV1025, Title 1-chp 5

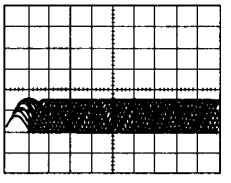
(1) Q109-Emitter (RF)
V: 100mV/div. H: 0.1μS/div.



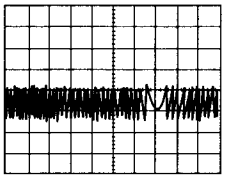
(2) TP (RFO)
V: 500mV/div. H: 0.1μS/div.



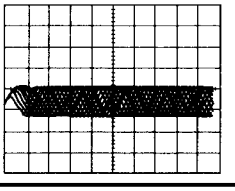
(3) IC301-pin 19 (RF for A/D converter)
V: 1V/div. H: 0.2μS/div.



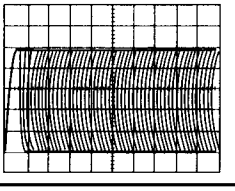
(4) TP (Tracking Error)
V: 1V/div. H: 2mS/div.



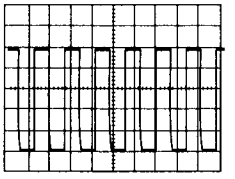
(5) IC201-pin 39 (EFM before slice)
V: 1V/div. H: 1μS/div.



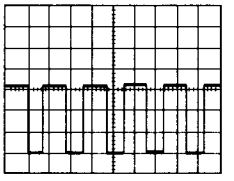
(6) IC201-pin 1 (EFM)
V: 1V/div. H: 0.2μS/div.



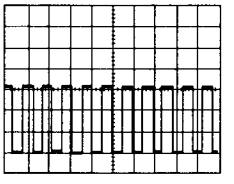
(7) Q281-Collector (FG)
V: 1V/div. H: 5mS/div.



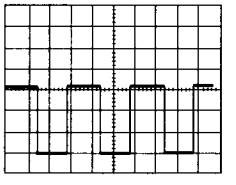
(8) Foot of R261 (FPWM)
V: 1V/div. H: 10μS/div.



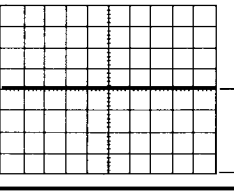
(9) Foot of R262 (VPWM)
V: 1V/div. H: 10μS/div.



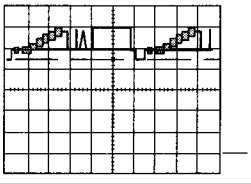
(10) Foot of R263 (PPWM)
V: 1V/div. H: 0.2μS/div.



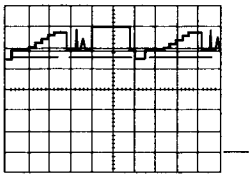
(11) Foot of R264 (RPWM)



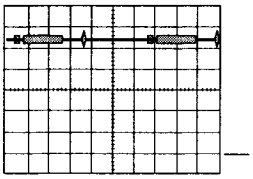
(12) IC801-pin 45 (Composite video output)
V: 500mV/div. H: 10μS/div.



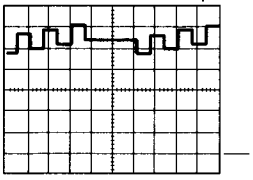
(13) IC801-pin 39 (Y output)
V: 500mV/div. H: 10μS/div.



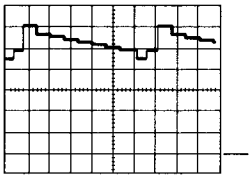
(14) IC801-pin 36 (C output)
V: 500mV/div. H: 10μS/div.



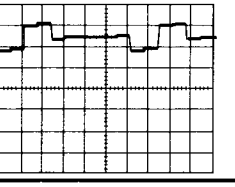
(15) IC801-pin 45 (C_B output when selecting color difference output)
V: 500mV/div. H: 10μS/div.



(16) IC801-pin 39 (Y output when selecting color difference output)
V: 500mV/div. H: 10μS/div.

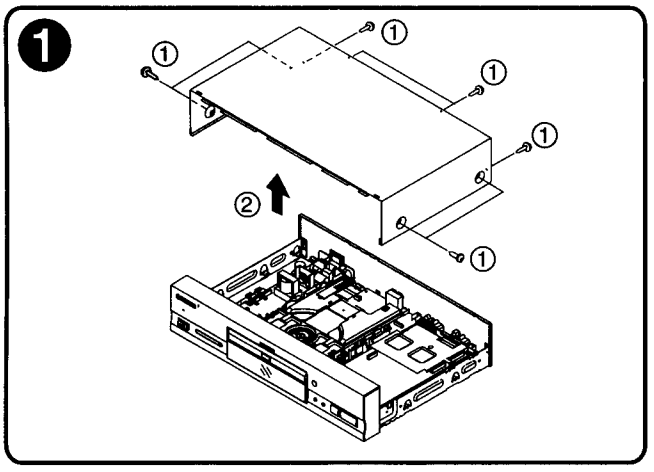


(17) IC801-pin 36 (C_R output when selecting color difference output)
V: 500mV/div. H: 10μS/div.

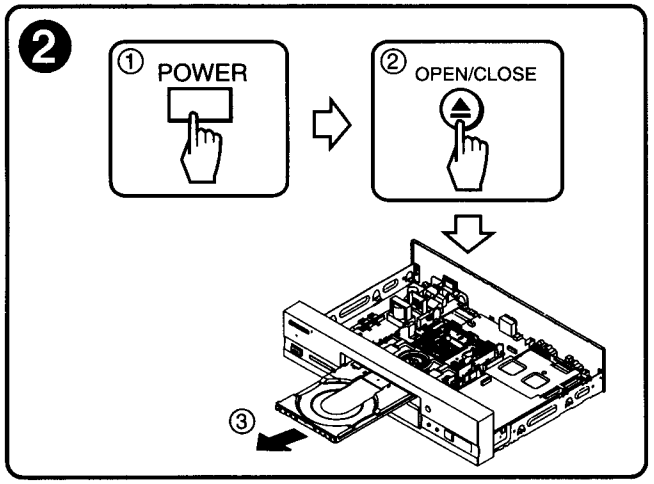


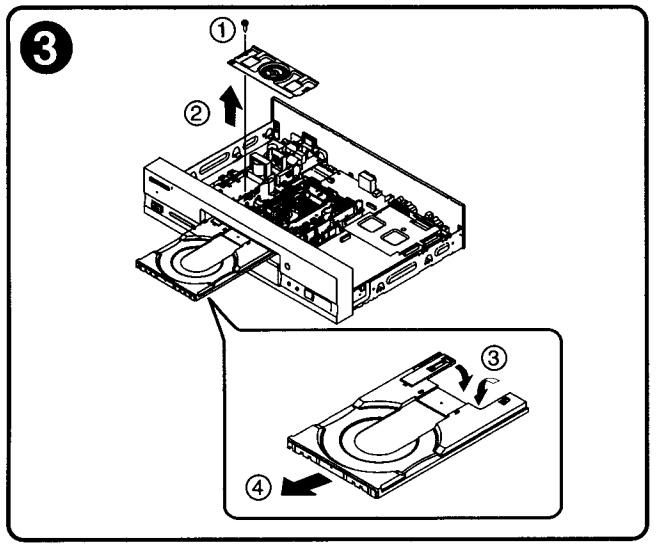
4 DISASSEMBLY
外し方

BONNET

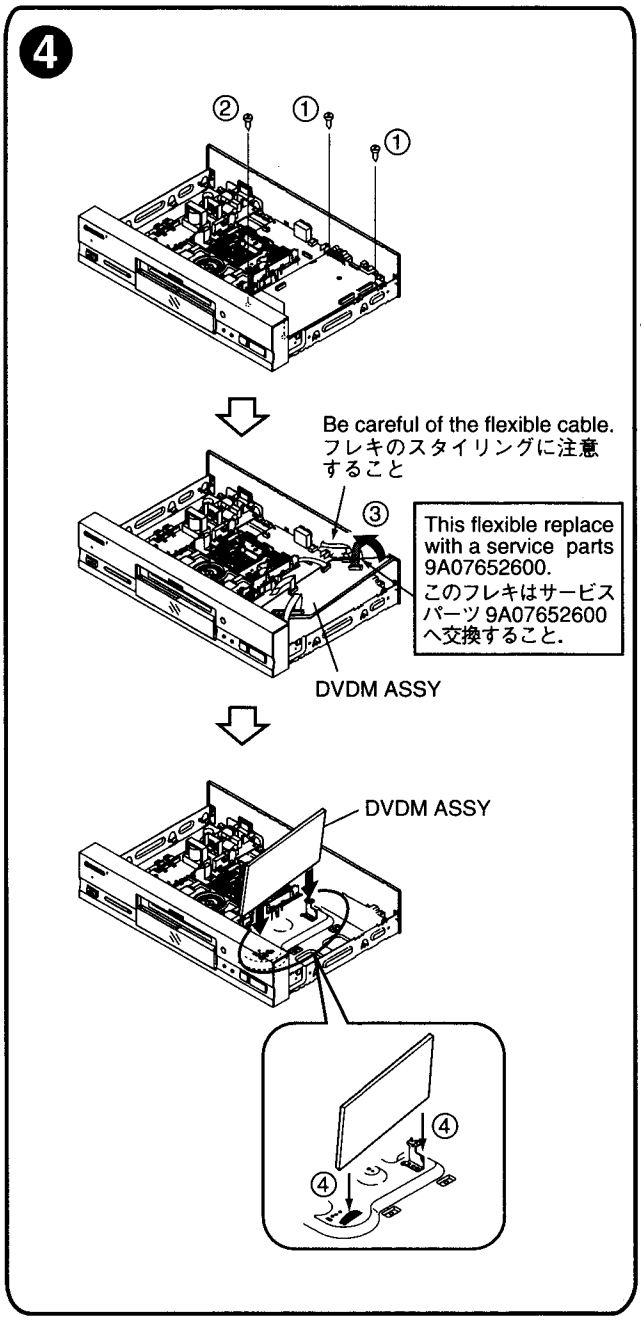


DISC TRAY





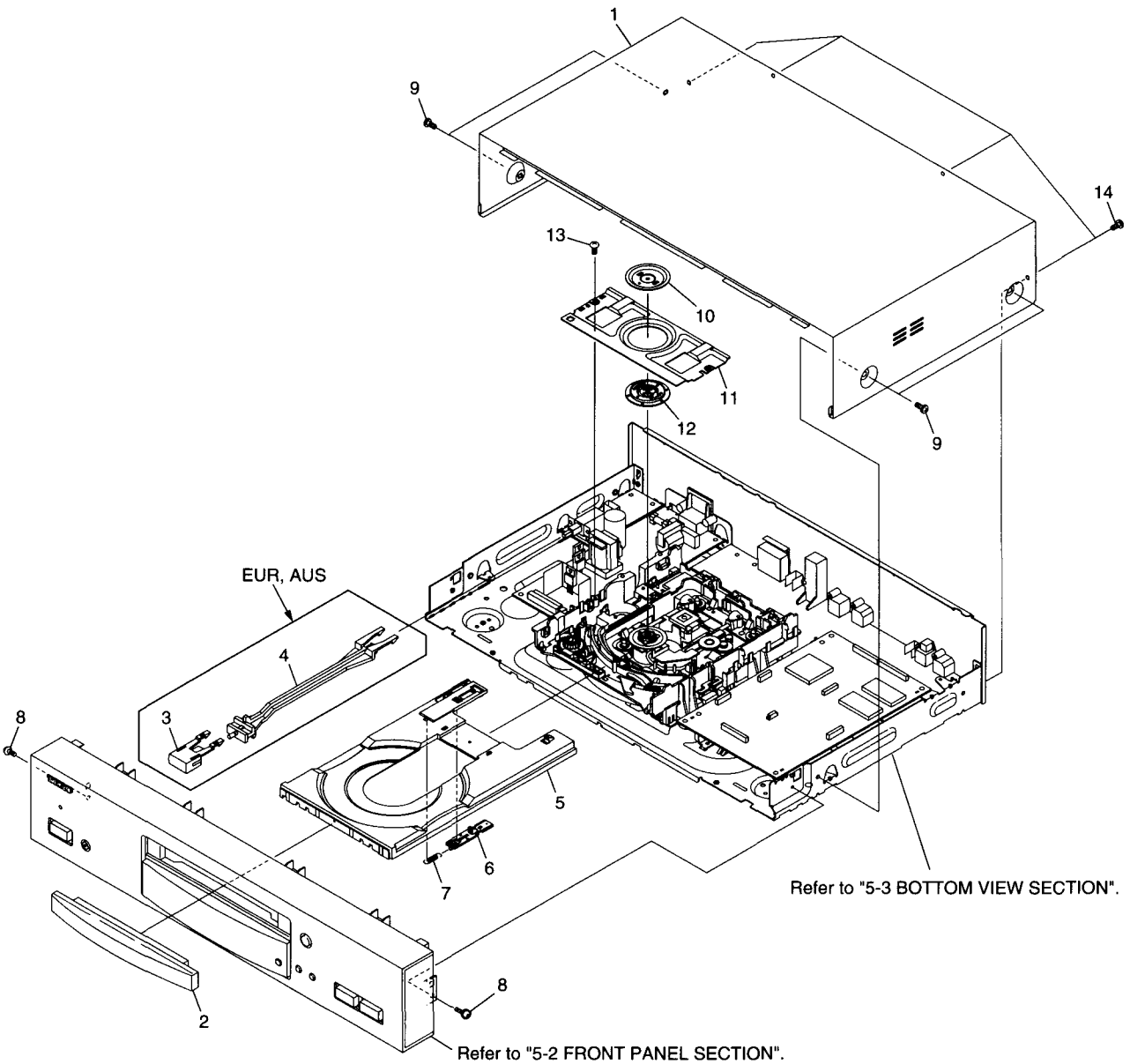
DVDM ASSY



5 EXPLODED VIEWS AND PARTS LIST

分解図とパーツリスト

5-1 EXTERIOR SECTION

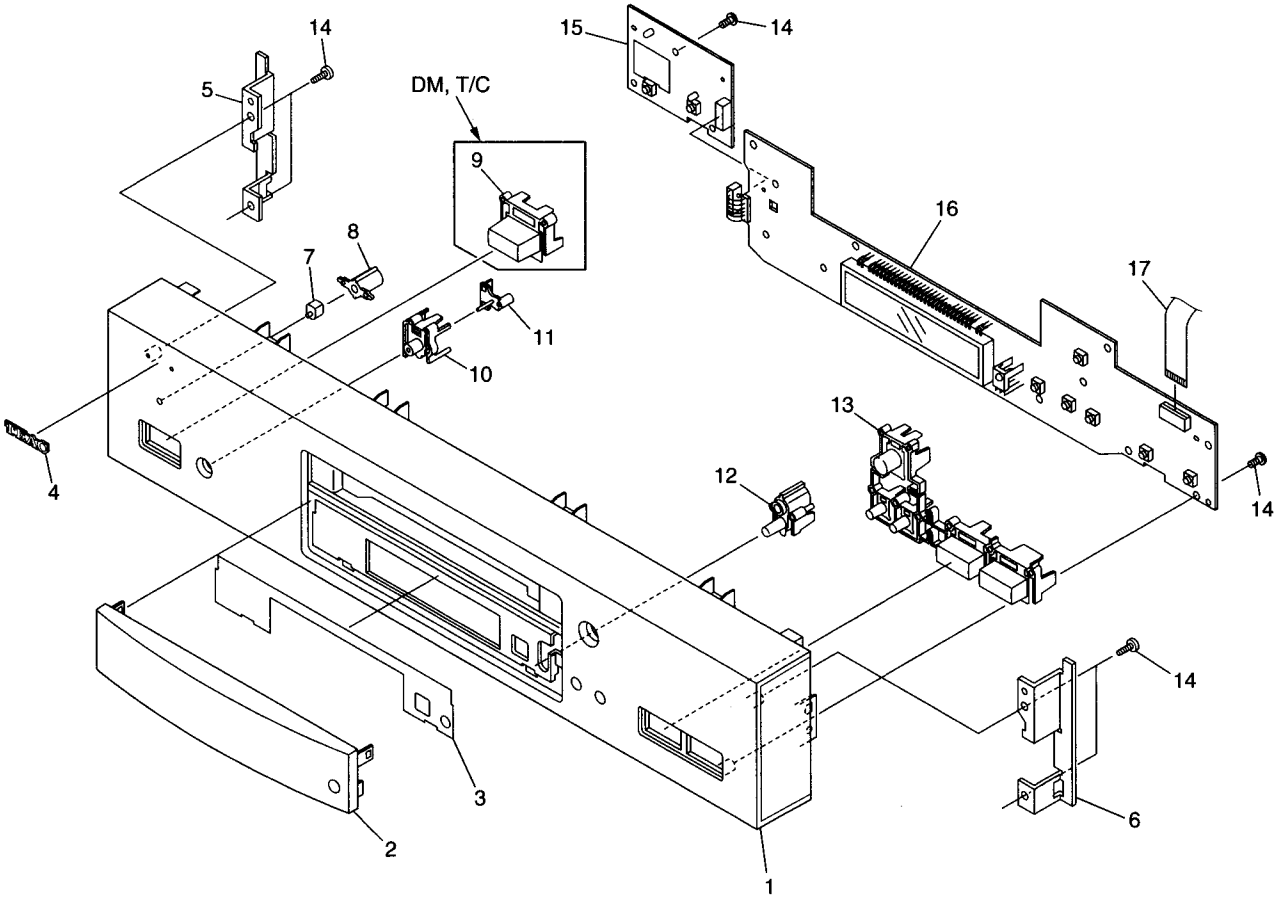


EXPLODED VIEW-1

REF.NO.	PARTS NO.	DESCRIPTION
1- 1	*9A07655200	BONNET S [US,C,E,A]
	*9A07658000	BONNET S [J]
1- 2	*M00873900A	PANEL CD TRAY(B) [US,C,E,A]
	*M00873901A	PANEL CD TRAY(G) [J]
1- 3	M00874300A	BUTTON POWER(B)-(B) [E,A]
1- 4	*9A07653900	POWER BUTTON JOINT [E,A]
1- 5	9A07654100	TRAY [US,C,E,A]
	9A07657800	TRAY [J]
1- 6	*9A07654300	TRAY STOPPER
1- 7	*9A07651900	TRAY STOPPER SPRING

REF.NO.	PARTS NO.	DESCRIPTION
1- 8	*9A06121800	SCREW, IBZ30P080MC
1- 9	*9A01240000	SCREW, BCZ40P060FZK [US,C,E,A]
	*9A04186500	SCREW, BCZ40P060FNI [J]
1-10	*9A07653600	CLAMPER PLATE
1-11	*9A07653700	BRIDGE
1-12	*9A07654200	CLAMPER
1-13	*9A01989300	SCREW
1-14	*9A02573800	SCREW, BBZ30P080FMC

5-2 FRONT PANEL SECTION

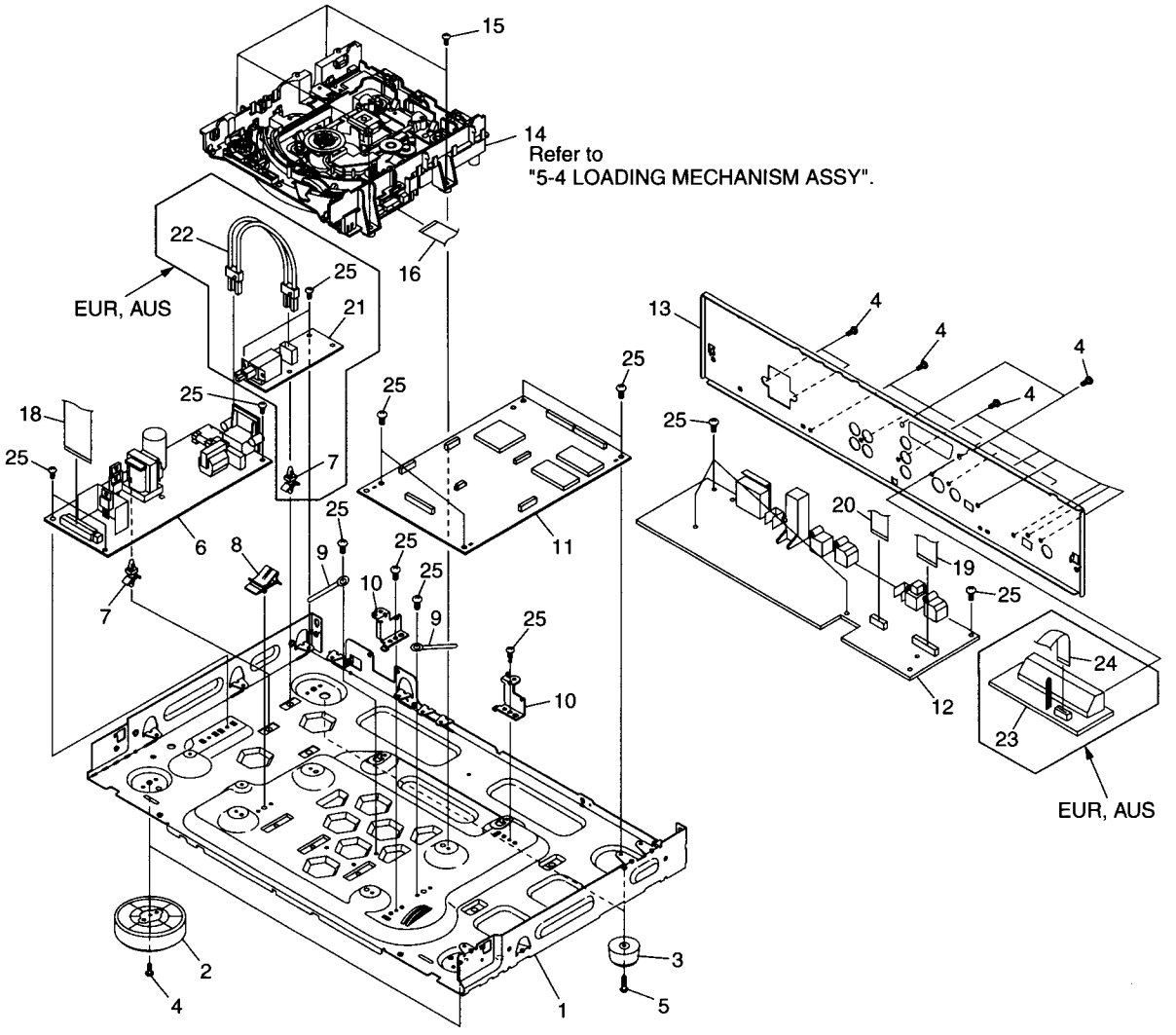


EXPLODED VIEW-2

REF.NO.	PARTS NO.	DESCRIPTION
2- 1	*M00873800A	FRONT PANEL(B) [E,A]
	*M00873801A	FRONT PANEL(G) [J]
	*M00873802A	FRONT PANEL(B) [US,C]
2- 2	*M00874000A	WINDOW FL [US,C,E,A]
	*M00874001A	WINDOW FL(G) [J]
2- 3	*M00874600A	PLATE FL
2- 4	*9A08031900	TEAC EMBLEM(K) [J]
	*9A07614900	TEAC EMBLEM [US,C,E,A]
2- 5	*M00874700A	PLATE BACK COVER L(B) [US,C,E,A]
	*M00874701A	PLATE BACK COVER L(G) [J]
2- 6	*M00874800A	PLATE BACK COVER R(B) [US,C,E,A]
	*M00874801A	PLATE BACK COVER R(G) [J]
2- 7	*9A06122100	LED LENS
2- 8	*M00874900A	BRACKET LED COVER

