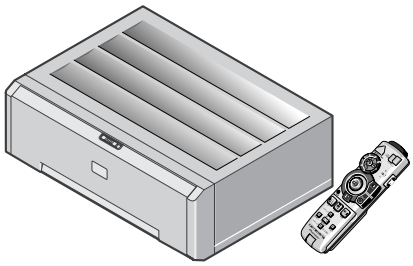
Service Manual

Pioneer

XDV-P9/UC



ORDER NO.
CRT2511

6-DISC MULTI-DVD PLAYER

XDV-P9

UC,ES/RC,ES/RD,EW

● This service manual should be used together with the following manual(s):

Model No.	Order No.	Mech. Module	Remarks
CX-692	CRT2533	MM-1	DVD/CD Mech. Unit:Circuit Description, Mech.Description, Disassembly

CONTENTS

PIONEER CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153-8654, Japan
PIONEER ELECTRONICS SERVICE INC. P.O.Box 1760, Long Beach, CA 90801-1760 U.S.A.
PIONEER EUROPE NV Haven 1087 Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS ASIACENTRE PTE.LTD. 253 Alexandra Road, #04-01, Singapore 159936

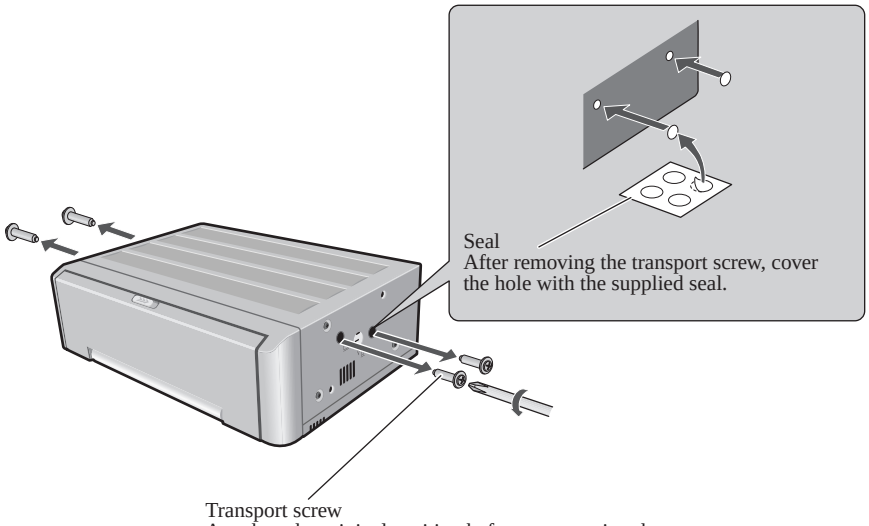
K-ZZD. MAY 2000 Printed in Japan

● DVD Player Service Precautions

1. Never adjust the LD VR in the pickup unit to protect the pickup from electrical damages.
2. For pickup unit(CGY2020) handling, please refer to"Disassembly"(see page 84).
   During replacement, handling precautions shall be taken to prevent an electrostatic discharge(set the short switch of the pickup unit to the SHORT side).
3. During disassembly, be sure to turn the power off since an internal IC might be destroyed when a connector is plugged or unplugged.
4. Please adjusting the skew after changing the pickup unit(see page 67).

● Transportation of Multi-DVD Player

A transport screw has been attached to the set in order to protect it during transportation. After removing the transport screw, cover the hole with the supplied seal. Be sure to remove the transport screw before mounting the set. The removed transport screw should be retained in the accessory bag for use the next time the set is transported.



1. SAFETY INFORMATION

1.1 XDV-P9/UC

CAUTION

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

WARNING

This product contains lead in solder and certain electrical parts contain chemicals which are known to the state of California to cause cancer, birth defects or other reproductive harm.
Health & Safety Code Section 25249.6 - Proposition 65

1.2 XDV-P9/EW

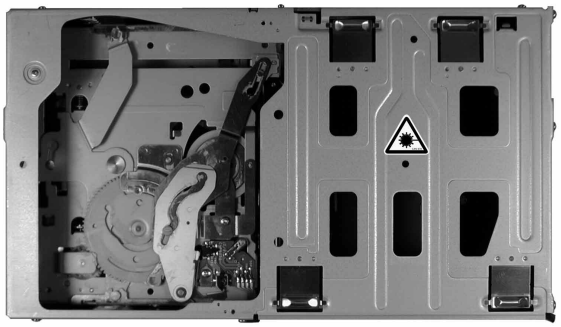
1. **Safety Precautions for those who Service this Unit.**
- **Follow the adjustment steps (see pages 64 through 71)in the service manual when servicing this unit. When checking or adjusting the emitting power of the laser diode exercise caution in order to get safe, reliable results.**

Caution:

1. **During repair or tests, minimum distance of 13cm from the focus lens must be kept.**
2. **During repair or tests, do not view laser beam for 10 seconds or longer.**

