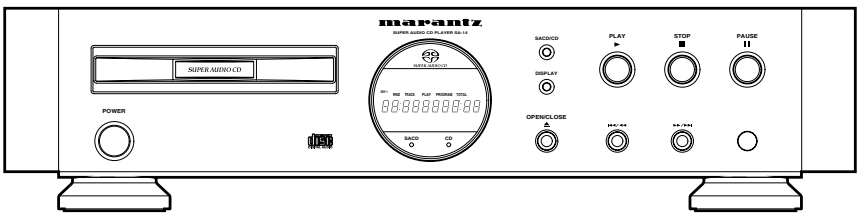
Service Manual

SA14/F1N, /C1G, /S1G,/U1G, /U1B

Super Audio CD Player

SA-14



SUPER AUDIO CD

COMPACT disc DIGITAL AUDIO

TABLE OF CONTENTS

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

修理の際は、必ず取扱説明書を準備し操作方法を確認の上作業を行ってください。

marantz®

SA-14

Printed in Japan

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

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AUSTRALIA
PHONE : 61 - 2 - 9810 - 5300
FAX : 61 - 2 - 9810 - 5355

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LENBROOK INDUSTRIES LIMITED
633 GRANITE COURT,
PICKERING, ONTARIO L1W 3K1
CANADA
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MT. WAVERLEY VIC 3149
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東京都渋谷区恵比寿南1-11-9

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

SHOCK, FIRE HAZARD SERVICE TEST :

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

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

Ref. UL Standard No. 1492.

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

1.1 TECHNICAL SPECIFICATIONS

	Super Audio CD	CD
Audio Characteristics		
Channels	2channels	2channels
Frequency range	2 Hz - 100 kHz	2 Hz - 20 kHz
Frequency characteristics	2 Hz - 50 kHz (-3 dB)	2 Hz - 20 kHz
Dynamic range	113 dB	100 dB
THD (1 kHz)	0.0015 %	0.0020 %
wow & flutter	Precision of quartz	Precision of quartz
Analog output		
output level (unbalanced)	2.2 V	2.2 V
output level (balanced)	4.3 V	4.3 V
Digital output		
output level (cinch JACK)	-	0 .5 Vp-p (75 ohm)
output level (optical)	-	-19 dBm
Optical Readout System		
Laser	AlGaAs	AlGaAs
Wave length	650 nm	780 nm
Sampling frequency	2.8224 MHz	44.1 kHz

Power Supply

/F1N version ..... AC 100 V 50Hz/60 Hz
/U1G, U1B version ..... AC 120 V 60 Hz
/N1G, /S1G version ..... AC 230 V 60 Hz
/C1G version ..... AC 220 V 60 Hz
Power Consumption ..... 21 W

Cabinet, etc.

Dimensions (Width x Height x Depth) ..... 458 x110 x 392 mm
Net weight ..... 11.8 kg
Operating temperatures ..... +5 ˚C ~ +35 ˚C
Operating humidity ..... 5 % ~ 90 % (without dew)

Accessories

Remote control unit (RC-14SA) 1
Dimensions (Width x Height x Depth) ..... 44 x 17.5 x 239 mm
Net weight (without Batteries) ..... 175 g
AAA (R03) Batteries 2
Stereo audio cable with cinch pins 1
AC Power Cord 1
User's Guide 1

Specifications subject to change without prior notice.

1.2. TEST MODE

1. How to enter the initial test mode

Turn the power on, press the SACD/CD button and the track down button more than two seconds.

Display: F 0 TEST

2. Version check mode

1 Press the SACD/CD button to enter this mode.

Display: 1 0 9 0 9 2 8

Year/Month/Day

2 Model number (Press the PLAY button in the step 1 .)

Display: 1 0 0 0 0 1 0

Model number

3 Version (Press the PLAY button in the step 2 .)

Display: 1 0 A 0 0 0 1

Version number

4 Then press the PLAY button to return to the initial test mode.

Display: F 0 TEST

3. Laser test mode

1 Press the PAUSE button to enter this mode.
(In case of the no disc mode, eject the tray.)

Display: 3 0 0 0 0 0 0

2 Enter the laser test mode.

Display: 3 1 0 0 0 0 0

3 CD laser lit up (Press the STOP button in the step 2 or 4.)

Display: 3 1 0 0 0 0 0

4 SACD laser lit up (Press the PAUSE button in the step 2 or 3.)

Display: 3 1 0 0 0 0 0

5 Laser test mode completed (Press the PLAY button in the step 2, 3 or 4.)

Display: F 0 TEST

4. FIP test

1 Press the PLAY button to enter this mode

Display: All lamps lit up.

2 Press the PLAY button again to return to the initial test mode

Display: F 0 TEST

5. How to exit the test mode

In case of finish the test mode, press the mains switch (POWER button)

■テストモード

1．テストモードの入り方

電源を入れ、SACD／CDボタンとスキップ戻しボタンを２秒以上押し続ける。

表示……　ＦＯ　TEST（テストモード初期状態）

2．バージョンチェックモード

テストモード初期状態からSACD／CDボタンを押すことによりこのモードに入る

① プログラム日付

表示……　１０９０９２８：年　月　日

② モデルナンバー（①でPLAYボタンを押す）

表示……　１０００００１０：モデルナンバー

③ バージョン（②でPLAYボタンを押す）

表示……　１０Ａ０００１：バージョンナンバー

④ 次にPLAYボタンを押すとテストモードの初期に戻る

表示……　ＦＯ　TEST

3．レーザテストモード

テストモード初期状態からPAUSEボタンを押すことによりこのモードに入る。

① トレイがイジェクトされた場合、OPEN/CLOSEボタンを押しトレイをクローズさせる。

表示……　３０００００００

② レーザテストモード（①でSTOPボタンを押す）

表示……　３１０００００

③ CDレーザ点灯（②, ④でSTOPボタンを押す）

表示……　３１０００００

④ SACDレーザ点灯（②, ③でPAUSEボタンを押す）

表示……　３１０００００

⑤ レーザーテストモード終了（PLAYボタンを押す）

表示……　ＦＯ　TEST

4．ＦＩＰテスト表示

テストモード初期状態からPLAYボタンを押すことによりこのモードに入る。

表示……　全点灯

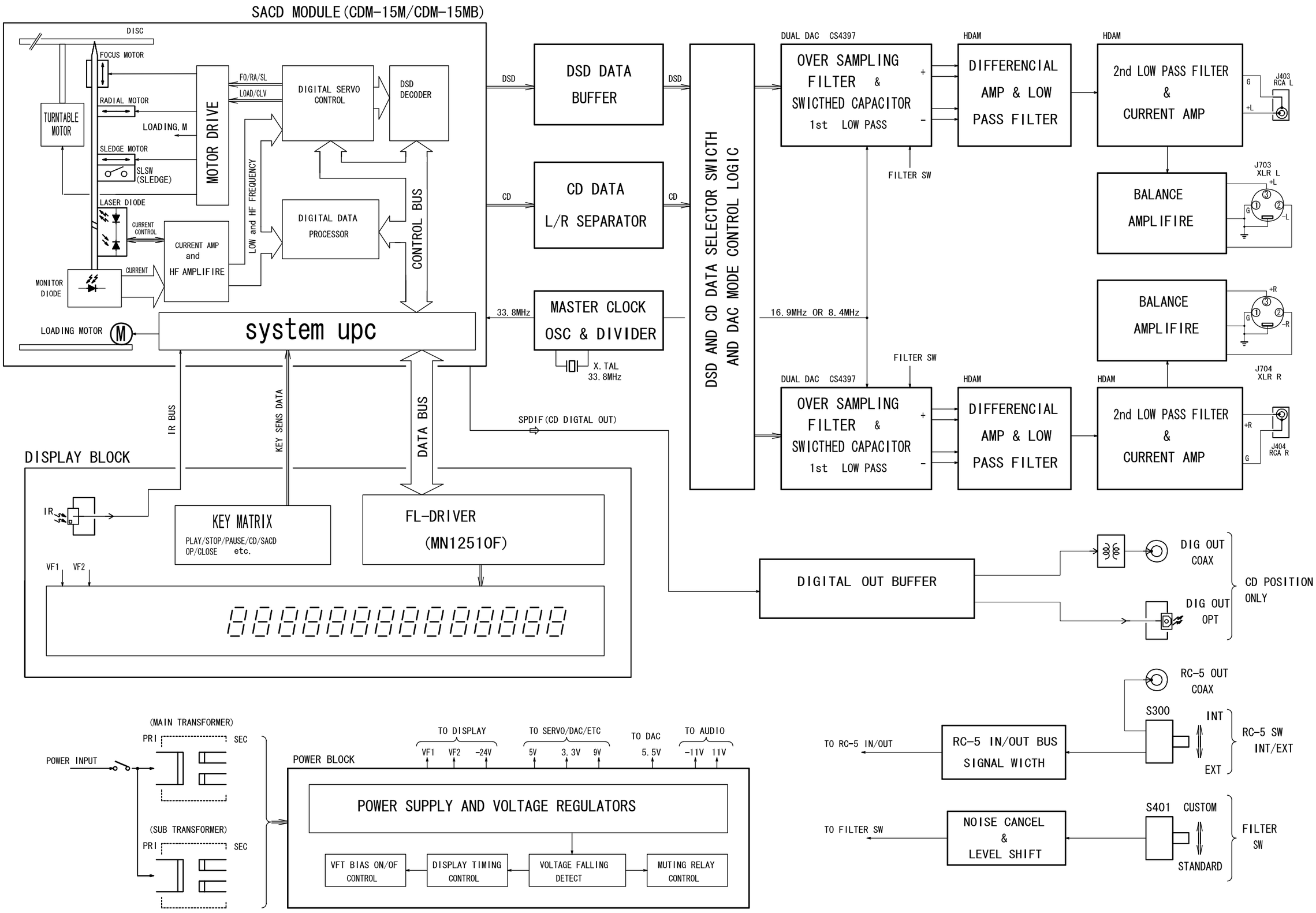
再度PLAYボタンを押すとテストモード初期状態に戻る。

表示……　ＦＯ　TEST

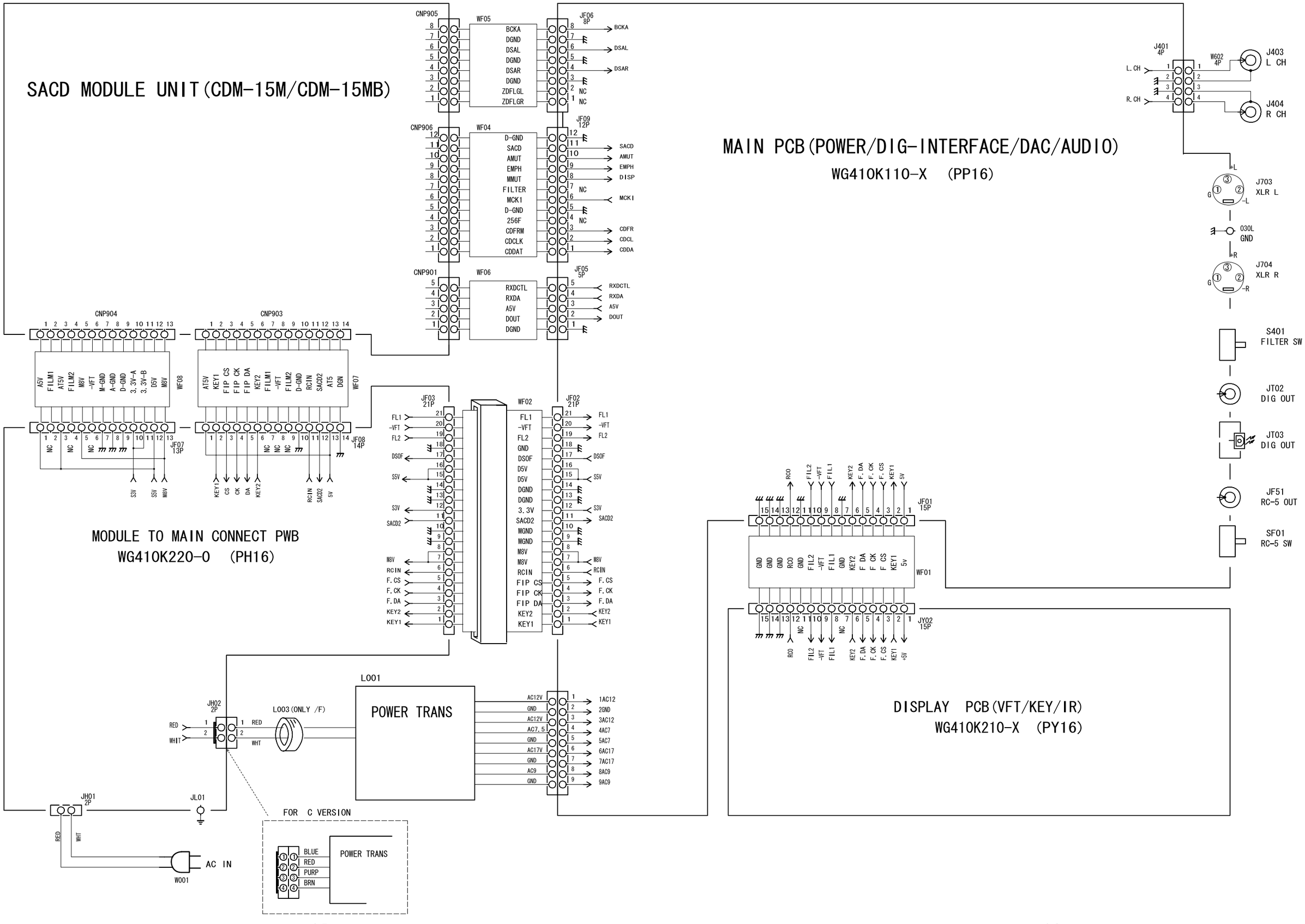
5．テストモード終了

テストモードを終了するには、ＰＯＷＥＲボタンを押して電源を切る。

1.3 BLOCK DIAGRAM

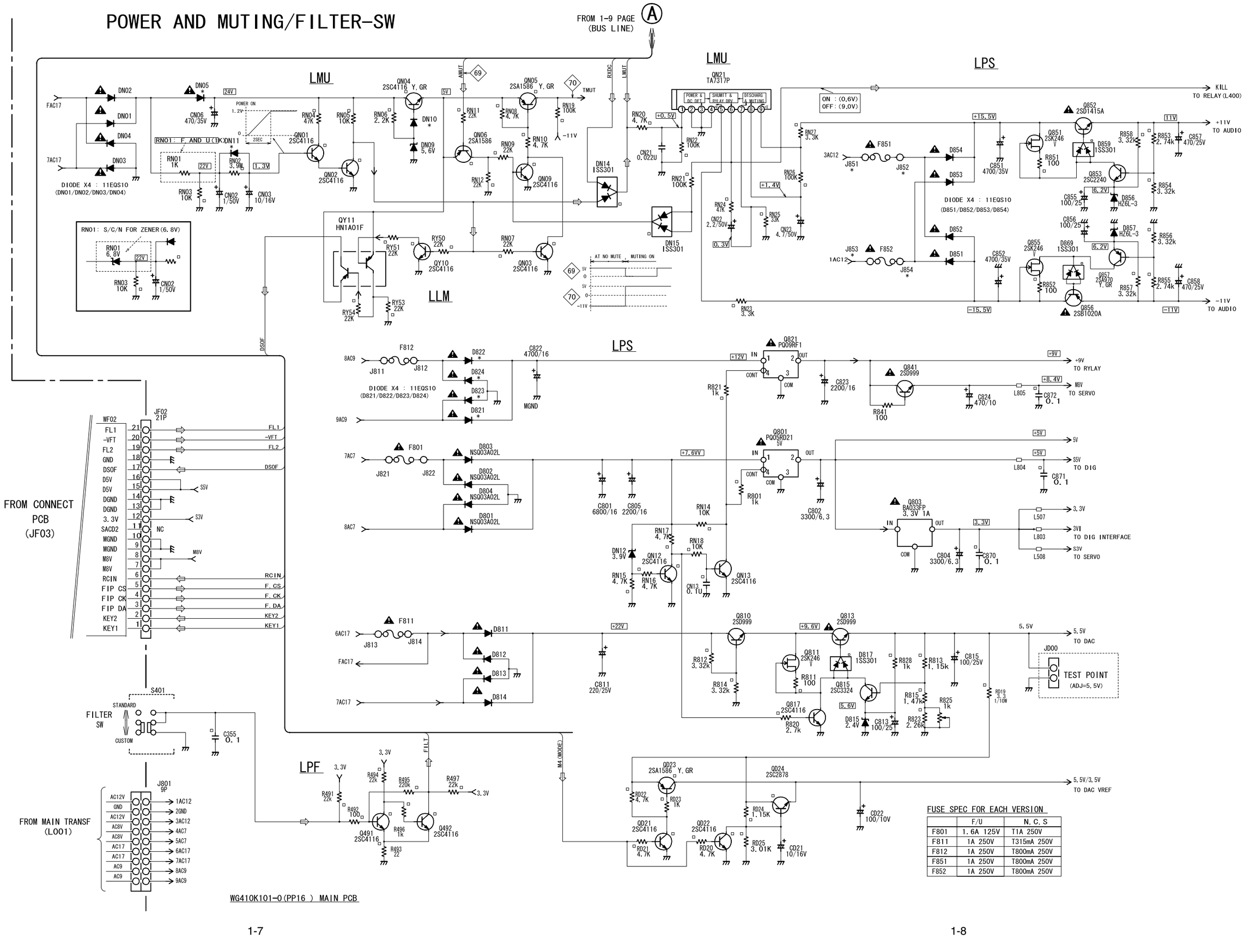


1.4 WIRING DIAGRAM



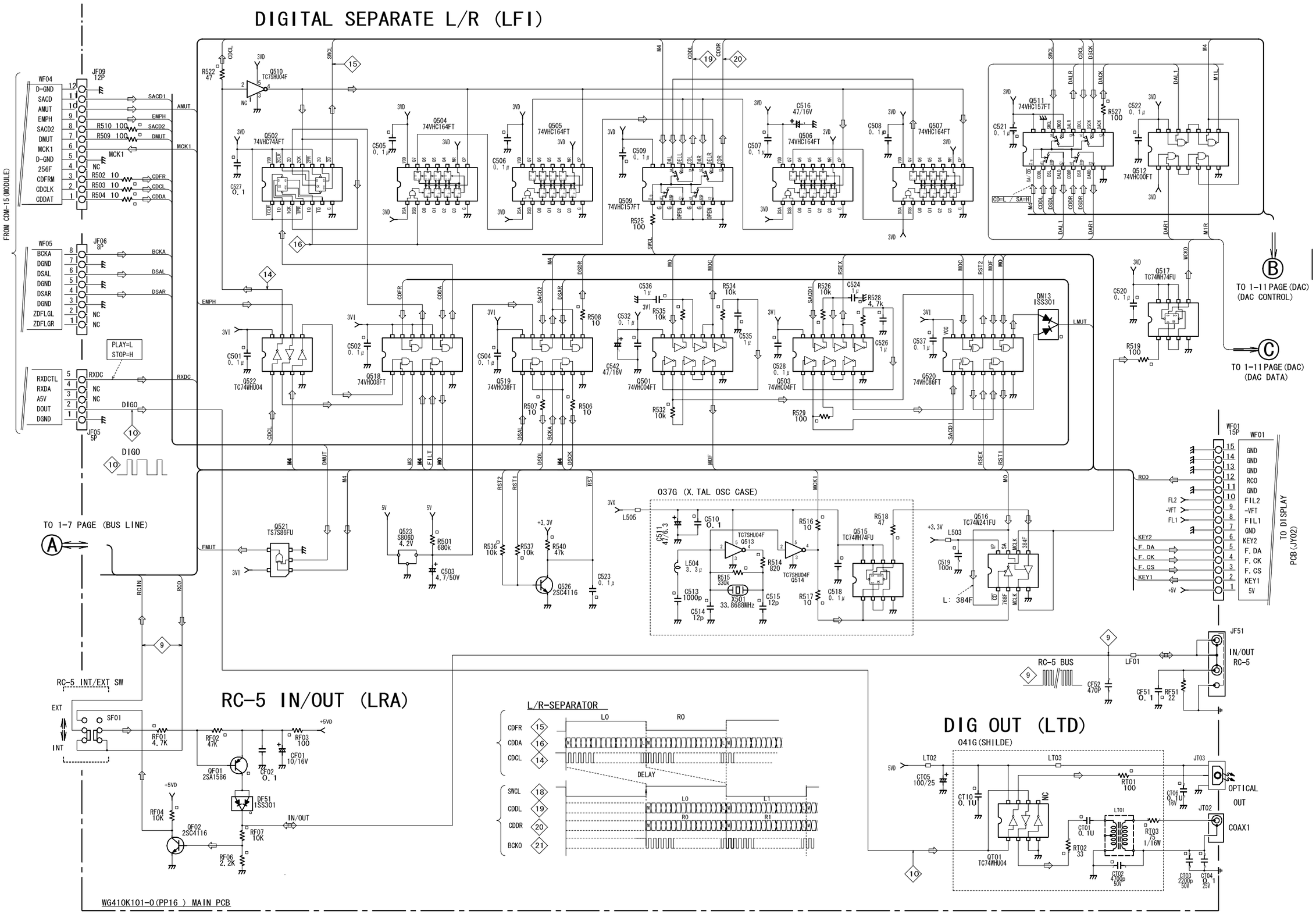
1.5 SCHEMATIC DIAGRAM

POWER AND MUTING/FILTER-SW



FUSE SPEC FOR EACH VERSION		
	F/U	N.C.S
F801	1.6A 125V	T1A 250V
F811	1A 250V	T315mA 250V
F812	1A 250V	T800mA 250V
F851	1A 250V	T800mA 250V
F852	1A 250V	T800mA 250V

DIGITAL SEPARATE L/R (LFI)



DAC/LPF AND CURRENT AMPLIFIRE

FROM 1-O PAGE
(DAC CONTROL)

FROM 1-10 PAGE
(DATA DATA)

DAC(LDA)

DIFFERENCIAL AND LPF(LPF)

CURRENT AMP AND LPF(LAU)

032G HDAM SHILED L.CH

031G HDAM SHILED L.CH

TO BAL AMP

KILL
FROM IC QN21
(PIN:6)

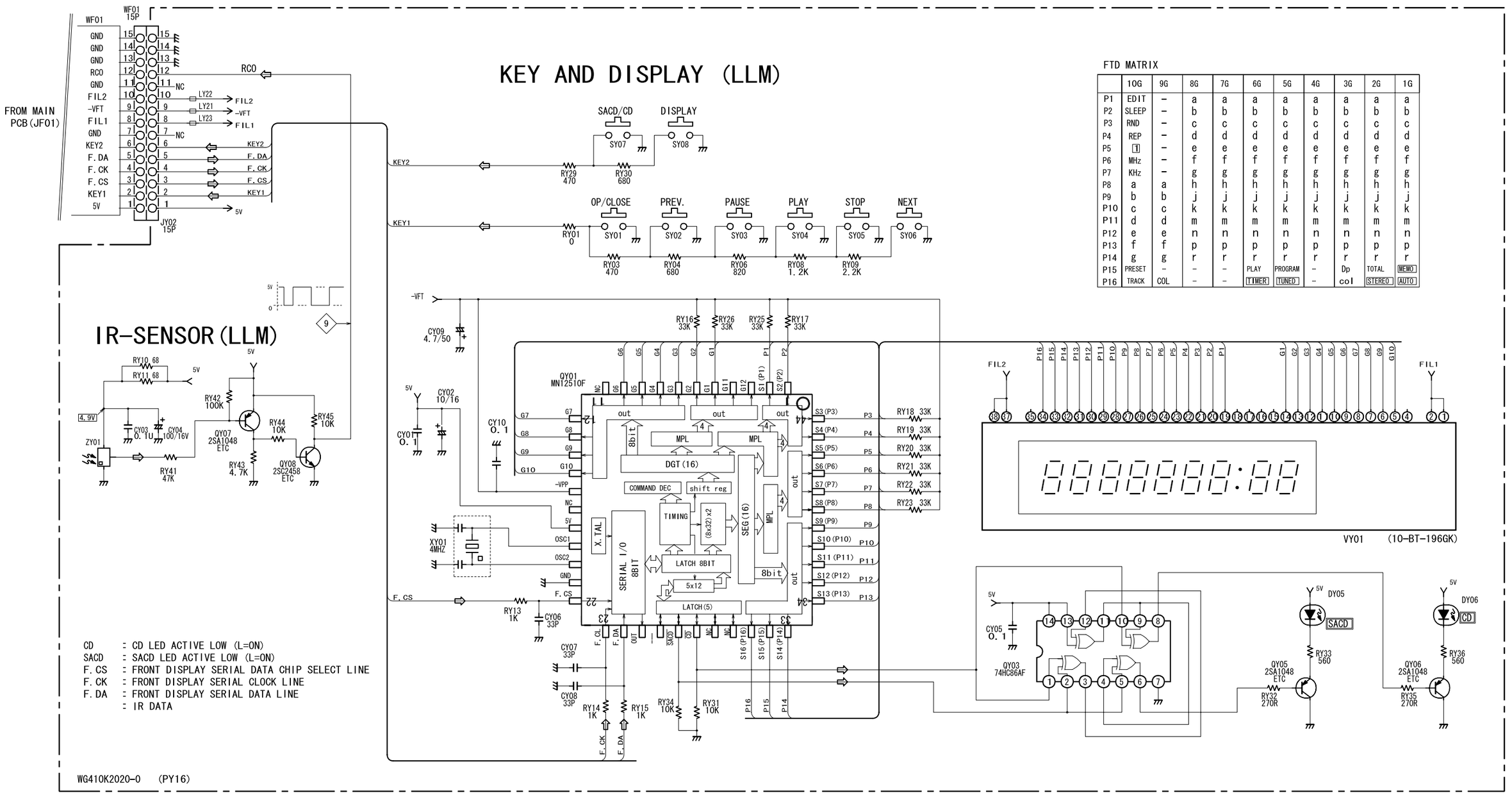
032G HDAM SHILED R.CH

031G HDAM SHILED R.CH

TO BAL AMP

WG410K101-0(PP16) MAIN PCB

DISPLAY DRIVER AND IR-SENSOR PCB

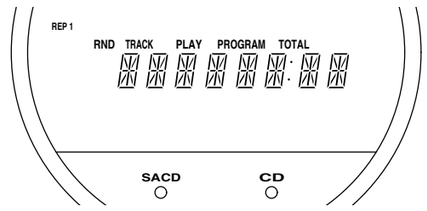


FTD MATRIX

	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G
P1	EDIT	–	a	a	a	a	a	a	a	a
P2	SLEEP	–	b	b	b	b	b	b	b	b
P3	RND	–	c	c	c	c	c	c	c	c
P4	REP	–	d	d	d	d	d	d	d	d
P5	1	–	e	e	e	e	e	e	e	e
P6	MHz	–	f	f	f	f	f	f	f	f
P7	KHz	–	g	g	g	g	g	g	g	g
P8	a	a	h	h	h	h	h	h	h	h
P9	b	b	j	j	j	j	j	j	j	j
P10	c	c	k	k	k	k	k	k	k	k
P11	d	d	m	m	m	m	m	m	m	m
P12	e	e	n	n	n	n	n	n	n	n
P13	f	f	p	p	p	p	p	p	p	p
P14	g	g	r	r	r	r	r	r	r	r
P15	PRESET	–	–	–	PLAY	PROGRAM	–	Dp	TOTAL	MEMO
P16	TRACK	COL	–	–	TIMER	TUNED	–	col	STEREO	AUTO

CD : CD LED ACTIVE LOW (L=ON)
SACD : SACD LED ACTIVE LOW (L=ON)
F.CS : FRONT DISPLAY SERIAL DATA CHIP SELECT LINE
F.CK : FRONT DISPLAY SERIAL CLOCK LINE
F.DA : FRONT DISPLAY SERIAL DATA LINE
: IR DATA

WG410K2020-0 (PY16)



POWER IN-SWICTH AND FTD BIAS

SACD MODULE UNIT
(CDM-15M/CDM-15MB)

MODULE TO MAIN CONNECT PWB

WF07
JF08 14P
CNP903
14 DGN
13 AT5
12 SACD2
11 RCIN
10 D-GND
9 FILM2
8 -VFT
7 FILM1
6 KEY2
5 FIP DA
4 FIP CK
3 FIP CS
2 KEY1
1 AT5V

5V
SACD2
RCIN
NC
NC
NC

DF01 DF02 DF03 DF04 DF05 DF06 DF07 DF08 DF09 DF10

KEY2
DA
CK
CS
KEY1

WF08
JF07 13P
CNP904
13 NC
12 D5V
11 3.3V-B
10 3.3V-A
9 D-GND
8 A-GND
7 M-GND
6 -VFT
5 M8V
4 FILM2
3 AT5V
2 FILM1
1 A5V

S3V
S5V
M8V
CF21 0.1U
CF22 0.1U
CF23 0.1U
CF24 220/6.3V
CF26 220/16V

L005
JF03
FL1 21
-VFT 20
FL2 19
18
GND 17
DSOF 16
S5V 15
14
S3V 13
12
SACD2 11
10
MGND 9
MGND 8
M8V 7
RCIN 6
F.CS 5
F.CK 4
F.DA 3
KEY2 2
KEY1 1