REF.NO.	PARTS NO.	DESCRIPTION
2- 9	M00874200A	BUTTON POWER(A)-(B) [US,C]
	M00874201A	BUTTON POWER(A)-(G) [J]
2-10	M00874500A	BUTTON SURROUND(B) [US,C,E,A]
	M00874501A	BUTTON SURROUND(G) [J]
2-11	*9A07651800	PLAY LENS
2-12	M00874400A	BUTTON FL
2-13	M00874100A	BUTTON FUNCTION(B) [US,C,E,A]
	M00874101A	BUTTON FUNCTION(G) [J]
2-14	*9A02573800	SCREW,BBZ30P080FMC
2-15	----------	PWSB ASSY [J,US,C]
	----------	PWSB ASSY [E,A]
2-16	9A07665700	FLKY ASSY [J]
	9A07665710	FLKY ASSY [US,C]
	9A07665720	FLKY ASSY [E,A]
2-17	9A07652100	FLEXIBLE CABLE(14P)

5-3 BOTTOM VIEW SECTION



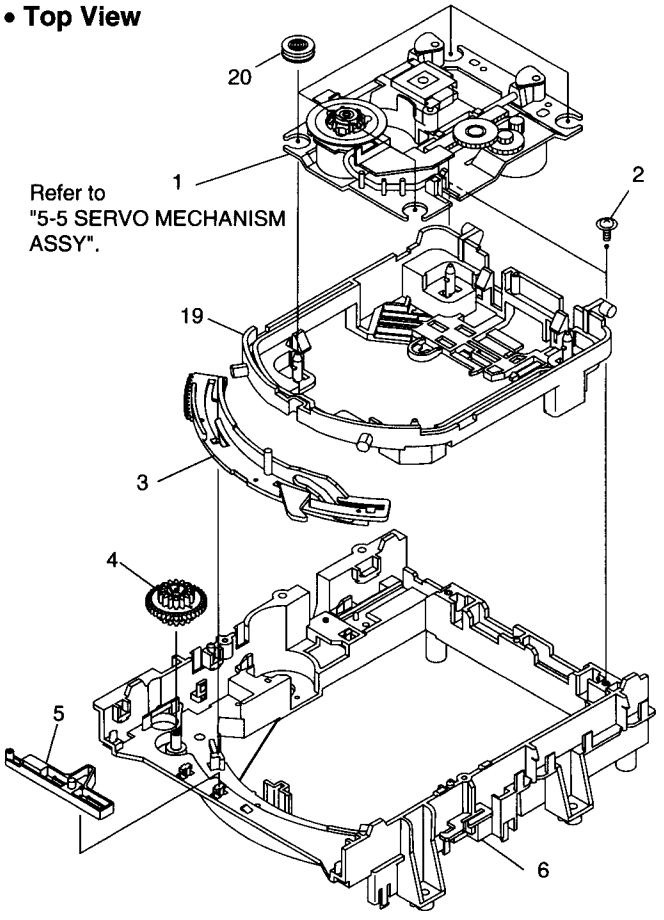
EXPLODED VIEW-3

REF. NO.	PARTS NO.	DESCRIPTION
3- 1	----------	BASE CHASSIS [E, A]
	----------	BASE CHASSIS [J, US, C]
3- 2	*9A07651600	INSULATOR
3- 3	*9A07655100	INSULATOR ASSY(F)
3- 4	*9A02573800	SCREW, BBZ30P080FMC
3- 5	*9A03409800	SCREW, BBZ30P180FMC
3- 6	⚠ 9A07657000	POWER SUPPLY ASSY [J, US, C]
	⚠ 9A07657020	POWER SUPPLY ASSY [E, A]
3- 7	----------	PCB HOLDER
3- 8	*9A07652700	FC CLIP
3- 9	----------	CORD STOPPER
3-10	----------	PCB HOLDER
3-11	9A07654800	DVDM ASSY
3-12	9A07657120	AVJB ASSY [E, A]
	9A07657100	AVJB ASSY [J, US, C]

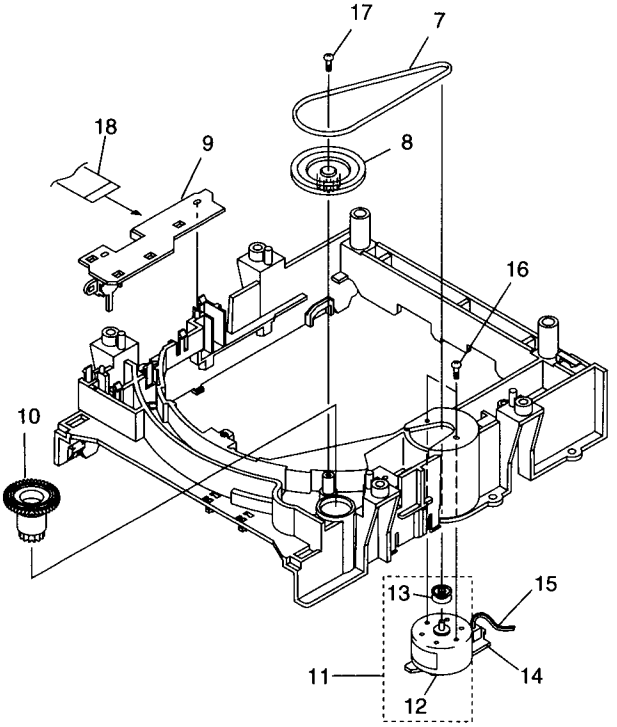
REF. NO.	PARTS NO.	DESCRIPTION
3-13	*9A07657700	REAR PANEL [J]
	*9A07657710	REAR PANEL [US, C]
	*9A07657720	REAR PANEL [E]
	*9A07657730	REAR PANEL [A]
3-14	----------	LOADING MECHANISM ASSY
3-15	*9A03409700	SCREW, BBZ30P100FMC
3-16	9A07652200	FLEXIBLE CABLE(12P)
3-18	9A07652000	FLEXIBLE CABLE(26P)
3-19	9A07652300	FLEXIBLE CABLE(26P)
3-20	9A07652400	FLEXIBLE CABLE(14P)
3-21	----------	MSWB ASSY [E, A]
3-22	----------	HOUSING ASSY [E, A]
3-23	9A07655000	SCCB ASSY [E, A]
3-24	9A07652500	FLEXIBLE CABLE(08P) [E, A]
3-25	*9A00676300	SCREW, BBZ30P060FCC

5-4 LOADING MECHANISM ASSY

• Top View



• Bottom View

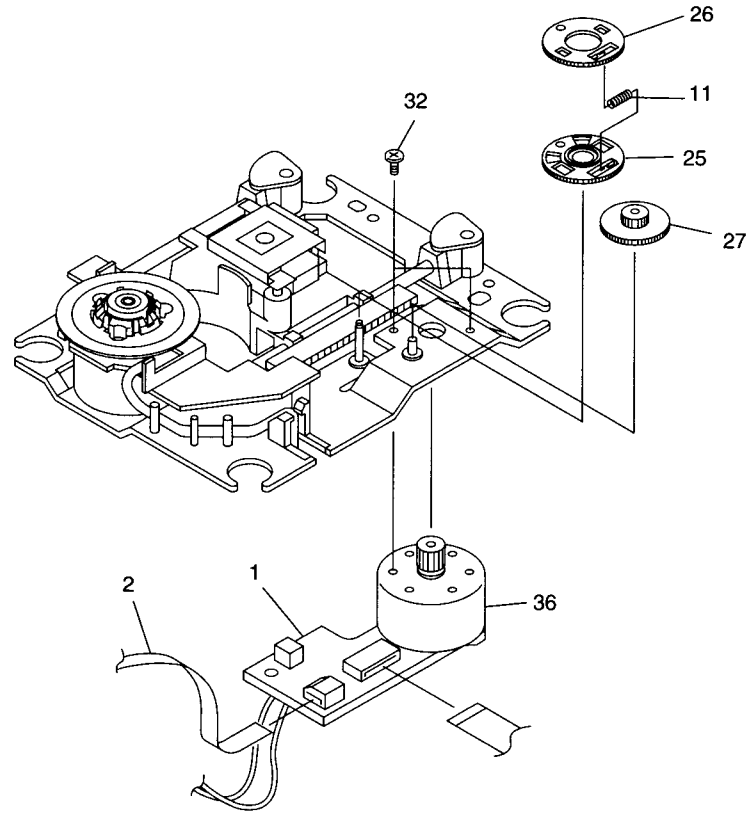


EXPLODED VIEW-4

REF.NO.	PARTS NO.	DESCRIPTION
4- 1	9A07683600	SERVO MECHANISM ASSY-S
4- 2	*9A07681600	TS SCREW
4- 3	9A07683200	DRIVE CAM
4- 4	9A07683100	DRIVE GEAR
4- 5	*9A07683400	LOCK PLATE
4- 6	*9A07682800	LOADING BASE
4- 7	9A07682200	BELT
4- 8	9A07682900	GEAR PULLEY
4- 9	----------	LOSB ASSY
4-10	9A07683000	LOADING GEAR

REF.NO.	PARTS NO.	DESCRIPTION
4-11	9A07683500	LOADING MOTOR ASSY
4-12	9A07681900	DC MOTOR/0.3W
4-13	9A05547300	MOTOR PULLEY
4-14	----------	LOMB ASSY
4-15	*9A07682700	CONNECTOR ASSY
4-16	*9A07682000	SCREW
4-17	*9A03781000	SCREW
4-18	9A07652500	FLEXIBLE CABLE(08P)
4-19	*9A07683300	FLOAT BASE
4-20	9A07682300	FLOATING RUBBER

5-5 SERVO MECHANISM ASSY



EXPLODED VIEW-5

REF. NO.	PARTS NO.	DESCRIPTION
5- 1	----------	SMEB ASSY
5- 2	----------	FGSB ASSY
5-11	*9A07678400	GEAR SPRING
5-25	9A07680000	GEAR A
5-26	9A07680100	GEAR B
5-27	9A07680200	GEAR C
5-32	*9A07677800	SCREW
5-36	9A07681100	CARRIAGE MOTOR ASSY

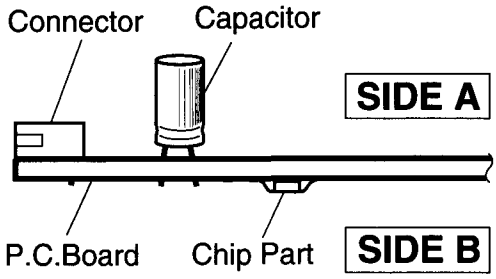
6 PC BOARDS AND PARTS LIST
基板図とパーツリスト

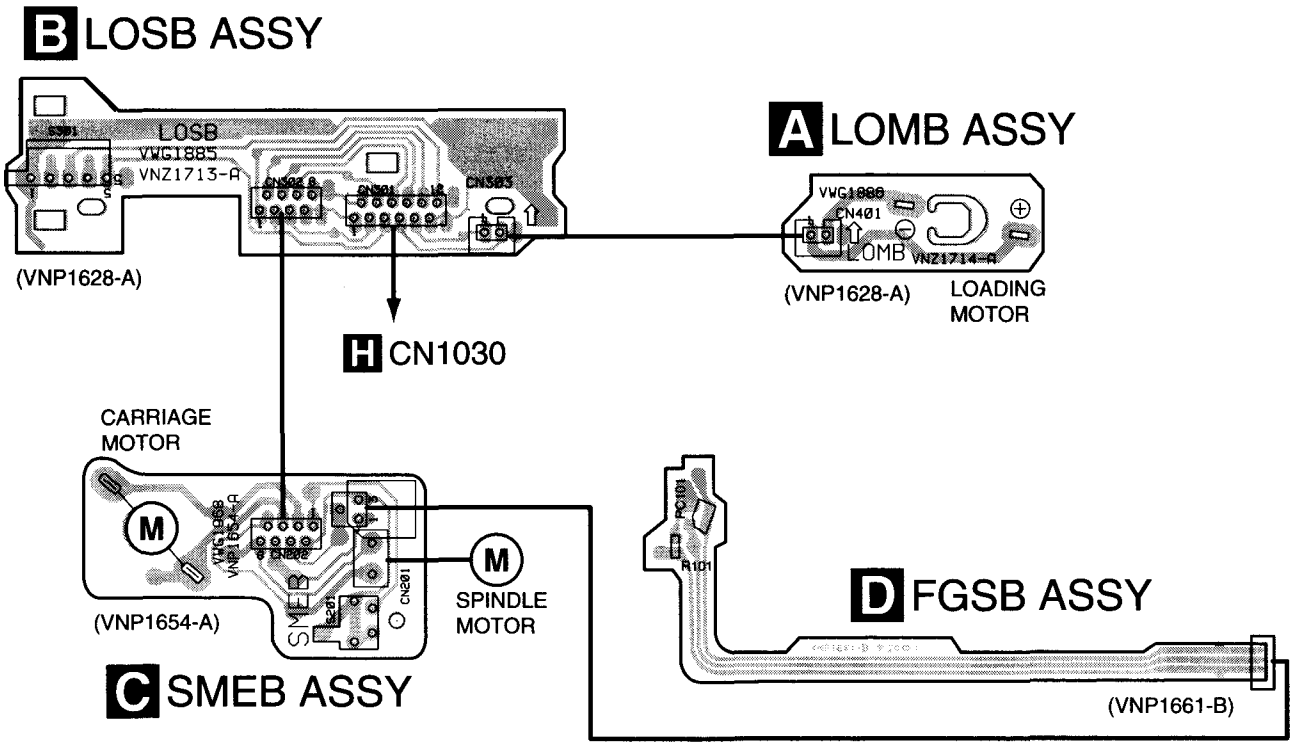
NOTES:

1. Part numbers in PCB diagrams match those in the schematic diagrams.
   回路図に示された配線番号は、同一番号でPCB図に掲載されています。
2. A comparison between the main parts of PCB and schematic diagrams is shown below.
   主要部品は、PCB図と回路図では、下図の様に表示されています。

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

3. The parts mounted on this PCB include all necessary parts for several destinations.
   For further information for respective destinations, be sure to check with the schematic diagram.
   このPCB図にマウントしている部品は複数の仕向地の部品を含んでいます。
   各仕向地の情報は、回路図で確認するようにしてください。
4. View point of PCB diagrams.
   PCB図の見かた。

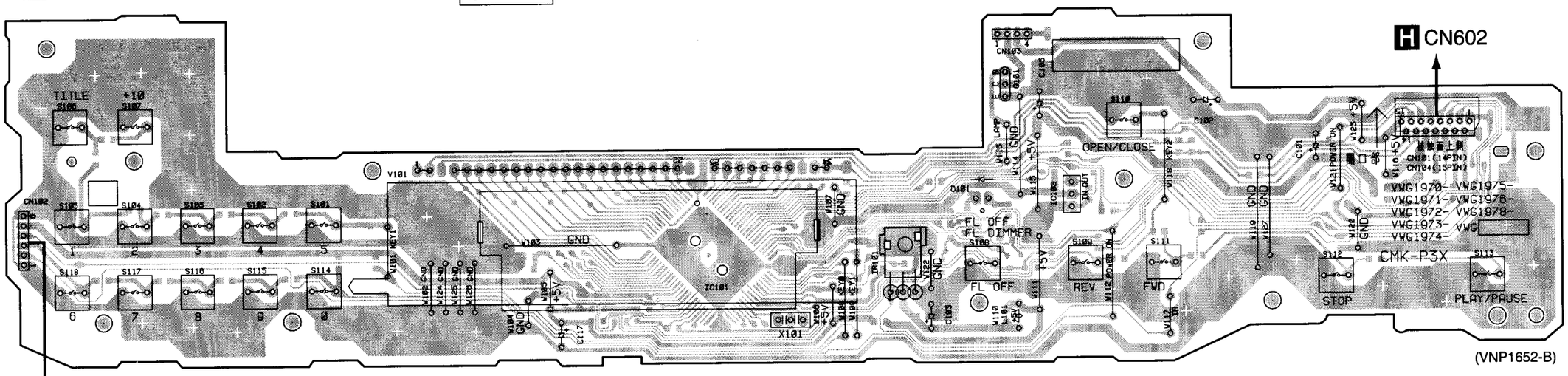




SIDE A

E FLKY ASSY

SIDE A

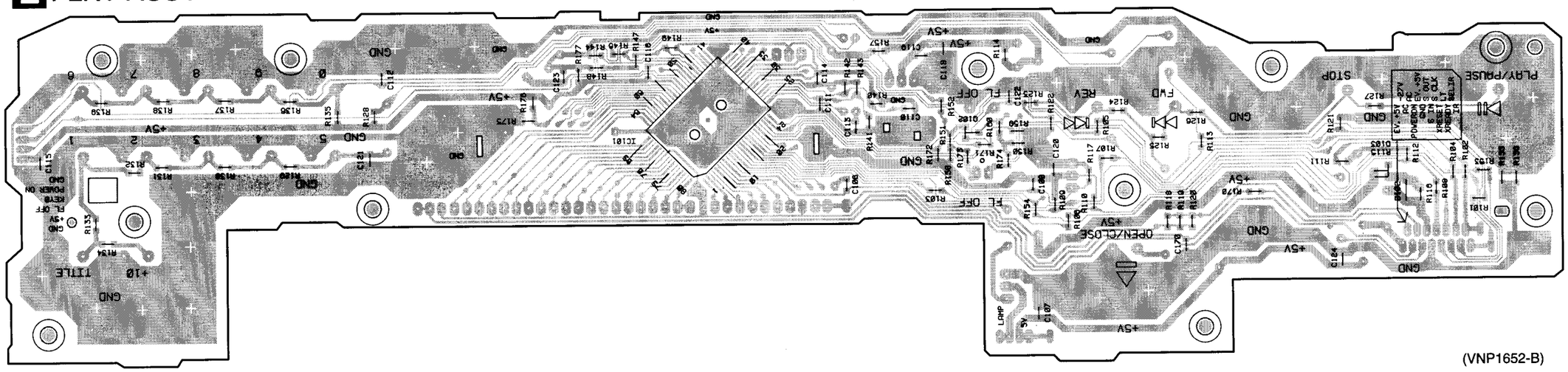


F CN201

IC101 Q101 IC102

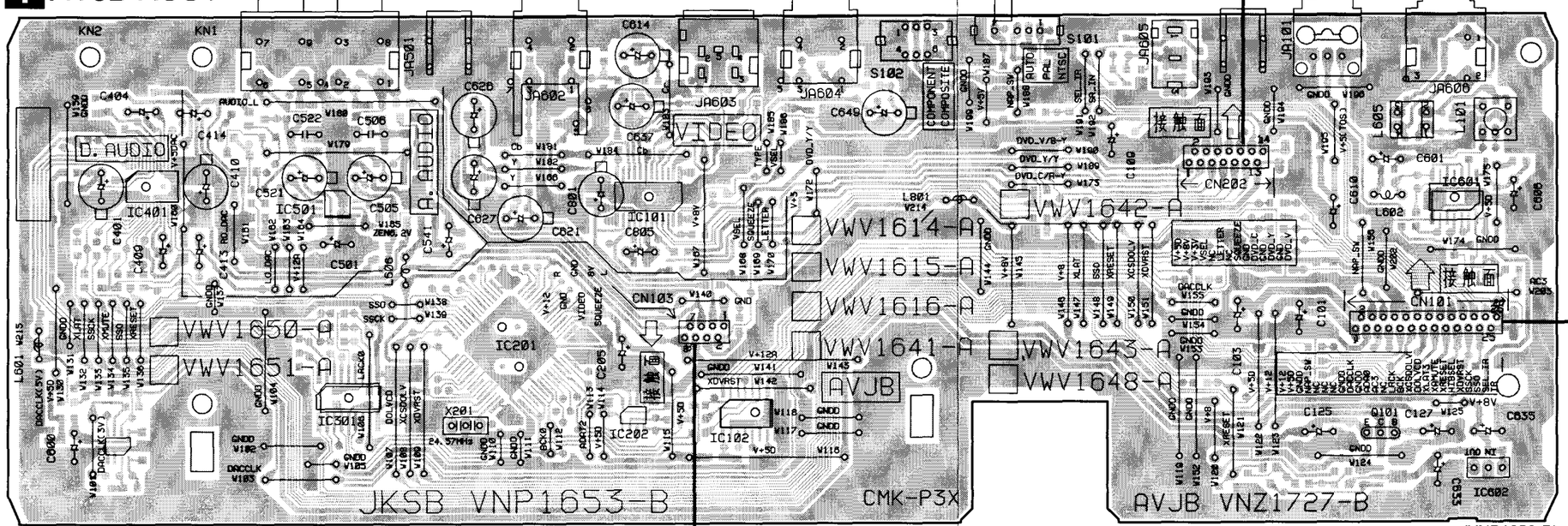
SIDE B

E FLKY ASSY



IC101 Q102

I AVJB ASSY

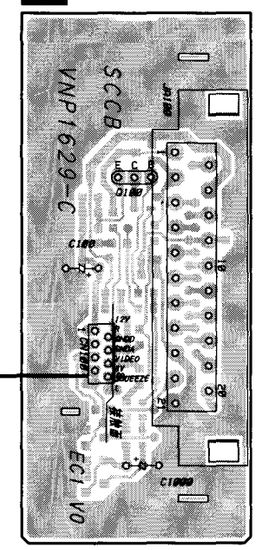


IC401 IC501 IC301 IC201 IC801 IC202 IC102 Q101 IC601 IC602

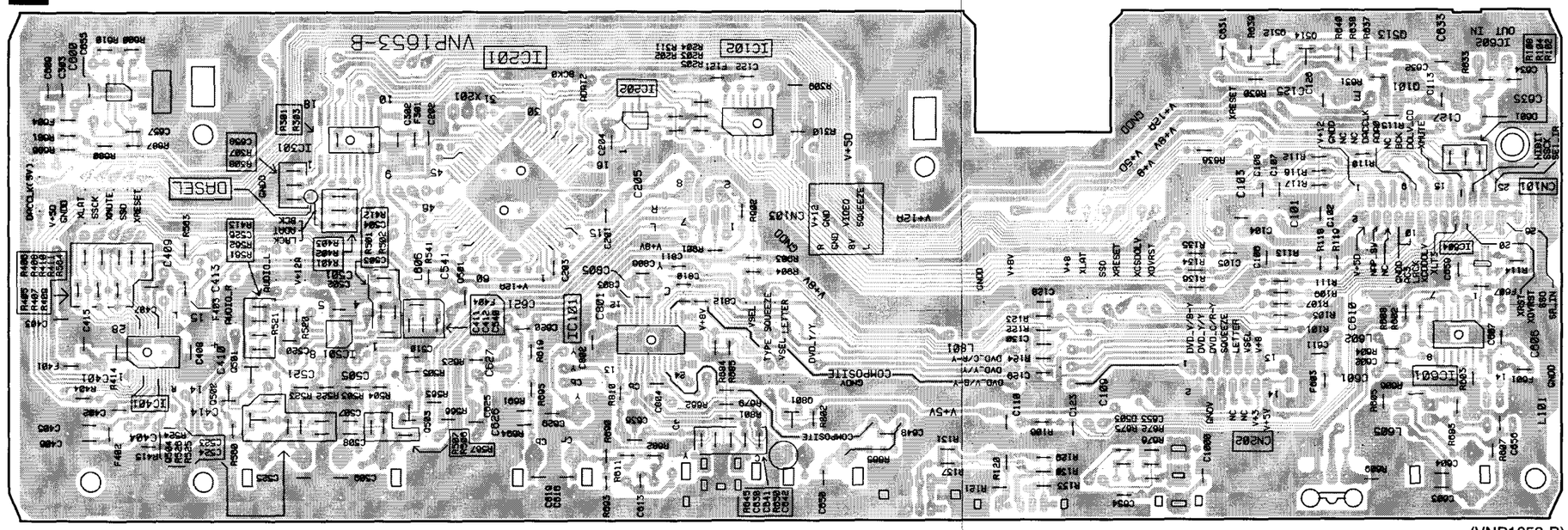
SIDE A

[EUR, AUS]

