PIONEER®
The Art of Entertainment

Service Manual

ORDER NO.
RRV1683

CD/VIDEO CD/LD PLAYER

CLD-100KV

● **Refer to the service manual RRV1638 for CLD-100K/TD.**

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

Type	Model	Power Requirement	Remarks
	CLD-100KV		
TD	O	AC110 – 240V	
TDXQ/NC	O	AC110 – 240V	

CONTENTS

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1. CONTRAST OF MISCELLANEOUS PARTS

NOTES:

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

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

560Ω	→	*56 × 10¹* → *561*	.....	*RD1/4PU[5][6][1]J*
47kΩ	→	*47 × 10³* → *473*	.....	*RD1/4PU[4][7][3]J*
0.5Ω	→	*0R5*	.....	*RN2H[0][R][5]K*
1Ω	→	*1R0*	.....	*RS1P[1][R][0]K*

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

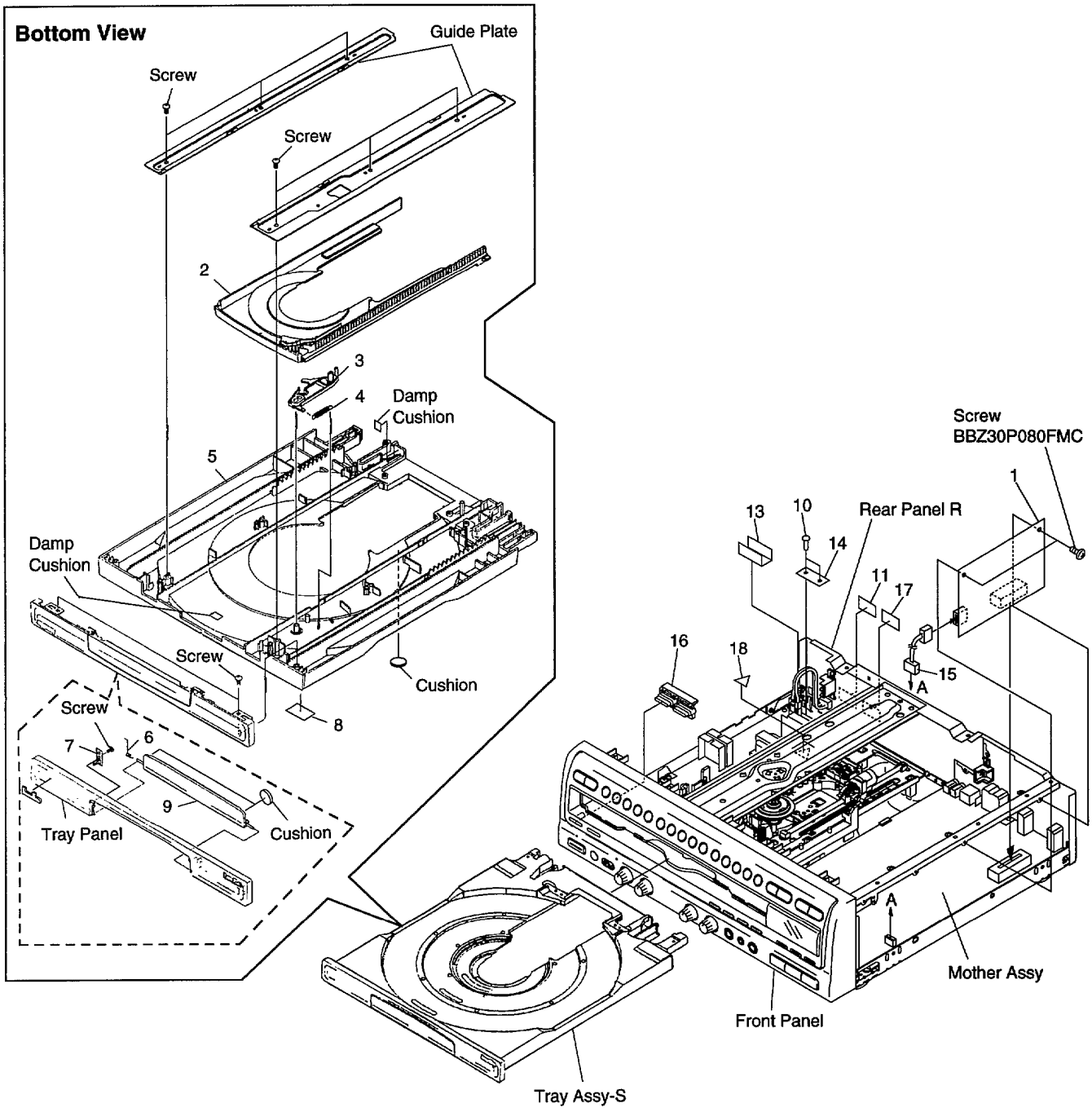
5.62kΩ	→	*562 × 10¹* → *5621*	.....	*RN1/4PC[5][6][2][1]F*

CLD-100KV/TD, CLD-100KV/TDXQ/NC and CLD-100K/TD have the same construction except for the following:

Mark	Symbol & Description	Part No.			Remarks
		CLD-100K/TD	CLD-100KV/TD	CLD-100KV/TDXQ/NC	
NSP	FRPB Assy	VWM1701	VWM1702	VWM1702	
	MOCB Assy	VWG1773	VWG1778	VWG1778	
NSP	LEDB Assy	VWG1774	VWG1779	VWG1779	
NSP	KALB Assy	VWG1776	VWG1787	VWG1787	
	MOTHER Assy	VWS1254	VWS1253	VWS1253	
	VCDB Assy	Not used	VWV1508	VWV1508	✻No.1
	CD Tray	Not used	VNK3007	VNK3007	✻No.2
	Lock Plate	Not used	VNL1703	VNL1703	✻No.3
	Lock Plate Spring	Not used	VBH1188	VBH1188	✻No.4
NSP	LD Tray	Not used	VNK3188	VNK3188	✻No.5
	Door Spring	Not used	VBH1248	VBH1248	✻No.6
	Door Holder	Not used	VNL1704	VNL1704	✻No.7
	Tray Panel	VNK3726	VNK3947	VNK3947	
NSP	Label	Not used	VRW1289	VRW1289	✻No.8
	CD Door Assy	Not used	VXA2286	VXA2286	✻No.9
	Display Sheet	VEC1872	VEC1892	VEC1892	
	Rivet	Not used	DEC – 176	DEC – 176	✻No.10
	Caution Label	Not used	PRW1018	PRW1018	✻No.11
	FL Spacer	Not used	REB1171	REB1171	✻No.12
	Flexible Cable	VDA1554	VDA1551	VDA1551	
	Barrier Sheet	Not used	VEC1877	VEC1877	✻No.13
	Barrier Sheet	Not used	VEC1878	VEC1878	✻No.14
	Housing Assy (3P)	Not used	VKP2133	VKP2133	✻No.15
NSP	PCB Holder	VNE1964	VNE2087	VNE2087	
	Key A	Not used	VNK3177	VNK3177	✻No.16
NSP	Caution Label (F)	Not used	VRW – 328	VRW – 328	✻No.17
	Caution Label (G)	Not used	VRW – 329	VRW – 329	✻No.18
	Front Panel	VNK3725	VNK3875	VNK3875	
	Play Button	VNK3728	VNK3946	VNK3946	
	Rear Panel R	VNA1750	VNA1792	VNA1820	
	Tray Assy – S	VXX2433	VXX2309	VXX2309	
	Packing Case	VHG1584	VHG1629	VHG1654	
	Remote Control Unit	VXX2452	VXX2466	VXX2466	
	Audio Cord	VDE1047	VDE1033	VDE1033	
	Operating Instructions (English/Spanish/Chinese)	VRE1049	VRE1056	VRE1056	
	Bonnet Case – S	VXX2252	VXX2252	VXX2411	
NSP	Panel Holder	VNA1507	VNA1835	VNA1714	

Note : The numbers in the remarks correspond to the numbers on the exploded diagram. Refer to "EXPLODED VIEWS".

■ EXPLODED VIEWS



■ CONTRAST OF PCB ASSEMBLIES

MOCB ASSY

VWG1778 and VWG1773 have the same construction except for the following:

Mark	Symbol & Description	Part No.		Remarks
		VWG1773	VWG1778	
	CN102	52492 – 1420	Not used	
	CN107	Not used	52492 – 2220	*
	IC101	PD3339A	PD3349A	

Note * : Refer to "2. SCHEMATIC AND PCB CONNECTION DIAGRAMS".

LEDB ASSY

VWG1779 and VWG1774 have the same construction except for the following:

Mark	Symbol & Description	Part No.		Remarks
		VWG1774	VWG1779	
	D705, D706	Not used	SLR – 342DCT31	*
	Q702	Not used	DTC114ES	*
	R705, R706	Not used	RD1/4PU181J	*

Note * : Refer to "2. SCHEMATIC AND PCB CONNECTION DIAGRAMS".

KALB ASSY

VWG1787 and VWG1776 have the same construction except for the following:

Mark	Symbol & Description	Part No.		Remarks
		VWG1776	VWG1787	
	D203, D204	Not used	SLR – 342YCT31	*
	R203, R204	Not used	RD1/4PU181J	*
	R211	RD1/4PU431J	RD1/4PU102J	
	R213	Not used	RD1/4PU621J	*
	R214	Not used	RD1/4PU431J	*
	S203, S204	Not used	ASG1034	*

Note * : Refer to "2. SCHEMATIC AND PCB CONNECTION DIAGRAMS".

MOTHER ASSY

VWS1253 and VWS1254 have the same construction except for the following:

Mark	Symbol & Description	Part No.		Remarks
		VWS1254	VWS1253	
	C110	CKSQYF103Z50	CKSQYF223Z50	*
	C701, C703, C706 – C708	Not used	CEAL470M6R3	*
	C702, C704	Not used	CKSQYF103Z50	*
	C705, C709	Not used	CKSQYF104Z25	*
	CN105	Not used	52045 – 2245	*
	CN121	52045 – 1445	Not used	
	CN701	Not used	BTFN20S-3SB7	*
	CN703	Not used	B3B – PH – K – S	*
	IC101	PD0240B2	PD0245A2	
	IC701	Not used	TC74HC4053AF	*
	IC702	Not used	NJM2235M	*
	IC905,IC202,IC302,IC903	BA4560F	XLA4560F	
	R12, R21, R28, R32, R40, R45, R720	Not used	RS1/10S000J	*
	R13 – R15, R48, R52, R752	RS1/10S000J	Not used	
	R110	RS1/10S681J	RS1/10S561J	
	R335	RS1/10S102J	RS1/10S751J	
	R625, R626	RS1/10S750J	RN1/10SC750D	
	R702	Not used	RN1/10SE152D	*
	R703, R705	Not used	RS1/10S103J	*
	R704	Not used	RS1/10S153J	*
	R706	Not used	RS1/10S822J	*
	R750	Not used	RN1/10SE271D	*
	R751	RS1/10S000J	RN1/10SE271D	
	R753	RS1/10S301J	RN1/10SE471D	
	R754	RS1/10S102F	RN1/10SE911D	
	R755, R756	Not used	RN1/10SE273D	*
	R764	RS1/10S331F	RN1/10SE271D	
	R765	RS1/10S822F	RN1/10SE473D	
	R766	RS1/10S511F	RN1/10SE473D	
	R5013, R5016, R5019	Not used	RS1/10S221J	*
	R5017	Not used	RS1/10S122J	*

Note * : Refer to "2. SCHEMATIC AND PCB CONNECTION DIAGRAMS".

CLD-100KV

■ PCB PARTS LIST
VCDB ASSY

Mark	No.	Description	Parts No.
SEMICONDUCTORS			
	IC101		CXD1852Q
	IC301		CXD1913Q
	IC201		HM514260CLJ – 7
	IC401		MC14577CF
	IC501		PD6193A
	IC801		PQ20VZ51
	IC601		TC74HC125AF
	IC602		TC74HCT7007AF
	IC402		TC7S08F
	IC701		TC7W74F
	IC102, IC603		TC7WU04F
	Q103		2PB709A
COILS AND FILTERS			
	F101		VTH1037
CAPACITORS			
	C105, C106		CCSQCH050C50
	C103, C104		CCSQCH100D50
	C604		CCSQCH101J50
	C121, C122		CCSQCH150J50
	C505, C506		CCSQCH200J50
	C310, C311, C902		CCSQCH220J50
	C101, C120, C204, C303, C313		CEAL470M6R3
	C802		CEAL470M6R3
	C102, C107 – C114, C130		CKSQYF104Z25
	C201 – C203, C250, C301, C302		CKSQYF104Z25
	C304, C305, C316 – C321		CKSQYF104Z25
	C401, C402, C501 – C504, C507		CKSQYF104Z25
	C530, C601 – C603, C701, C801		CKSQYF104Z25
RESISTORS			
	R320		RN1/10SC750D
	R301		RN1/10SE103D
	R802		RN1/10SE122D
	R801		RN1/10SE202D
	R312		RN1/10SE221D
	R302, R303		RN1/10SE332D
	R318, R319		RN1/10SE471D
	R705		RS1/8S000J
		Other Resistors	RS1/10S□□□J
OTHERS			
	CN201	CONNECTOR POST	B3B – PH – K – S
	CN101	CONNECTOR	BTFN20P – 3RD7
	X501	CERAMIC RESONATOR	CSAC4.00MGCM
	X103	CRYSTAL RESONATOR (27.000MHz)	VSS1095
	X101	CRYSTAL RESONATOR (28.63636MHz)	VSS1096
	X102	CRYSTAL RESONATOR (45.1584MHz)	VSS1097

3. SCHEMATIC AND PCB CONNECTION DIAGRAMS

NOTE FOR SCHEMATIC DIAGRAMS (Type 4A)

1. When ordering service parts, be sure to refer to "PARTS LIST of EXPLODED VIEWS" or "PCB PARTS LIST".

2. Since these are basic circuits, some parts of them or the values of some components may be changed for improvement.

3. RESISTORS:
Unit: k:kΩ, M:MΩ, or Ω unless otherwise noted.
Rated power: 1/4W, 1/6W, 1/8W, 1/10W unless otherwise noted.
Tolerance: (F): ±1%, (G): ±2%, (K): ±10%, (M): ±20% or ±5% unless otherwise noted.

4. CAPACITORS:
Unit: p:pF or µF unless otherwise noted.
Ratings: capacitor (µF)/voltage(V) unless othrewise noted.
Rated voltage: 50V except for electrolytic capacitors.

5. COILS:
Unit: m:mH or µH unless otherwise noted.

6. VOLTAGE AND CURRENT:
▭ or ← V:
DC voltage (V) in PLAY mode unless otherwise noted.
⇦ mA or ← mA:
DC current in PLAY mode unless otherwise noted.
Value in ( ) is DC current in STOP mode.

7. OTHERS:
- ⊘ or ◐ : Adjusting point.
- ⊸ : Measurement point.
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the parts. Therefore, when replacing, be sure to use parts of identical designation.

8. SCH-□ ON THE SCHEMATIC DIAGRAM:
- SCH-□ indicates the drawing number of the schematic diagram. (SCH stands for schematic diagram.)

9. SWITCHES (Underline indicates switch position):

LMSB ASSY
S101 : SW1
S102 : SW2
S103 : SW3

PKSB ASSY
S104 : OUTER
S105 : INNER

MOCB ASSY
S101 : STOP
S102 : PLAY/PAUSE
S103 : CD OPEN
S104 : LD OPEN
S105 : FLAT
S106 : NATURAL
S107 : SHARP

KALB ASSY
S201 : POWER ON
S203 : V-CD
S204 : PBC
S206 : SINGLE PLAY
S207 : VOCAL PARTNER
S208 : ONE TOUCH KARAOKE
S209 : GUIDE VOCAL

VRSB ASSY
S601 : MODE SELECTION

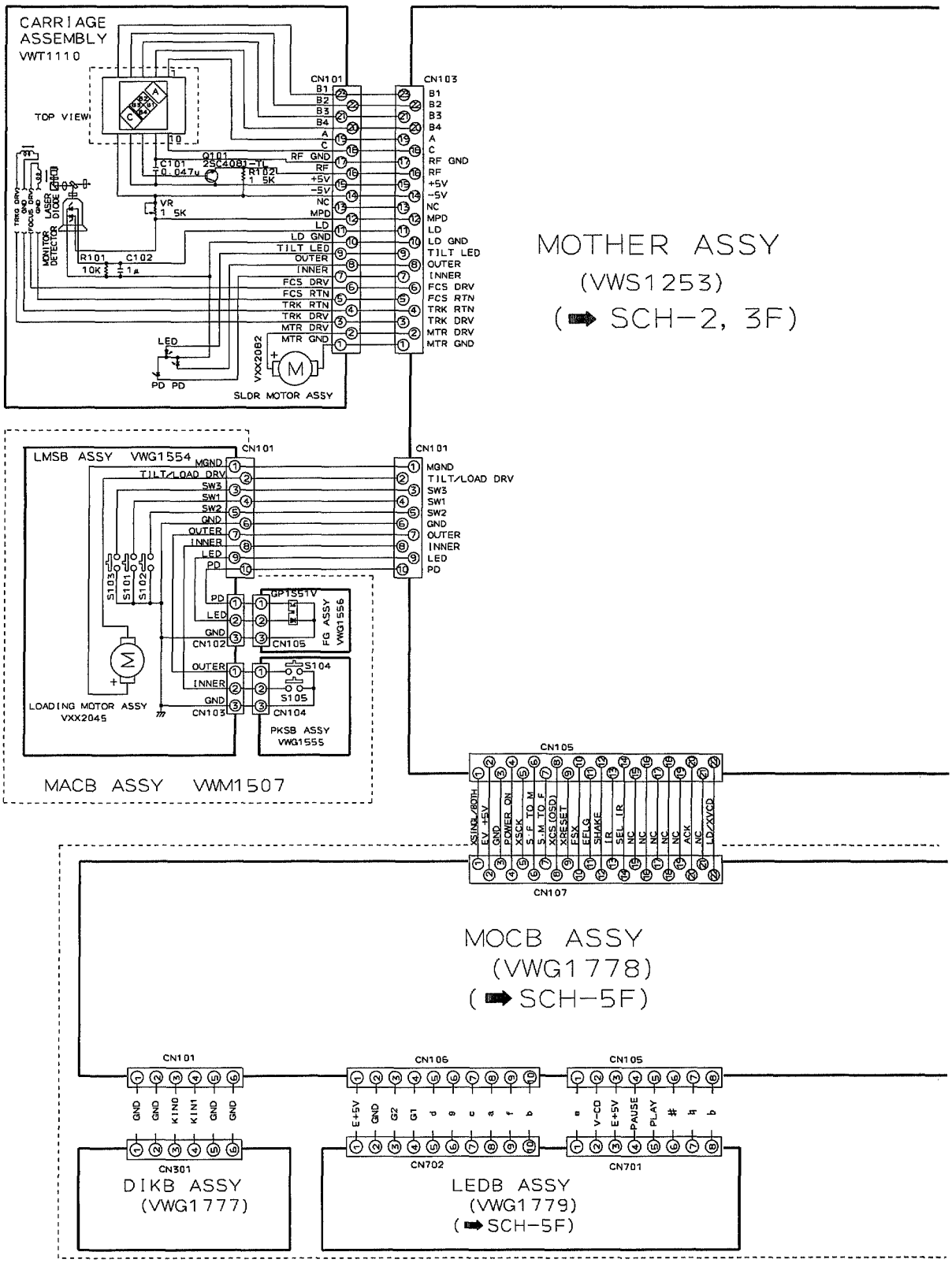
DIKB ASSY
S301 : ⏮
S302 : ⏭
S303 : 1
S304 : 2
S305 : 3
S306 : 4
S307 : 5
S308 : 6
S309 : 7
S310 : 8
S311 : 9
S312 : 10
S313 : 11
S314 : 12
S315 : 13
S316 : 14
S317 : 15

NOTE FOR PCB DIAGRAMS

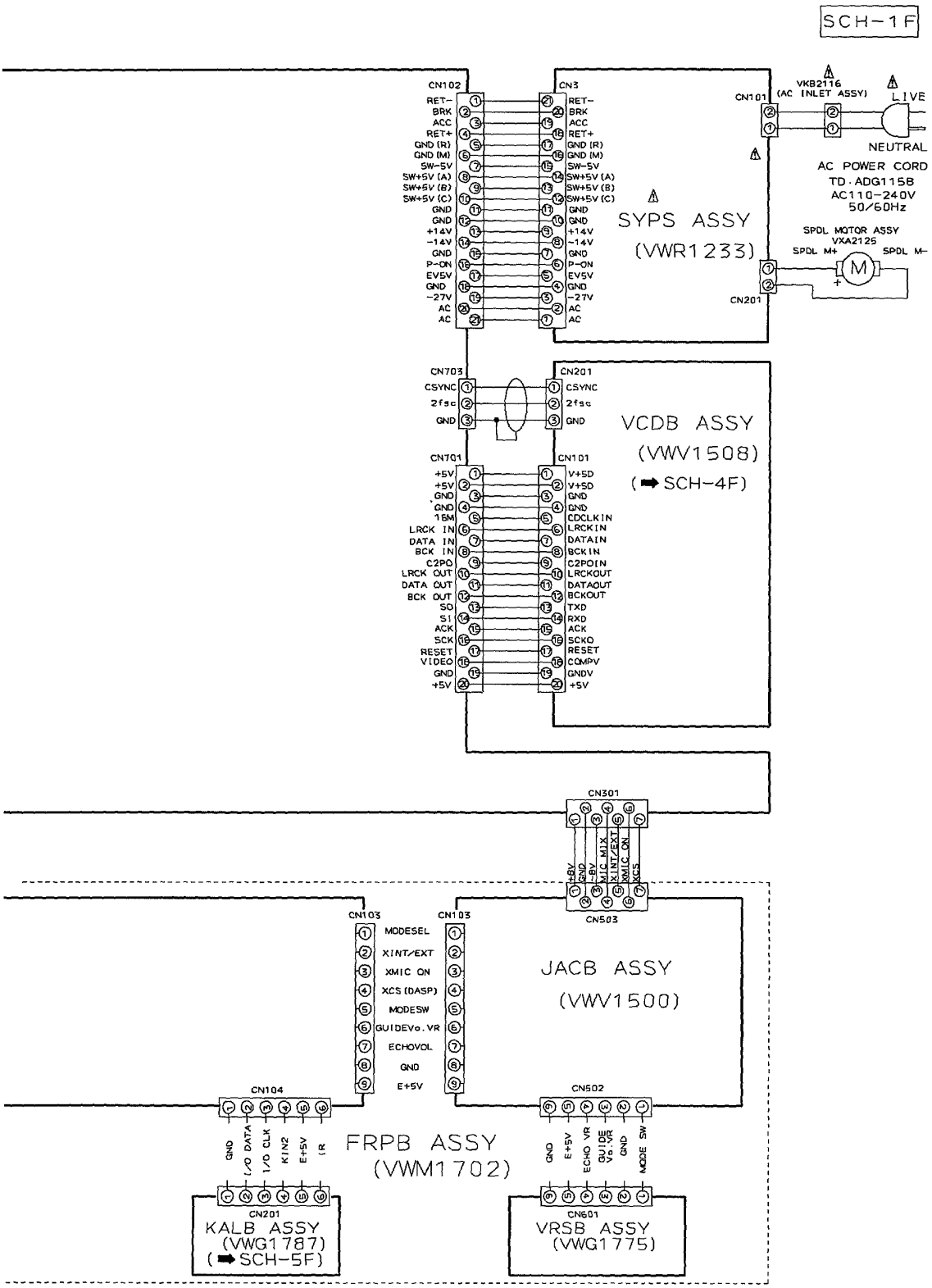
1. Part numbers in PCB diagrams match those in the schematic diagrams.
2. A comparison between the main parts of PCB and schematic diagrams is shown below.

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

2.1 OVERALL CONNECTIONS



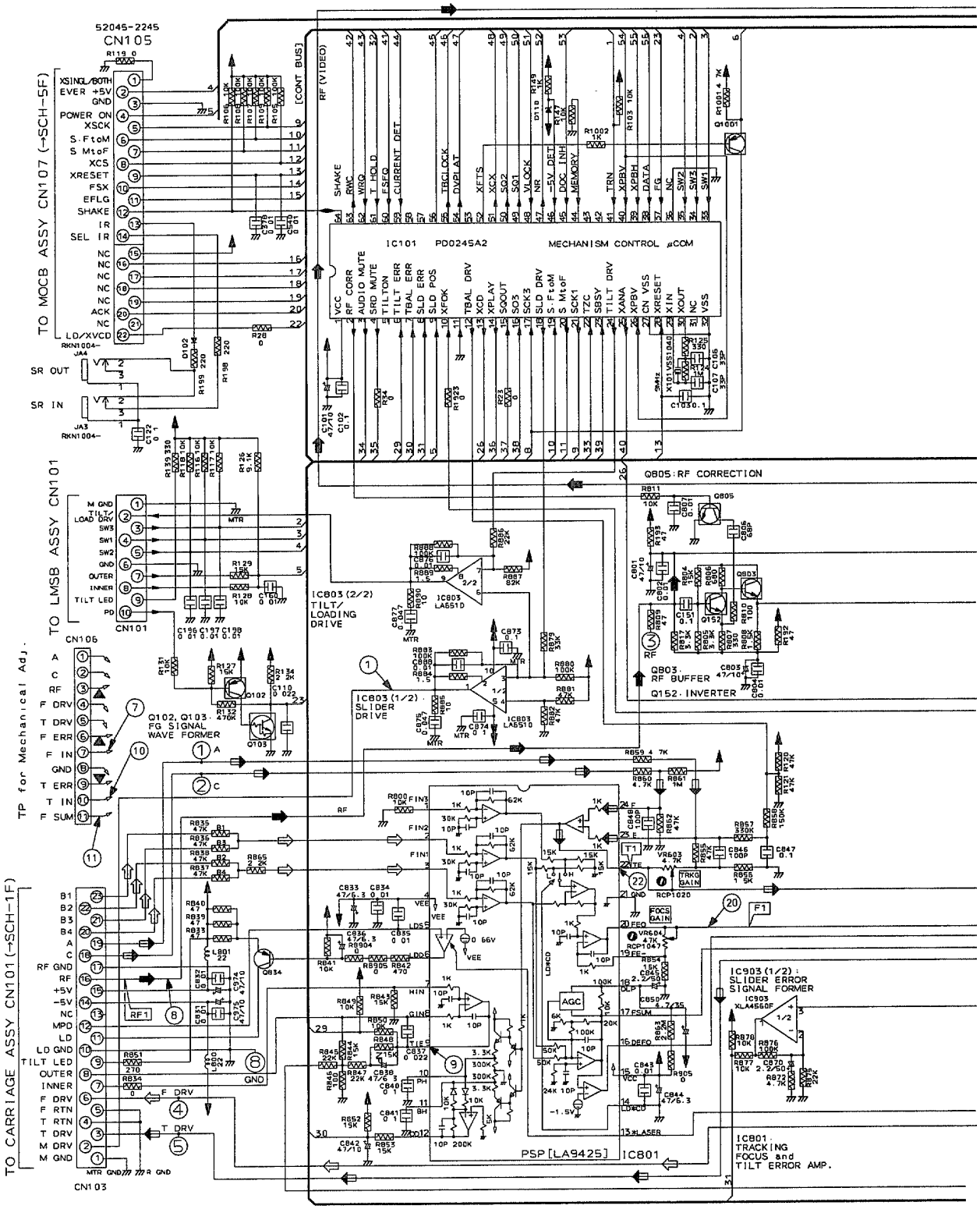
SCH-1F OVERALL CONNECTIONS



OVERALL CONNECTIONS

SCH-1F

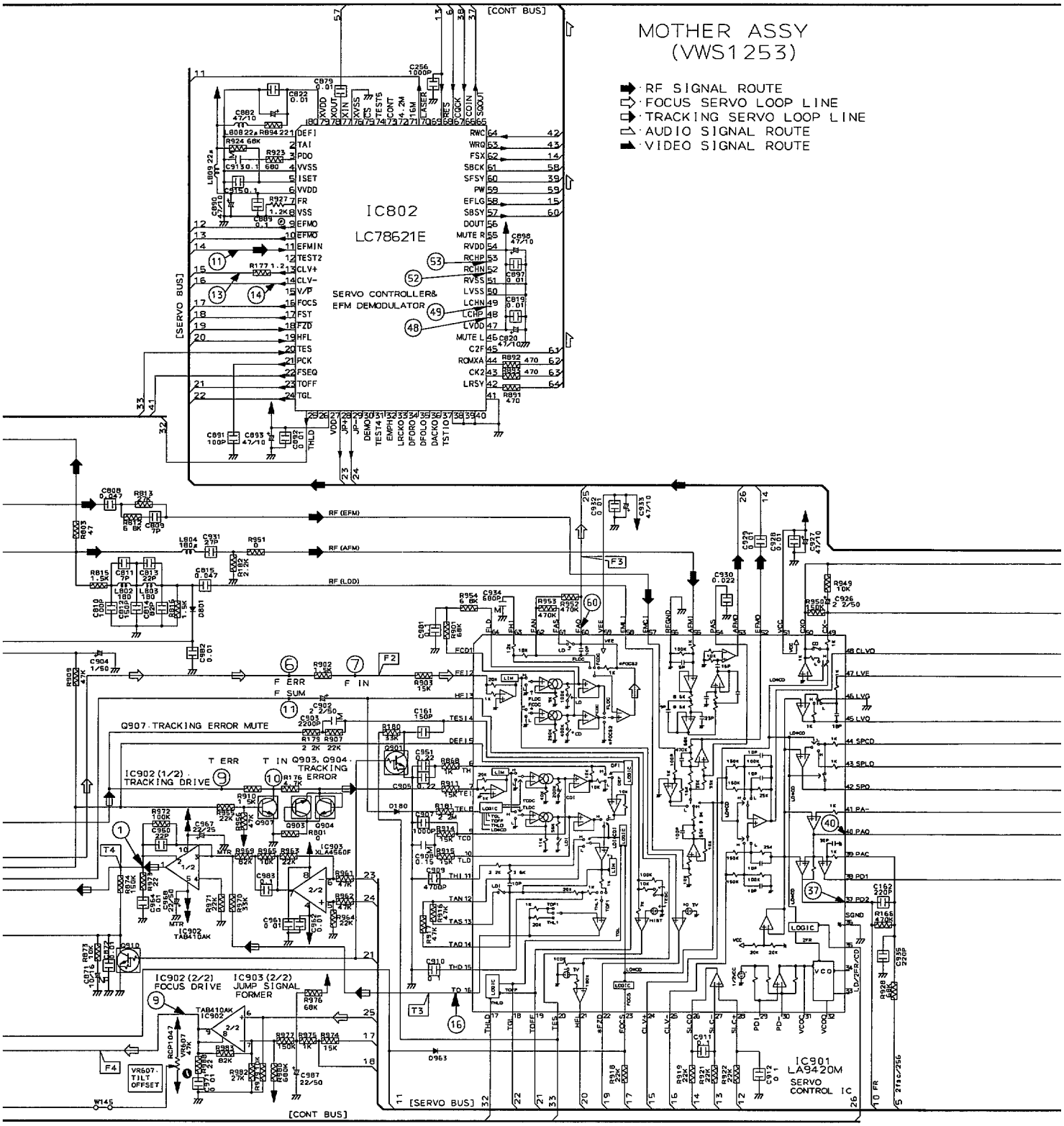
2.2 MOTHER ASSEMBLY



MOTHER ASSY (1/2)

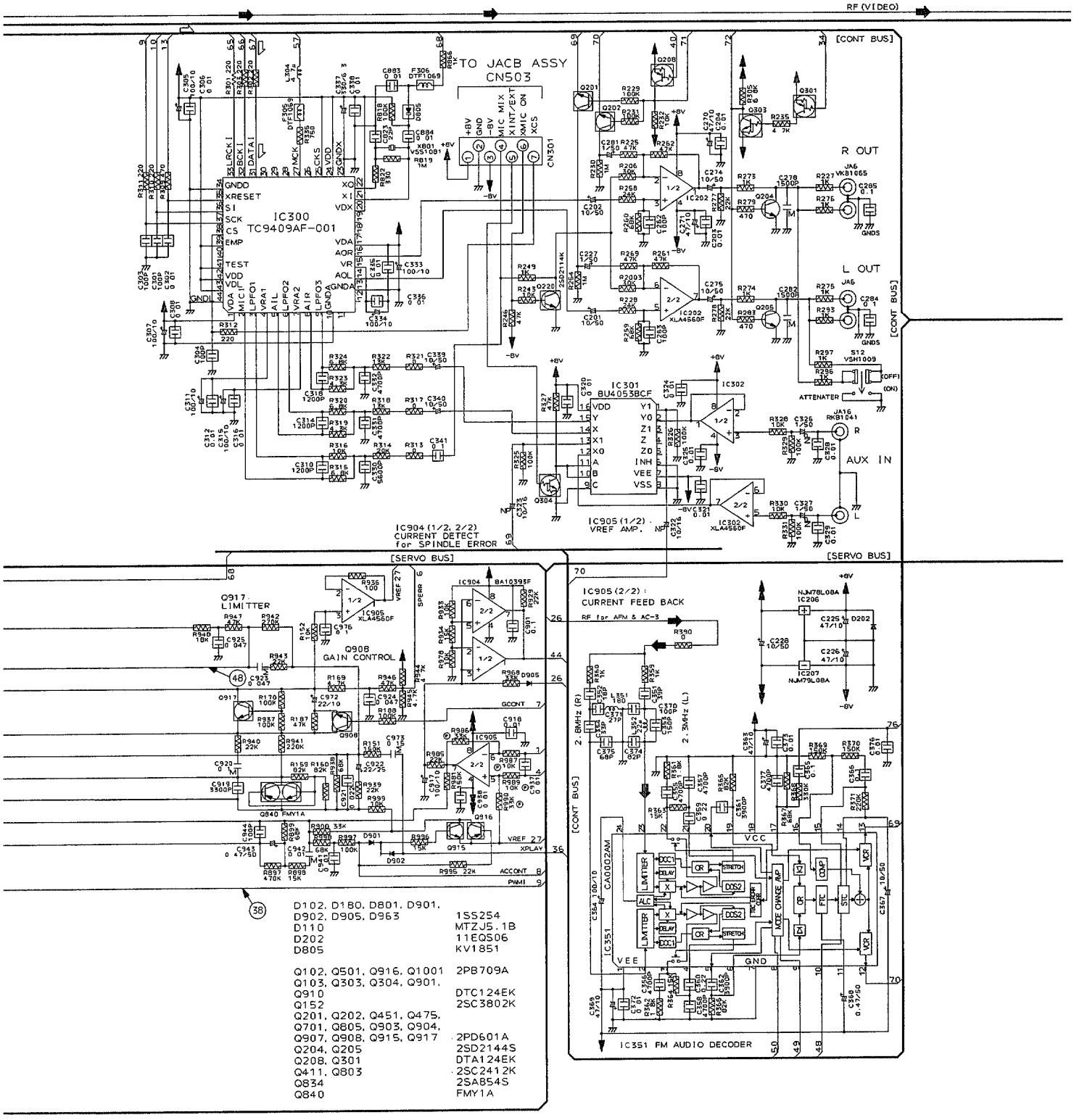
SCH-2F

SCH-2F



MOTHER ASSY (1/2)