WF02
FL1
-VFT
FL2
GND
DSOF
D5V
D5V
DGND
DGND
3.3V
SACD2
MGND
MGND
M8V
M8V
RCIN
FIP CS
FIP CK
FIP DA
KEY2
KEY1

TO MAIN PCB
CONECTOR(JF02)

JL01

LLM

CY61 0.022
CY60 0.022
DY01
DY02
FL1
FL2
RY58 47
RY57 47
QY12 2SC2458 Y.GR
RY56 10K
RY55 47K
DIODE X4 : 1D3
(DY61/DY62/DY63/DY64)
DY63
DY64
DY61
DY62
-23V
CY62 100/50V
QY61 2SA1048 ETC
RY61 3.3K
DY66
DY65 24V
DY11 4.7V
CY63 100/35V
-VFT
-23V

CNP901
1 DGND
2 DOUT
3 A5V
4 RXDA
5 RXDCTL
WF06

CNP906
1 CDDAT
2 CDCLK
3 CDFRM
4 256F
5 D-GND
6 MCK1
7 FILTER
8 DMUT
9 EMPH
10 AMUT
11 SACD
12 D-GND
WF04

CNP905
1 ZDFLGR
2 ZDFLGL
3 DGND
4 DSAR
5 DGND
6 DSAL
7 DGND
8 BCKA
WF05

FOR MAIN PCB
CONECTOR(JF05/JF06/JF09)

FH01 : F= 5MM JUMPER

W002
RED
WHT
JH01 2P
J001 (S01-16C)
SH01
FH01
GH01 0.01UF AC.250V
(FOR U:C:N:S)
W002 2P-WIRE
BRN
BRN
JH03 2P
L006(3T)
JH04 2P
/F :10MM JUMPER

(L002)
SUB TRANS
AC2.9
AC2.9
AC29
AC29N

W001
AC IN

WHT
RED
4 3 2 1
JH02 2P OR 4P
BRN
PURP
RED
BLUE

WG410K201-0(PH16)

FOR F:U:N:S

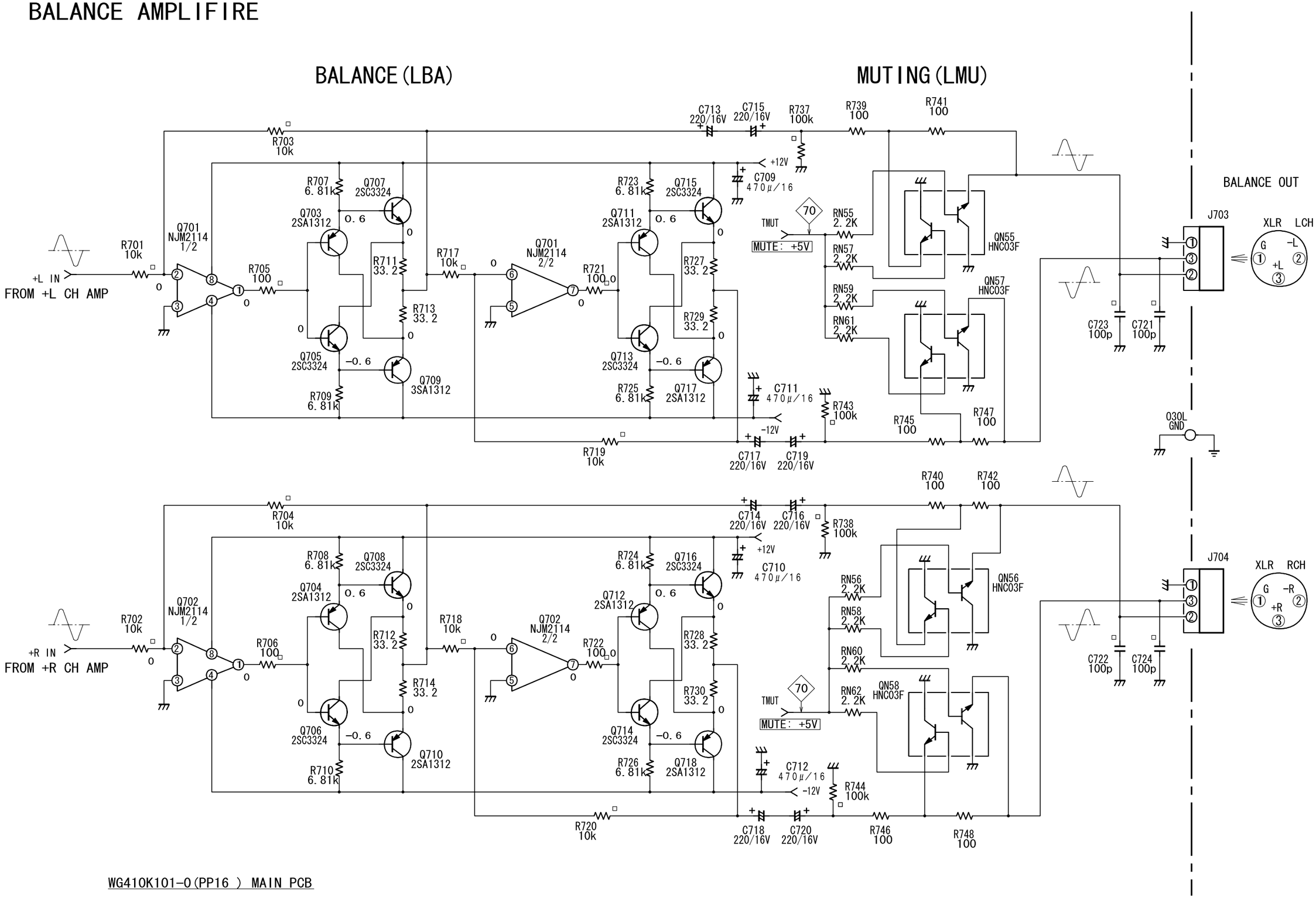
L001
L003 (F ONLY)
BRN AC13.1V
RED
AC13.1V
ORANGE
YELLOW AC8.1V
GREEN
BLUE AC18.4V
PURPLE
GREEN AC10.4V
BLUE
L004
AC12V
GND
AC12V
AC7.5
GND
AC17V
GND
AC9
GND
FOR J801

CONNECTION FOR TRANSF C(ONLY)

FOR JH02
BRN
PURP
RED
BLUE

L001
BRN AC13.1V
RED
AC13.1V
ORANGE
YELLOW AC8.1V
GREEN
BLUE AC18.4V
PURPLE
GREEN AC10.4V
BLUE
L004
AC12V
GND
AC12V
AC7.5
GND
AC17V
GND
AC9
GND
FOR J801

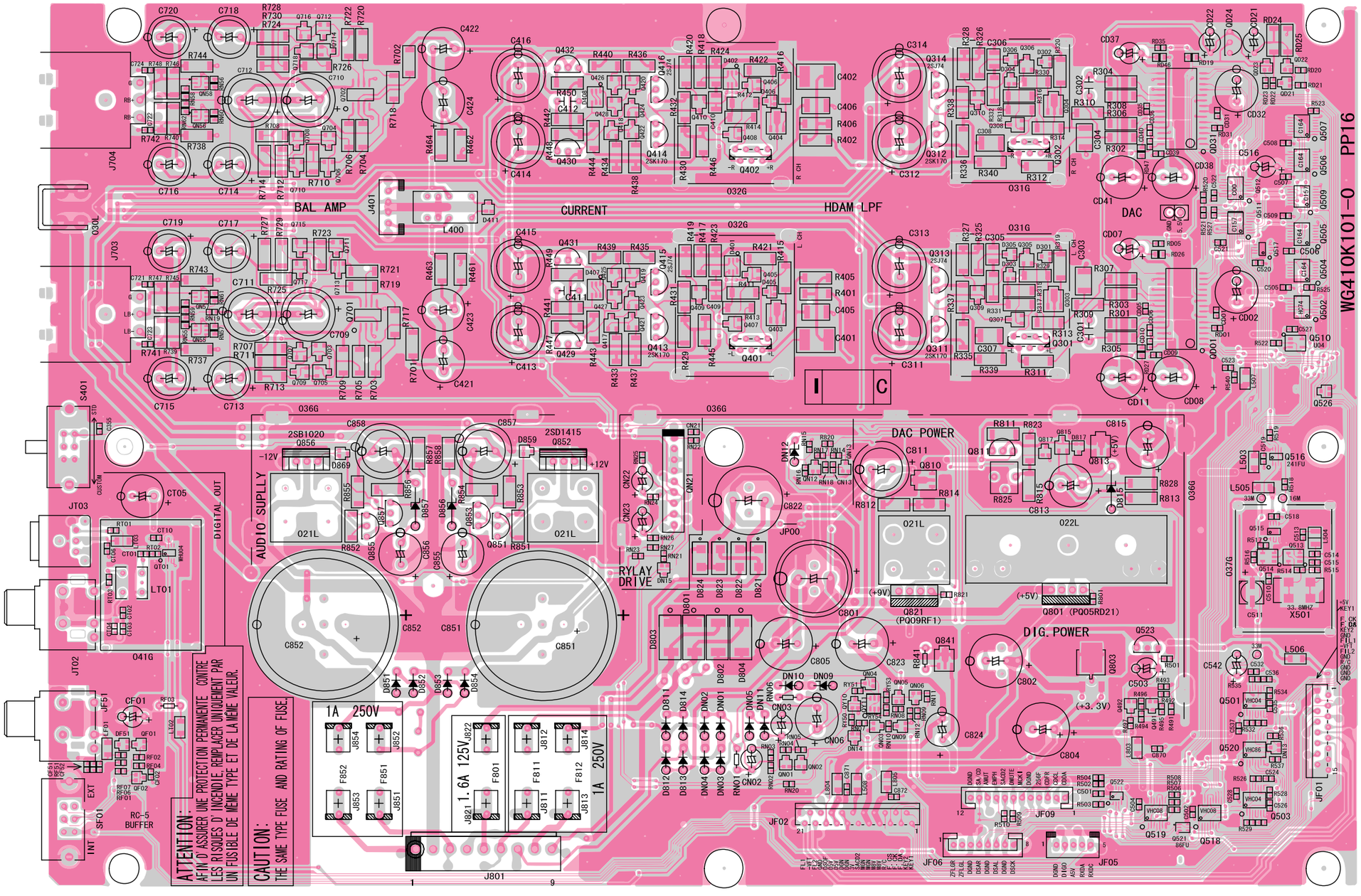
BALANCE AMPLIFIRE



WG410K101-0(PP16) MAIN PCB

1.6 PARTS LOCATION

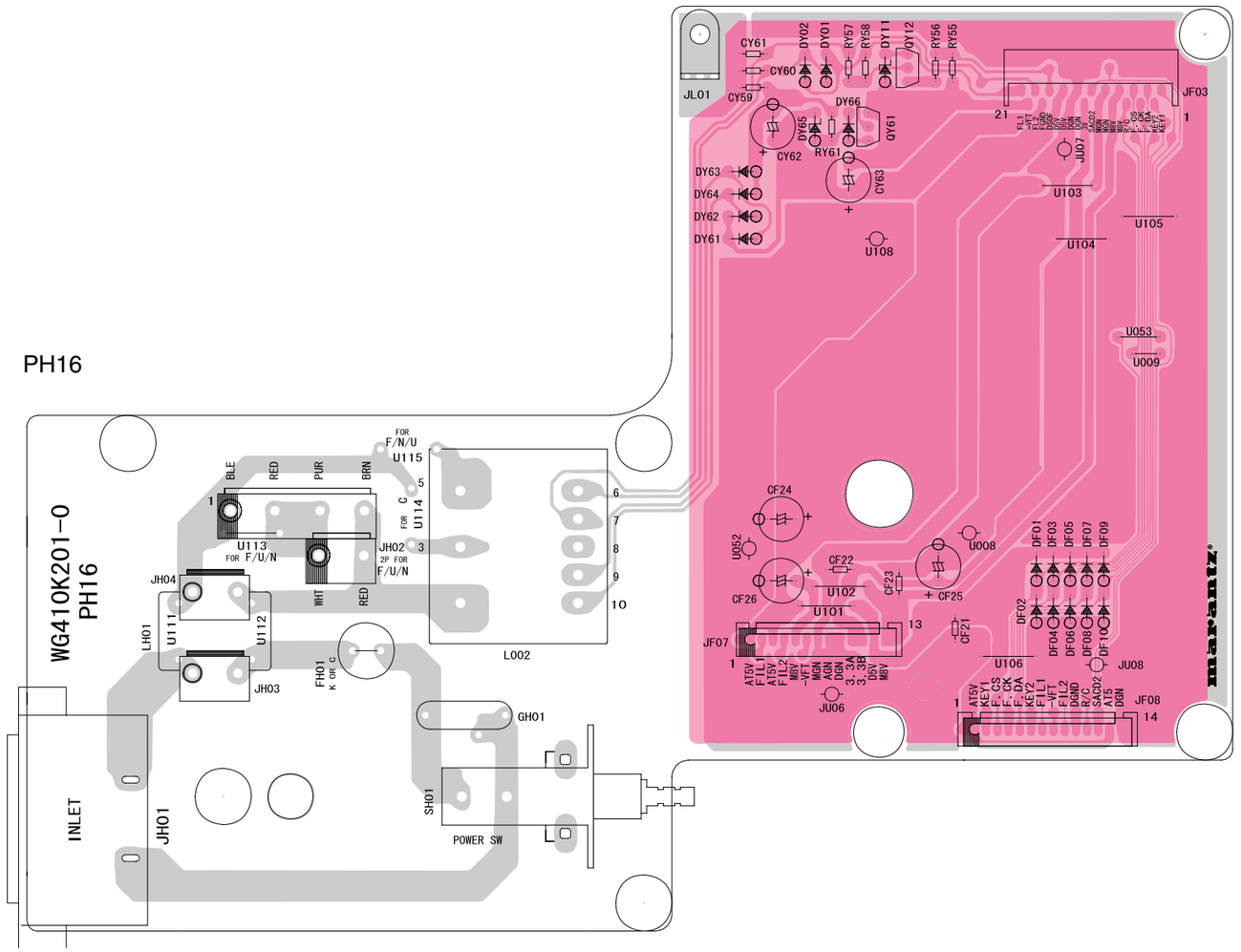
QN58	Q716	Q712	Q715	Q711	Q432	Q416	Q431	Q415	Q410	Q406	Q314	Q310	Q308	Q304	QD24	-	QD21	Q507	
QN56	Q718	Q714	Q717	Q713	Q426	Q420	Q425	Q419	Q408	Q404	Q312			Q302	QD31			Q506	
		Q702		Q701	Q428	Q424	Q427	Q423	Q402		Q313		Q305	Q303				Q509	
QN57	Q708	Q704	Q707	Q703	Q418	Q422	Q417	Q421	Q409	Q405	Q311	Q309	Q307	Q301			Q512	Q505	
QN55	Q710	Q706	Q709	Q705	Q430	Q414	Q429	Q413	Q407	Q403								Q504	
									Q401								Q511	Q502	
															QD01		Q517	Q510	Q526



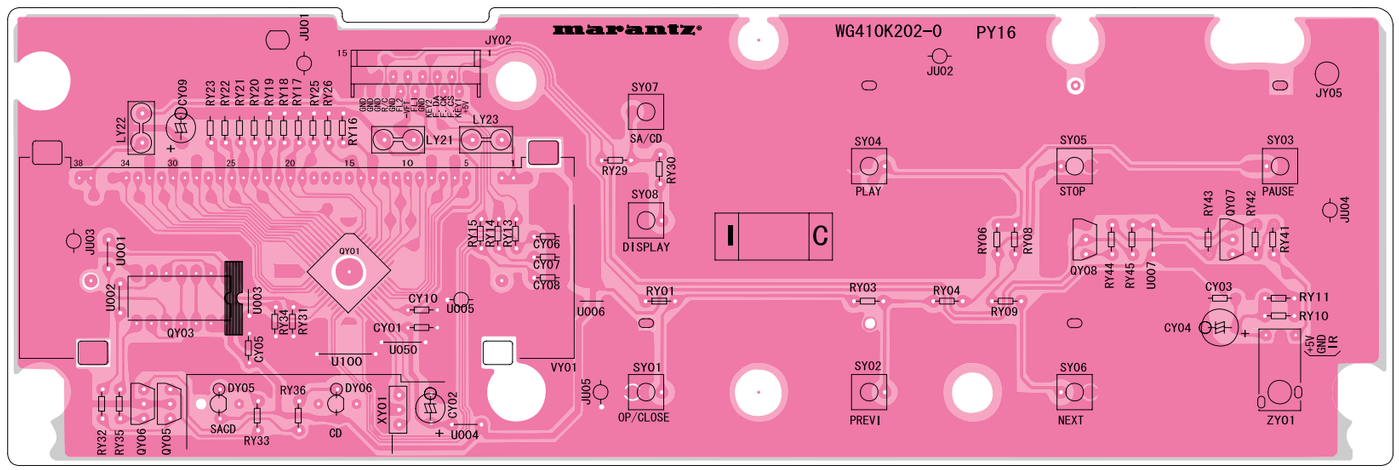
QF01	QT01			Q856	Q857	Q853	Q852			QN12	QN13	Q810	Q811	Q817	Q815	Q813		Q516	
QF02					Q855	Q851			QN21			Q821			Q801			Q515	
											QN04	QN05				Q492	Q491	Q514	Q513
											QY10	QN06						Q501	
											QY11	QN03						Q520	
												QN09						Q503	
										QN01	QN02								

QY61 QY12

PH16



PY16



QY05 QY03 QY01 QY08 QY07
QY06

1.7 ELECTRICAL ADJUSTMENTS

1.7 調　整

. Adjustment the Voltage of DAC (CS4397)

.Purpose

Set the Voltage of Audio part CS4397(QD01, QD31).

Adjustment point : R825(2.2Kohm)

Test point : J800

Equipment : Digital Multi Meter(DC voltage)

.Adjust the voltage at that status 5.4V to 5.5V by the trim resister R825.

.If there incorrect adjust, the unit shouls be defective of DISTORTION and AUDIO OUT PUT Voltage.

DAC電圧の調整

★目的

CS4397(QD01、QD31)のAUDIO部の電圧をSetupするため。

調整箇所：R825(2.2Kohm)

半固定抵抗で5.4～5.5Vに調整する。

TEST-POINT：J800

測定器：デジタルボルトメーター

★調整電圧による不良

Distortion並びにAudioのout put電圧の不良となる。

QD01/QD31(CS4397)

Fig-1 and Fig-2 chart are condition for DAC and pin of IC.

Select the CD/SACD mode by Fig-1 and Fig-2

QD01/QD31(CS4397)

SA-14に於いてCD/SACDのDACの動作モードはfig-1及びfig-2のChartによってそれぞれ（ICの各ピンの状態）CD/SACDのmodeが選択される。

Fig－1

FUNCTION		MODE CONTROL					DISCRIPTION
		M4 2pin	M3 3pin	M2 4pin	M1 14pin	M0 5pin	
CD	input Mode	0	x	x	1	0	Right justfied to 16bit input mode selected
	Empha on/off (only CD)	0	0	1	x	x	44.1k Deemphsis on mode selected
		0	1	1	x	x	Deemphasis disabled
SACD Mode		1	0	1	dsd-R	0	DSD filter custom (64x Over sampled)
		1	0	1	dsd-R	1	DSD filter standard (128x Over sampled)

Fig－2

ITEM	CD	SACD	
MCLK(10pin)	16.9344MHz	Filter : custom 16.9344MHz	Filter : Standard 8.4672MHz
CMOD(12pin)	44.1KHz	H=(3.3v fix)	

Note

1. Set the CMOD of SACD(12pin=H)
2. When replay CD disc, A frequency of 44.1KHz input CMOD
3. The master CLK(192/384fs) for MCLK change by mode.

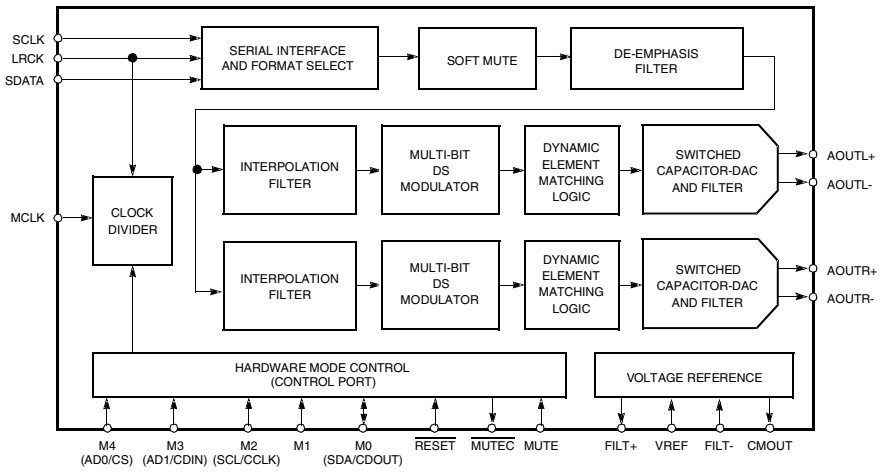
Note

1. SACD時CMODの設定(12pin=H)
2. CD時CMODには44.1KHzがinput。
3. MCLKはmodeによりmaster CLK(192/384fs）が変わる。

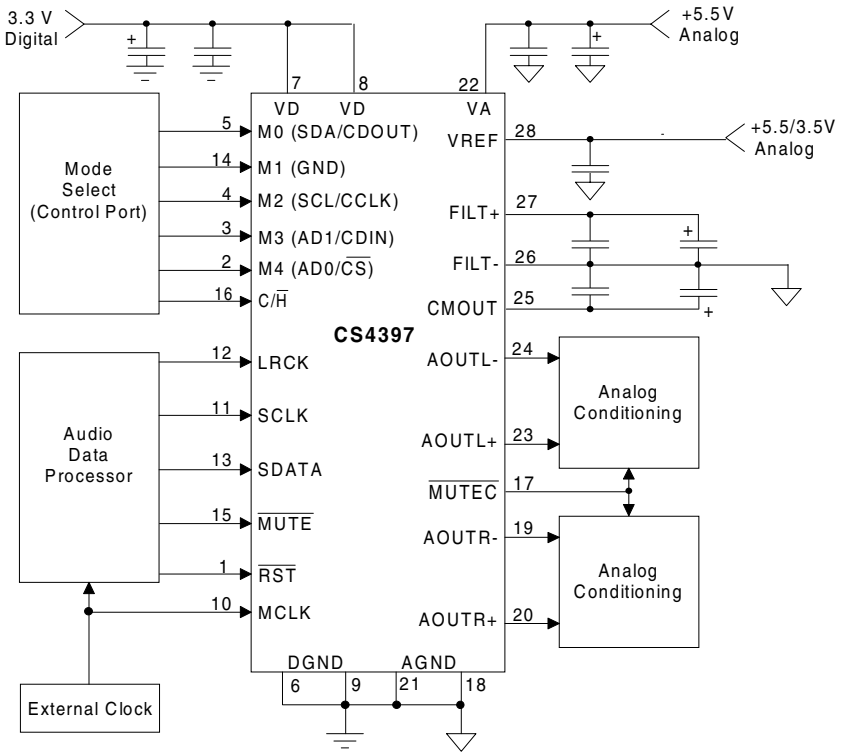
1.8 IC DATA

QD01/QD31 CS4397

Block Diagram

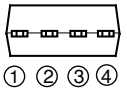


Pin Configuration



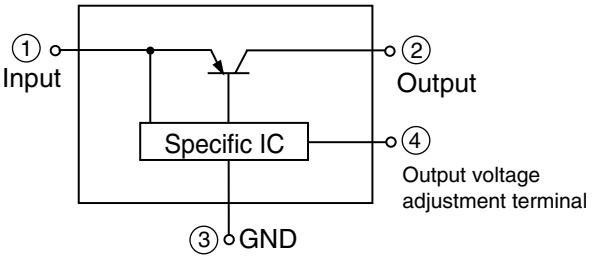
Q801 PQ05RD21 & Q821 PQ09RF1

Pin Configuration

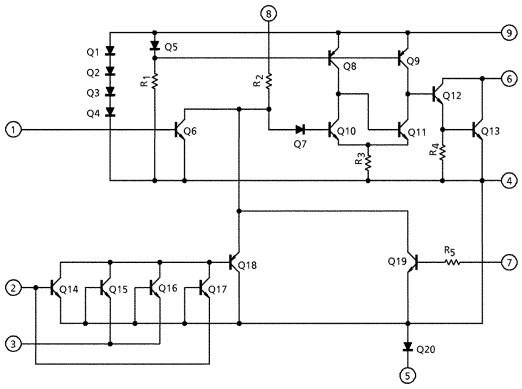


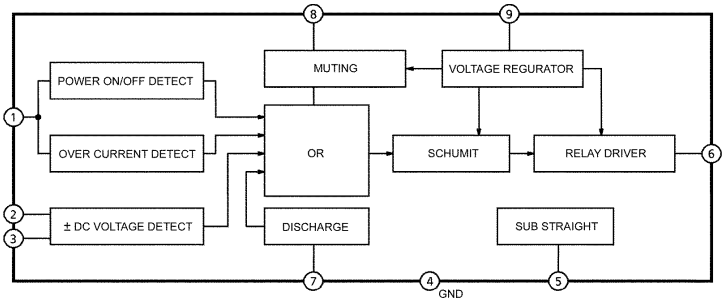
① DC input(Vin)
② DC output(Vo)
③ GND
④ Output voltage adjustment terminal(Vadj)

Block Diagram



TA7317P(QN21)





CS4397
Pin Function

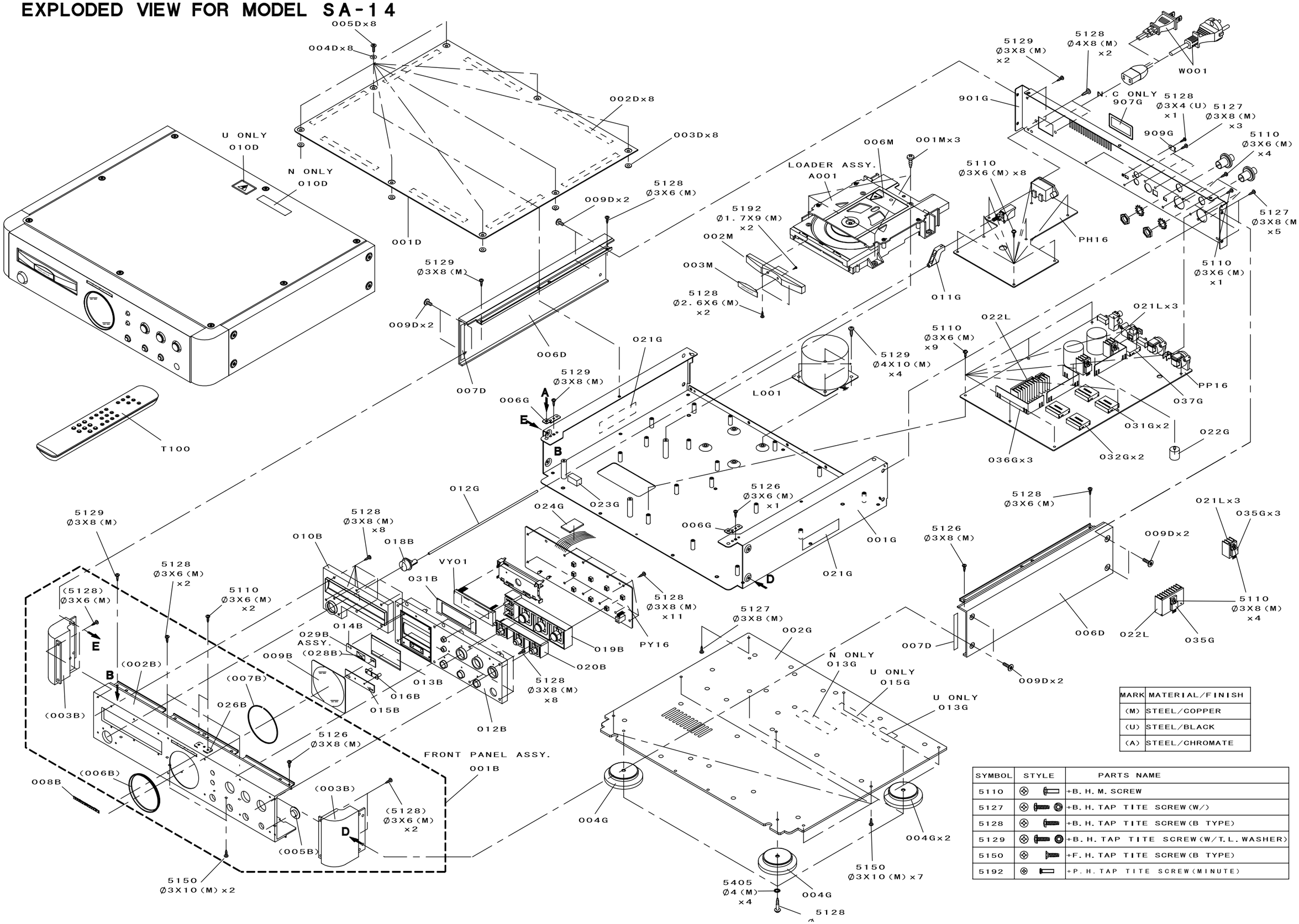
No.	Pin Name	I/O	Description
1	RST	I	Reset input (Low active)
2	M4(AD0/CS)	I	See Fig-1
3	M3(AD1/CDIN)	I	See Fig-1
4	M2(SCL/CCLK))	I	See Fig-1
5	M0(SDA/CDOUT)	I/O	See Fig-1
6	DGND		Digital ground
7	VD		Digital power supply +3.3V
8	VD		Digital power supply +3.3V
9	DGND		Digital ground
10	MCLK	I	Master clock PCM mode:384Fs(16.9344MHz) DSD mode:192Fs (8.4672MHz/16.9344MHz)
11	SCLK	I	Serial data clock
12	LRCK(PCM) CLKMODE(DSD)	I I	PCM mode:Left/Right channel clock(44.1KHz) DSD mode:Select H(3.3V)
13	SDATA(PCM) DSD_L(DSD)	I	PCM mode:Serial audio data DSD mode:Direct Stream Digital audio data (Left)
14	M1(PCM) DSD_R(DSD)	I	PCM mode:(Low) DSD mode:Direct Stream Digital audio data (Right)
15	MUTE	I	Mute input (Low active)
16	C/H	I	Control port (H) /Hardware (L) mode select
17	MUTEC	O	Mute control (Low active)
18	AGND		Analog ground
19	AOUTR-	O	Right channel negative Analog out
20	AOUTR+	O	Right channel positive Analog out
21	AND		Analog ground
22	VA		Analog power supply +5.5V
23	AOUTL+	O	Left channel positive Analog out
24	AOUTL-	O	Left channel negative Analog out
25	CMOUT	O	Common mode voltage
26	FILT-	I	Reference ground
27	FILT+	O	Reference filter
28	VREF		Voltage reference input