J SCCB ASSY



I AVJB ASSY

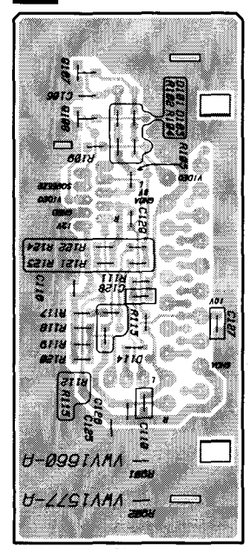


IC603 IC401 Q502 Q501 IC301 IC501 Q503 IC201 IC202 IC101 IC102 Q801 Q514 Q512 Q513 Q101 IC602 IC604 IC601

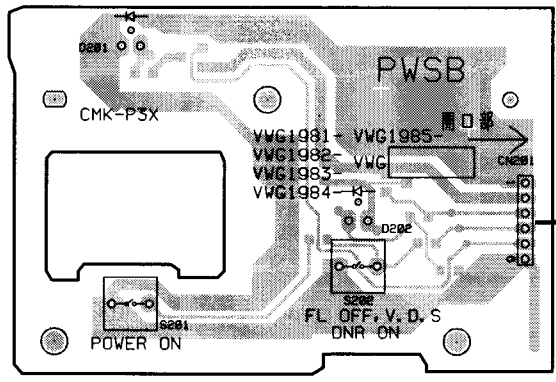
SIDE B

[EUR, AUS]

J SCCB ASSY



F PWSB ASSY

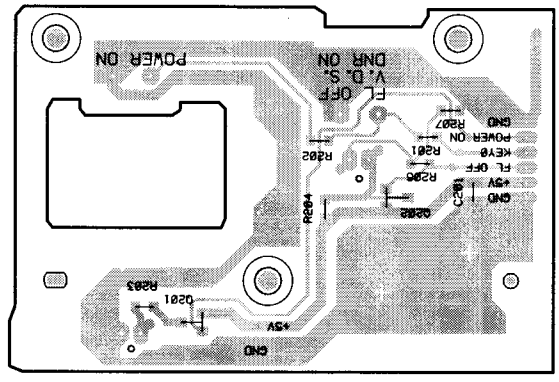


→ E CN102

(VNP1652-B)

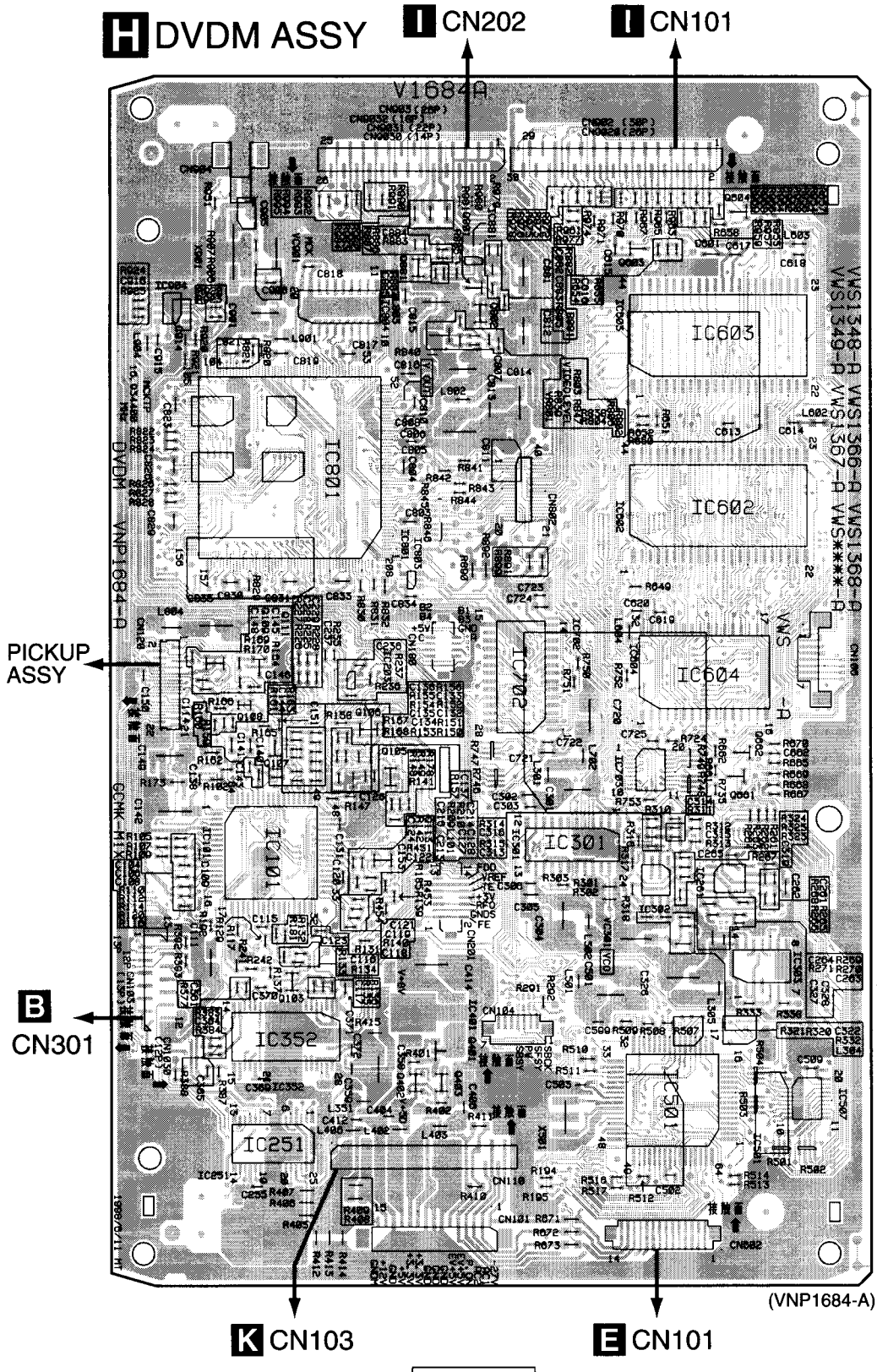
SIDE A

F PWSB ASSY



(VNP1652-B)

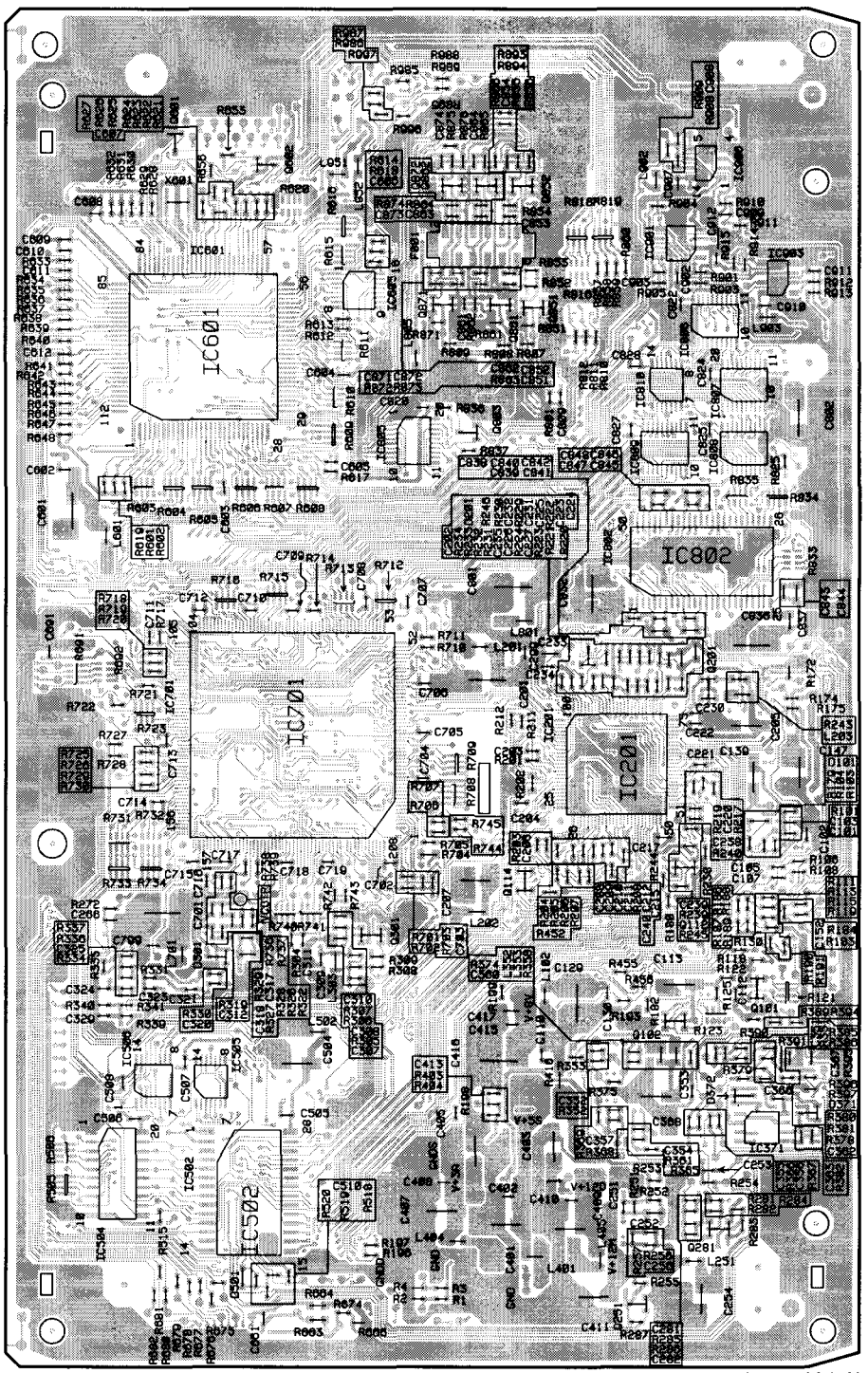
SIDE B



SIDE A

- This PCB is a four-layered board. Middle layer is mainly connected to Vcc and GND.
- この基板は4層基板です．中間層は主にVccとGNDが配線されています．

H DVDM ASSY



(VNP1684-A)

Q601 Q602 IC906
Q872 Q862 Q852

IC901 IC903

IC605
Q871 Q861 Q851
IC601 IC806

IC810 IC807

IC805 Q803
IC809 IC808

IC802

Q201
IC701

IC201

Q112
Q114

Q301

Q101

Q102

IC506 IC505
IC371

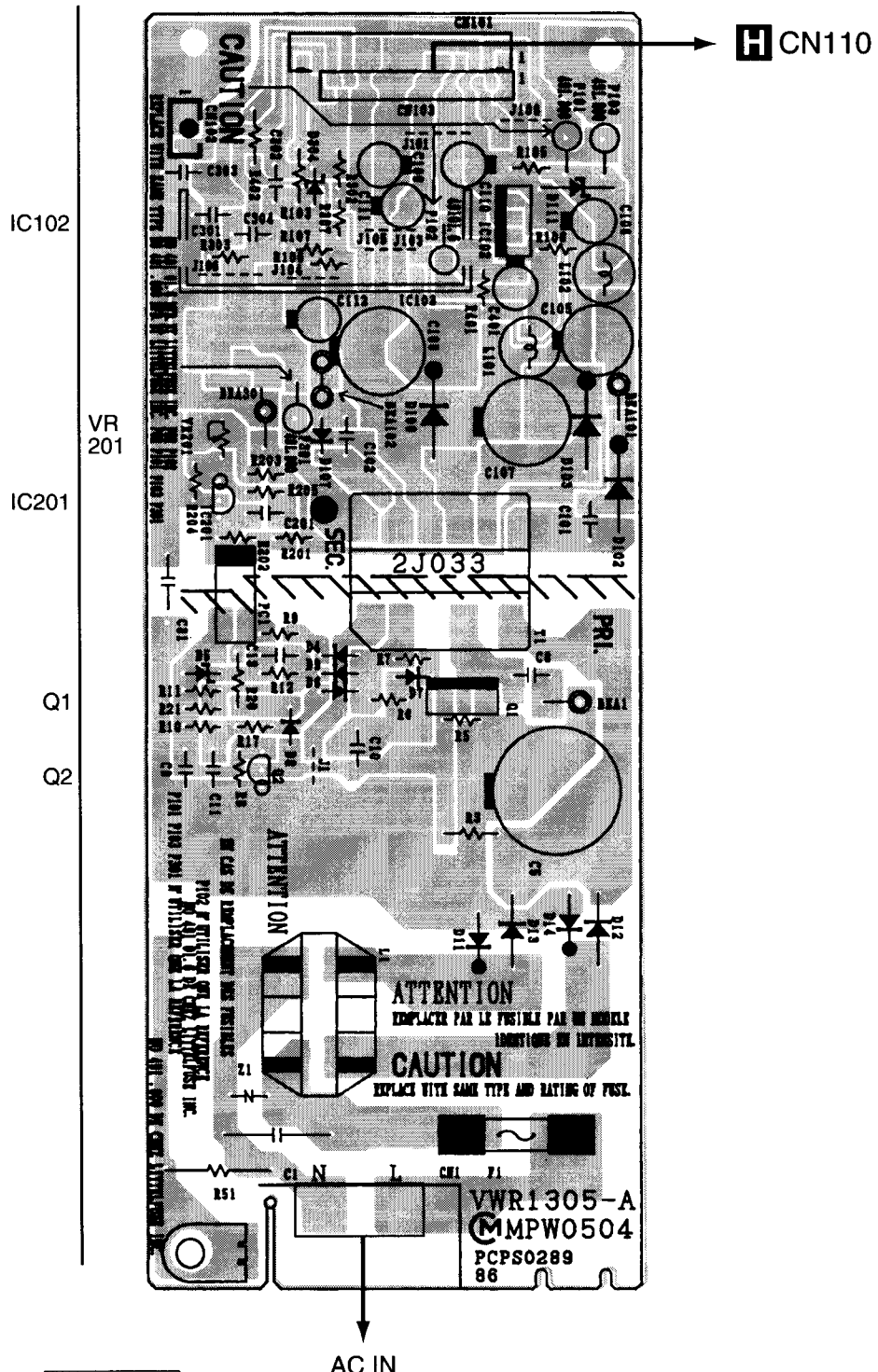
IC504
IC502 Q281

Q251

SIDE B

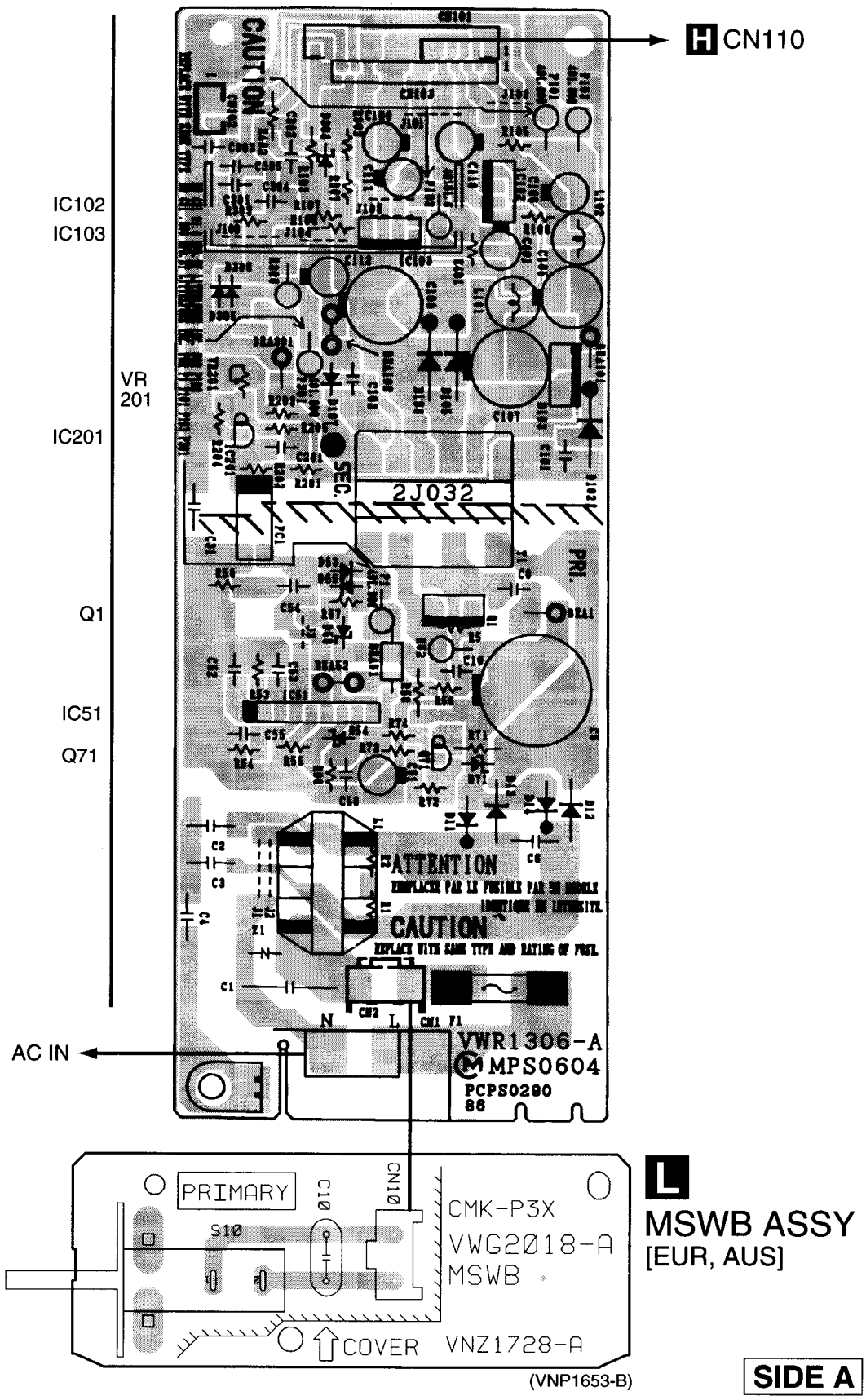
- This PCB is a four-layered board. Middle layer is mainly connected to Vcc and GND.
- この基板は4層基板です．中間層は主にVccとGNDが配線されています．

K POWER SUPPLY ASSY [DM, T/C]



SIDE A

K POWER SUPPLY ASSY [EUR, AUS]



L MSWB ASSY [EUR, AUS]

SIDE A

LOMB ASSY

REF.NO.	PARTS NO.	DESCRIPTION
	----------	LOMB ASSY
CN401	9A00926200	CONNECTOR ASSY

LOSB ASSY

REF.NO.	PARTS NO.	DESCRIPTION
	----------	LOSB ASSY
	9A02202800	LEAF SWITCH
CN301	9A07659200	12P FFC CONNECTOR
CN302	9A07659100	8P FFC CONNECTOR
CN303	9A00926200	CONNECTOR ASSY

SMEB ASSY

REF.NO.	PARTS NO.	DESCRIPTION
	----------	SMEB ASSY
	*9A07658300	PCB,SMEB
CN201	9A07658600	3P FFC CONNECTOR
CN202	9A07658200	8P FFC CONNECTOR
S 201	9A07658100	PUSH SWITCH

FGSB ASSY

REF.NO.	PARTS NO.	DESCRIPTION
	----------	FGSB ASSY
PC101	9A07658700	PHOTO INTERRUPTER

FLKY ASSY

REF.NO.	PARTS NO.	DESCRIPTION
	9A07665700	FLKY ASSY [J]
	9A07665710	FLKY ASSY [US,C]
	9A07665720	FLKY ASSY [E,A]
	9A07664100	REMOTE RECEIVER UNIT
	*9A04673100	SPACER
	*9A07665000	FL HOLDER
	*9A07665100	LED SPACER
CN101	9A07664900	14P FFC CONNECTOR
CN102	9A06101900	FJ CONNECTOR 6P
D 101	9A07664600	LED(ORANGE)
D 102	9A07664000	SCHOTTKY DIODE
IC101	9A07664300	IC,FL CONTROL
IC102	9A04672800	IC,S-806D-T
S 108-113	9A07663900	TACT SWITCH
V 101	9A07664800	FL TUBE
X 101	9A07665300	CERAMIC RESONATOR(5MHZ)

PWSB ASSY

REF.NO.	PARTS NO.	DESCRIPTION
	----------	PWSB ASSY [J,US,C]
	----------	PWSB ASSY [E,A]
CN201	9A06096200	FJ CONNECTOR 6P
D 201	9A07664500	LED(RED)
D 202	9A07726900	LED(ORANGE),SLR-343DCT31N
Q 201	9A07664200	TRANSISTOR
S 201	9A07663900	TACT SWITCH [J,US,C]
S 202	9A07663900	TACT SWITCH

DVDM ASSY

REF.NO.	PARTS NO.	DESCRIPTION
	9A07654800	DVDM ASSY
	9A07675400	FLEXIBLE CABLE(7P)
CN1030	9A07675900	12P FFC CONNECTOR
CN106	9A07675500	7P FFC CONNECTOR
CN110,020	9A07676100	26P FFC CONNECTOR
CN120	9A07675800	24P FFC CONNECTOR
CN180	9A07676200	B TO B CONNECTOR 8P
CN201	9A07675600	B TO B CONNECTOR 14P
CN602	9A07675700	14P FFC CONNECTOR
CN9030	9A07676000	14P FFC CONNECTOR
D 301	9A07670200	VARIABLE CAPACITANCE DIODE
D 371,372	9A07670500	DIODE,CHIP ARRAY
D 601	9A07671300	DIODE,CHIP
F 4010	9A07669600	BEAD,CHIP
F 4020	9A07669600	BEAD,CHIP
F 4030	9A07669600	BEAD,CHIP
F 4040	9A07669600	BEAD,CHIP
F 4050	9A07669600	BEAD,CHIP
F 4060	9A07669600	BEAD,CHIP
F 6630	9A07669500	BEAD,CHIP
F 6640	9A07669500	BEAD,CHIP
F 6710	9A07669500	BEAD,CHIP
F 801	9A07676800	VIDEO FILTER
F 8010	9A07669600	BEAD,CHIP
IC101	9A07670300	IC,ASP
IC201	9A07670400	IC,DSP
IC251	9A07666500	IC,SPINDLE DRIVER
IC261,302	9A07670900	IC,OP AMP
IC301	9A07666200	IC,A/D
IC303	9A06600700	IC,LOGIC
IC352	9A07666400	IC,4CH BTL DRIVER
IC371	9A06590800	IC,COMPARATOR
IC401	⚠ 9A07666300	IC,REGULATOR
IC501	9A07671200	IC,MECHANISM CONTROL
IC502	9A07673800	SRAM(256K)
IC504	9A07674100	IC,H-CMOS
IC505	9A07674700	IC,LOGIC
IC506,605	9A07674600	IC,LOGIC
IC507	9A07674300	IC,LOGIC
IC601	9A07671000	IC,SYSTEM CONTROL