SCH-2F

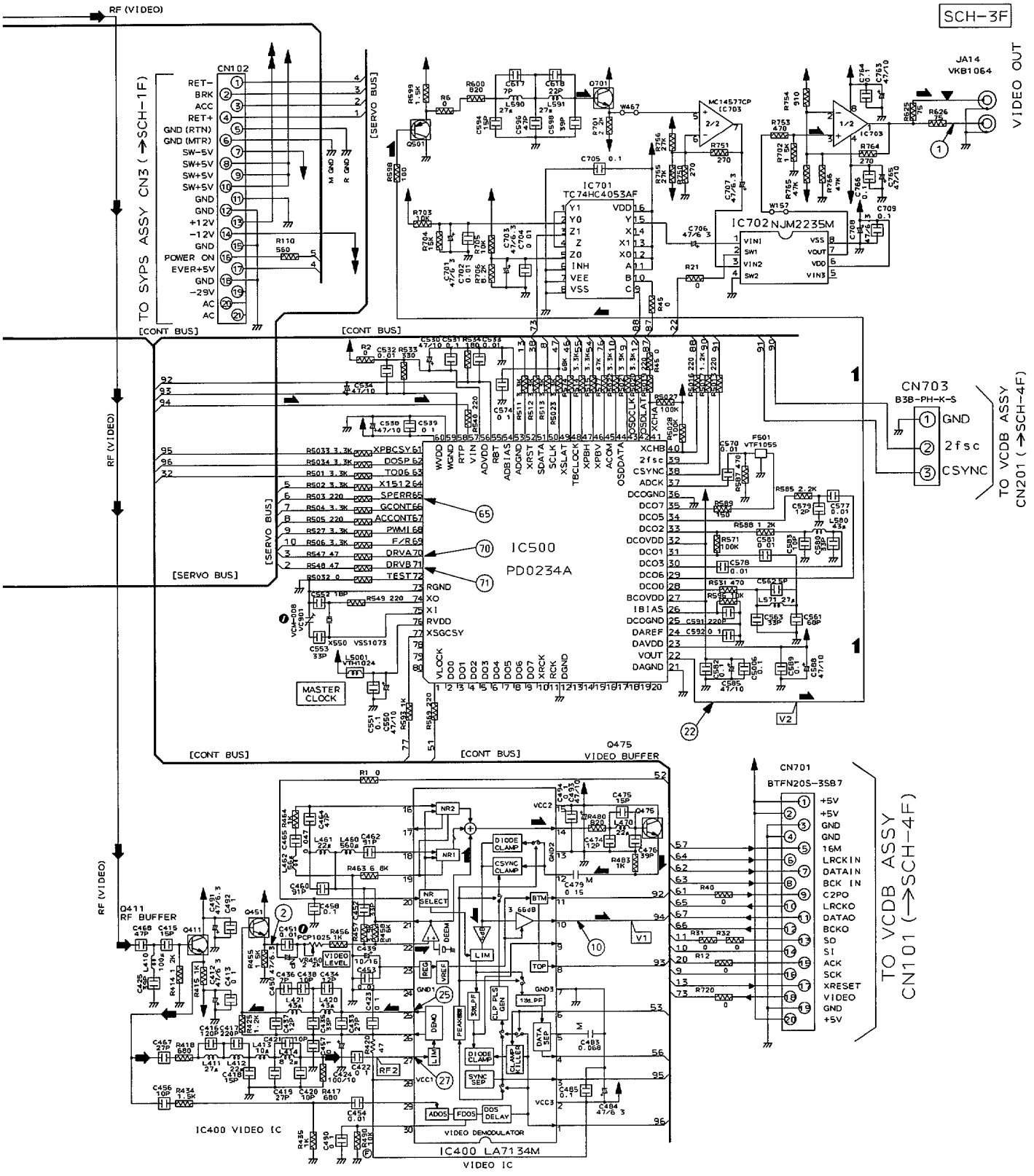


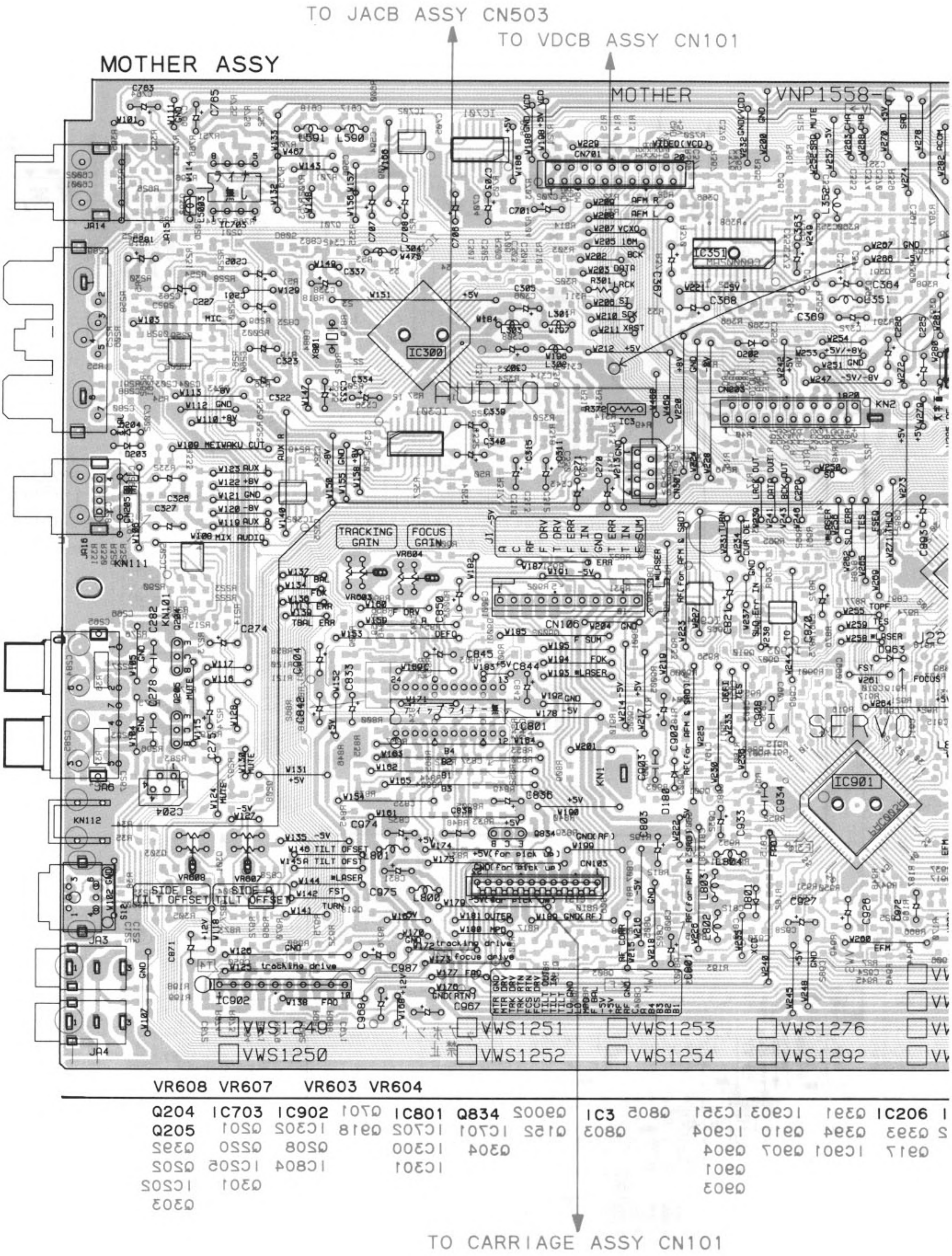
D102, D180, D801, D901, D902, D905, D963	1SS254
D110	MTZJ5.1B
D202	11EQS06
D805	KV1851
Q102, Q501, Q916, Q1001	2PB709A
Q103, Q303, Q304, Q901, Q910	DTC124EK
Q152	2SC3802K
Q201, Q202, Q451, Q475, Q701, Q805, Q903, Q904, Q907, Q908, Q915, Q917	2PD601A
Q204, Q205	2SD2144S
Q208, Q301	DTA124EK
Q411, Q803	2SC2412K
Q834	2SA854S
Q840	FMY1A

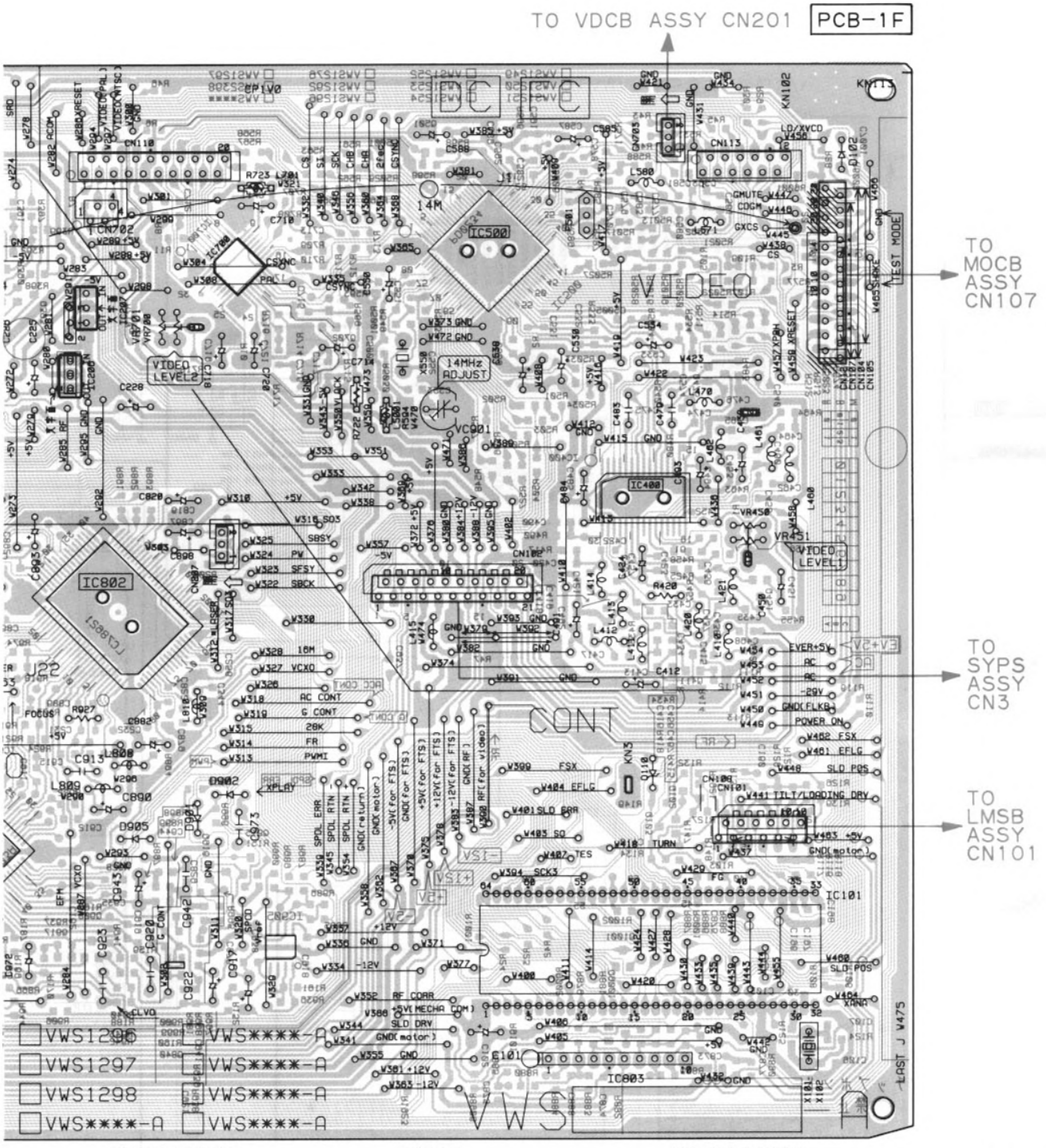
SCH-3F

MOTHER ASSY (2/2)

Note:
The numbers marked with a circle show the number of each measuring point, which correspond to the number in the service manual CLD-100K (ORDER NO. RRV1638) on page28.


SCH-3F
RF (VIDEO)
CN102
TO SYPS ASSY CN3 (→SCH-1F)
[CONT BUS]
[SERVO BUS]
IC701
TC74HC4053AF
IC702 NJM2235M
JA14
VKB1064
VIDEO OUT
CN703
B3B-PH-K-S
GND
2fsc
CSYNC
TO VCDB ASSY
CN201 (→SCH-4F)
IC500
PD0234A
MASTER CLOCK
Q475
VIDEO BUFFER
Q411
RF BUFFER
CN701
BTFN20S-3SB7
+5V
+5V
GND
GND
16M
LRCKIN
DATAIN
BCK IN
C2PO
LRCKO
DATAO
BCKO
SO
SI
ACK
SCK
XRESET
VIDEO
GND
+5V
TO VCDB ASSY
CN101 (→SCH-4F)
IC400 VIDEO IC
IC400 LA7134M
VIDEO IC
MOTHER ASSY (2/2)
SCH-3F

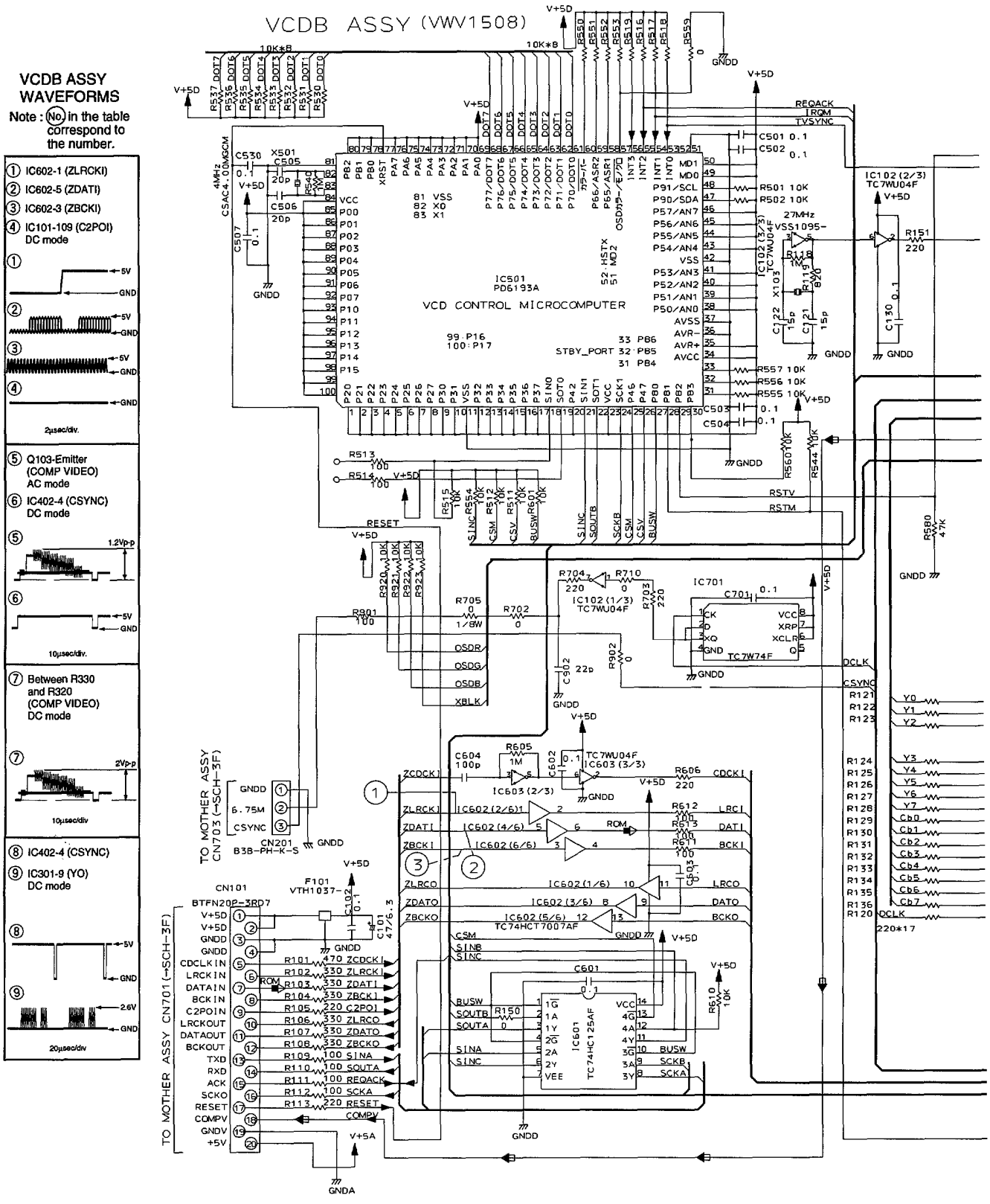

TO JACB ASSY CN503
TO VDCB ASSY CN101
MOTHER ASSY
MOTHER VNP1558-C
AUDIO
SERVO
TRACKING GAIN
FOCUS GAIN
SIDE B TILT OFFSET
SIDE A TILT OFFSET
VWS1249
VWS1250
VWS1251
VWS1252
VWS1253
VWS1254
VWS1276
VWS1292
VR608 VR607 VR603 VR604
TO CARRIAGE ASSY CN101



- This diagram is viewed from the mounted parts side.

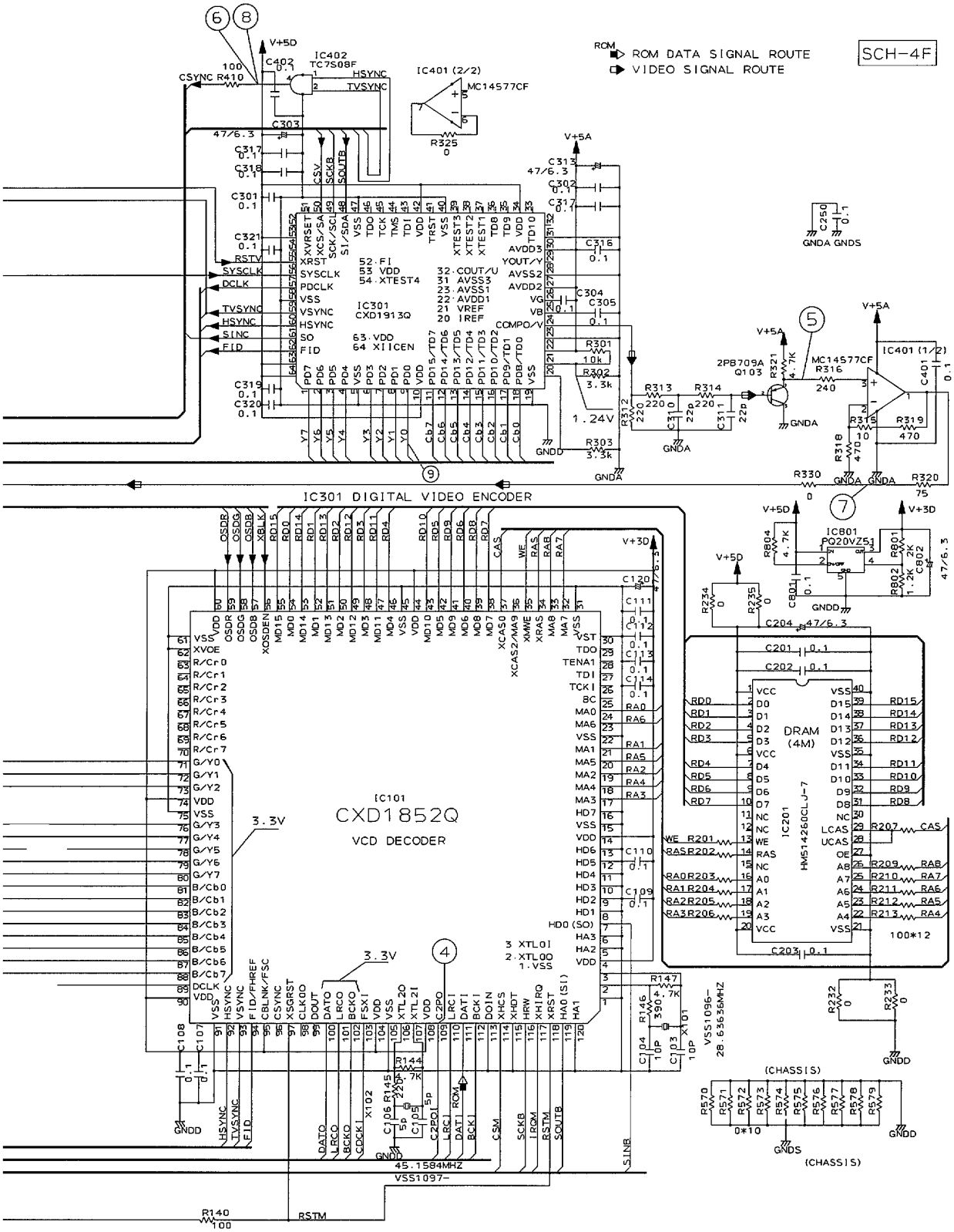
- The parts mounted on this PCB include all necessary parts for several destinations.
  For further information for respective destinations, be sure to check with the schematic diagram.

2.3 VCDB ASSEMBLY



VCDB ASSY

SCH-4F



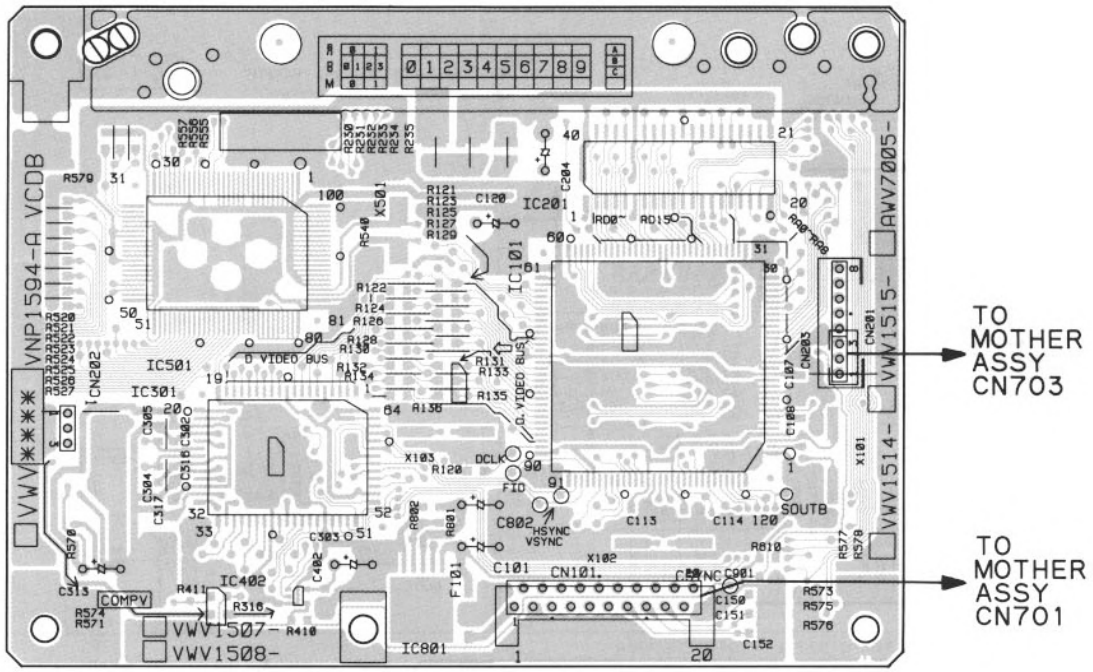
VCDB ASSY

SCH-4F

- This diagram is viewed from the mounted parts side.

PCB-2F

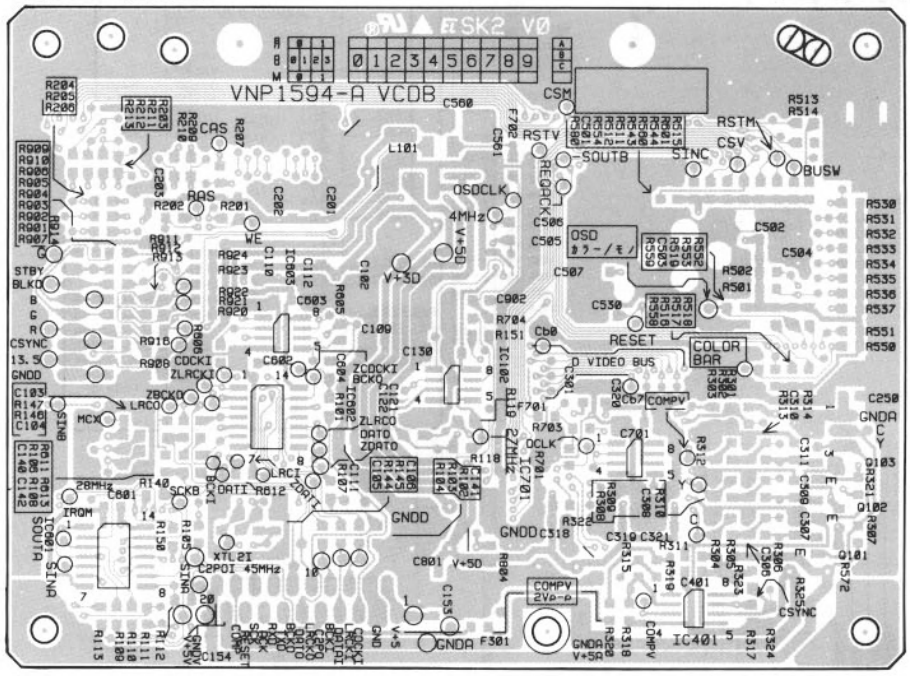
VCDB ASSY



IC501 IC301 IC402 IC201 IC101

PCB-2F

VCDB ASSY



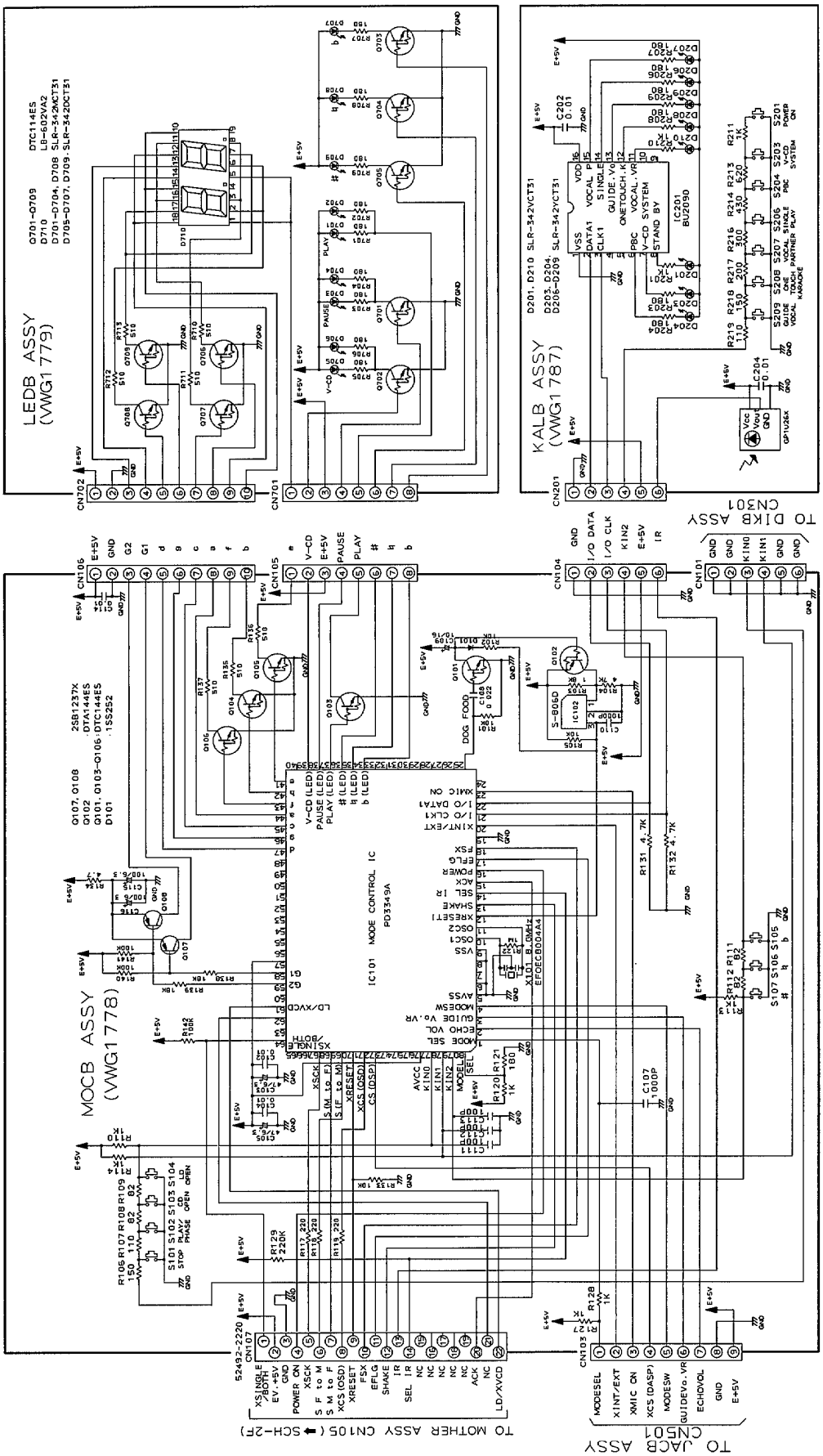
IC601 IC603 IC602 IC102 IC701 IC401 Q103 Q102 Q101

- This diagram is viewed from the foil side.

- 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.

2.4 MOCB, LEDB AND KALB ASSEMBLIES

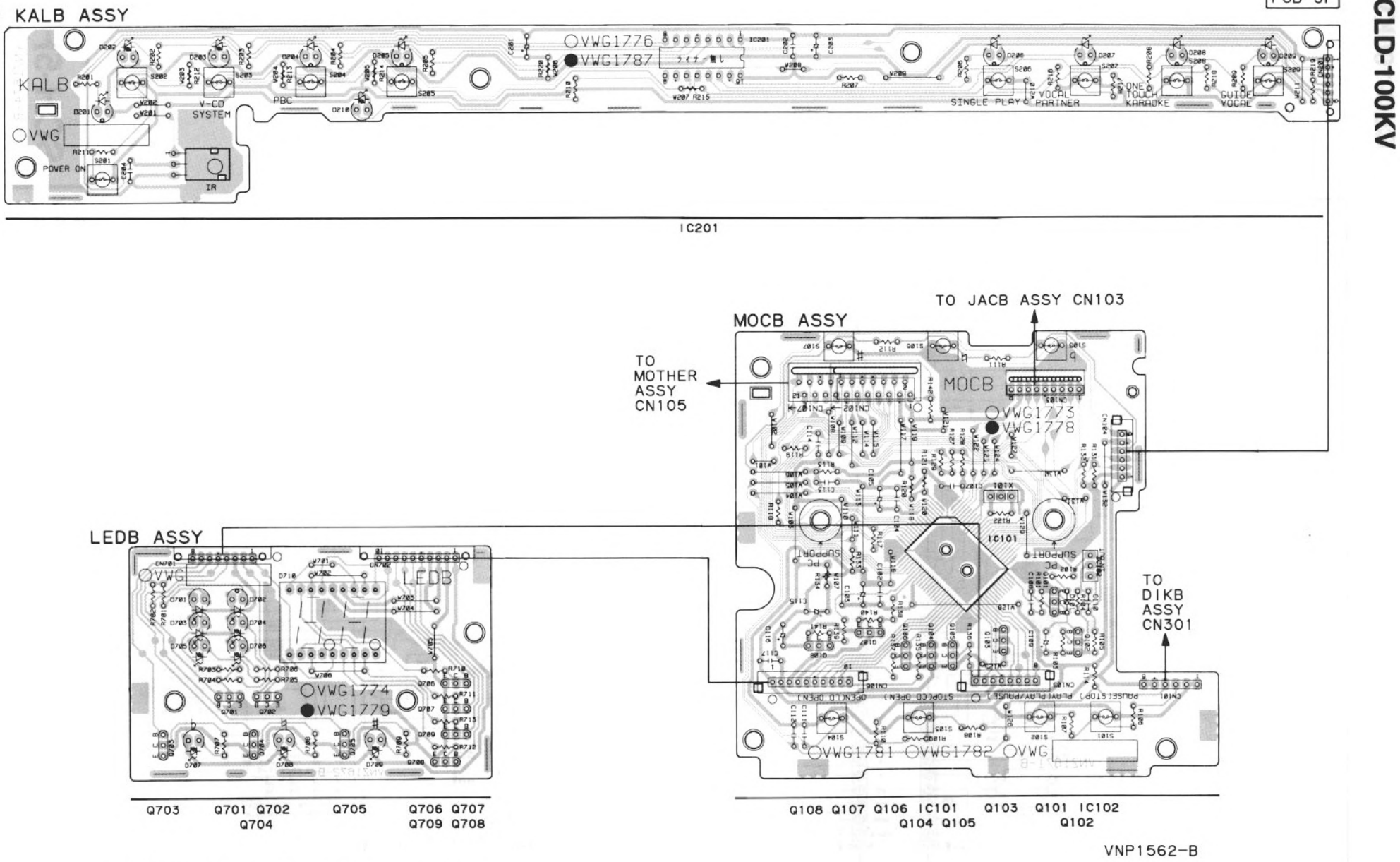
SCH-5F



MOCB ASSY
LEDB ASSY
KALB ASSY

SCH-5F

PCB-3F



VNP1562-B

- This diagram is viewed from the mounted parts side.
- 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.