1.9 EXPLODED VIEW AND PARTS LIST

POS. NO	VERS. COLOR	PART NO. (PCS)	DESCRIPTION	PART NO. (MJI)
001B	/C1G		ASSY GOLD BLAST	410K248520
	/S1G			
	/U1G			
001B	/F1N		FRONT PANEL ASSY GOLD AIR	410K248530
001B	/U1B		FRONT PANEL ASSY BLACK LAST	410K248510
002B	/C1G		FRONT PANEL GOLD BLAST	410K248110
	/S1G			
	/U1G			
002B	/F1N		FRONT PANEL GOLD HAIR LINE	410K248120
002B	/U1B		FRONT PANEL BLACK	410K248010
003B	/C1G	4822 426 10497	ESCUTCHEON GOLD	269J063110
	/S1G			
	/U1G			
003B	/F1N	4822 426 10497	ESCUTCHEON GOLD	269J063110
003B	/U1B	4822 426 10496	ESCUTCHEON BLACK	269J063010
005B	GOLD	4822 381 12016	LENS IR GOLD	256J355030
005B	BLACK	4822 381 12015	LENS IR BLACK	256J355040
006B	GOLD		RING GOLD NO.4	410K353120
006B	BLACK		RING BLACK NO.1	410K353010
007B			SPRING FOR RING	410K115010
008B	GOLD	9965 000 01554	BADGE MNTZ GOLD	313J251110
008B	BLACK	9965 000 01553	BADGE MNTZ BLACK	313J251010
009B			WINDOW	410K158010
010B	GOLD		BUSHING POWER/TRAY GOLD	410K259110
010B	BLACK		BUSHING POWER/TRAY BLACK	410K259010
012B	GOLD		BUSHING FL/PLAY BUTTON GOLD	410K259120
012B	BLACK		BUSHING FL/PLAY BUTTON BLACK	410K259020
014B			INDICATOR SACD LOGO	410K265010
015B			INDICATOR SACD/CD LENS	410K265020
016B			LENS SACD/CD	392K355020
018B	GOLD		BUTTON POWER GOLD	410K270110
018B	BLACK		BUTTON POWER BLACK	410K270010
019B	GOLD		BUTTON PLAY/STOP GOLD	410K270120
019B	BLACK		BUTTON PLAY/STOP BLACK	410K270020
021B	GOLD		BUTTON OPEN/CLOSE GOLD	410K270130
021B	BLACK		BUTTON OPEN/CLOSE BLACK	410K270030
028B			BADGE SACD LOGO	410K251010
001D	GOLD		LID TOP GOLD	410K257110
001D	BLACK		LID TOP BLACK	410K257010
002D			SHEET FOR TOP LID INSIDE	313J107010
005D	GOLD	4822 502 14425	SCREW FOR TOP LID	323S010020
005D	BLACK	4822 502 21693	SCREW FOR TOP LID	323S010030
006D	GOLD	4822 426 10499	SIDE PANEL GOLD	269J249110
006D	BLACK	4822 426 10498	SIDE PANEL BLACK	269J249010
009D	GOLD	4822 502 14425	SCREW FOR SIDE PANEL	323S010020
009D	BLACK	4822 502 21693	SCREW FOR SIDE PANEL	323S010030
004G			LEG GOLD	163J057410
011G		9965 000 00588	POWER BUTTON LINK	376K121010
012G			INSULATOR SHAFT POWER BUTTON	410K120010
001M			SCREW MECHANISM	410K010010
002M	GOLD		ESCUTCHEON GOLD	392K063150
002M	BLACK		ESCUTCHEON BLACK	392K063050
003M			ESCUTCHEON SACD LOGO	392K063160

POS. NO	VERS. COLOR	PART NO. (PCS)	DESCRIPTION	PART NO. (MJI)
A001	GOLD		MECHANISM SACD CDM-15M	392K304510
A001	BLACK		MECHANISM SACD CDM-15MB	392K304520
⚠ L001	/C1		MAINS TRANSF. 110/220V	TS46010040
⚠ L001	/F1		MAINS TRANSF. 100V	TS46010010
⚠ L001	/S1		MAINS TRANSF.MAIN 230V	TS46010020
⚠ L001	/U1		MAINS TRANSF.MAIN 120V	TS46010030
⚠ W001	/C1G		MAINS CORD CORDSET 7A 250V	ZC02009010
⚠ W001	/F1N	4822 321 11337	MAINS CORD MITY 3P 12A 125V F	ZC01802080
⚠ W001	/S1G		MAINS CORD S PORE 2P 10A 250V	ZC01804100
⚠ W001	/U1B		MAINS CORD UL/CSA 10A 125V	ZC01803100
⚠ W001	/U1G		MAINS CORD UL/CSA 10A 125V	ZC01803100
			PACKING	
001T	/C1,/S1		USER GUIDE SA-14	410K851350
001T	/F1		USER GUIDE SA-14	410K851110
001T	/U1		USER GUIDE SA-14	410K851250
T100			UNIT KIT REMOTE CONTROLLER RC-14SA	ZK410K0010
			NOT STANDARD SPARE PARTS	
001S			PACKING CASE	410K801010
002S			CUSHION LEFT	410K809010
003S			CUSION RIGHT	410K809020
006S			PROTECTOR TRAY ESCUTCHEON	392K269010

EXPLODED VIEW FOR MODEL SA-14



MARK	MATERIAL/FINISH
(M)	STEEL/COPPER
(U)	STEEL/BLACK
(A)	STEEL/CHROMATE

SYMBOL	STYLE	PARTS NAME
5110		+B.H.M.SCREW
5127		+B.H.TAP TITE SCREW(W/)
5128		+B.H.TAP TITE SCREW(B TYPE)
5129		+B.H.TAP TITE SCREW(W/T.L.WASHER)
5150		+F.H.TAP TITE SCREW(B TYPE)
5192		+P.H.TAP TITE SCREW(MINUTE)

1.10 ELECTRICAL PARTS LIST

ASSIGNMENT OF COMMON PARTS CODES.

RESISTORS

R✻✻✻: 1) GD05 × × × 140, Carbon film fixed resistor, ±5% 1/4W
R✻✻✻: 2) GD05 × × × 160, Carbon film fixed resistor, ±5% 1/6W
① ——— Resistance value

Examples ;
① Resistance value

0.1 Ω	001	10 Ω	100	1 kΩ	102	100 kΩ	104
0.5 Ω	005	18 Ω	180	2.7 kΩ	272	680 kΩ	684
1 Ω	010	100 Ω	101	10 kΩ	103	1 MΩ	105
6.8 Ω	068	390 Ω	391	22 kΩ	223	4.7 MΩ	475

Note : Please distinguish 1/4W from 1/6W by the shape of parts used actually.

CAPACITORS

C✻✻✻: CERAMIC CAP.
3) DD1 × × × × 370, Ceramic capacitor
Disc type
② ③ Temp.coeff.P350 ～N1000, 50V
③ ——— Capacity value
② ——— Tolerance

Examples ;
② Tolerance (Capacity deviation)
±0.25 pF 0
±0.5 pF 1
±5% 5
✻ Tolerance of COMMON PARTS handled here are as follows :
0.5 pF ～ 5 pF .... ±0.25 pF
6 pF ～ 10 pF .... ±0.5 pF
12 pF ～ 560 pF .... ±5%
③ Capacity value

0.5 pF	005	3 pF	030	100 pF	101
1 pF	010	10 pF	100	220 pF	221
1.5 pF	015	47 pF	470	560 pF	561

C✻✻✻ : CERAMIC CAP.
4) DK16 × × × 300, High dielectric constant ceramic capacitor
④ Disc type
Temp.chara. 2B4, 50V
④ ——— Capacity value

Examples ;
④ Capacity value

100 pF	101	1000 pF	102	10000 pF	103
470 pF	471	2200 pF	222		

C✻✻✻ : 5) ELECTROLY CAP. (⫩), 6) FILM CAP. (⫧)
5) EA × × × × × × 10, Electrolytic capacitor
⑤ ⑥ One-way lead type, Tolerance ±20%
⑥ ——— Working voltage
⑤ ——— Capacity value

Examples ;
⑤ Capacity value

0.1 µF	104	4.7 µF	475	100 µF	107
0.33 µF	334	10 µF	106	330 µF	337
1 µF	105	22 µF	226	1100 µF	118
				2200 µF	228

⑥ Working voltage

6.3V	006	25V	025
10V	010	35V	035
16V	016	50V	050

6) DF15 × × × 350 → Plastic film capacitor
DF15 × × × 310 → One-way type, Mylar ±5% 50V
DF16 × × × 310 → Plastic film capacitor
⑦ One-way type, Mylar ±10% 50V
⑦ ——— Capacity value

Examples ;
⑦ Capacity value

0.001 µF (1000 pF)	102	0.1 µF	104
0.0018 µF	182	0.56 µF	564
0.01 µF	103	1 µF	105
0.015 µF	153		

NOTE : 1) The above CODES (R✻✻✻ , R✻✻✻ , C✻✻✻ , C ✻✻✻ and C ✻✻✻) are omitted on the schematic diagram in some case.
2) On the occasion, be confirmed the common parts on the parts list.
3) Refer to "Common Parts List" for the other common parts (**RI05**, **DD4**, **DK4**).

NOTE ON SAFETY FOR FUSIBLE RESISTOR :

The suppliers and their type numbers of fusible resistors are as follows;

1. KOA Corporation

Part No. (MJI)	Type No. (KOA)	Description
NH05 × × × 140	RF25S × × × × Ω J	(±5% 1/4W)
NH05 × × × 120	RF50S × × × × Ω J	(±5% 1/2W)
NH85 × × × 110	RF73B2A × × × × Ω J	(±5% 1/10W)
NH95 × × × 140	RF73B2E × × × × Ω J	(±5% 1/4W)

✻ Resistance value
Resistance value (0.1 Ω 10 kΩ)

2. Matsushita Electronic Components Co., Ltd

Part No. (MJI)	Type No. (MEC)	Description
NF05 × × × 140	ERD-2FCJ × × ×	(±5% 1/4W)
RF05 × × × 140		
NF02 × × × 140	ERD-2FCG × × ×	(±2% 1/4W)
RF02 × × × 140		

✻ Resistance value
✻ Resistance value

Examples ;
✻ Resistance value

0.1 Ω	001	10 Ω	100	1 kΩ	102	100 kΩ	104
0.5 Ω	005	18 Ω	180	2.7 kΩ	272	680 kΩ	684
1 Ω	010	100 Ω	101	10 kΩ	103	1 MΩ	105
6.8 Ω	068	390 Ω	391	22 kΩ	223	4.7 MΩ	475

ABBREVIATION AND MARKS

ANT.	: ANTENNA	BATT.	: BATTERY
CAP.	: CAPACITOR	CER.	: CERAMIC
CONN.	: CONNECTING	DIG.	: DIGITAL
HP	: HEADPHONE	MIC.	: MICROPHONE
µ-PRO	: MICROPROCESSOR	REC.	: RECORDING
RES.	: RESISTOR	SPK	: SPEAKER
SW	: SWITCH	TRANSF.	: TRANSFORMER
TRIM.	: TRIMMING	TRS.	: TRAMSISTOR
VAR.	: VARIABLE	X'TAL	: CRYSTAL

NOTE ON SAFETY :

Symbol ⚠ Fire or electrical shock hazard. Only original parts should be used to replaced any part marked with symbol ⚠ . Any other component substitution (other than original type), may increase risk of fire or electrical shock hazard.

安全上の注意：

⚠がついている部品は、安全上重要な部品です。必ず指定されている部品番号の部品を使用して下さい。

POS. NO	VERS. COLOR	PART NO. (PCS)	DESCRIPTION	PART NO. (MJI)
			PH16-POWER SW/SUB TRANS CIRCUIT BOARD	
			PH16-CAPACITORS	
CF24		4822 124 90364	ELECT 220µF M 16V	OA22701620
CF26		4822 124 90364	ELECT 220µF M 16V	OA22701620
CY60		4822 122 40588	CER. 0.022µF ±20%	DA17223110
CY61		4822 122 40588	CER. 0.022µF ±20%	DA17223110
CY62		4822 124 90355	ELECT 100µF M 50V	OA10705020
CY63		4822 124 41536	ELECT 100µF M 35V	OA10703520
			PH16-RESISTORS(COMMON)	
R✻✻✻			CARBON FILM FIXED RES. ±5% 1/6W : RY55-RY58 RY61	
			PH16-SEMICONDUCTORS	
DF01				
∫		4822 130 32362	DIODE 1SS176 MA165 1SS254	HD20002000
DF10			30V 0.1A	
DY01		4822 130 82421	DIODE 1D3 1A/200V	HD20002710
DY02		4822 130 82421	DIODE 1D3 1A/200V	HD20002710
DY61				
∫		4822 130 82421	DIODE 1D3 1A/200V	HD20002710
DY64				
DY65		4822 130 80116	ZENER DIODE 24V	HD32401000
DY66		4822 130 32362	DIODE 1SS176 MA165 1SS254 30V 0.1A	HD20002000
QY12		4822 130 60839	TRS. 2SC2458 (Y GR)	HT324582B0
QY61		4822 130 42715	TRS. 2SA1048 2SA933S 2SA1267	HT10001000
			PH16-MISCELLANEOUS	
⚠ FH01	/C1,/S1, /U1	4822 252 11189	FUSE T2.5A/250V TR5 N O.19372	FS20250200
⚠ GH01		4822 121 43732	FILM 0.01µF M 250V AC	DF77103500
JF03			JACK 21FE-ST-VK-N	YJ07020170
⚠ JH01			JACK MAINS INLET M1818-A	YJ04002510
⚠ L002	/C1,/S1	4822 146 10891	MAINS TRANSF. SUB 115/230V	TS13517060
⚠ L002	/F1		MAINS TRANSF.SUB 100V	TS13517050
⚠ L002	/U1		MAINS TRANSF.SUB 120V	TS13517070
⚠ SH01		4822 276 13364	PUSH SWITCH SDDLD1 POWER TV-3	SP01011990
			PP16-MAIN/DAC/AUDIO CIRCUIT BOARD	
			PP16-CAPACITORS	
CD01		4822 126 11687	CER. 0.1µF +80% -20% 25V	DK98104200
CD02		4822 124 90354	ELECT 100µF M 16V	OA10701620
CD05		4822 126 11687	CER. 0.1µF +80% -20% 25V	DK98104200
CD06		4822 126 11687	CER. 0.1µF +80% -20% 25V	DK98104200
CD07		4822 124 22237	ELECT 10µF 16V	OA10601650
CD08		4822 124 23514	ELECT 100µF 16V	OA10701650
CD09		4822 126 11687	CER. 0.1µF +80% -20% 25V	DK98104200
CD10		4822 126 11687	CER. 0.1µF +80% -20% 25V	DK98104200
CD11		4822 124 23514	ELECT 100µF 16V	OA10701650
CD21		4822 124 90352	ELECT 10µF M 16V	OA10601620
CD22		4822 124 90353	ELECT 100µF M 10V	OA10701020
CD31		4822 126 11687	CER. 0.1µF +80% -20% 25V	DK98104200
CD32		4822 124 90354	ELECT 100µF M 16V	OA10701620
CD35		4822 126 11687	CER. 0.1µF +80% -20% 25V	DK98104200
CD36		4822 126 11687	CER. 0.1µF +80% -20% 25V	DK98104200
CD37		4822 124 22237	ELECT 10µF 16V	OA10601650
CD38		4822 124 23514	ELECT 100µF 16V	OA10701650
CD39		4822 126 11687	CER. 0.1µF +80% -20% 25V	DK98104200
CD40		4822 126 11687	CER. 0.1µF +80% -20% 25V	DK98104200
CD41		4822 124 23514	ELECT 100µF 16V	OA10701650

POS. NO	VERS. COLOR	PART NO. (PCS)	DESCRIPTION	PART NO. (MJI)
CF01		4822 124 90352	ELECT 10µF M 16V	OA10601620
CF02		4822 126 11687	CER. 0.1µF +80% -20% 25V	DK98104200
CF51		4822 126 11687	CER. 0.1µF +80% -20% 25V	DK98104200
CF52		4822 126 11568	CER. 470pF ±10% 50V	DK96471300
CN02		4822 124 41543	ELECT 1µF 50V	OA10505020
CN03		4822 124 90352	ELECT 10µF M 16V	OA10601620
CN06		4822 124 41541	ELECT 470µF M 35V	OA47703520
CN13		4822 126 11687	CER. 0.1µF +80% -20% 25V	DK98104200
CN21		4822 126 11567	CER. 0.022µF ±10% 25V	DK96223200
CN22		4822 124 90357	ELECT 2.2µF M 50V	OA22505020
CN23		4822 124 22274	ELECT 4.7µF M 50V	OA47505020
CT01		4822 126 11687	CER. 0.1µF +80% -20% 25V	DK98104200
CT02		4822 126 11685	CER. 4700 pF ±10 % 50V	DK96472300
CT03		4822 126 12339	CER. 2200pF ±10% 50V	DK96222300
CT04		4822 126 11687	CER. 0.1µF +80% -20% 25V	DK98104200
CT05		4822 124 80119	ELECT 100µF 25V	OA10702540
CT06		4822 126 11687	CER. 0.1µF +80% -20% 25V	DK98104200
CT10		4822 126 11687	CER. 0.1µF +80% -20% 25V	DK98104200
C301			FILM 1800pF ±5% 160V	OF55182550
C302			FILM 1800pF ±5% 160V	OF55182550
C303			MICA CHIP 390pF ±5%	DF95391500
C304			MICA CHIP 390pF ±5%	DF95391500
C305		4822 123 30422	MICA CHIP 33pF 500WV	DF95330500
C306		4822 123 30422	MICA CHIP 33pF 500WV	DF95330500
C307			MICA CHIP 120pF 500WV	DF95121500
C308			MICA CHIP 120pF 500WV	DF95121500
C311	/C1,/S1	4822 124 80958	ELECT 470µF 16V	OA47701640
C311	/F1,/U1	4822 124 11953	ELECT 470µF M 16V	OA47701650
C312	/C1,/S1	4822 124 80958	ELECT 470µF 16V	OA47701640
C312	/F1,/U1	4822 124 11953	ELECT 470µF M 16V	OA47701650
C313	/C1,/S1	4822 124 80958	ELECT 470µF 16V	OA47701640
C313	/F1,/U1	4822 124 11953	ELECT 470µF M 16V	OA47701650
C314	/C1,/S1	4822 124 80958	ELECT 470µF 16V	OA47701640
C314	/F1,/U1	4822 124 11953	ELECT 470µF M 16V	OA47701650
C355		4822 126 11687	CER. 0.1µF +80% -20% 25V	DK98104200
C401			MICA CHIP 1200pF 100WV	DF95122510
C402			MICA CHIP 1200pF 100WV	DF95122510
C405		4822 123 30362	MICA CHIP 560pF 100WV	DF95561510
C406		4822 123 30362	MICA CHIP 560pF 100WV	DF95561510
C409		4822 123 30422	MICA CHIP 33pF 500WV	DF95330500
C410		4822 123 30422	MICA CHIP 33pF 500WV	DF95330500
C411		9965 000 01564	FILM 680pF ±5% 100V	OF55681540
C412		9965 000 01564	FILM 680pF ±5% 100V	OF55681540
C413	/C1,/S1	4822 124 80958	ELECT 470µF 16V	OA47701640
C413	/F1,/U1	4822 124 11953	ELECT 470µF M 16V	OA47701650
C414	/C1,/S1	4822 124 80958	ELECT 470µF 16V	OA47701640
C414	/F1,/U1	4822 124 11953	ELECT 470µF M 16V	OA47701650
C415	/C1,/S1	4822 124 80958	ELECT 470µF 16V	OA47701640
C415	/F1,/U1	4822 124 11953	ELECT 470µF M 16V	OA47701650
C416	/C1,/S1	4822 124 80958	ELECT 470µF 16V	OA47701640
C416	/F1,/U1	4822 124 11953	ELECT 470µF M 16V	OA47701650
C421				
∫		4822 124 80123	ELECT 220µF 16V	OA22701640
C424				
C501		4822 126 11687	CER. 0.1µF +80% -20% 25V	DK98104200
C502		4822 126 11687	CER. 0.1µF +80% -20% 25V	DK98104200
C503		4822 124 22274	ELECT 4.7µF M 50V	OA47505020
C504				
∫		4822 126 11687	CER. 0.1µF +80% -20% 25V	DK98104200
C510				
C511		4822 124 11131	TANTAL CHIP 47µF 6.3V	EY47600620
C513		5322 126 11578	CER. 1000pF ±10% B 50V	DK96102300
C514		4822 126 11663	CER. 12pF ±5 % 50V	DD95120300
C515		4822 126 11663	CER. 12pF ±5 % 50V	DD95120300

POS. NO	VERS. COLOR	PART NO. (PCS)	DESCRIPTION	PART NO. (MJI)
C516		4822 124 41539	ELECT 47µF M 16V	OA47601620
C518				
∫		4822 126 11687	CER. 0.1µF +80% -20% 25V	DK98104200
C523				
C524		4822 126 13303	CER. 1µF +80% -20% 10V	DK98105200
C526		4822 126 13303	CER. 1µF +80% -20% 10V	DK98105200
C527		4822 126 11687	CER. 0.1µF +80% -20% 25V	DK98104200
C528		4822 126 11687	CER. 0.1µF +80% -20% 25V	DK98104200
C532		4822 126 11687	CER. 0.1µF +80% -20% 25V	DK98104200
C535		4822 126 13303	CER. 1µF +80% -20% 10V	DK98105200
C536		4822 126 13303	CER. 1µF +80% -20% 10V	DK98105200
C537		4822 126 11687	CER. 0.1µF +80% -20% 25V	DK98104200
C542		4822 124 41539	ELECT 47µF M 16V	OA47601620
C709	/C1,/S1	4822 124 80958	ELECT 470µF 16V	OA47701640
C709	/F1,/U1	4822 124 11953	ELECT 470µF M 16V	OA47701650
C710	/C1,/S1	4822 124 80958	ELECT 470µF 16V	OA47701640
C710	/F1,/U1	4822 124 11953	ELECT 470µF M 16V	OA47701650
C711	/C1,/S1	4822 124 80958	ELECT 470µF 16V	OA47701640
C711	/F1,/U1	4822 124 11953	ELECT 470µF M 16V	OA47701650
C712	/C1,/S1	4822 124 80958	ELECT 470µF 16V	OA47701640
C712	/F1,/U1	4822 124 11953	ELECT 470µF M 16V	OA47701650
C713				
∫		4822 124 90365	ELECT 220µF M 25V	OA22702520
C720				
C721				
∫	/C1,/S1/	4822 126 11759	CER. 100pF ±5% 50V	DD95101300
C724	U1			
C801		4822 124 22243	ELECT 6800µF ±20% 16V	OA68801620
C802		4822 124 80773	ELECT 3300µF ±20% 6.3V	OA33800620
C804		4822 124 80773	ELECT 3300µF ±20% 6.3V	OA33800620
C805		4822 124 40723	ELECT 2200µF 16V	OA22801620
C811		4822 124 90051	ELECT 220µF M 25V	OA22702550
C813	/F1N	4822 124 22238	ELECT 100µF ±20% 25V	OA10702550
C815		4822 124 22238	ELECT 100µF ±20% 25V	OA10702550
C822		4822 124 80582	ELECT 4700µF ±20% 16V	OA47801620
C823		4822 124 40723	ELECT 2200µF 16V	OA22801620
C824		4822 124 90371	ELECT 470µF ±20% 10V	OA47701020
C851			ELECT 4700µF M 35V	OB47803520
C852			ELECT 4700µF M 35V	OB47803520
C855	/C1,/S1	4822 124 80119	ELECT 100µF 25V	OA10702540
C855	/F1,/U1	4822 124 22238	ELECT 100µF ±20% 25V	OA10702550
C856	/C1,/S1	4822 124 80119	ELECT 100µF 25V	OA10702540
C856	/F1,/U1	4822 124 22238	ELECT 100µF ±20% 25V	OA10702550
C857		4822 124 22242	ELECT 470µF M 25V	OA47702550
C858		4822 124 22242	ELECT 470µF M 25V	OA47702550
C870		4822 126 11687	CER. 0.1µF +80% -20% 25V	DK98104200
C871		4822 126 11687	CER. 0.1µF +80% -20% 25V	DK98104200
C872		4822 126 11687	CER. 0.1µF +80% -20% 25V	DK98104200
			PP16-RESISTORS	
RD01		4822 051 30223	CHIP 22k Ω ±5% 1/16W	NN05223610
RD05		4822 051 30102	CHIP 1k Ω ±5% 1/16W	NN05102610
!RD19		4822 117 10145	FUSIBLE 3.3 Ω ±5% 1/10W	NH85033110
RD20		4822 051 30472	CHIP 4.7k Ω ±5% 1/16W	NN05472610
RD21		4822 051 30472	CHIP 4.7k Ω ± 5% 1/16W	NN05472610
RD22		4822 051 30472	CHIP 4.7k Ω ±5% 1/16W	NN05472610
RD23		4822 051 30102	CHIP 1k Ω ±5% 1/16W	NN05102610
RD24			1.15k Ω ±1% 1/4W	GM11411510
RD25			3.01k Ω ±1% 1/4W	GM11430110
RD31		4822 051 30223	CHIP 22k Ω ±5% 1/16W	NN05223610
RD35		4822 051 30102	CHIP 1k Ω ±5% 1/16W	NN05102610
RF01		4822 051 30472	CHIP 4.7k Ω ±5% 1/16W	NN05472610
RF02		4822 051 30473	CHIP 47k Ω ±5% 1/16W	NN05473610
RF04		4822 051 30103	CHIP 10k Ω ±5% 1/16W	NN05103610
RF06		4822 051 30222	CHIP 2.2k Ω ±5% 1/16W	NN05222610
RF07		4822 051 30103	CHIP 10k Ω ±5% 1/16W	NN05103610