DVDM ASSY

REF.NO.	PARTS NO.	DESCRIPTION
IC603	9A07677300	FLASH ROM
IC604	9A07674000	SRAM(1M BIT)
IC701	9A07671100	IC,DVD DATA PROCESSOR
IC702	9A07670800	DRAM(4M BIT)
IC703	9A07674400	IC
IC801	9A07670700	IC,MPEG2 DECODER
IC802	9A07670600	SD-RAM(16M)
IC805,806	9A07674800	IC,LOGIC
IC807,808	9A07674200	IC,LOGIC
IC809	9A07674800	IC,LOGIC
IC810	9A07674500	IC,LOGIC
IC881	9A07673900	IC,OP AMP
IC901	9A07669100	IC,CLOCK GENERATE
IC903,904	9A06094900	IC,LOGIC(3GATE)
IC906	9A06094900	IC,LOGIC(3GATE)
L 101,303	9A07677000	COIL,CHIP 10U
L 304	9A07676900	COIL,CHIP 1.5U
L 6740	9A07677200	BEAD,CHIP
L 6750	9A07677200	BEAD,CHIP
L 6760	9A07677200	BEAD,CHIP
L 6770	9A07677200	BEAD,CHIP
L 6780	9A07677200	BEAD,CHIP
L 6790	9A07677200	BEAD,CHIP
L 6800	9A07677200	BEAD,CHIP
L 6810	9A07677200	BEAD,CHIP
L 6820	9A07677200	BEAD,CHIP
L 804	9A07677100	COIL,CHIP
L 9050	9A07677200	BEAD,CHIP
L 9560	9A07677200	BEAD,CHIP
L 9570	9A07677200	BEAD,CHIP
L 9580	9A07677200	BEAD,CHIP
L 9620	9A07677200	BEAD,CHIP
L 9630	9A07677200	BEAD,CHIP
L 9640	9A07677200	BEAD,CHIP
L 9870	9A07677200	BEAD,CHIP
L 9880	9A07677200	BEAD,CHIP
L 9890	9A07677200	BEAD,CHIP
Q 101,105	9A07670000	TRANSISTOR,CHIP
Q 102	9A07669900	TRANSISTOR,CHIP
Q 103,281	9A07670100	TRANSISTOR,CHIP
Q 106,109	9A07669900	TRANSISTOR,CHIP
Q 107,111	9A07669300	TRANSISTOR
Q 108	9A07669800	N-FET
Q 112-114	9A07670000	TRANSISTOR,CHIP
Q 201	9A07670000	TRANSISTOR,CHIP
Q 301	9A07670100	TRANSISTOR,CHIP
Q 401 ⚠	9A07663600	TRANSISTOR
Q 402,881	9A07670000	TRANSISTOR,CHIP
Q 601,661	9A07669400	TRANSISTOR
Q 602	9A07669300	TRANSISTOR
Q 603	9A07669200	TRANSISTOR,CHIP
Q 662,803	9A07669400	TRANSISTOR
Q 851,852	9A07669900	TRANSISTOR,CHIP
Q 861,862	9A07669900	TRANSISTOR,CHIP
Q 871,872	9A07669900	TRANSISTOR,CHIP

DVDM ASSY

REF.NO.	PARTS NO.	DESCRIPTION
R 121	9A07725600	R,CHIP NETWORK 220
R 123	9A07666100	R,CHIP NETWORK 390
R 502-504	9A07725600	R,CHIP NETWORK 220
R 505,506	9A07725500	R,CHIP NETWORK 103
R 603-606	9A07725600	R,CHIP NETWORK 220
R 607-611	9A07725400	R,CHIP NETWORK 470
R 615,616	9A07725500	R,CHIP NETWORK 103
R 620,692	9A07725500	R,CHIP NETWORK 103
R 691	9A07725600	R,CHIP NETWORK 220
R 708,709	9A07725500	R,CHIP NETWORK 103
R 712,713	9A07725600	R,CHIP NETWORK 220
R 715,716	9A07725600	R,CHIP NETWORK 220
R 723	9A07725400	R,CHIP NETWORK 470
R 731,732	9A07725600	R,CHIP NETWORK 220
R 733,734	9A07725500	R,CHIP NETWORK 103
R 740,741	9A07725500	R,CHIP NETWORK 103
R 748,749	9A07725500	R,CHIP NETWORK 103
R 816	9A07725600	R,CHIP NETWORK 220
R 818,819	9A07725600	R,CHIP NETWORK 220
R 833-835	9A07725600	R,CHIP NETWORK 220
VC301	9A07675200	TRIMMER,CERAMIC CHIP 40P
VC901	9A07675300	TRIMMER,CERAMIC CHIP 30P
X 501	9A07676600	CERAMIC RESONATOR,CHIP(10M)
X 601	9A07676500	CERAMIC RESONATOR,CHIP(20M)
X 901	9A07676700	CRYSTAL(13.824MHZ)

AVJB ASSY

REF.NO.	PARTS NO.	DESCRIPTION
	9A07657100	AVJB ASSY [J,US,C]
	9A07657120	AVJB ASSY [E,A]
	*9A06091000	TERMINAL SCREW
CN101	9A07662200	26P FFC CONNECTOR
CN103	9A07662000	8P FFC CONNECTOR [E,A]
CN202	9A07662100	14P FFC CONNECTOR
CN603	9A07659900	4P MINI DIN SOCKET
D 501	9A07661800	ZENER DIODE,CHIP
F 121	9A07662800	INDUCTOR,CHIP
F 401-404	9A07662800	INDUCTOR,CHIP
F 601,603	9A07662800	INDUCTOR,CHIP
F 607	9A07662800	INDUCTOR,CHIP
IC101	9A07725900	IC,LA7135AM-TL
IC102	9A06572400	IC,HEX BUFFER
IC201	9A07661300	IC,DSP
IC202	9A06572200	IC,ANALOG SW
IC401	9A07661400	IC,D/A
IC501	9A07661100	IC,OP AMP
IC601	9A06600700	IC,LOGIC
IC604	9A07726000	IC,TC7SET08F
JA101	9A02165500	MODULE,LASER SENSOR
JA501	9A07660900	4P PIN JACK
JA602	9A07685000	3P PIN JACK [J,US,C]
JA604	9A06106000	1P PIN JACK
JA606	9A07661900	1P PIN JACK(NI,BLK)

AVJB ASSY

REF. NO.	PARTS NO.	DESCRIPTION
L 101	9A05539200	PULSE TRANSFORMER
L 564	9A07726100	LAMINATED CHIP
L 602	9A05542500	NOISE FILTER
L 606	9A07661000	INDUCTOR
Q 101	9A07663700	TRANSISTOR
Q 501	9A07661200	TRANSISTOR
Q 502	9A07663400	TRANSISTOR, CHIP
Q 503, 504	9A07663800	TRANSISTOR, CHIP
Q 512	9A07663500	TRANSISTOR, CHIP
Q 513	9A07663600	TRANSISTOR
Q 801	9A07661200	TRANSISTOR [J, US, C]
S 101	9A07662600	SLIDE SWITCH [E, A]
S 102	9A06106300	SLIDE SWITCH [J, US, C]
X 201	9A07662700	CERAMIC RESONATOR(24M)

SCCB ASSY

REF. NO.	PARTS NO.	DESCRIPTION
	9A07655000	SCCB ASSY [E, A]
	*9A07685500	PCB, SCCB
	*9A03770500	PCB BINDER
	9A07685400	EARTH PLATE
CN100	9A07662000	8P FFC CONNECTOR
D 101, 103	9A07685200	ZENER DIODE, CHIP
D 114	9A07685100	DIODE, CHIP
JA100	9A07685300	RGB CONNECTOR
Q 100	9A07685700	TRANSISTOR
Q 107, 108	9A07661200	TRANSISTOR

POWER SUPPLY ASSY

REF. NO.		PARTS NO.	DESCRIPTION
	⚠	9A07657000	POWER SUPPLY ASSY [J, US, C]
	⚠	9A07657020	POWER SUPPLY ASSY [E, A]
FU001	⚠	9A07651700	FUSE, 2.5A [E, A]
IC101	⚠	9A07651200	PROTECTOR(1A) [E, A]
IC101	⚠	9A07651100	PROTECTOR(800MA) [J, US, C]
IC102	⚠	9A07651300	PROTECTOR(1.6A)
IC103	⚠	9A07651100	PROTECTOR(800MA)
IC301	⚠	9A07651100	PROTECTOR(800MA)

MSWB ASSY

REF. NO.		PARTS NO.	DESCRIPTION
		----------	MSWB ASSY [E, A]
CN010		9A07661500	AC CORD SOCKET
S 010	⚠	9A07660000	PUSH SWITCH

7 INCLUDED ACCESSORIES
付属品

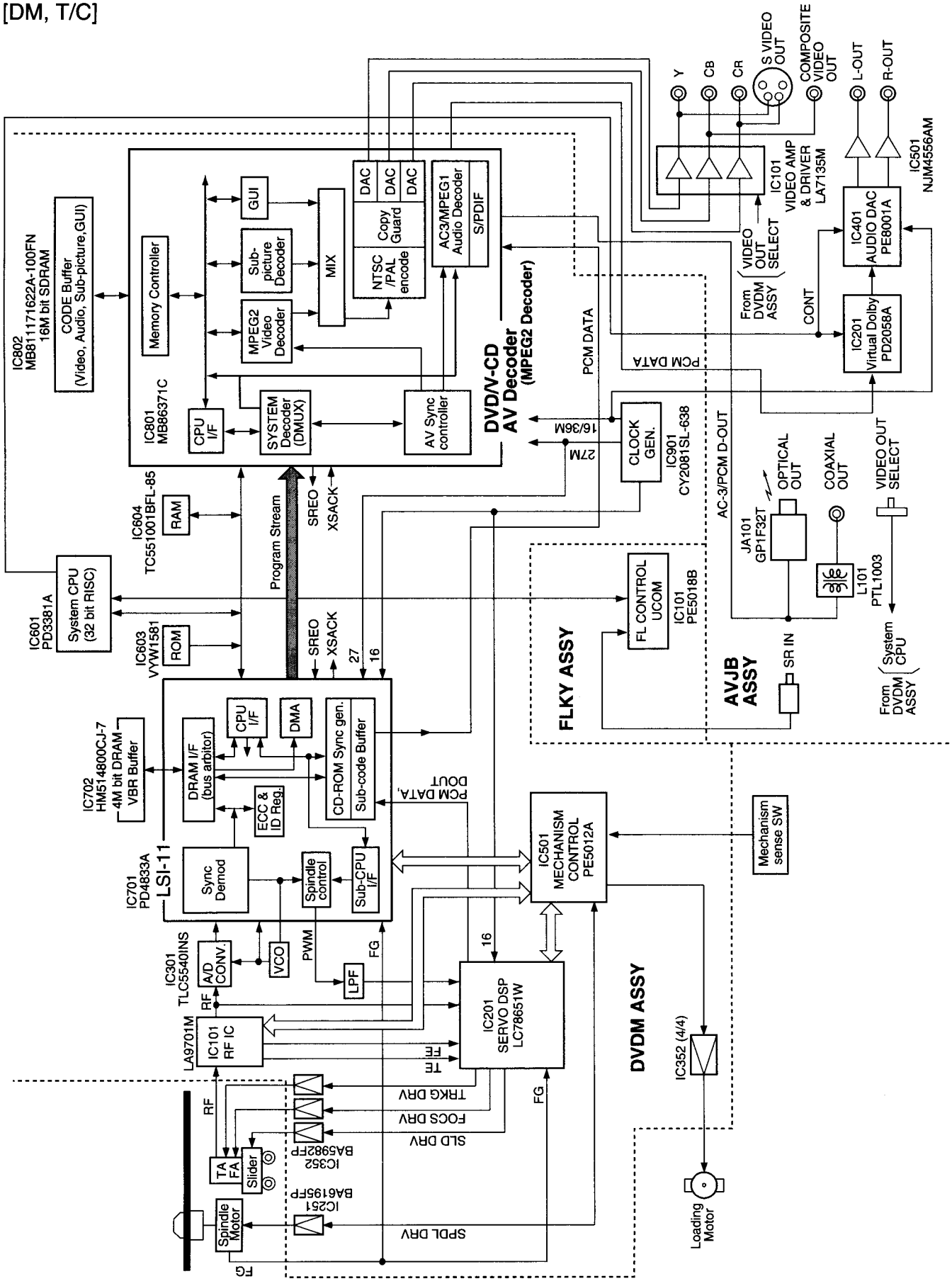
INCLUDED ACCESSORIES

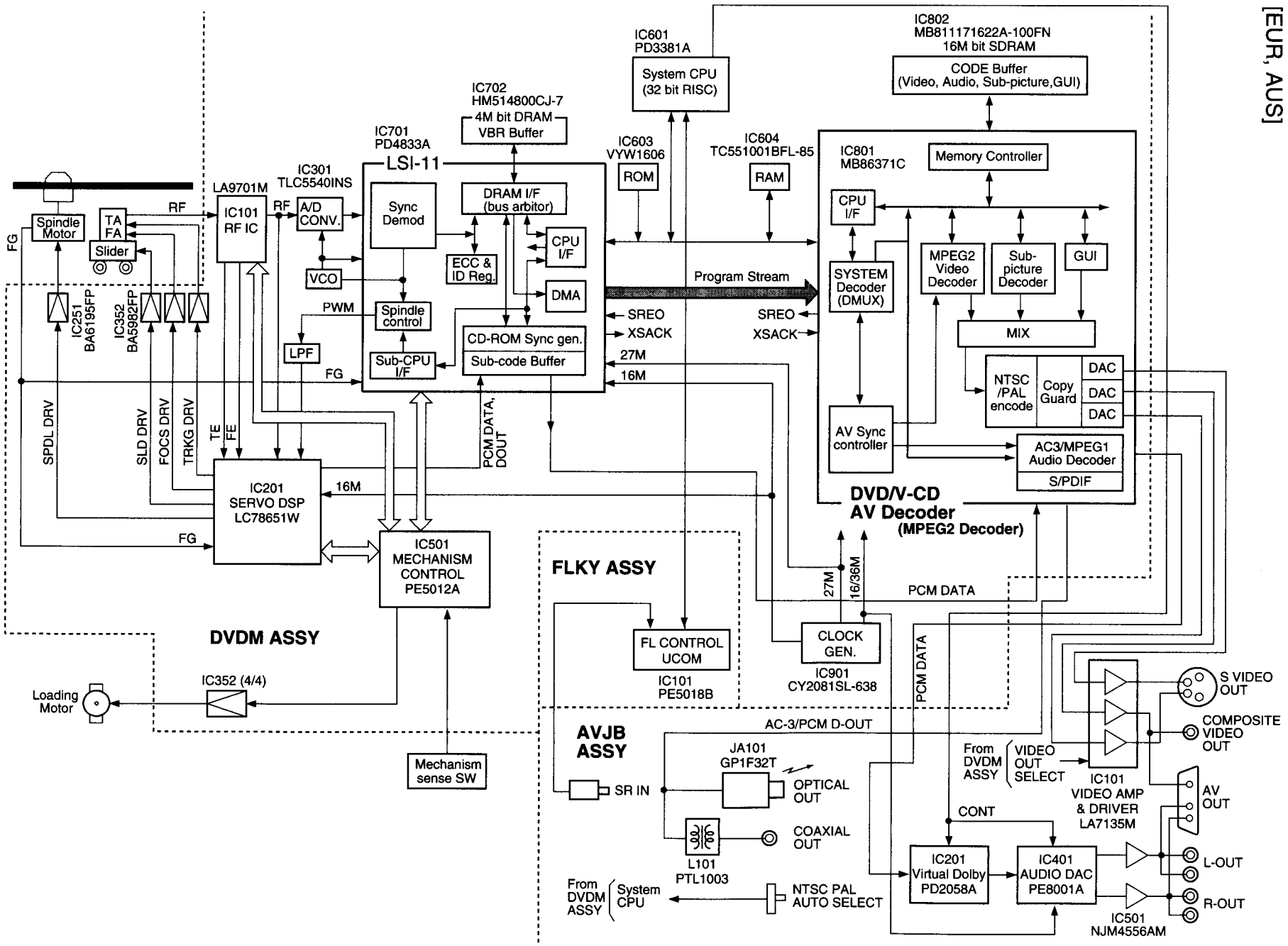
REF. NO.	PARTS NO.	DESCRIPTION	REMARKS
	*9A07511800	OWNER'S MANUAL, J [J]	
	*9A07511900	OWNER'S MANUAL, E/F/P/SP [US, C, E, A]	
	*9A07512000	OWNER'S MANUAL, G/I/D/SW [E]	
	9A07655300	REMOTE CONTROL UNIT	
	----------	BATTERY, R6P 2P(E) [US, C, E, A]	
	----------	BATTERY, R6P 2P(J) [J]	
⚠	9A07655900	POWER CORD [E]	
⚠	9A07656300	POWER CORD [US, C]	
⚠	9A07657200	POWER CORD [J]	
⚠	E00538900A	POWER CORD [A]	
	*9A06574300	AUDIO CORD	
	*9A06123800	VIDEO CORD	

8 BLOCK DIAGRAM

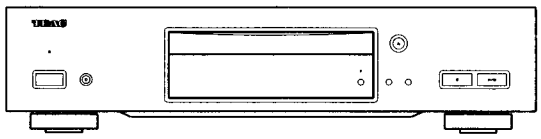
ブロックダイアグラム

[DM, T/C]




IC802
MB811171622A-100FN
16M bit SDRAM
CODE Buffer
(Video, Audio, Sub-picture,GUI)
IC601
PD3381A
System CPU
(32 bit RISC)
IC702
HM514800CJ-7
4M bit DRAM
VBR Buffer
IC701
PD4833A
LSI-11
IC603
VYW1606
ROM
IC604
TC551001BFL-85
RAM
IC801
MB86371C
Memory Controller
CPU I/F
MPEG2 Video Decoder
Sub-picture Decoder
GUI
SYSTEM Decoder (DMUX)
MIX
NTSC /PAL encode
Copy Guard
DAC
DAC
DAC
AV Sync controller
AC3/MPEG1 Audio Decoder
S/PDIF
DVD/V-CD
AV Decoder
(MPEG2 Decoder)
Program Stream
SREO
XSACK
27M
16M
IC301
TLC5540INS
A/D CONV.
LA9701M
IC101
RF IC
RF
FG
Spindle Motor
TA
FA
Slider
IC251
BA6195FP
IC352
BA5982FP
Sync Demod
DRAM I/F (bus arbitor)
ECC & ID Reg.
CPU I/F
DMA
VCO
PWM
Spindle control
LPF
Sub-CPU I/F
CD-ROM Sync gen.
Sub-code Buffer
SPDL DRV
SLD DRV
FOCS DRV
TRKG DRV
TE
FE
PCM DATA, DOUT
IC201
SERVO DSP
LC78651W
16M
IC501
MECHANISM
CONTROL
PE5012A
DVDM ASSY
Loading Motor
IC352 (4/4)
Mechanism sense SW
FLKY ASSY
FL CONTROL
UCOM
IC101
PE5018B
CLOCK GEN.
IC901
CY2081SL-638
27M
16/36M
PCM DATA
AVJB ASSY
AC-3/PCM D-OUT
JA101
GP1F32T
SR IN
OPTICAL OUT
COAXIAL OUT
L101
PTL1003
From DVDM ASSY
System CPU
NTSC PAL AUTO SELECT
CONT
IC201
Virtual Dolby
PD2058A
IC401
AUDIO DAC
PE8001A
IC501
NJM4556AM
From DVDM ASSY
VIDEO OUT SELECT
IC101
VIDEO AMP
& DRIVER
LA7135M
S VIDEO OUT
COMPOSITE VIDEO OUT
AV OUT
L-OUT
R-OUT