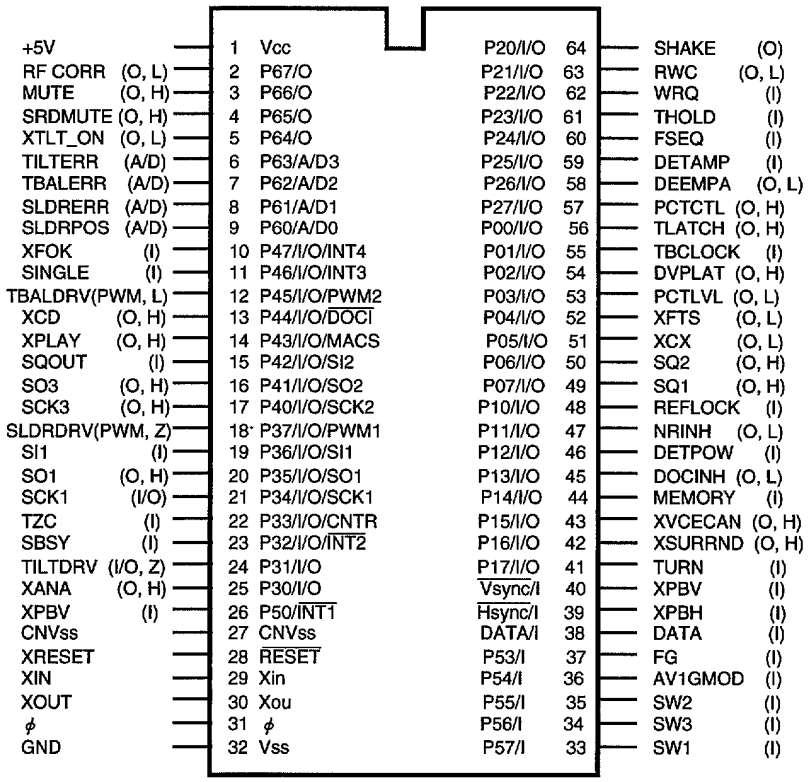
3. IC INFORMATION

■ PD0245A2 (MOTHER ASSY : IC101)

• MECHANISM CONTROL IC

• Pin Arrangement (Top View)

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



• Pin Function

No.	Pin Name	I/O	Function
1	VCC	I	Power supply pin Apply 5V±10%
2	RFCORR	O	RF correction switch signal output H : Gain UP CD, CDV-A : Low, CAV inner circuit gain up, others are High
3	MUTE	O	Audio mute control signal output of audio system L : Release MUTE H : MUTE
4	SRDMUTE	O	Mute control signal output for AC3 Release MUTE during playback. L : Release MUTE H : MUTE
5	XTLT ON	O	Tilt operation information L : During operation In the OPEN/CLOSE, the voltage will up about 10% by using this port.
6	TILTERR	I A/D	This signal is A/D converted as the tilt servo control input. Control the tilt motor so that this signal becomes 2.5V.
7	TBALERR	I A/D	Tracking balance error signal input This signal is A/D converted as the tracking offset control input.
8	SLDERR	I A/D	This signal is A/D converted as the slider servo control input. Control the tilt motor so that this signal becomes 2.5V.
9	SLDPOS	I A/D	Pickup position detection switch input Detect the position by reading A/D input value which each switches are resistance divided.
10	XFOK	I	Focus servo lock signal input L : Lock H : Unlock Use for lock detection of focus servo.
11	SINGLE	I	This information transmit to mode control by communication. L : Port high H : Port low Use for the signal mode
12	TBALDRV	O PWM	Output the tracking offset signal to PWM output, then use for auto tracking offset. 910 μsec period, tri-state control H, L, Z
13	XCD	O	LD/CD switch signal output L : CD H : LD
14	XPLAY	O	Signal output during spindle servo L : During servo H : During acceleration, brake and stop
15	SQOUT	I	Command data input from DSP Read out SUBQ
16	SO3	O	Serial 3 data signals output Serial signals are common used and signal distinguishes from the latch signals (DVPLAT and TLAT).
17	SCK3	O	Serial 3 clock signals output
18	SLDDRV	O PWM	Slider control signal output 5V=FWD, 0V=REV, 2.5V=STOP 910 μsec period, tri-state control H, L, Z

No.	Pin Name	I/O	Function
19	SI1	I	Data input from the mode control IC
20	SO1	O	Serial data output to the mode control IC
21	SCK1	I/O	Clock for serial communication with the mode control IC Becomes input mode without communicate with the mode control IC
22	TZC	I INT	Tracking error zero cross signal input Monitor this signal when searching track count in the miss clamp detection.
23	SBSY	I	Interrupt input for reading sub-code Q data from DSP
24	TILTDRV	I/O	LOAD/TILT control output 0.5V-Tray IN, OUT/Tilt DOWN, UP 2.5V-STOP Use for tilt servo that tilt drive is PWM output.
25	XANA	O	Digital/Analog audio switch signal output L : Analog H : Digital
26	XPBV	I	Playback vertical sync. signal input of LD/CDV L : During vertical sync.
27	CNVss	I	Ground for A/D conversion
28	XRESET	I	Reset signal input L : Reset H : Release reset Mode control is controlled.
29	XIN	I	9MHz clock oscillation input
30	XOUT	O	9MHz clock oscillation output
31	N.C.	O	Not used
32	GND	I	Ground
33	SW1	I	Switch input for Loading/Tilt position detection
34	SW3		
35	SW2		
36	AV1GMOD	I	AV1 gijutu mode When this port set to H, unti-shock control will be effective by Address C-bit2 from the mode control.
37	FG	I	Spindle motor FG signal input 16 outputs per rotation Used after dividing by 2 in microprocessor
38	DATA	I	Input pin for Phillips code decoder with built in mechanism controller
39	XPBH	I	Playback H-SYNC input for Phillips code decoder
40	XPBV	I	Playback V-SYNC input for Phillips code decoder
41	TURNA	I	Turn switch input H : side A L : side B
42	XSURRND	O	Surround control H : OFF L : ON
43	XVCECAN	O	Voice cancel output H : OFF L : Cancel
44	MEMORY	I	Memory model discrimination H : Memory model L : Non-memory model
45	DOCINH	O	Control the clamp pulse and clamp killer by tri-state value
46	DETPOW	I	Use for power abnormal signal input port. L : Normal H : Abnormal
47	NRINH	O	Control output of the noise reduction switch signal output L : CX ON H : CX OFF
48	REFLOCK	I	Reference signal input from DVP L : Phase not aligned H : Phase aligned (Non-memory)
49	SQ1	O	Analog audio switch signal output 1/L L : Squelch OFF H : Squelch ON
50	SQ2	O	Analog audio switch signal output 2/R L : Squelch OFF H : Squelch ON
51	XCX	O	Analog audio CX noise reduction switch switch signal output L : CX ON H : CX OFF
52	XFTS	O	Serial command output switch signal output of DSP/others L : DSP H : others
53	PCTLVL	O	Signal output for the picture quality adjustment L : SHARP2 (strong) H : SHARP1 (weak)
54	DVPLAT	O	PD0234 serial latch signal output Latches at falling edge.
55	TBCLOCK	I	Spindle lock signal input L : Unlock H : Lock
56	TLATCH	O	DAC & digital filter PD2026B serial control latch signal output Latches at falling edge.
57	PCTCTL	O	Outline correction signal output L : Correction OFF H : Correction ON
58	DEEMPA	O	DSP deemphasis control L : OFF H : ON
59	DETAMP	I	Spindle over-current detection signal input L : Over current H : Normal
60	FSEQ	I	Subcode sync. conformity detection signal input L : Not conformity H : Conformity
61	THOLD	I	Track jump accelerating / decelerating signal input L : other H : accelerating / decelerating
62	WRQ	I	Subcode Q reading OK signal input L : NG H : OK This pin will be H when Subcode Q data passed by CRC check.
63	RWC	O	DSP read / write command signal output L : Read H : Write
64	SHAKE	I/O	Handshake signal for data communication with the mode control IC This pin is the bilateral data line and each microprocessor control the Input / Output.

■ PD3349A (MOCB ASSY : IC101)
■ MODE CONTROL IC

● Pin Function

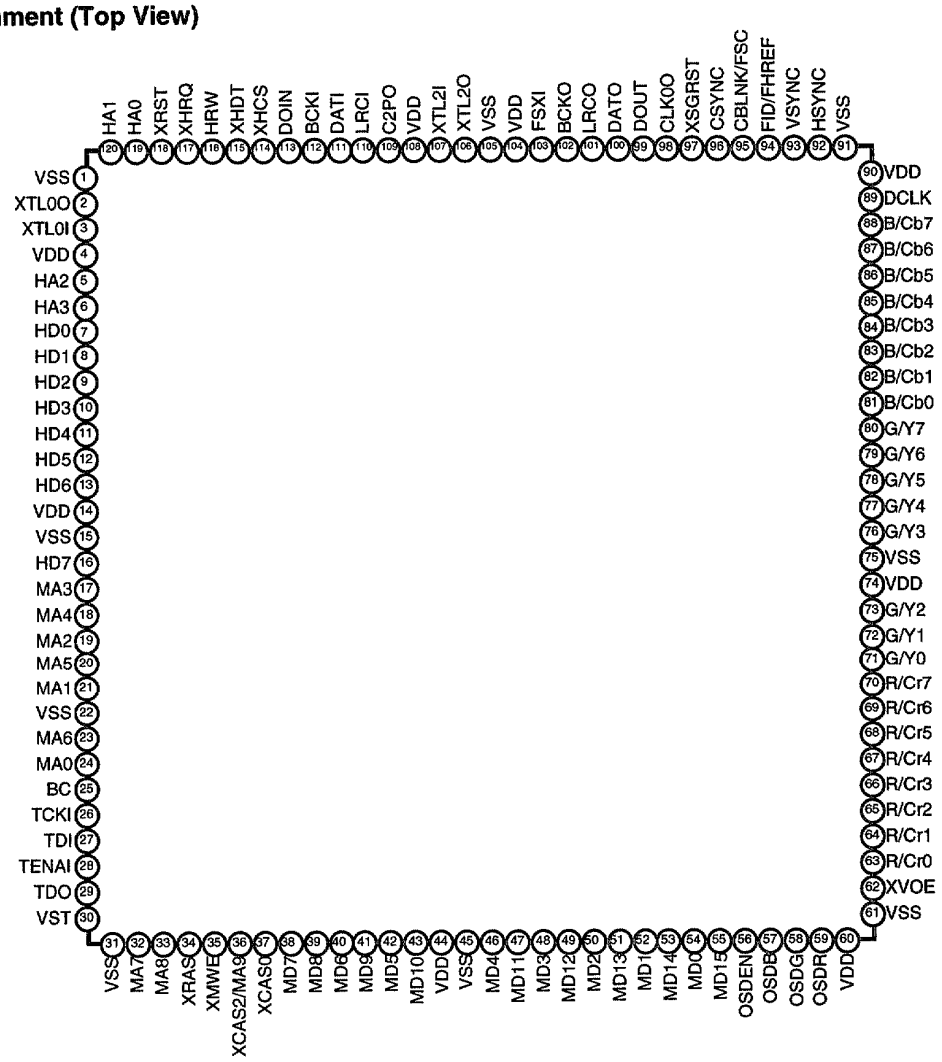
No.	Pin Name	I/O	Function
1	MODESEL	I	MIC control input. (AD input)
2	ECHO VOL	I	Echo volume data value. (AD input)
3	ONTA BAL	I	Vocal volume data value. (AD input)
4	MODE SW	I	Model switching input. (Standard, Karaoke and AUX) (AD input)
5	AVss	I	GND
6	TEST	I	GND
7	X2	O	Not used. (N.C)
8	X1	I	GND
9	Vss	I	GND
10	OSC1	I	Oscillator. (8MHz)
11	OSC2	O	
12	XRESET (IN)	I	CPU reset input. (L : Reset)
13	SHAKE (ACK)	I/O	Mechanism control communications request input. (Mode control communications enabled output.)
14	SEL IR	I	Remote control input.
15	V-CD	I/O	VCD control communications request input. (Mode control communications enabled output.)
16	P.ON	O	Mother board power supply switching output.
17	EFLG	I	For error rate measurement.
18	FSX	I	For error rate measurement.
19	P1/6	I	Not used. (N.C)
20	XINT/EXT	O	Analog audio switching output. (L : Player, H : External input)
21	I/O CLK1	O	Clock output for I/O expander.
22	I/O DATA1	O	Data output for I/O expander.
23	XMIC ON	O	Mic line switching output. (L : ON, H : OFF)
24	P4/7	O	Not used. (N.C)
25	DOG FOOD	O	Pulse output for Watch dog.
26	P4/5	O	Not used. (N.C)
27	P4/4		
28	P4/3		
29	P4/2		
30	P4/1		
31	P4/0		
32	P5/0		
33	P5/1		
34	b (LED)	O	Key control DOWN LED output.
35	NATURAL (LED)	O	Key control NATURAL LED output.
36	# (LED)	O	Key control UP LED output.
37	PAUSE (LED)	O	Pause LED output.
38	PLAY (LED)	O	Play LED output.
39	V-CD (LED)	O	Video CD LED output.
40	Vdisp	I	Not used. (N.C)

No.	Pin Name	I/O	Function
41	E	O	7 seg. display segment output.
42	B		
43	F		
44	A		
45	C		
46	G		
47	D		
48	P6/7	O	Not used. (N.C)
49	P7/0		
50	P7/1		
51	P7/2		
52	P7/3		
53	P7/4		
54	P7/5		
55	P7/6		
56	P7/7		
57	VCC	I	Power supply. (+5V)
58	G1	O	7 seg. display grid output.
59	G2	O	7 seg. display grid output.
60	P8/2	O	Not used. (N.C)
61	LD/VCD	O	LD/VCD screen switching output. (H : LD, L : VCD)
62	P8/4	O	Not used. (N.C)
63	P8/5	O	Not used. (N.C)
64	XSINGLE/BOTH	O	Switching between single side and double sides. (H : Double sides, L : Single side)
65	P8/7	O	Not used. (N.C)
66	P9/0	O	Not used. (N.C)
67	XSCK	I/O	Serial communications clock input/output.
68	S-MTOF	I	Serial communications data input.
69	S-FTOM	O	Serial communications data output.
70	XRESET (OUT)	O	Mother board reset output.
71	XCS (OSD)	O	Character generator (PD0198A), communications request output.
72	CS (DASP)	O	DSP (TC9409F-001), communications request output.
73	P9/7	O	Not used. (N.C)
74	PA/0		
75	PA/1		
76	AVCC	I	+5V
77	KIN0	I	Key data input. (AD input)
78	KIN1		
79	KIN2		
80	MODEL SEL	I	Model switch port. (AD input)

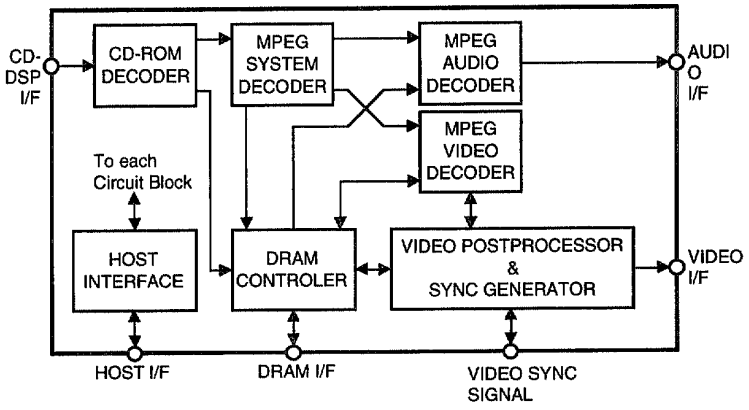
■ CXD1852Q (VCDB ASSY : IC101)

• MPEG1 DECODER

• Pin Assignment (Top View)



• Block Diagram



• Pin Function

No.	Pin Name	I/O	Function
1	VSS	—	Connect to ground
2	XTL0O	O	Master clock of video decoder Clock input to XTL0I or connect a oscillator between XTL0I and XTL0O. Frequency is 27MHz, 28.6363MHz (NTSC 8fsc), 35.4686MHz (PAL 8fsc).
3	XTL0I	I	
4	VDD	—	+3.3V power supply
5	HA2	I	When host interface is parallel mode, HA0-HA3, become register address input pins. When host interface is serial mode, HA0 becomes serial data input pin, and HA1-HA3 are fixed to "L" level.
6	HA3		
7	HD0	I/O	When host interface is parallel mode, HD0-HD7, become register data input/output pins. When host interface is serial mode, HD0 becomes serial data output pin, and HD1-HD7 are fixed to "L" level.
8	HD1		
9	HD2		
10	HD3		
11	HD4		
12	HD5		
13	HD6		
14	VDD	—	+3.3V power supply
15	VSS	—	Connect to ground
16	HD7	I/O	When host interface is parallel mode, HD0-HD7, become register data input/output pins. When host interface is serial mode, HD0 becomes serial data output pin, and HD1-HD7 are fixed to "L" level.
17	MA3	O	DRAM address signal output Connect to DRAM address pins agree with number.
18	MA4		
19	MA2		
20	MA5		
21	MA1		
22	VSS	—	Connect to ground
23	MA6	O	DRAM address signal output Connect to DRAM address pins agree with number.
24	MA0		
25	BC	—	Test pin Set to open.
26	TCKI		
27	TDI		
28	TENAI		
29	TDO		
30	VST	—	Test pin Connect to ground.
31	VSS	—	Connect to ground
32	MA7	O	DRAM address signal output Connect to DRAM address pins agree with number.
33	MA8		
34	XRAS	O	Low address strobe signal output Connect to $\overline{RAS}$ signal pin of DRAM.
35	XMWE	O	Write enable signal output of DRAM Connect to $\overline{WE}$ signal pin of DRAM.
36	XCAS2/MA9	O	Use for when connecting the 8 bit DRAM When construction of DRAM is 256kw×16bit×2, connect to $\overline{CAS}$ signal pin of upper word (256k-512k-1) side DRAM (upper and lower bytes are common used). When DRAM is 512kw×8bit×2, connect to MA9 pin (two DRAMs).
37	XCAS0	O	Column address strobe signal output of DRAM. When construction of DRAM is 256kw×16bit×2, connect to $\overline{CAS}$ signal pin of lower word (0-256k-1) side DRAM (upper and lower bytes are common used). In other case, connect to all $\overline{CAS}$ signal pins of DRAM.
38	MD7	I/O	Data signal input/output of DRAM Connect to DRAM data pins agree with number.
39	MD8		
40	MD6		
41	MD9		
42	MD5		
43	MD10		
44	VDD	—	+3.3V power supply
45	VSS	—	Connect to ground

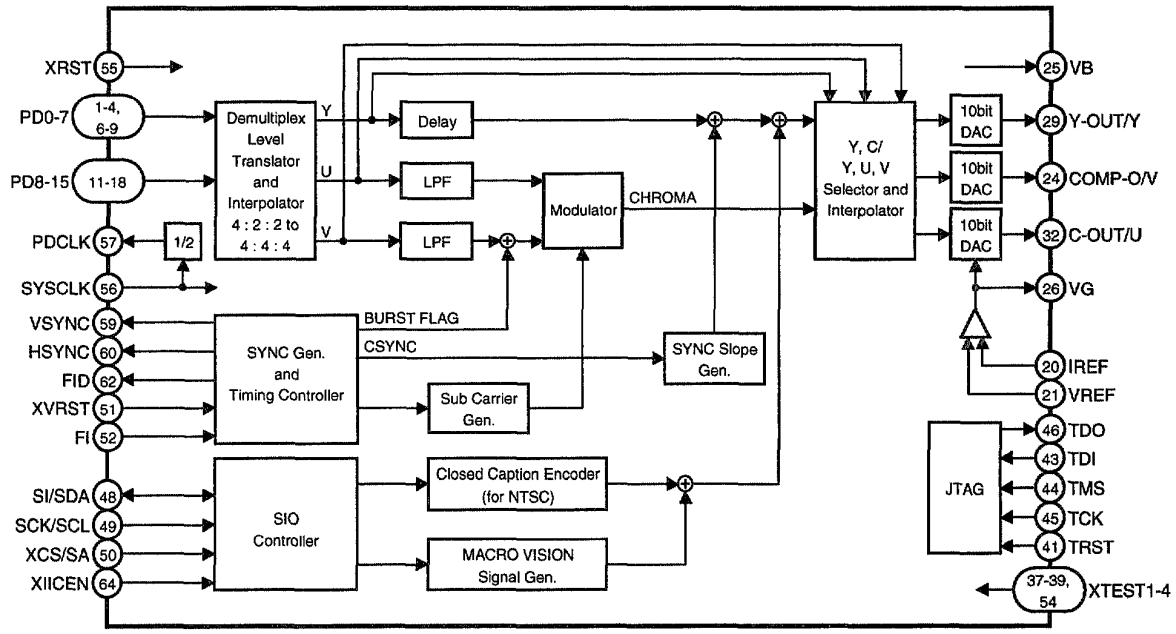
No.	Pin Name	I/O	Function
46	MD4	I/O	Data signal input/output of DRAM Connect to DRAM data pins gree with number.
47	MD11		
48	MD3		
49	MD12		
50	MD2		
51	MD13		
52	MD1		
53	MD14		
54	MD0		
55	MD15		
56	OSDEN	I	OSD enable signal Polarity of enable is changed by register setting.
57	OSDB	I	OSD data input When input signal which input to OSDEN is enable state, entered color in the color table which setting with there inputs (3 bit) is output to the picture data.
58	OSDG		
59	OSDR		
60	VDD	—	+3.3V power supply
61	VSS	—	Connect to ground
62	XVOE	I	Video output enable signal pin L : Picture data output and DCLK output are enabled. H : Disable (High impedance)
63	R/Cr0	O	Picture data output Correspondence of output data format (RGB, YCbCr etc.) and output data are able to changed by register setting.
64	R/Cr1		
65	R/Cr2		
66	R/Cr3		
67	R/Cr4		
68	R/Cr5		
69	R/Cr6		
70	R/Cr7		
71	G/Y0		
72	G/Y1		
73	G/Y2		
74	VDD	—	+3.3V power supply
75	VSS	—	Connect to ground
76	G/Y3	O	Picture data output Correspondence of output data format (RGB, YCbCr etc.) and output data are able to changed by register setting.
77	G/Y4		
78	G/Y5		
79	G/Y6		
80	G/Y7		
81	B/Cb0		
82	B/Cb1		
83	B/Cb2		
84	B/Cb3		
85	B/Cb4		
86	B/Cb5		
87	B/Cb6		
88	B/Cb7		
89	DCLK	I/O	Dot clock (DCLK) signal pin Normally, DCLK frequency is 13.5MHz. DCLK is able to input from this pin and output from this pin by dividing from clock input.
90	VDD	—	+3.3V power supply

No.	Pin Name	I/O	Function
91	VSS	—	Connect to ground
92	HSYNC	I/O	Horizontal sync. signal pin When internal sync. generator is used, outputs dot clock (DCLK) by frequency divided. When internal sync. generator is not used, it becomes input.
93	VSYNC	I/O	Vertical sync. signal pin When internal sync. generator is used, outputs dot clock (DCLK) by frequency divided. When internal sync. generator is not used, it becomes input.
94	FID/FHREF	I/O	Field discrimination signal (FID) and horizontal sync. phase reference signal (FHREF) pin Set this pin by register setting. When set to FID, outputs by using the internal sync. generator and inputs by not using it. "H" is correspond to odd field. When set to FHREF, outputs signal divided by XTL0. When XTL0 is 8fsc, signal becomes suitable HSYNC period and we for phase compare with HSYNC signal.
95	CBLNK/FSC	I/O	Composite blanking signal (CBLNK) and fsc signal pin Set this pin by register setting. When set to CBLK, outputs by using the internal sync. generator and inputs by not using it. When set to fsc, outputs signal divided by XTL0. Divided ratio is able to selected 1/8 or 1/16.
96	CSYNC	O	Composite sync. signal pin divided by DCLK. Signal is not able to input.
97	XSGRST	I	Reset signal input of sync. generator "L" for initialize the internal sync. generator.
98	CLK0O	O	Outputs clock divided by XTL0 Divided ratio is able to selected 1/8 or 1/16.
99	DOUT	O	Audio digital output
100	DATO	O	Audio serial data output to DAC·
101	LRCO	O	L/R clock output to DAC
102	BCKO	O	Bit clock output to DAC
103	FSXI	I	Clock input for audio interface Input 256fs (11.2896MHz), 384fs (16.9344MHz), 512fs (22.5792MHz) and 768fs (33.8688MHz).
104	VDD	—	+3.3V power supply
105	VSS	—	Connect to ground
106	XTL2O	O	Master clock of CD-ROM decoder and audio decoder Clock input to XTL2I or connect a oscillator between XTL2I and XTL2O. Frequency is 45MHz. This clock is for internal circuit, then not synchronize the input and output.
107	XTL2I	I	
108	VDD	—	+3.3V power supply
109	C2PO	I	C2 pointer input from CD-DSP Indicate the error of DATI input.
110	LRCI	I	LR clock input from CD-DSP Indicate the L ch and R ch of DATI.
111	DATI	I	Serial data input from CD-DSP
112	BCKI	I	Bit clock input from CD-DSP Clock for strobe the DATI input.
113	DOIN	I	Digital data input from CD-DSP
114	XHCS	I	Chip select signal input at register access
115	XHDT	I/O	Wait signal output at register access When host interface is pararell mode only, this pin is effective. Use to pull-up for open drain operation. In the serial mode, use to pull-up.
116	HRW	I	When host interface is parallel mode, this pin becomes R/$\overline{W}$ signal input. When host interface is serial mode, it becomes serial clock input.
117	XHIRQ	O	Interrupt request signal output Use to pull-up for open drain operation.
118	XRST	I	Hardware reset signal input When this pin set to "L" , initialize the all operation.
119	HA0	I	When host interface is parallel mode, HA0-HA3, become register address input pins. When host interface is serial mode, HA0 becomes serial data input pin, and HA1-HA3 are fixed to "L" level.
120	HA1		

■ CXD1913Q (VCDB ASSY : IC301)

• DIGITAL VIDEO ENCODER

• Block Diagram



• Pin Function

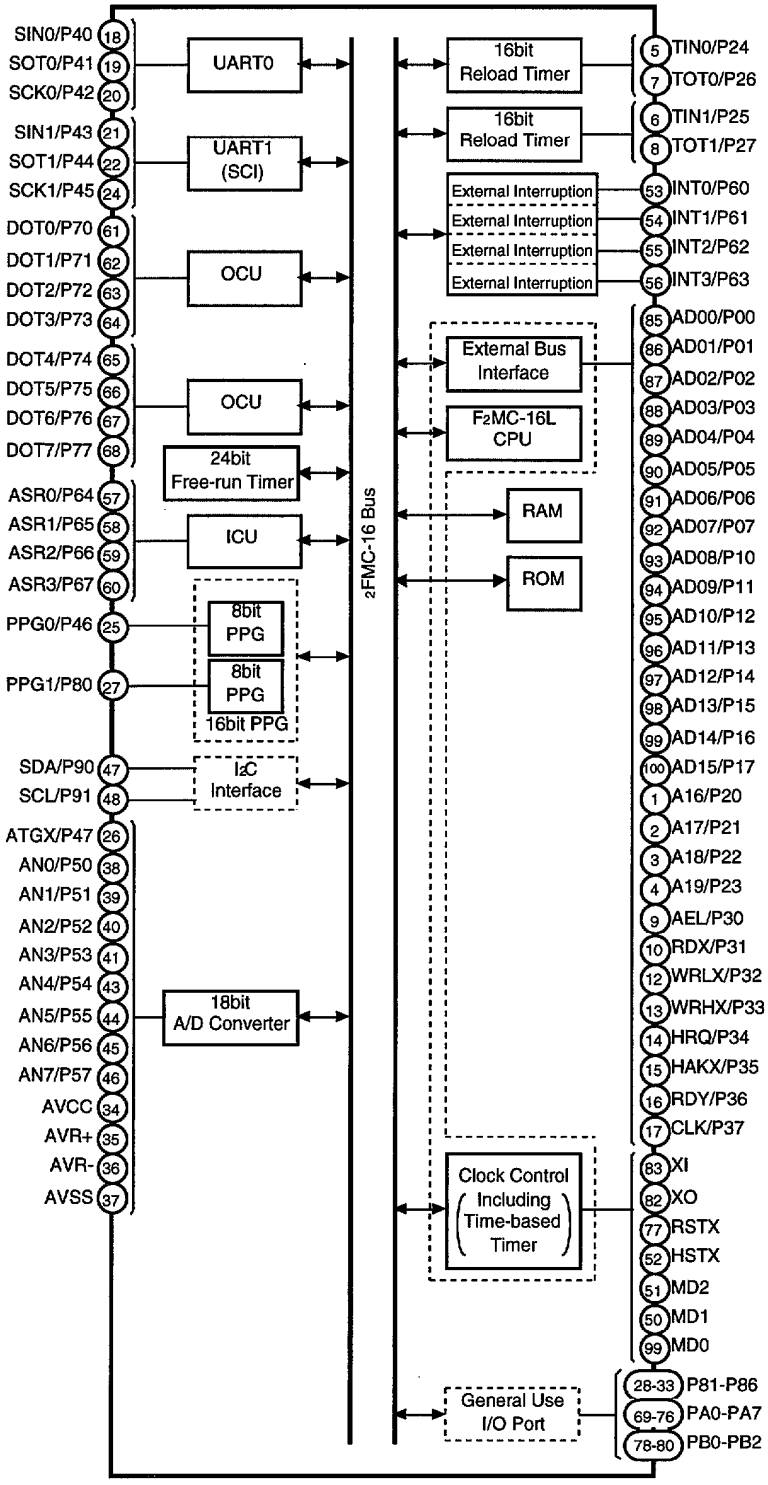
No.	Pin Name	I/O	Function
1	PD7	I	8bit pixel data input When PIF MODE = 0, input for Y, Cb and Cr signals which are multiplexed. When PIF MODE = 1, input for Y signal.
2	PD6		
3	PD5		
4	PD4		
5	VSS	—	Ground for digital
6	PD3	I	8bit pixel data input When PIF MODE = 0, input for Y, Cb and Cr signals which are multiplexed. When PIF MODE = 1, input for Y signal.
7	PD2		
8	PD1		
9	PD0		
10	VDD	—	Power supply for digital
11	PD15/TD7	I/O	8bit pixel data input/test data bus Whon PIF MODE = 0, there pins are not able to we. When PIF MODE = 1, input for Cb and Cr signals which are multiplexed. In the test mode, use for the internal circuit test data bus. Test mode is opened for device vender only.
12	PD14/TD6		
13	PD13/TD5		
14	PD12/TD4		
15	PD11/TD3		
16	PD10/TD2		
17	PD9/TD1		
18	PD8/TD0		
19	VSS	—	Ground for digital
20	IREF	I	Reference current input Connect a 16-times resister ("16R") of output resistor value "R"
21	VREF	I	Reference voltage input Set the output full scale.
22	AVDD1	—	Power supply for analog
23	AVSS1	—	Ground for analog
24	COMP-O/V	O	10bit D/A converter output When YC/YUV = 1, outputs conposite signal. When YC/YUV = 0, outputs color-difference (V) signal.
25	VB	O	Connect a about 0.1μF capacitor to VSS.
26	VG	O	Connect a about 0.1μF capacitor to AVDD.
27	AVDD2	—	Power supply for analog
28	AVSS2	—	Ground for analog
29	Y-OUT/Y	O	10bit D/A converter output Outputs luminance (Y) signal.
30	AVDD3	—	Power supply for analog
31	AVSS3	—	Ground for analog
32	C-OUT/U	O	10bit D/A converter output When YC/YUV = 1, outputs chroma (C) signal. When YC/YUV = 0, outputs color-difference (U) signal.

No.	Pin Name	I/O	Function
33	TD10	I/O	Test data bus Set to open. In the test mode, we for the internal circuit test data bus. Test mode is opened for device vender only.
34	VDD	—	Power supply for digital
35	TD9	I/O	Test data bus Set to open. In the test mode, we for the internal circuit test data bus. Test mode is opened for device vender only.
36	TD8		
37	XTEST1	I	Test mode control input with pull-up When these pins are "H", CXD1910AQ is not test mode. Test mode is opened for device vender only.
38	XTEST2		
39	XTEST3		
40	VSS	—	Ground for digital
41	TRST	I	Reset signal input for JTAG of active "L" with pull-up.
42	VDD	—	Power supply for digital
43	TDI	I	Serial data input for JTAG with pull-up
44	TMS	I	Control signal input for JTAG with pull-up
45	TCK	I	Clock input for JTAG
46	TDO	O	Serial data output for JTAG
47	VSS	—	Ground for digital
48	SI/SDA	I	This pins function is selected by XIICEN (pin 64). When XIICEN is "H", it becomes SONY SIO mode and SI serial data input. When XIICEN is "L", it becomes I²C-BUS mode and SDA input/output.
49	SCK/SCL	I	This pins function is selected by XIICEN (pin 64). When XIICEN is "H", it becomes SONY SIO mode and SCK serial clock input. When XIICEN is "L", it becomes I²C-BUS mode and SCL input.
50	XCS/SA	I	This pins function is selected by XIICEN (pin 64). When XIICEN is "H", it becomes SONY SIO mode and XCS chip select input. When XIICEN is "L", it becomes I²C-BUS mode and SA slave address selection input signal which selecting slave address of I²C-BUS.
51	XVRST	I	Vertical sync. reset input of active "L" with pull-up Use for synchronize the external and internal vertical sync. When XVRST is "L", reset the internal digital sync. generator according to FI.
52	FI	I	Field ID input Indicates the field ID at vertical sync. reset. H : 1st field L : 2nd field
53	VDD	—	Power supply for digital
54	XTEST4	I	Test mode control input with pull-up When these pins are H, CXD1910AQ is not test mode. Test mode is opened for device vender only.
55	XRST	I	System reset input at active "L" "L" for more than 40 clocks (SYSCLK) at power on reset.
56	SYSCLK	I	System clock input It needs to correctly 27MHz for generating the correctly sub-carrier frequency.
57	PDCLK	O	Pixel data clock output for 13.5MHz This clock is SYSCLK divided by 2. Use for 16bit pixel data mode.
58	VSS	—	Ground for digital
59	VSYNC	O	Vertical sync. signal output
60	HSYNC	O	Horizontal sync. signal output
61	SO	O	This pin's function is selectedby XIICEN (pin 64). When XIICEN is "H", it becomes SONY SIO mode and SO serial out output. When XIICEN is "L", this pin is not used and output becomes Hi-impedance.
62	FID	O	Field ID output When FIDS = 1, L : 1st field, H : 2nd field. When FIDS = 0, H : 1st field, L : 2nd field.
63	VDD	—	Power supply for digital
64	XIICEN	I	Serial interface mode selection input with pull-up When this pin is "L", pins 48 to 50 and 61 become I²C-BUS mode. When this pin is "H", pins 48 to 50 and 61 become SONY SIO mode.

■ PD6193A (VCDB ASSY : IC501)

• VCD CONTROL IC

• Block Diagram

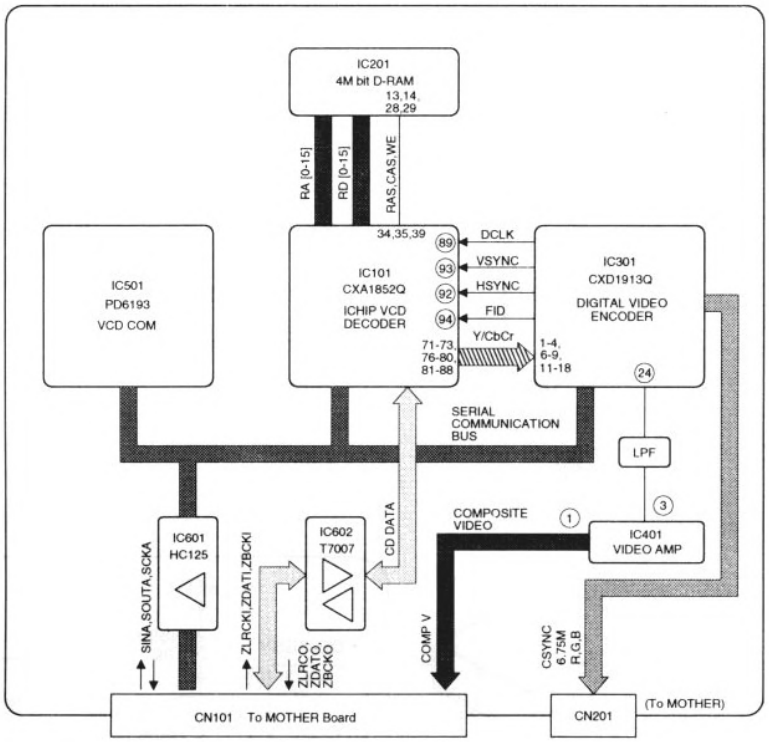


• Pin Function

No.	Pin Name	I/O	Function
1	P20	I	Not used (+5V)
2	P21		
3	P22		
4	P23		
5	P24		
6	P25		
7	P26		
8	P27		
9	P30		
10	P31		
11	VSS	—	GND
12	P32	I	Not used (+5V)
13	P33		
14	P34		
15	P35		
16	P36		
17	P37		
18	SIN0	I	Serial data input
19	SOT0	O	Serial data output
20	P42	I	Not used (+5V)
21	SINC	I	Serial communication (data input)
22	SOUTB	O	Serial communication (data output)
23	VCC	I	Power supply (+5V)
24	SCKB	O	Serial communication (clock)
25	CSM	O	Communication device selection (CXD1852)
26	CSV	O	Communication device selection (CXD1913)
27	BUSW	O	Communication device selection (system controller)
28	RSTM	O	Reset (CXD1852)
29	RSTV	O	Reset (CXD1913)
30	LD/VCD	O	Select the player output screen H : Player screen L : VCD screen
31	NTSC/PAL	O	Reserve pin (+5V)
32	P85		
33	P86		
34	AVCC	I	Power supply (+5V)
35	AVR+	I	Reference voltage of analog circuit (+5V)
36	AVR-	I	Reference voltage of analog circuit (GND)
37	AVSS	—	GND
38	P50	I	Not used (+5V)
39	P51		
40	P52		
41	P53		
42	VSS	—	GND
43	P54	I	Not used (+5V)
44	P55		
45	P56		
46	P57		
47	P90	I/O	Not used (+5V)
48	P91		
49	MD0	I	Operation mode setting (connect to +5V)
50	MD1		
51	MD2	I	Operation mode setting (connect to GND)
52	HSTX	I	N.C.
53	TVSYNC	I	Video vertical sync. signal interruption
54	IRQM	I	CXD1852 interruption
55	REQACK	I/O	Serial communication (REQ/ENB)
56	INT3	I	Not used (+5V)
57	OSD MODE	I	H : Color L : Monochrome (connect to +5V)
58	P65	I	Not used (+5V)
59	P66		
60	COLOR BAR	I	L : Color-bar display
61	P70	I	Reserve pin (+5V)
62	P71		
63	P72		
64	P73		
65	P74		
66	P75		
67	P76		
68	P77		
69	PA0	I	Not used (+5V)
70	PA1		
71	PA2		
72	PA3		
73	PA4		
74	PA5		
75	PA6		
76	PA7		
77	XRST	I	External reset request input
78	PB0	I	Not used (+5V)
79	PB1		
80	PB2		
81	VSS	—	GND
82	X0	I	Pins for crystal oscillator (4MHz)
83	X1	O	
84	VCC	I	Power supply (+5V)
85	P00	I	Not used (+5V)
86	P01		
87	P02		
88	P03		
89	P04		
90	P05		
91	P06		
92	P07		
93	P10		
94	P11		
95	P12		
96	P13		
97	P14		
98	P15		
99	P16		
100	P17		

4. VCD INFORMATION

4.1 VCDB ASSY BLOCK DIAGRAM



4.2 VCDB ASSY:ERROR DISPLAY AND TEST MODE

Item

1) SELF-DIAGNOSIS FUNCTION (ERROR DISPLAY)
2) VCD COLOR-BAR OUTPUT

1) SELF-DIAGNOSIS FUNCTION (ERROR DISPLAY)

One of the following error codes will be displayed on the OSD, FL or LED display when an error has occurred. The display goes blank when entry from the keyboard begins. Press and hold the CLEAR key for more than five seconds if you wish the error code displayed again.