POS. NO	VERS. COLOR	PART NO. (PCS)	DESCRIPTION	PART NO. (MJI)
RF51		4822 117 12139	CHIP 22 Ω ±5% 1/16W	NN05220610
RN01	/C1,/S1	4822 130 80132	ZENER DIODE 3.9V	HD30391000
RN02		4822 117 11977	CHIP 3.9M Ω ±5% 1/16W	NN05395610
RN03	/C1,/S1	4822 116 83819	CHIP 18k Ω ±5% 1/16W	NN05183610
RN03	/F1,/U1	4822 051 30103	CHIP 10k Ω ±5% 1/16W	NN05103610
RN04		4822 051 30473	CHIP 47k Ω ±5% 1/16W	NN05473610
RN05		4822 051 30103	CHIP 10k Ω ±5% 1/16W	NN05103610
RN07		4822 051 30223	CHIP 22k Ω ±5% 1/16W	NN05223610
RN08		4822 051 30472	CHIP 4.7k Ω ±5% 1/16W	NN05472610
RN09		4822 051 30223	CHIP 22k Ω ±5% 1/16W	NN05223610
RN10		4822 051 30472	CHIP 4.7k Ω ±5% 1/16W	NN05472610
RN11		4822 051 30223	CHIP 22k Ω ±5% 1/16W	NN05223610
RN12		4822 051 30223	CHIP 22k Ω ±5% 1/16W	NN05223610
RN14		4822 051 30103	CHIP 10k Ω ±5% 1/16W	NN05103610
RN15		4822 051 30472	CHIP 4.7k Ω ±5% 1/16W	NN05472610
RN16		4822 051 30472	CHIP 4.7k Ω ±5% 1/16W	NN05472610
RN17		4822 051 30472	CHIP 4.7k Ω ±5% 1/16W	NN05472610
RN18		4822 051 30103	CHIP 10k Ω ±5% 1/16W	NN05103610
RN19		4822 051 30104	CHIP 100k Ω ±5% 1/6W	NN05104610
RN20		4822 051 30472	CHIP 4.7k Ω ±5% 1/16W	NN05472610
RN21		4822 051 30104	CHIP 100k Ω ±5% 1/16W	NN05104610
RN22		4822 051 30104	CHIP 100k Ω ±5% 1/16W	NN05104610
RN23		4822 051 30332	CHIP 3.3k Ω ±5% 1/16W	NN05332610
RN24		4822 051 30473	CHIP 47k Ω ±5% 1/16W	NN05473610
RN25		4822 051 30333	CHIP 33k Ω ±5% 1/16W	NN05333610
RN26		4822 051 30104	CHIP 100k Ω ±5% 1/16W	NN05104610
RN27		4822 051 30332	CHIP 3.3k Ω ±5% 1/16W	NN05332610
RN55				
∫		4822 111 90906	CHIP 2.2k Ω ±5% 1/10W	NI05222110
RN62				
RY50				
∫		4822 051 30223	CHIP 22k Ω ±5% 1/16W	NN05223610
RY54				
RT01		4822 051 30101	CHIP 100 Ω ±5% 1/16W	NN05101610
RT02		4822 051 30339	CHIP 33 Ω ±5% 1/16W	NN05330610
RT03		4822 051 30759	CHIP 75 Ω ±5% 1/16W	NN05750610
R301				
∫			2.26k Ω ±1% 1/4W	GM11422610
R308				
R309			562 Ω ±1% 1/4W	GM11456200
R310			562 Ω ±1% 1/4W	GM11456200
R311			3.32k Ω ±1% 1/4W	GM11433210
R312			3.32k Ω ±1% 1/4W	GM11433210
R313			1.62k Ω ±1% 1/4W	GM11416210
R314			1.62k Ω ±1% 1/4W	GM11416210
R315				
∫			121 Ω ±1% 1/4W	GM11412100
R318				
R319			68.1 Ω ±1% 1/4W	GM114681G0
R320			68.1 Ω ±1% 1/4W	GM114681G0
R325				
∫			562 Ω ±1% 1/4W	GM11456200
R328				
R329			33.2k Ω ±1% 1/4W	GM11433220
R330			33.2k Ω ±1% 1/4W	GM11433220
R331			100 Ω ±1% 1/4W	GM11410000
R332			100 Ω ±1% 1/4W	GM11410000
R335				
∫			10 Ω ±1% 1/4W	GM114100G0
R338				
R339			4.42k Ω ±1% 1/4W	GM11444210
R340			4.42k Ω ±1% 1/4W	GM11444210
R401			2.26k Ω ±1% 1/4W	GM11422610
R402			2.26k Ω ±1% 1/4W	GM11422610

POS. NO	VERS. COLOR	PART NO. (PCS)	DESCRIPTION	PART NO. (MJI)
R405			3.32k Ω ±1% 1/4W	GM11433210
R406			3.32k Ω ±1% 1/4W	GM11433210
R411				
∫			121 Ω ±1% 1/4W	GM11412100
R414				
R415			68.1 Ω ±1% 1/4W	GM114681G0
R416			68.1 Ω ±1% 1/4W	GM114681G0
R417				
∫			562 Ω ±1% 1/4W	GM11456200
R420				
R421			33.2k Ω ±1% 1/4W	GM11433220
R422			33.2k Ω ±1% 1/4W	GM11433220
R423			46.4 Ω ±1% 1/4W	GM114464G0
R424			46.4 Ω ±1% 1/4W	GM114464G0
R429				
∫			100 Ω ±1% 1/4W	GM11410000
R432				
R433				
∫			274 Ω ±1% 1/4W	GM11427400
R440				
R441			46.4 Ω ±1% 1/4W	GM114464G0
R442			46.4 Ω ±1% 1/4W	GM114464G0
R443			121 Ω ±1% 1/4W	GM11412100
R444			121 Ω ±1% 1/4W	GM11412100
R445			274 Ω ±1% 1/4W	GM11427400
R446			274 Ω ±1% 1/4W	GM11427400
R447				
∫			33.2 Ω ±1% 1/4W	GM114332G0
R450				
R461			100k Ω ±1% 1/4W	GM11410030
R462			100k Ω ±1% 1/4W	GM11410030
R463			100 Ω ±1% 1/4W	GM11410000
R464			100 Ω ±1% 1/4W	GM11410000
R491		4822 051 30223	CHIP 22k Ω ±5% 1/16W	NN05223610
R492		4822 051 30101	CHIP 100 Ω ±5% 1/16W	NN05101610
R493		4822 117 12139	CHIP 22 Ω ±5% 1/16W	NN05220610
R494		4822 051 30223	CHIP 22k Ω ±5% 1/16W	NN05223610
R495		4822 051 30224	CHIP 220k Ω ±5% 1/16W	NN05224610
R496		4822 051 30102	CHIP 1k Ω ±5% 1/16W	NN05102610
R497		4822 051 30223	CHIP 22k Ω ±5% 1/16W	NN05223610
R501		4822 051 30684	CHIP 680k Ω ±5% 1/16W	NN05684610
R502		4822 051 30109	CHIP 10 Ω ±5% 1/16W	NN05100610
R503		4822 051 30109	CHIP 10 Ω ±5% 1/16W	NN05100610
R504		4822 051 30109	CHIP 10 Ω ±5% 1/16W	NN05100610
R506		4822 051 30109	CHIP 10 Ω ±5% 1/16W	NN05100610
R507		4822 051 30109	CHIP 10 Ω ±5% 1/16W	NN05100610
R508		4822 051 30109	CHIP 10 Ω ±5% 1/16W	NN05100610
R509		4822 051 30101	CHIP 100 Ω ±5% 1/16W	NN05101610
R510		4822 051 30101	CHIP 100 Ω ±5% 1/16W	NN05101610
R514		4822 117 12968	CHIP 820 Ω ±5% 1/16W	NN05821610
R515		4822 051 30334	CHIP 330k Ω ±5% 1/16W	NN05334610
R516		4822 051 30109	CHIP 10 Ω ±5% 1/16W	NN05100610
R517		4822 051 30109	CHIP 10 Ω ±5% 1/16W	NN05100610
R518		4822 051 30479	CHIP 47 Ω ±5% 1/16W	NN05470610
R519		4822 051 30101	CHIP 100 Ω ±5% 1/16W	NN05101610
R520		4822 051 30479	CHIP 47 Ω ±5% 1/16W	NN05470610
R521		4822 051 30479	CHIP 47 Ω ±5% 1/16W	NN05470610
R522		4822 051 30479	CHIP 47 Ω ±5% 1/16W	NN05470610
R523		4822 051 30472	CHIP 4.7k Ω ±5% 1/16W	NN05472610
R525		4822 051 30101	CHIP 100 Ω ±5% 1/16W	NN05101610
R526		4822 051 30103	CHIP 10k Ω ±5% 1/16W	NN05103610
R527		4822 051 30101	CHIP 100 Ω ±5% 1/16W	NN05101610
R528		4822 051 30103	CHIP 10k Ω ±5% 1/16W	NN05103610
R529		4822 051 30101	CHIP 100 Ω ±5% 1/16W	NN05101610
R532		4822 051 30101	CHIP 100 Ω ±5% 1/16W	NN05101610
R534		4822 051 30472	CHIP 4.7k Ω ±5% 1/16W	NN05472610
R535		4822 051 30103	CHIP 10k Ω ±5% 1/16W	NN05103610
R536		4822 051 30103	CHIP 10k Ω ±5% 1/16W	NN05103610

POS. NO	VERS. COLOR	PART NO. (PCS)	DESCRIPTION	PART NO. (MJI)
R537		4822 051 30103	CHIP 10k Ω ±5% 1/16W	NN05103610
R540		4822 051 30473	CHIP 47k Ω ±5% 1/16W	NN05473610
R701				
∫			10k Ω ±1% 1/4W	GM11410020
R704				
R705			100 Ω ±1% 1/4W	GM11410000
R706			100 Ω ±1% 1/4W	GM11410000
R707				
∫			6.81k Ω ±1% 1/4W	GM11468110
R710				
R711				
∫			33.2 Ω ±1% 1/4W	GM114332G0
R714				
R717				
∫			10k Ω ±1% 1/4W	GM11410020
R720				
R721			100 Ω ±1% 1/4W	GM11410000
R722			100 Ω ±1% 1/4W	GM11410000
R723				
∫			6.81k Ω ±1% 1/4W	GM11468110
R726				
R727				
∫			33.2 Ω ±1% 1/4W	GM114332G0
R730				
R737			100k Ω ±1% 1/4W	GM11410030
R738			100k Ω ±1% 1/4W	GM11410030
R739				
∫			100 Ω ±1% 1/4W	GM11410000
R742				
R743			100k Ω ±1% 1/4W	GM11410030
R744			100k Ω ±1% 1/4W	GM11410030
R745				
∫			100 Ω ±1% 1/4W	GM11410000
R748				
R801		4822 051 30102	CHIP 1k Ω ±5% 1/16W	NN05102610
R811			100 Ω ±1% 1/4W	GM11410000
R812			3.32k Ω ±1% 1/4W	GM11433210
R813			1.15k Ω ±1% 1/4W	GM11411510
R814			3.32k Ω ±1% 1/4W	GM11433210
R815			1.47k Ω ±1% 1/4W	GM11414710
R820		4822 051 30272	CHIP 2.7k Ω ±5% 1/16W	NN05272610
R821		4822 051 30102	CHIP 1k Ω ±5% 1/16W	NN05102610
R823			2.26k Ω ±1% 1/4W	GM11422610
R825		4822 100 11758	TRIMMING RH068 1KB 0.3Ω	RA01021100
R828			1k Ω ±1% 1/6W	GM11410010
R851			100 Ω ±1% 1/4W	GM11410000
R852			100 Ω ±1% 1/4W	GM11410000
R853			2.74k Ω ±1% 1/4W	GM11427410
R854			3.32k Ω ±1% 1/4W	GM11433210
R855			2.74k Ω ±1% 1/4W	GM11427410
R856			3.32k Ω ±1% 1/4W	GM11433210
R857			3.32k Ω ±1% 1/4W	GM11433210
R858			3.32k Ω ±1% 1/4W	GM11433210
			PP16-RESISTORS(COMMON)	
R***			CARBON FILM FIXED RES.	
			±5% 1/6W : RF03	
			[RN01(/F1,/U1)] RN06 R841	
			PP16-SEMICONDUCTORS	
DF51		4822 130 83715	CHIP DIODE 1SS301 DAN202U	HZ21005000
⚠ DN01				
∫			DIODE 11EQS10 1A 100V	HD20055100
⚠ DN05				
DN09		4822 130 33948	ZENER DIODE 5.6V	HD30561000
DN10		4822 130 32362	DIODE 1SS176 MA165 1SS254	HD20002000
			30V 0.1A	

POS. NO	VERS. COLOR	PART NO. (PCS)	DESCRIPTION	PART NO. (MJI)
DN11		4822 130 32362	DIODE 1SS176 MA165 1SS254 30V 0.1A	HD20002000
DN12		4822 130 80132	ZENER DIODE 3.9V	HD30391000
DN13		4822 130 83715	CHIP DIODE 1SS301 DAN202U	HZ21005000
DN14		4822 130 83715	CHIP DIODE 1SS301 DAN202U	HZ21005000
DN15		4822 130 83715	CHIP DIODE 1SS301 DAN202U	HZ21005000
D301				
∫		4822 130 81324	CHIP DIODE 1SS302	HZ20018050
D306				
D401		4822 130 81148	CHIP DIODE IMN10 ARRAY	HZ20007210
D402		4822 130 81148	CHIP DIODE IMN10 ARRAY	HZ20007210
D405		4822 130 81324	CHIP DIODE 1SS302	HZ20018050
D406		4822 130 81324	CHIP DIODE 1SS302	HZ20018050
D407		4822 130 81148	CHIP DIODE IMN10 ARRAY	HZ20007210
D408		4822 130 81148	CHIP DIODE IMN10 ARRAY	HZ20007210
D411		4822 130 83715	CHIP DIODE 1SS301 DAN202U	HZ21005000
⚠ D801				
∫			CHIP DIODE NSQ03A02L	HZ20009100
⚠ D804				
⚠ D811				
∫			DIODE 11EQS10 1A 100V	HD20055100
⚠ D814				
D815		4822 130 31253	ZENER DIODE HZ2CLL 2.4V	HD30067010
D817		4822 130 83715	CHIP DIODE 1SS301 DAN202U	HZ21005000
D821				
∫		4822 130 11513	CHIP DIODE RB161L-40 1A 40V	HZ20057210
D824				
⚠ D851				
∫			DIODE 11EQS10 1A 100V	HD20055100
⚠ D854				
⚠ D856		4822 130 33664	ZENER DIODE HZ6L 6.2V	HD30021010
⚠ D857		4822 130 33664	ZENER DIODE HZ6L 6.2V	HD30021010
D859		4822 130 83715	CHIP DIODE 1SS301 DAN202U	HZ21005000
D869		4822 130 83715	CHIP DIODE 1SS301 DAN202U	HZ21005000
QD01			IC CS4397 24BIT 192KHZ DAC	HC10008880
QD21		4822 130 61541	CHIP TRS. 2SC4116	HX341162B0
QD22		4822 130 61541	CHIP TRS. 2SC4116	HX341162B0
QD23		4822 130 63598	CHIP TRS. 2SA1586 (O Y)	HX115862A0
QD24		4822 130 43818	TRS. 2SC2878 (A B)	HT328782A0
QD31			IC CS4397 24BIT 192KHZ DAC	HC10008880
QF01		4822 130 63598	CHIP TRS. 2SA1586 (O Y)	HX115862A0
QF02		4822 130 61541	CHIP TRS. 2SC4116	HX341162B0
QN01				
∫		4822 130 61541	CHIP TRS. 2SC4116	HX341162B0
QN04				
QN05		4822 130 63598	CHIP TRS. 2SA1586 (O Y)	HX115862A0
QN06		4822 130 63598	CHIP TRS. 2SA1586 (O Y)	HX115862A0
QN09		4822 130 61541	CHIP TRS. 2SC4116	HX341162B0
QN12		4822 130 61541	CHIP TRS. 2SC4116	HX341162B0
QN13		4822 130 61541	CHIP TRS. 2SC4116	HX341162B0
QN21		4822 209 83312	IC TA7317P RELEY DRIVER IC	HC10042050
QN55				
∫		4822 130 63844	SEMICON.COMP HN1C03F(B)	BA20016050
QN58				
QT01			IC TC7WHU04FU	HC008005K0
QY10		4822 130 61541	CHIP TRS. 2SC4116	HX341162B0
QY11		4822 111 92195	SEMICON.COMP HN1A01F(Y GR)	BA10011050
Q301		4822 130 42843	F.E.T. 2SK389 (GR BL)	HF203892A0
Q302		4822 130 42843	F.E.T. 2SK389 (GR BL)	HF203892A0
Q303		4822 130 61425	CHIP TRS. 2SC2873 (Y)	HX328731B0

POS. NO	VERS. COLOR	PART NO. (PCS)	DESCRIPTION	PART NO. (MJI)
Q304		4822 130 61425	CHIP TRS. 2SC2873 (Y)	HX328731B0
Q305				
∫		4822 130 63928	CHIP TRS. 2SA1312 (B)	HX113121B0
Q308				
Q309		4822 130 63929	CHIP TRS. 2SC3324 (B)	HX333241B0
Q310		4822 130 63929	CHIP TRS. 2SC3324 (B)	HX333241B0
Q311		5322 130 41844	F.E.T. 2SK170 V	HF201701H0
Q312		5322 130 41844	F.E.T. 2SK170 V	HF201701H0
Q313		4822 130 62649	F.E.T. 2SJ74 V	HF100741H0
Q314		4822 130 62649	F.E.T. 2SJ74 V	HF100741H0
Q401		4822 130 42843	F.E.T. 2SK389 (GR BL)	HF203892A0
Q402		4822 130 42843	F.E.T. 2SK389 (GR BL)	HF203892A0
Q403		4822 130 61425	CHIP TRS. 2SC2873 (Y)	HX328731B0
Q404		4822 130 61425	CHIP TRS. 2SC2873 (Y)	HX328731B0
Q405				
∫		4822 130 63928	CHIP TRS. 2SA1312 (B)	HX113121B0
Q408				
Q409		4822 130 63929	CHIP TRS. 2SC3324 (B)	HX333241B0
Q410		4822 130 63929	CHIP TRS. 2SC3324 (B)	HX333241B0
Q413		5322 130 41844	F.E.T. 2SK170 V	HF201701H0
Q414		5322 130 41844	F.E.T. 2SK170 V	HF201701H0
Q415		4822 130 62649	F.E.T. 2SJ74 V	HF100741H0
Q416		4822 130 62649	F.E.T. 2SJ74 V	HF100741H0
Q417		4822 130 63928	CHIP TRS. 2SA1312 (B)	HX113121B0
Q418		4822 130 63928	CHIP TRS. 2SA1312 (B)	HX113121B0
Q419		4822 130 63929	CHIP TRS. 2SC3324 (B)	HX333241B0
Q420		4822 130 63929	CHIP TRS. 2SC3324 (B)	HX333241B0
Q421				
∫		4822 130 63928	CHIP TRS. 2SA1312 (B)	HX113121B0
Q424				
Q425				
∫		4822 130 63929	CHIP TRS. 2SC3324 (B)	HX333241B0
Q428				
Q429		4822 130 43283	TRS. 2SC2705 (O Y)	HT327052A0
Q430		4822 130 43283	TRS. 2SC2705 (O Y)	HT327052A0
Q431		4822 130 42999	TRS. 2SA1145 (O Y)	HT111452A0
Q432		4822 130 42999	TRS. 2SA1145 (O Y)	HT111452A0
Q491		4822 130 61541	CHIP TRS. 2SC4116	HX341162B0
Q492		4822 130 61541	CHIP TRS. 2SC4116	HX341162B0
Q501			IC TC74VHC04FT	HC008105K0
Q502			IC TC74VHC74FT	HC005605K0
Q503			IC TC74VHC04FT	HC008105K0
Q504				
∫			IC TC74VHC164FT	HC006005K0
Q507				
Q509		9965 000 04633	IC TC74VHC157FT	HC005805K0
Q510		4822 209 32984	IC TC7SHU04F	HC10427050
Q511		9965 000 04633	IC TC74VHC157FT	HC005805K0
Q512		9965 000 04632	IC TC74VHC00FT	HC005105K0
Q513		4822 209 32984	IC TC7SHU04F	HC10427050
Q514		4822 209 32984	IC TC7SHU04F	HC10427050
Q515			IC TC7WH74FU	HC007905K0
Q516			IC TCWH241FU	HC008305K0
Q517			IC TC7WH74FU	HC007905K0
Q518			IC TC74VHC08FT	HC008205K0
Q519			IC TC74VHC08FT	HC008205K0
Q520			IC TC74VHC86FT	HC008405K0
Q521			IC TS7S86FU	HC10414050
Q522			IC TC7WHU04FU	HC008005K0
Q523		4822 209 15921	IC RESET IC S-806D-Z	HC10077530
Q526		4822 130 61541	CHIP TRS. 2SC4116	HX341162B0
Q701		4822 209 91175	IC NJM2114M	HC10175090
Q702		4822 209 91175	IC NJM2114M	HC10175090
Q703		4822 130 63928	CHIP TRS. 2SA1312 (B)	HX113121B0
Q704		4822 130 63928	CHIP TRS. 2SA1312 (B)	HX113121B0

POS. NO	VERS. COLOR	PART NO. (PCS)	DESCRIPTION	PART NO. (MJI)
Q705				
∫		4822 130 63929	CHIP TRS. 2SC3324 (B)	HX333241B0
Q708				
Q709				
∫		4822 130 63928	CHIP TRS. 2SA1312 (B)	HX113121B0
Q712				
Q713				
∫		4822 130 63929	CHIP TRS. 2SC3324 (B)	HX333241B0
Q716				
Q717		4822 130 63928	CHIP TRS. 2SA1312 (B)	HX113121B0
Q718		4822 130 63928	CHIP TRS. 2SA1312 (B)	HX113121B0
⚠ Q801			IC PQ05RD21 5V 2A	HC31905320
Q803		9965 000 03397	IC BA033FP	HC96J33210
Q810		4822 130 43954	CHIP TRS. 2SD999	HX409992A0
Q811		4822 130 42836	F.E.T. 2SK246 (GR)	HF202461C0
⚠ Q813		4822 130 43954	CHIP TRS. 2SD999	HX409992A0
Q815		4822 130 63929	CHIP TRS. 2SC3324 (B)	HX333241B0
Q817		4822 130 61541	CHIP TRS. 2SC4116	HX341162B0
⚠ Q821			IC PQ09RF1	HC31909320
Q841		4822 130 43954	CHIP TRS. 2SD999	HX409992A0
Q851		4822 130 42836	F.E.T. 2SK246 (GR)	HF202461C0
⚠ Q852			TRS. 2SD1415A	HT41415100
Q853		4822 130 43233	TRS. 2SC2240 (GR BL)	HT322402A0
Q855		4822 130 42836	F.E.T. 2SK246 (GR)	HF202461C0
⚠ Q856			TRS. 2SB1020A	HT21020100
Q857		4822 130 42949	TRS. 2SA970 (GR BL)	HT109702A0
			PP16-MISCELLANEOUS	
FZ01			SERAMIC VIB. 432KHz CSB432EB	FQ04323030
⚠ F801	/C1,/S1	4822 070 31002	FUSE 1 A 250V BS LISTED	FS10100850
⚠ F801	/F1,/U1		FUSE 1.6A 250V UL CSA	FS10160350
⚠ F811	/C1,/S1	4822 253 30394	FUSE T315MA 250V BS LISTED	FS10031850
⚠ F811	/F1,/U1		FUSE 1A 250V UL CSA	FS10100350
⚠ F812	/C1,/S1	4822 070 38001	FUSE 800 MA 250V BS LISTED	FS10080850
⚠ F812	/F1,/U1		FUSE 1A 250V UL CSA	FS10100350
⚠ F851	/C1,/S1	4822 070 38001	FUSE 800 MA 250V BS LISTED	FS10080850
⚠ F851	/F1,/U1		FUSE 1A 250V UL CSA	FS10100350
⚠ F852	/C1,/S1	4822 070 38001	FUSE 800 MA 250V BS LISTED	FS10080850
⚠ F852	/F1,/U1		FUSE 1A 250V UL CSA	FS10100350
JF51		4822 267 41009	TERMINAL RCA PIN JACK 2P	YT02020890
JT02		4822 290 81638	TERMINAL RCA PIN JACK 1P	YT02010790
JT03		4822 267 31369	OPT. CONNECTOR GP1F32T	YJ15000090
J403		4822 290 61214	TERMINAL RCA PIN JACK 1P GOLD	YT02010820
J404		4822 290 61214	TERMINAL RCA PIN JACK 1P GOLD	YT02010820
J703		4822 265 20653	JACK XLR CANON PLUG	YJ01003810
J704		4822 265 20653	JACK XLR CANON PLUG	YJ01003810
LF01		4822 158 60654	FERRITE CORE BLM31A02	FC90030070
LT01		4822 142 60422	PULSE TRANSF.	TP41042030
LT02		4822 158 60654	FERRITE CORE BLM31A02	FC90030070
LT03		4822 158 60654	FERRITE CORE BLM31A02	FC90030070
L400		4822 280 10353	RELAY NA-9-WK DC9V	LY20090090
L503		4822 158 60654	FERRITE CORE BLM31A02	FC90030070
L504			CHIP INDUCTANCE 3.3µH NL322522	LU12332010
L505				
∫		4822 158 60654	FERRITE CORE BLM31A02	FC90030070
L508				
L803		4822 158 60654	FERRITE CORE BLM31A02	FC90030070
L804		4822 158 60654	FERRITE CORE BLM31A02	FC90030070

POS. NO	VERS. COLOR	PART NO. (PCS)	DESCRIPTION	PART NO. (MJI)
L805		4822 158 60654	FERRITE CORE BLM31A02	FC90030070
SF01		4822 277 21559	SLIDE SWITCH	SS02021150
S401		4822 277 21559	SLIDE SWITCH	SS02021150
X501		4822 242 10818	CRYSTAL 33.8688MHz	JX33001380
ZY01			PHOTO UNIT RPM6936-H4	HW10008210
			PY16-FRONT CIRCUIT BOARD	
			PY16-CAPACITORS	
CF21		4822 126 11558	CER. 0.1µF Z 50V	DA17104110
CF22		4822 126 11558	CER. 0.1µF Z 50V	DA17104110
CF23		4822 126 11558	CER. 0.1µF Z 50V	DA17104110
CY01		4822 126 11558	CER. 0.1µF Z 50V	DA17104110
CY02		4822 124 90352	ELECT 10µF M 16V	OA10601620
CY03		4822 126 11558	CER. 0.1µF Z 50V	DA17104110
CY04		4822 124 90354	ELECT 100µF M 16V	OA10701620
CY05		4822 126 11558	CER. 0.1µF Z 50V	DA17104110
CY06		4822 126 13089	CER. 33pF ±5%	DA15330110
CY07		4822 126 13089	CER. 33pF ±5%	DA15330110
CY08		4822 126 13089	CER. 33pF ±5%	DA15330110
CY09		4822 124 22274	ELECT 4.7µF M 50V	OA47505020
CY10		4822 126 11558	CER. 0.1µF Z 50V	DA17104110
			PY16-RESISTORS(COMMON)	
R***			CARBON FILM FIXED RES. ±5% 1/6W : RY03 RY04 RY06 RY08-RY11 RY13-RY23 RY25 RY26 RY29-RY36 RY41-RY45	
			PY16-SEMICONDUCTORS	
DY05		4822 130 80326	L.E.D. LT3D8B RED	HI10062320
DY06		4822 130 80326	L.E.D. LT3D8B RED	HI10062320
DY11		4822 130 10667	ZENER DIODE 4.7V	HD30471000
QY01			IC MN12510F FTD DRIVER	HC10171020
QY03		4822 209 63184	IC LC74HC86	HC708600B0
QY05		4822 130 42715	TRS. 2SA1048 2SA933S 2SA1267	HT10001000
QY06		4822 130 42715	TRS. 2SA1048 2SA933S 2SA1267	HT10001000
QY07		4822 130 42715	TRS. 2SA1048 2SA933S 2SA1267	HT10001000
QY08		4822 130 41947	TRS. 2SC2458 2SC1740S 2SC3199	HT30001000
			PY16-MISCELLANEOUS	
JY02			JACK 15FE-ST-VK-N	YJ07020110
LY21			FERRITE CORE BL02RN2-R62T2 BEAD	FC90050130
LY22			FERRITE CORE BL02RN2-R62T2 BEAD	FC90050130
LY23			FERRITE CORE BL02RN2-R62T2 BEAD	FC90050130
SY01				
∫		4822 276 13537	PUSH SWITCH SKHVBF 260GF RED	SP01012030
SY08				
VY01		4822 135 00194	DISPLAY UNIT 10-BT-196GK	HQ31004410
XY01		4822 242 72527	SERAMIC VIB. CST4.00MGW	FQ04004030

Service Manual

CDM-15M
CDM-15MB

SACD Module

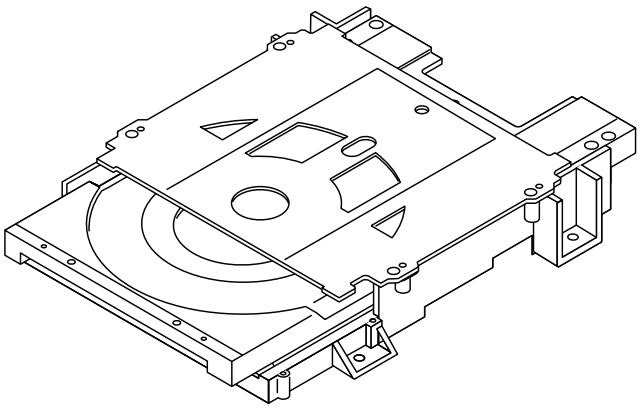


TABLE OF CONTENTS

Please use this service manual with referring to the user guide (D.F.U.) without fail.
修理の際は、必ず取扱説明書を準備し操作方法を確認の上作業を行ってください。

marantz®

CDM-15M / CDM-15MB

2.1 REMOVING AND REINSTALLING THE MAIN PARTS

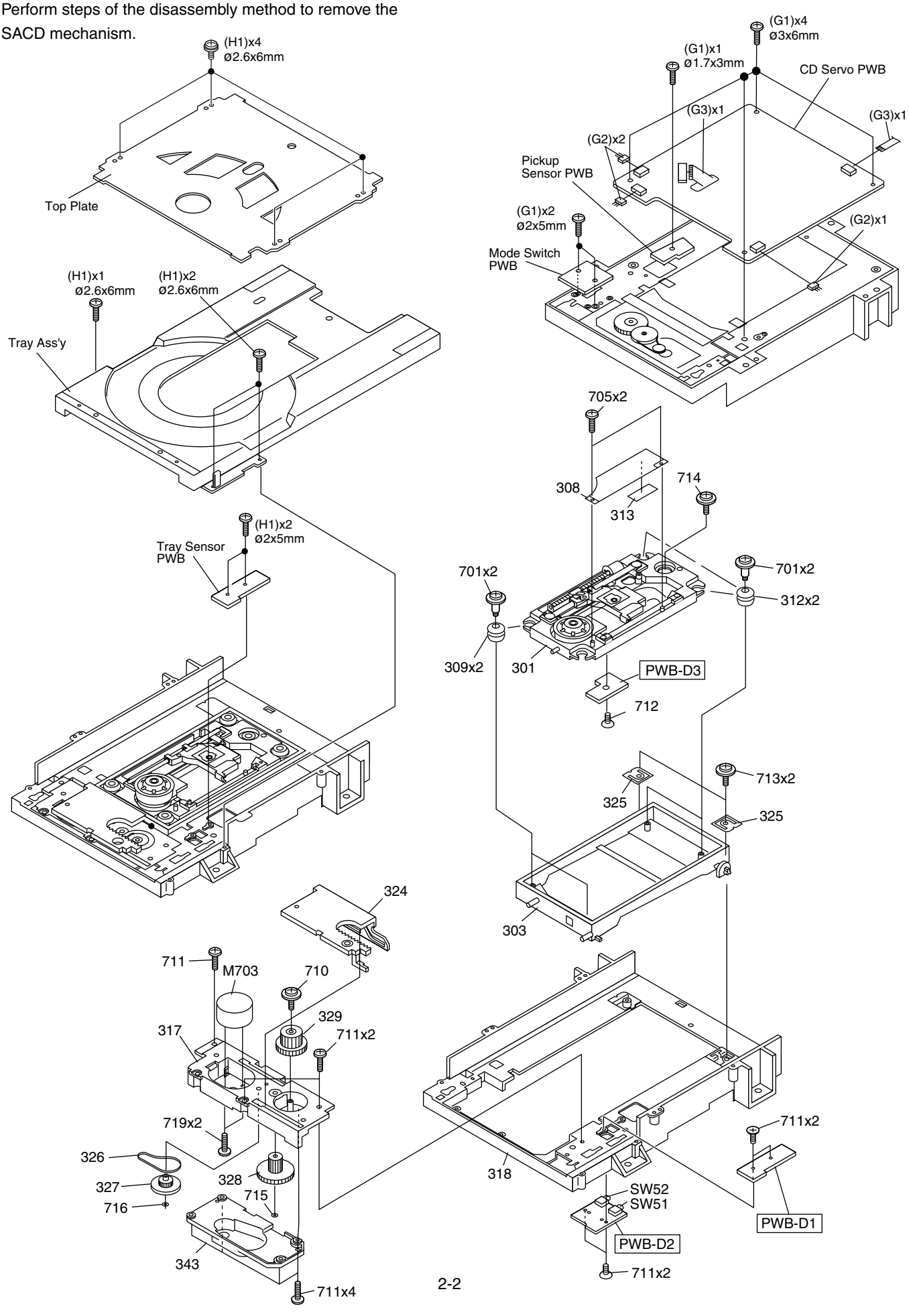
SACD MECHANISM SECTION

Perform steps of the disassembly method to remove the SACD mechanism.