2. **A "CLASS 1 LASER PRODUCT" label is affixed to the rear of the player.**

3. **The triangular label is attached to the mechanism unit frame.**

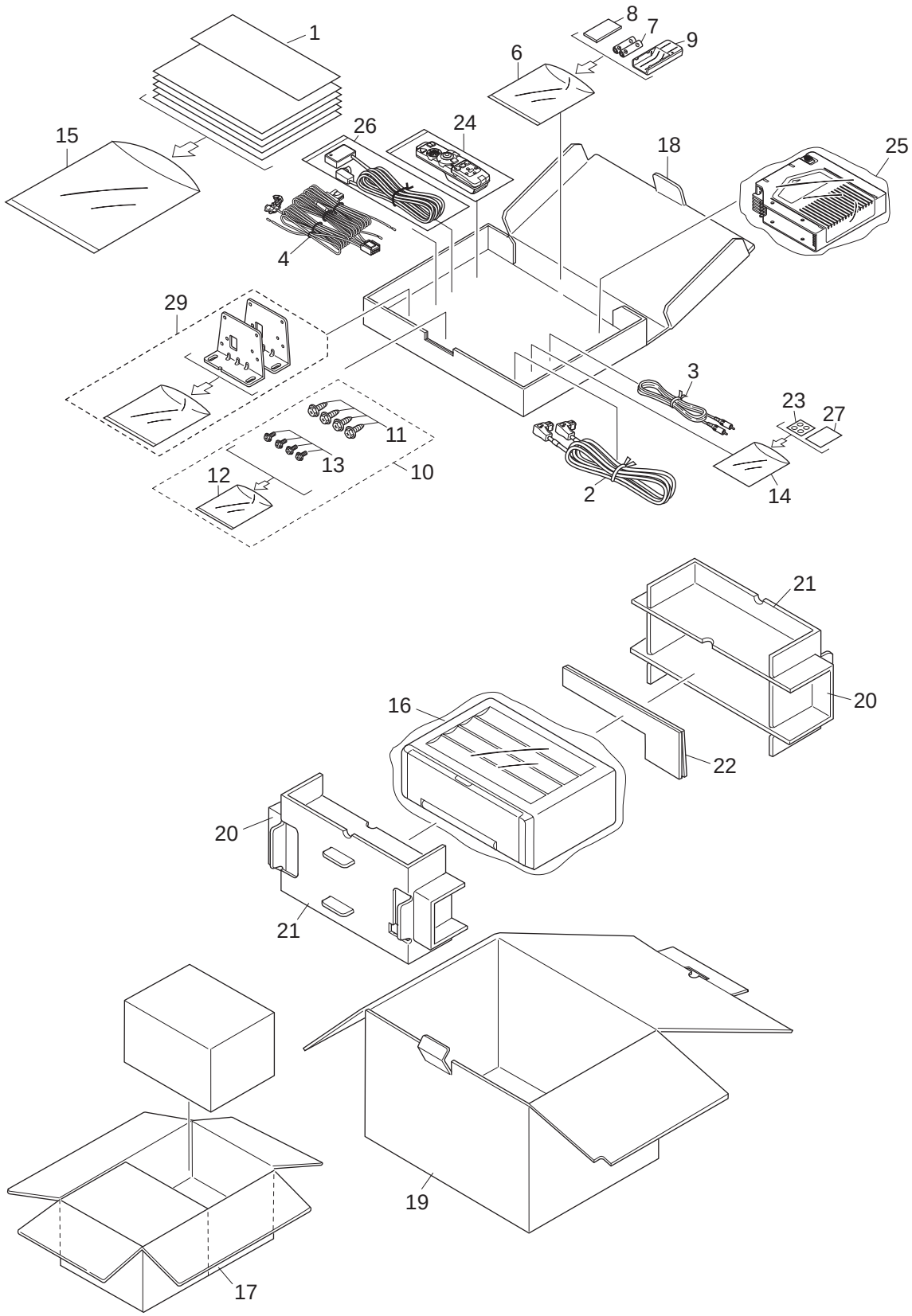


4. **Specifications of Laser Diode**

Specifications of laser radiation fields to which human access is possible during service.
Wavelength = 650 nanometers(DVD)
Wavelength = 780 nanometers(CD)

2. EXPLODED VIEWS AND PARTS LIST

2.1 PACKING



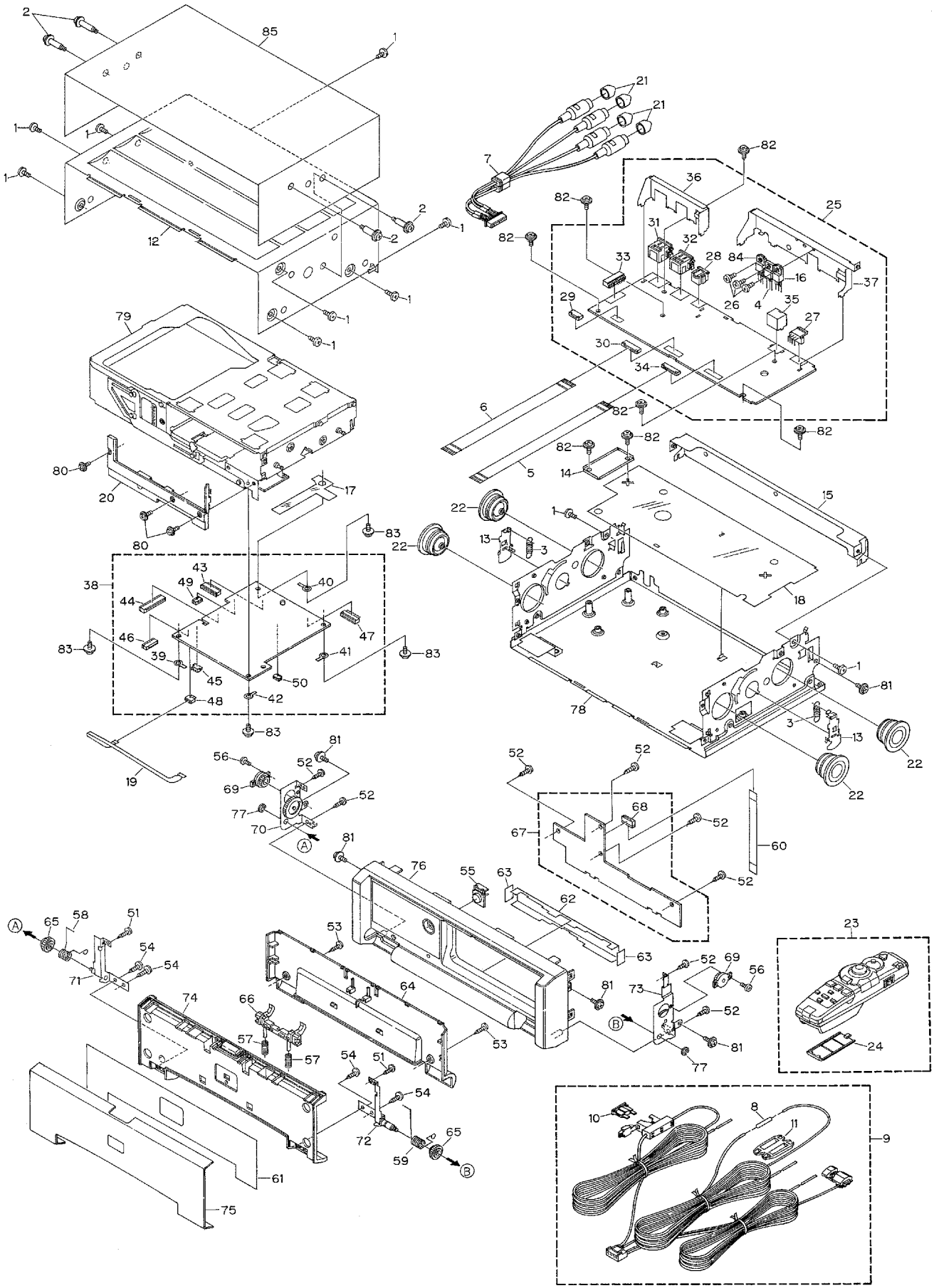
NOTE:

- Parts marked by "*" are generally unavailable because they are not in our Master Spare Parts List.
- Screws adjacent to ∇ mark on the product are used for disassembly.