Error codes

J1 Communications error between the microprocessor (IC501) on the VCDB ASSY and the mode controller.
J2 Communications error between the microprocessor (IC501) on the VCDB ASSY and IC101.
J3 Communications error between the microprocessor (IC501) on the VCDB ASSY and IC301.

Possible causes for error J1

Broken communications link (incomplete connection of the CN101 connector).
Power supply malfunctioning.
VCD microprocessor (IC501) on the VCDB ASSY malfunctioning.
Communications line buffer (IC601) on the VCDB ASSY malfunctioning.

Possible causes for error J2

VCD microprocessor (IC501) on the VCDB ASSY malfunctioning.
Communications line buffer (IC601) on the VCDB ASSY malfunctioning.
Buffers (IC601 and IC603) on the VCDB ASSY malfunctioning.
MPEG decoder (IC101) on the VCDB ASSY malfunctioning.

Possible causes for error J3

VIDEO encoder (IC301) on the VCDB ASSY malfunctioning.
Communication link between IC501 and IC301 of the VCDB ASSY incomplete.

2) VCD COLOR-BAR OUTPUT

The VCDB ASSY (versions VWV1508 and higher) have a test mode that generates color bars from the board. (Using this test mode allows you to accurately judge this aspect of ~~the video output system of the VCDB ASSY.)

To enter VCD Color-Bar Test mode, proceed as follows:

Preparation

Turn the power of the main unit OFF, then open the case.

Testing

Attach a chip jumper to "R558" (indicated on the VCDB ASSY) located on the soldered surface of the VCDB ASSY, then ground Pin 60 of IC501. The VCDB ASSY will continuously output color bars at 100% when the power is turned ON again.
Insert the video CD disc.

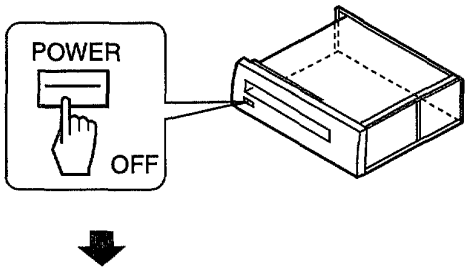
4.3 VCD COLOR-BAR OUTPUT

The VCDB ASSY have the test mode which output the color-bar signal independently.

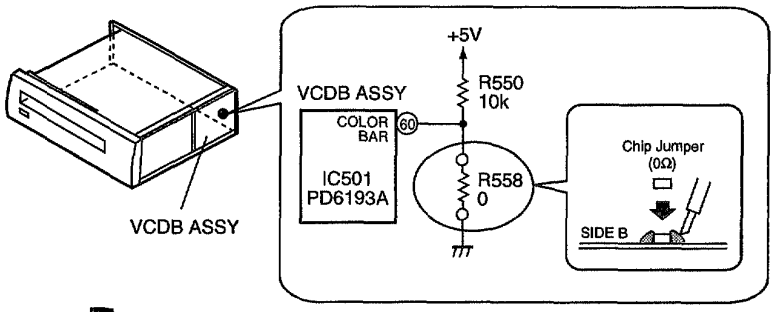
4.4 VCD COLOR-BAR TEST MODE

Color-bar TEST MODE:ON

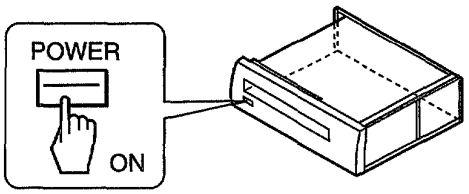
① Power OFF



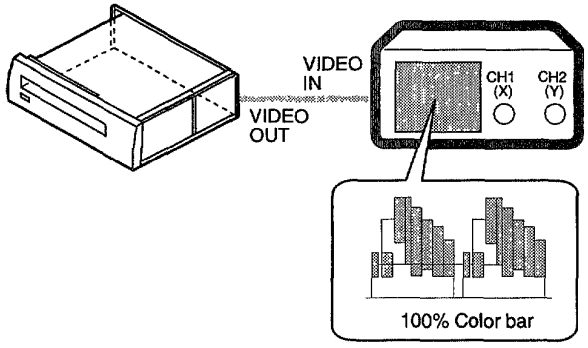
② Mount R558 (0Ω)



③ Power ON



④ 100% Color-bar Output



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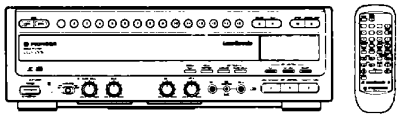
The Art of Entertainment

Service Manual



ORDER NO.
RRV1638

CD/LD PLAYER
CLD-100K

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

Type	Model	Power Requirement	Remarks
	CLD-100K		
TD	O	AC110 – 240V	
TL	O	AC110 – 240V	

CONTENTS

PIONEER ELECTRONIC CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153, Japan
PIONEER ELECTRONICS SERVICE, INC. P.O.Box 1760, Long Beach, CA 90801-1760, U.S.A.
PIONEER ELECTRONIC [EUROPE] N.V. Haven 1087, Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS ASIACENTRE PTE. LTD. 501 Orchard Road, #10-00 Lane Crawford Place, Singapore 0923

T-FFB JUNE 1996 Printed in Japan

1. SAFETY INFORMATION

VARO!
AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.

ADVERSEL:
USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION UNDGÅ UDSAETTELSE FOR STRÅLING.

VARNING!
OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD. BETRAKTA EJ STRÅLEN.

LASER
Kuva 1
Lasersateilyn varoitusmerkki

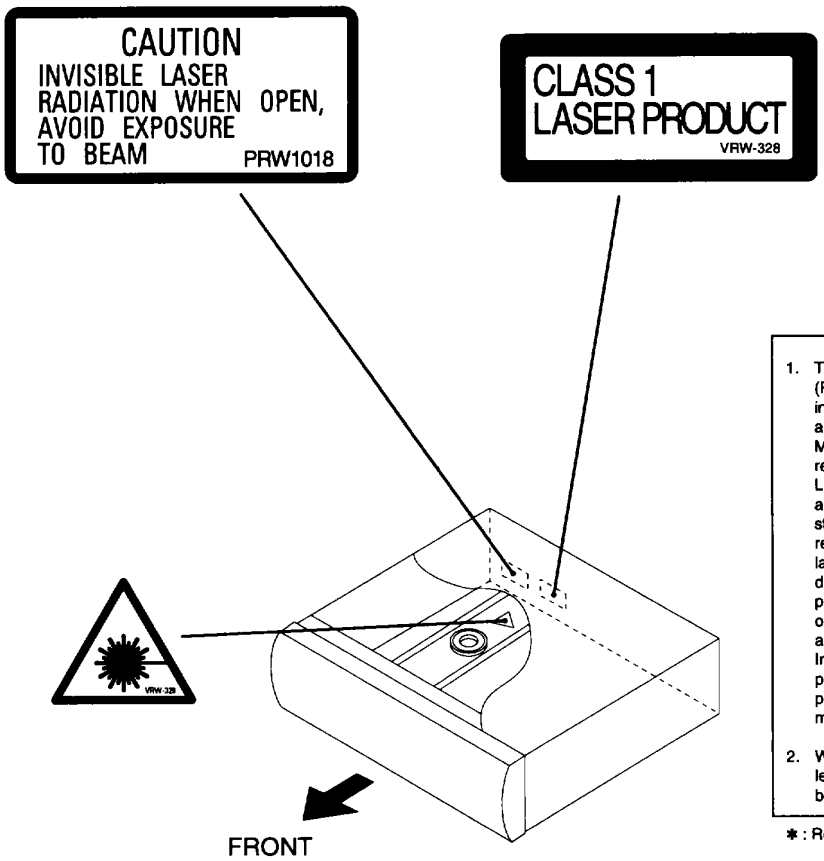
WARNING!
DEVICE INCLUDES LASER DIODE WHICH EMITS INVISIBLE INFRARED RADIATION WHICH IS DANGEROUS TO EYES. THERE IS A WARNING SIGN ACCORDING TO PICTURE 1 INSIDE THE DEVICE CLOSE TO THE LASER DIODE.

IMPORTANT
THIS PIONEER APPARATUS CONTAINS LASER OF CLASS 1.
SERVICING OPERATION OF THE APPARATUS SHOULD BE DONE BY A SPECIALLY INSTRUCTED PERSON.

LASER DIODE CHARACTERISTICS
MAXIMUM OUTPUT POWER: 5 mw
WAVELENGTH: 780-785 nm

LASER
Picture 1
Warning sign for laser radiation

LABEL CHECK (for TL type)



Additional Laser Caution

1. The ON/OFF statuses of the slider position detection switches (PARK INNER, PARK OUTER on the PKSB assy), and loading-status detection switchies (SW 1, 2 and 3 on the LMSB assy) are detected by the microprocessor (IC101 in the MOTHER assy). To permit the laser diode to oscillate, it is required to set the slider-position detection switches for the LD ACTIVE status (PARK INNER : OFF, PARK OUTER : OFF), and to set the loading-status detection switches for tilt neutral state (SW1 : OFF, SW2 : OFF, SW3 : ON). As long as these requirements are not satisfied, the laser diode will not oscillate. When the requirements are met in any way, the laser diode can oscillate. The laser diode oscillation will continue it pin 13 of IC801 is shorted to GND or the emitter and collector of Q834 are shorted each other (fault condition) in MOTHER assy.
   In the test mode ✱, the laser diode oscillates when the microprocessor detects a PLAY signal, or when the PLAY key is pressed (S102 ON in the FLKB assy), with the above requirements satisfied.
2. When the cover is open, close viewing through the objective lens with the naked eye will cause exposure to a Class 1 laser beam.

✱ : Refer to pages 39 and 40.

2. PACKING, EXPLODED VIEWS AND PARTS LIST

NOTES:

- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*
- *Parts list without notice are common for CLD-100K/TD and CLD-100K/TL.*

2.1 PACKING

(1) CONTRAST OF CLD-100K/TD AND TL

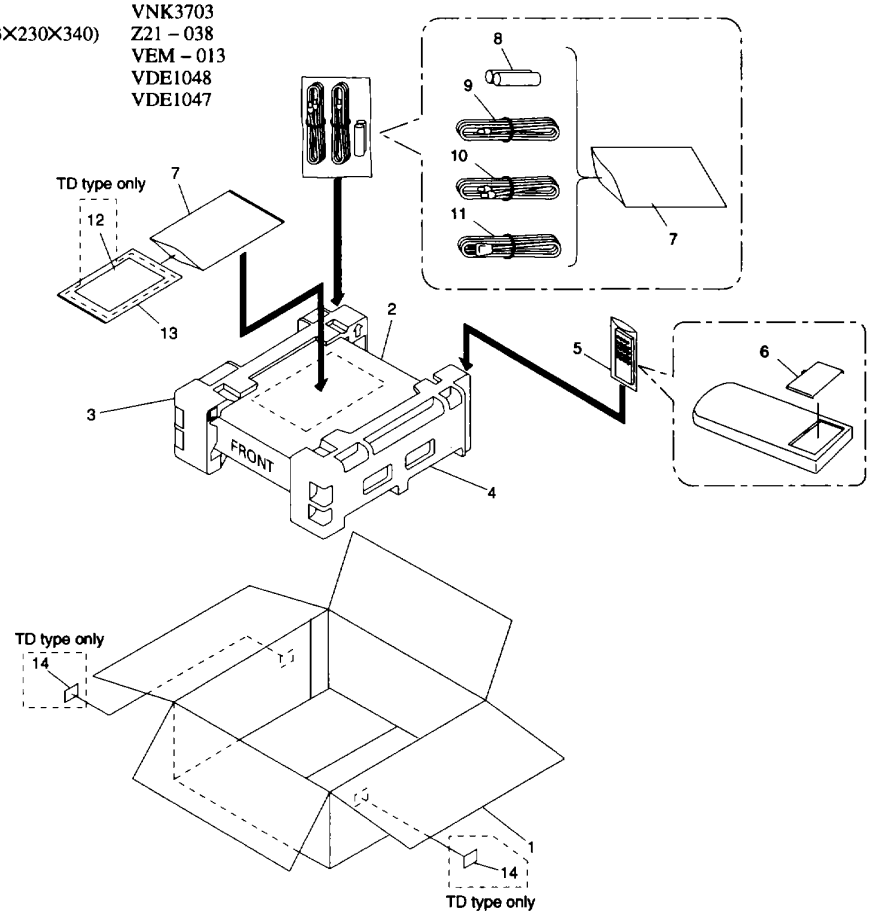
CLD-100K/TL and TD have the same construction except for the following:

Mark	No.	Symbol & Description	Part No.		Remarks
			TD type	TL type	
⚠ NSP	11	AC Power Cord	ADG1158	ADG1154	
	12	Warranty card	ARW1020	Not used	
	13	Operating Instructions (English/Spanish/Chinese)	VRE1049	Not used	
	13	Operating Instructions (English/Chinese)	Not used	VRE1052	
	14	TD Label	VRW1606	Not used	

(2) PARTS LIST FOR CLD-100K/TD

Mark	No.	Description	Parts No.
	1	Packing Case	VHG1584
	2	Mirror Mat Sheet	DHL1006
	3	Pad L	VHA1177
	4	Pad R	VHA1178
	5	Remote Control Unit(CU – CLD137)	VXX2452
	6	Battery Cover	VNK3703
	7	Polyethylene Bag(0.03X230X340)	Z21 – 038
NSP	8	Battery (R6P, AA)	VEM – 013
	9	Video Cord	VDE1048
	10	Audio Cord	VDE1047

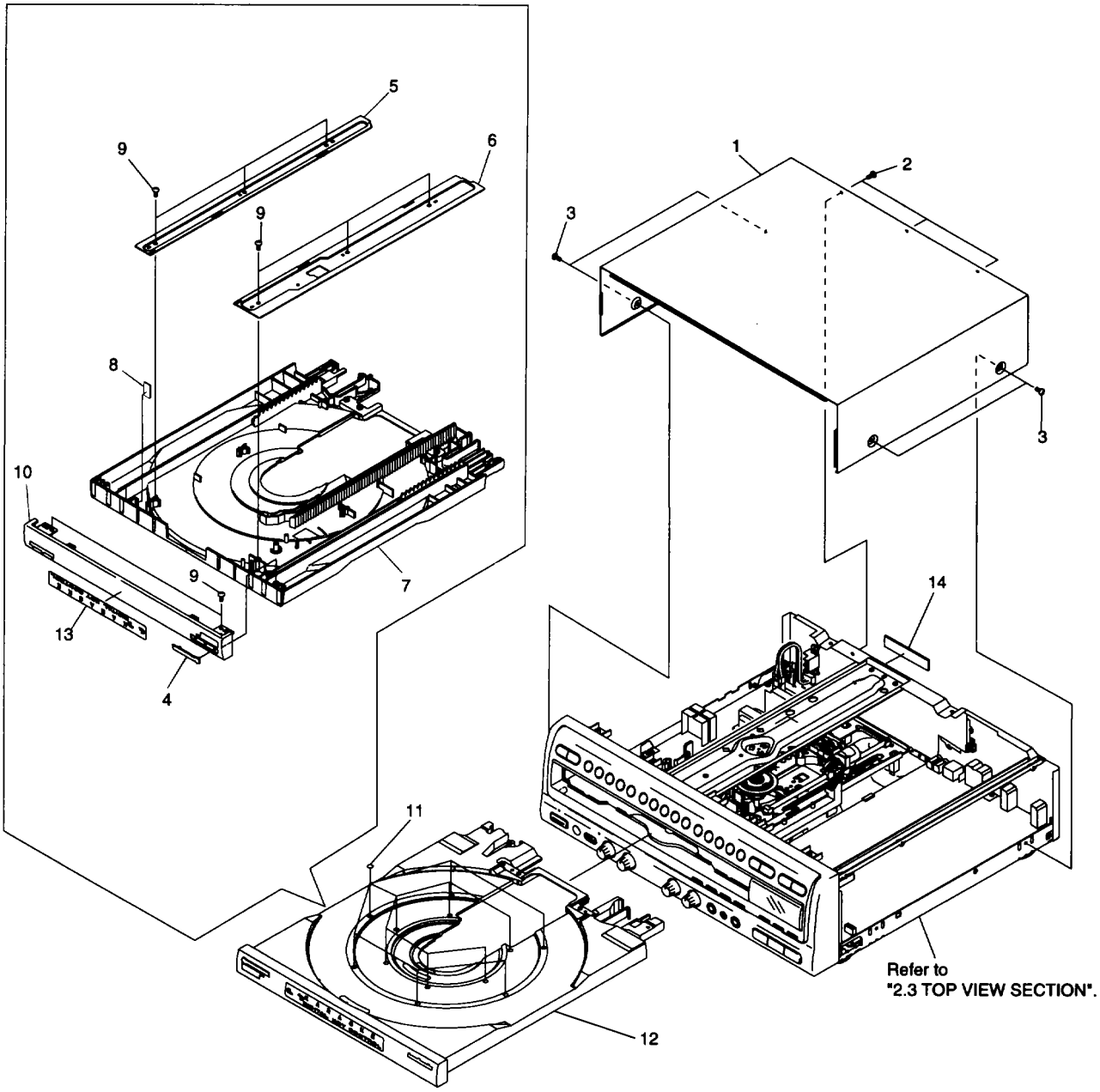
Mark	No.	Description	Parts No.
⚠ NSP	11	AC Power Code	ADG1158
	12	Warranty Card	ARW1020
	13	Operating Instructions (English/Spanish/Chinese)	VRE1049
	14	TD Label	VRW1606



2.2 EXTERIOR AND DISC TRAY SECTION

Parts List

Mark	No.	Description	Parts No.
	1	Bonnet Case – S	VXX2252
	2	Screw	BBZ30P080FMC
	3	Screw	BCZ40P060FZK
	4	Name Plate	PAM1704
	5	Guide Plate (R)	VNE1939
	6	Guide Plate (L)	VNE1938
NSP	7	Tray	VNK3780
	8	Damp Cushion	VEC1683
	9	Screw	BBZ30P080FMC
	10	Tray Panel	VNK3726
	11	Cushion	VEC1682
	12	Tray Assy – S	VXX2433
NSP	13	Getter	VRW1588
NSP	14	Rear Spacer	VEC1866



NOTE : Screws adjacent to ▼ mark on product are used for disassembly.

2.3 TOP VIEW SECTION

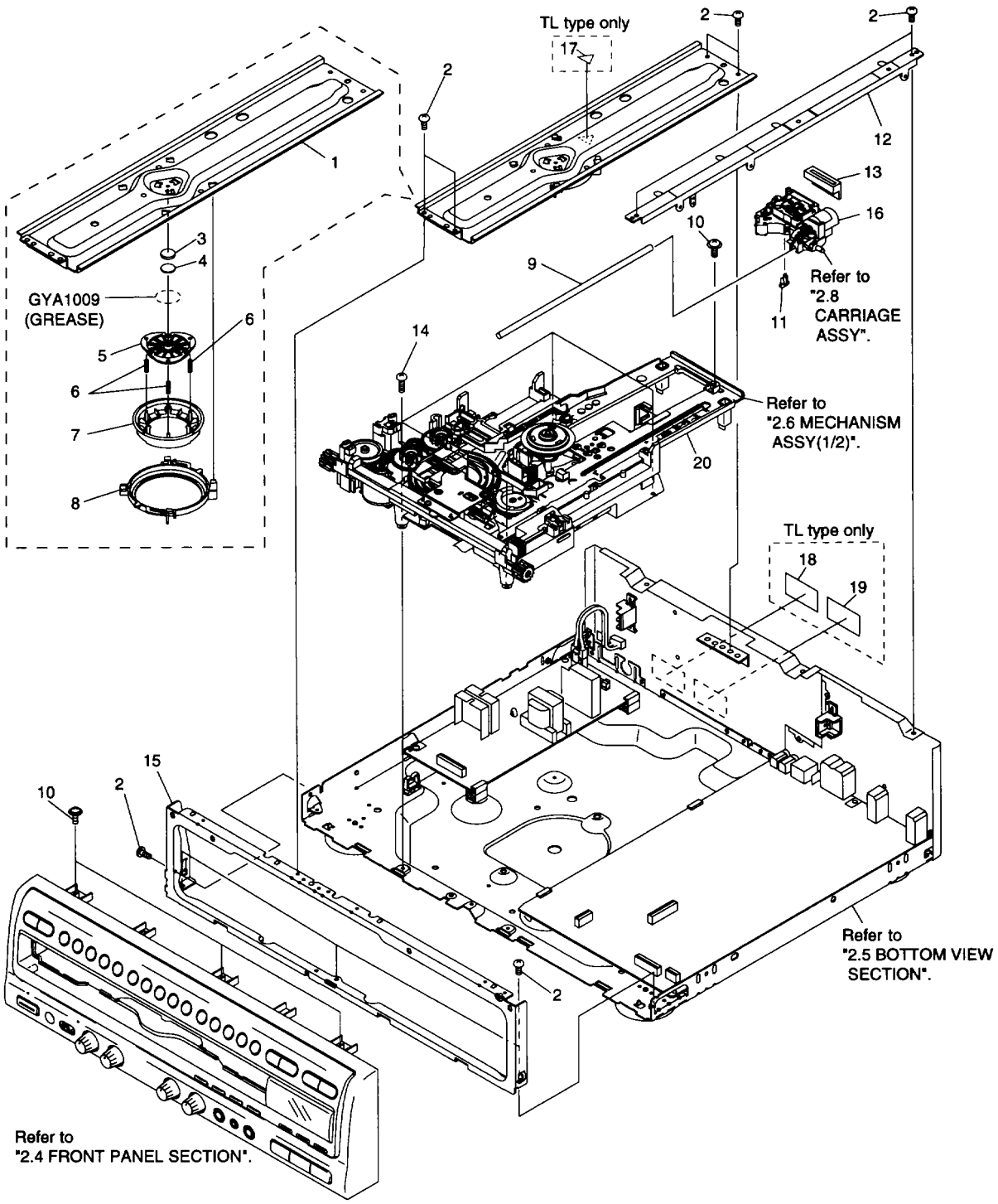
(1) CONTRAST OF CLD-100K/TD AND TL

CLD-100K/TL and TD have the same construction except for the following:

Mark	No.	Symbol & Description	Part No.		Remarks
			TD type	TL type	
	17	Caution Label (G)	Not used	VRW – 329	
	18	Caution Label	Not used	PRW1018	
NSP	19	Caution Label (F)	Not used	VRW – 328	

(2) PARTS LIST FOR CLD-100K/TD

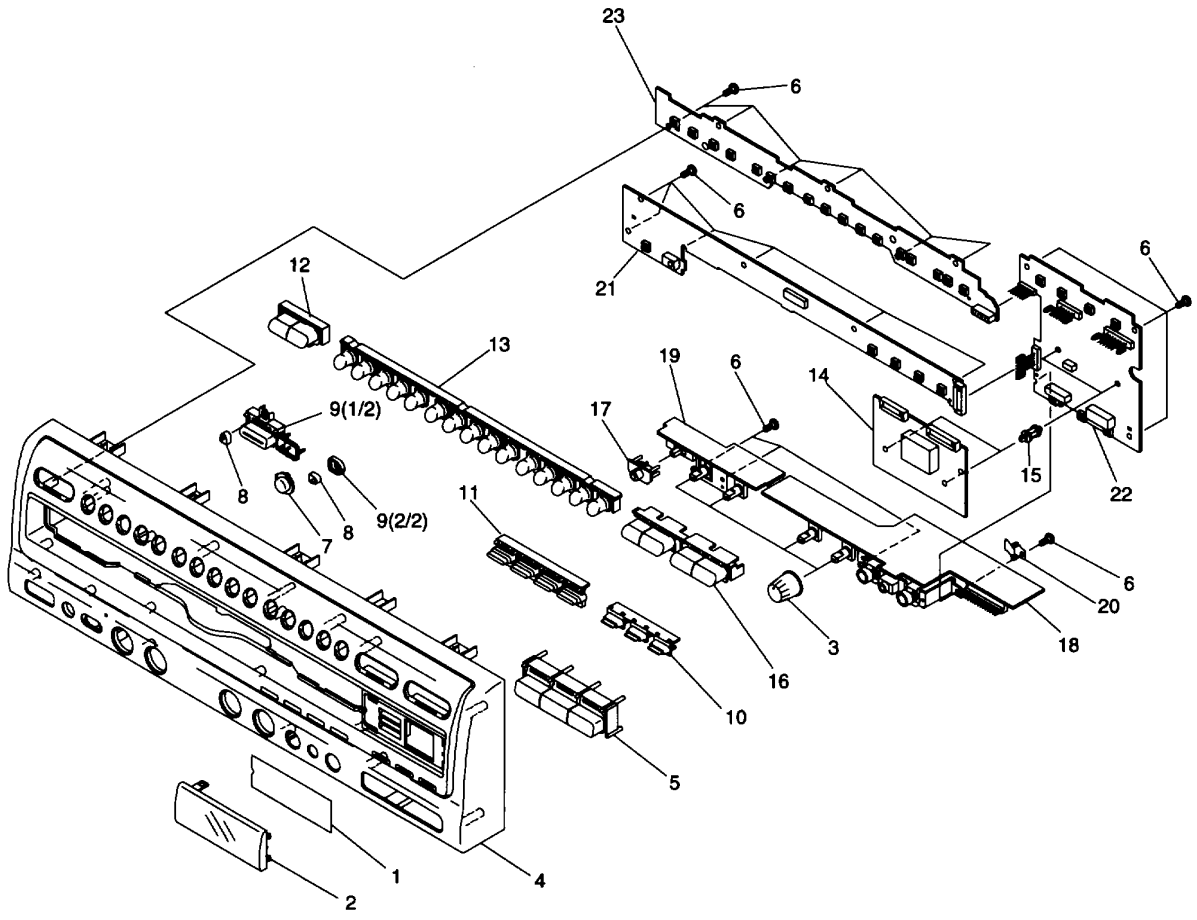
Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
	1	Clamper Arm	VNE2022		11	CA Hook	VNL1698
	2	Screw	BBZ30P080FMC	NSP	12	PCB Holder	VNE1964
	3	Rubber Mat	VEB1114		13	FFC Holder	VNL1706
	4	Thrust Holder	VNL1663		14	Screw	BBZ30P100FMC
	5	Clamper Head	VNL1649	NSP	15	Panel Holder	VNA1507
	6	Clamp Spring	VBH1192		16	Carriage Assy	VWT1110
	7	Clamper	VNL1648		17	.....	
	8	Clamper Holder	VNL1636		18	.....	
	9	Shaft	VLL1481		19	.....	
	10	Screw	IBZ30P080FMC	NSP	20	Mechanism Assy	VWT1109


TL type only
17
2
2
2
1
12
13
16
10
3
4
9
GYA1009
(GREASE)
6
5
6
7
8
14
11
Refer to
"2.8
CARRIAGE
ASSY".
Refer to
"2.6 MECHANISM
ASSY(1/2)".
20
TL type only
18
19
15
10
2
2
Refer to
"2.5 BOTTOM VIEW
SECTION".
Refer to
"2.4 FRONT PANEL SECTION".

2.4 FRONT PANEL SECTION

Parts List

Mark	No.	Description	Parts No.
	1	Display Sheet	VEC1872
	2	Sub Panel	VNK3727
	3	VR Knob	VNK3677
	4	Front Panel	VNK3725
	5	Key Control Button	VNK3674
	6	Screw	BBZ30P080FMC
	7	IR Window	VNK2246
	8	LED Lens	PNW2019
	9	Power Button	VNK3179
	10	LED Lens	VNK3730
	11	L Key A	VNK3688
	12	Skip Button	VNK3775
	13	15 Key	VNK3771
NSP	14	LEDB Assy	VWG1774
	15	PC Support	DEC1044
	16	Play Button	VNK3728
	17	Slide Knob	VNK3187
	18	JACB Assy	VWV1500
NSP	19	VRSB Assy	VWG1775
	20	Earth Plate	VNE2027
NSP	21	KALB Assy	VWG1776
	22	MOCB Assy	VWG1773
NSP	23	DIKB Assy	VWG1777


23
6
6
21
6
12
13
19
6
14
17
9(1/2)
8
7
8
9(2/2)
11
15
22
6
20
18
3
16
10
5
1
2
4

2.5 BOTTOM VIEW SECTION

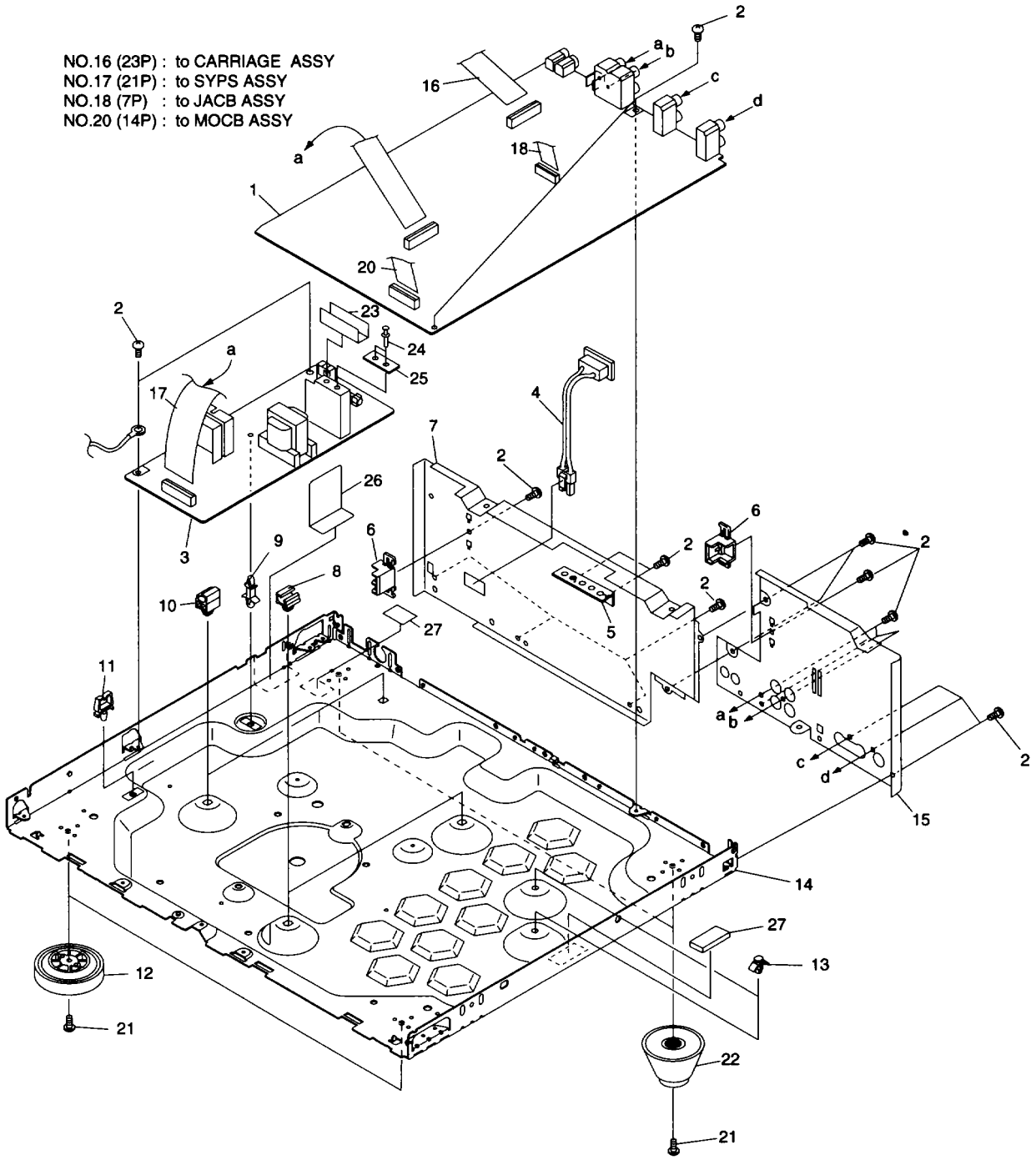
(1) CONTRAST OF CLD-100K/TD AND TL

CLD-100K/TL and TD have the same construction except for the following:

Mark	No.	Symbol & Description	Part No.	
			TD type	TL type
	7	Rear Panel R	VNA1750	VNA1789

(2) PARTS LIST FOR CLD-100K/TD

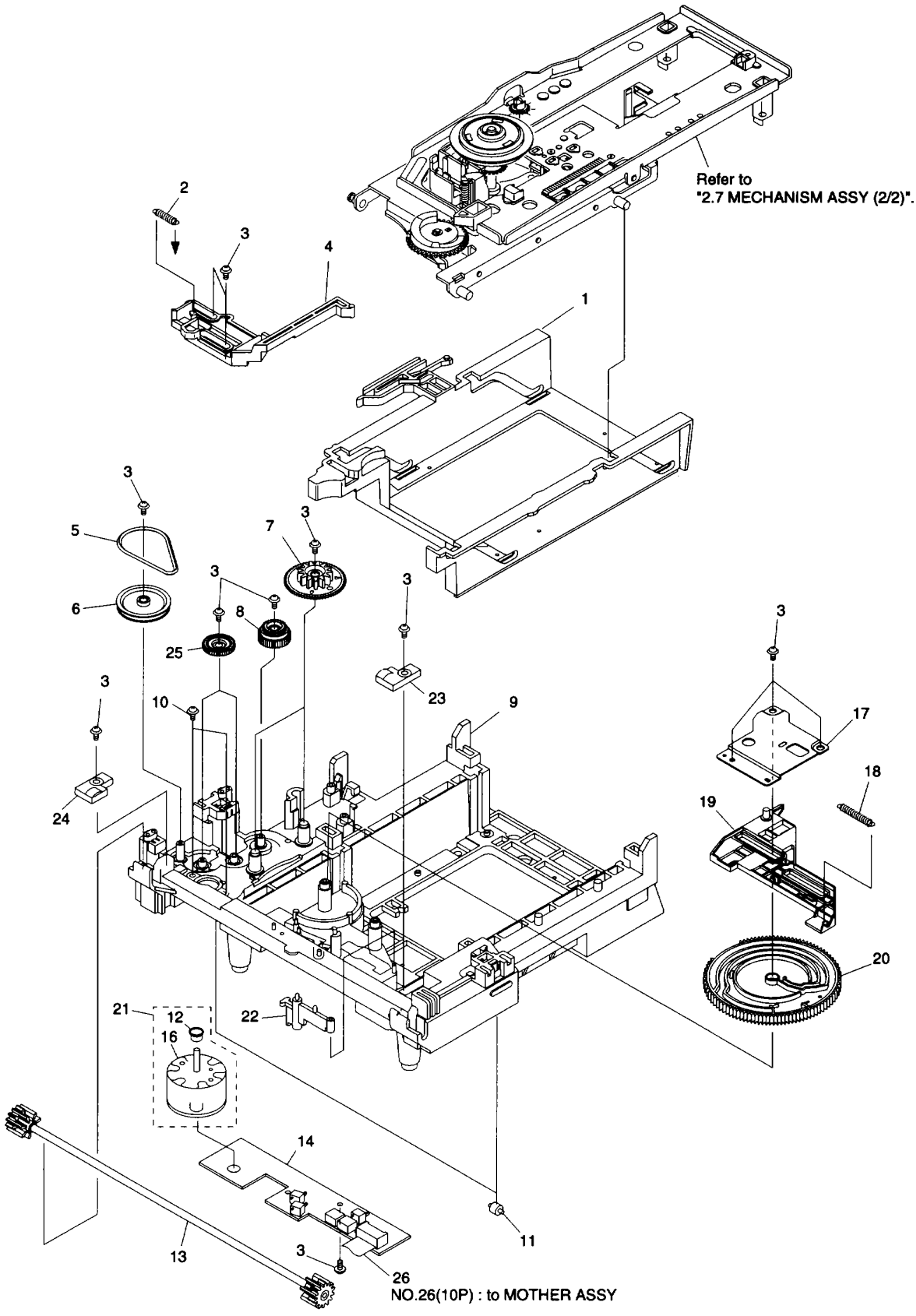
Mark	No.	Description	Parts No.
	1	Mother Assy	VWS1254
	2	Screw	BBZ30P080FMC
⚠	3	SYPS Assy	VWR1233
⚠	4	AC Inlet Assy	VKP2116
	5	Rear Angle	VNE2024
	6	Tray Stopper	VNL1657
	7	Rear Panel R	VNA1750
NSP	8	P Plate Holder	PNY – 405
NSP	9	PC Support	VEC – 269
NSP	10	PCB Hinge	VEC1174
NSP	11	Wire Clip (H)	VEC1181
	12	Insulator	PNW1912
	13	Card Spacer	VEC1708
NSP	14	Chassis	VNA1461
	15	Rear Panel L	VNA1776
	16	Flexible Cable (23P)	VDA1464
	17	Flexible Cable (21P)	VDA1465
	18	Flexible Cable (7P)	VDA1555
	19	.....	
	20	Flexible Cable (14P)	VDA1554
	21	Screw	BBZ30P100FMC
	22	Insulator Assy	VXA2295
	23	Barrier Sheet	VEC1877
	24	Rivet	DEC – 176
	25	Barrier Sheet	VEC1878
NSP	26	Barrier Sheet	VEC1869
	27	Spacer	PEB1275