TEAC



SERVICE GUIDE

DV-1000

DVD PLAYER

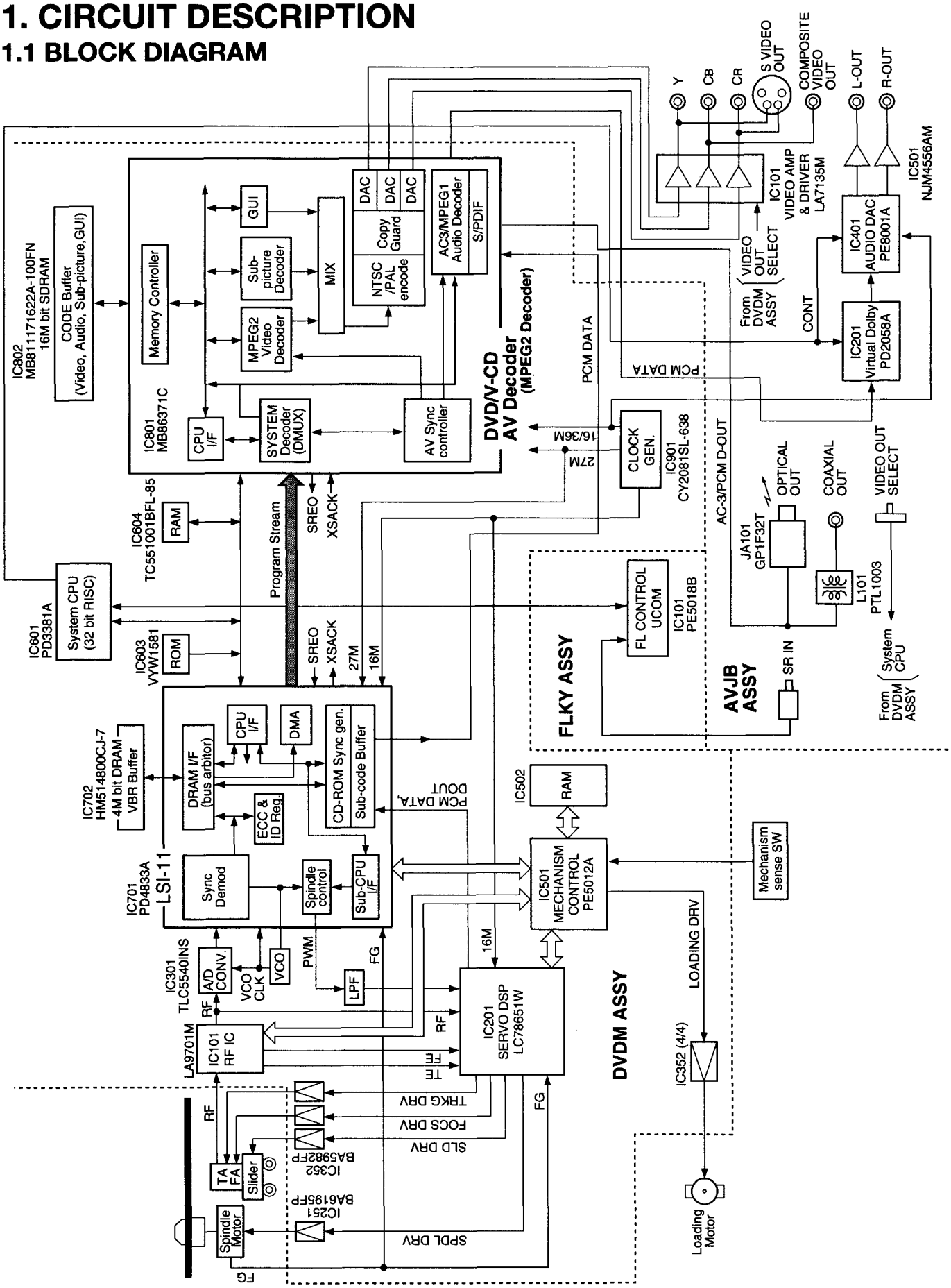
CONTENTS

Effective : November, 1999

D00530600A

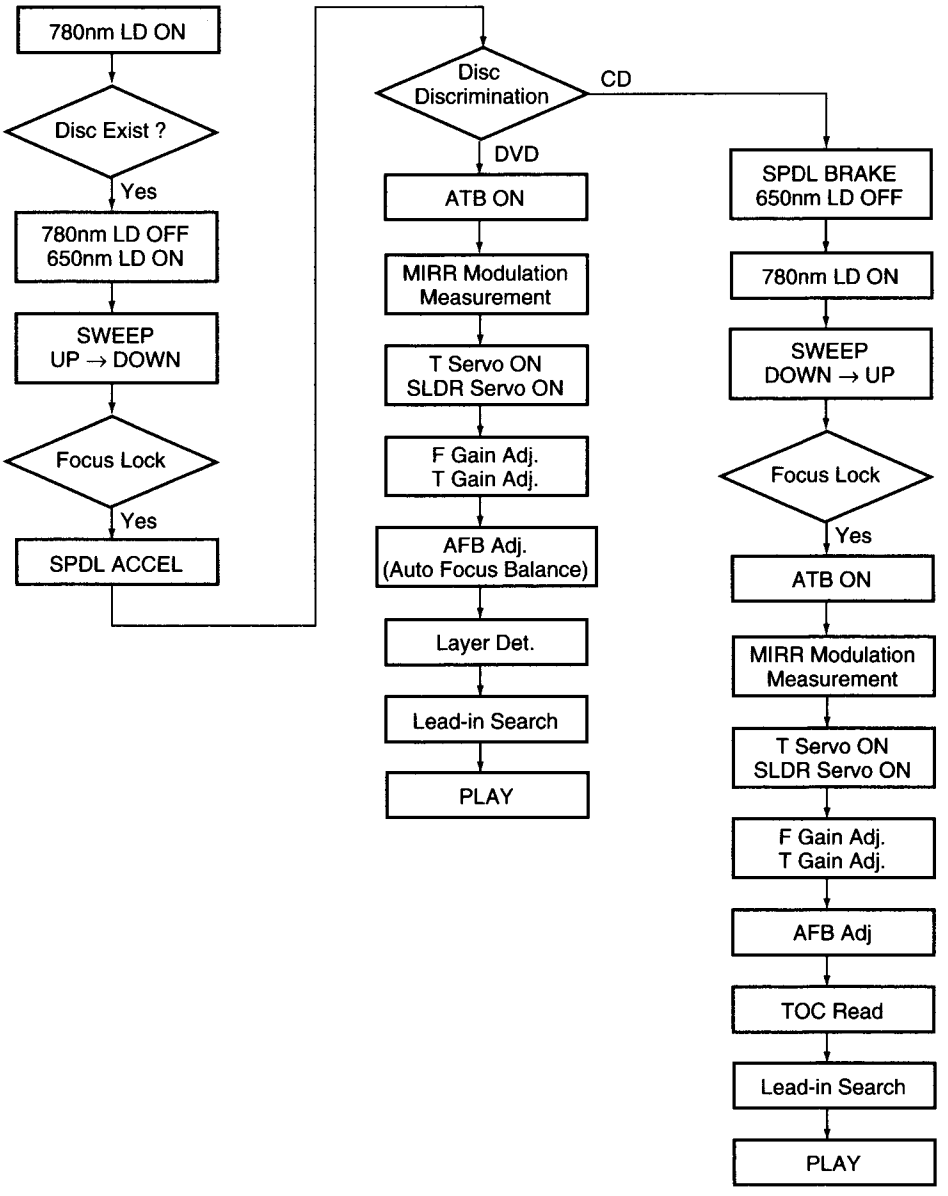
1. CIRCUIT DESCRIPTION

1.1 BLOCK DIAGRAM



1.2 EXPLANATION OF EACH MOVEMENT

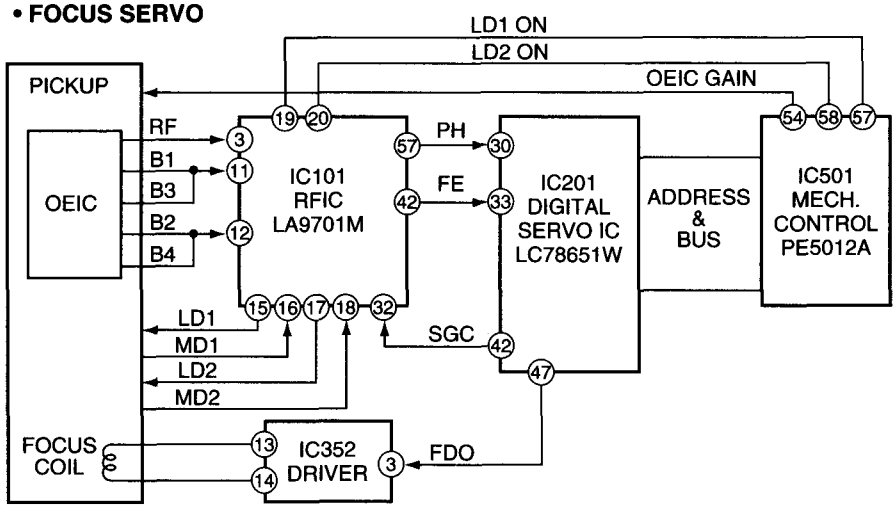
1.2.1 Sequence Up to Playback



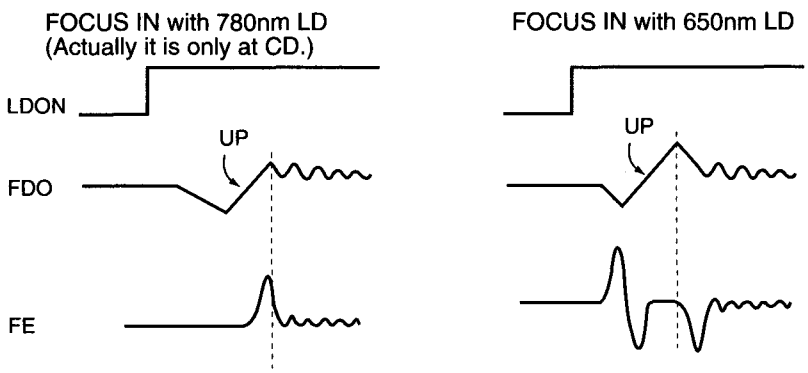
1.2.2 Focus Servo

FE generated in the RF IC is sent to the Digital servo IC.
Both DVD and CD, the servo is turned on during the transition from "Upmost" to "Down" of the first-order sine wave with 650 nm LD ON (LD 1 ON = H). For a CD, it turns on during the transition from "Down" to "Up" of the first-order sine wave with 780 nm LD ON (LD 2 ON = H).
The kick-brake pulses, such as those for FOCUS jump, are also output from pin 47 (FDO) of IC201.

• FOCUS SERVO



• FOCUS LOCK TIMING



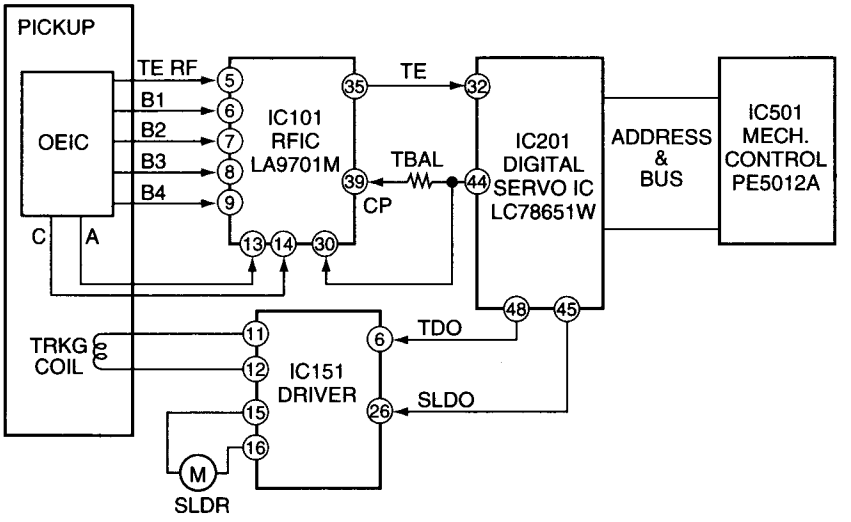
1.2.3 Tracking / Slider Servo

ATB: For phase differential TE (use for DVD), the tracking balance compensation is achieved by outputting the offset from the TBAL output at pin 44 of the digital servo IC, and by biasing the charge pump resistor for phase-difference error of RFIC.
For 3-beam TE (use for CD), the tracking balance compensation is achieved by adjusting the gain balance of A and C in RFIC with the voltage of RFIC-pin 30.
The difference is detected by processing TE at pin 32 of IC 201 with an internal digital equalizer.

TDO: In addition to the servo output, the low-band components, such as the kick-brake for jump, are added for TDO output.

SLDO: The low-band components of TE are processed by the internal digital equalizer, and deadband is added for SLDO output. The offset voltage for pickup movement is also included in the SLDO output.

• TRACKING / SLIDER SERVO

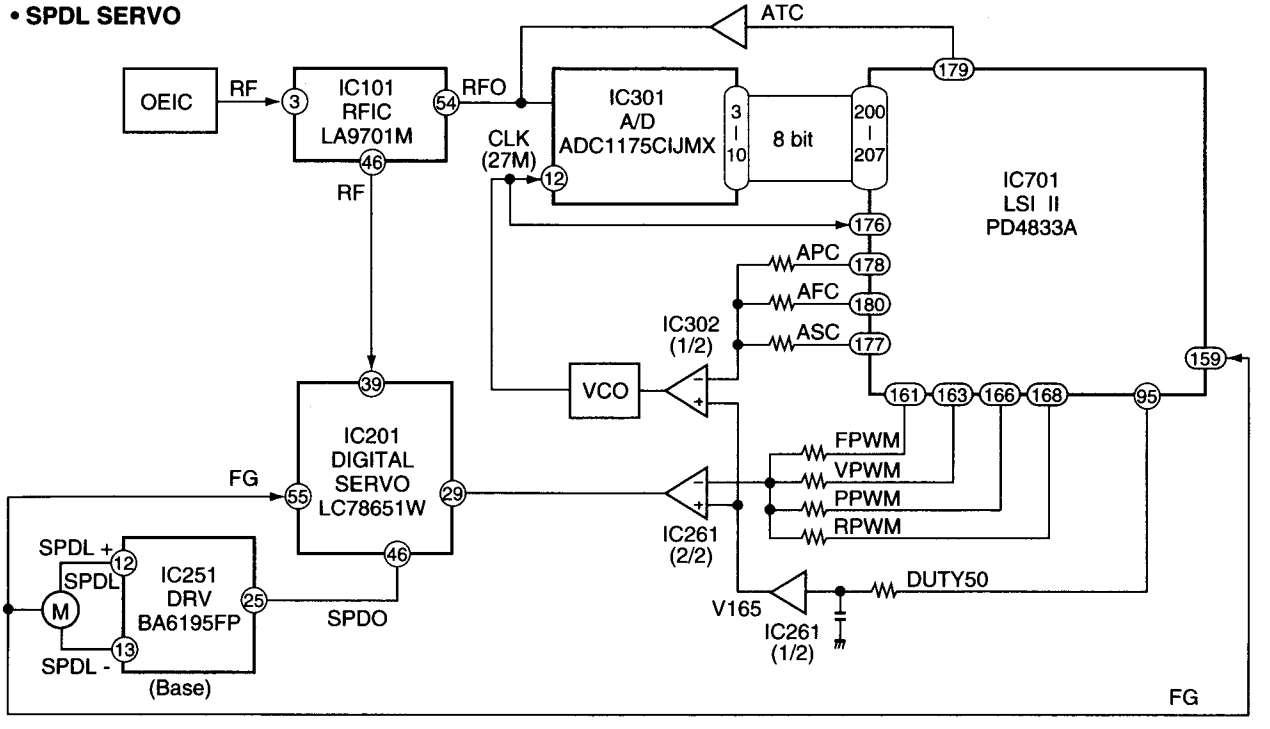


1.2.4 SPINDLE SERVO

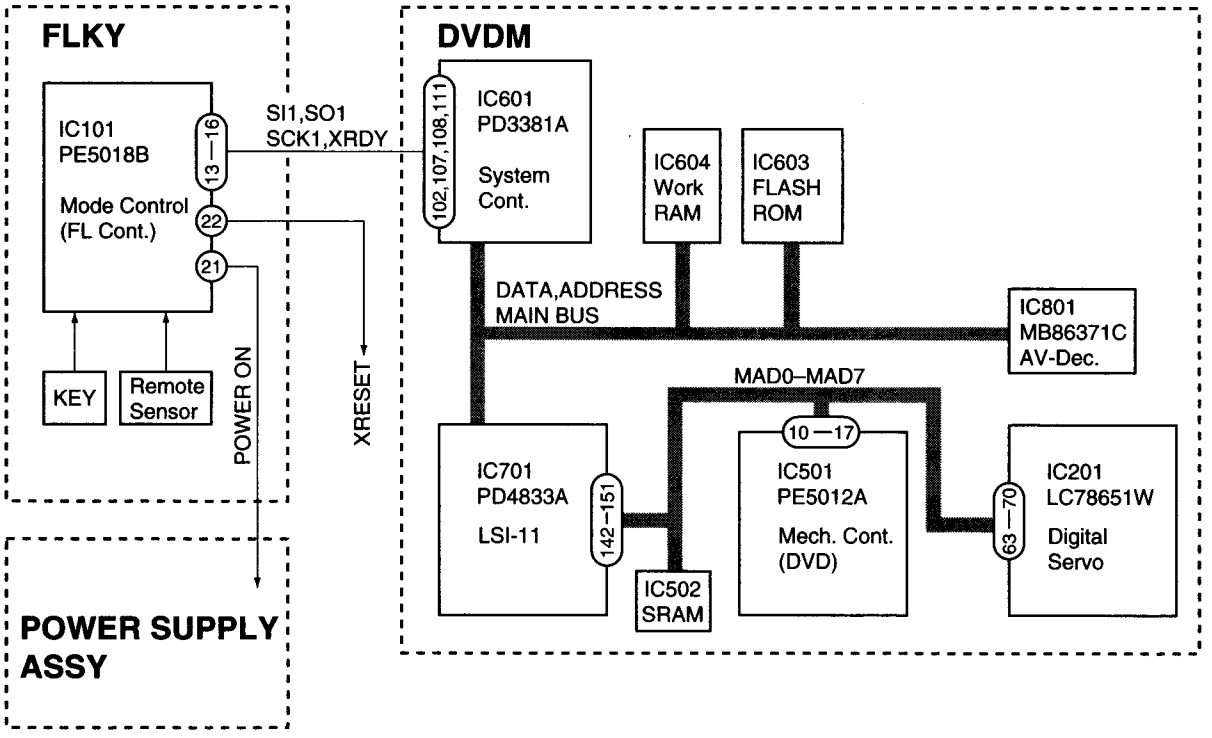
For a CD, the RF signal output from pin 46 of the RF IC is converted to binary in IC201. By comparing the binary value with the reference CLK (clock), the SPDL ERR signal is output from pin 46.

For a DVD, the SPDL ERR signal is generated from the PWM signal output from LSI-II. Upon receiving this signal via pin 29, IC201 also outputs it from pin 46, switching from the CD SPDL ERR signal.

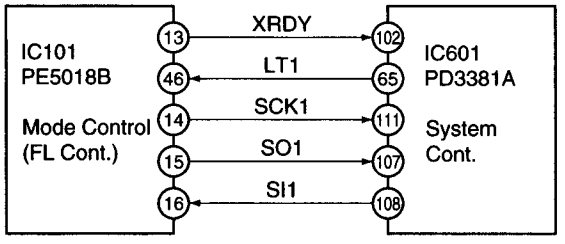
• SPDL SERVO

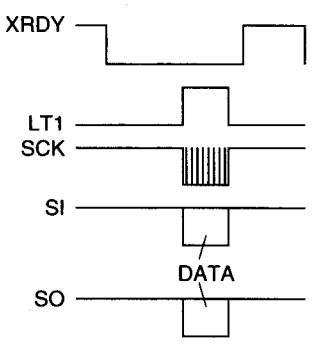


1.2.5 System Control



1) Interface between Mode Cont. and System Cont.





Timing Chart

If there is no communication for 2 sec.,
Mode Cont. turn off the power and reset.

2. TEST MODE

2.1 HOW TO ENTER THE TEST MODE

There is the two following methods in an enters of the test mode.

1. Input [ESC] key and [TEST/RANDOM] key of the LD test mode remote control unit in order under the power on condition.
2. Connect a personal computer with the RS232C terminal (CN106), and input entry command (TE) of test mode from the personal computer.

Note: FL indication and LED come all to light until key operation is done when entering the test mode.

2.2 RELEASE THE TEST MODE

There is the three following methods in a release of the test mode.

1. Turn the power off.
2. Press [ESC] key of the remote control unit. At this time, reset it for a while except for during the LD and CDV set.
3. Connect a personal computer with the RS232C terminal (CN106), and input normal mode entry command (NE) from the personal computer.

2.3 LIST OF TEST MODE FUNCTION

Contents of Command	Condition	Key Name of Remote Control Unit	Code of Remote Control Unit
Open	STOP	REPEAT A	A8 – 48
Close	OPEN	REPEAT A	A8 – 48
Stop	PLAY	REPEAT B	A8 – 44
Play (DVD is only tracing.) Increase the address (at FTS coefficient indication mode)	STOP ——	TV/LDP	A8 – 0F
Play (DVD is with decode.)	STOP	PLAY	A8 – 17
Pause on Decrease the address (at FTS coefficient indication mode)	PLAY ——	CX	A8 – 0E
Pause on/off	PLAY/PAUSE	PAUSE	A8 – 18
Search address input (0 to 9) * Use for other numerical value input		0 to 9	A8 – 00 to 09
Search address input (A to F)	During address input	PGM+1 to 6	
① Search address clear ② Escape the search input mode	During address input Address = 0	CLEAR	A8 – 45
Change the search address input mode (Off → absolute address → addition → subtraction → Off) * Use for other numerical value input		+10	A8 – 1F
Search execution (ignore the wrong address)		CHP/TIM	A8 – 13
Tracking open	PLAY	STEP FWD	A8 – 54
Tracking close	PLAY	STEP REV	A8 – 50
Slider in	TR : Off	SCAN REV Shuttle REV	A8 – 11 A8 – 2C to 2F
Low speed scan REV	TR : On	SCAN REV	A8 – 11
Scan REV (Jump number is variable)	TR : On	Shuttle REV	A8 – 2C to 2F
Slider out	TR : Off	SCAN FWD Shuttle FWD	A8 – 10 A8 – 28 to 2B
Low speed scan FWD	TR : On	SCAN FWD	A8 – 10
Scan FWD (Jump number is variable)	TR : On	Shuttle FWD	A8 – 28 to 2B
Loading in	STOP	SKIP REV	A8 – 53
Loading out	STOP	SKIP FWD	A8 – 52
LD on (650 nm)		TEST+1	A8 – 5E + A8 – 01

Contents of Command	Condition	Key Name of Remote Control Unit	Code of Remote Control Unit
Focus on		TEST+2	A8 – 5E + A8 – 02
Focus sweep		TEST+3	A8 – 5E + A8 – 03
LD on (780 nm)		TEST+4	A8 – 5E + A8 – 04
Focus jump +		MULTI FWD	A8 – 58
Focus jump –		MULTI REV	A8 – 55
Spindle FG on		TEST+5	A8 – 5E + A8 – 05
AFB on/off		TEST+6	A8 – 5E + A8 – 06
FTS coefficient indication	After the address four-digit input	TEST + 9	A8 – 5E + A8 – 09
CD error rate indication	PLAY	TEST + 0	A8 – 5E + A8 – 00
Jitter indication		TEST + DIG/ANA	A8 – 5E + A8 – 0C
Scrren indication on/Switching of the first and second screen	OSD : Off/On	DISPLAY	A8 – 43
Screen indication off	OSD : On	AUDIO	A8 – 1E
Screen indication on/off		PROGRAM	A8 – 4C
Switching of ID display methods (decimal/hexadecimal)		DIG/ANA	A8 – 0C
DISC type designation	STOP	HILITE/INTRO	A8 – 5A
• Forced designation to DVD		+1	+A8 – 01
• Forced designation to CD		+3	+A8 – 03
• Request for Disc sensing		+0	+A8 – 00
Tray close of disc sense inhibition	Checker mode	REPEAT A	A8 – 48
Background color (eight colors) switching		2/R	A8 – 49
Background color (eight colors) switching (reverse toggle)		1/L	A8 – 4B
Video : Component output		DIGITAL EFFECT	A8 – 5C
Video : Composite output		STILL WITH SOUND	A8 – 5B
Audio : 5.1CH forced output (5.1CH output model only)		TEST + FRONT	A8 – 5E + A3 – 99 AF – 65
Audio : Speaker setting change mode on (5.1CH output model only)		TEST + CENTER	A8 – 5E + A3 – 99 AF – 66
Audio : Speaker setting change (5.1CH output model only)		TEST + REAR	A8 – 5E + A3 – 99 AF – 67
Audio : 5.1CH forced output off and setting change mode off (5.1CH output model only)		TEST + LFE	A8 – 5E + A3 – 99 AF – 68
Audio : Speaker setting change mode on (5.1CH output model only)	Checker mode	ESC + CENTER	A8 – 5F + A3 – 99 AF – 66
Audio : Speaker setting change (5.1CH output model only)	Checker mode	ESC + REAR	A8 – 5F + A3 – 99 AF – 67
Audio : Speaker setting change mode off (5.1CH output model only)	Checker mode	ESC + LFE	A8 – 5F + A3 – 99 AF – 68
RF AGC OFF		D-LEVEL+0	A8 – 37 + A8 – 00
RF AGC ON		D-LEVEL+1	A8 – 37 + A8 – 01

● Special Mention Item

(1) Indications for the spindle status are as follows:
A/B : Spindle accelerator and brake
FG : FG servo
SRV : Rough, velocity/phase servo
O_S : Offset addition, rough, velocity/phase servo

(2) The movement of loading in/out starts from the tray open status. After that, this function is executed unless a play and close operation are done.

(3) There are three methods for entering a search address:
① Absolute address designation
→ Searching for the address entered
(indication for the most significant digit : >)
② Additional input
→ Searching for the address with the current ID number plus an entered number
(indication for the most significant digit : +)
③ Subtractive input
→ Searching for the address with the current ID number minus an entered number
(indication for the most significant digit : –)
The above modes can be changed by pressing [+10] key.
Note : A number for addition or subtraction must be entered in hexadecimal.

(4) If disc-type designation is forcibly executed during a mode other than Checker mode, the system controller will abandon disc-type designation after setting the mechanism controller. Therefore, after startup of the player, disc sensing will be performed again for safety.
If disc-type designation is forcibly executed during Checker mode, as disc-type designation is not abandoned, playback will be immediately started.

(5) A background color change in order of blue → green → light blue → red → purple → yellow → gray → black → with the [2/R] key.
It changes in order of gray → yellow → purple → red → light blue → green → blue → black → in the case of the [1/L] key.

(6) 5.1CH forced output becomes 5.1CH mode, the speaker setting will forcibly set to 3/2 + SW.

(7) Speaker setting change mode becomes 5.1CH mode, and it changes in order of 3/2+SW → 3/2 → 2/2+SW → 2/2 → 3/0+SW → 3/0 → 2/0.
It is the same as the test mode and the checker mode.

2.4 THE EXPLANATION OF EACH FUNCTION

2.4.1 FUNCTION

The function that can be operated in the test mode is as the following.
Use a LD test mode remote control unit in the test mode.