● PACKING SECTION PARTS LIST

Mark	No.	Description	Part No. XDV-P9/UC	XDV-P9/ES/RC	XDV-P9/ES/RD	XDV-P9/EW
*	1-1	Card	ARY1048	Not used	Not used	Not used
	1-2	Owner's Manual(English)	CRB1613	CRB1613	CRB1613	CRB1613
	1-3	Owner's Manual(Spanish)	Not used	Not used	Not used	CRB1614
	1-4	Owner's Manual(German)	Not used	Not used	Not used	CRB1615
	1-5	Owner's Manual(French)	CRB1616	Not used	Not used	CRB1616
	1-6	Owner's Manual(Italian)	Not used	Not used	Not used	CRB1617
	1-7	Owner's Manual(Dutch)	Not used	Not used	Not used	CRB1618
	1-8	Owner's Manual(Chinese)	Not used	CRB1619	Not used	Not used
*	1-9	Caution Card	Not used	Not used	Not used	CRP1226
*	1-10	Caution Card	Not used	CRP1227	CRP1227	CRP1227
*	1-11	Warranty Card	Not used	Not used	Not used	CRY1157
*	2	Cord	CDE4167	CDE4167	CDE4167	CDE4167
	3	Cord Assy	CDE6377	CDE6377	CDE6377	CDE6377
	4	Cord Assy	CDE6398	CDE6398	CDE6398	Not used
	5	•••••				
	6	Polyethylene Bag	CEG1011	CEG1011	CEG1011	Not used
	7	Battery	CEX1021	CEX1021	CEX1021	Not used
	8	Sheet	CNM5288	CNM5288	CNM5288	Not used
	9	Holder	CNS4502	CNS4502	CNS4502	CNS4502
	10	Screw Assy	CEA2624	CEA2624	CEA2624	CEA2624
	11	Screw	CBA1295	CBA1295	CBA1295	CBA1295
*	12	Polyethylene Sheet	CNM5158	CNM5158	CNM5158	CNM5158
	13	Screw	HMF40P080FZK	HMF40P080FZK	HMF40P080FZK	HMF40P080FZK
*	14	Polyethylene Bag	CEG1099	CEG1099	CEG1099	CEG1099
	15	Polyethylene Bag	CEG1116	CEG1116	Not used	CEG1116
	16	Polyethylene Bag	CEG1174	CEG1026	CEG1026	CEG1026
	17	Contain Box	CHL4093	CHL4090	CHL4091	CHL4092
	18	Sub Carton	CHG4094	CHG4094	CHG4094	CHG4094
	19	Carton	CHG4093	CHG4090	CHG4091	CHG4092
	20	Protector	CHP2281	CHP2281	CHP2281	CHP2281
	21	Protector	CHP2282	CHP2282	CHP2282	CHP2282
*	22	Spacer	CHW1834	CHW1834	CHW1834	CHW1834
	23	Seal	CNM5741	CNM5741	CNM5741	CNM5741
	24	Remote Control Main Assy	CPN1638	CPN1639	CPN1639	Not used
	25	Magazine Assy	CXB5932	CXB5932	CXB5932	CXB5932
	26	Sensor Assy	CXB5928	CXB5928	CXB5928	Not used
*	27	Caution Card	CRP1090	CRP1090	CRP1090	CRP1090
	28	•••••				
	29	Angle Assy	CXB5933	CXB5933	CXB5933	CXB5933