NO.16 (23P) : to CARRIAGE ASSY
NO.17 (21P) : to SYPS ASSY
NO.18 (7P) : to JACB ASSY
NO.20 (14P) : to MOCB ASSY

2.6 MECHANISM ASSY (1/2)

Parts List

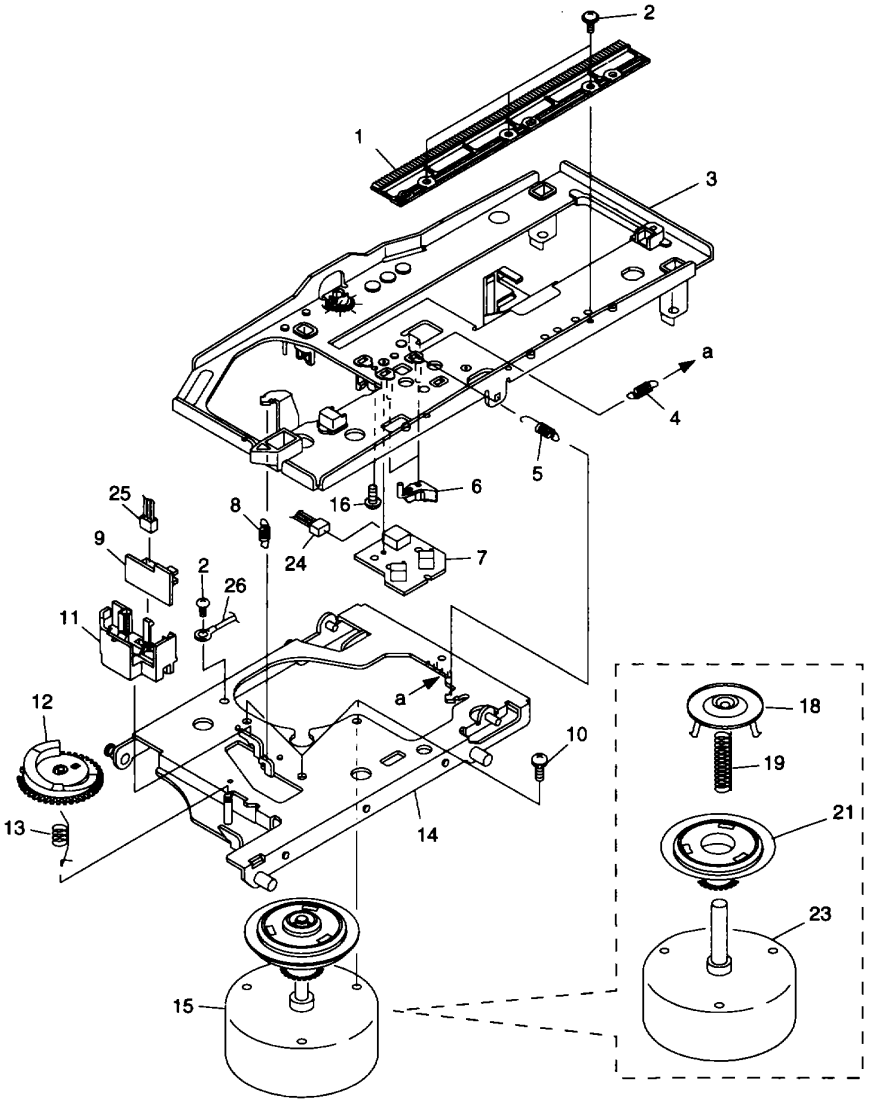
Mark	No.	Description	Parts No.
	1	Clamp Cam	VNL1633
	2	CDP Spring	VBH1191
	3	Screw	Z39 – 019
	4	CD Plate	VNL1632
	5	Rubber Belt	VEB1184
	6	Gear Pulley	VNL1662
	7	Twin Gear	VNL1626
	8	Center Gear	VNL1660
	9	Mechanism Base	VNK3239
	10	Screw	BMZ26P040FMC
	11	Roller	VNL1042
NSP	12	Motor Pulley	VNL1630
	13	Synchro Gear Assy	VXA2105
NSP	14	LMSB Assy	VWG1554
	15	.....	
NSP	16	Carriage Motor	VXM1033
	17	Shaft Holder	VNE1942
	18	CAS Spring	VBH1190
	19	Cam Plate	VNL1631
	20	Cam Gear	VNL1625
	21	Loading Motor Assy	VXX2045
	22	MB – Switch Lever	VNL1664
	23	Slider (R)	VNL1666
	24	Slider (L)	VNL1665
	25	Double Gear	VNL1661
	26	Flexible Cable (10P)	VDA1466


Refer to
"2.7 MECHANISM ASSY (2/2)".
NO.26(10P) : to MOTHER ASSY

2.7 MECHANISM ASSY (2/2)

Parts List

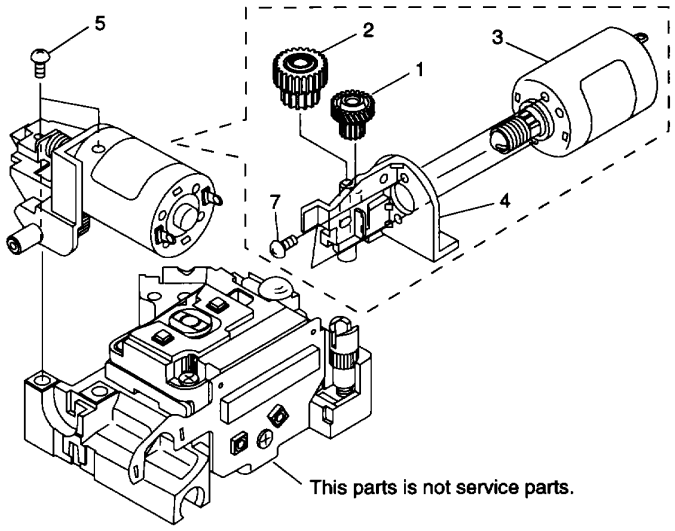
Mark	No.	Description	Parts No.
	1	CA Rack	VNL1647
	2	Screw	IBZ26P060FMC
	3	Tilt Base	VNL1642
	4	Radial Spring	VBH1246
	5	Thrust Spring	VBH1245
	6	CA – Switch Lever	VNL1644
NSP	7	PKSB Assy	VWG1555
	8	Tilt Tension Spring	VBH1244
NSP	9	FG Assy	VWG1556
	10	Screw	PMA30P050FMC
	11	FG Base	VNL1645
	12	Tilt Cam	VNL1643
	13	Tilt Cam Spring	VBH1243
	14	Motor Base	VNE1941
	15	Spindle Motor Assy	VXA2125
	16	Screw	IBZ26P120FMC
	17	.....	
	18	Centering Hab	VNL1623
	19	Centering Spring	VBH1083
	20	.....	
NSP	21	R – Turn Table Assy	VXA2216
	22	.....	
NSP	23	Spindle Motor	VXM1057
	24	Housing ASSY(3P:blue)	VKP2045
	25	Housing ASSY(3P:yellow)	VKP2046
NSP	26	Earth Lead Unit	XDF – 507



2.8 CARRIAGE ASSY

Parts List

Mark	No.	Description	Parts No.
	1	CA Gear (A)	VNL1638
	2	CA Gear (B)	VNL1639
	3	Slider Motor Assy	VXX2082
	4	Motor Holder	VNL1700
	5	Screw	PBZ20P050FMC
	6	.....	
	7	Screw	PMZ20P030FMC



3. SCHEMATIC AND PCB CONNECTION DIAGRAMS

NOTE FOR SCHEMATIC DIAGRAMS (Type 4A)

1. **When ordering service parts, be sure to refer to "PARTS LIST of EXPLODED VIEWS" or "PCB PARTS LIST".**
2. **Since these are basic circuits, some parts of them or the values of some components may be changed for improvement.**
3. **RESISTORS:**
   Unit: k:kΩ, M:MΩ, or Ω unless otherwise noted.
   Rated power: 1/4W, 1/6W, 1/8W, 1/10W unless otherwise noted.
   Tolerance: (F): ±1%, (G): ±2%, (K): ±10%, (M): ±20% or ±5% unless otherwise noted.
4. **CAPACITORS:**
   Unit: p:pF or μF unless otherwise noted.
   Ratings: capacitor (μF)/voltage(V) unless othrewise noted.
   Rated voltage: 50V except for electrolytic capacitors.
5. **COILS:**
   Unit: m:mH or μH unless otherwise noted.
6. **VOLTAGE AND CURRENT:**
   ▭ or ← V:
   DC voltage (V) in PLAY mode unless otherwise noted.
   ⇦ mA or ← mA:
   DC current in PLAY mode unless otherwise noted.
   Value in ( ) is DC current in STOP mode.
7. **OTHERS:**
   • ⊘ or ⊘ : Adjusting point.
   • ◄ : Measurement point.
   • The ⚠ mark found on some component parts indicates the importance of the safety factor of the parts. Therefore, when replacing, be sure to use parts of identical designation.
8. **SCH-□ ON THE SCHEMATIC DIAGRAM:**
   • SCH-□ indicates the drawing number of the schematic diagram. (SCH stands for schematic diagram.)
9. **SWITCHES** (Underline indicates switch position):

LMSB ASSY	KALB ASSY	DIKB ASSY
S101 : SW1	S201 : POWER ON	S301 : ⏮
S102 : SW2	S206 : SINGLE PLAY	S302 : ⏭
S103 : SW3	S207 : VOCAL PARTNER	S303 : 1
PKSB ASSY	S208 : ONE TOUCH KARAOKE	S304 : 2
S104 : OUTER	S209 : GUIDE VOCAL	S305 : 3
S105 : INNER	VRSB ASSY	S306 : 4
MOCB ASSY	S601 : MODE SELECTION	S307 : 5
S101 : PAUSE		S308 : 6
S102 : PLAY		S309 : 7
S103 : STOP		S310 : 8
S104 : OPEN/CLOSE		S311 : 9
S105 : FLAT		S312 : 10
S106 : NATURAL		S313 : 11
S107 : SHARP		S314 : 12
		S315 : 13
		S316 : 14
		S317 : 15

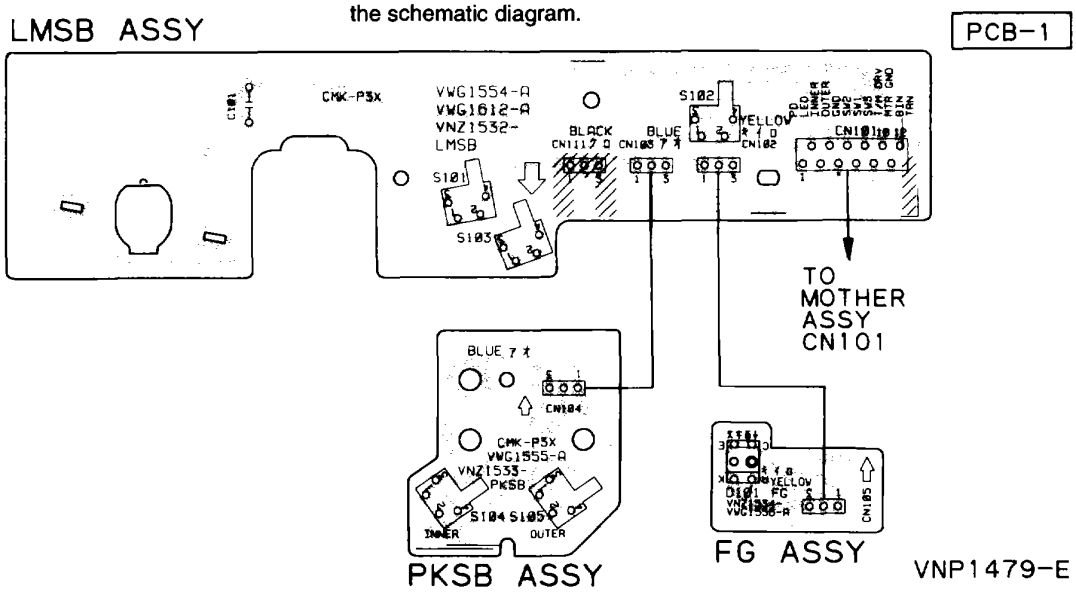
NOTE FOR PCB DIAGRAMS

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

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

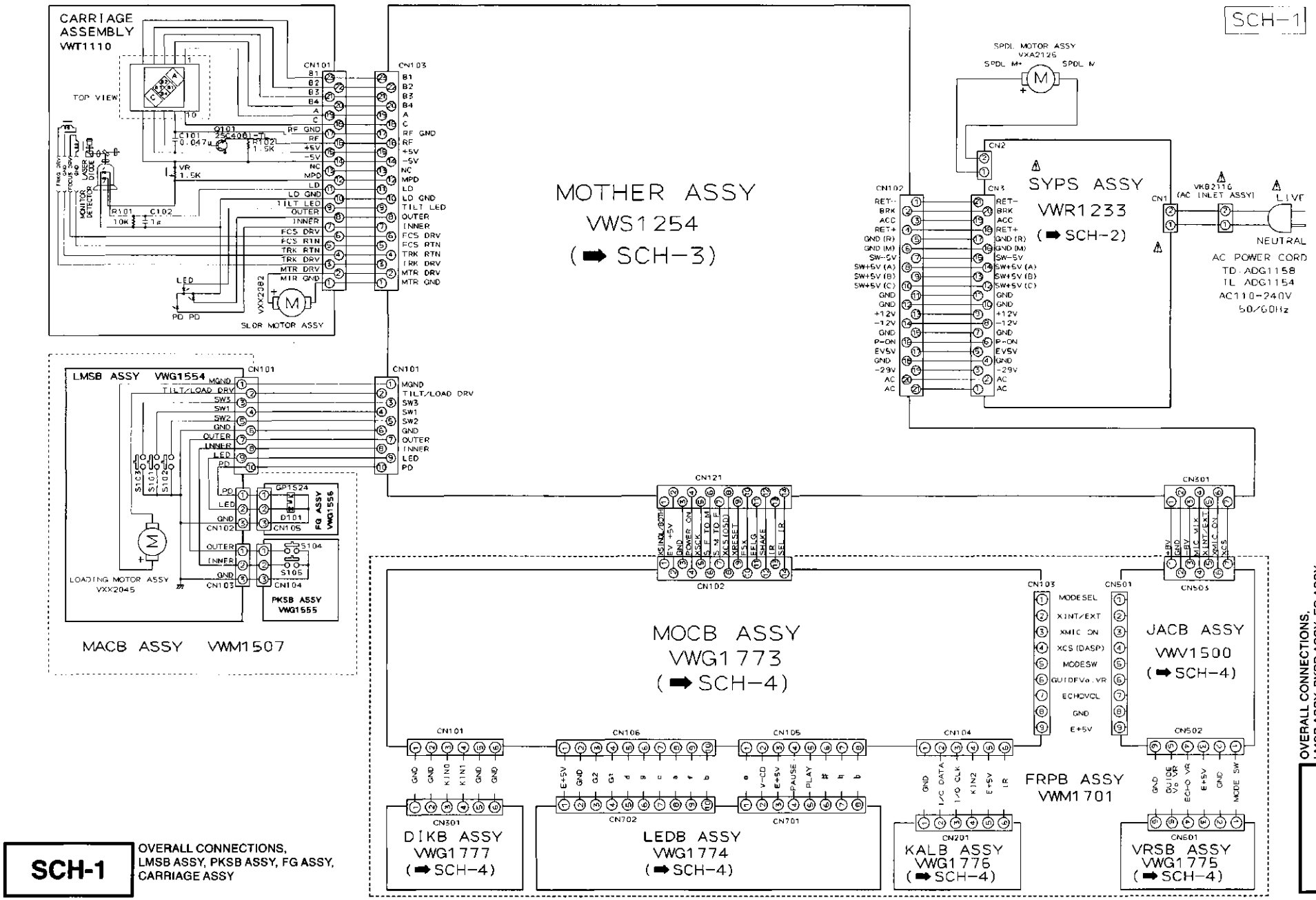
- This diagram is viewed from the mounted parts side.
- The parts mounted on this PCB include all necessary parts for several destinations.
  For further information for respective destinations, be sure to check with the schematic diagram.

PCB-1



VNP1479-E

3.1 OVERALL CONNECTIONS, LMSB, PKSB, FG AND CARRIAGE ASSEMBLIES



SCH-1 OVERALL CONNECTIONS, LMSB ASSY, PKSB ASSY, FG ASSY, CARRIAGE ASSY

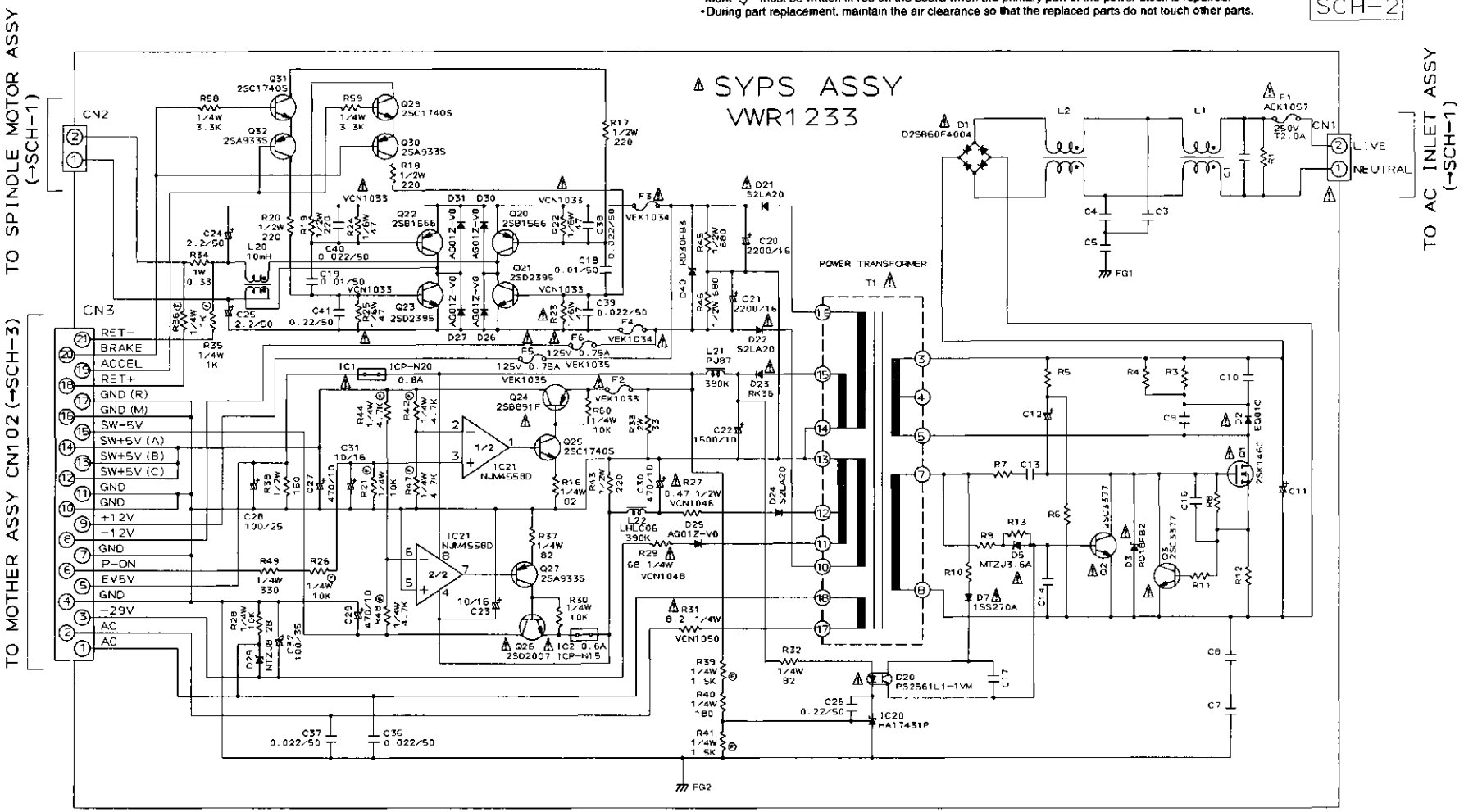
SCH-1 OVERALL CONNECTIONS, LMSB ASSY, PKSB ASSY, FG ASSY, CARRIAGE ASSY

3.2 SYPS ASSEMBLY

《Caution on repair the primary side parts of the SYPS assy》

- During repair, those other than the specified parts cannot be used to prevent the occurrence of an accident.
- Mark ✓ must be written in red on the board when the primary part of the power block is repaired.
- During part replacement, maintain the air clearance so that the replaced parts do not touch other parts.

SCH-2



● NOTE FOR FUSE REPLACEMENT

CAUTION: FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH SAME TYPE NO. ICP-N20, MFD BY ROHM CO., LTD. FOR IC1.

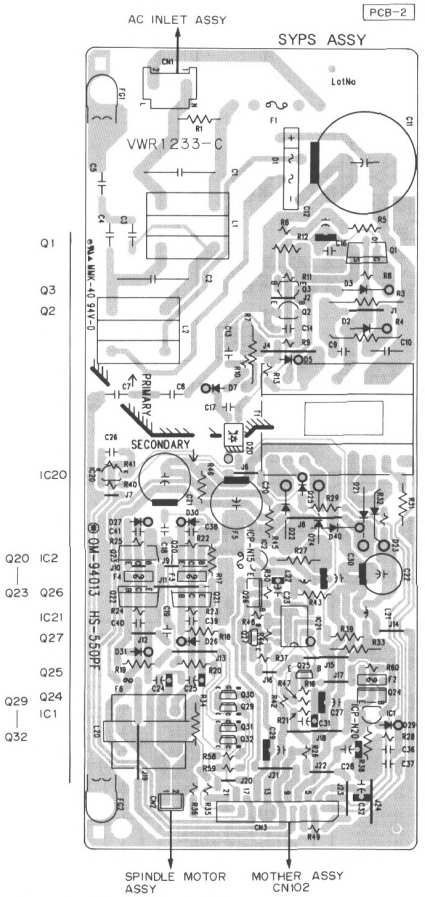
CAUTION: FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH SAME TYPE NO. ICP-N15, MFD BY ROHM CO., LTD. FOR IC2.

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

SCH-2 SYPS ASSY

SYPS ASSY SCH-2

PCB-2



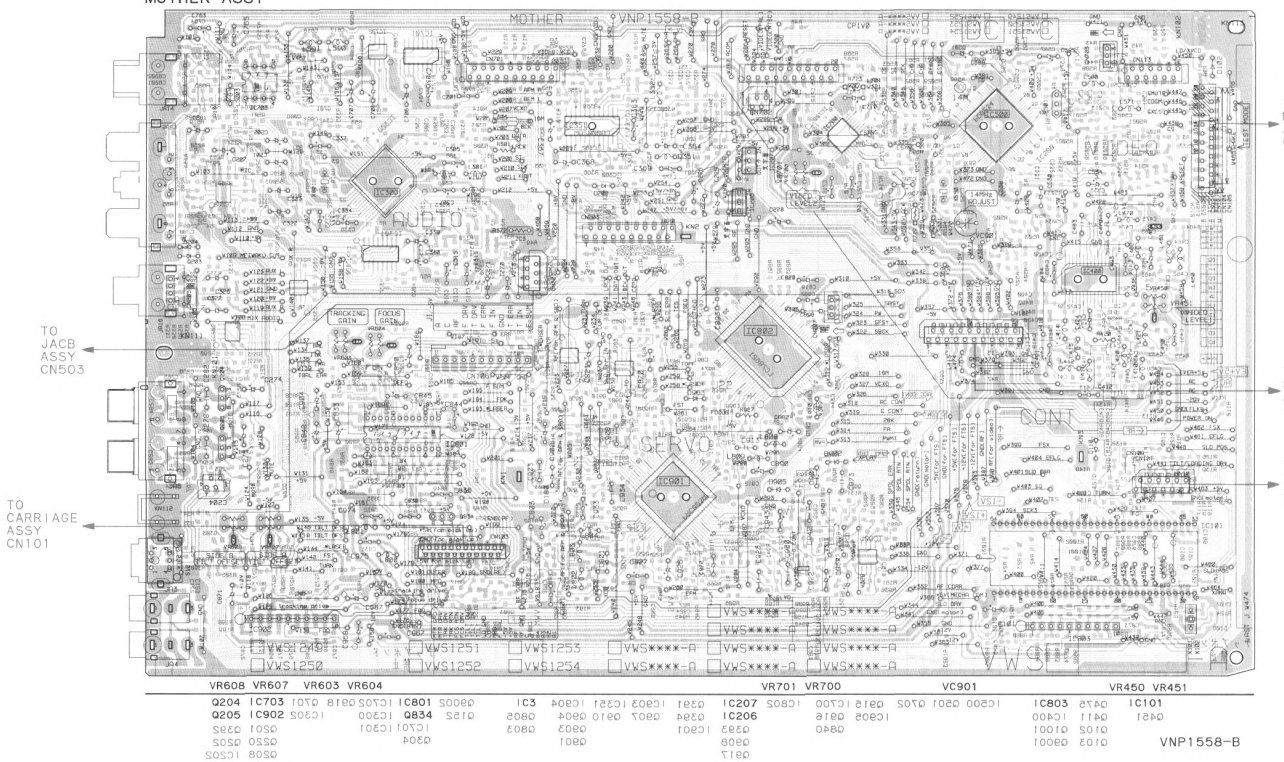
- This diagram is viewed from the mounted parts side.
- The parts mounted on this PCB include all necessary parts for several destinations.
  For further information for respective destinations, be sure to check with the schematic diagram.

3.3 MOTHER ASSEMBLY

- This diagram is viewed from the mounted parts side.
- 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.

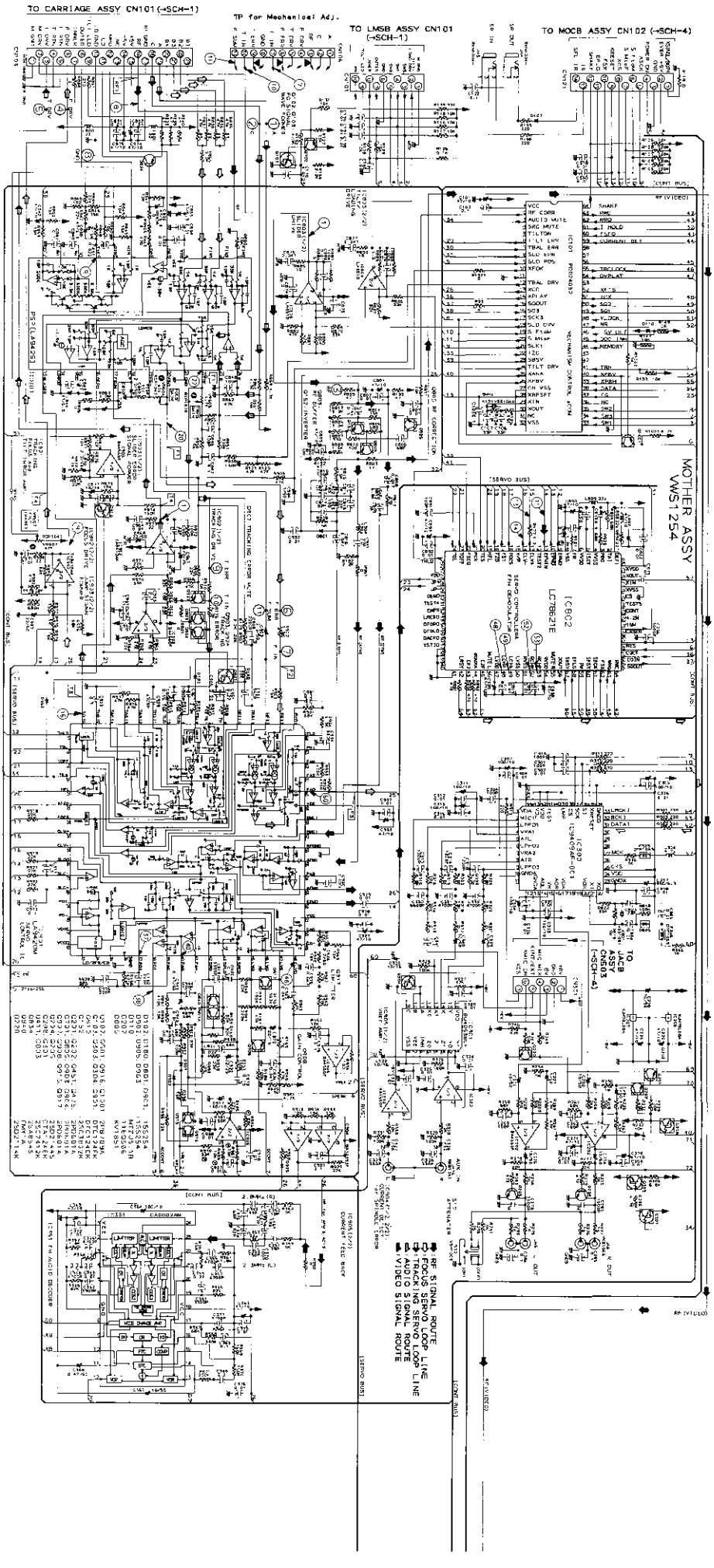
PCB-3

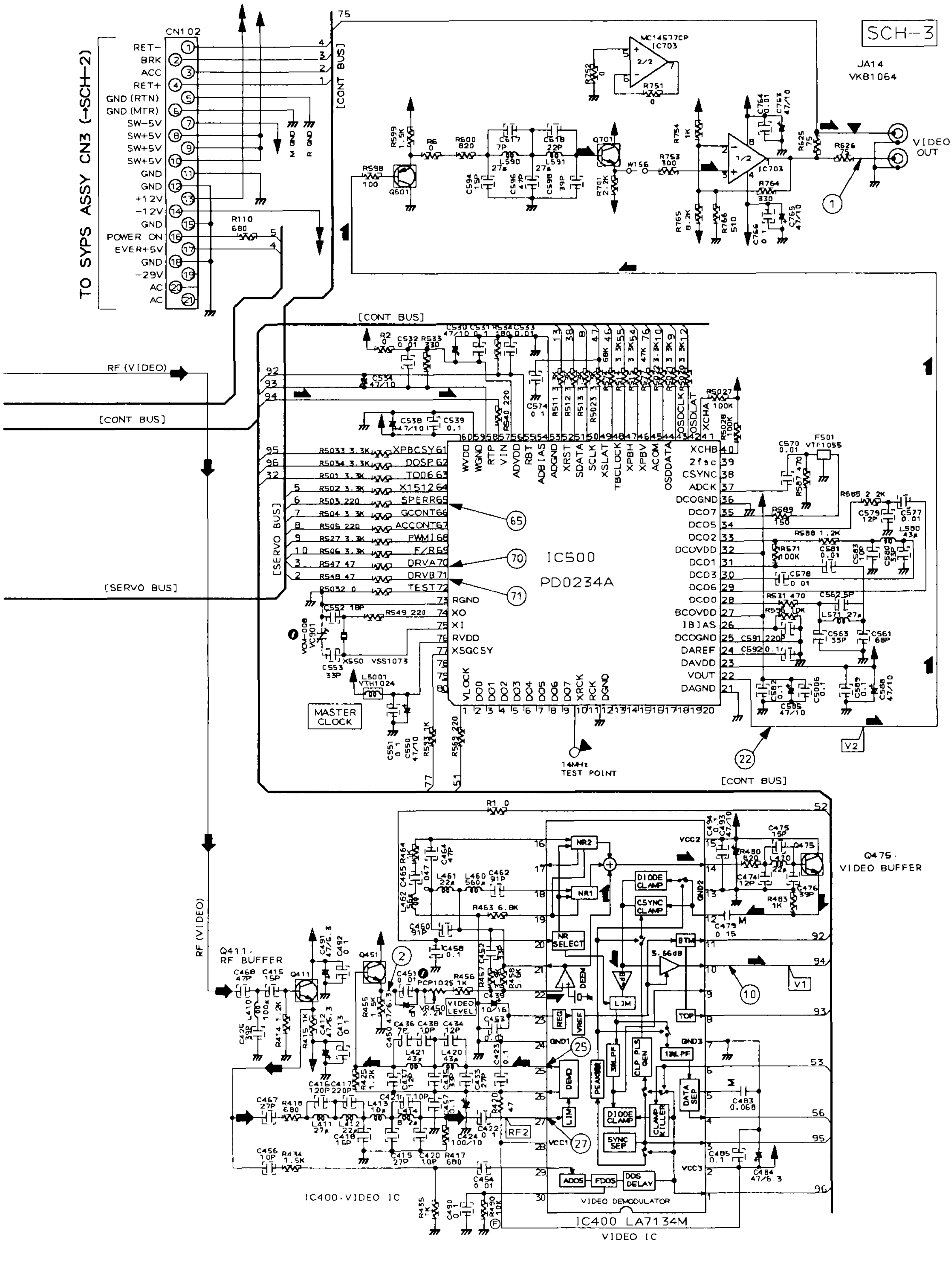
MOTHER ASSY



SCH-3

MOTHER ASSY





SCH-3
TO SYPS ASSY CN3 (→SCH-2)
CN102
RET-
BRK
ACC
RET+
GND (RTN)
GND (MTR)
SW-5V
SW+5V
SW+5V
SW+5V
GND
GND
+12V
-12V
GND
POWER ON
EVER+5V
GND
-29V
AC
AC
M GND
R GND
[CONT BUS]
MC14577CP
IC703
JA14
VKB1064
VIDEO OUT
Q501
Q701
W156
RF (VIDEO)
[CONT BUS]
[SERVO BUS]
IC500
PD0234A
MASTER CLOCK
X550 VSS1073
VTH1024
14MHz TEST POINT
[CONT BUS]
F501 VTF1055
Q411·RF BUFFER
Q451
VIDEO LEVEL
Q475·VIDEO BUFFER
NR2
NR1
NR SELECT
DIODE CLAMP
CSYNC CLAMP
BTM
3.66dB
DEEM
LIM
TOP
REG
VREF
DEMO
PEAKER
3MLPF
CLP PLS GEN
1MLPF
DATA SEP
DIODE CLAMP
SYNC SEP
CLAMP KILLER
ADOS
FDOS
DOS DELAY
VIDEO DEMODULATOR
IC400 LA7134M
VIDEO IC
IC400·VIDEO IC
V1
V2
RF2
VCC1
VCC2
VCC3
GND1
GND2
GND3

WAVEFORMS AND VOLTAGE

MOTHER ASSEMBLY

Note: (No) in the table correspond to the pin number.