■主要部品の交換方法

SACDメカニズム部

・分解方法に従ってSACDメカニズムを取り外して下さい。



How to remove the loading motor (See Fig. 2-1.)

1. Remove the lift lever.
2. Remove the screws (A1) x 4 pcs., to remove the gear cover.
3. Remove the screws (A2) x 2 pcs., to remove the loading motor.

●ローディングモータの取り外し方法（図2-1参照）

1. リフトレバーを取り外す。
2. ねじ（Ａ１）×４本を取り外しギヤカバーを取り外す。
3. ねじ（Ａ２）×２本を取り外しローディングモータを取り外す。

(Adjusting the SACD mechanism completed products)

It is necessary to position the spindle motor, the sub-shaft (mechanism), and the pickup to play a nonstandardized SACD disc. If the pickup or motor is replaced at the service division, these adjustments cannot be performed because of the facility and measuring equipment matters.

The SACD mechanism completed products are adjusted for the above reasons.

After installing:

After installing the SACD mechanism completed product, remove the two solders shown below.**(See Fig. 2-2.)**

[REMARK]

- The two solders are used to eliminate static electricity before installing the SACD mechanism completed product.

SACDメカニズムの交換

ＳＡＣＤメカニズム（３０１）を交換した際には、必ず下図（図2-2）の２ヶ所のハンダ（ＳＡＣＤメカニズム保管時の静電破壊防止）を取り除いてください。

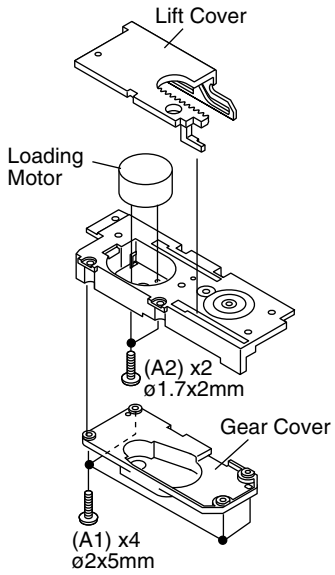


Figure 2-1

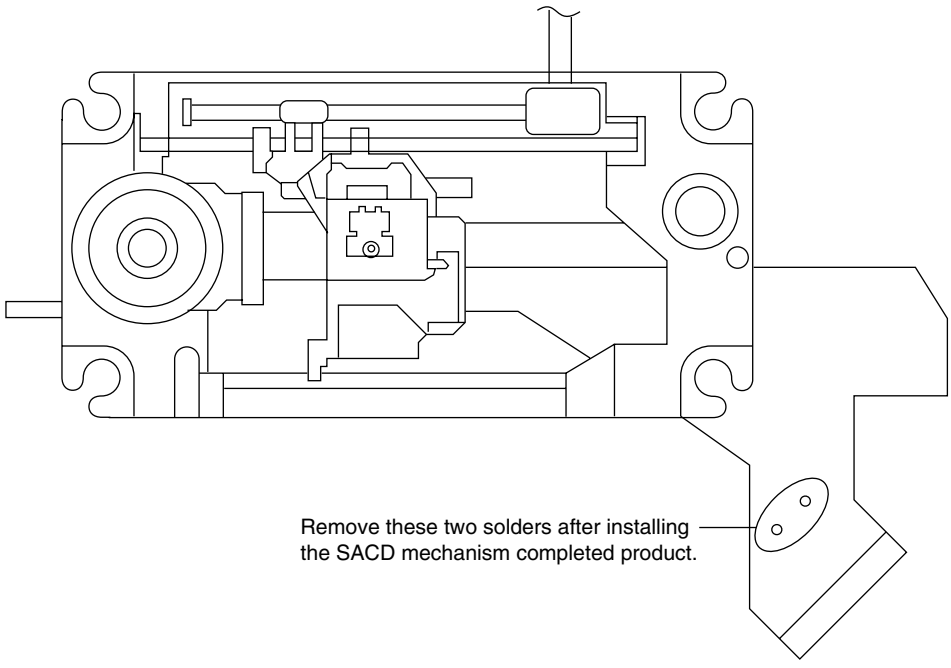


Figure 2-2

Adjusting the tension of the timing belt

Remove the gear unit and connect the ammeter to the DC power as shown in Fig. 2-3.

●タイミングベルトのテンション調整

ギヤユニットを取り外し、図2−3の様に電流計とDC電源を接続する。

If measurement of the loading motor current is possible, move the motor in the direction of the arrow so as to obtain 40 - 50 mA, and fix the motor with screws (A1) x 2 pcs. (See Fig. 2-4.)

ローディングモータの電流測定が出来る様にして40mA〜50mAになる様モータを矢印方向に移動させ、ねじ（Ａ１）×2本でモータを固定する。（図2-4参照）

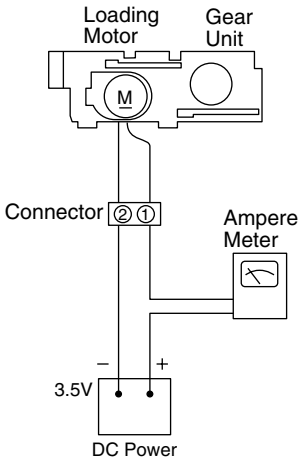


Figure 2-3

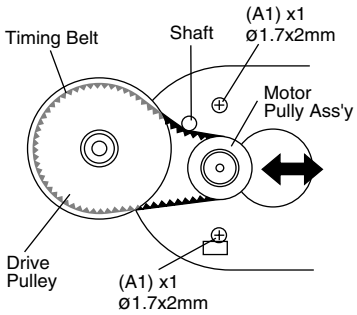
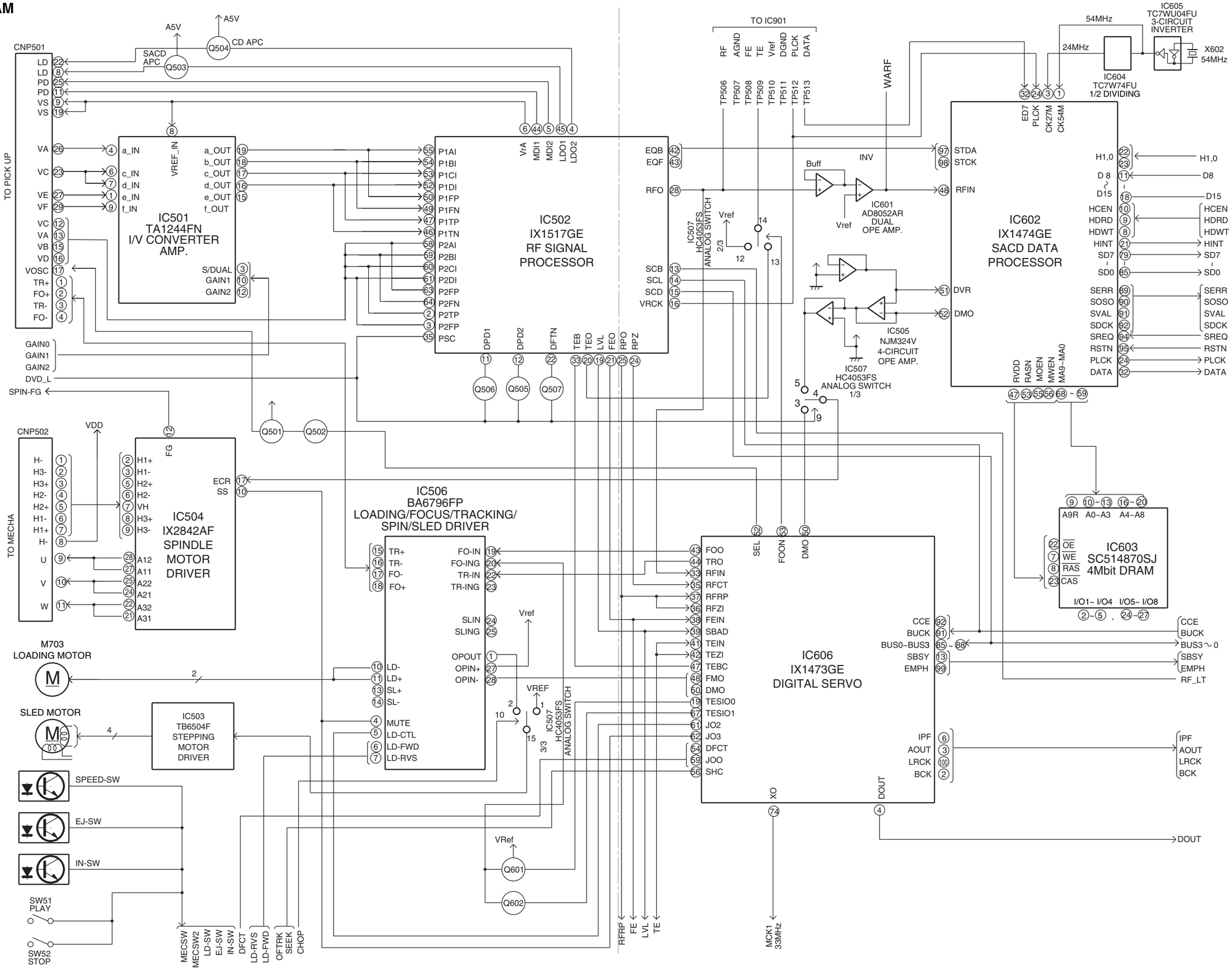
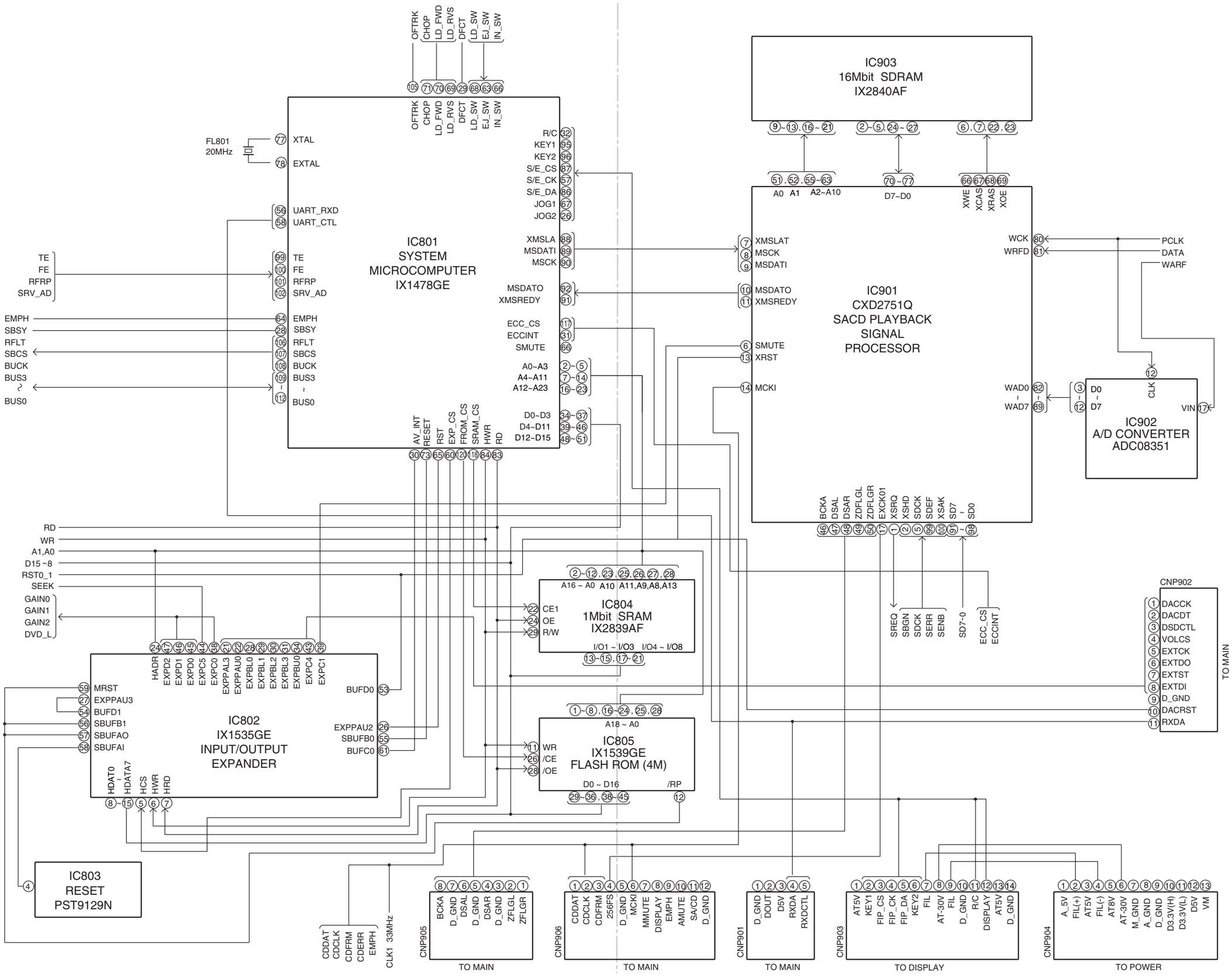


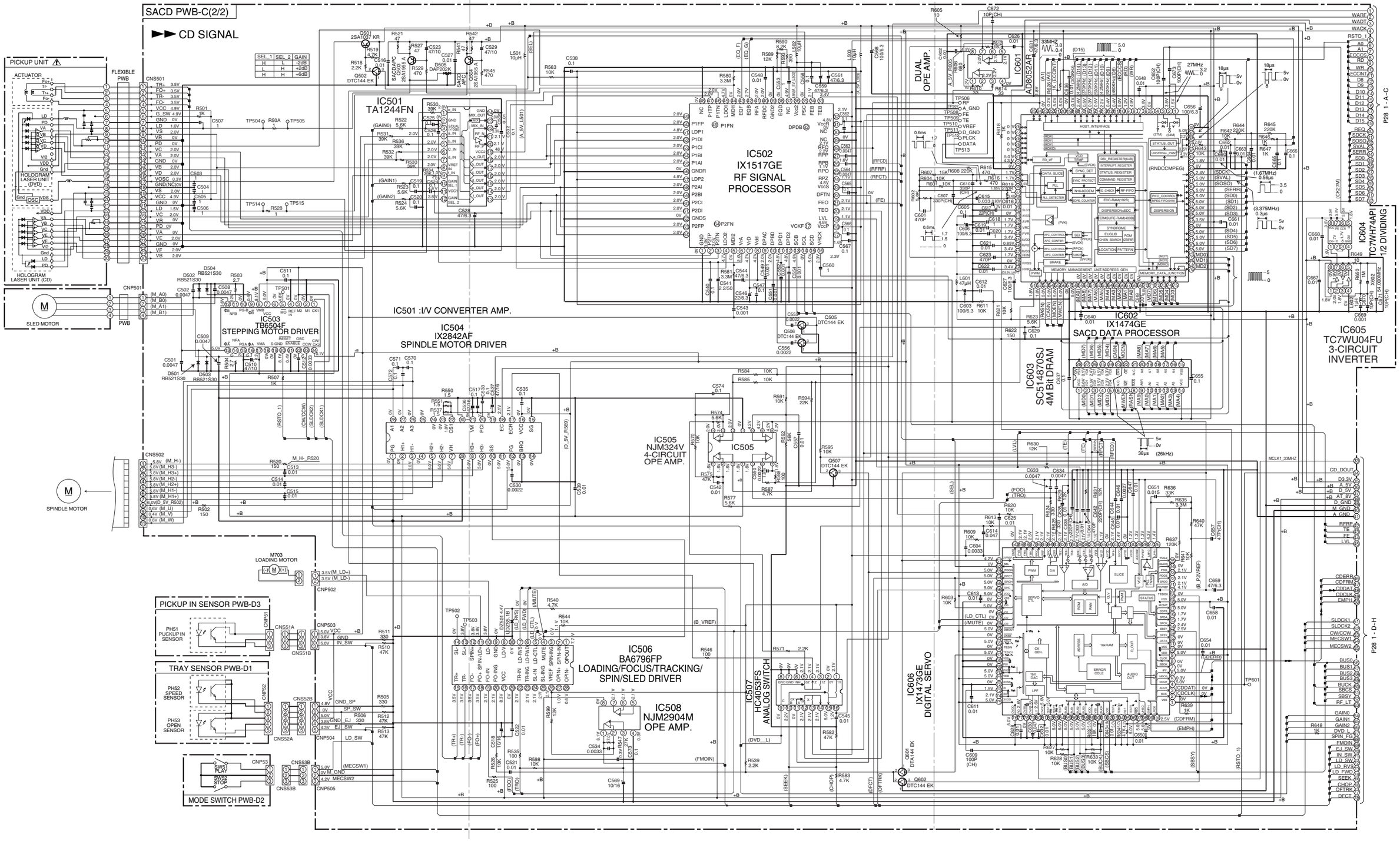
Figure 2-4

2.2 BLOCK DIAGRAM




IC801
SYSTEM
MICROCOMPUTER
IX1478GE
IC903
16Mbit SDRAM
IX2840AF
IC901
CXD2751Q
SACD PLAYBACK
SIGNAL
PROCESSOR
IC902
A/D CONVERTER
ADC08351
IC802
IX1535GE
INPUT/OUTPUT
EXPANDER
IC803
RESET
PST9129N
IC804
1Mbit SRAM
IX2839AF
IC805
IX1539GE
FLASH ROM (4M)
FL801
20MHz
XTAL
EXTAL
UART_RXD
UART_CTL
TE
FE
RFRP
SRV_AD
EMPH
SBSY
RFLT
SBCS
BUCK
BUS3
~
BUS0
R/C
KEY1
KEY2
S/E_CS
S/E_CK
S/E_DA
JOG1
JOG2
XMSLA
MSDATI
MSCK
MSDATO
XMSREDY
ECC_CS
ECCINT
SMUTE
A0~A3
A4~A11
A12~A23
D0~D3
D4~D11
D12~D15
OFTRK
CHOP
LD_FWD
LD_RVS
DFCT
LD_SW
EJ_SW
IN_SW
AV_INT
RESET
RST
EXP_CS
FROM_CS
SRAM_CS
HWR
RD
WR
A1,A0
D15 ~8
RST0_1
SEEK
GAIN0
GAIN1
GAIN2
DVD_L
HADR
EXPD2
EXPD1
EXPD0
EXPC5
EXPC0
EXPPAL3
EXPPAU0
EXPBL0
EXPBL1
EXPBL2
EXPBL3
EXPBU0
EXPC4
EXPC1
MRST
EXPPAU3
BUFD1
SBUFB1
SBUFAO
SBUFAI
BUFD0
EXPPAU2
SBUFB0
BUFC0
HDAT0
HDATA7
HCS
HWR
HRD
A0 A1 A2~A10
D7~D0
XWE
XCAS
XRAS
XOE
XMSLAT
MSCK
MSDATI
MSDATO
XMSREDY
SMUTE
XRST
MCKI
WCK
WRFD
PCLK
DATA
WARF
WAD0
~
WAD7
D0
~
D7
CLK
VIN
BCKA
DSAL
DSAR
ZDFLGL
ZDFLGR
EXCKO1
XSRQ
XSHD
SDCK
SDEF
XSAK
SD7
~
SD0
A16 ~ A0
A10
A11,A9,A8,A13
CE1
OE
R/W
I/O1 ~ I/O3
I/O4 ~ I/O8
A18 ~ A0
WR
/CE
/OE
D0 ~ D16
/RP
SREQ
SBGN
SDCK
SERR
SENB
SD7~0
ECC_CS
ECCINT
CNP902
DACCK
DACDT
DSDCTL
VOLCS
EXTCK
EXTDO
EXTST
EXTDI
D_GND
DACRST
RXDA
TO MAIN
CDDAT
CDCLK
CDFRM
CDERR
EMPH
CLK1 33MHz
CNP905
BCKA
D_GND
DSAL
D_GND
DSAR
D_GND
ZFLGL
ZFLGR
TO MAIN
CNP906
CDDAT
CDCLK
CDFRM
256FS
D_GND
MCKI
MMUTE
DISPLAY
EMPH
AMUTE
SA/CD
D_GND
TO MAIN
CNP901
D_GND
DOUT
D5V
RXDA
RXDCTL
TO MAIN
CNP903
AT5V
KEY1
FIP_CS
FIP_CK
FIP_DA
KEY2
FIL
AT-30V
FIL
D_GND
R/C
DISPLAY
AT5V
D_GND
TO DISPLAY
CNP904
A_5V
FIL(+)
AT5V
FIL(-)
AT8V
AT-30V
M_GND
A_GND
D_GND
D3.3V(H)
D3.3V(L)
D5V
VM
TO POWER

2.3 SCHEMATIC DIAGRAM



SACD PWB-C(1/2)

►► CD SIGNAL

IC801
IX1478GE
SYSTEM
MICROCOMPUTER

IC802
IX1535GE
INPUT/OUTPUT
EXPANDER

IC803
PST9129N
RESET

IC804
IX2839AF
1M SRAM

IC805
IX1539GE
FLASH ROM(4M)