2.2 EXTERIOR



(1) EXTERIOR SECTION PARTS LIST

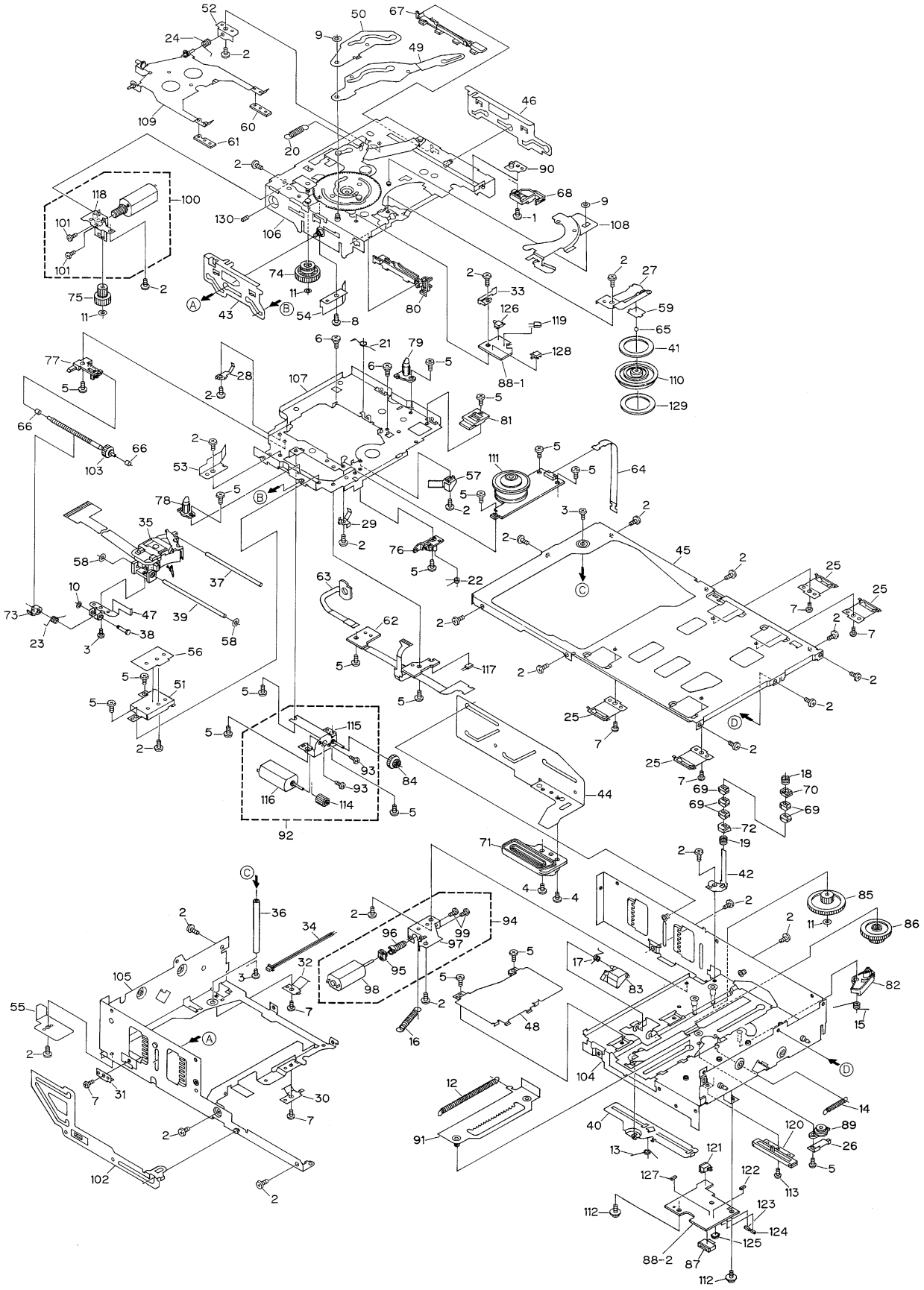
Mark	No.	Description	Part No.
	1	Screw	BMZ30P040FZK
	2	Screw	CBA1353
	3	Spring	CBH2354
	4	IC(IC3951)	PQ30RV31
	5	Flat Cable	CDE6278
	6	Flat Cable	CDE6279
	7	Cord Assy	CDE6283
	8	Resistor	RS1/2PMF102J
	9	Cord Assy	CDE6398
	10	Fuse(4A)	CEK1001
	11	Cap	CNS1472
	12	Upper Case	CNB2564
	13	Arm	CNC8058
	14	Stopper	CNC8765
	15	Stopper	CNC8768
	16	Transistor(Q3921)	2SB942
	17	Insulator	CNM6405
	18	Insulator	CNM6690
	19	PCB	CNP5604
	20	Panel	CNS6007
	21	Cap	CNV2680
	22	Damper	CNV6346
	23	Remote Control Main Assy	See Contrast table(2)
	24	Case	See Contrast table(2)
	25	Extension Unit	See Contrast table(2)
	26	Screw	BMZ26P060FMC
	27	Plug(CN2903)	CKS-461
	28	Connector(CN3801)	CKS1940
	29	Connector(CN3891)	CKS1945
	30	Connector(CN3991)	CKS1953
	31	Connector(CN3841)	CKS3407
	32	Connector(CN3842)	CKS3408
	33	Connector(CN3831)	CKS3602
	34	Connector(CN3701)	CKS3749
	35	Connector(CN3811)	CKS4362
	36	Holder	CNC8766
	37	Holder	CNC8767
	38	Main Unit	CWM7264
	39	Terminal(CN1603)	CKF1064
	40	Terminal(CN1604)	CKF1064
	41	Terminal(CN1605)	CKF1064
	42	Terminal(CN1607)	CKF1064
	43	Connector(CN1601)	CKS1953
	44	Connector(CN101)	CKS1964
	45	Connector(CN312)	CKS2191
	46	Connector(CN302)	CKS3480
	47	Connector(CN1600)	CKS3749
	48	Connector(CN310)	CKS3767
	49	Connector(CN301)	CKS4358
	50	Connector(CN1000)	CKS4374
	51	Screw	BPZ20P060FMC
	52	Screw	BPZ20P080FMC
	53	Screw	BPZ20P080FZK
	54	Screw	BPZ26P080FZK
	55	Button(EJECT)	CAC6566
	56	Screw(M2x2)	CBA1176
	57	Spring	CBH2351
	58	Spring	CBH2352
	59	Spring	CBH2353
	60	Flat Cable	CDE6277
	61	Double Side Tape	CNM6672
	62	Sheet	CNM6689
	63	Filter	CNM6789
	64	Cover	CNS5915
	65	Gear	CNV6151
	66	Stopper	CNV6155
	67	Keyboard Unit	CWM7084
	68	Connector(CN4001)	CKS1945
	69	Damper Unit	CXB5480
	70	Bracket Unit	CXB5481
	71	Holder Unit	CXB5482
	72	Holder Unit	CXB5483
	73	Bracket Unit	CXB5868
	74	Holder Unit	CXB6621
	75	Panel Unit	CXB5872
	76	Grille Unit	CXB5873
	77	Washer	YE30FUC
	78	Lower Case Unit	CXB5484
	79	DVD/CD Mechanism Unit(MM-1)	CXK7010
	80	Screw	IMS20P035FZK
	81	Screw	IMS30P040FMC
	82	Screw	PMB26P050FMC
	83	Screw	PMB26P060FMC
	84	IC(IC3961)	BA08T
*	85	Caution Card	CRP1219

(2) CONTRAST TABLE

XDV-P9/UC, XDV-P9/ES/RC, XDV-P9/ES/RD and XDV-P9/EW are constructed same except for the following:

Mark	No.	Description	Part No.			
			XDV-P9/UC	XDV-P9/ES/RC	XDV-P9/ES/RD	XDV-P9/EW
	23	Remote Control Main Assy	CPN1638	CPN1639	CPN1639	Not used
	24	Case	CNS6050	CNS6050	CNS6050	Not used
	25	Extension Unit	CWM7079	CWM7081	CWM7082	CWM7080