Measurement condition: In case when (D.audio) is written, at time when disc that has digital audio recording is played.

MOTHER ASSY

IC801 (LA9425)

T1(22) 5ms/div
200mVp-p
0V
DC mode

F1(20) 5ms/div
100mVp-p
0V
DC mode

(9) 10ms/div
0.2Vp-p
0V
DC mode

IC802 (LC78621E)

(11) 0.5μs/div
1.6Vp-p
0V
DC mode

50μs/div
(13) 5Vp-p
0V
(14)
0V
DC mode

0.2μs/div
(48),(53) 5Vp-p
0V
(49),(52) 5Vp-p
0V
DC mode

IC803 (LA6510)

(1) 2ms/div
1.8Vp-p
0V
DC mode

IC901 (LA9420M)

T3(16) 5ms/div
500mVp-p
0V
DC mode

F3(60) 5ms/div
1Vp-p
0V
DC mode

10μs/div
(38) 5Vp-p
0V
(37)
0V
DC mode

(40) 10ms/div
0.3Vp-p
0V
DC mode

(48) 50μs/div
1Vp-p
0V
DC mode

IC902 (TA8410AK)

T4(1) 5ms/div
2Vp-p
0V
DC mode

F4(9) 5ms/div
5Vp-p
0V
DC mode

CN106

(7)(F2) 5ms/div
200mVp-p
0V
DC mode

(10) 5ms/div
100mVp-p
0V
DC mode

(11) 5ms/div
0V
0.2Vp-p
DC mode

CN103

RF1(8) 2ms/div
600mVp-p
AC mode

Q451 Emitter

(2) 10μs/div
400mVp-p
AC mode

JA14 VIDEO OUT

(1) 10μs/div
1Vp-p
(75Ω termination) 0V
DC mode

IC400 (LA7134M)

V1(10) 10μs/div
1.6Vp-p
0V
DC mode

RF2(27) 2ms/div
400mVp-p
AC mode

(25) 10μs/div
1Vp-p
0V
DC mode

IC500 (PD0234A)

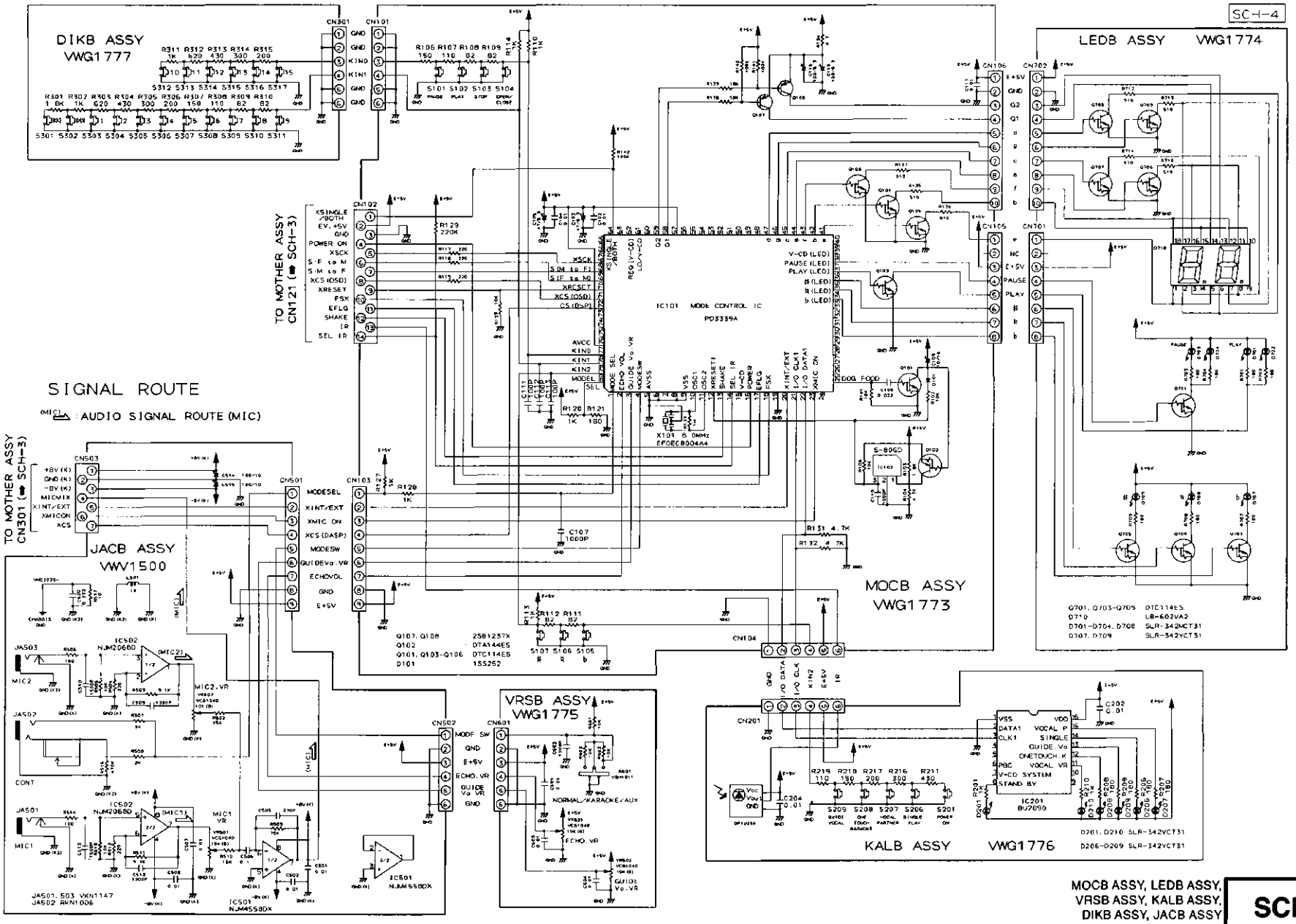
V2(22) 10μs/div
1Vp-p
DC mode

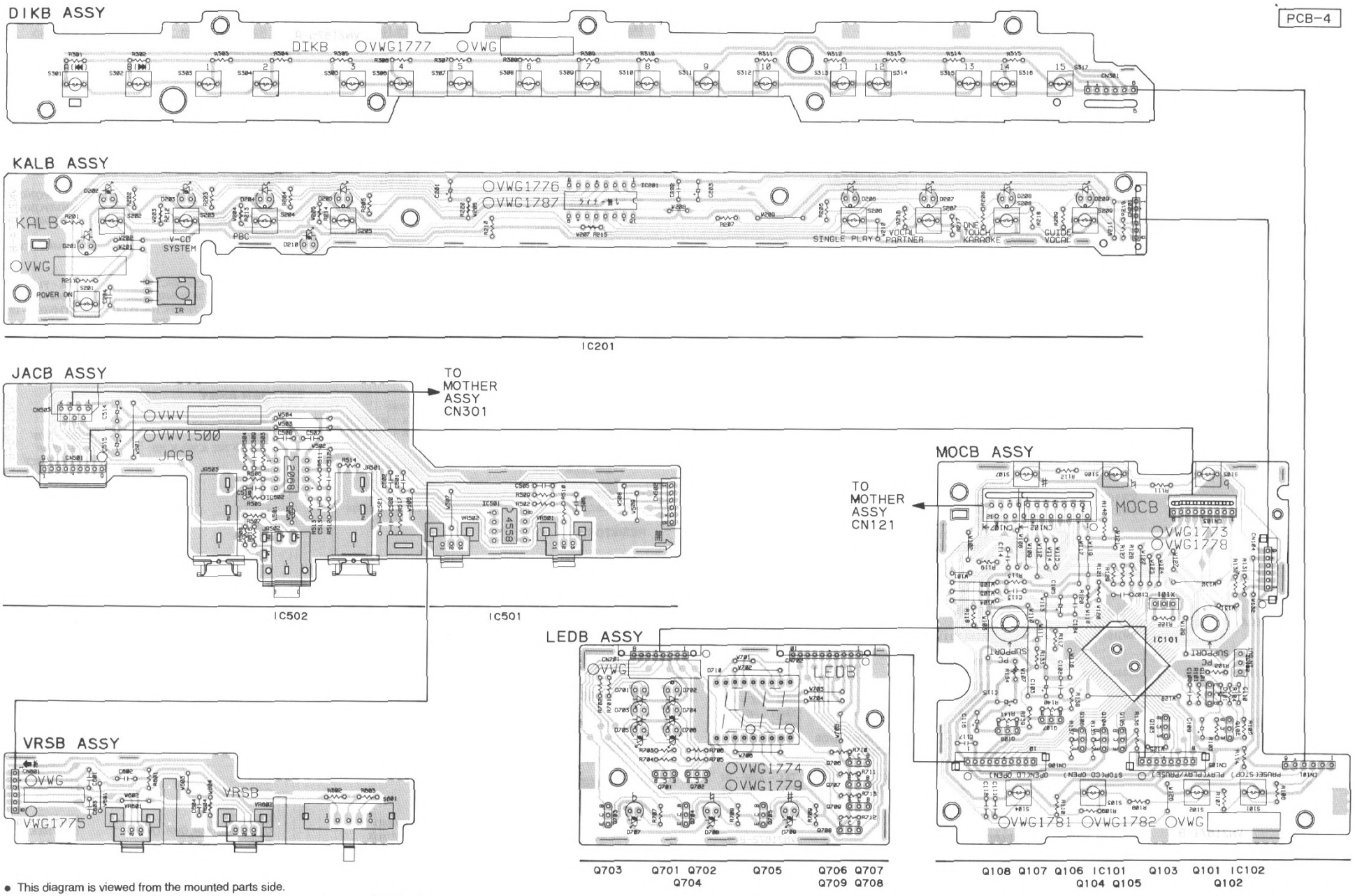
(65) 5ms/div
5Vp-p
0V
DC mode

10μs/div
(71) 5Vp-p
0V
(70)
0V
DC mode

MOTHER ASSY **SCH-3**

3.4 MOCB, LEDB, VRSB, KALB, DIKB AND JACB ASSEMBLIES





- This diagram is viewed from the mounted parts side.
- 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.

VNP1562-B

4. PCB PARTS LIST

NOTES:

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

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

560Ω	→	*56 × 10¹*	→ *561*	*RD1/4PU[5][6][1]J*
47kΩ	→	*47 × 10³*	→ *473*	*RD1/4PU[4][7][3]J*
0.5Ω	→	*0R5*		*RN2H[0][R][5]K*
1Ω	→	*1R0*		*RS1P[1][R][0]K*

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

5.62kΩ	→	*562 × 10¹*	→ *5621*	*RN1/4PC[5][6][2][1]F*

Mark	No.	Description	Parts No.

LIST OF ASSEMBLIES

NSP		MACB ASSY	VWM1507
NSP		├ LMSB ASSY	VWG1554
NSP		├ PKSB ASSY	VWG1555
NSP		└ FG ASSY	VWG1556
NSP		FRPB ASSY	VWM1701
		├ MOCB ASSY	VWG1773
NSP		├ LEDB ASSY	VWG1774
NSP		├ VRSB ASSY	VWG1775
NSP		├ KALB ASSY	VWG1776
NSP		├ DIKB ASSY	VWG1777
		└ JACB ASSY	VWV1500
		MOTHER ASSY	VWS1254
⚠		SYPS ASSY	VWR1233

MACB ASSY

OTHERS

	PCB(MACB)	VNP1479

LMSB ASSY

SWITCHES AND RELAYS

S101 – S103		DSG1017

OTHERS

CN101	10P CONNECTOR	52044 – 1045

PKSB ASSY

SWITCHES AND RELAYS

S104, S105		DSG1017

FG ASSY

SEMICONDUCTORS

D101		GP1S24

FRPB ASSY

OTHERS

	PCB(FRPB)	VNP1562

MOCB ASSY

SEMICONDUCTORS

IC101		PD3339A
IC102		S – 806D
Q107, Q108		2SB1237X
Q102		DTA144ES
Q101, Q103 – Q106		DTC114ES
D101		1SS252

SWITCHES AND RELAYS

S101 – S107		ASG1034

CAPACITORS

C109		CEAL100M16
C115, C116		CEAL101M6R3
C103, C105		CEAL470M6R3
C111 – C113		CKPUYB101K50
C107, C110		CKPUYB102K50
C108		CKPUYF223Z25
C102, C104, C117		CKPUYY103N16

RESISTORS

R134		RFA1/6PU4R7J
R110, R113, R114, R127		RN1/6PQ1001F
Other Resistors		RD1/4PU□□□J

OTHERS

CN101	PIN HEADER	1068 – 06C – PP
CN102	CONNECTOR 14P	52492 – 1420
CN103	CONNECTOR	BTMK09S – 1S
X101	CERAMIC RESONATOR	EFOEC8004A4
CN104	CONNECTOR PLUG	TKC – A06P – C1
CN105	CONNECTOR PLUG	TKC – A08P – B1
CN106	CONNECTOR PLUG	TKC – A10P – B1

LEDB ASSY

SEMICONDUCTORS

Q701, Q703 – Q709		DTC114ES
D710		LB – 602VA2
D701 – D704, D708		SLR – 342MCT31
D707, D709		SLR – 342YCT31

Mark	No.	Description	Parts No.
RESISTORS			
	All Resistors		RD1/4PU□□□J
OTHERS			
	CN701	CONNECTOR	TKC – A08X – B1
	CN702	CONNECTOR	TKC – A10X – B1

VRSB ASSY

SWITCHES AND RELAYS			
	S601		VSH1011
CAPACITORS			
	C602		CKPUYB102K50
	C601, C603, C604		CKPUYY103N16
RESISTORS			
	VR601, VR602 (10kΩ • B)		VCS1040
	Other Resistors		RD1/4PU□□□J
OTHERS			
	CN601	CONNECTOR 6P	06P – FJ
		PCB HOLDER(FE)	VNE2026

KALB ASSY

SEMICONDUCTORS			
	IC201		BU2090
	D201, D210		SLR – 342VCT31
	D206 – D209		SLR – 342YCT31
SWITCHES AND RELAYS			
	S201, S206 – S209		ASG1034
CAPACITORS			
	C202, C204		CKPUYY103N16
RESISTORS			
	All Resistors		RD1/4PU□□□J
OTHERS			
		REMOTE RECEIVER UNIT	GP1U26X
	CN201	CONNECTOR	TKC – A06X – B1

DIKB ASSY

SWITCHES AND RELAYS			
	S301 – S317		ASG1034
RESISTORS			
	All Resistors		RD1/4PU□□□J
OTHERS			
	CN301	CONNECTOR 6P	9133S – 06A

JACB ASSY

SEMICONDUCTORS			
	IC502		NJM2068D
	IC501		NJM4558DX
COILS AND FILTERS			
	L501		LFA010J

Mark	No.	Description	Parts No.
CAPACITORS			
	C514, C515		CEJA101M10
	C505		CKPUYB271K50
	C520		CKPUYF223Z25
	C509, C512		CKPUYX122M16
	C510, C513		CKPUYX152M16
	C501, C502, C507, C508		CKPUYY103N16
	C506		CQMA104J50
RESISTORS			
	R508		RN1/6PQ2001F
	R507		RN1/6PQ3001F
	VR501, VR502 (10kΩ • B)		VCS1040
	Other Resistors		RD1/4PU□□□J
OTHERS			
	CN502	CONNECTOR 6P	06R – FJ
	CN503	7P CONNECTOR	52044 – 0745
	CN501	CONNECTOR PLUG	BTMK09P – 1R
	JA502	HEADPHONE JACK	RKN1006
	JA501, JA503	MIC JACK	VKN1147
		SNAP PLATE	VNE1102
		JACK HOLDER	VNE2054

MOTHER ASSY

SEMICONDUCTORS		
	IC904	BA10393F
	IC202, IC302, IC903, IC905	BA4560F
	IC301	BU4053BCF
	IC351	CA0002AM
	IC803	LA6510
	IC400	LA7134M
	IC901	LA9420M
	IC801	LA9425
	IC802	LC78621E
	IC703	MC14577CP
	IC206	NJM78L08A
	IC207	NJM79L08A
	IC500	PD0234A
	IC101	PD0240B2
	IC902	TA8410AK
	IC300	TC9409AF – 001
	Q1001, Q102, Q501, Q916	2PB709A
	Q201, Q202, Q451, Q475, Q701	2PD601A
	Q805, Q903, Q904, Q907, Q908	2PD601A
	Q915, Q917	2PD601A
	Q834	2SA854S
	Q411, Q803	2SC2412K
	Q152	2SC3802K
	Q220	2SD2114K
	Q204, Q205	2SD2144S
	Q208, Q301	DTA124EK
	Q103, Q303, Q304, Q901, Q910	DTC124EK
	Q840	FMY1A
	D202	11EQS06
	D102, D180, D801, D901, D902	1SS254

Mark	No.	Description	Parts No.
	D905, D963		1SS254
	D805		KV1851
	D110		MTZJ5.1B
SWITCHES AND RELAYS			
	S12	SLIDE SWITCH	VSH1009
COILS AND FILTERS			
	F305, F306	CHIP BEAD	DTF1069
	L413		LAU100J
	L410		LAU101J
	L351, L802 – L804		LAU181J
	L352, L412, L461, L470		LAU220J
	L800, L801, L808, L809		LAU220J
	L411, L571, L590, L591		LAU270J
	L420, L421, L580		LAU430J
	L304		LAU4R7J
	L462		LAU560J
	L414		LAU8R2J
	L460		LFA561J
	F501	14.3MHz FILTER	VTF1055
	L5001	FERRITE BEAD	VTH1024
CAPACITORS			
	C562		CCSQCH050C50
	C436, C617, C809, C811		CCSQCH070D50
	C420, C421, C438, C456, C583		CCSQCH100D50
	C262, C263, C301, C303, C304		CCSQCH101J50
	C370, C810, C846, C848, C891		CCSQCH101J50
	C944		CCSQCH101J50
	C434, C437, C474, C579		CCSQCH120J50
	C416		CCSQCH121J50
	C415, C418, C475, C594		CCSQCH150J50
	C161, C353, C812		CCSQCH151J50
	C352, C552		CCSQCH180J50
	C618, C813, C823, C950		CCSQCH220J50
	C162, C417, C591, C935		CCSQCH221J50
	C371, C419, C433, C467, C931		CCSQCH270J50
	C106, C107, C354, C435, C452		CCSQCH330J50
	C553, C563, C580		CCSQCH330J50
	C328, C329		CCSQCH331J50
	C351, C425, C476, C598		CCSQCH390J50
	C464, C468, C596		CCSQCH470J50
	C375, C561, C806		CCSQCH680J50
	C374, C814		CCSQCH820J50
	C460, C462		CCSQCH910J50
	C439		CEAL100M16
	C412, C484, C491, C833, C836		CEAL470M6R3
	C844		CEAL470M6R3
	C838		CEALNP470M6R3
	C326, C327		CEANP010M50
	C322, C323		CEANP100M16
	C972		CEANP220M10
	C450		CEANP470M6R3
	C227, C281, C904		CEAS010M50
	C201, C202, C228, C274, C275		CEAS100M50
	C339, C340, C367		CEAS100M50
	C305, C307, C311, C315		CEAS101M10
	C333, C334, C364, C424, C917		CEAS101M10

Mark	No.	Description	Parts No.
	C922, C967		CEAS220M25
	C845, C870, C902, C926		CEAS2R2M50
	C337		CEAS331M6R3
	C101, C225, C226, C363		CEAS470M10
	C369, C493, C530, C534, C538		CEAS470M10
	C550, C585, C588, C763, C765		CEAS470M10
	C801, C803, C820, C842, C882		CEAS470M10
	C890, C893, C898, C927, C933		CEAS470M10
	C974, C975		CEAS470M10
	C368, C943		CEASR47M50
	C968, C987		CEHAQ220M50
	C270, C271		CEJA470M10
	C850		CEJA4R7M35
	C256, C490, C907		CKSQYB102K50
	C203, C204, C308, C320, C321		CKSQYB103K50
	C324, C325		CKSQYB103K50
	C335, C336, C338, C879		CKSQYB103K50
	C341, C915, C981		CKSQYB104K25
	C310, C314, C318		CKSQYB122K50
	C919		CKSQYB332K50
	C361, C362		CKSQYB392K50
	C331, C332, C355 – C358, C377		CKSQYB472K50
	C909		CKSQYB472K50
	C330		CKSQYB562K50
	C110, C122, C160, C196 – C198		CKSQYF103Z50
	C302, C306, C312, C316		CKSQYF103Z50
	C372, C373, C376, C378, C451		CKSQYF103Z50
	C454, C532, C533, C540, C570		CKSQYF103Z50
	C577, C578, C581, C802, C804		CKSQYF103Z50
	C807, C819, C822, C831, C832		CKSQYF103Z50
	C834, C835, C843, C872, C876		CKSQYF103Z50
	C883, C884, C888, C889, C892		CKSQYF103Z50
	C897, C918, C928, C929, C932		CKSQYF103Z50
	C937, C938, C941, C961, C962		CKSQYF103Z50
	C964, C971, C982		CKSQYF103Z50
	C102, C103, C151, C284, C285		CKSQYF104Z25
	C365, C366, C413, C422, C423		CKSQYF104Z25
	C453, C457, C458, C485, C492		CKSQYF104Z25
	C494, C5006, C531, C539, C551		CKSQYF104Z25
	C574, C582, C589, C592, C764		CKSQYF104Z25
	C766, C840, C841, C847		CKSQYF104Z25
	C873, C874, C901, C910 – C912		CKSQYF104Z25
	C976, C983		CKSQYF104Z25
	C837, C921, C930		CKSQYF223Z50
	C359, C360, C905, C951		CKSQYF224Z25
	C465, C808, C815, C875, C877		CKSQYF473Z25
	C924, C925		CKSQYF473Z25
	C942		CQMA103J50
	C913, C920		CQMA104J50
	C278, C282		CQMA152J50
	C479, C908, C973		CQMA154J50
	C903		CQMA222J50
	C923		CQMA473J50
	C934		CQMA681J50
	C483		CQMA683J50
	C871	(10μF/16V)	VCH1152
	VC901	(20pF)	VCM – 008

Mark	No.	Description	Parts No.
RESISTORS			
	R927		RD1/4PU122J
	R301		RD1/4PU221J
	R420		RD1/4PU470J
	R490, R987, R989		RN1/10SE103D
	R880, R883		RN1/10SE104D
	R879, R986, R990		RN1/10SE333D
	R881, R882		RN1/10SE473D
	VR450	(2.2kΩ, 0.1W)	PCP1025
	VR603	(4.7kΩ, 0.1W)	RCP1020
	VR604, VR607	(47kΩ, 0.1W)	RCP1047
	Other Resistors		RS1/10S□□□J
OTHERS			
	CN301	7P CONNECTOR	52045 – 0745
	CN101	10P CONNECTOR	52045 – 1045
	CN121	14P CONNECTOR	52045 – 1445
	CN102	21P CONNECTOR	52045 – 2145
	CN103	23P CONNECTOR	52233 – 2310
	CN106	11P CONNECTOR	B11P – SHF – 1AA
	JA16	JACK	RKB1041
	JA3, JA4	JACK	RKN1004
		PCB BINDER	VEF1040
	JA14	JACK	VKB1064
	JA6	JACK	VKB1065
		SCREW PLATE	VNE1948
	KN101, KN102	EARTH METAL FITTING	VNF1084
	X101	CERAMIC RESONATOR (9.00MHz)	VSS1040
	X550	CRYSTAL RESONATOR (14.31818MHz)	VSS1073
	X801	CRYSTAL RESONATOR (16MHz)	VSS1081

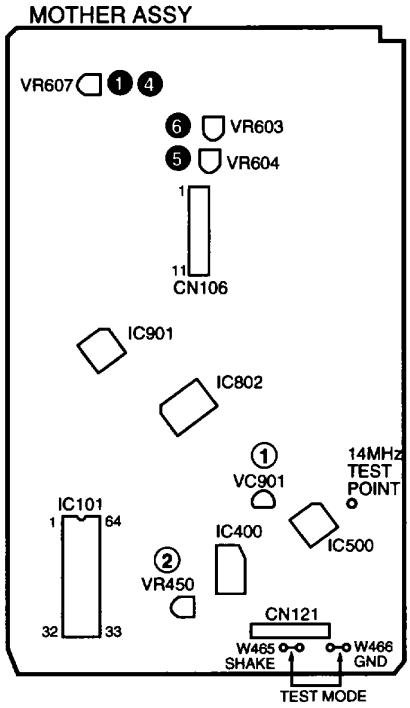
SYPS ASSY

Mark	No.	Description	Parts No.
SEMICONDUCTORS			
	IC20		HA17431P
⚠	IC2		ICP – N15
⚠	IC1		ICP – N20
	IC21		NJM4558D
	Q27, Q30, Q32		SA933S
	Q20, Q22		2SB1566
⚠	Q24		2SB891F
	Q25, Q29, Q31		2SC1740S
⚠	Q2 , Q3		2SC3377
⚠	Q26		2SD2007
	Q21, Q23		2SD2395
⚠	Q1		2SK1460
	D25 – D27, D30, D31		AG01Z – VO
⚠	D1		D2SB60F4004
⚠	D2		EG01C
⚠	D5		MTZJ3.6A
	D29		MTZJ8.2B
⚠	D20		PS2561L1 – 1VM
⚠	D3		RD18FB2
	D40		RD30FB3
	D23		RK36
	D21, D22, D24		S2LA20
⚠	D7		1SS270A
RESISTORS			
⚠	R22 – R25	(47Ω, 1/6W)	VCN1033
⚠	R27	(0.47Ω, 1/2W)	VCN1046
⚠	R29	(68Ω, 1/4W)	VCN1048
⚠	R31	(8.2Ω, 1/4W)	VCN1050
OTHERS			
⚠	F1	FUSE(T2A, 250V)	AEK1057
⚠	F2	FUSE	VEK1033
⚠	F3, F4	FUSE	VEK1034
⚠	F5, F6	FUSE	VEK1035

5. ADJUSTMENTS (調整方法)

5.1 ADJUSTMENT ITEMS AND LOCATION (調整項目と調整位置)

■Adjustment Points (PCB Part)



■Adjustment Items

[Mechanical Part]

❶ Tilt Offset Adjustment
(チルトオフセット調整)

❷ Tangential Direction Angle Adjustment
(タンジェンシャル傾き調整)

❸ Spindle Motor Centering Adjustment
(スピンドル芯出し調整)

❹ Crosstalk Check and Fine Tilt Offset Adjustment for Side A
(クロストーク確認及び，チルトオフセット微調)

❺ Focus Servo Loop Gain Adjustment
(フォーカスサーボループゲイン調整)

❻ Tracking Servo Loop Gain Adjustment
(トラッキングサーボループゲイン調整)

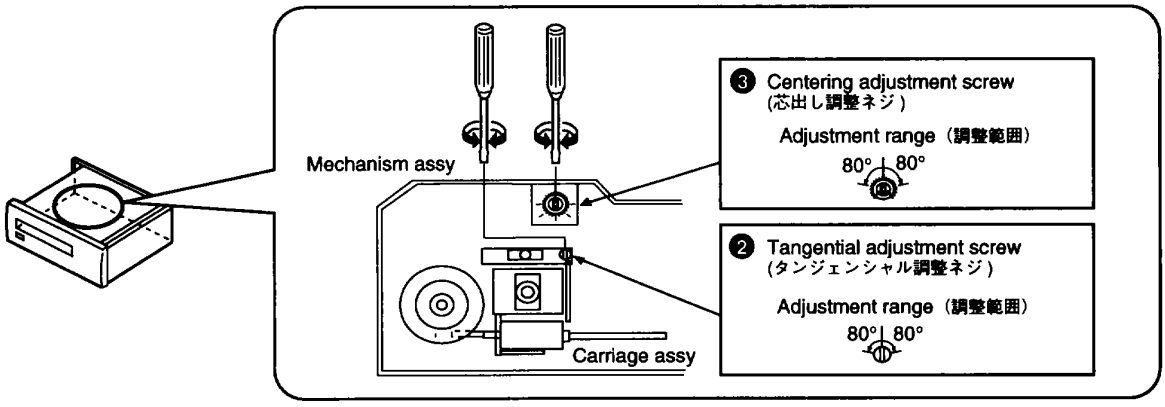
❼ RF Level Check
(RFレベル確認)

[Electrical Part]

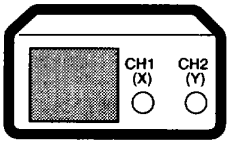
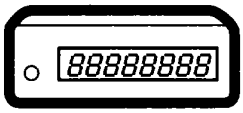
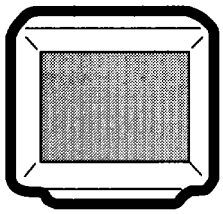
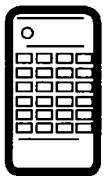
① Master Clock Adjustment
(マスタークロック調整)

② Output Video Level Adjustment
(出力ビデオレベル調整)

■Adjustment Points (Mechanism Part)

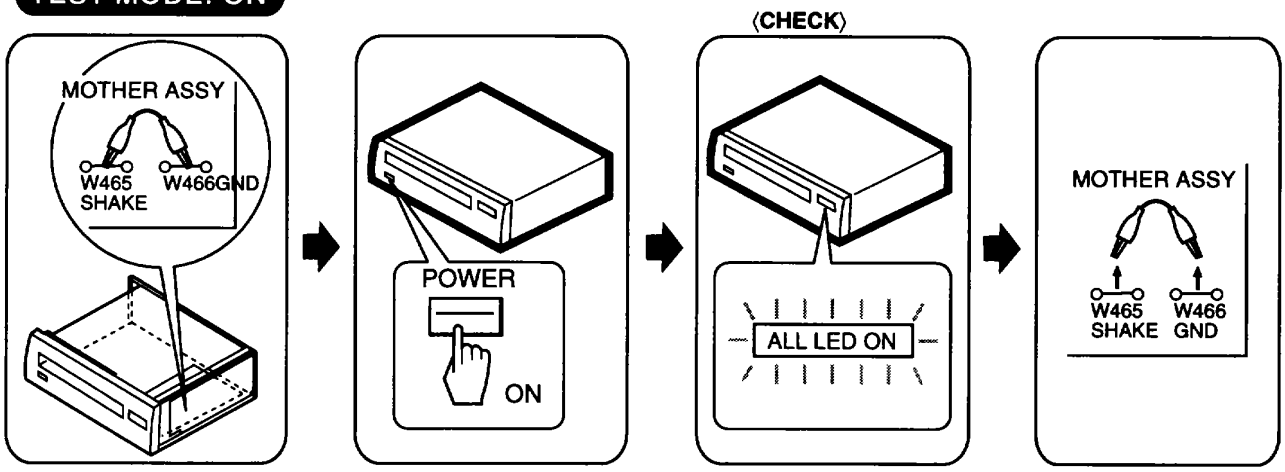


5.2 JIGS AND MEASURING INSTRUMENTS (調整に必要な治工具類)

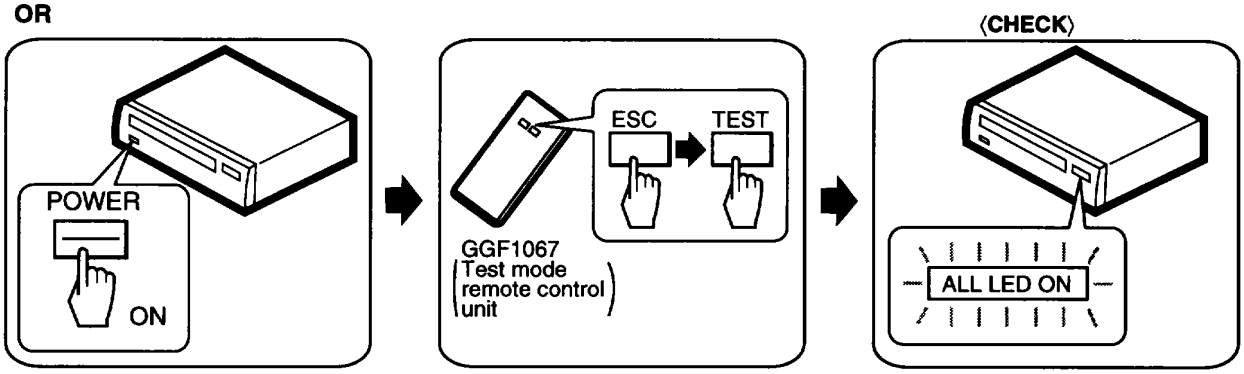
 CD test disc (YEDS-7)	 LD test disc (GGV1012)	 ⊖ Screwdriver (medium)	 ⊖ Screwdriver (small)
 ⊖ Precise screwdriver	 ⊕ Screwdriver (large)	 ⊕ Screwdriver (medium)	 Dual-trace oscilloscope (with delay) Frequency band ≧ 40MHz
 Frequency counter Display digit ≧ 8-digit	 TV monitor	 Test mode remote control unit (GGF1067)	