IC901
CXD2751Q
SACD PLAYBACK
SIGNAL
PROCESSOR

IC902
ADC08351
A/D CONVERTER

16Mbit SDRAM
IC903
IX2840 AF

FL801
20MHz

D801
DAN202K

D802
DAP202K

Q801
DTC144 EK

CNP901
P21 11 - G
CNS307B
TO MAIN PWB

CNP902
P20 1 - G
CNS309B
TO MAIN PWB

CNP903
P22 1 - D
CNS201A
TO DISPLAY PWB

CNP904
P24 1 - D, P26 1 - D
CNP102
TO POWER PWB

CNP905
P20 1 - E
CNS302B
TO MAIN PWB

CNP906
P20 1 - D
CNS301B
TO MAIN PWB

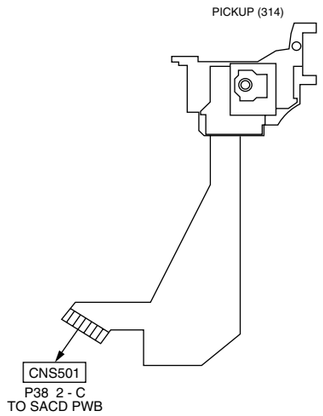
P32 6 - A, B

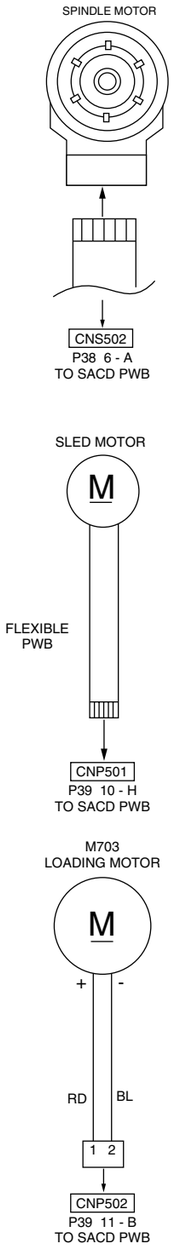
P32 6 - E - H

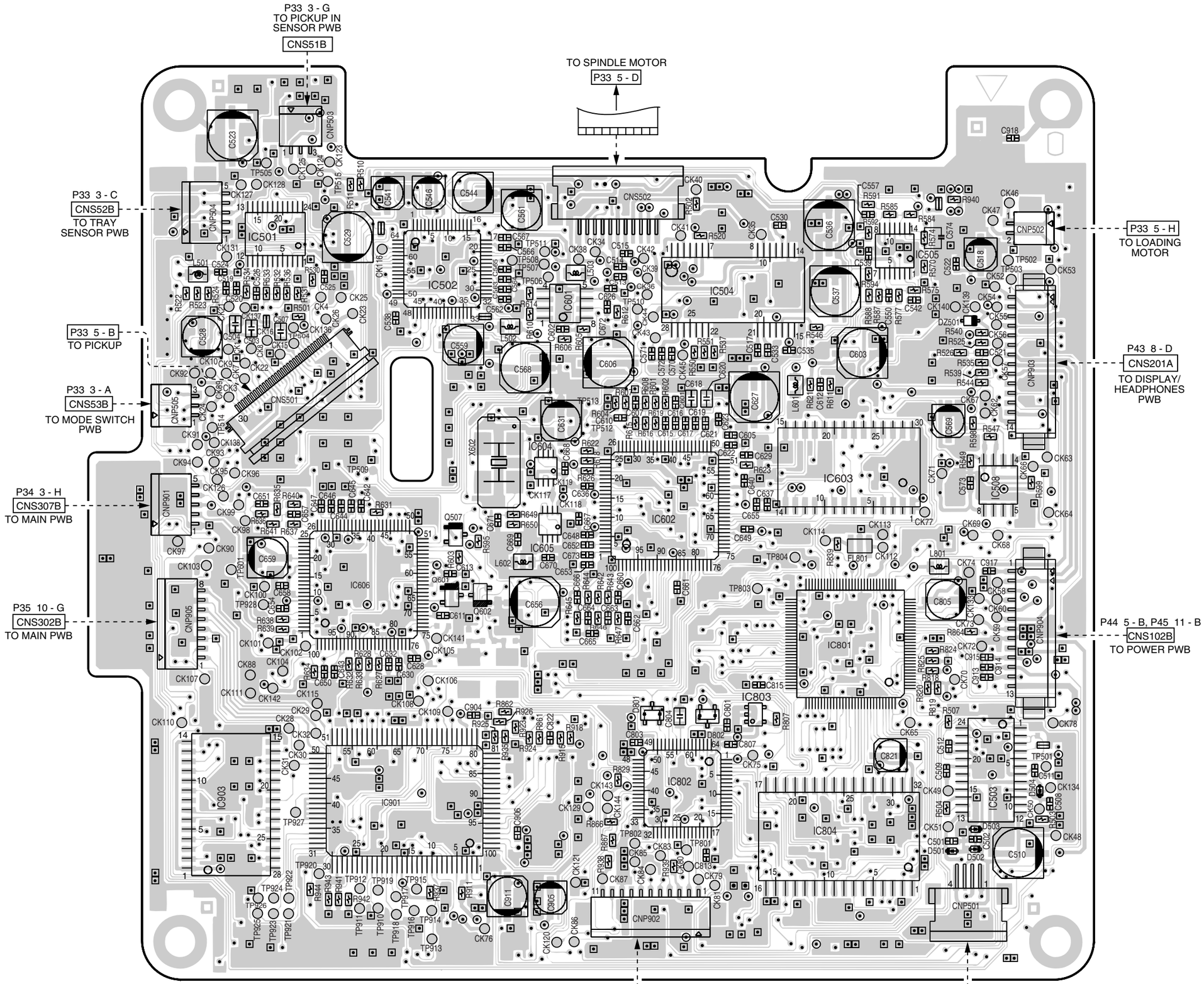
2-11

2-12

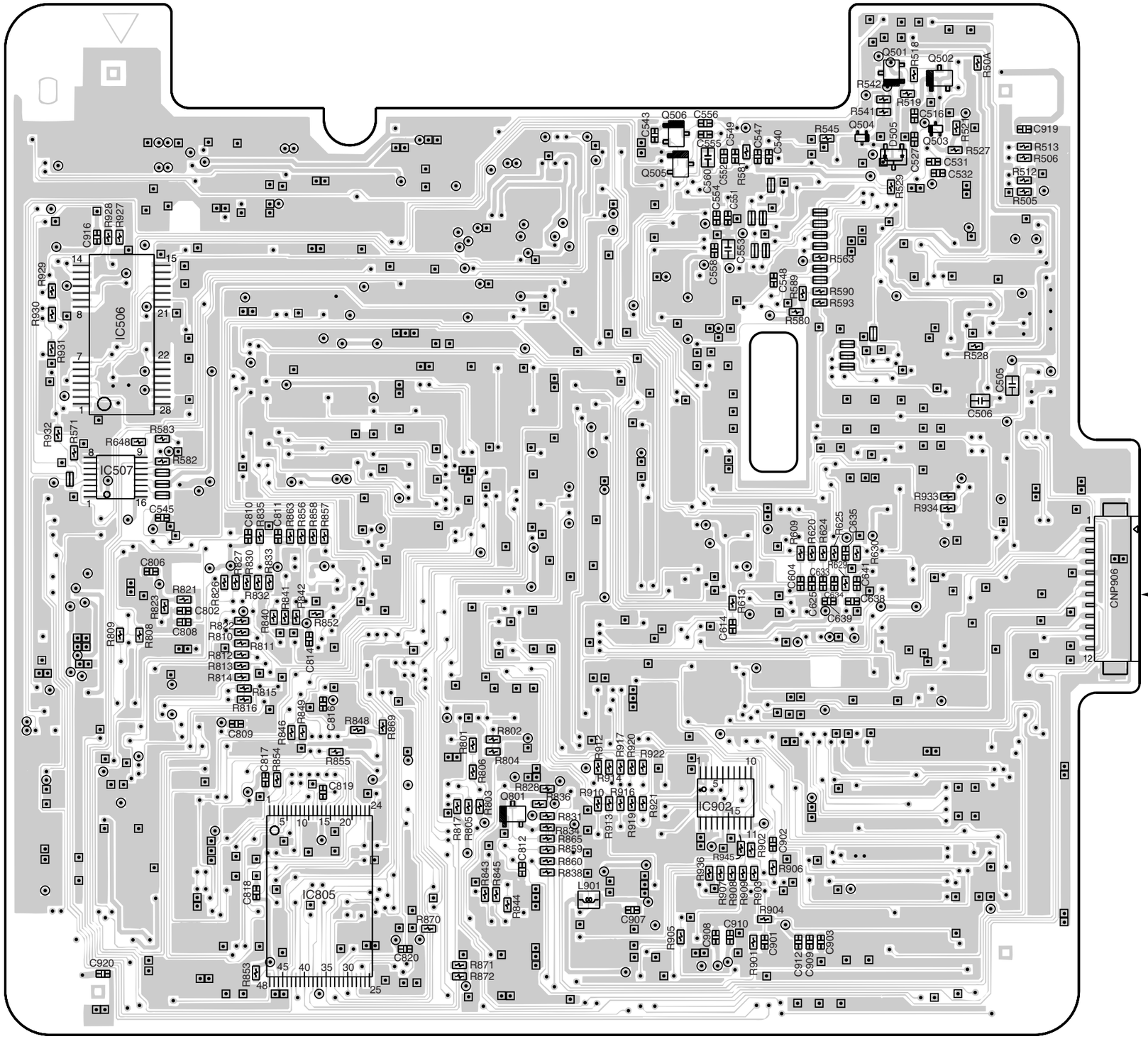
2.4 PARTS LOCATION



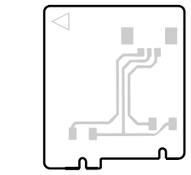




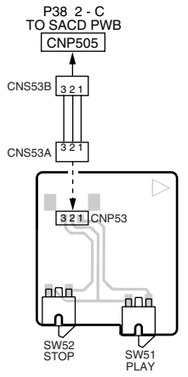
SACD PWB-C (TOP VIEW)



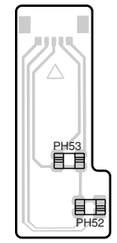
SACD PWB-C(BOTTOM VIEW)



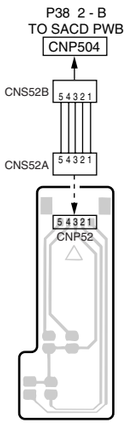
MODE SWITCH
PWB-D2
(TOP VIEW)



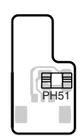
MODE SWITCH
PWB-D2
(BOTTOM VIEW)



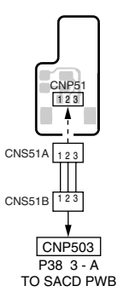
TRAY SENSOR
PWB-D1
(TOP VIEW)



TRAY SENSOR
PWB-D1
(BOTTOM VIEW)



PICKUP IN
SENSOR PWB-D3
(TOP VIEW)



PICKUP IN
SENSOR PWB-D3
(BOTTOM VIEW)

2.5 IC DATA

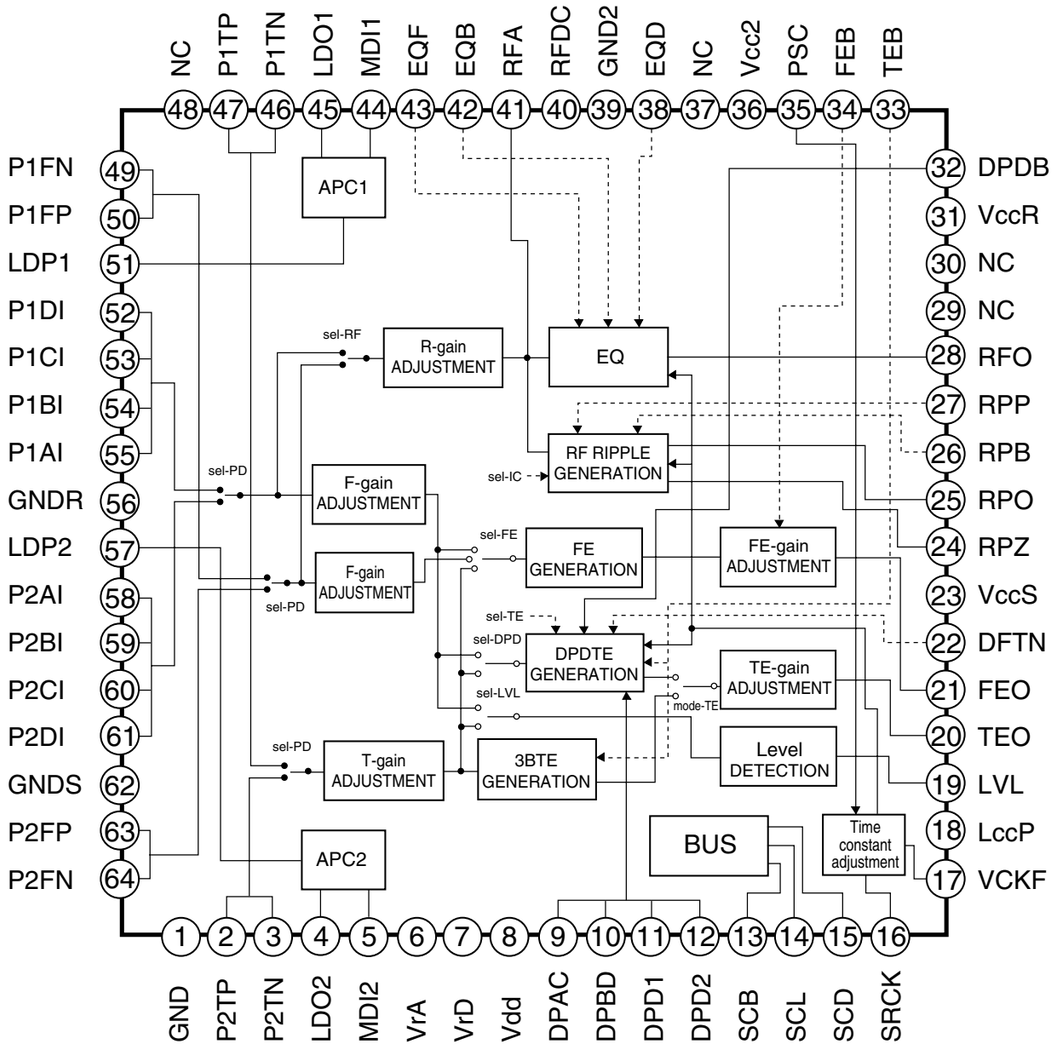
IC502 RH-iX1517GEZZ: RF Signal Processor (IX1517GE) (1/2)

Pin No.	Terminal Name	Input/Output	Function	Terminal DC Voltage (TYP.)	Remarks
1	GND	Ñ	GND terminal	-	
2	P2TP	Input	TE+ input (CD)	VrA	
3	P2TN	Input	TE- input (CD)	VrA	
4	LDO2	Output	Drive output	-	
5	MDI2	Input	Monitor output	-	
6	VrA	Output	Analog VREF	2.1 [V]	
7	VrD	Output	Digital VREF	-	1/2 of Vdd (2.1V)
8	VDD	Input	Power terminal		Approx. 4.2V
9	DPAC	-	DPD AC coupling capacity 1	-	
10	DPBD	-	DPD AC coupling capacity 2	--	
11	DPD1	-	DPD integration capacity 1	--	
12	DPD2	-	DPD integration capacity 2	-	
13	SCB	Input	Control line (Bit clock)	2.2 [V]	
14	SCL	Input	Control line (Latch signal)	2.2 [V]	
15	SCD	Input	Control line (Serial data)	2.2 [V]	
16	VRCK	Input	Reference clock input	2.3 [V]	Frequency increase results in shift to higher filter frequency except for servo LPF.
17	VCKF	-	Time constant adjustment capacity	-	
18	VCCP	-	Power terminal	-	
19	LVL	Output	Servo addition output	VrD x (1/2)	
20	TEO	Output	TE output	VrD	
21	FEO	Output	FE output	VrD	
22	DFTN	Input	DPD defect	-	DPD output at Low: Mute
23	VCCS	-	Power terminal (Servo)	-	
24	RPZ	Output	RF ripple center voltage	VrD	
25	RPO	Output	RF ripple output	VrD	
26	RPB	Output	RF ripple bottom	-	
27	RPP	Output	RF ripple peak	-	
28	RFO	Output	Equalizing RF output	2.3 [V]	
29,30	NC	-	NC terminal	-	Used by connecting to GND.
31	VCCR	-	Power terminal (RF)	-	
32	DPDB	Input	Pit depth adjustment	VrD	DPDB increase brings delay capacity increase on sides A and B.
33	TEB	Input	TE balance	VrD	TEB increase brings increase in gain on TP side and in delay capacity on sides A and C.
34	FEB	Input	FE balance	VrD	FEB increase brings increase in gain on sides A and C (FP).
35	PSC	Input	VRCK frequency division ON/OFF	-	Frequency division OFF at High
36	VCC2	-	Power terminal	-	
37	NC	-	NC terminal	VrD	Connected to GND via C.
38	EQD	Input	Group delay correction	VrD	Group delay by raising EQD: rise rightward
39	GND2	-	GND terminal	-	
40	RFDC	-	DC feedback capacity	-	
41*	RFA	Output	RF total adding output	2.2 [V]	
42	EQB	Input	Boost adjustment	VrD	Boost quantity up by raising EQB.
43	EQF	Input	Frequency adjustment	VrD	Shift to higher frequency by raising EQF.
44	MDI1	Input	Monitor input	-	
45	LDO1	Output	Drive output	-	
46	P1TN	Input	TE- input (DVD)	VrA	
47	P1TP	Input	TE+ input (DVD)	VrA	
48	NC	-	NC terminal	-	Used by connecting to GND.
49	P1FN	Input	FE- input (DVD)	VrA	

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

IC502 RH-iX1517GEZZ: RF Signal Processor (IX1517GE) (2/2)

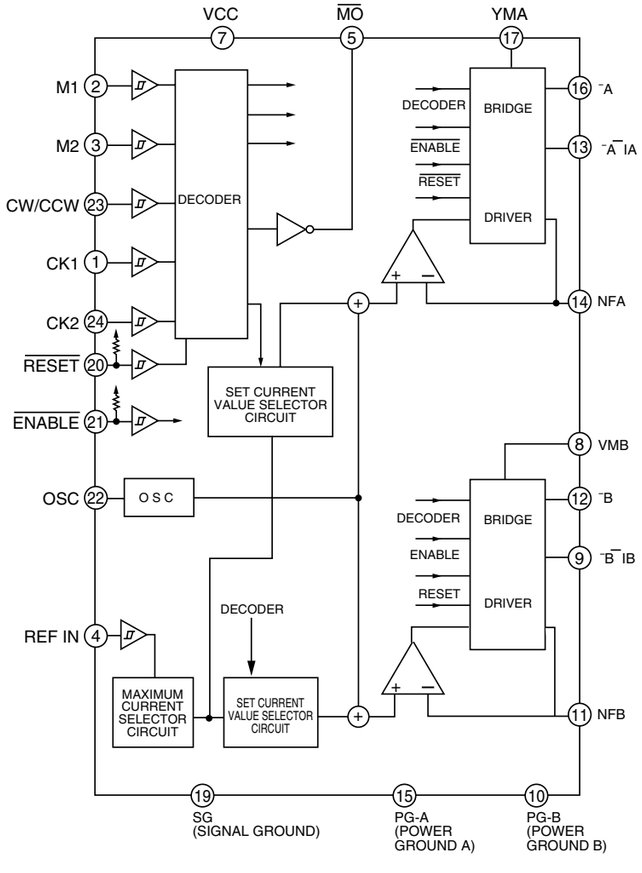
Pin No.	Terminal Name	Input/Output	Function	Terminal DC Voltage (TYP.)	Remarks
50	P1FP	Input	FE+ input	VrA	
51	LDP1	Input	APC polarity 1	-	Positive polarity when connecting to Vcc
52	P1DI	Input	D input (DVD)	VrA	
53	P1CI	Input	C input (DVD)	VrA	
54	P1BI	Input	B input (DVD)	VrA	
55	P1AI	Input	A input (DVD)	VrA	
56	GNDR	-	GND terminal (RF)	-	
57	LDP2	Input	APC polarity 2	-	Positive polarity when connecting to Vcc
58	P2AI	Input	A input (CD)	VrA	
59	P2BI	Input	B input (CD)	VrA	
60	P2CI	Input	C input (CD)	VrA	
61	P2DI	Input	D input (CD)	VrA	
62	GNDS	-	GND terminal (Servo)	-	
63	P2FP	Input	FE+ input	VrA	
64	P2FN	Input	FE- input	VrA	

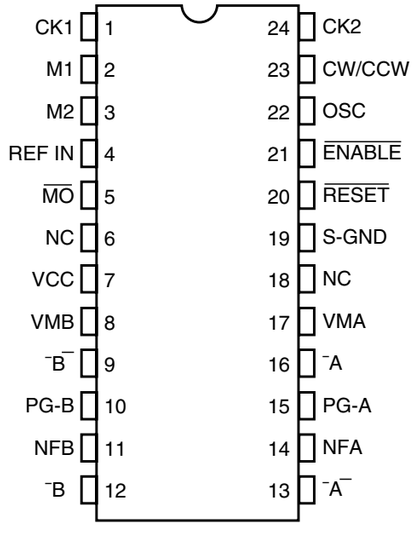


IC503 VHiTB6504F+-1: Stepping Motor Driver (TB6504F)

Pin No.	Terminal Name	Function
1	CK1	Clock signal input
2, 3	M1, M2	Excitation mode set terminal
4	REF IN	Output reference value (VNF) set terminal H: VNF=0.5V, L: VNF=0.25V
5*	$\overline{MO}$	Monitor output L: Initial condition
6*	NC	Not used
7	VCC	Logic side power terminal
8	VMB	Output side power terminal
9	ø$\overline{B}$	$\overline{B}$ output
10	PG-B	Power ground
11	NFB	B channel current detection terminal
12	øB	B output
13	ø$\overline{A}$	$\overline{A}$ output
14*	NFA	A channel current detection terminal
15	PG-A	Power ground
16	øA	A output
17	VMA	Output side power terminal
18*	NC	Not used
19	S-GND	Signal ground
20	$\overline{RESET}$	Reset signal input
21	$\overline{ENABLE}$	Enable signal input
22	OSC	Internal oscillation frequency set terminal. Capacitor is externally mounted.
23	CW/CCW	Clockwise/counterclockwise input
24	CK2	Clock signal input

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

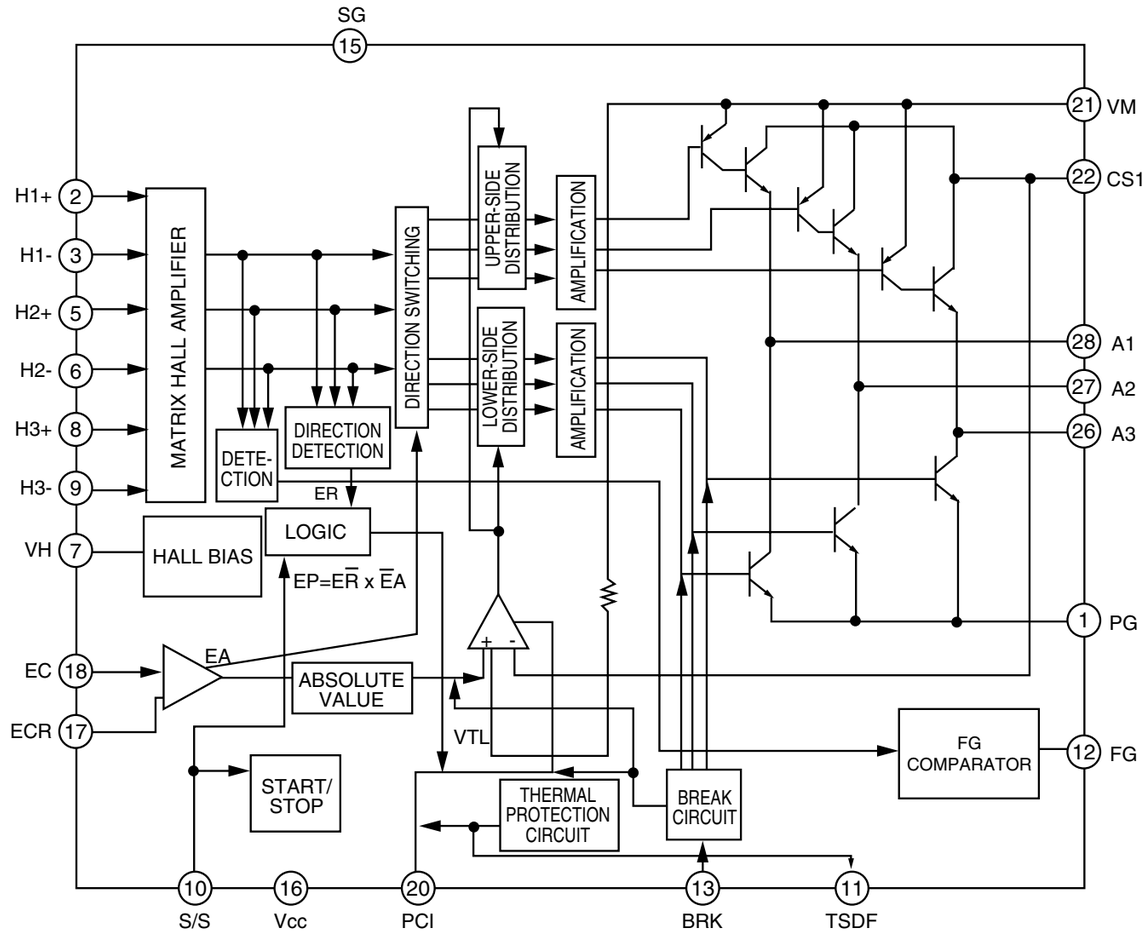




IC504 RH-iX2842AFZZ: Spindle Motor Driver (IX2842AF)

Pin No.	Terminal Name	Function	Pin No.	Terminal Name	Function
1	PG	Power GND terminal	15	SG	Signal GND terminal
2	H1+	Hall element 1 positive input terminal	16	VCC	Power terminal
3	H1-	Hall element 1 negative input terminal	17	ECR	Torque instruction reference input terminal
4*	NC	Not used	18	EC	Torque instruction input terminal
5	H2+	Hall element 2 positive input terminal	19*	NC	Not used
6	H2-	Hall element 2 negative input terminal	20	PCI	Current feedback phase compensating terminal
7	VH	Hall bias terminal	21	VM	Motor power terminal
8	H3+	Hall element 3 positive input terminal	22	CS1	Current detection terminal 1
9	H3-	Hall element 3 negative input terminal	23*	NC	Not used
10	SS	Start/Stop switching terminal	24*	NC	Not used
11*	TFLG	Thermal protection monitor terminal	25*	NC	Not used
12	FG	FG signal output terminal	26	A3	Drive output 3
13	BRK	Break mode set terminal	27	A2	Drive output 2
14*	NC	Not used	28	A1	Drive output 1

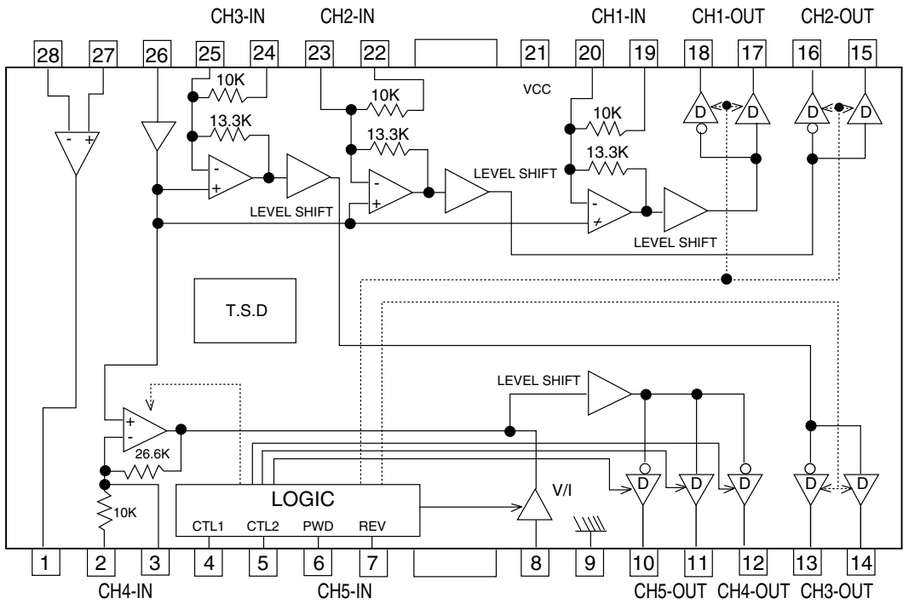
In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.



IC506 VHiBA6796FP-1: Loading/Focus/Tracking/Spin/Sled Driver (BA6796FP)

Pin No.	Terminal Name	Function	Pin No.	Terminal Name	Function
1*	OPOUT	Operational amplifier output terminal	15	CH2-OUT-	CH2 negative output terminal
2	CH4-IN	CH4 input terminal	16	CH2-OUT+	CH2 positive output terminal
3*	CH4-IN'	CH4 gain adjustment input terminal	17	CH1-OUT-	CH1 negative output terminal
4	CTL1	Control 1 input terminal	18	CH1-OUT+	CH1 positive output terminal
5	CTL2	Control 2 input terminal	19	CH1-IN	CH1 input terminal
6	FWD	Tray forward input terminal	20	CH1-IN'	CH1 gain adjustment input terminal
7	REV	Tray reverse input terminal	21	VCC	VCC
8	TRAY-IN	Tray input terminal	22	CH2-IN	CH2 input terminal
9	GND	Substrate GND	23*	CH2-IN'	CH2 gain adjustment input terminal
10	CH5-OUT-	Tray negative output terminal	24*	CH3-IN	CH3 input terminal
11	COM-OUT	Tray positive terminal/CH4 negative output terminal	25*	CH3-IN'	CH3 gain adjustment input terminal
12*	CH4-OUT+	CH4 positive output terminal	26	VREF-IN	Bias amplifier input terminal
13*	CH3-OUT+	CH3 positive output terminal	27*	OPIN+	Operational amplifier non-inversion input terminal
14*	CH3-OUT-	CH3 negative output terminal	28*	OPIN-	Operational amplifier inversion input terminal

Note 1: Positive output/negative output means polarity toward input. (Ex. 18 pin output 'H' in case of 19 pin input 'H')
Note 2: Tray positive output/tray negative output means polarity toward mode. (Ex. 11 pin output 'H' in case of the forward mode)
In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.



Mode Switching Table

For CTL1 and CTL2

CTL1	CTL2	CH1	CH2	CH3	CH4	CH5
L	L	OFF				ON
L	H					
H	L	ON				OFF
H	H	OFF		ON	OFF	ON

Note: Output: high impedance in case of OFF.