2.3 DVD MECHANISM



● DVD MECHANISM SECTION PARTS LIST

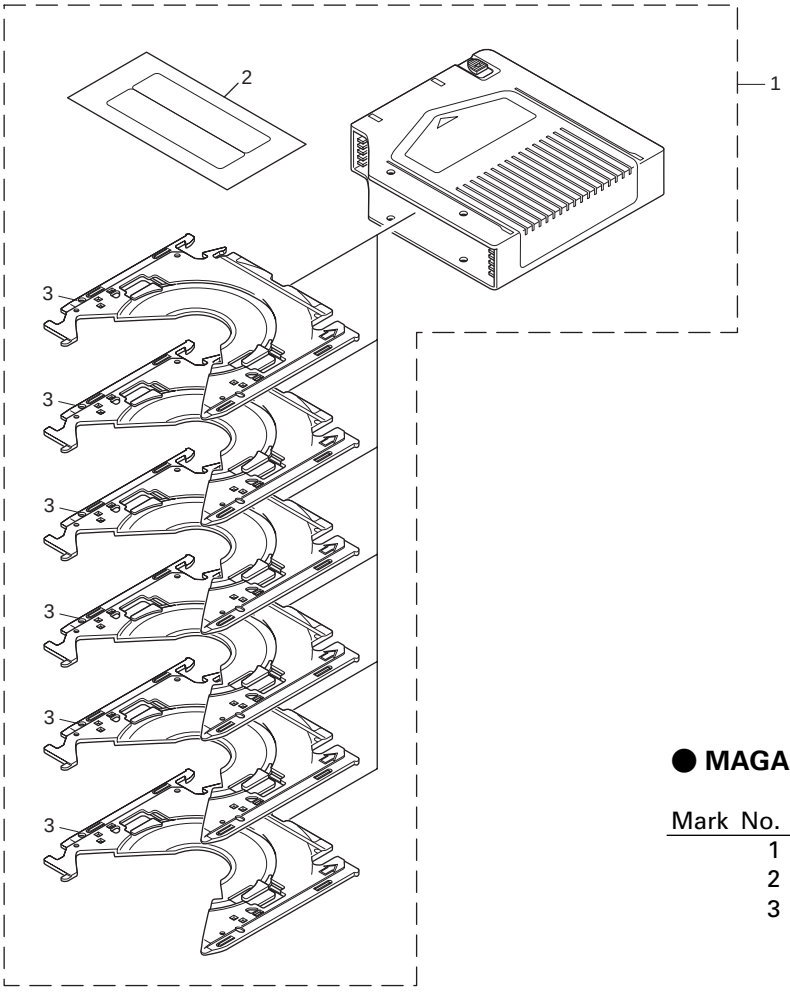
Mark	No.	Description	Part No.
	1	Screw	CBA1026
	2	Screw(M2x2.5)	CBA1037
	3	Screw(M2x2.5)	CBA1041
	4	Screw(M2x3.5)	CBA1114
	5	Screw(M2x3)	CBA1154
	6	Screw	CBA1243
	7	Screw(M2x1.4)	CBA1387
	8	Screw	CBA1419
	9	Washer	CBF1002
	10	Washer	CBF1037
	11	Washer	CBF1038
	12	Spring	CBH1826
	13	Spring	CBH1827
	14	Spring	CBH1828
	15	Spring	CBH1829
	16	Spring	CBH1830
	17	Spring	CBH1919
	18	Spring	CBH1930
	19	Spring	CBH2070
	20	Spring	CBH2091
	21	Spring	CBH2159
	22	Spring	CBH2227
	23	Spring	CBH2238
	24	Spring	CBH2279
	25	Spring	CBL1307
	26	Spring	CBL1362
	27	Spring	CBL1388
	28	Spring	CBL1416
	29	Spring	CBL1417
	30	Spring	CBL1418
	31	Spring	CBL1419
	32	Spring	CBL1420
	33	Spring	CBL1422
	34	Connector	CDE6156
	35	PU Unit	CGY2020
	36	Shaft	CLA2803
	37	Shaft	CLA3428
*	38	Shaft	CLA3431
	39	Shaft	CLA3562
	40	Lever	CNC6194
	41	Plate	CNC6847
	42	Holder	CNC7448
	43	Lever	CNC7975
	44	Lever	CNC8065
	45	Frame	CNC8068

Mark	No.	Description	Part No.
	46	Lever	CNC8097
	47	Bracket	CNC8106
	48	Cover	CNC8129
	49	Arm	CNC8335
	50	Arm	CNC8336
*	51	Cover	CNC8347
	52	Holder	CNC8476
	53	Cover	CNC8921
	54	Cover	CNC8922
	55	Cover	CNC8923
	56	Plate	CNC9010
	57	Cover	CNC9083
	58	Cushion	CNM6301
	59	Spacer	CNM6334
	60	Sheet	CNM6385
	61	Sheet	CNM6581
	62	PCB	CNP5371
	63	PCB	CNP5380
	64	PCB	CNP5381
	65	Ball	CNR1189
	66	Bearing	CNR1415
	67	Rail	CNV4420
	68	Lever	CNV4422
	69	Guide	CNV4597
	70	Guide	CNV4722
	71	Rack	CNV4828
	72	Guide	CNV5193
*	73	Rack	CNV5451
	74	Gear	CNV5658
	75	Gear	CNV5659
	76	Holder	CNV5661
	77	Holder	CNV5662
	78	Guide	CNV5663
	79	Guide	CNV5664
	80	Rail	CNV5668
	81	Guide	CNV5671
	82	Arm	CNV5868
	83	Arm	CNV6158
	84	Gear	CNV6226
	85	Gear	CNV6242
	86	Gear	CNV6285
	87	Connector(CN301)	CKS3476
	88	PCB	CNX3040
	89	Damper Unit	CXA7714
	90	Plate Unit	CXB2262

Mark	No.	Description	Part No.
	91	Lever Unit	CXB2266
	92	Motor Unit(-B)(Carriage)(M1)	CXB3930
	93	Screw	JFZ20P025FNI
	94	Motor Unit(-C)(ELV)(M4)	CXB3931
*	95	Gear	CNV6239
	96	Gear	CNV6240
*	97	Bracket Unit	CXB5838
*	98	Motor	CXM1116
	99	Screw	JFZ20P025FNI
	100	Motor Unit(-A)(Tray)(M2)	CXB3932
	101	Screw	JFZ20P025FNI
	102	Lever Unit	CXB3933
	103	Screw Unit(-D)	CXB3934
	104	Magazine Holder Unit	CXB3935
	105	Frame Unit	CXB3970
	106	Chassis Unit	CXB3972
	107	Chassis Unit	CXB3975
	108	Lever Unit	CXB3976
	109	Arm Unit	CXB4318
	110	Clamper	CNV5667