(1) Door Open/Close

1. Press [REPEAT A] (48) key of the remote control unit.
2. Press [OPEN/CLOSE] key of the player from the stop condition.

(2) Stop

1. Press [REPEAT B] (44) key of the remote control unit.
2. Press [STOP] key of the remote control unit or the player from the stop condition.

(3) Play 1 (Demultiplex exist which it tries to output the playback screen)

1. Press [PLAY] (17) key of the remote control unit.
   • DVD rise up at the tracking close. Playback screen may not appear because the NAVI information isn't read in the test mode.

(4) Play 2 (Demultiplex is absent which performing trace only)

1. Press [TV/LDP] (0F) key of the remote control unit.
   • Perform only tracing with DVD, and there are no video and audio output.
2. Increase the address at the FTS coefficient indication mode.

(5) Pause

1. It becomes pause condition by pressing [CX] (0E) key of the remote control unit in the play.
   • ON/OFF changes alternately with DVD.
2. Pause ON/OFF changes alternately by pressing [PAUSE] (18) key in the play.
   • Only Play 2 is effective with DVD.
3. Decrease the address at the FTS coefficient indication mode.

(6) Tracking Open

1. Press [STEP FWD] (54) key of the remote control unit in the play condition.

(7) Tracking Close

1. Press [STEP REV] (50) key of the remote control unit in the play condition.

(8) Slider In

1. Press [SCAN REV] (11) key of the remote control unit in the tracking off condition.
2. Turn the shuttle of the remote control unit in the REV direction (2C to 2F) in the tracking off condition. (DVD only)

(9) Slider Out

1. Press [SCAN FWD] (10) key of the remote control unit in the tracking off condition.
2. Turn the shuttle of the remote control unit in the FWD direction (28 to 2A) in the tracking off condition. (DVD only)

(10) Scan In

1. Press [SCAN REV] (11) key of the remote control unit in the tracking on condition.
2. Turn the shuttle of the remote control unit in the REV direction (2C to 2F) in the tracking on condition.
   - DVD can be scanned only in the case of the play 2 (playback without demultiplex).

(11) Scan Out

1. Press [SCAN FWD] (10) key of the remote control unit in the tracking on condition.
2. Turn the shuttle of the remote control unit in the FWD direction (28 to 2A) in the tracking on condition.
   - DVD can be scanned only in the case of the play 2 (playback without demultiplex).

(12) Loading In/Out

When pressing [SKIP REV] (53) key of the remote control unit in the open condition, it loads in the clamp direction. Then it loads in the open direction when pressing [SKIP FWD] (52) key.

- This function can practice only when it is indicated with "OPEN" in FL.

(13) Search Address Input Entry

It becomes the address input mode when [+10] (1F) key is pressed. (indication for the most significant digit : >)
Indicate the last address as the initial condition in this time.
Only in case of DVD, addition search (indication for the most significant digit : +) and subtraction search (indication for the most significant digit : –) are able to select in order by pressing [+10] key continuously.
The address where input value was added to the present address is make to search with addition search.
The address where input value was subtracted to the present address is make to search with subtraction search.
In case of CD is only absolute time search.
Also address clear and release from the address input mode are able to perform by 2 steps by pressing [CLEAR] (45) key.

(14) Search Address Input

Press [0] to [9] keys of the remote control unit.
Set up the address by the hexadecimal number with DVD.
When [PROGRAM] (4C) key is pressed in the address input mode, input mode changes to hexadecimal number input (Indicates "*" mark), and [1] to [6] keys are input as [A] to [F].
At this time, [7], [8], [9] and [0] keys are not accepted.
Also the hexadecimal number input and the decimal number input can be changed with toggle.

(15) Search Practice

1. Press [CHP/TIM] (13) key of the remote control unit.
   Practice the on screen no playback (Doesn't demultiplex) after the search with DVD.
2. Press [PLAY] (17) key of the remote control unit.
   Practice the on screen playback (demultiplex exists) after the search with DVD.

(16) Auto Digital On/Off

Auto Digital ON/OFF switches every time [DIG/ANA] (0C) key of the remote control unit is pressed.

(17) Screen Display On

1. Press [DISPLAY] (43) key of the remote control unit.
2. Display on/off switches every time [PROGRAM] (4C) key of the remote control unit is pressed.
   - When [DISPLAY] key is pressed in the display on, change the part number indication of the microprocessor and revision indication.
   - Initial state is screen display on and it becomes the part number indication of the microprocessor.

(18) Screen Display Off

1. Press [AUDIO] (1E) key of the remote control unit.
2. Display on/off switches every time [PROGRAM] (4C) key of the remote control unit is pressed.

(19) Focus Jump +

Focus jumps in 1 layer from 0 layer when [MULTI FWD] (58) key of the remote control unit is pressed. (DVD only)

(20) Focus Jump –

Focus jumps in 0 layer from 1 layer when [MULTI REV] (55) key of the remote control unit is pressed. (DVD only)

2.4.2 EXPANSION FUNCTION 1

Set the reception mode of expansion function by pressing [TEST] (5E) key of the LD test mode remote control unit, then expansion function is able to execute by pressing the following keys.
Indication for the most significant digit becomes "T" during the reception mode of expansion function. (This mode can on and off with toggle.)

(1) LD On (650n)

Turn the laser diode to on by pressing [TEST] and [1] keys in order.

(2) Focus On

Focus locks by pressing [TEST] and [2] keys in order.

(3) Focus Sweep

Repeat focus sweep by pressing [TEST] and [3] keys in order.

(4) LD On (780n)
Turn the laser diode to on by pressing [TEST] and [4] keys in order.

(5) Spindle FG Servo
Rising up the spindle and FG servo becomes on by pressing [TEST] and [5] keys in order.

(6) AFB On/Off
Switch the AFB on and off with toggle by pressing [TEST] and [6] keys in order.

(7) AGC On/Off
Switch the AGC on and off with toggle by pressing [TEST] and [7] keys in order.

(8) Jitter Value Indication
It becomes the jitter-value indication mode by pressing [TEST] and [DIG/ANA] keys in order.

(9) DSP Coefficient Indication of FTS System
Set up the address (four digits) of the coefficient that it wants to see by the point of search address input, then real time indicates the coefficient in OSD by pressing [TEST] and [9] keys in order.

(10) CD Error Rate Indication
Indicate the value in OSD after measuring is completed by pressing [TEST] and [0] keys in order after set up the measuring time (1 to 8 seconds) by the point of search address input.

(11) Skirt Terminal Output Setting (VIDEO)
Turn the output video signal to VIDEO by pressing [TEST] and [AUDIO] keys in order.

(12) Skirt Terminal Output Setting (S-VIDEO)
Turn the output video signal to S-VIDEO by pressing [TEST] and [SUBTITLE] keys in order.

(13) Skirt Terminal Output Setting (RGB)
Turn the output video signal to RGB by pressing [TEST] and [ANGLE] keys in order.

(14) Virtual Dolby (VDS) ON
Turn the virtual dolby to ON by pressing [TEST] and [FWD SKIP] keys in order. (It is effective in this more than 5 ch of AC3.)

(15) Virtual Dolby (VDS) OFF
Turn the virtual dolby to OFF by pressing [TEST] and [REV SKIP] keys in order.

2.4.3 EXPANSION FUNCTION 2

Set the reception mode of expansion function 2 by pressing [HILITE/INTRO] (55) key of the remote control unit, then expansion function 2 is able to execute by pressing the following keys.

(1) Forced DVD Setting
In the checker mode, set up the condition that DVD is attached forcibly except for the result of disc distinction by pressing [HILITE/INTRO] and [1] keys in order.
In the no checker mode (normal test mode), once execute the setting but abandan it soon.
Therefore, perform the disc distinction again for the safety when rising up the player in this condition.

(2) Forced CD Setting
In the checker mode, set up the condition that CD is attached forcibly except for the result of disc distinction by pressing [HILITE/INTRO] and [3] keys in order.
In the no checker mode (normal test mode), once execute the setting but abandan it soon.
Therefore, perform the disc distinction again for the safety when rising up the player in this condition.

(3) Execute the Disk Distinction
In the checker mode, execute the disc distinction result by pressing [HILITE/INTRO] and [0] keys in order.

2.4.4 EXPANSION FUNCTION 3 (AGC Manual Setting Mode)

Enter the AGC Manual Setting mode by pressing the [D-LEVEL CTRL] (37) key on the remote control unit. This function is enabled when AGC is off with a DVD set.

How to set
When the [D-LEVEL CTRL] (37) key is pressed with a DVD set, brackets [ ] are displayed to the right of the ATB setting, showing that the AGC Manual Setting mode has been entered.
In this condition, AGC set on/off can be achieved by pressing the [0] or [1] key. The set value is displayed in the brackets.
To exit the AGC Manual Setting mode, press the [D-LEVEL CTRL] key again or call the Search Address Input mode with the [+10] key.

2.5 PLAYER REGION CONFIRMATION

This function enables you to confirm the region code and version of ROM in the player.
Use the LD test mode remote control unit for service (GGF1067).

(1) Entry

Press the [ESC] key and [Clear] key in the LD test mode remote control unit to enter region confirmation mode.

(2) Confirmation

Region code and ROM version is displayed on the monitor so you can confirm each code.
(Of course, Region code can not be changed.)

(3) Exit

Press the [ESC] key to exit the Region confirmation mode.

- This function also resets the unit to the initial settings (When shipped from the factory). In fact, User setting (Parental level code number, Condition memory, Last memory, Set-up menu data etc.,) will be lost.

2.6 RAM DISPLAY MODE

This function provides a real time display of the RAM contents at the specified address of the system controller or the mechanism controller.
The display for the system controller shows four bytes, and that for the mechanism controller shows one byte. They cannot, however, be simultaneously monitored. Use the LD test mode remote control unit for this operation.

(1) Entry

Press the [ESC] key and the [TV/LDP] key in sequence to enter the RAM Display mode.

(2) Displays

In this mode, the lowest line of the OSD shows the following:

```
00000 : 55000000<F000 : 0001
  ①          ②     ③   ④     ⑤
```

① : Lower 5 digits of the specified RAM address of the system controller. (The actual address is 010XXXXX h.)
② : Contents at the specified address of the system controller (The leftmost byte corresponds to the specified address.)
③ : The angle bracket points to the controller whose data are being displayed in real time.
④ : Lower 4 digits of the specified RAM address of the mechanism controller
⑤ : Contents at the specified address of the mechanism controller

(3) Address setting

Each time you press the [DISPLAY] key, the system controller and the mechanism controller are selected in turn (the angle bracket ③ points toward the current selection).
Pressing the [TV/LDP] key increases the address.
Pressing the [CX] key decreases the address.
Holding these keys increases or decreases the address in units of ten.

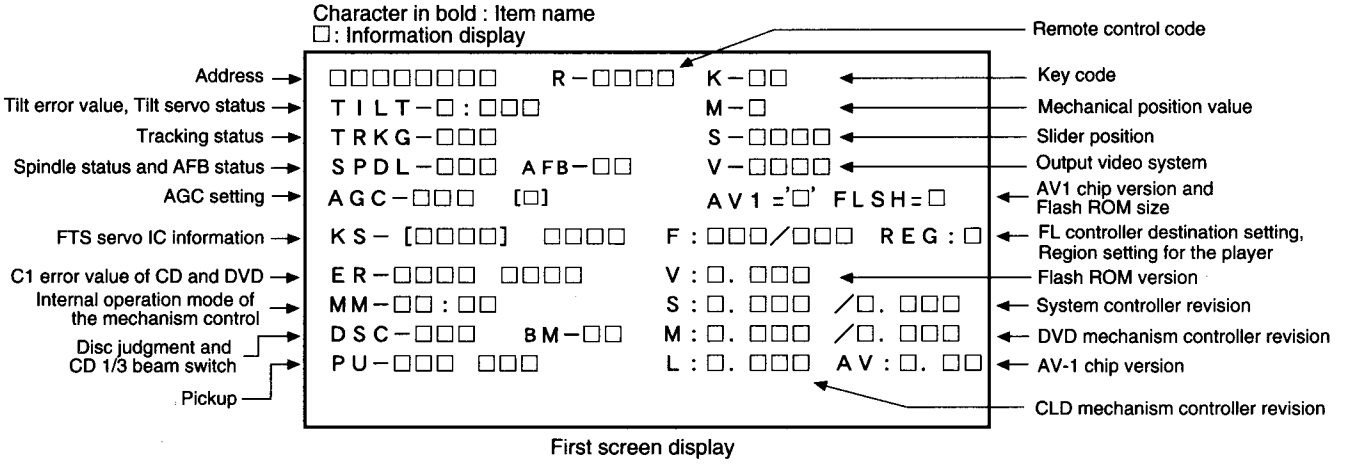
(4) Exit

Press the [ESC] key again to exit this mode.

2.7 TEST MODE SCREEN DISPLAY

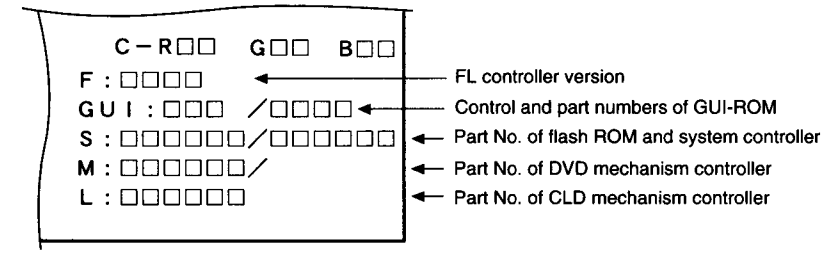
Consecutive double-OSD display is supported during test mode. The screen is composed 10 lines with a maximum of 32 characters per line. It can't be used with the debugging display mode together. Screen display contents including the CLD model.

• Screen Composition



First screen display

Caution :
The first screen and second screen switch by pressing [DISPLAY] key of the remote control unit.
It is only a version display part on the lower right of the screen those contents of display change.



Second screen display (at lower right portion of the screen)

• 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/LD (CLV)	: A-TIME (min. sec.)	[0 0 0 0 * * * *]
LD (CAV)	: FRAME	[0 0 0 * * * * *]

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

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

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

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

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

(4) Tilt error value, Tilt servo status [TILT – * : * * *]

Tilt error value :	[0] to [F]
Tilt servo status :	
Tilt neutral	[N]
Tilt servo on	[ON]
Tilt servo off	[OFF]

(5) Tracking status [TRKG – ***]

Tracking on	[ON]
Tracking off	[OFF]

(6) Spindle status [SPDL – * * *]

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

(7) Mechanism position value [M – *]

Position code	[0] to [8]

(8) Slider position [S – * * * *]

CD TOC area	[IN]
CD active area	[CD]
CDV video area	[CDV]
LD active area	[LD]
Side B inside	[B IN]

(9) AGC setting [AGC – * *] [*]

AGC on	[AGC-ON]
AGC off	[AGC-OFF]
RF AGC on	[1]
RF AGC off	[0]

(10) Output video system [V – * * * *]

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

(11) FTS servo IC information

Indications for the following two types of information can be switched:

① DSP coefficient indication [KS – [* * * *] * * * *]
Displays the address (four digits) of the specified coefficient and the setting value (four digits) with [TEST] and [9] keys.

② Jitter value indication [JT – [0 0 0 0] * * * *]
Displays the jitter value (four digits) with [TEST] and [DIG/ANA] 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], [CDV], [LD], [VCD], [ ]

② CD 1/3 beam switch [BM – * *]

(15) Pickup [PU – * * *]

The pickup being operating is displayed.

DVD	[DVD]
CLD	[CLD]

The wavelength 650 or 780 is displayed while executing LD on (approx. 10 seconds) with the command.

DVD 650	[DVD 650 nm during LD on]
DVD 780	[DVD 780 nm during LD on]

(16) Version of the AV-1 chip [AV1 = ' * ']

Flash ROM size [FLASH=*]

(17) ① Destination setting of the FL controller [F : * * * / * * *]

Model type <Front>
Destination code <Rear>

② Region setting of the player [REG : *]

Setting value [1] to [6]

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

(19) 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>

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

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

(21) Revision of the CLD mechanism controller [L : * . * * *]

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

(23) Version of the FL controller [F : * . *]

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

① Control number of the GUI-ROM (3-figure number of decimal) <Front>
② Part number of the GUI-ROM <Rear>

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

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

(26) Part number of the DVD mechanism controller

(Example) PD4889A0 → 4889A0
(PE5012A0)

(27) Part number of the CLD mechanism controller

(Example) PD0260A2 → 0260A2

(28) 5.1CH output mode indication (5.1/2)

(29), (30), (31) Speaker ON/OFF indication

3. ERROR CODE

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

FL Display	Detecting Microcomputer	Possible causes	Operation of the unit
GUI ROM ERROR	System controller	Difference in versions of the GUI-ROM and of the software for the system controller	Operates as an OSD model
FLASH ID	System controller	Difference in versions of the One-Time of the system controller and of the flash ROM, or bus line failure	No operation
FLASH SIG	System controller	Difference in memory IDs of the flash ROM	
FLASH WRP	System controller	Write protect error of the flash ROM	No operation
FLASH SUM	System controller	Check sum error of the flash ROM	No operation
MECHA CPU	System controller	Downloading of the software for the mechanical controller not started	No operation
ILLGAL	System controller	The system controller fetched a code other than an operation code	No operation
SLOT	System controller	Inappropriate slot command issued	No operation
CPU AERR	System controller	CPU address error	No operation
DMA AERR	System controller	DMA address error	No operation
AV1 VER	System controller	Difference in versions of the unit and of the AV1	
RESERVE	System controller	Undefined interrupt	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 center of the FL display

FL	Description of Error	Detecting Microcomputer	Causes if with a DVD	Causes if with a CD (LD)	Operation of the Unit
11	Search timeout	DVD mechanism controller	Search could not be complete within 10 seconds.	Search could not be complete within 7 seconds, and it could not enter the target area within 10 seconds by VCD scan.	CD: Stops, DVD: Continues operation
12	Search retry error	DVD mechanism controller	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	DVD mechanism controller	Timeout (10.5 seconds) while tracing at the stage of convergence of a search.		Stop
1B	Index 0 search error	DVD mechanism controller		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	DVD mechanism controller	Inside switch could not ON within 2 seconds.		Stop
23	Timeout of slider outer circumference	DVD mechanism controller	Inside switch could not OFF within 2 seconds.		Stop
33	No FOK pulse during playback CLVA	DVD mechanism controller	No FOK pulse during 4 loops or more after the spindle was PLL locked and restarting was tried 4 times and more. No FOK pulse during 4 loops or more until the spindle was PLL-locked after the spindle kick.	No FOK pulse during 2 loops or more after the spindle was PLL-locked and restarting was tried 4 times and more. No FOK pulse during 2 loops or more until the PLL was locked after CLVA.	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	DVD mechanism controller	If normal starting was impossible in the following three cases, disc-type sensing will be retried if error No. 33, 4*, 5*, 7*, or C3 occurs: (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	Detecting Microcomputer	Causes if with a DVD	Causes if with a CD (LD)	Operation of the Unit
39	SGC converge timeout	DVD mechanism controller	SGC could not converge during detects the peak		Open
41	Spindle timeout	DVD mechanism controller	The unit did not enter Stop mode within 10 seconds of issuance of a Stop command.		Stop
48	Spindle FG transition timeout	DVD mechanism controller	The spindle could not converge into within ± 12% of the target FG rotation speed within 10 seconds after spindle kick, or the target FG rotation speed was not achieved 5 times or with 1-mS-interval interrupts within 150 mS after AGC was completed.		Stops. (FG timeout)
49	Spindle PLL transition timeout	DVD mechanism controller	The rotation speed of the spindle became 1.5-fold and more that at the innermost circumference of the DVD during three loops, or the spindle could not be locked within 1 second before AGC started.		Stops. ("73" is displayed during starting process.)
4A	Spindle lock timeout	DVD mechanism controller	Spindle could not lock more than 1 second before start the AFB.		Stops. ("73" is displayed during starting process.)
51	Auto sequence timeout of peak detection	DVD mechanism controller	ABUSY did not return within a specified time after the DDTCT (peak detection) command was sent.		Stop
52	Auto sequence timeout of focus jump down	DVD mechanism controller	ABUSY did not return within a specified time after the FJMPD (Focus jump 1 to 0) command was sent.		Stop
53	Auto sequence timeout of focus jump up	DVD mechanism controller	ABUSY did not return within a specified time after the FJMPU (Focus jump 0 to 1) command was sent.		Stop
54	Auto sequence timeout of play AGC	DVD mechanism controller	ABUSY did not return within a specified time after the GSUMON (play-AGC-measuring) command was sent.		Stop
55	Auto sequence timeout of disc-type-sensing	DVD mechanism controller	ABUSY did not return within a specified time after the DJSRT (disc-sensing) command was sent.		Stop
56	Auto sequence timeout of ATB2	DVD mechanism controller	ABUSY did not return within a specified time after the TBLOFS (Internal ATB after the completion of external ATB) command was sent.		Stop
57	Auto sequence timeout of tracking servo ON	DVD mechanism controller	ABUSY did not return within a specified time after the TSON (tracking servo ON) command was sent.		Stop
58	Auto sequence timeout of ATB1	DVD mechanism controller	ABUSY did not return within a specified time after the TBL (external ATB) command was sent.		Stop
59	Auto sequence timeout of focus gain adjustment	DVD mechanism controller	ABUSY did not return within a specified time after the FGN (focus gain adjustment) command was sent.		Stop
5A	Auto sequence timeout of tracking gain adjustment	DVD mechanism controller	ABUSY did not return within a specified time after TGN (tracking gain adjustment) command was sent.		Stop
5B	Auto sequence timeout of offset adjustment	DVD mechanism controller	ABUSY did not return within a specified time after the CMDAVE (offset adjustment) command was sent.		Stop
5C	Auto sequence timeout of modulation factor measurement	DVD mechanism controller	ABUSY did not return within a specified time after the ADJMIR (modulation factor measurement) command was sent.		Stop
5D	Auto sequence timeout of auto focus bias	DVD mechanism controller	ABUSY did not return within 2 seconds after the AFB (auto focus bias) command was sent.		Stop
5E	Auto sequence timeout of RF count	DVD mechanism controller	ABUSY did not return within a specified time after the RFSMP (RF count) command was sent.		Stop
5F	Auto sequence already busy	DVD mechanism controller	A command could not be sent because ABUSY was low.		Stop
62	Pause retry error	DVD mechanism controller	Pause mode could not be restored within three retries after it had been released.		Continues operation

FL	Description of Error	Detecting Microcomputer	Causes if with a DVD	Causes if with a CD (LD)	Operation of the Unit
71	ID readout check failure during playback	DVD mechanism controller	An ID could not be read for 160 loops (about 480 mS) or more during tracing, or recovery (restart) was tried for 3 times after detecting high speed (1.3-fold of ID=20000H rotation) or low speed (0.7-fold of ID=300000H rotation).		Stop
72	Subcode check failure during playback	DVD mechanism controller		No frame could be read for 3 seconds or more, or the subcode could not be read during 2 seconds before the TOC read-in search.	Stop
73	ID readout failure during startup	DVD mechanism controller	An ID could not be read within 1 second after PLL lock, or the spindle detected an abnormality (uncapturable [beyond ± 12%] high speed [1.5-fold of ID=20000H rotation] within 5 seconds after finishing the kick.		Opens (ID readout failure)
74	Subcode check failure during startup	DVD mechanism controller		No subcode could be read within 3 seconds after AFB had been finished.	Opens (Subcode readout failure).
81	Timeout for reading TOC of the mechanism controller	DVD mechanism controller		TOC readout took 30 seconds or more.	Stop
82	Timeout for reading TOC of the system controller	DVD mechanism controller		Reading TOC of the system controller took 30 seconds or more.	Stop
A1	Communication timeout of DSP command	DVD mechanism controller	A command could not be issued to DSP because Command Busy (XCBUSY) was in force (XCBUSY = L) for a specified time (about 1024 mS).		Open
A2	Communication timeout for reading DSP coefficient	DVD mechanism controller	Command Busy (XCBUSY) was in force for a specified time (about 1024 mS) 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.		Open
A3	Communication timeout for writing DSP coefficient	DVD mechanism controller	Command Busy (XCBUSY) was in force for a specified time (about 1024 mS) before and after the coefficient write command was issued to DSP.		Open
A4	Communication timeout for continuously writing DSP coefficient	DVD mechanism controller	Command Busy (XCBUSY) was in force for a specified time during continuous coefficient writing, or before and after a continuous write command was issued to DSP.		Open
B1	Timeout error for backup	DVD mechanism controller	Codes could not be read for a specified time during the backup process.		Stops (the mechanical controller operates independently).
B2	Retry error for backup	DVD mechanism controller	Tracing impossible after a specified number of iterations of backup operations.		Stops (the mechanical controller operates independently).
B3	Retry error for trace	DVD mechanism controller	During tracing, runaway was detected after three iterations of backup operations for detecting runaway.		Stops (the mechanical controller operates independently).
C3	Detection of tracking overcurrent	DVD mechanism controller	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	DVD mechanism controller	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)
C6	Child process stack overflow	DVD mechanism controller	The child stack overflowed.		Forcibly stop the unit with the mechanism controller, then reset with the system controller.