5.3 TEST MODE (テストモード)

TEST MODE: ON

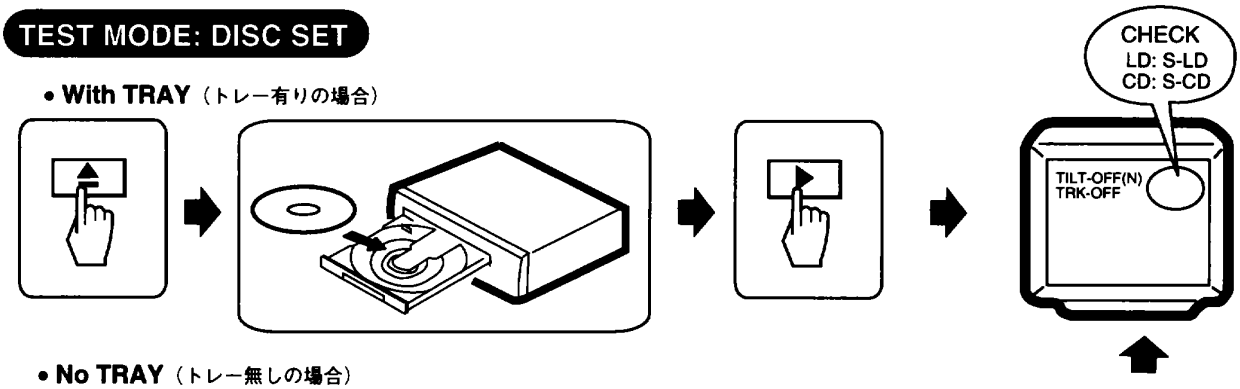


OR

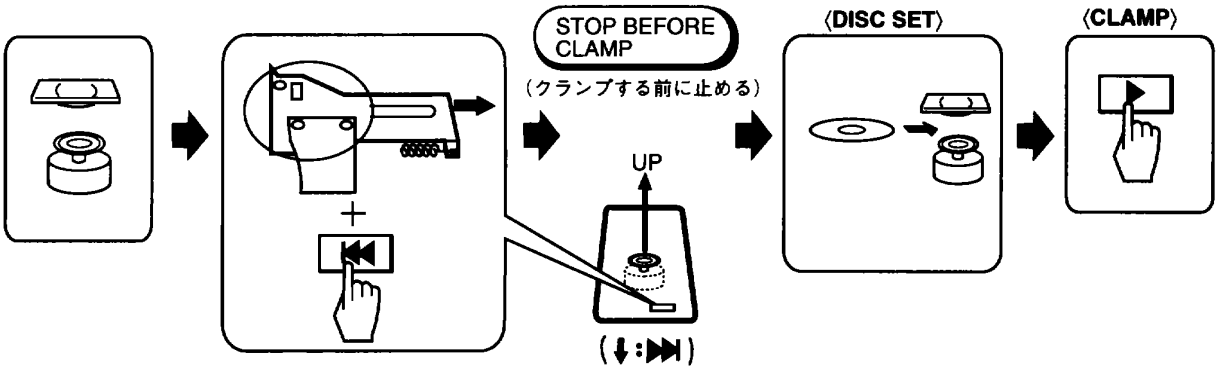


TEST MODE: DISC SET

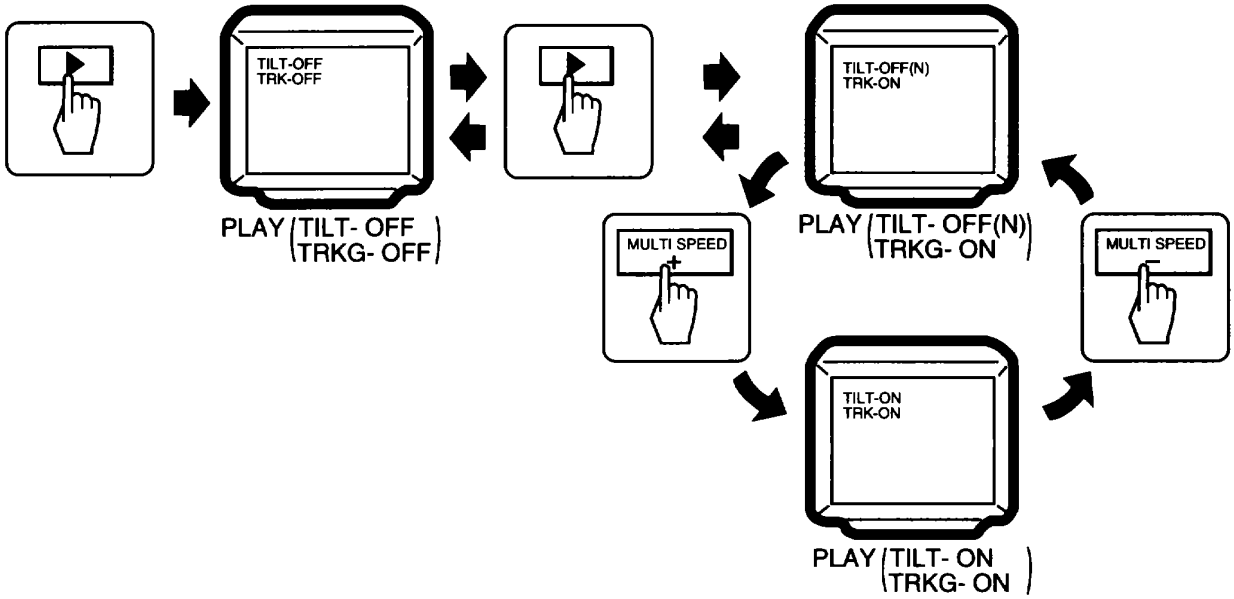
• **With TRAY** (トレー有りの場合)



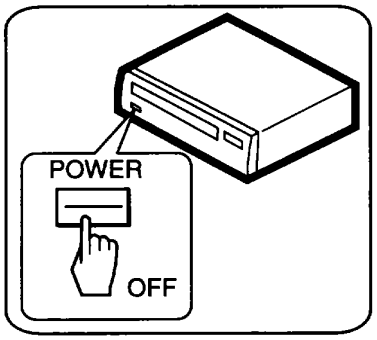
• **No TRAY** (トレー無しの場合)



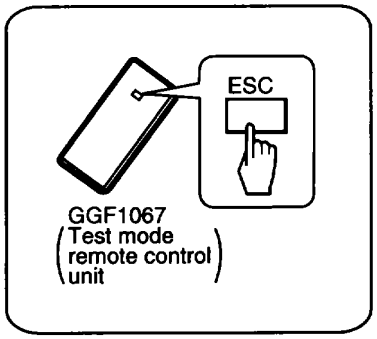
TEST MODE: PLAY



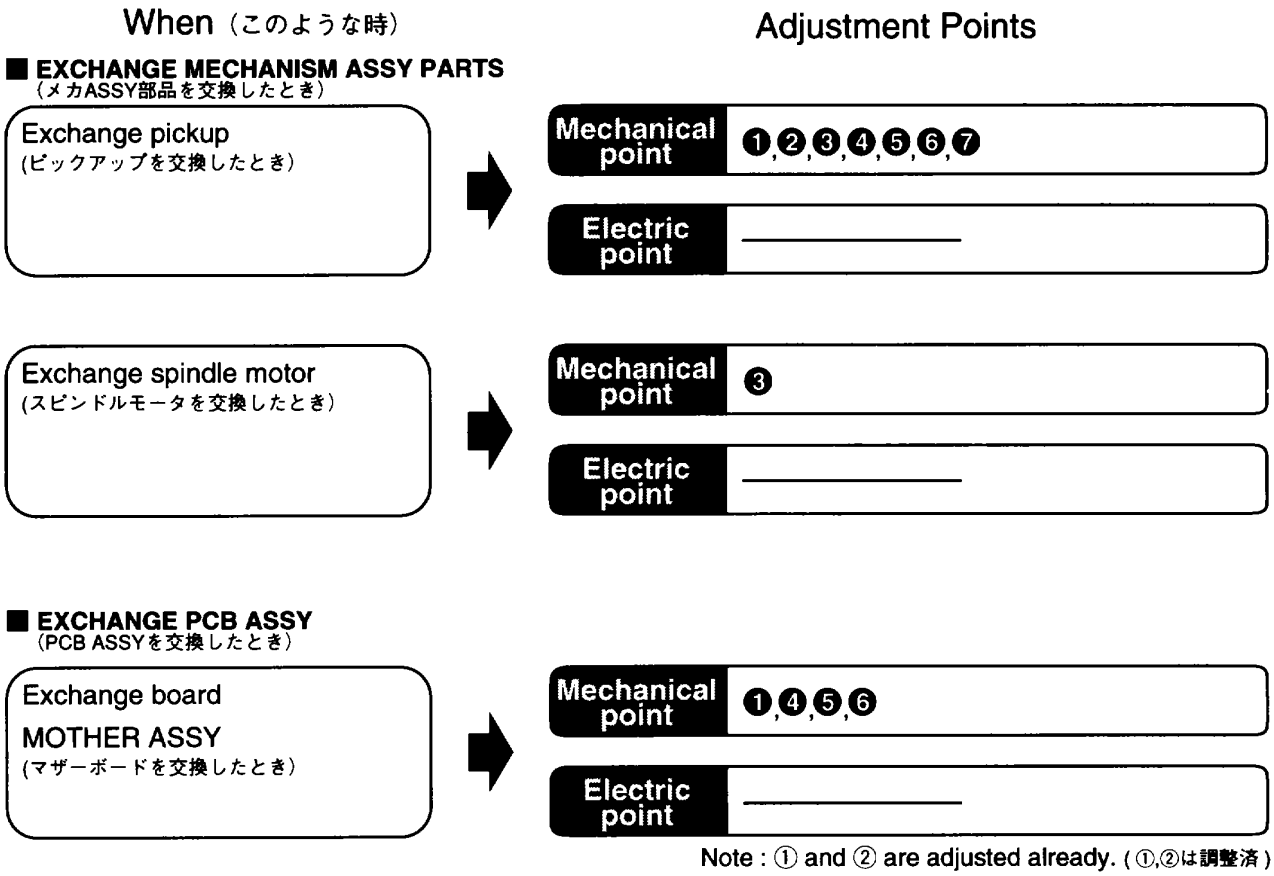
TEST MODE: OFF



OR



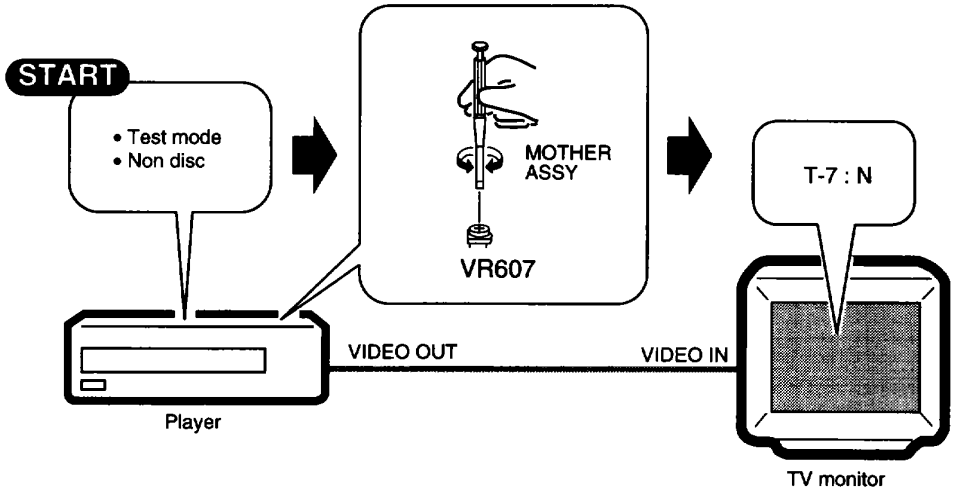
5.4 NECESSARY ADJUSTMENT POINTS (必要な調整項目)



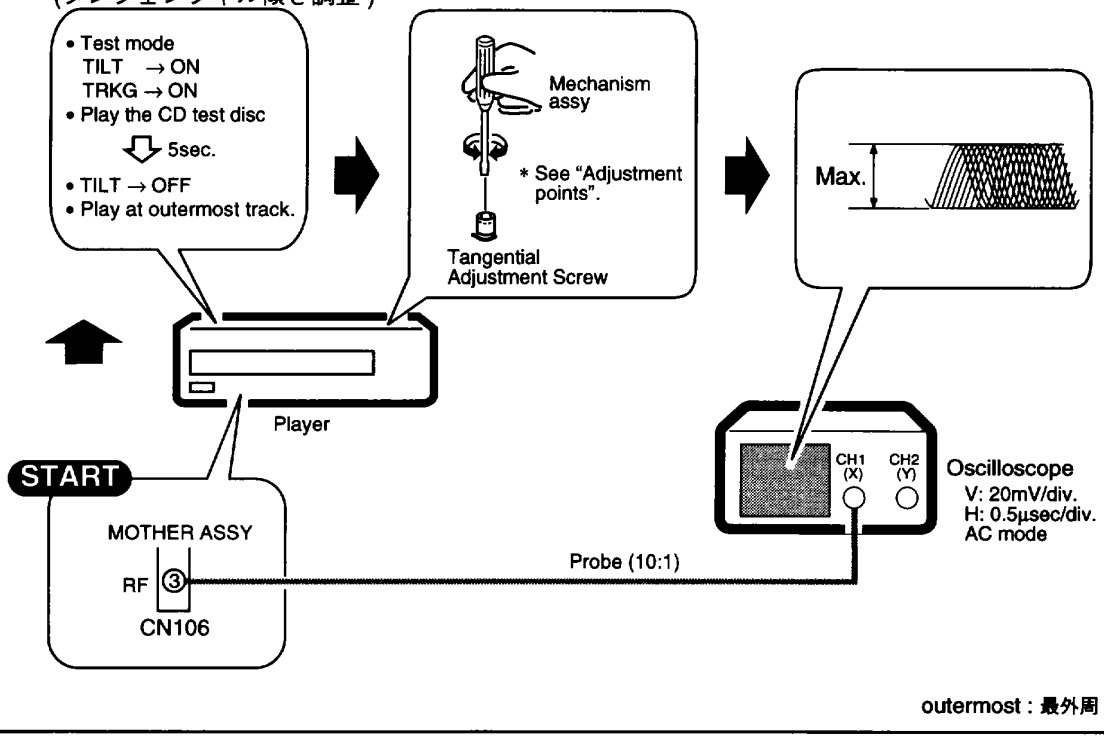
Note : ① and ② are adjusted already. (①,②は調整済)

5.5 MECHANICAL ADJUSTMENT (機構系の調整)

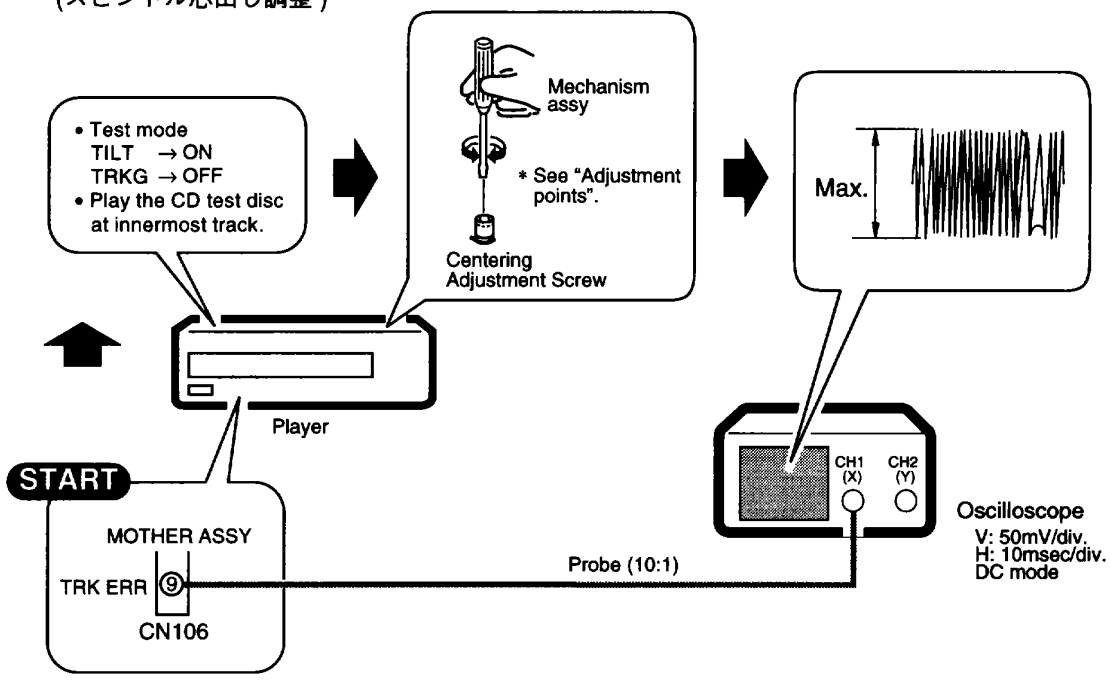
❶ Tilt Offset Adjustment
(チルトオフセット調整)



❷ Tangential Direction Angle Adjustment
(タンジェンシャル傾き調整)

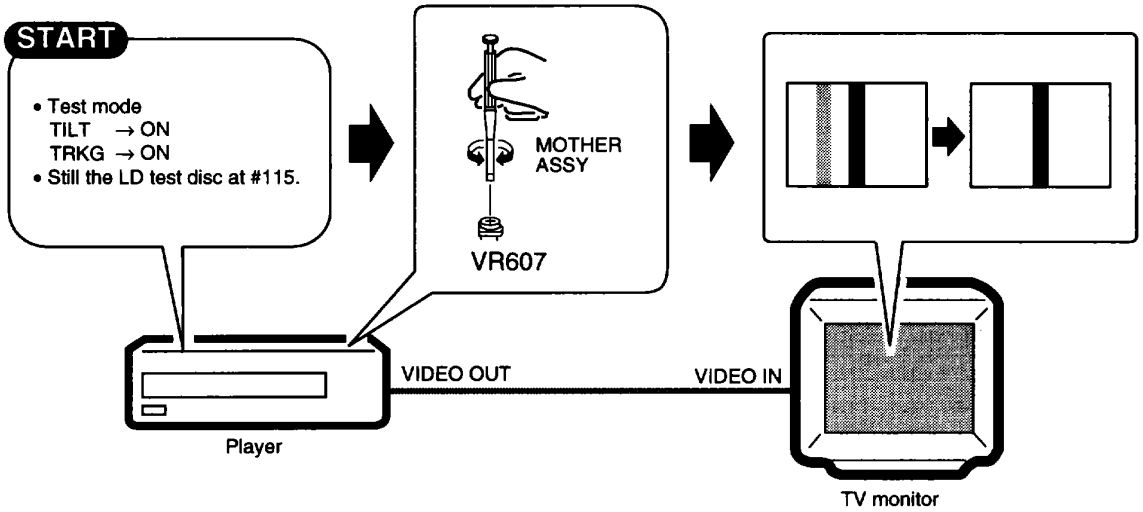


❸ Spindle Motor Centering Adjustment
(スピンドル芯出し調整)

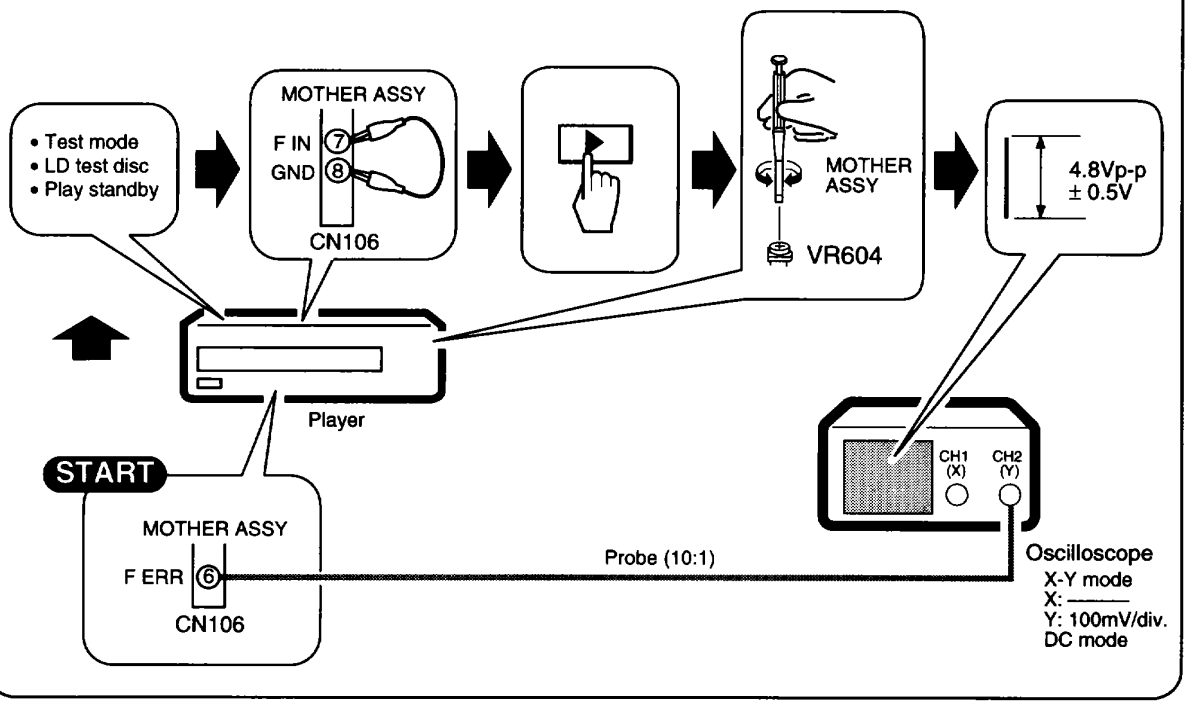


innermost : 最内周

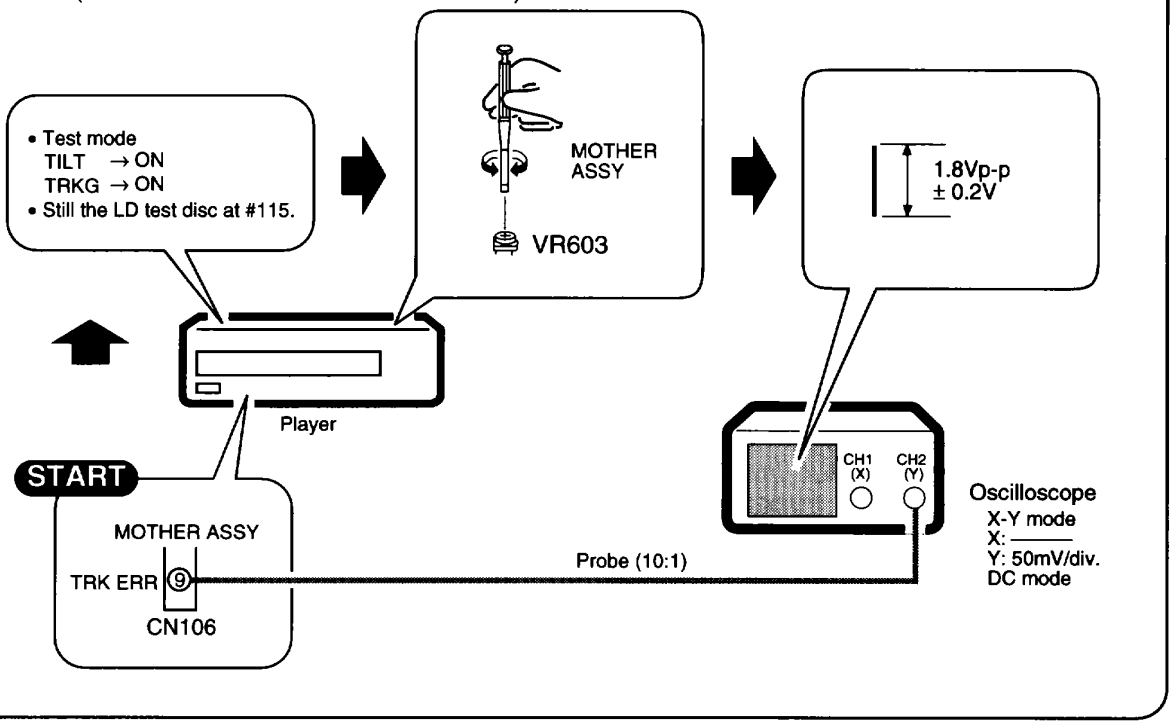
❹ Crosstalk Check and Fine Tilt Offset Adjustment
(クロストーク確認及び，チルトオフセット微調)



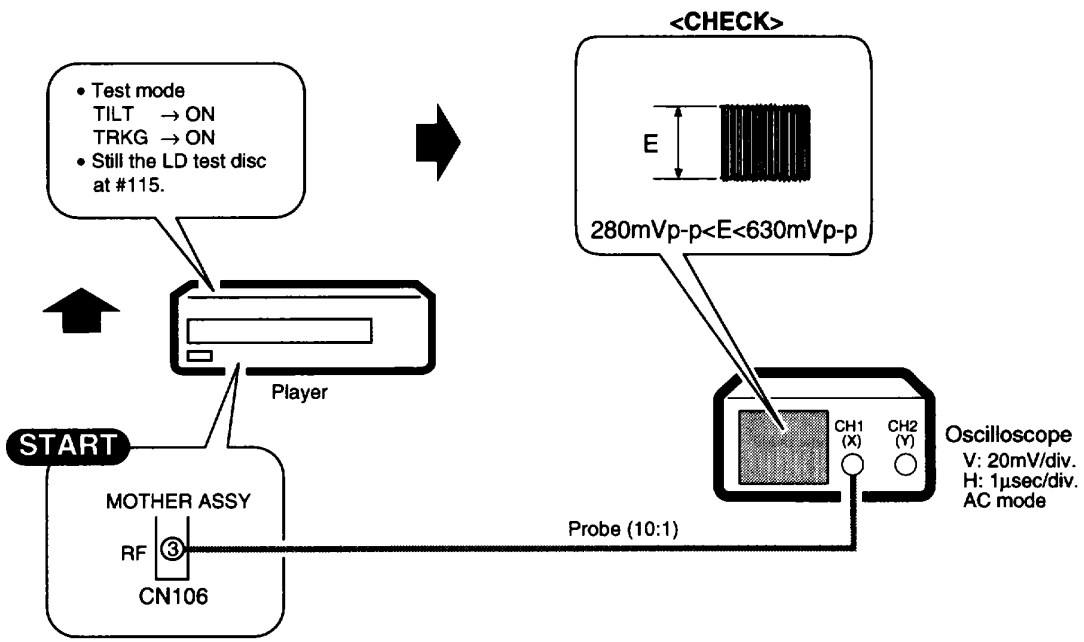
5 Focus Servo Loop Gain Adjustment
(フォーカスサーボループゲイン調整)



6 Tracking Servo Loop Gain Adjustment
(トラッキングサーボループゲイン調整)

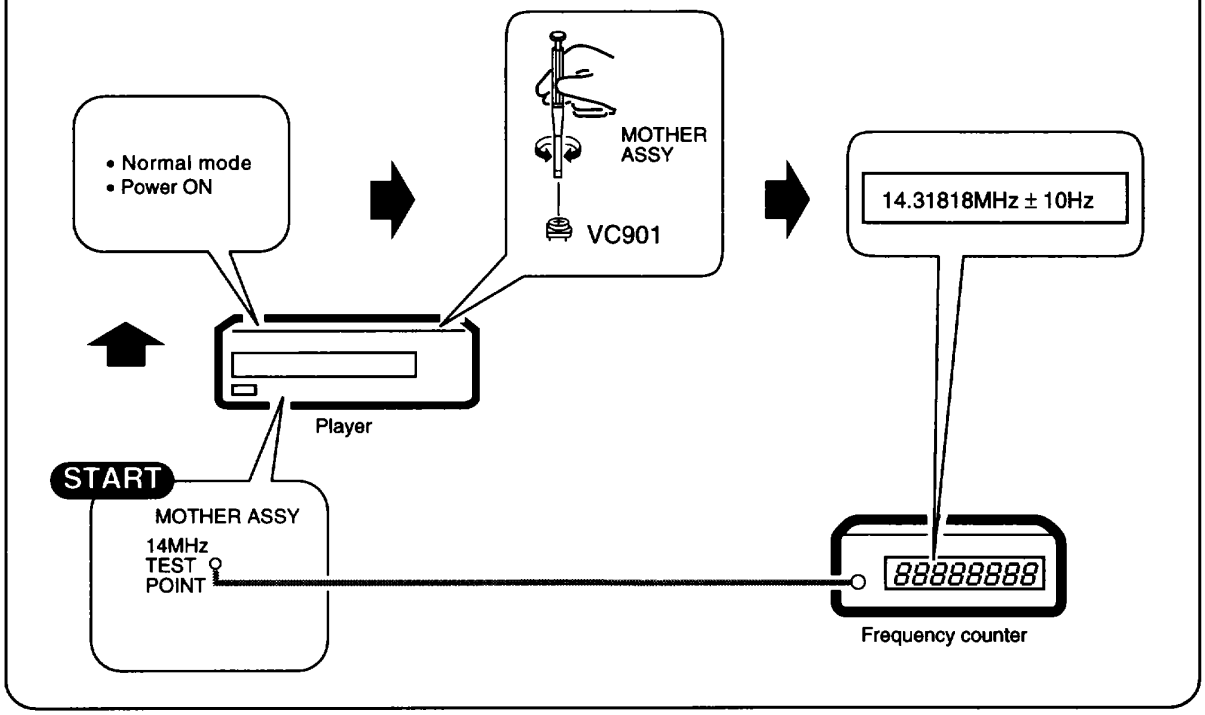


7 RF Level Check
(RFレベル確認)

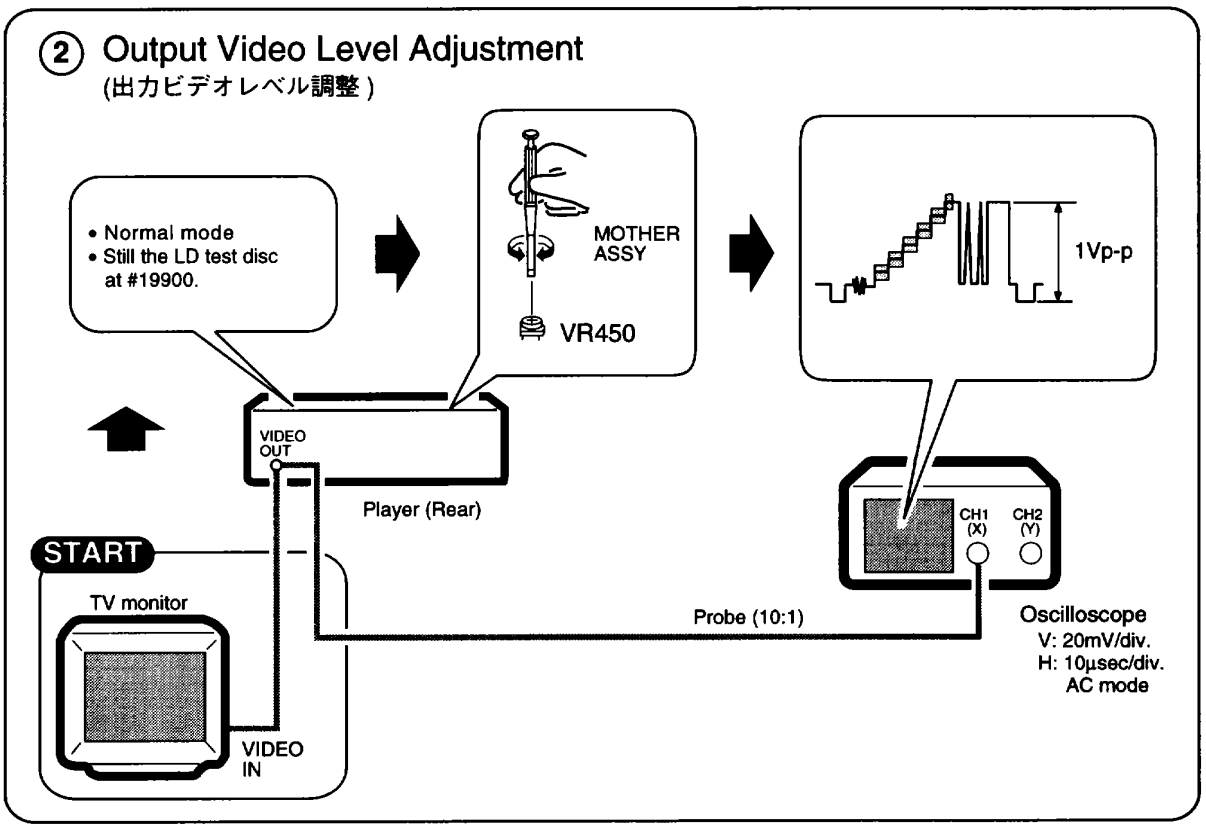


5.6 ELECTRICAL ADJUSTMENT (電気系の調整)

① Master Clock Adjustment
(マスタークロック調整)

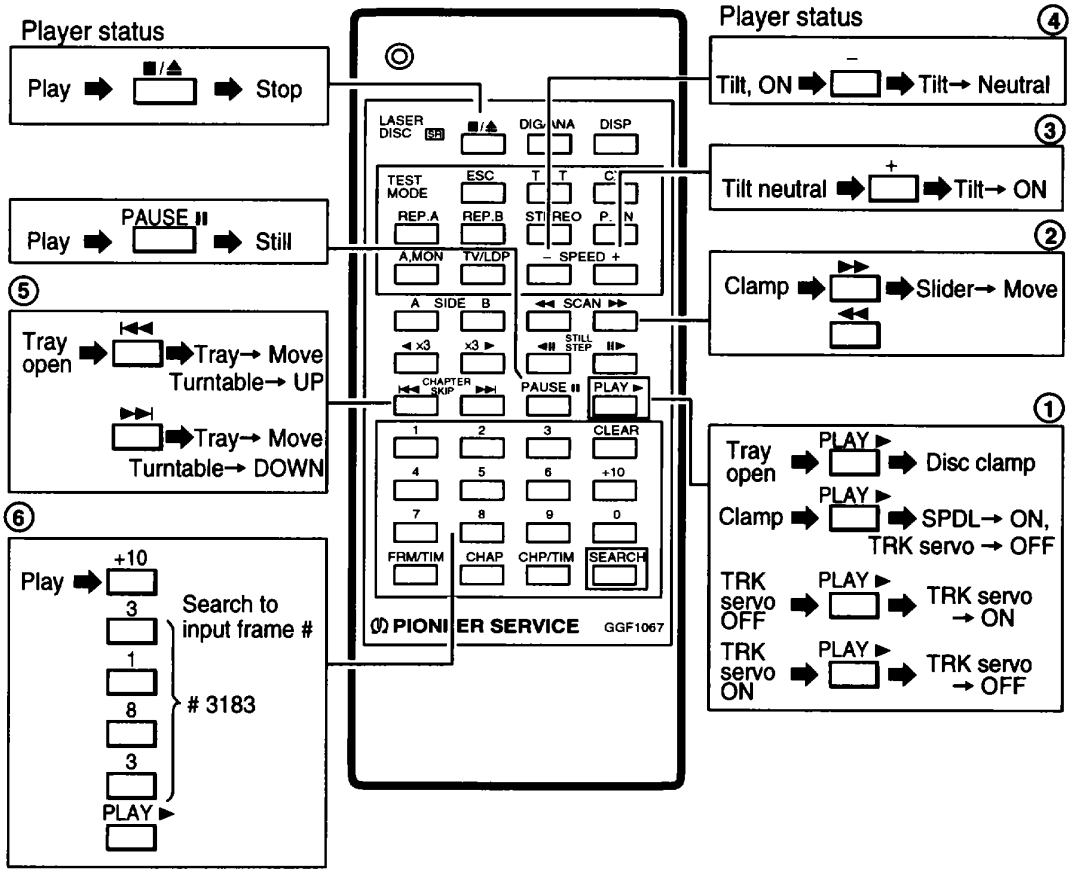


② Output Video Level Adjustment
(出力ビデオレベル調整)

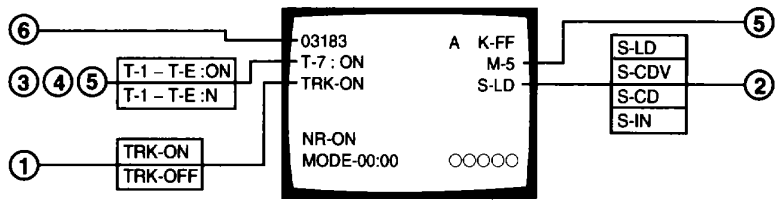


5.7 OPERATIONS IN THE TEST MODE (テストモード時のサービス用リモコン操作方法)

■ Test Mode Remote Control Unit (GGF1067)



■ TV Monitor Display



6. SELF-DIAGNOSTIC FUNCTIONS

The self-diagnostic functions automatically display an error code on the TV screen and front panel fluorescent display section when there is an error. The customer checks the error code and conveys it to the service personnel to make repairs more efficient.
After an error occurs, even if the error code goes off, you can display the error code again by holding down the CLEAR key for 5 seconds (except a loading error L ∗ display). At that time, partial error is displayed with the mechanism switch information. However, if the power cord is unplugged, the error code information is lost.

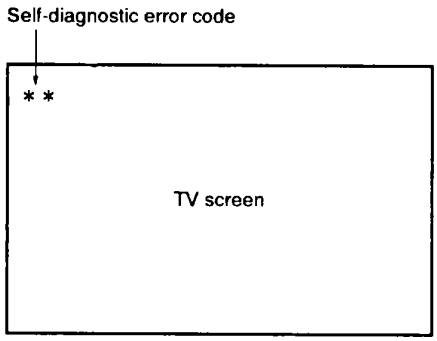


Fig. 1 TV screen display

This table explains the information for analyzing the cause when an error occurs with the CLD player.