Mark	No.	Description	Part No.
	111	Motor(Spindle)(M3)	CXM1151
	112	Screw	IMS26P040FMC
	113	Screw	JFZ17P020FNI
*	114	Gear	CNV6225
*	115	Bracket Unit	CXB4003
*	116	Motor	CXM1117
	117	Photo Transistor(Q851)	PT4800(BC)
*	118	Bracket Unit	CXB3971
	119	LED(D851)	CN504-2
	120	Resistor(VR301)	CCW1021
	121	Switch(S301)	CSN1044
	122	Capacitor(C301)	CKSRYB104K16
	123	Resistor(R301)	RS1/16S562J
	124	Resistor(R302)	RS1/16S622J
	125	Semi-fixed(VR302)	CCP1338
	126	Switch(S852)	CSN1052
	127	Capacitor(C302)	CKSRYB103K50
	128	Switch(S851)	CSN1051
	129	Sheet	CNM6998
	130	Screw	ZMK30H025FBK

2.4 MAGAZINE ASSY



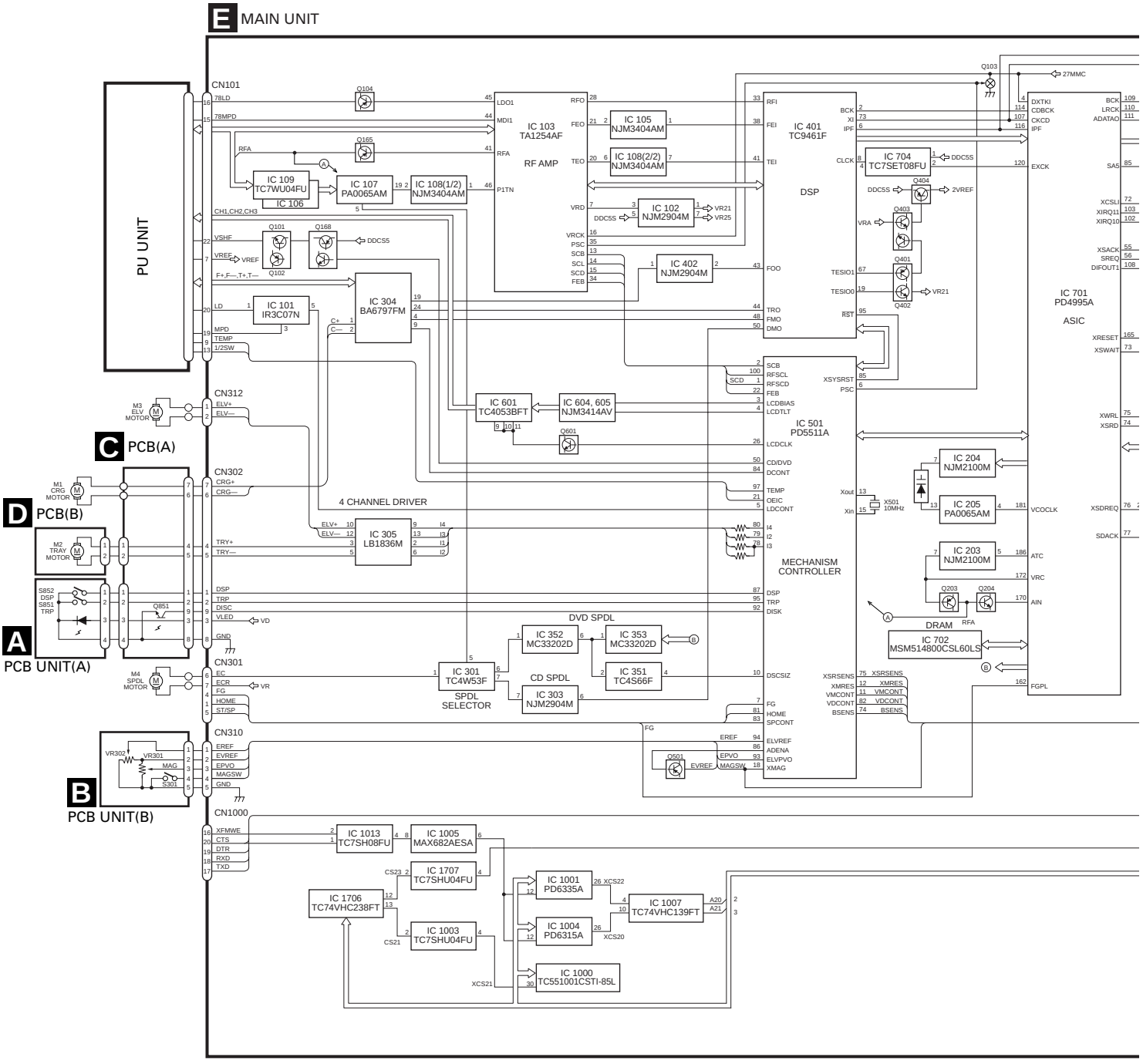
● MAGAZINE ASSY SECTION PARTS LIST

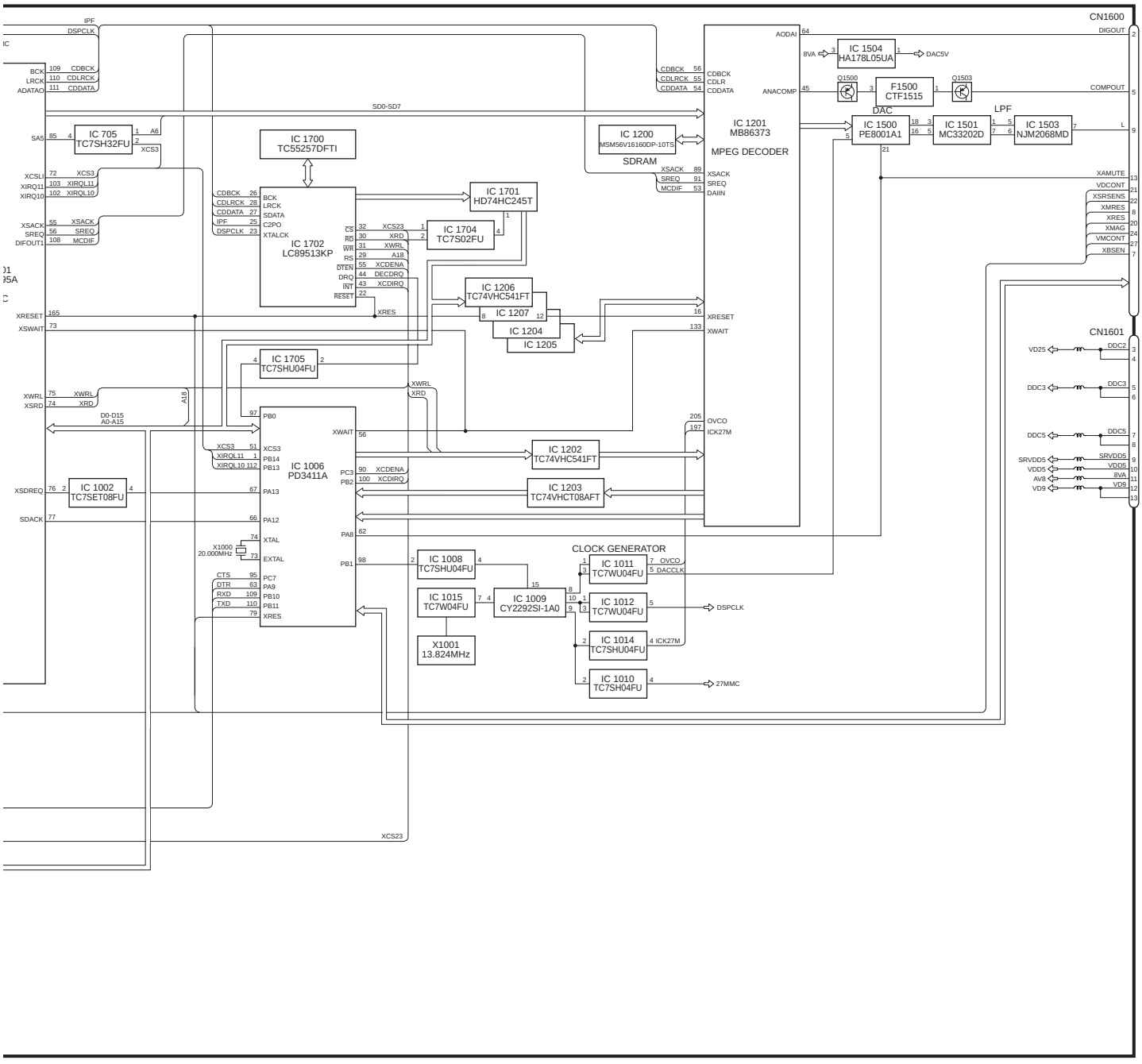
Mark	No.	Description	Part No.
	1	Magazine Assy	CXB5932
	2	Label	CRW1395
	3	Tray Unit	CXB6081