FL	Description of Error	Detecting Microcomputer	Causes if with a DVD	Causes if with a CD (LD)	Operation of the Unit
C7	SRAM error (checksum)	DVD mechanism controller	The checksum for the SRAM object data during Stop mode didn't match that during downloading.		The object data of the mechanism controller is reloaded.
C8	Mechanical controller runaway	DVD mechanism controller	Runaway of the mechanical controller was detected by the watchdog timer (105 mS).		The object data of the mechanism controller is reloaded.
CA	No-download error (download demand)	DVD mechanism controller	Downloading was demanded once the power was turned on.		Downloads the object data of the mechanism controller.
D1	SRAM device error	DVD mechanism controller	Reading from and writing to SRAM were impossible after the power was turned on.		No operation
D2	DSP device error	DVD mechanism controller	Reading from and writing to DSP were impossible after the power was turned on.		No operation
D3	LSI-II device error	DVD mechanism controller	Reading from and writing to LSI-II were impossible after the power was turned on.		No operation. In a case of a failure of the LSI-II, the error data may not be transmitted to the system controller.
E3	Violation against digital copy guard	System controller			Stop
F5	Tray being pushed	DVD mechanism controller	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	DVD mechanism controller	Loading, unloading or clamping could not be completed within a specified time (about 5 seconds).	(1) Loading, unloading or clamping could not be completed within a specified time. (2) Tilt error could not be canceled by reaching within the dead zone within 5 seconds.	Reverses the loading direction. If timeout is repeated upon retry, the unit stops.
FC	Focus	DVD mechanism controller	Focus could not be achieved when focus-in was tried and sweeping was done three times with a disc in the tray after disc-type sensing had been completed.	(1) A setup command was issued from the system controller with no disc loaded. (2) During setup, when the slider was moving to the startup position, the focus of an LD was out or focusing of a CD/ CDV did not succeed after three tries. (3) During startup, the maximum duty for the slider servo continued for three loops or more. (4) Focus of the LD was out during CAV/CLV sensing. (5) During TOC reading, the focus was out.	Stops wherever possible then opens (stops in the case of side B).
FE	TOC read	DVD mechanism controller		The entire TOC could not be read within 30 seconds after the first subcode was read.	CD: Stops (TOC read timeout), LD: Operates as if there were no TOC.

4. IC INFORMATION

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

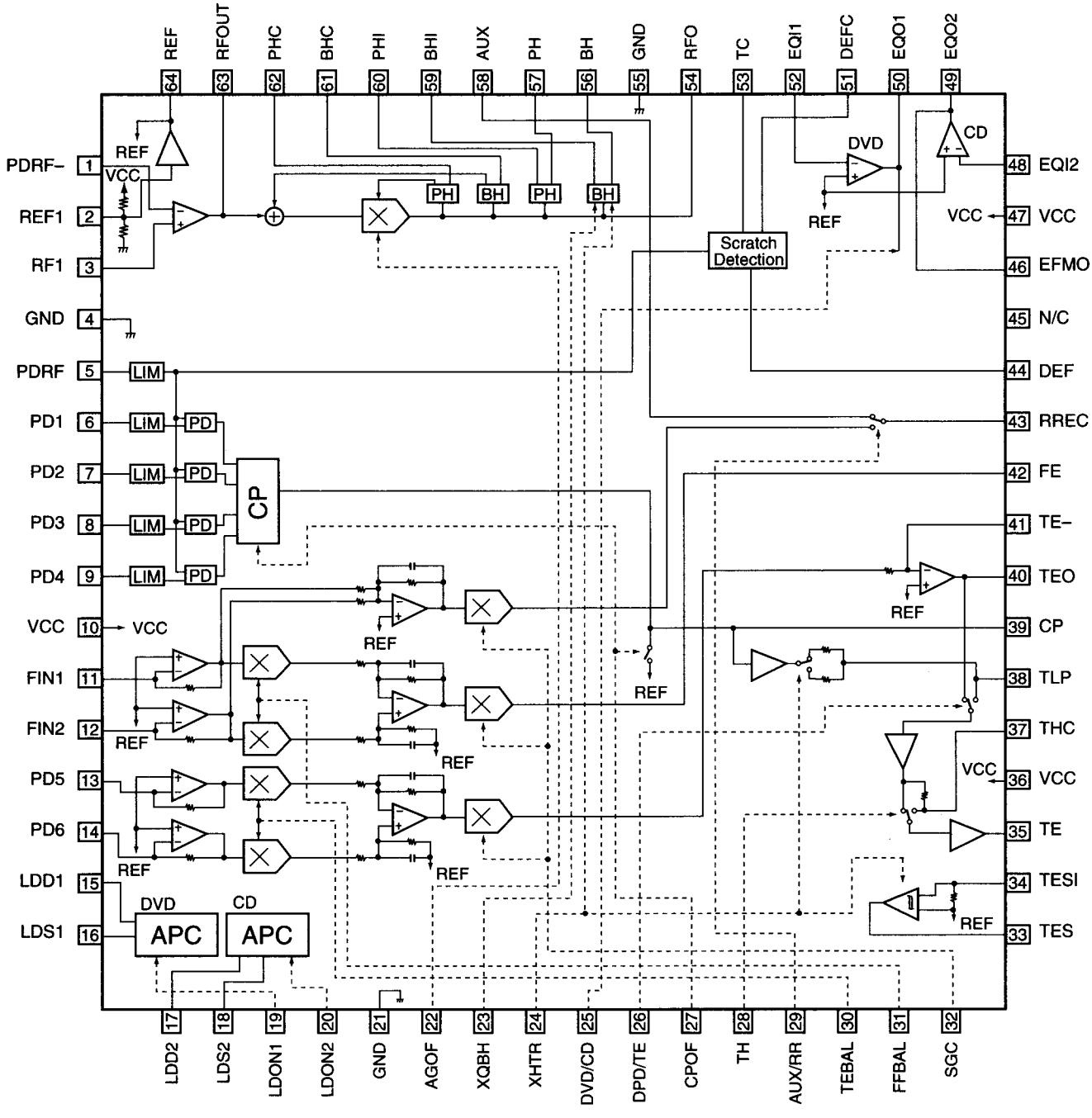
● List of IC

LA9701M, LC78651W, PE5018B, PE5012A, PD3381A

■ LA9701M (DVDM ASSY : IC101)

· **RF IC**

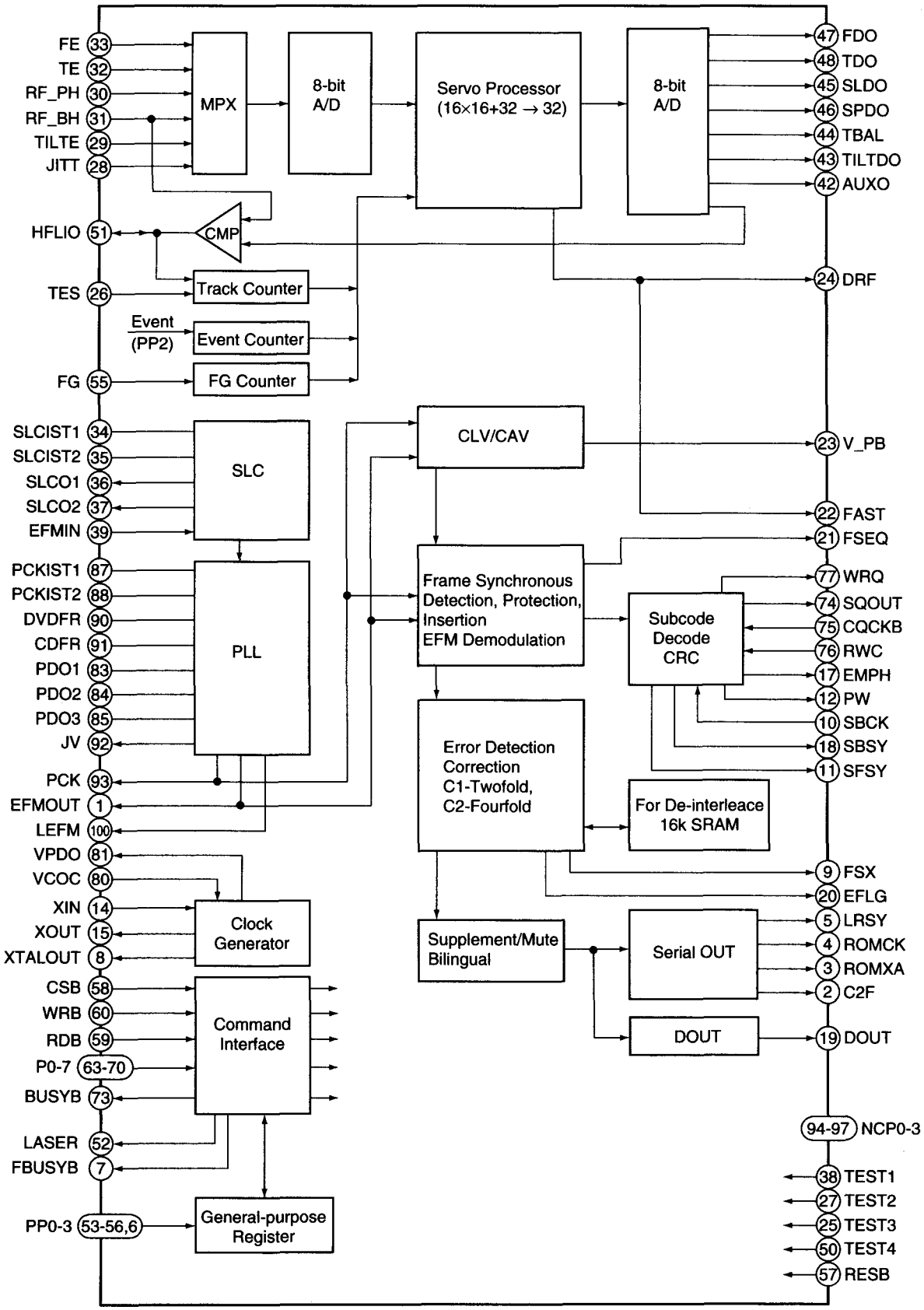
● Block Diagram



■ LC78651W (DVDM ASSY : IC201)

- DSP IC

● Block Diagram



● 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/SYNC	I/O	General-purpose port input/output / DVD sync. signal input
7	FBUSYB	O	Busy signal output of DSP process operation
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 for oscillation circuit
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 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
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	–	Control output 1 for SLC
37	SLCO2	–	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 internal system clock
80	VCOC	–	Connect a PLL filter for internal system clock
81	VPDO		
82	AVDD	–	PLL 5V power supply for internal system clock
83	PDO1	–	PLL filter connection pin 1 for EFM playback
84	PDO2	–	PLL filter connection pin 2 for EFM playback
85	PDO3	–	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	NCP0	–	NC
95	NCP1		
96	NCP2		
97	NCP3		
98	DVDD2	–	5V power supply
99	VSS	–	GND
100	LEFM	O	Output the state that cut and out a signal which was binary-stated value EFM with PCK

■ PE5018B (FLKY ASSY : IC101)

- FL Control IC

● Pin Function

No.	Mark	Pin Name	I/O	Function	No.	Mark	Pin Name	I/O	Function
1	P94	G7	O	FL timing output H: ON	41	P32	P32	I	Not used
2	P93	G6			42	P31	P31	I	Not used
3	P92	G5			43	P30	(NC)	O	Non connection
4	P91	G4			44	P03	P03	I	Not used
5	P90	G3			45	P02	ON POWER	I	Switch the STBY/POWER ON at FL controller is rised u.p L: STBY
6	P81	G2			46	P01	LT	I	Communication handshake line with system controller H: Communication permission
7	P80	G1			47	P00	SEL IR	I	Remote control signal input
8	VDD	VCC	–	Power supply pin	48	IC	IC	–	–
9	P27	(NC)	O	Non connection	49	P72	(NC)	O	Non connection
10	P26	(NC)	O	Non connection	50	P71	FL OFF LED	O	FL OFF LED ON/OFF L: ON
11	P25	(NC)	O	Non connection	51	P70	V.D.S. LED	O	Virtual Dolby Surround LED ON/OF L:ON (DV-515 only)
12	P24	LAMP	O	DVD lamp ON/OFF H: ON	52	VDD	VDD	–	Power supply pin
13	P23	XREADY	O	Communication handshake line with system controller L: Communication permission	53	P127	(NC)	O	Non connection
14	P22	SCK	I/O	Communication clock output with system controller	54	P126	(NC)		
15	P21	SO	I/O	Communication data output with system controller	55	P125	(NC)		
16	P20	SI	I	Communication data input with system controller	56	P124	(NC)		
17	RESET	RESET IN	I	Reset input L: Reset	57	P123	(NC)		
18	P74	(NC)	O	Non connection	58	P122	(NC)		
19	P73	(NC)	O	Non connection	59	P121	(NC)		
20	AVSS	VSS	–	GND	60	P120	(NC)		
21	P17	POWER ON	O	SW 5V ON/OFF H: ON	61	P117	P15	O	FL segment output H: ON
22	P16	RESET OUT	O	System reset input L: Reset	62	P116	P14		
23	P15	(NC)	O	Non connection	63	P115	P13		
24	P14	KIN2	I	Key input	64	P114	P12		
25	P13	KIN1			65	P113	P11		
26	P12	KIN0			66	P112	P10		
27	P11	MS1	I	Destination discrimination input	67	P111	P9		
28	P10	MS0			68	P110	P8		
29	AVDD	AVDD	–	Power supply pin	69	P107	P7		
30	AVREF	AVREF	–	Reference power supply pin	70	P106	P6		
31	P04	P04	I	Not used	71	VLOAD	– 27V	–	Input for – 27V
32	XT2	(NC)	–	Non connection	72	P105	P5	O	FL segment output H: ON
33	VSS	VSS	–	GND	73	P104	P4		
34	X1	X1	I	Connect a microprocessor clock	74	P103	P3		
35	X2	X2	–		75	P102	P2		
36	P37	(NC)	O	Non connection	76	P101	P1		
37	P36	(NC)	O	Non connection	77	P100	G11		
38	P35	(NC)	O	Non connection	78	P97	G10		
39	P34	P34	I	Not used	79	P96	G9		
40	P33	P33	I	Not used	80	P95	G8		

■ PE5012A (DVDM ASSY : IC501)

- **Mechanism Control IC**

● Pin Function

No.	Pin Name	I/O	Function	No.	Pin Name	I/O	Function
1	LODDRV	I/O	Loading motor drive output	33	XCSB	O	DSP parallel command setting output "L"
2	XDF INH	I/O	High impedance (input) at DEFECT ON "L" output at DEFECT OFF	34	ASTB	O	Address strobe of multiplexed address/data bus
3	FOFST3	O	Not used (H fixed)	35	XRESET	I	System reset input "L"
4	EFLG	I	Count data input of error rate Measureable by using timer 1 and 2.	36	SBSY	INT	Subcode frame sync. input (H: S0+S1 period)
5	FSX	I		37	THLD	INT	T HOLD
6	ATBO	I/O	Tracking offset adjustment	38	XABUSY	INT	DSP auto sequence busy input "L"
7	V PB	I	EFM servo lock signal H/L = rough servo / phase servo	39	XMIRQ2	INT	LSI-11 interrupt input "L"
8	FOFST1	I/O	Focus offset adjustment 1	40	VDD	–	Power supply pin
9	VSS	–	GND	41	X2	–	Connect a crystal for main system clock oscillation
10	MAD0	I/O	External address data bus	42	X1	I	
11	MAD1			43	VPP	–	Internal connection Connect to Vss.
12	MAD2			44	PXT2	–	Connect a crystal for sub system clock oscillation
13	MAD3			45	XCURDET	I	Acutuator over-current detection input "L": Servo OFF for 300 ms.
14	MAD4			46	AVSS	–	Ground for A/D converter
15	MAD5			47	LODPOS	I	Loading clamp position SW input
16	MAD6			48	SLDPOS	I	Slider position SW input
17	MAD7			49	DOORSW	I	Not used
18	MA8	O	External address bus	50	FOFST4	I/O	Not used (H fixed)
19	MA9			51	XDSPRST	O	Not used
20	MA10			52	MON	O	Spindle motor ON output "L"
21	MA11			53	FOFST2	I/O	Focus offset adjustment 2
22	MA12			54	OEICG	O	"H": OEIC gain up to 6dB
23	MA13			55	AVDD	–	Analog power supply for A/D converter
24	VSS	–	GND	56	AVREF	I	Reference voltage input for A/D converter
25	MA14	O	External address bus	57	LD1ON	O	650nm laser diode ON signal
26	MA15			58	LD2ON	O	780nm laser diode ON signal
27	(P60)	O	Not used	59	AGOFF	O	"H": AGC of RFIC turns to OFF
28	DRXLD	O	Not used	60	DVD/XCD	O	H: DVD, L: CD
29	XCBUSY	I	DSP command reception is possible "L"	61	DPDXTE	O	Tracking error switch (H: 1 beam, L: 3 beams)
30	WRQ	I	Readable flag of subcode Q	62	TOFSTA	I/O	Tracking balance adjustment A
31	XMRD	O	CPU read pulse "L"	63	XCD2X	O	Not used
32	XMWR	O	CPU write pulse "L"	64	TOFSTC	I/O	Tracking balance adjustment C

■ PD3381A (DVDM ASSY : IC601)

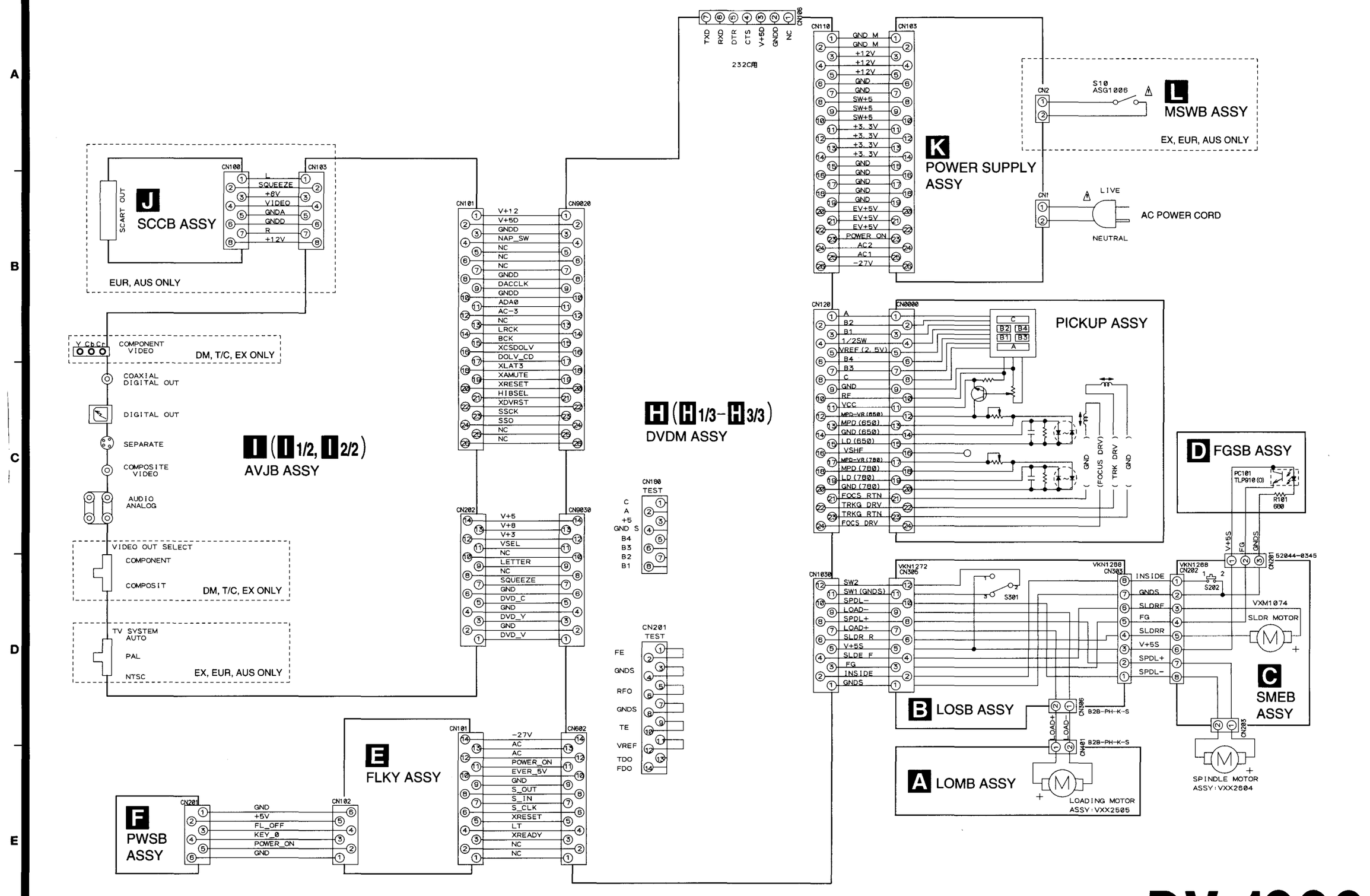
· System Control IC

● Pin Function

No.	Pin Name	I/O	Function	No.	Pin Name	I/O	Function
1	PB14/XIRQ6	I	LSI-11 interrupt #1	41	A16	O	Address bus
2	PB15/XIRQ7	I	AV Chip interrupt #0	42	A17		
3	VSS	–	GND	43	VCC	–	V+5D
4	AD0	I/O	Data bus	44	A18	O	Address bus
5	AD1			45	A19		
6	AD2			46	A20		
7	AD3			47	A21		
8	AD4			48	XCS0	O	(N.C. during ROM mode)
9	AD5			49	XCS1	O	External address decoder enable
10	AD6			50	XCS2	O	
11	AD7			51	XCS3	O	LSI-11 chip select
12	VSS	–	GND	52	VSS	–	GND
13	AD8	I/O	Data bud	53	PA0/XCS4	O	Dolby virtual chip enable (DV-515 only)
14	AD9			54	PA1/XCS5	O	Dolby virtual chip command/data control (DV-515 only)
15	VCC	–	V+5D	55	PA2/XCS6	O	AV Chip chip select
16	AD10	I/O	Data bus	56	XWAIT	I	External wait input
17	AD11			57	XWRL	O	Low Byte write pulse
18	AD12			58	XWRH	O	High Byte write pulse
19	AD13			59	XRD	O	Read pulse
20	AD14			60	PA7	O	Serial data latch pulse
21	AD15			61	VSS	–	GND
22	VSS	–	GND	62	PA8	I	Final-stage mute of audio output
23	A0	O	Address bus	63	PA9	I	Parallel expansion port enable (S9)
24	A1			64	PA10/TIOCA1	I	AV Chip interrupt #1
25	A2			65	PA11/TIOCB1	I	Communication response to FL controller
26	A3			66	PA12/DACK0	O	
27	A4			67	PA13/XDREQ0	I	
28	A5			68	PA14/XDACK1	O	
29	A6			69	PA15/XDREQ1	I	
30	A7			70	VCC	–	V+5D
31	VSS	–	GND	71	CK	O	
32	A8	O	Address bus	72	VSS	–	GND
33	A9			73	EXTAL	–	20MHz ceramic resonator
34	A10			74	XTAL	–	
35	A11			75	VCC	–	V+5D
36	A12			76	NMI	I	D+5V
37	A13			77	VCC (Vpp)	–	V+5D
38	A14			78	WDTOVF	O	
39	A15			79	XRES	I	
40	VSS	–	GND	80	MD0	I	MD1, MD0 = 01 external ROM