For F and R (CH5 control is effective only in case of ON)

F	R	Output Mode
L	L	High impedance
L	H	Reverse
H	L	Forward
H	H	Break

IC602 RH-iX1474GEZZ: SACD Data Processor (IX1474GE) (1/2)

Pin No.	Terminal Name	Input/Output	Function	Remarks
1	DPCKI	Input	Signal processing reference clock input	0.5 - 3.3Vpp, feedback resistor built in.
2	DVDD3	-	Digital power supply (3.3V)	For logic cell
3	SVCKI	Input	Servo reference clock input (Oscillation circuit input terminal)	3.3V-I/F feedback resistor built in
4*	SVCKO	Output	Servo reference clock input (Oscillation circuit input terminal)	
5	DVSS	-	Digital power supply (0V)	For logic cell
6	DVDD3	-	Digital power supply (3.3V)	For logic cell
7*	NC	-	The use forbidden	Open
8	HDWT	Input	MPU write signal	Level TTL
9	HDRD	Input	MPU read signal	Level TTL
10	HCEN	Input	MPU chip select	Level TTL
11-18	HD0-HD7	Input/Output	MPU data bus	Level TTL
19	DVSS	-	Digital power supply (0V)	For I/O cell
20	DVDD5	-	Digital power supply (5V)	For I/O cell
21	HINT	Output	MPU interrupt signal (Occurrence of interruption = "L")	OPEN DRAIN
22,23	HA0, HA1	Input	MPU address bus	Level TTL
24	PLCK	Output	Read channel clock output terminal	
25*-31*	ED0-ED6	-	For default adjustment; use by user is forbidden. (NC)	Open
32	ED7	Output	SACD 2 binary data	
33	TEST	Input	For default adjustment	Set to "L".
34	PDON	Output	PLL phase error signal output (Polarity: -)	
35	PDOP	Output	PLL phase error signal output (Polarity: +)	
36	RLLD	Output	PLL detection result output	
37	LPFN	Input	Inversion input of amplifier for PLL loop filter	
38	LPFO	Output	Output of amplifier for PLL loop filter	
39	VCOF	Output	VCO filter terminal	
40	SCLO	Output	Reference voltage output terminal of built-in comparator	
41	AVSS	-	Analog power supply (0V)	
42	AVR	Output	Non-PLL analog reference potential (1.65V)	
43	VRC	-	Resistance dividing point potential (For generating analog reference potential: 1.65)	
44	PVR	Output	PLL analog reference potential (1.65V)	
45	AVDD	-	Analog power supply (3.3V)	
46	RVR2	-	Secondary reference voltage (For connecting capacitor)	
47	RVDD	-	Dedicated power terminal (3.3V)	
48	RFIN	Input	RF signal input	
49	RVSS	-	Dedicated power terminal (0V)	
50	RVR1	-	The first reference voltage (For connecting capacitor)	
51	DVR	Input	DMO reference potential (1.65V recommended)	
52	DMO	Output	DVD disc equalizer output (Ternary PWM + Hiz)	
53	RASN	Output	External RAM column address select (Negative logic)	
54	CASN	Output	External RAM row address select (Negative logic)	
55	MOEN	Output	External RAM output enable signal	
56	MWEN	Output	External RAM read/ write select	
57	DVSS	-	Digital power supply (0V)	For logic cell
58	DVDD3	--	Digital power supply (3.3V)	For logic cell
59-68	MA9-MA0	Output	External RAM address bus	
69	DVSS	-	Digital power supply (0V)	For I/O cell
70	DVDD5	-	Digital power supply (5V)	For I/O cell
71-78	MD7-MD0	Input/Output	External RAM data bus	Level TTL
79-82	SD7-SD4	Output	MPEG data output	
83	DVSS	-	Digital power supply (0V)	For logic cell

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

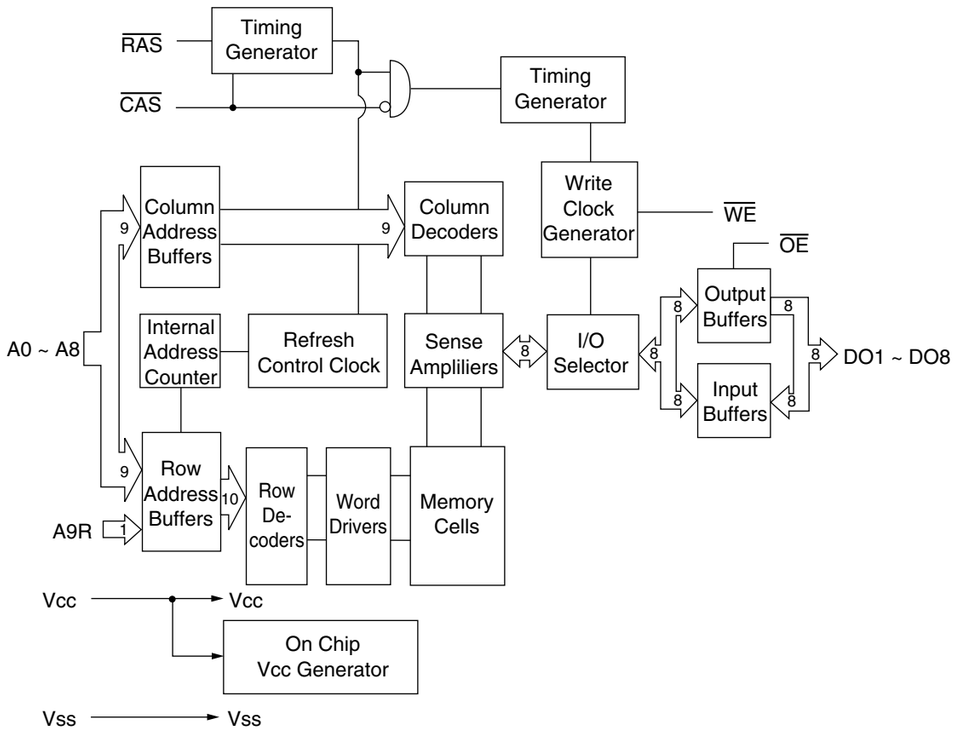
IC602 RH-iX1474GEZZ: SACD Data Processor (IX1474GE) (2/2)

Pin No.	Terminal Name	Input/Output	Function	Remarks
84	DVDD3	-	Digital power supply (3.3V)	For logic cell
85-88	SD3-SD0	Output	MPEG data output	
89	SERR	Output	MEPG data reliability flag (Data error = "L")	
90	SBGN	Output	MEPG output sector synchronous signal (Sector head = "L")	
91	SENB	Output	MEPG data effective flag (Effective = "L")	
92	SDCK	Output	MEPG data transfer clock	
93	DVSS	-	Digital power supply (0V)	For logic cell
94	SREQ	Input	MEPG data request flag (In case of request = "L")	Level TTL
95	RSTN	Input	Hard reset input (In case of reset = "L")	
96	DVDD3	-	Digital power supply (3.3V)	For logic cell
97	STDA	Output	Status data output	
98	STCK	Output	Status clock output	
99	UPWM	Output	Universal PWM output	
100	DVSS	-	Digital power supply (0V)	For logic cell

IC603 VHiSC514870SJ: 4Mbit DRAM (SC514870SJ)

Pin No.	Terminal Name	Function
10-13, 16-20, 9	A0-A8, A9R	Address input
8	$\overline{RAS}$	Row address strobe
23	$\overline{CAS}$	Column address strobe
2-5, 24-27	DQ1-DQ8	Data input/Data output
22	$\overline{OE}$	Output enable
7	$\overline{WE}$	Write enable
1	VCC	Power supply (5V)
15, 28	VSS	Ground (0V)
6*, 21*	NC	Not used

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.



IC606 RH-iX1473GEZZ: Digital Servo (IX1473GE) (1/3)

Pin No.	Terminal Name	Input/Output	Function	Remarks
1	VSS	-	Digital ground terminal	
2	BCK	Output	Bit clock (1.4122 MHz) output terminal	
3	AOUT	Output	Audio data output terminal	
4	DOUT	Output	Digital-out output terminal	
5*	MBOV	Output	When buffer memory over signal output terminal is over: "H"	
6	IPF	Output	When AOUT output of correction flag output terminal shows the correction impossible symbol: "H"	
7*	SBOK	Output	When CRCC judgment result output terminal of sub-code Q data shows OK: "H"	
8*	CLCK	Input/Output	Can be selected by using the clock output/input terminal command bit for reading sub-code P-W data.	
9	VDD	-	Digital + power terminal	
10	VSS	-	Digital ground terminal	
11*	DATA	Output	Sub-code P-W data output terminal	
12*	SFSY	Output	Reproductive frame sync signal output terminal	
13	SBSY	Output	When sub-code sync of sub-code block sync output terminal is detected: "H" at the position of SI	
14*	SPCK	Output	Output terminal of the clock (176.4 kHz) for reading processor status signals	
15*	SPDA	Output	Processor status signal output terminal	
16*	COFS	Output	Correction frame clock (7.35 kHz) output terminal	
17*	MDNIT	Output	Can monitor DSP internal flag and PLL clock by using microcomputer commands of LSI internal signal monitor terminal	
18	VDD	-	Digital + power terminal	
19	TESIO0	Input	Test input/output terminal. Normally fixed at "L".	
20	P2VREF	-	PLL special 2VREF terminal	
21*	SPDO	Output	VCO center frequency shift terminal	
22*	PDOS	Output	Phase error (between EFM and PLCK) signal output terminal (to be used in case of 8-time speed operation)	
23	PDO	Output	Output terminal for phase error signal between EFM signal and PLCK signal	
24*	TMAXS	Output	TMAX detection result output terminal. Selected by command bit TMPS.	
25	TMAX	Output	**TMAX Detection result** / **TMAX Output** Longer than the specified frequency / "P2VEFF" Shorter than the specified frequency / "VSS" Within the specified frequency / "HiZ"	
26	LPFN	Input	Inversion input terminal of amplifier for low-pass filter	
27	LPFO	Output	Output terminal of amplifier for low-pass filter	
28	PVREF	-	VREF terminal for PLL system	
29	VCOREF	Input	VCO center frequency reference level terminal. Normally fixed at "PVREF".	
30	VCOF	Output	Filter terminal for VCO	
31	AVSS	-	Analog system ground terminal	
32	SLCO	Output	Output terminal of DAC for generating data slice level	
33	RFI	Input	RF signal input terminal	
34	AVDD	-	Analog power terminal	
35	RFCT	Input	RFRP signal center level input terminal	
36	REZI	Input	Input terminal for RFRP zero-cross	
37	RFRP	Input	RF ripple signal input terminal	
38	FEI	Input	Focus error signal input terminal	
39	SBAD	Input	Sub-beam adding signal input terminal	
40	TSIN	Input	Test input terminal. Normally fixed at "Vref".	
41	TEI	Input	Tracking error signal input terminal (Input when tracking servo is ON.)	
42	TEZI	Input	Input terminal for tracking error zero cross	
43	FOO	Output	Focus equalizer output terminal	

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

IC606 RH-iX1473GEZZ: Digital Servo (IX1473GE) (2/3)

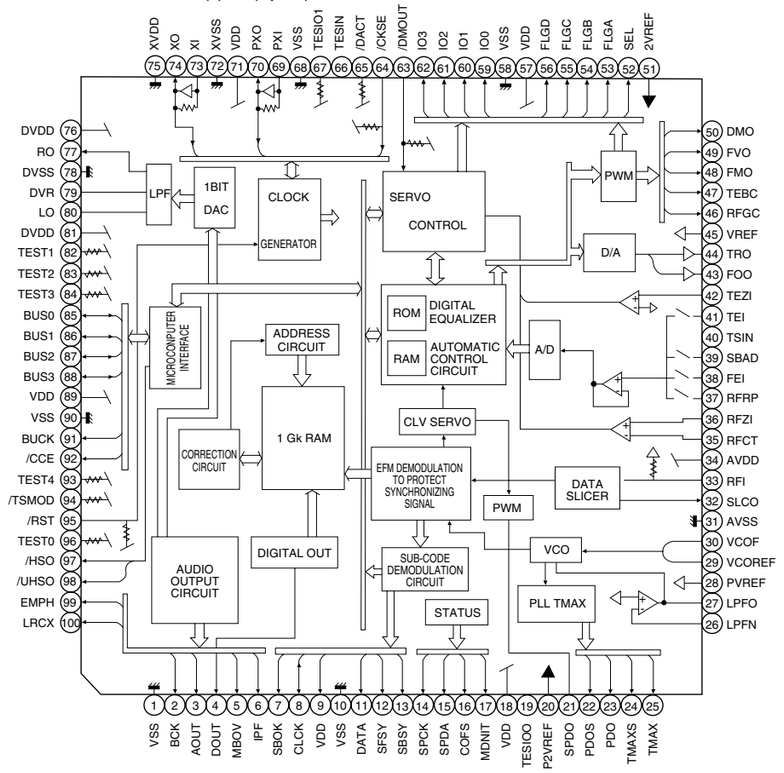
Pin No.	Terminal Name	Input/Output	Function	Remarks
44	TRO	Output	Tracking equalizer output terminal	
45	VREF	-	Analog reference power terminal	
46*	RFGC	Output	Outputs 3-pole PWM signal of RF amplitude adjusting signal output terminal. (PWM carrier = 88.2 kHz)	
47	TEBC	Output	Outputs 3-pole PWM signal of tracking balance control signal output terminal. (PWM carrier = 88.2 kHz)	
48	FMO	Output	Outputs 3-pole PWM signal of feed equalizer output terminal. (PWM carrier = 88.2 kHz)	
49*	FVO	Output	Outputs speed error signal or 3-pole PWM signal of feed search EQ output terminal. (PWM carrier = 88.2 kHz)	
50	DMO	Output	To output PWM signals of 3 poles of disc equalizer output terminal. (PWM carrier = DPS 88.2 kHz, synchronizing with PXO)	
51	2VREF	-	Reference power terminal	
52	SEL	Output	Laser diode control signal	
53	FLGA	Output	FLG-A output terminal	
54	FLGB	Output	FLG-B output terminal	
55*	FLGC	Output	FLG-C output terminal	
56	FLGD	Output	FLG-D output terminal	
57	VDD	-	Power terminal	
58	VSS	-	Connected to GND.	
59-62 (60*)	IO0-IO3	Input/Output	General-purpose I/O port Can be switched to input/output port possible according to commands. In case of input port: can read terminal condition (H/L) by read commands possible. In case of output port: can control terminal condition (H/L/HiZ) by commands possible.	
63	/DMOUT	Input	Terminal for setting the mode outputting feed equalizer binary PWM from IO0 and 1 terminals and disc equalizer binary PWM from IO2 and 3 terminals. "L": active.	
64	/CKSE	-	X'tal select terminal. In case of 16.9344MHz: "H"; in case of 33.8688 MHz: "L"	
65*	/DACT	-	Test terminal	
66	TESIN	Input	Test input terminal	
67	TESIO1	Input/Output	Test input/output terminal	
68	VSS	-	Digital ground terminal	
69	PXI	Input	DSP system clock oscillation circuit input terminal	
70	PXO	Output	DSP system clock oscillation circuit output terminal	
71	VDD	-	Digital + power terminal	
72	XVSS	-	Ground terminal for system clock oscillation circuit	
73	XI	Input	System clock oscillation circuit input terminal	
74*	XO	Output	System clock oscillation circuit output terminal	
75	XVDD	-	+ power terminal for system clock oscillation circuit	
76	DVDD	-	D/A conversion section power terminal	
77*	RO	Output	Channel R data normal rotation output terminal	
78	DVSS	-	D/A conversion section analog ground terminal	
79	DVR	-	D/A conversion section reference voltage terminal	
80*	LO	Output	Channel L data normal rotation output terminal	
81	DVDD	-	D/A conversion section power terminal	
82	TEST1	Input	Test terminal Normally open	Pull-up resistor built in
83	TEST2	Input	Test terminal Normally open	Pull-up resistor built in
84	TEST3	Input	Test terminal Normally open	Pull-up resistor built in
85	BUS0	Input/Output	Data input/output terminal for microcomputer interface	Schmitt input CMOS port
86	BUS1	Input/Output		
87	BUS2	Input/Output		
88	BUS3	Input/Output		

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

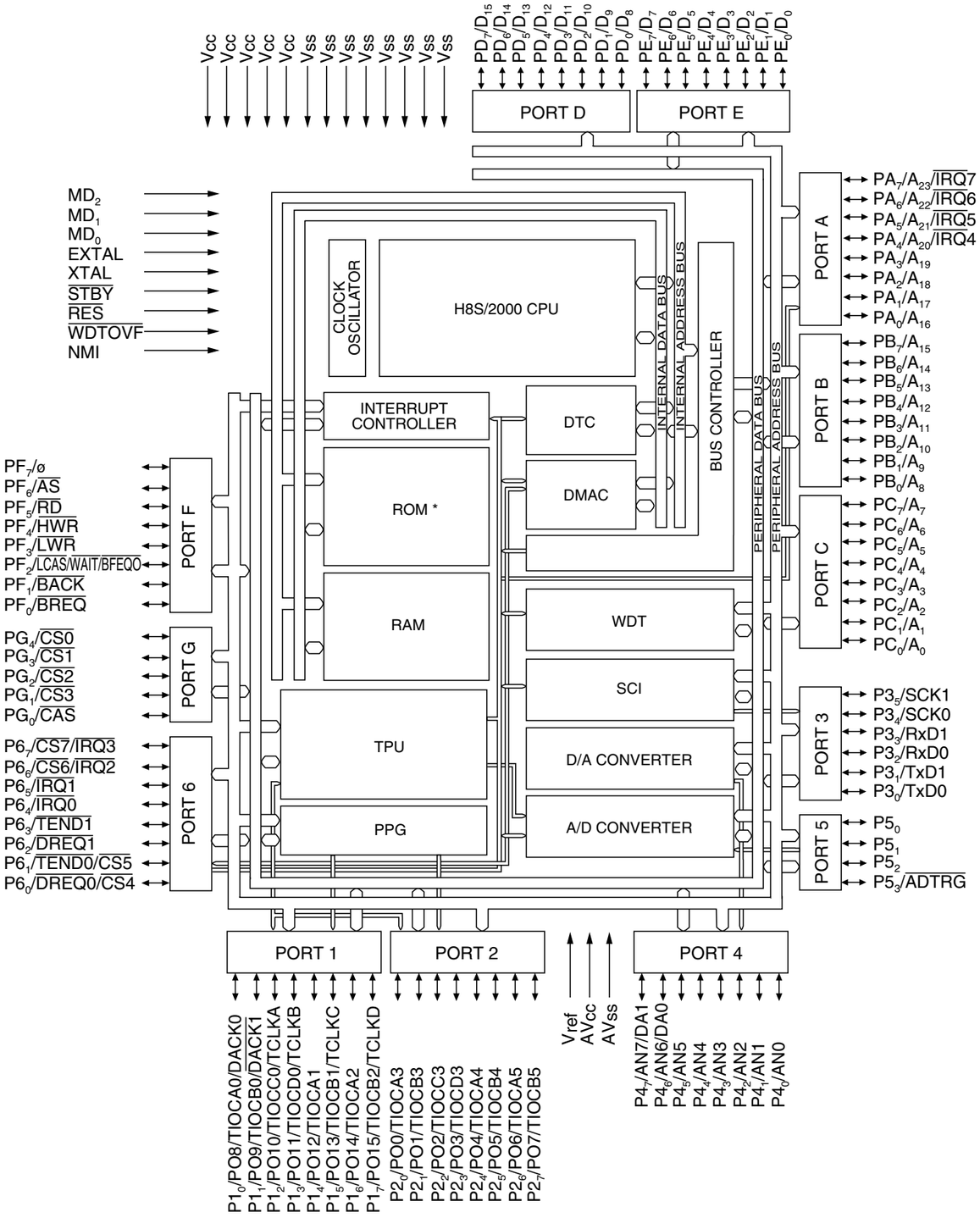
IC606 RH-iX1473GEZZ: Digital Servo (IX1473GE) (3/3)

Pin No.	Terminal Name	Input/Output	Function	Remarks
89	VDD	-	Digital + power terminal	
90	VSS	-	Digital ground terminal	
91	BUCK	Input	Clock input terminal for microcomputer interface	Schmitt input
92	/CCE	Input	Chip enable signal input terminal for microcomputer interface "L": BUS0 to 3 are active.	Schmitt input
93	TEST4	Input	Test terminal Normally open	Pull-up resistor built in
94	/TSMOD	Input	Local test mode select terminal	Pull-up resistor built in
95	/RST	Input	Reset signal input terminal "L" in case of reset	Pull-up resistor built in Pull-up resistor
96	TEST0	Input	Test terminal Normally open	Pull-up resistor built in Pull-up resistor
97*	/HSO	Output	Playback speed mode flag output terminal	
98*	/UHSO	Output	/UHSO / /HSO / Playback speed H / H / Normal speed playback H / L / Double speed playback L / H / 4-time speed playback L / L / 8-time speed playback	
99	EMPH	Output	Emphasis flag output terminal for sub-code Q data H: emphasis ON, L: emphasis OFF Output polarity can be inverted according to commands	
100	LRCK	Output	Channel clock (44.1 kHz) output terminal L channel: L, R channel: H Output polarity can be inverted according to commands	

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.



IC801 RH-iX1478GEZZ: System Microcomputer (IX1478GE)



IC802 RH-iX1535GEZZ: Input/Output Expander (IX1535GE) (1/2)

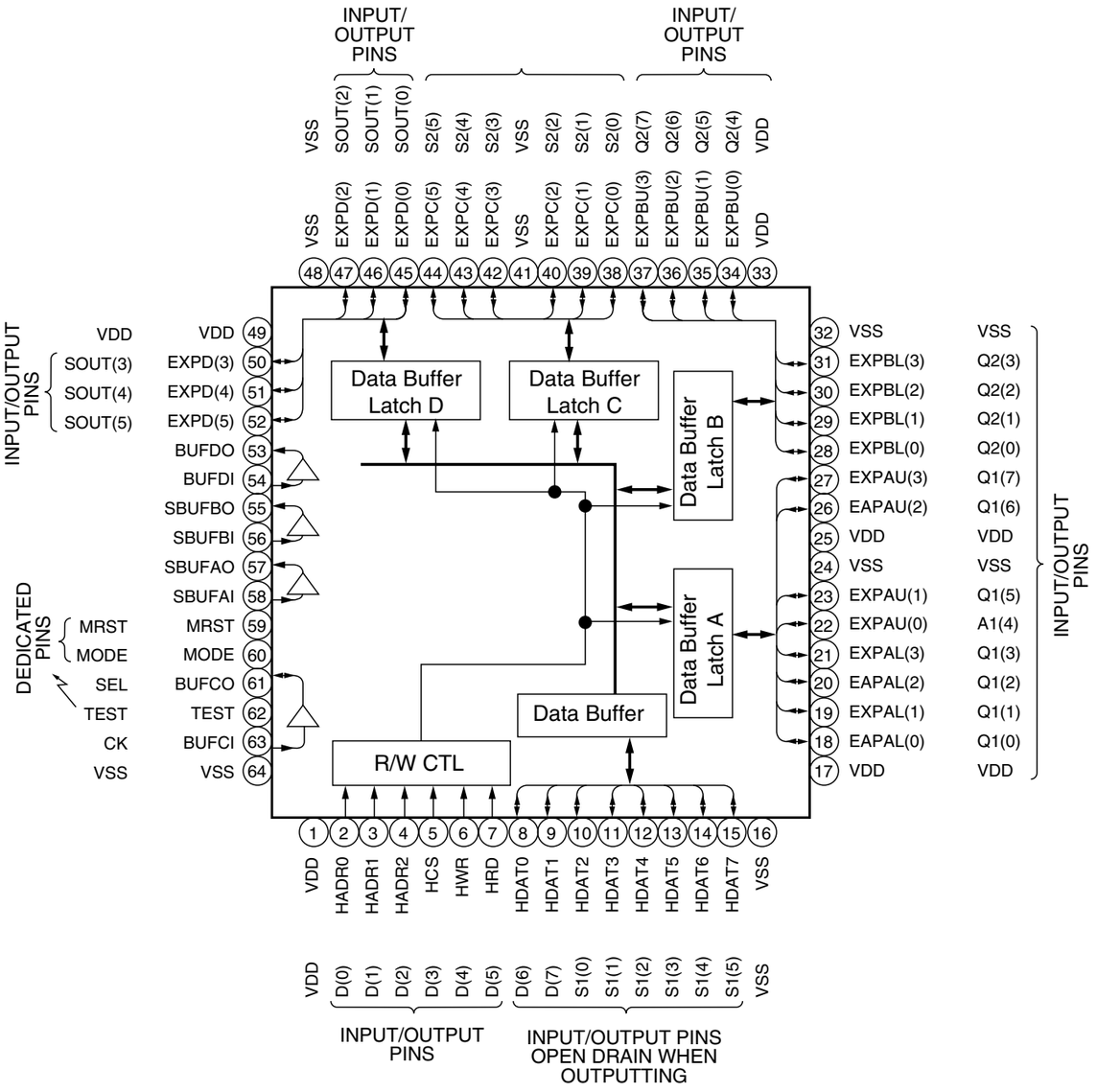
Pin No.	Terminal Name	Input/Output	Function
1	VDD	-	Power supply +3.3V
2-4	HADR0-HADR2	Input	CPU address bus
5	HCS	Input	CPU chip select
6	HWR	Input	CPU write signal
7	HRD	Input	CPU read signal
8-15	HDAT0-HDAT7	Input/Output	CPU data bus
16	VSS	-	Digital GND
17	VDD	-	Power supply +3.3V
18	EXPPAL0, SLDCK 1	Output	Driving clock output for stepping motor driver
19	EXPPAL1, SLDCK 2	Output	Mode control output for stepping motor driver
20	EXPPAL2, CW/CCW	Output	Rotating direction control output for stepping motor driver
21	EXPPAL3, DACCK	Output	Clock signal for electronic capacity IC
22	EXPPAU0, DACDT	Output	Data signal for electronic capacity IC
23*	EXPPAU1	Input/Output	General input/output terminal Gr.A
24	VSS	-	Digital GND
25	VDD	-	Power supply +3.3V
26	EXPPAU2	Input	General input/output terminal Gr.A
27	EXPPAU3	Output	General input/output terminal Gr.A
28	EXPBL0, EXTCK	Output	Control clock output to 1-bit amplifier
29	EXPBL1, EXTDO	Output	Control data output to 1-bit amplifier
30	EXPBL2, EXTST	Output	Control strobe output to 1-bit amplifier
31	EXPBL3, VOLCS	Output	Chip select signal for electronic capacity IC
32	VSS	-	Digital GND
33	VDD	-	Power supply +3.3V
34	EXPBU0, EXTDI	Input	Control data input from 1-bit amplifier
35	EXPBU1, MECSW1	Input	Tray position detection input
36	EXPBU2, MECSW2	Input	Mechanism stop mode detection input
37	EXPBU3, SMODE	Input	Operating mode set input. Opened (S-MODE)
38	EXPC0, DVD_L	Output	SACD disc inserted/CD stopped: L
39	EXPC1, SMUTE	Output	Soft mute signal for SACD decoder
40	EXPC2, AMUTE	Output	Audio mute. In case of playback/manual search
41	VSS	-	Digital GND
42	EXPC3	Input/Output	General input/output terminal Gr.C
43	EXPC4, DSDCTL	Output	Output control signal for DSD 1-bit signal
44	EXPC5, SEEK	Output	General input/output terminal Gr.C
45	EXPD0, GAIN0	Output	Gain control signal for RF pre-amplifier
46	EXPD1, GAIN1	Output	Gain control signal for RF pre-amplifier
47	EXPD2, GAIN2	Output	Gain control signal for RF pre-amplifier
48	VSS	-	Digital GND
49	VDD	-	Power supply +3.3V
50	EXPD3, MMUTE	Output	Main relay control signal. After reading disc TOC: "H"
51	EXPD4	Input/Output	General input/output terminal Gr.D
52	EXPD5, EMPH	Output	De-emphasis signal output
53	BUFDO, RST_01	Output	Buffer output D/Reset signal output for peripheral IC
54	BUFDI	Input	Buffer input D
55	SBUFBO	Output	Schmitt buffer output B
56	SBUFBI	Input	Schmitt buffer input B
57	SBUFAO	Output	Schmitt buffer output A
58	SBUFAI	Input	Schmitt buffer input A
59	MRST	Input	Reset terminal

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

IC802 RH-iX1535GEZZ: Input/Output Expander (IX1535GE) (2/2)

Pin No.	Terminal Name	Input/Output	Function
60	MODE	Input	Mode switching terminal. Fix at "L".
61	BUFCO	Input/Output	Buffer output C
62	TEST	Input	Test terminal. Fixed at "L".
63	BUFCI	Input	Buffer input C. Not used.
64	VSS	-	Digital GND

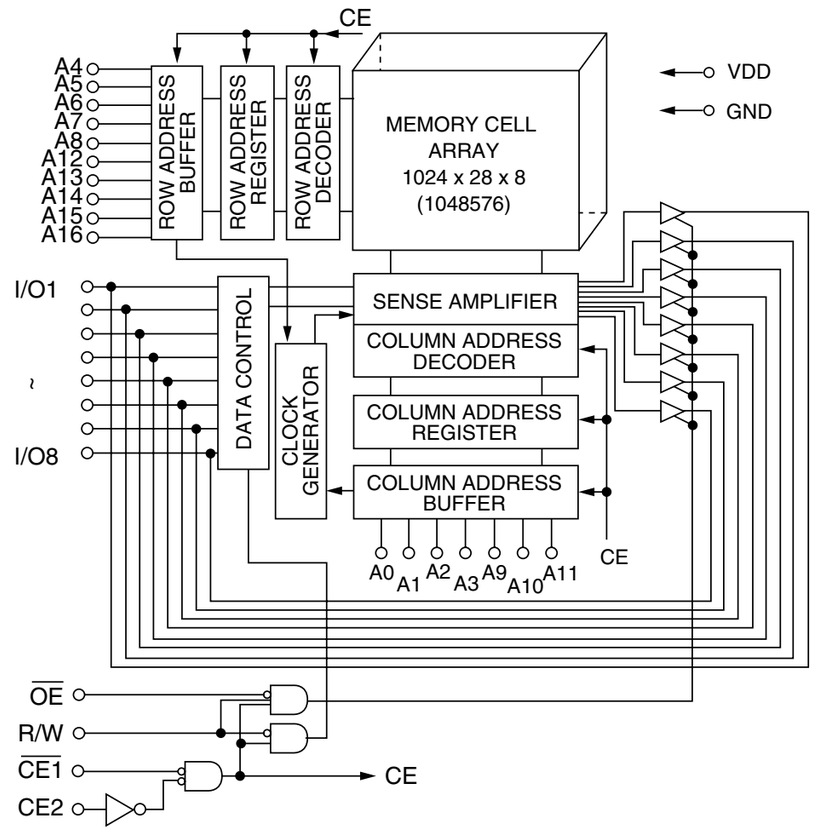
Pins 1 to 15: Simultaneous changes possible. Operating frequency: approx. 10MHz
Pins 18 to 47: Simultaneous changes possible. (Static signal) Operating frequency: approx. 1kHz
Pins 50 to 57: Simultaneous changes almost impossible. Operating frequency: approx. 1kHz

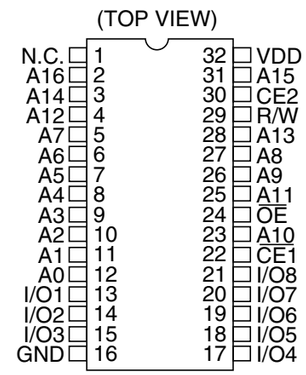


IC804 RH-iX2839AFZZ: 1Mbit SRAM (IX2839AF)

Pin No.	Terminal Name	Function
1*	NC	Not used
2	A16	Address input
3	A14	Address input
4	A12	Address input
5-12	A7-A0	Address input
13-15	I/O1-I/O3	Data input/output
16	GND	Ground
17-21	I/O4-I/O8	Data input/output
22	$\overline{CE1}$	Chip enable input
23	A10	Address input
24	$\overline{OE}$	Output enable input
25	A11	Address input
26, 27	A9, A8	Address input
28	A13	Address input
29	R/W	Read/Write input
30	CE2	Chip enable input
31	A15	Address input
32	VDD	Power terminal (+5V)

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.