Self-diagnostic error code	Contents	Conditions	Probable cause
H0	Spindle overcurrent detection error.	In the play state, overcurrent was detected in the spindle motor. Monitoring starts 5 seconds after the start of play or special playback mode, this error is detected if the overcurrent port is "L" for 4 seconds.	•Motor NG •Clamper rubbing
U0	FG abnormality error	①At LD start-up, the rate of rotation calculated from the FG was less than 15 rpm for 5 consecutive seconds from the spindle run command. ②At CD start-up, there was less than 1/8th rotation even after 5 seconds had passed since the end of acceleration. ③During play search, CD : subcordes are being read/LD : Phillips codes are being read and the spindle is locked, but a state in which the rate of rotation calculated from the FG was less than 15 rpm continued for 5 seconds or more. In the above case, it is judged that an abnormality has occurred in the FG sensor and that accurate rotation rate calculation has become impossible.	•FG sensor abnormality, FG signal not coming to mechanism controller •FG sensor clogged •Rubbing between FG sensor and slit •Turntable dropped •FG slit deposition NG
H1	Partial short error	①At LD start-up, the speed did not reach 1200 rpm within a certain time (12 seconds) after the spindle run command. ②At CD start-up, a certain speed (313 rpm) was not reached within 6 seconds from the end of spindle acceleration.	•Spindle motor NG •Commutator NG •Bearing too tight •Power supply NG
H2 A0	Power supply abnormality error	− 5V power supply abnormality detected. The power supply abnormality port is constantly monitored and if its signal stays high for about 1 second consecutively, the power supply is judged to be abnormal.	• − 5V not fed from POWER SUPPLY assy •Parts shorted
L ∗	Loading error	①When loading operation goes over time (approx. 10 sec.). ②When assist at disc sense entry ends and is not tilt neutral. ③When assist at set up entry ends and is not tilt neutral.	•Tilt switch 1, 2, 3 abnormal, so tilt/loading state not read in correctly •Tilt/loading mechanism mechanically locked •Drive IC NG •Power supply NG
E ∗	Slider error	During slider movement, a time over-run occurred (track count search 20 seconds, mandatory movement 10 seconds)	•Slider ceased being able to run •The slider mechanism is mechanically locked and can no longer move to its target. •Slider position switch NG •Flexible cable pulled out •Drive IC NG •Power supply abnormal
U1	Miss clamp error	①During LD setup, after 1/8th rotation, the track count during 1/8 rotation exeeded 511. ②During start-up, the focus was lost once and refocusting was attempted, but the focus could not be locked. ③Two FG pulses did not come within 800 ms from from the start of LD start-up. ④The disc clamp operation did not end within 5 seconds.	•Disc sandwiched •Disc shifted •Spindle motor NG •Disc scratched or dirty defocused during start-up •Two discs loaded •PU actuator NG •Tilt sensor NG •Tilt neutral NG (tilt base NG)

Self-diagnostic error code	Contents	Conditions	Probable cause
P *	Spindle error	①During TOC reading with an LD, the spindle servo was not locked within 60 seconds from the start of the spindle run. ②When CAV/CLV determination is not finished within 60 seconds from spindle servo lock. ③The codes could not be read for 10 – 15 seconds consecutively for an LD or 7 – 10 seconds for a CD/CDV and the spindle servo was not locked. ④The speed exceeded 2100 rpm during LD start up.	P0 :•PH code, SUB-Q code can not be read •VCO, PLL offset out of adjustment •Disc defect P5:•PAL disc, mirror disc, etc. PLAY •No RF P6:•Spindle servo does not lock •Spindle motor NG
F *	Focus error	①"In the "no disc" state, a setup command was received from the mode controller. ②When LD is out of focus when slider is moved to starting position during set up. In case of CD/CDV is NG even after three focus tries. ③During start-up, the maximum slider servo duty continued for 3 loops or more.	F5 :•CD, LD on top of each other •LD scratched or dirty defocused during slider movement •Disc NG •Slider position switch NG F6 :•Inner edge of disc scratched or dirty •Slider ran into inner edge mechanical stopper

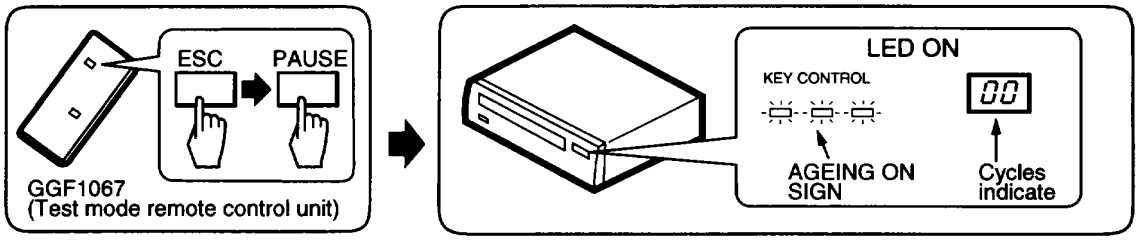
* Besides the above errors, there is the "U2" communications error (the mode controller could not communicate normally with the mechanism controller)
* The probable cause is a defective mechanism controller, disconnected cable, etc..
Mechanism mode contents (meanig of * for L * etc.)

0 : Play	5 : Setup (rotation start)
1 : Open	6 : TOC read
2 : Standby	7 : Play
3 : Clamp	8 : Search
4 : Disc sense	F : Recovery mode

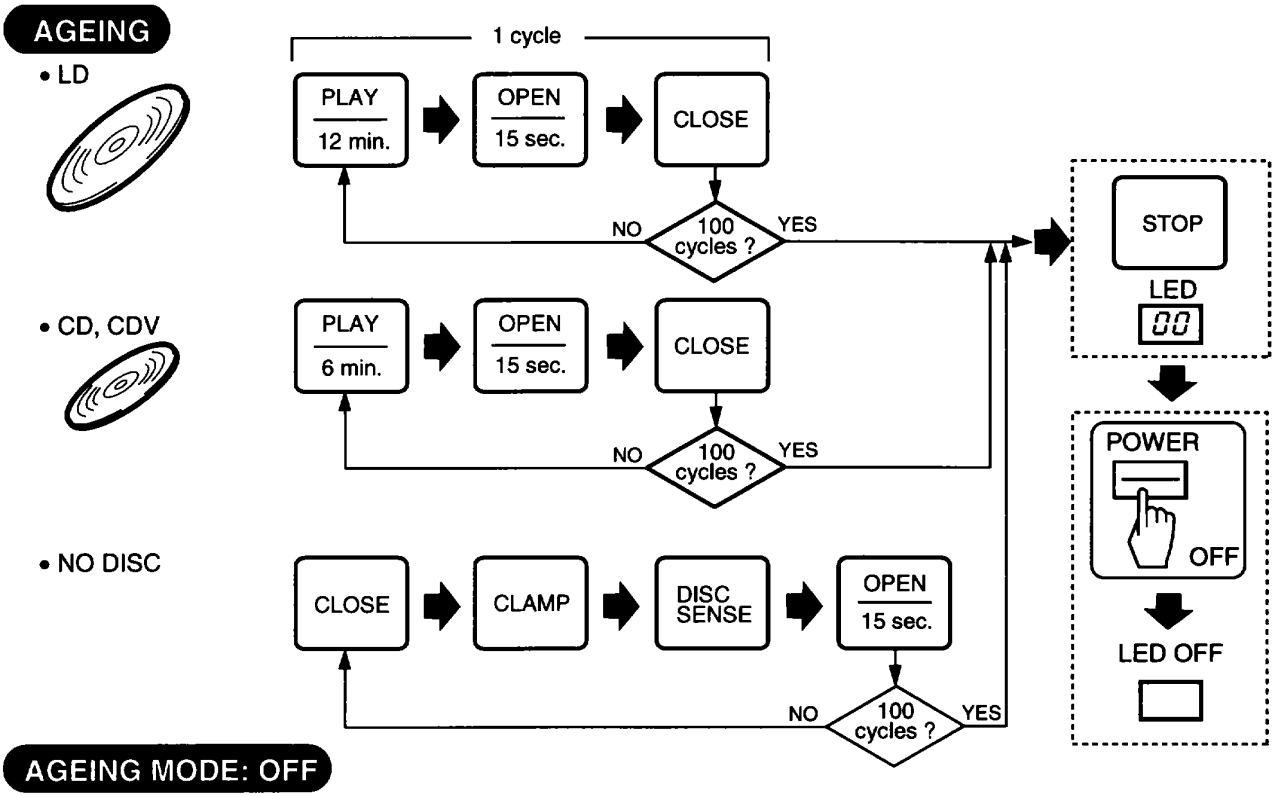
* 0 : Normal playing
7 : Moving to play operation

7. AGEING MODE (エージングモード)

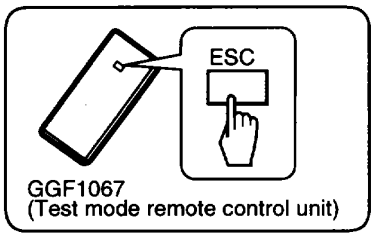
AGEING MODE: ON •Note for KARAOKE model : Set the SINGLE PLAY (一曲停止) mode to OFF.



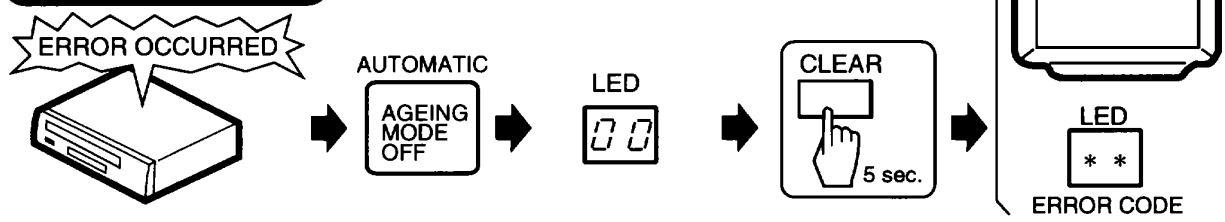
AGEING



AGEING MODE: OFF



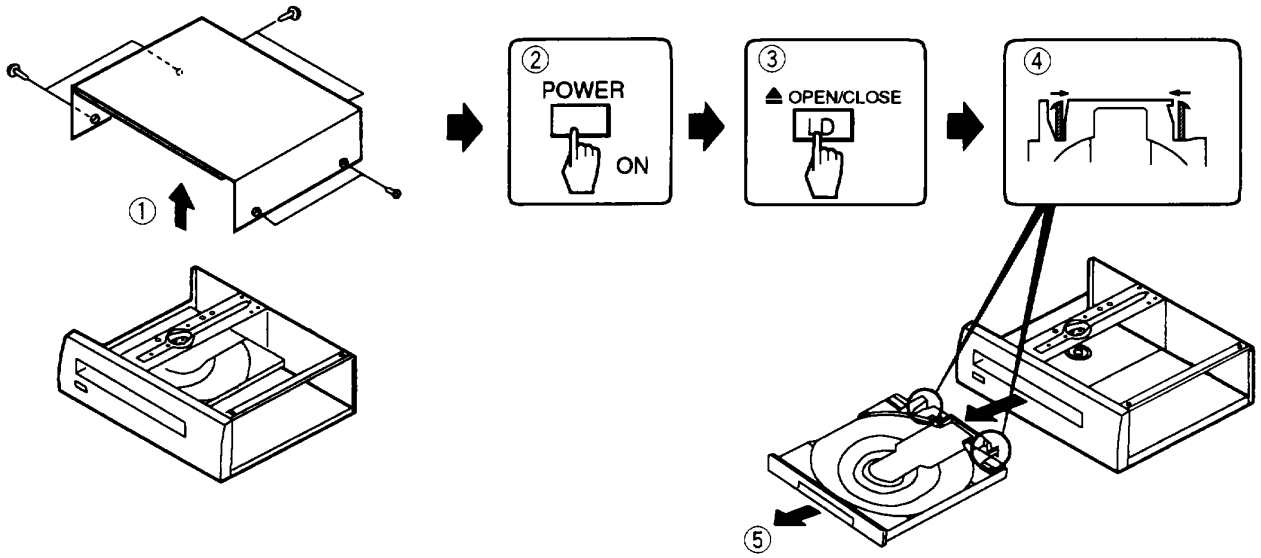
ERROR OCCURRED ERROR OCCURED : エラー発生



8. DISASSEMBLY/ASSEMBLY (分解/組立の手順)

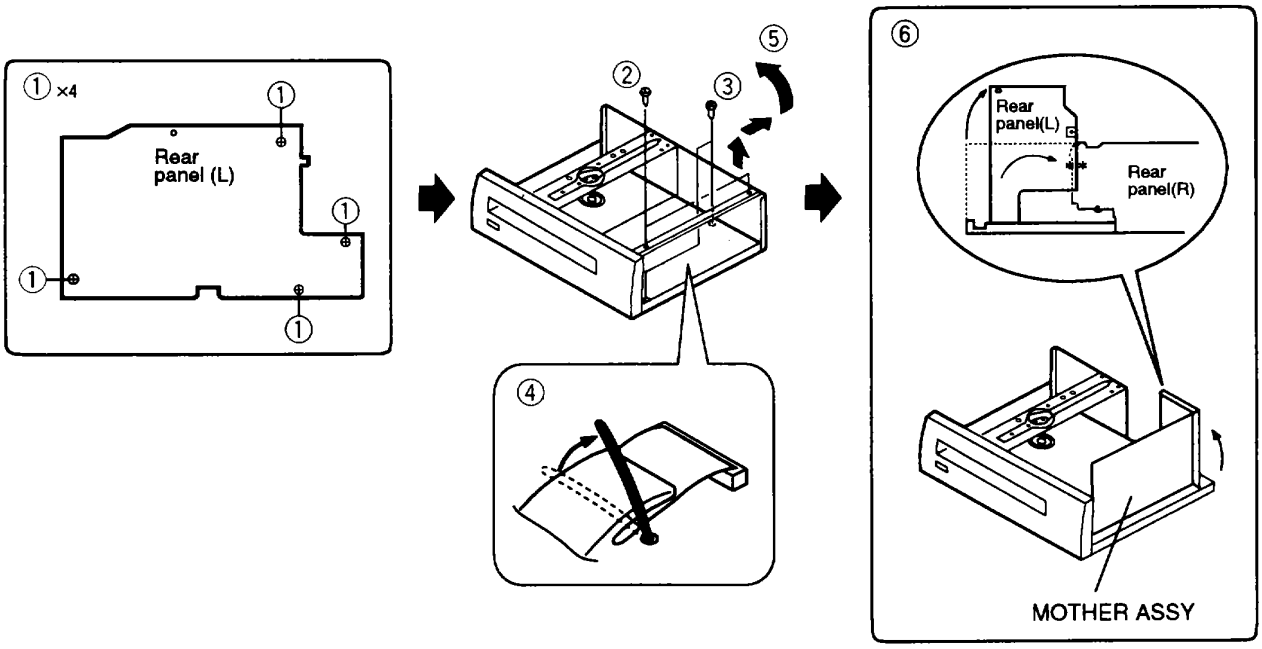
8.1 DISC TRAY

- Disassembly : ①→②→③→④→⑤
- Assembly : ⑤→①



8.2 MOTHER ASSY

- Disassembly : ①→②→③→④→⑤→⑥
- Assembly : ⑥→⑤→④→③→②→①



9. IC INFORMATION

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

■PD3339A (MOCB ASSY : IC101)

· MODE CONTROL IC

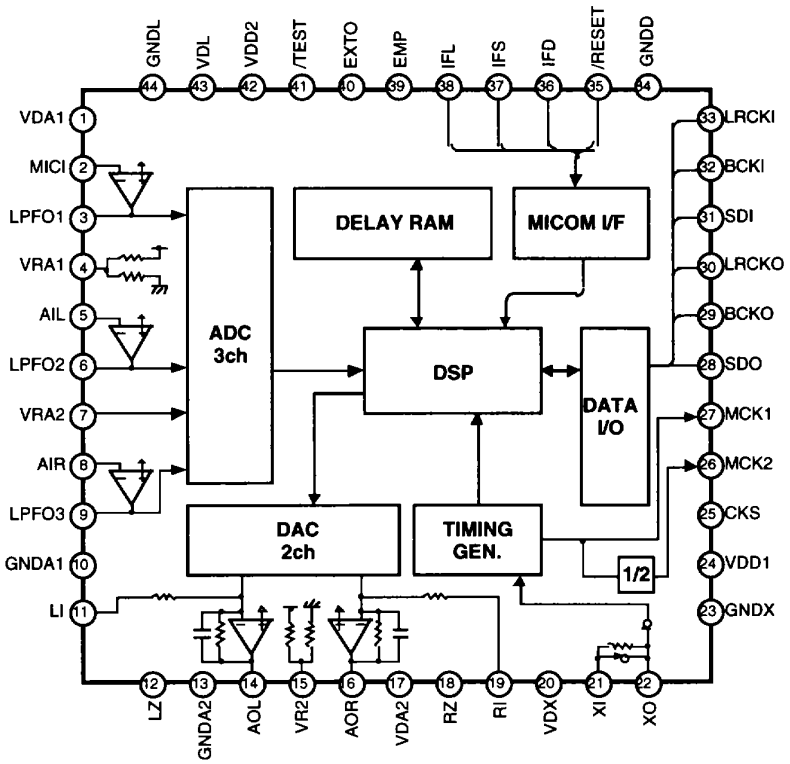
•Pin Function

No.	Mark	Pin Name	I/O	Function	No.	Mark	Pin Name	I/O	Function
1	P04	MODE SEL	I	MIC switch input	41	P60	e	O	7 seg. segment e
2	P05	ECHO VOL	I	Echo audio volume input	42	P61	b	O	7 seg. segment b
3	P06	ONTA BAL	I	Guide vocal audio volume input	43	P62	f	O	7 seg. segment f
4	P07	MODE SW	I	Standard/Karaoke/External input switching input	44	P63	a	O	7 seg. segment a
5	AVSS	—	I	GND	45	P64	c	O	7 seg. segment c
6	TEST	Not used	I	GND	46	P65	g	O	7 seg. segment g
7	X2	Not used	O	NC	47	P66	d	O	7 seg. segment d
8	X1	Not used	I	GND	48	P67	Not used	O	NC
9	VSS	GND	I	GND	49	P70	Not used		
10	OSC1	—	I	Main system clock oscillation (8MHz)	50	P71	Not used		
11	OSC2	—	O		51	P72	Not used		
12	xRST	XRESET IN	I	CPU reset input (Reset for L)	52	P73	Not used		
13	IRQO	SHAKE	I	Mechanism controller serial communication request	53	P74	Not used		
14	IRQI	SEL IR	I	Remote control input	54	P75	Not used		
15	P12	Not used	O	NC	55	P76	Not used		
16	P13	POWER	O	Mother board power supply switching output (Power ON for H)	56	P77	Not used		
17	P14	EFLG	I	For error rate measurement	57	VCC	—	I	+5V
18	P15	FSX	I	For error rate measurement	58	P80	DIGIT1	O	7 seg. digit 1
19	P16	Not used	I	GND	59	P81	DIGIT2	O	7 seg. digit 2
20	P33	XINT/EXT	O	Internal/External audio selection	60	P82	Not used	O	NC
21	P32	I/O CLKI	O	Clock output for I/O expander	61	P83	Not used		
22	P31	I/O DATA	O	Data output for I/O expander	62	P84	Not used		
23	P30	XMIC ON	O	Mic audio input switching output (Output ON for L)	63	P85	Not used		
24	P47	Not used	O	NC	64	P86	WSIDE SEL	I	Single side/Double sided model switch port (L : Sigle side model)
25	P46	DOG FOOD	O	Pulse output for Watchdog	65	P87	Not used	O	NC
26	P45	Not used	O	NC	66	P90	Not used	O	
27	P44	Not used	O		67	SCKI	S-LOCK	I/O	Serial communication clock (Mech. controller, OSD and DSP)
28	P43	Not used	O		68	SII	S-MTOF	I	Serial communication data input (Mech. controller)
29	P42	Not used	O		69	SOI	S-FTOM	O	Serial communication data output (Mech. controller, OSD and DSP)
30	P41	Not used	O		70	P94	XRESET OUT	O	Mother board reset output (Reset for L)
31	P40	Not used	O		71	P95	XOSDCS	O	CS output of OSD IC
32	P50	Not used	O		72	P96	XDSPCS	O	CS output of DISP IC
33	P51	Not used	O		73	P97	Not used	O	NC
34	P52	LED (♭)	O	Key control flat LED (Lights for H)	74	PAO	Not used		
35	P53	LED (NTL)	O	Key control natural LED (Lights for H)	75	PAI	Not used		
36	P54	LED (#)	O	Key control sharp LED (Lights for H)	76	AVCC	—	I	+5V
37	P55	LED (PLAY)	O	PLAY LED (Lights for H)	77	ANO	KIN0	I	adc input : A/D key input 0 (0 to 5V)
38	P56	LED (PAUSE)	O	PAUSE LED (Lights for H)	78	ANI	KIN1	I	adc input : A/D key input 1 (0 to 5V)
39	P57	Not used	O	NC	79	PO2	KIN2	I	adc input : A/D key input 2 (0 to 5V)
40	P17	Not used	I	NC	80	PO3	MODEL SEL	I	adc input : Model switch port

■TC9409AF-001 (MOTHER ASSY : IC300)

· DIGITAL AUDIO SIGNAL PROCESSOR

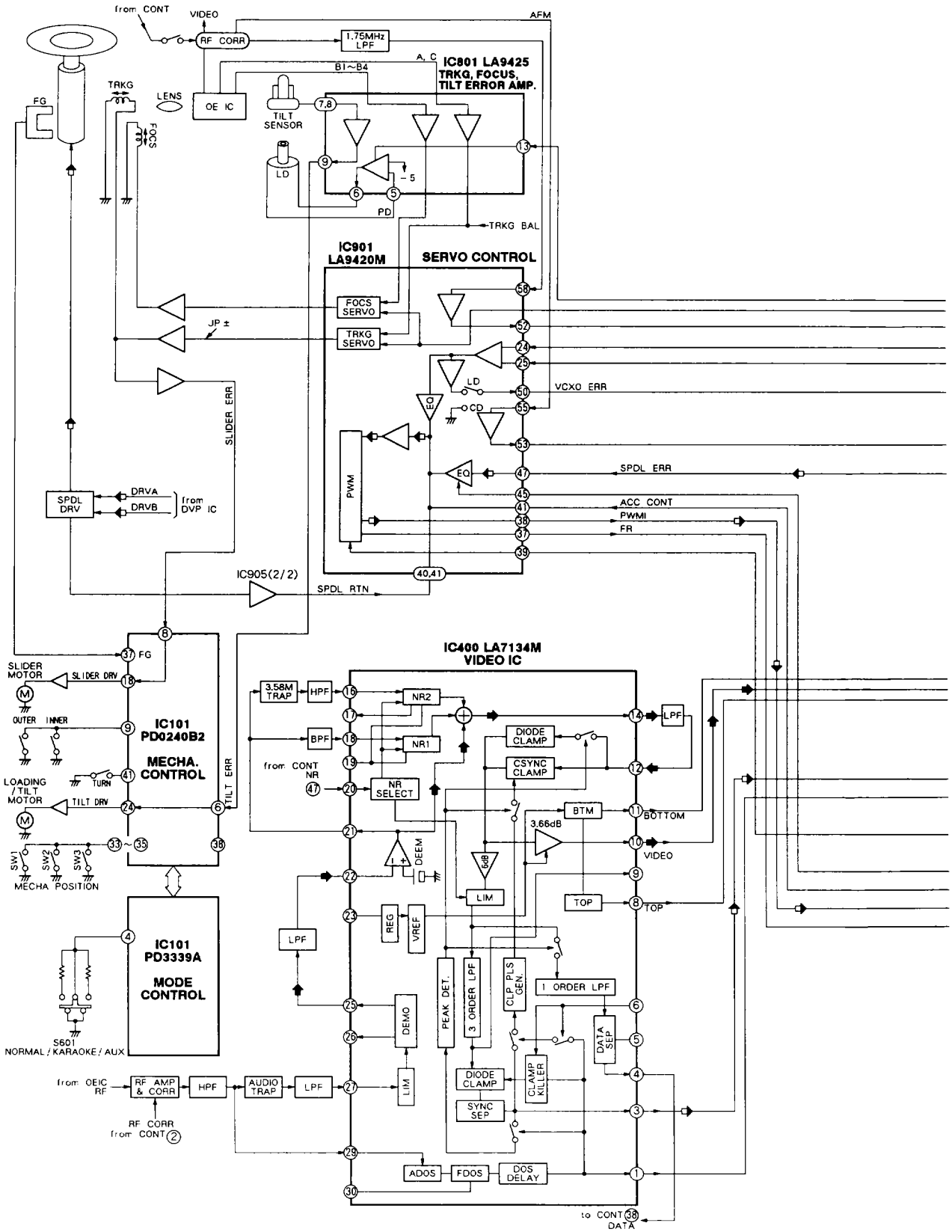
•Block Diagram

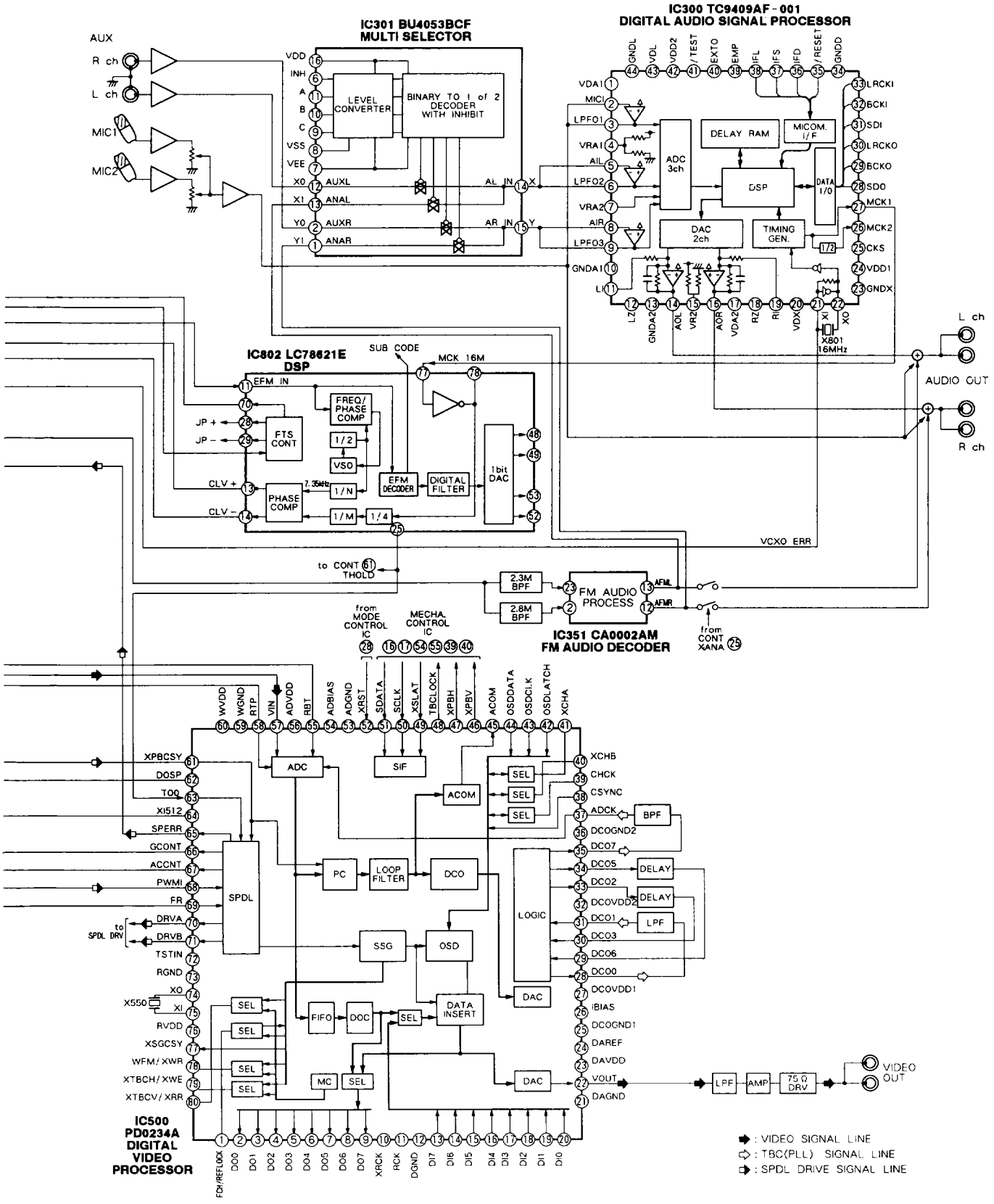


•Pin Function

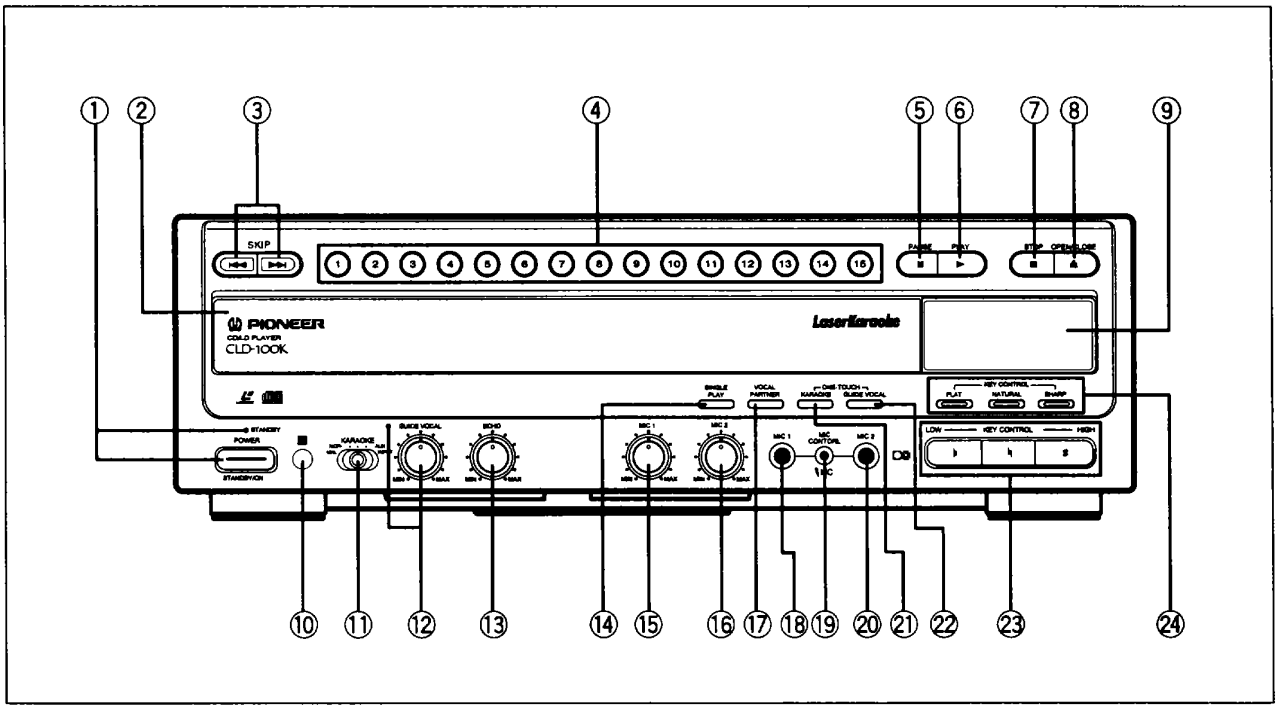
No.	Pin Name	I/O	Function	No.	Pin Name	I/O	Function
1	VDA1	—	ADC power supply	23	GNDX	—	Ground for oscillation section
2	MICI	I(A)	LPF input for MIC input	24	VDD1	—	Digital power supply
3	LPFO1	O(A)	LPF output for MIC input	25	CKS	I	Master clock selection (H : 256/384fs, L : 512/768fs)
4	VRA1	—	ADC reference voltage	26	MCK2	O	Oscillation clock output for frequency divided by 2
5	AIL	I(A)	LPF input for L ch line input	27	MCK1	O	Oscillation clock output
6	LPFO2	O(A)	LPF output for L ch line input	28	SDO	O	Digital audio data output
7	VRA2	—	Reference power supply for ADC	29	BCKO	O	Bit clock output
8	AIR	I(A)	LPF input for R ch line input	30	LRCKO	O	Channel clock output
9	LPFO3	O(A)	LPF output for R ch line input	31	SDI	I	Digital audio data input
10	GNDA1	—	ADC ground	32	BCKI	I	Bit clock input
11	LI	I	L ch analog adder input	33	LRCKI	I	Channel clock input
12	LZ	O	L ch digital input zero detection	34	GNDD	—	Digital ground
13	GNDA2	—	DAC ground	35	/RESET	I(UP)	Reset (Reset for L)
14	AOL	O(A)	L ch DAC output	36	IFD	I	Microcomputer I/F data input
15	VR2	—	DAC reference voltage	37	IFS	I	Microcomputer I/F data shift clock input
16	AOR	O(A)	R ch DAC output	38	IFL	I	Microcomputer I/F latch pulse input
17	VDA2	—	DAC power supply	39	EMP	I	Deemphasis setting (Deemphasis ON for H)
18	RZ	O	R ch digital input zero detection	40	EXTO	O	Expansion output
19	RI	I	R ch analog adder input	41	/TEST	I(UP)	Test mode setting (Normally, fixed for H)
20	VDX	—	Power supply for oscillation section	42	VDD2	—	Digital power supply
21	XI	I	Connect a oscillator	43	VDL	—	Digital power supply for DRAM
22	XO	O	(any of 256, 384, 512 or 768fs)	44	GNDL	—	Digital ground for DRAM

10. BLOCK DIAGRAM




IC301 BU4053BCF
MULTI SELECTOR
IC300 TC9409AF-001
DIGITAL AUDIO SIGNAL PROCESSOR
IC802 LC78621E
DSP
IC351 CA0002AM
FM AUDIO DECODER
IC500
PD0234A
DIGITAL
VIDEO
PROCESSOR
AUX
R ch
L ch
MIC1
MIC2
AUDIO OUT
VIDEO OUT
X801
16MHz
SUB CODE
MCK 16M
EFM IN
VCXO ERR
to CONT THOLD
from MODE CONTROL IC
MECHA. CONTROL IC
from CONT XANA
: VIDEO SIGNAL LINE
: TBC(PLL) SIGNAL LINE
: SPDL DRIVE SIGNAL LINE

11. PANEL FACILITIES



① **POWER STANDBY/ON switch and STANDBY indicator**
Press to turn the power on and off.
② **CD/LD Disc table**
③ **SKIP buttons**
④ **Direct music search buttons**
⑤ **PAUSE (II) button**
⑥ **PLAY (►) button**
⑦ **STOP (■) button**
⑧ **OPEN/CLOSE (▲) button**
⑨ **Display window**
⑩ **Remote sensor**
⑪ **NORMAL/KARAOKE/AUX INPUT selector**
⑫ **GUIDE VOCAL level control/indicator**
⑬ **ECHO level control**
⑭ **SINGLE PLAY button/indicator**
⑮ **MIC 1 level control**
⑯ **MIC 2 level control**
⑰ **VOCAL PARTNER button/indicator**
⑱ **MIC 1 jack**
⑲ **MIC CONTROL jack**
⑳ **MIC 2 jack**
㉑ **ONE-TOUCH KARAOKE button/indicator**
㉒ **ONE-TOUCH GUIDE VOCAL button/indicator**
㉓ **KEY CONTROL buttons**
㉔ **KEY CONTROL indicator**

12. SPECIFICATIONS

General

System ..... LaserVision Disc system and Compact Disc digital audio system
Laser ..... Semiconductor laser wavelength 780 nm
Power requirements ..... AC 110 - 240 V, 50/60 Hz
Power consumption ..... 31 W
Weight ..... 5.9 kg
Dimensions ..... 420 (W) x 390 (D) x 132 (H) mm
Operating temperature ..... +5 °C ~ +35 °C
Operating humidity ..... 5 % ~ 85 %
(There should be no condensation of moisture.)

Video characteristics (two pairs)

Format ..... NTSC specifications
Video output
Level ..... 1 Vp-p nominal, sync. negative, terminated
Impedance ..... 75 Ω unbalanced
Jack ..... RCA jack

Audio characteristics (two pairs)

Output level
During analog audio output ..... 200 mVrms (1 kHz, 40 %)
During digital audio output ..... 200 mVrms (1 kHz, -20 dB)
Jacks ..... Both RCA jacks
Number of channels ..... 2 (Stereo)

Other terminals

Control input/output ..... Both miniature jacks
AUX ..... RCA jacks

Accessories

Remote control unit 1
Size "AA" (IEC R6P) dry cell batteries 2
Video cord 1
Audio cord 1
Power cord 1
Operating instructions 1
Warranty card 1

NOTE:

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