No.	Pin Name	I/O	Function	No.	Pin Name	I/O	Function
81	MD1	I	MD1, MD0 = 10 internal ROM	97	PB0/TIOCA2	I	RS232 transmitable output
82	MD2	I	GND	98	PB1/TIOCB2	I	DAC fs 48/44 selection
83	VCC	–	V+5D	99	VCC	–	V+5D
84	VCC	–	V+5D	100	PB2/TIOCA3	I	HiBit function ON
85	AVCC	–	V+5D	101	PB3/TIOCB3	I	AV Chip interrupt #2
86	AVref	–	V+5D	102	PB4/TIOCA4	I	Communication request from FL controller
87	PC0/AN0	I	Rear panel switch H/M/L = NTSC/Auto/PAL	103	PB5/TIOCB4	I	Block sync. input of external digital input (S9)
88	PC1/AN1	I	Authoring emulator mode setting	104	PB6/TCLKC	I	C2 error correction impossible pulse
89	PC2/AN2	I	(YAKU) special mode setting	105	PB7/TCLKD	I	Dolby virtual chip reset & pulse (DV-515 only)
90	PC3/AN3	I	Reception error (unlock signal) input of DIR (S9)	106	VSS	–	GND
91	AVSS	–	GND	107	PB8/SI0	I	Serial bus data input
92	PC4/AN4	I	Not used	108	PB9/SO0	O	Serial bus data output
93	PC5/AN5	I	Test mode entry	109	PB10/SI1	I	RS-232C RxD
94	PC6/AN6	I	CDG data input	110	PB11/SO1	I	RS-232C TxD
95	PC7/AN7	I	RS232 transmitable input	111	PB12/SCK0	I/O	Serial bus clock input and output
96	VSS	–	GND	112	PB13/XIRQ5	I	LSI-11 interrupt #0

TEAC SCHEMATIC DIAGRAM **DV-1000** OVERALL CONNECTION DIAGRAM/LOMB/LOSB/SMEB/FGSB



DVD PLAYER **DV-1000**

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E
FLKY ASSY

DISTINATION SELECT RESISTORS

	EUR, AUS	DM	T/C	EX
R141	27K	0	6.2K	27K
R143	20K	—	36K	68K

	EUR, AUS, EX	DM, T/C
R140	—	0
R147, R148	0	—

IC101 PE5018B FL CONTROL MICROCOMPUTER

IC102 IS-006D

IR101 GP1U28X

FL TUBE V101 VAW1046-

D101 SLR-342DC (NP) (ORANGE) FL OFF

CN101 VKN1274-
-27V
AC
AC
POWER ON
EVER +5V
GND
S OUT
S IN
S CLK
XRESET
LT
XRESET
NC
NC

TO CN602 (TO DVDM)

CN102 06P-FJ
GND
+5V
FL OFF
KEY 0
POWER ON
GND

FL OFF S108 REV S109 OPEN/CLOSE S110 FWD S111 STOP S112 PLAY/PAUSE S113

F
PWSB ASSY

CN201 06R-FJ

Q201 PDTA124EK

D202 VIRTUAL DOLBY SURROUND SLR-343DC (NP) (ORANGE)

S202 VIRTUAL DOLBY SURROUND

S201 POWER ON

DM, T/C ONLY

D201 SLP911B5H (RED) STAND BY

	EUR, AUS	DM, T/C	EX
S201	—	MOUNT	—
R203	180	750	750

	EUR, AUS, EX	DM, T/C
R118~R120	0	33

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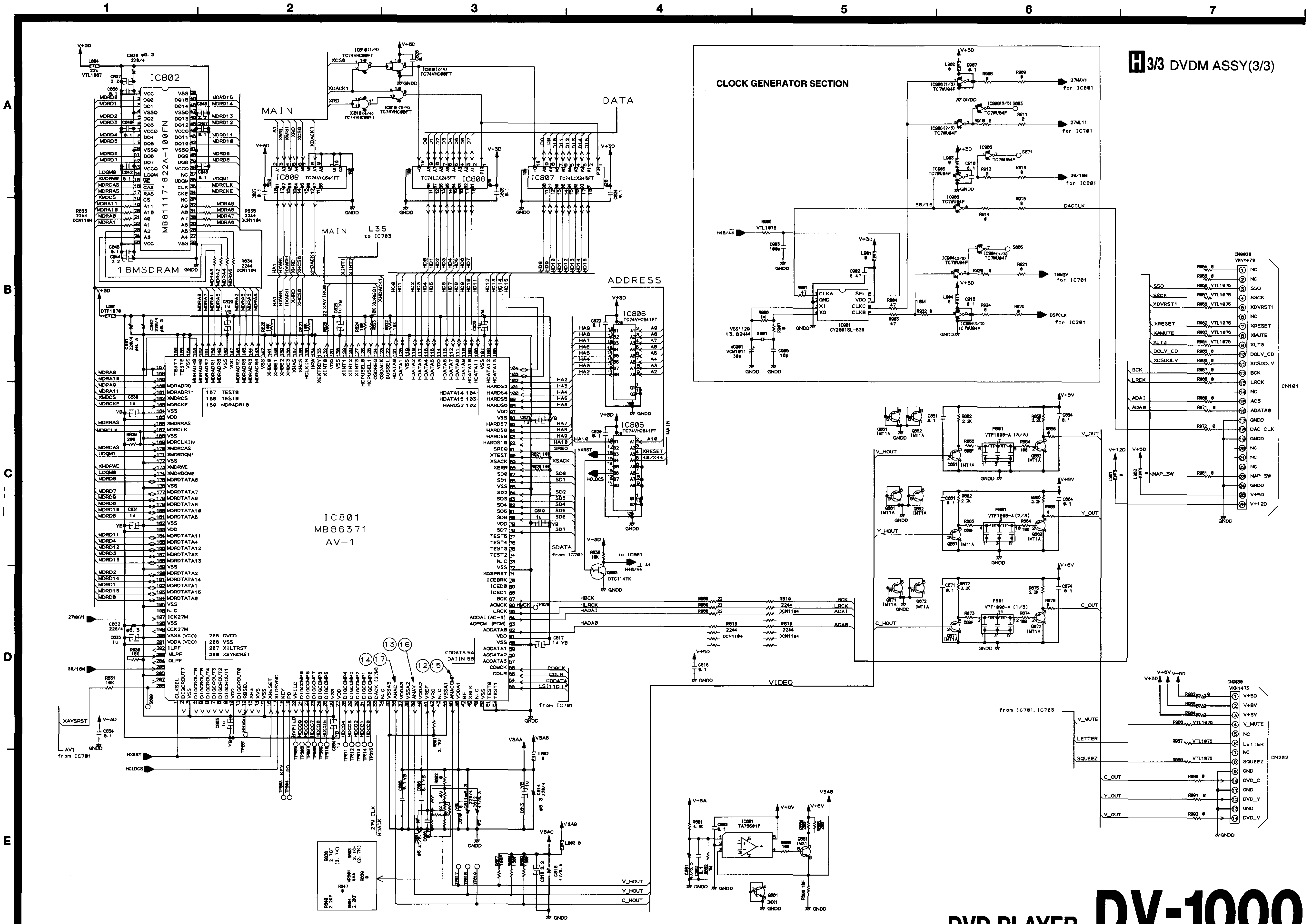
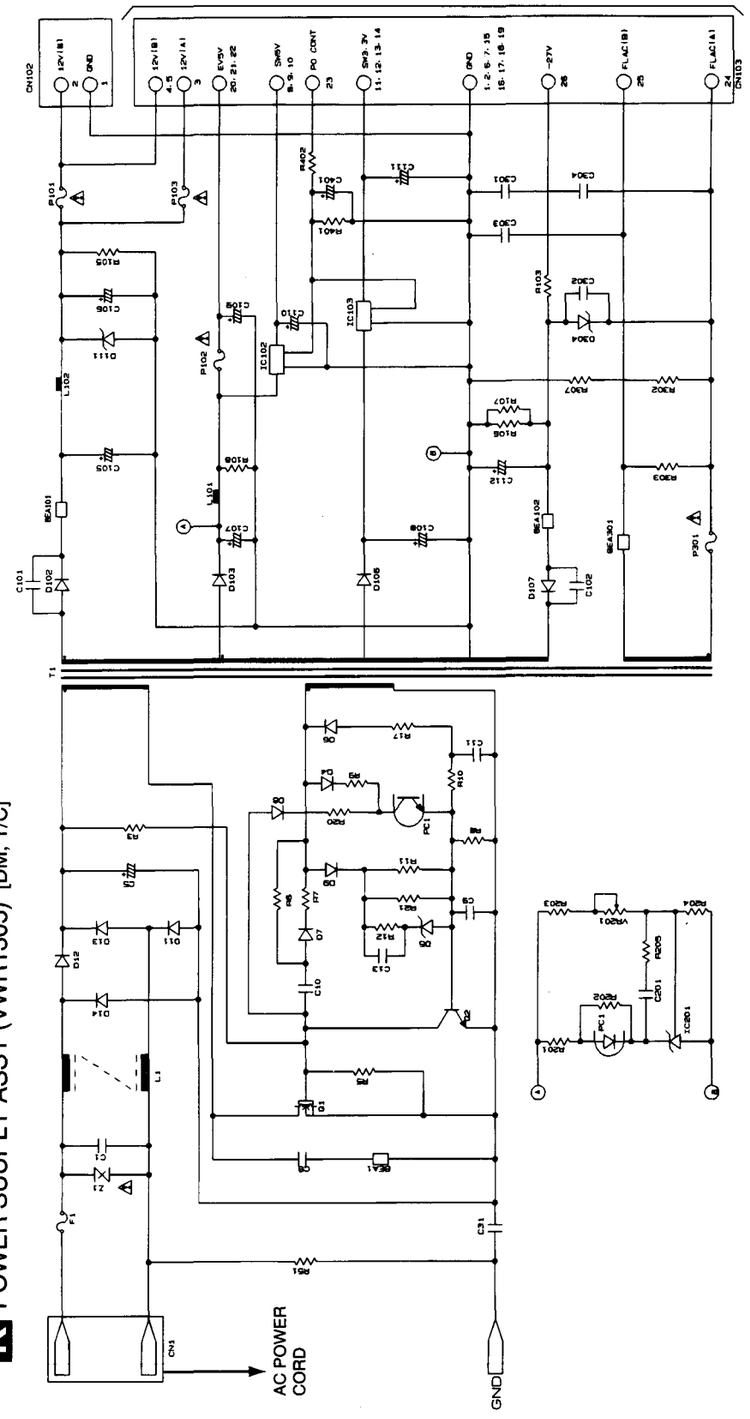

H 3/3 DVDM ASSY(3/3)
CLOCK GENERATOR SECTION
IC802
MB81117162 2A-100FN
16MSDRAM
IC801
MB86371
AV-1
IC809
IC808
IC807
IC806
IC805
MAIN
DATA
ADDRESS
VIDEO
CN101
CN202

1 2 3 4 5 6 7

A B C D E

CAUTION : FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH SAME TYPE NO. 491 .800 MFD. BY LITTELFUSE INC. FOR P101, P103, P301 AND NO. 491 01.6 MFD. BY LITTELFUSE INC. FOR P102.

DVDM CN110



K POWER SUUPLY ASSY (VWR1305) [DM, T/C]

• NOTE FOR FUSE REPLACEMENT

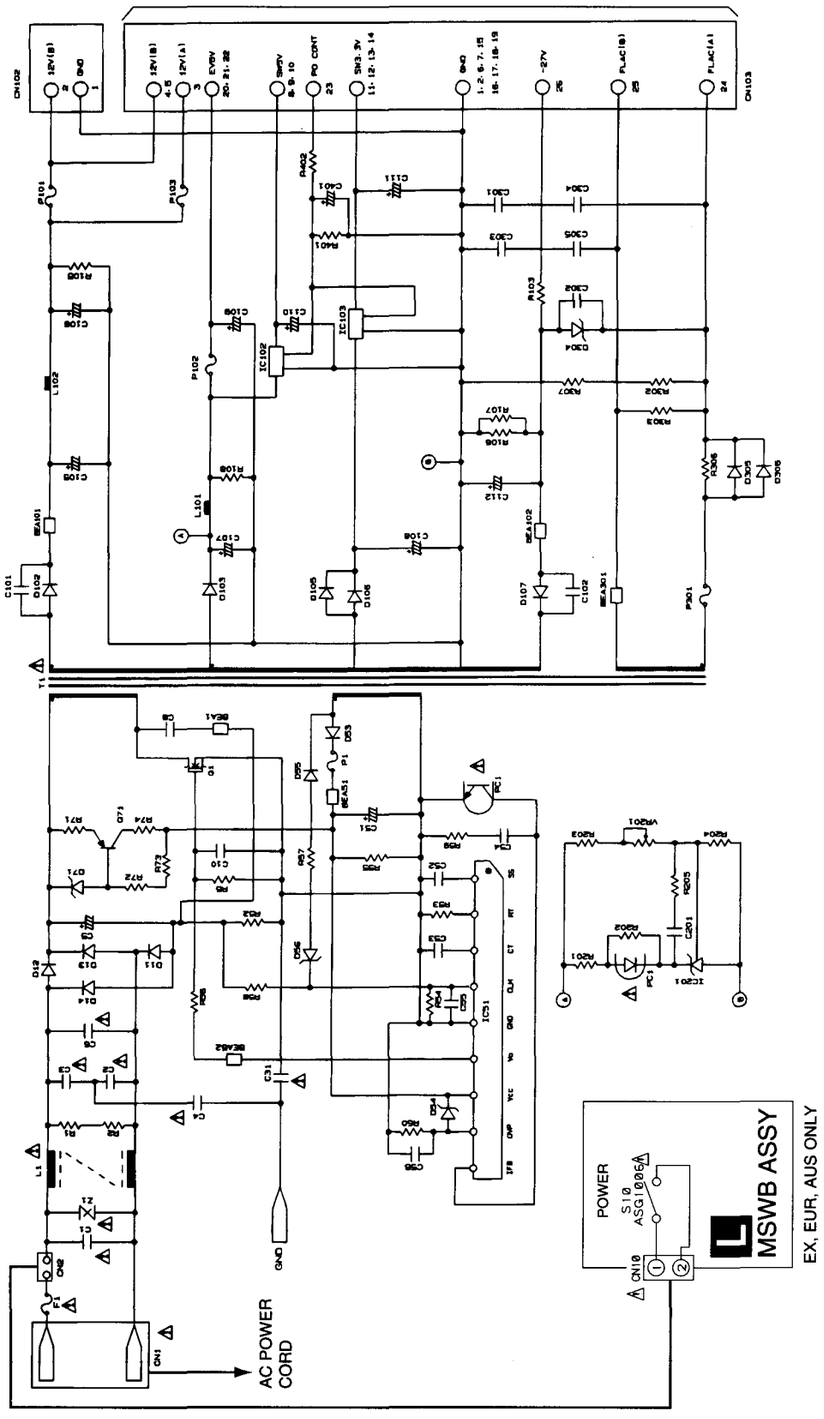
CAUTION - FOR CONTINUED PROTECTION AGAINST RISK OF FIRE. REPLACE WITH SAME TYPE AND RATINGS ONLY.

INSTRUCTIONS FOR SERVICE PERSONNEL
BEFORE RETURNING APPLIANCE TO THE CUSTOMER, MAKE LEAKAGE-CURRENT OR RESISTANCE MEASUREMENTS TO DETERMINE THAT EXPOSED PARTS ARE ACCEPTABLY INSULATED FROM THE SUPPLY CIRCUIT.

注 意

⚠マークのある部品は安全規格重要部品です。交換するときは必ずティアック指定の部品を使用してください。

DVDM CN110



K POWER SUUPLY ASSY (VWR1306) [EX, EUR, AUS]

NOTES:

⚠Parts marked with this sign are safety critical components. They must always be replaced with identical components-refer to the appropriate parts list and ensure exact replacement.

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TEAC SCHEMATIC DIAGRAM DV-1000 DVDM (1/3)

H 1/3 DVDM ASSY(1/3)

IC301 ADC1175C1JM

RF IC IC101 LA9701M

FTS DRV IC IC352 BA5982FP

IC504 TC74HC673AF

SRAM IC502 SM28Z8256LMX-70

IC501 PE5012A MECH CPU

DSP IC IC201 LC78651W

IC251 BA6195FP SPDL DRV IC

PICKUP ASSY

1 2 3 4 5 6 7

A B C D E

H 2/3 DVDM ASSY(2/3)

XCSDOLV, XCS6, XWRL, XWRH, XLT3, XAMUTE, XDACK1, XDREQ1, 48/44, XDVRST1, XAVIRQ0, NSP-SW, SSCK, SSO, XRESET

IC604 WORK SRAM
TC551001BFL-85

IC603 PGM 4MFLASH MEMORY
MBM29F400TC-70-PF
VYW1644-A

IC601
PD3381A
SH7034

IC702 DRAM
HM514800CJ-7

IC701
LSI11
PD4833A

CN101

CN185
VKN1299

IC74VHCT641FT

MAIN

ADDRESS

DATA

SDATA

SDATA (AV1)

AV1

L35
from IC801

from IC781

from IC201

from IC301

from IC281

from IC501

to CN9858

to SPDL

to IC703

MECH CPU

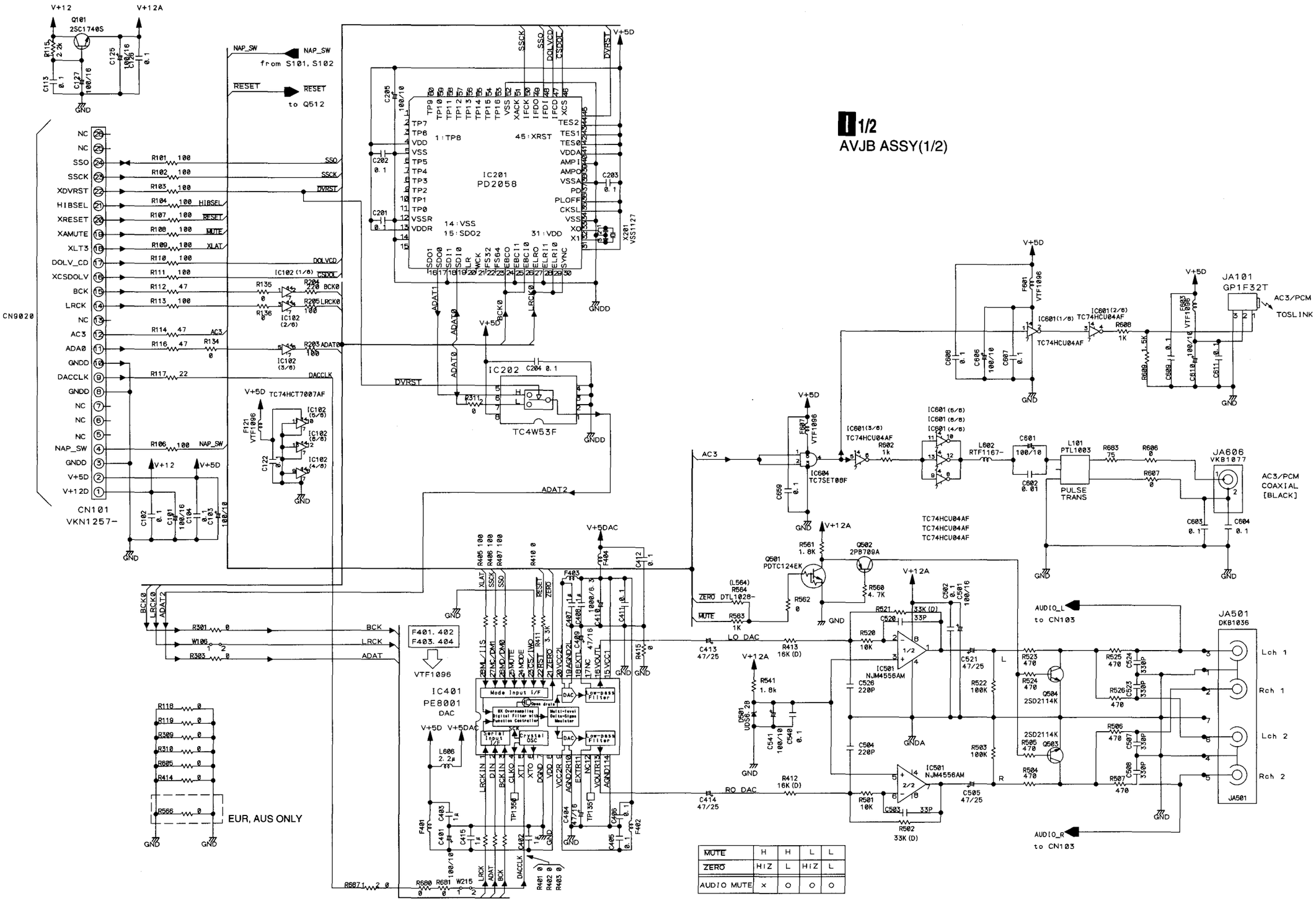
JACK
to CN9858

SERVO

1 2 3 4 5 6 7

A B C D E

1 1/2
AVJB ASSY(1/2)



MUTE	H	H	L	L
ZERO	HIZ	L	HIZ	L
AUDIO MUTE	×	O	O	O

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I 2/2
AVJB ASSY(2/2)

VSEL	RCA PIN	S	Y/Cb/Cr
H	V+C	Y, C	-/-/-
L	-	-	Y/Cb/Cr

	LOW	OPEN	HIGH
TYPE	S&COM	—	CONPONENT
AMP SEL	through	6dB	8.5dB
VSEL	13, 17, 21	NO MUTE	15, 19, 23

NAP_SW Voltage

	COMPONENT			COMPOSITE&S OUT		
MODE	NTSC	PAL	AUTO	NTSC	PAL	AUTO
NAP_SW	2.0V	0V	1.0V	5.0V	3.0V	3.9V

ANALOG
COMPONENT VIDEO OUTPUT
Y=1Vp-p CB, CR=0.7Vp-p

EUR, AUS ONLY

DM, T/C, EX ONLY

J SCCB ASSY

EUR, AUS ONLY

DVD PLAYER DV-1000

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