IC805 RH-iX1539GEZZ: Flash ROM (IX1539GE) (1/2)

Pin No.	Terminal Name	Input/Output	Function
1-3	A15-A13	Input	Block select addresses: Select 1/32 erase block. These addresses are latched during data entry, erase and lock block.
4-8	A12-A8	Input	Word select addresses: Select one word in 1.6k byte block. These addresses are latched during data entry.
9*, 10*	NC	-	Not used
11	WR	Input	Write enable: Controls access to command user interface, to data cue register and to address cue latch. At Low, WR is active to input address and data at leading edge.
12	/RP	Input	Reset/power-down: By setting /RP at Low, control circuit is initialized when supplying power. When supplying/breaking power, /RP pin is maintained at Low to protect data. If /RP is at Low, device is in condition of deep power down. To return from the deep power down, 480ns is required. When pin /RP is at Low, all chip operation is interrupted and reset. After return, device reads array.
13	VPP	-	Device power supply: 5.0 V
14	/WP	-	Write/Erase power supply: 5.0±0.5V is applied during the writing/erasing operation.
15	RY/BY	Output	Ready/Busy: Outputs the condition of the internal write state machine. "Low" shows the write state machine is in operation. When the machine is waiting for the next instruction to operate, interrupting erasing, or in deep power-down condition, RY/BY pin is in the float condition.
16,17	A18, A17	Input	Block select addresses: Select 1/32 erase block. These addresses are latched during data entry, erase and lock block.
18-25	A7-A0	Input	Word select addresses: Select one word in 1.6k byte block. These addresses are latched during data entry.
26	/CE	Input	Chip enable: Makes control logic, input buffer, decoder, and sense amplifier of the device active. Only when /CE is Low, chip becomes active.
27	GND	-	Ground
28	/OE	Input	Output enable: By setting /OE at Low, data are output from pin DQ. If /OE is set at High, pin DP becomes in the float condition.
29	DQ0	Input/Output	Lower byte data input/output: Data and command input during cycle of writing command user interface. Memory array, identifier, and status data output when reading various data. Float condition in case of chip non-select or output disable.
30	DQ8	Input/Output	Upper byte data input/output: The function is the same as shown in case of the lower byte data input/output above. Operating only in x16 mode. Floating in x 8 mode. DQ15/A-1: address
31	DQ1	Input/Output	Lower byte data input/output: Data and command input during cycle of writing command user interface. Memory array, identifier, and status data output when reading various data. Float condition in case of chip non-select or output disable.
32	DQ9	Input/Output	Upper byte data input/output: The function is the same as shown in case of the lower byte data input/output above. Operating only in x16 mode. Floating in x 8 mode. DQ15/A-1: address
33	DQ2	Input/Output	Lower byte data input/output: Data and command input during cycle of writing command user interface. Memory array, identifier, and status data output when reading various data. Float condition in case of chip non-select or output disable.
34	DQ10	Input/Output	Upper byte data input/output: The function is the same as shown in case of the lower byte data input/output above. Operating only in x16 mode. Floating in x 8 mode. DQ15/A-1: address
35	DQ3	Input/Output	Lower byte data input/output: Data and command input during cycle of writing command user interface. Memory array, identifier, and status data output when reading various data. Float condition in case of chip non-select or output disable.
36	DQ11	Input/Output	Upper byte data input/output: The function is the same as shown in case of the lower byte data input/output above. Operating only in x16 mode. Floating in x 8 mode. DQ15/A-1: address
37	VCC	-	Device power supply: 5.0±0.5V
38	DQ4	Input/Output	Lower byte data input/output: Data and command input during cycle of writing command user interface. Memory array, identifier, and status data output when reading various data. Float condition in case of chip non-select or output disable.
39	DQ12	Input/Output	Upper byte data input/output: The function is the same as shown in case of the lower byte data input/output above. Operating only in x16 mode. Floating in x 8 mode. DQ15/A-1: address
40	DQ5	Input/Output	Lower byte data input/output: Data and command input during cycle of writing command user interface. Memory array, identifier, and status data output when reading various data. Float condition in case of chip non-select or output disable.
41	DQ13	Input/Output	Upper byte data input/output: The function is the same as shown in case of the lower byte data input/output above. Operating only in x16 mode. Floating in x 8 mode. DQ15/A-1: address

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

IC901 VHiCXD2751Q-1: SACD Playback Signal Processor (CXD2751Q) (1/2)

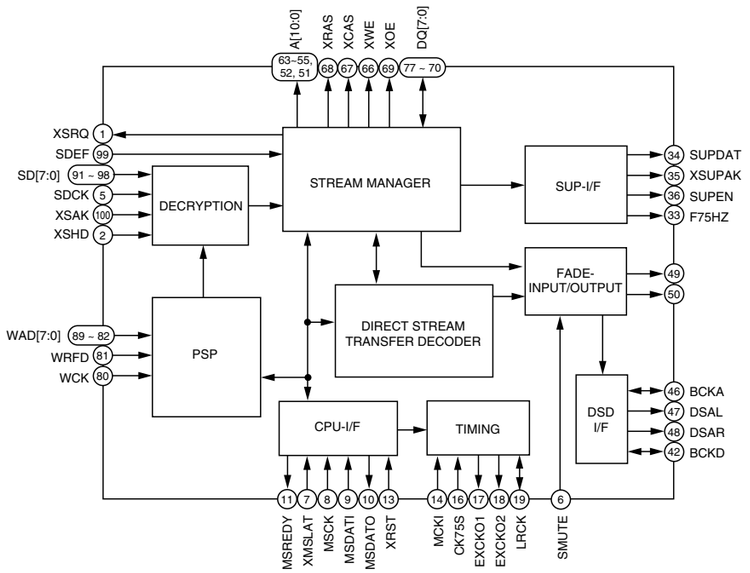
Pin No.	Terminal Name	Input/Output	Function
1	XSRQ	Output	Output terminal for data request to be input in the front end processor.
2	XSHD	Input	Input terminal for header flag to be output from the front end processor.
3	VDD	-	Power supply terminal, +3.3V
4	VSS	-	Ground terminal
5	SDCK	Input	Input terminal for data transmitting clock to be output from the front end processor
6	SMUTE	Input	Soft mute terminal H: Soft mute of audio output, L: Released
7	XMSLAT	Input	Latch input terminal for microcomputer serial communication Latches addresses and data when this terminal rises.
8	MSCK	Input	Shift clock input terminal for microcomputer serial communication Inputs and shifts the serial input data when the clock to be input in this terminal rises. Read-out data change when the clock to be input in this terminal falls.
9	MSDATI	Input	Data input terminal for microcomputer serial communication (Microcomputer -> CXD2751Q) Inputs serial data and addresses for communication.
10	MSDATO	Output	Data input terminal for microcomputer serial communication (CXD2751Q -> Microcomputer) High impedance except during output
11	MSREDY	Output	Ready-to-output flag for microcomputer serial communication. Outputs "L", if complete. Open drain.
12*	XMSDOE	Output	Data enable terminal for microcomputer serial communication Makes this terminal active when using the try state buffer outside.
13	XRST	Input	Resets entire IC when reset terminal is "L". Clock which is output from output terminals EXCKO1, EXCKO2, and LRCK does not stop during reset.
14	MCKI	Input	Master clock input terminal Inputs clock of 512Fs (22.579 MHz) or 768Fs (33.869 MHz).
15	VSS	-	Ground terminal
16	CK75S	Input	Master clock select terminal. Selects "H" in case of 768Fs and "L" in case of 512Fs.
17	EXCKO1	Output	External output clock terminal 1. Outputs 768Fs/512Fs/256Fs/128Fs according to setting.
18*	EXCKO2	Output	External output clock terminal 2. Outputs 768Fs/512Fs/256Fs/128Fs according to setting.
19*	LRCK	Input/Output	IFs (44.1kHz) clock input/output terminal. Selects master/slave according to setting.
20*	NC	-	Not used
21*	MNT2	Output	Monitor output terminal. Outputs partial internal operation according to setting.
22	TRST	Input	Reset terminal for test. Inputs power-on reset signal or fixed at "L".
23	TCK	Input	Test clock input terminal. Fixed at "L".
24*	TDI	Input	Test input terminal. Open
25*	TENA1	Input	Test input terminal. Open
26*	TDO	Output	Test input terminal. Open
27	VST	-	Test ground terminal. Connected to ground
28	VDD	-	Power supply terminal, +3.3V
29	VSS	-	Ground terminal
30*, 31*	MNT1, MNT0	Output	Monitor output terminal. Outputs partial internal operation according to setting.
32*	XBIT	Output	DST related monitor terminal. Not connected.
33*	F75HZ	Output	75Hz clock output terminal
34*	SUPDAT	Output	Supplementary data serial output terminal
35*	XSUPAK	Output	Supplementary data effective flag terminal Outputs "L" when supplementary data are effective.
36*	SUPEN	Output	Supplementary data byte-unit enable output terminal Changes to "H" at the break of 1 byte (8 bits) of serial data.
37	TEST1	Input	Test input terminal. Fixed at "L".
38	VSS	-	Ground terminal
39	TEST2	Input	Test input terminal. Fixed at "L".
40, 41	VSS	-	Ground terminal
42*	BCKD	Input/Output	Phase reference signal input/output terminal for DSD data phase modulation output Input/output according to setting
43*-45*	NC	-	Not used

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

IC901 VHiCXD2751Q-1: SACD Playback Signal Processor (CXD2751Q) (2/2)

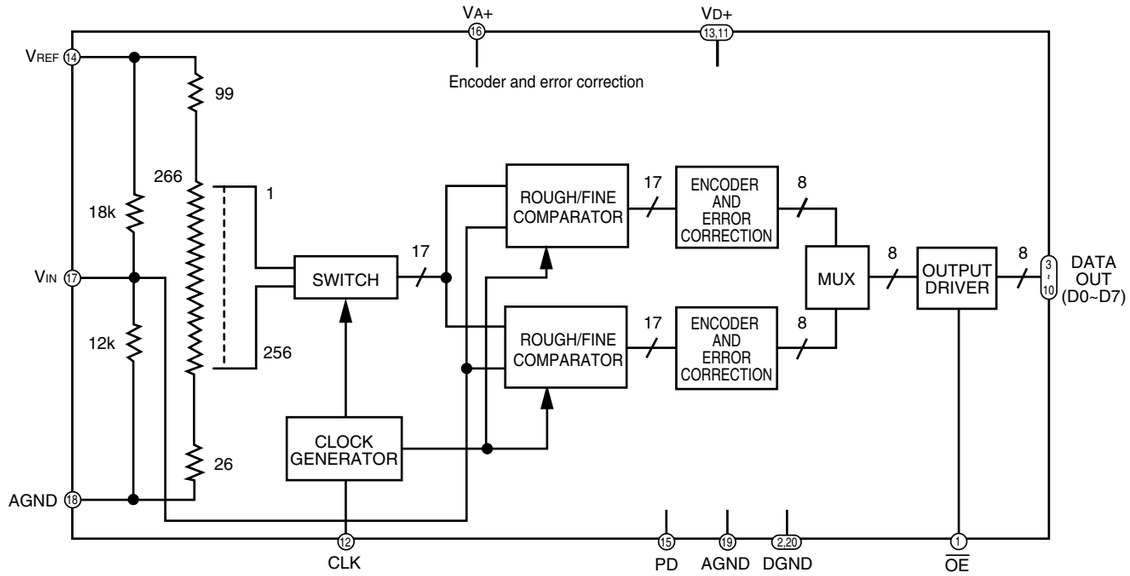
Pin No.	Terminal Name	Input/Output	Function
46	BCKA	Input/Output	Shift clock input/output terminal for DSD data output. Input/output according to setting.
47	DSAL	Output	Lch-DSD data output terminal. Phase modulation output according to setting.
48	DSAR	Output	Rch-DSD data output terminal. Phase modulation output according to setting.
49	ZDFLGL	Output	Lch zero data detection flag. "H": when silent data continue for 300msec.
50	ZDFLGR	Output	Rch zero data detection flag. "H": when silent data continue for 300msec.
51	A0	Output	DRAM address output terminal (LSB)
52	A1	Output	DRAM address output terminal
53	VDD	-	Power supply terminal, +3.3V
54	VSS	-	Ground terminal
55-62	A2-A9	Output	DRAM address output terminal
63	A10	Output	DRAM address output terminal (MSB)
64*	NC	-	Not used
65	VSS	-	Ground terminal
66	XWE	Output	DRAM write enable output terminal. Connected to WE terminal of DRAM.
67	XCAS	Output	DRAM column address strobe output terminal. Connected to CAS terminal of DRAM.
68	XRAS	Output	DRAM row address strobe output terminal. Connected RAS terminal of DRAM.
69	XOE	Output	DRAM read enable output terminal. Connected OE terminal of DRAM.
70-77	DQ0-DQ7	Input/Output	DRAM data input/output terminal
78	VDD	-	Power supply terminal, +3.3V
79	VSS	-	Ground terminal
80	WCK	Input	Operation clock for detecting PSP physical disc mark. Inputs 27.00MHz.
81	WRFD	Input	RF data input terminal for detecting PSP physical disc mark Inputs RF data made binary by slicer.
82	WAD0	Input	A/D data input/output terminal for detecting PSP physical disc mark (LSB)
83-88	WAD1-WAD6	Input	A/D data input/output terminal for detecting PSP physical disc mark
89	WAD7	Input	A/D data input/output terminal for detecting PSP physical disc mark (MSB)
90	VSS	-	Ground terminal
91	SD7	Input	Input terminal for stream data to be output from the front end processor (MSB)
92-97	SD6-SD1	Input	Input terminal for stream data to be output from the front end processor
98	SD0	Input	Input terminal for stream data to be output from the front end processor (LSB)
99	SDEF	Input	Input terminal for error flag to be output from the front end processor
100	XSAK	Input	Input terminal for data effective flag to be output from the front end processor

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.



IC902 VHiADC08351-1: A/D Converter (ADC08351)

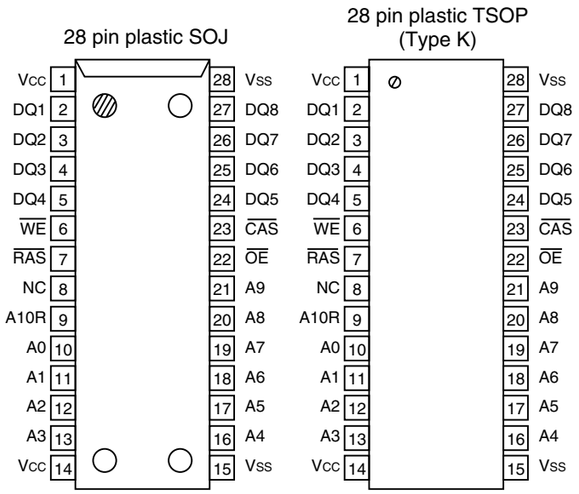
Pin No.	Terminal Name	Function
1	$\overline{OE}$	CMOS/TTL compatible digital input terminal. When this terminal is set to Low, digital output of ADC08351 becomes enable. When this terminal is set to High, digital output changes to the high-impedance condition.
2	DGND	Ground return circuit terminal for digital power supply.
3-10	D0-D7	Conversion data output terminal. C0 shows LSB, and D7 shows MBS. Effective data are output on data bus immediately after CLK input rising edge. When $\overline{OE}$ terminal is set to Low, these terminals become enable.
11	VD	Positive digital power voltage terminal. Connected to +3V power supply. VA and VD are supplied from the common power supply.
12	CLK	CMOS/TTL compatible clock input terminal. VIN is sampled at CLK input trailing edge.
13	VD	Positive digital power voltage terminal. Connected to +3V voltage power.
14	VREF	Positive reference voltage input terminal. Voltage of this terminal ranges from 0.75V to VA.
15	PD	CMOS/TTL compatible digital input terminal. When this terminal is set to High, ADC08351 enters the power down mode, minimizing power consumption. When this is set to Low, the device enters the normal operation mode.
16	VA	Positive analog power voltage terminal: To connect +3V voltage power.
17	VIN	Analog signal input. Convertible input ranges from 0.5Vp-p to 0.68Va.
18, 19	AGND	Ground return circuit terminal for analog power supply.
20	DGND	Ground return circuit terminal for digital power supply.

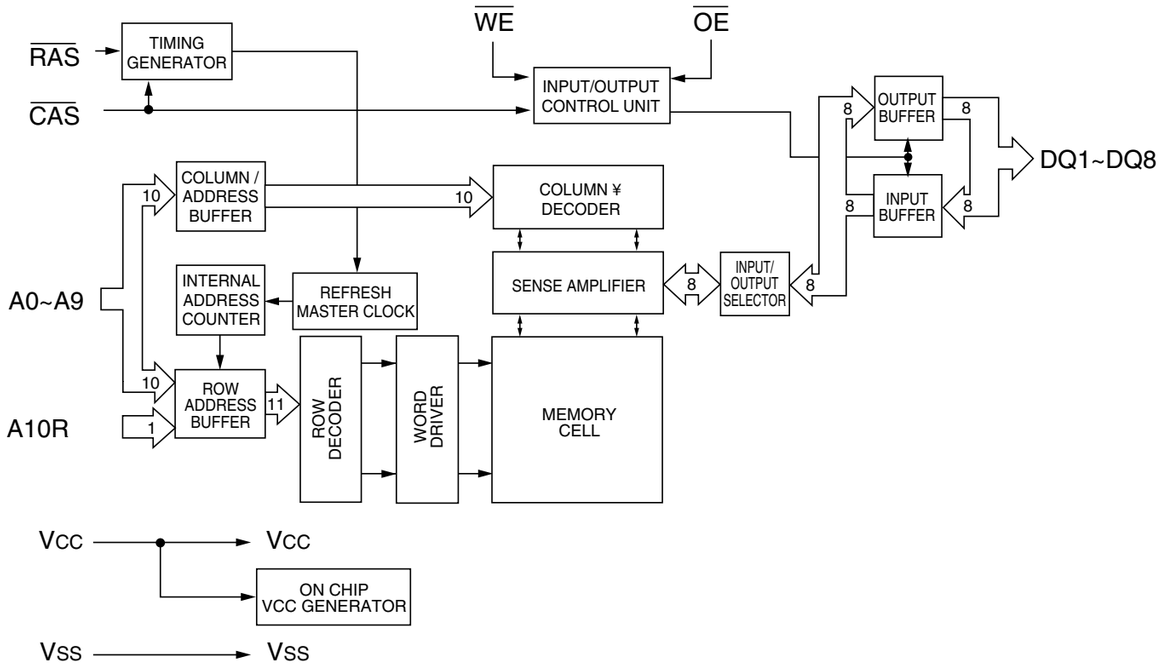


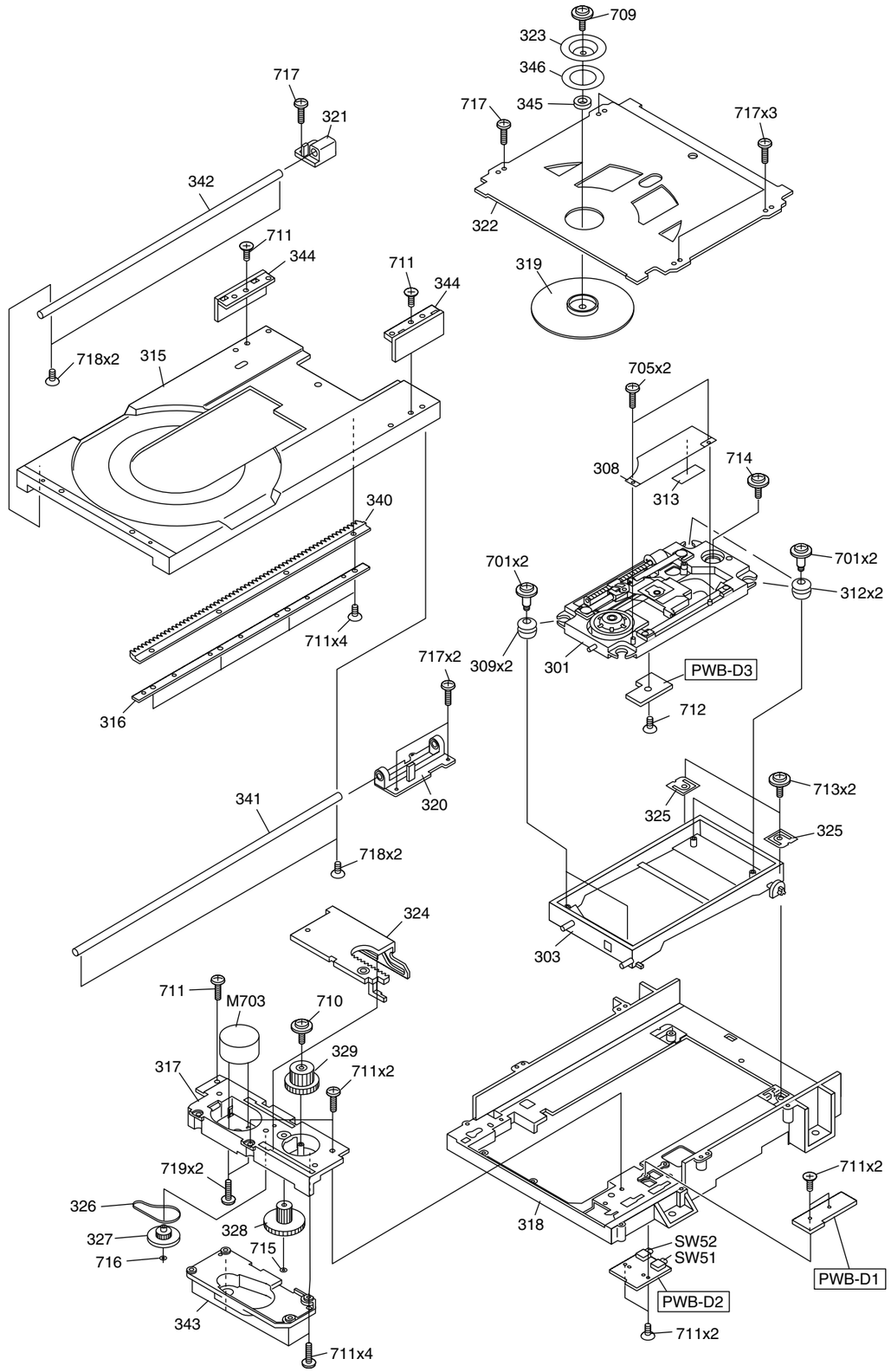
IC903 RH-iX2840AFZZ: 16Mbit SDRAM (IX2840AF)

Pin No.	Terminal Name	Function
1	VCC	Power supply (3.3V)
2-5	DQ1-DQ4	Data input/output
6	$\overline{WE}$	Write enable
7	$\overline{RAS}$	Row address strobe
8*	NC	Not used
9	A10R	Address input
10-13	A0-A3	Address input
14	VCC	Power supply (3.3V)
15	VSS	Ground (0V)
16-21	A4-A9	Address input
22	$\overline{OE}$	Output enable
23	$\overline{CAS}$	Column address strobe
24-27	DQ5-Q8	Data input/output
28	VSS	Ground (0V)

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.







2.7 ELECTRICAL PARTS LIST

POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)
301		9965 000 06889	SACD MECHAMISM ASSY MOTOR DC <=37.5W	*ZZ001620R
303		9965 000 06890	HOLDER, STEEL MECHANISM	392K271200
309		9965 000 06891	SHOCK ABSORBER FLOAT RUBBER	392K130200
312		9965 000 06892	SHOCK ABSORBER FLOAT RUBBER	392K130210
315	GOLD	9965 000 06893	STEEL TRAY GOLD	392K163200
315	BLACK	9965 000 06893	STEEL TRAY BLACK	392K163210
319		9965 000 06894	DISC, STEEL STABILIZER	392K104200
320		9965 000 06895	HOLDER, STEEL SHAFT A	392K106200
321		9965 000 06896	HOLDER, STEEL SHAFT B	392K106210
323		9965 000 06897	PLATE, STEEL YOKE	392K104210
324		9965 000 06898	LEVER, STEEL LIFT	392K354200
325		9965 000 06899	SPRING HOLD	392K116200
326		9965 000 06900	BELT, DRIVING TIMING	392K264200
327		9965 000 06901	PULLEY, STEEL	392K262200
328		9965 000 06902	TOOTHED WHEEL GEAR	392K058200
329		9965 000 06903	TOOTHED WHEEL TRAY GEAR	392K058210
340		9965 000 06904	GEAR TRAY RACK GEAR	392K058220
345		9965 000 06905	MAGNET	392K305200
346		9965 000 06906	DISC, PLASTIC HIMELON SHEET	392K107200
709		9965 000 06907	SCREW, STEEL	392K010200
M703		9965 000 06908	LOADING MOTOR ASSY MOTOR DC <=37.5W	*ZZ001630R
PWB-D1-D3		9965 000 06909	PR.CIRCUIT, COMPACT DISC TRAY SENSOR/SWITCH/ PICKUP IN S	*ZZ001650R

POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)
CNP 501		9965 000 06886	CONNECTOR, PLUG 4P	*YP200040R
CNS 501		9965 000 06887	CONNECTOR, SOCKET 30P	*YJ002240R
CNS 502		9965 000 06888	CONNECTOR, SOCKET 11P	*YJ002250R
D0501		9965 000 06882	DIODE, RB521S30 POWER RECTIFIER	*HZ200150R
D0502		9965 000 06882	DIODE, RB521S30 POWER RECTIFIER	*HZ200150R
D0503		9965 000 06882	DIODE, RB521S30 POWER RECTIFIER	*HZ200150R
D0504		9965 000 06882	DIODE, RB521S30 POWER RECTIFIER	*HZ200150R
D0505		9965 000 06882	DIODE, DAP202U POWER RECTIFIER	HZ20001210
D0801		9965 000 06882	DIODE, DAN202K POWER RECTIFIER	HZ20002210
D0802		9965 000 06882	DIODE, DAP202U POWER RECTIFIER	HZ20001210
DZ501		9340 548 52115	DIODE, PDZ5.1B REFERENCE	*HZ300050R
FL801		9965 000 06884	FILTER, CERAMIC 20MHz	*FQ000510R
IC501		9965 000 06864	IC TA1244FN I/V CONVERTER	*HC106400R
IC502		9965 000 06865	PROCESSOR IX1517GE RF SIGNAL	*HC106410R
IC503		9965 000 06866	IC IX2842AF STEPPING MOTOR DRIVER	*HC106430R
IC504		9965 000 06867	IC NJM234V SPINDLE MOTOR DRIVER	*HC106440R
IC506		9965 000 06868	IC BA6796FP LOADING/FOCUS/TRACKING/ SPIN/SLED DRIVER	*HC106450R
IC507		9965 000 06869	IC NJM2904M ANA SWITCH	*HC106470R
IC601		9965 000 06870	IC AD8052AR ANA AMPLIFIER	*HC106480R
IC602		9965 000 06871	PROCESSOR IX1474GE SACD DATA	*HC106490R
IC603		9965 000 06872	IC SC514870SJ 4M DRAM	*HC106500R
IC606		9965 000 06873	IC IX1473GE DIGITAL SERVO	*HC106510R
IC801		9965 000 06874	NON PROGRAMMED MICROPROCESSOR	*HC106520R
IC802		9965 000 06875	IC IX1535GE INPUT/OUTPUT EXPANDER	*HC106530R
IC803		4822 209 13204	IC PST9129N RESET	*HC106540R
IC804		9965 000 06876	IC IX2839AF 1M SRAM	*HC106550R
IC805		9965 000 06877	IC IX1539GE FLASH ROM	*HC106560R
IC901		9965 000 06878	PROCESSOR CXD2751Q SACD PLAYBACK SIGNAL	*HC106570R
IC902		9965 000 06879	IC ADC08351 A/D CONVERTER	*HC106580R
IC903		9965 000 06880	IC IX2840AF SDRAM	*HC106590R
PH051		9965 000 06883	COUPLER, OPTO/PHOTO RP1222	*HC200100R
PH052		9965 000 06883	COUPLER, OPTO/PHOTO RP1222	*HC200100R
PH053		9965 000 06883	COUPLER, OPTO/PHOTO RP1222	*HC200100R
Q0501		4822 130 60729	DIG.TRS, <1W DTC124EK	*BA001040R
Q0502		4822 130 60729	DIG.TRS, <1W DTC124EK	*BA001040R
Q0503		4822 130 60729	DIG.TRS, <1W DTC124EK	*BA001040R
Q0504		9965 000 06881	DIG.TRS, <1W 2SA1955A	*HX100080R
Q0505		9965 000 06881	DIG.TRS, <1W 2SA1955A	*HX100080R
Q0601		4822 130 60729	DIG.TRS, <1W DTC124EK	*BA001040R
Q0602		4822 130 60326	DIG.TRS, <1W DTA144EK	*BA001050R
Q0801		4822 130 60729	DIG.TRS, <1W DTC124EK	*BA001040R
X0601		9965 000 06885	CRYSTAL 54000MHz	*JX000710R