3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

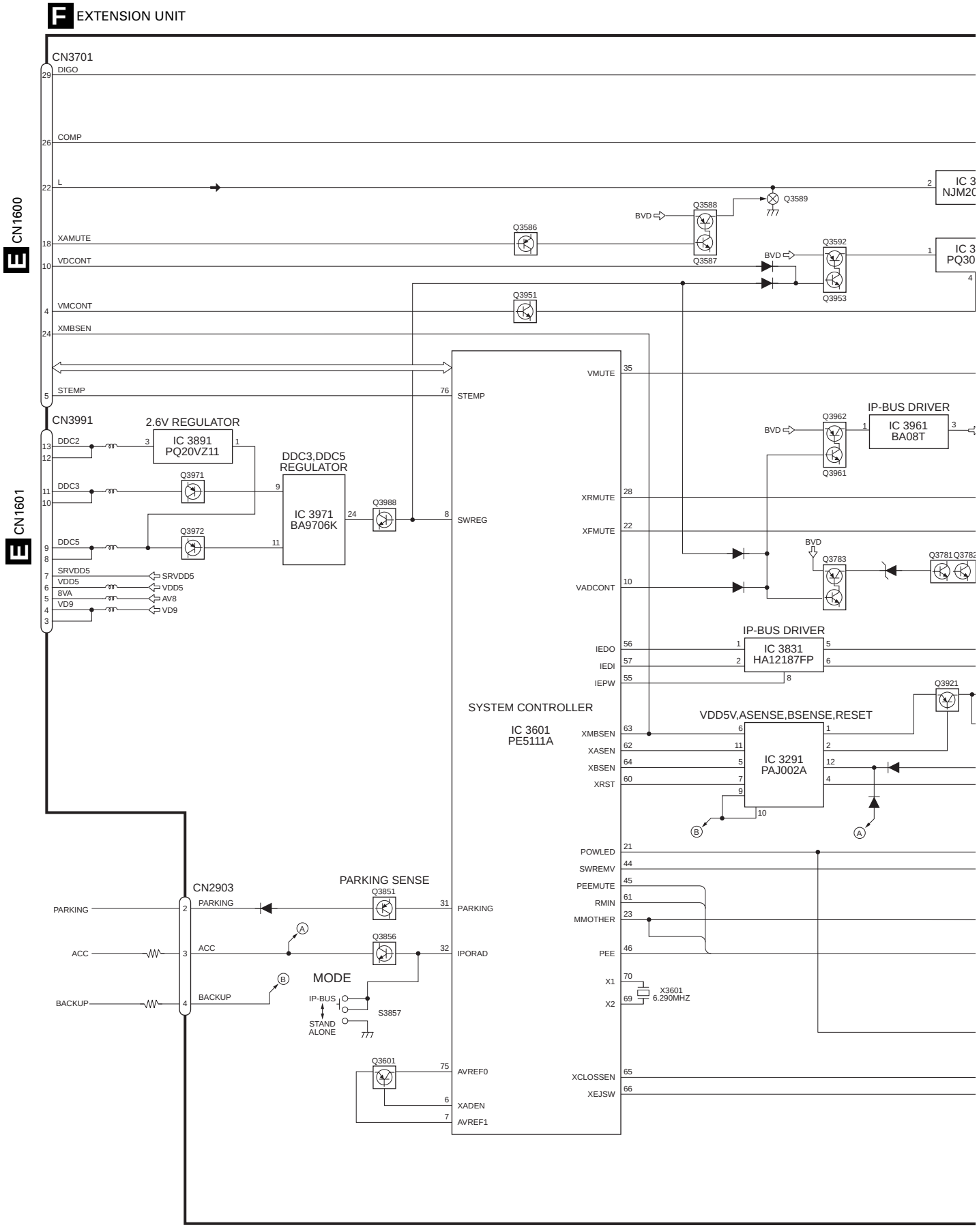
3.1 BLOCK DIAGRAM

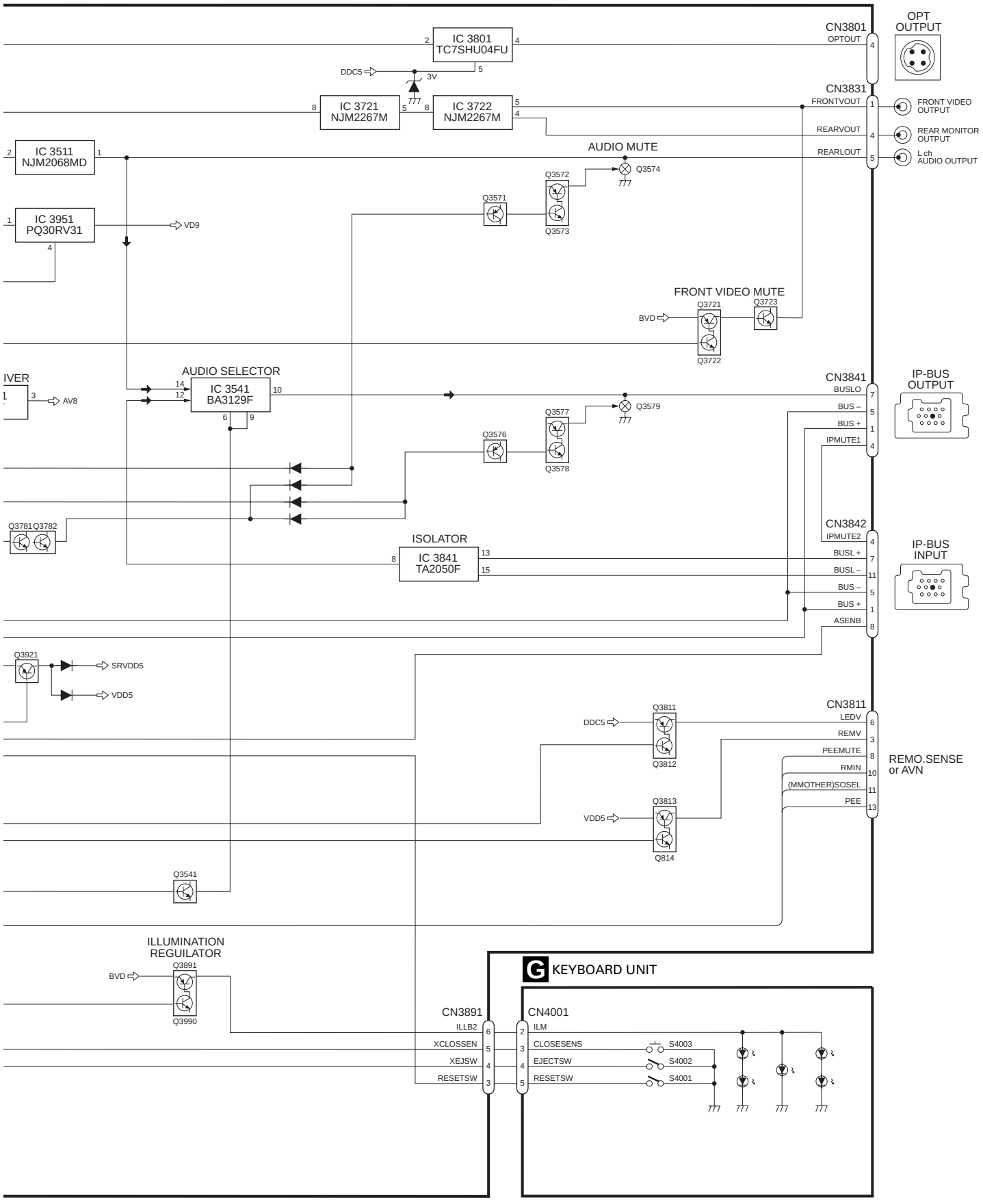
● **DVD/CD Mechanism Unit, Main Unit**




CN1600
IC 705 TC7SH32FU
IC 1700 TC55257DFTI
IC 1702 LC89513KP
IC 1701 HD74HC245T
IC 1704 TC7S02FU
IC 1705 TC7SHU04FU
IC 1206 TC74VHC541FT
IC 1207
IC 1204
IC 1205
IC 1006 PD3411A
IC 1002 TC7SET08FU
IC 1202 TC74VHC541FT
IC 1203 TC74VHCT08AFT
IC 1200 MSM56V16160DP-10TS
SDRAM
IC 1201 MB86373
MPEG DECODER
IC 1504 HA178L05UA
DAC5V
Q1500
F1500 CTF1515
Q1503
DAC
IC 1500 PE8001A1
IC 1501 MC33202D
LPF
IC 1503 NJM2068MD
CN1601
CN3701
CN3991
CLOCK GENERATOR
IC 1008 TC7SHU04FU
IC 1015 TC7W04FU
IC 1009 CY2292SI-1A0
IC 1011 TC7WU04FU
IC 1012 TC7WU04FU
IC 1014 TC7SHU04FU
IC 1010 TC7SH04FU
X1000 20.000MHz
X1001 13.824MHz
SD0-SD7
DSPCLK
27MMC

● Extension Unit, Keyboard Unit



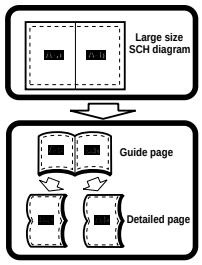

IC 3801
TC7SHU04FU
DDC5
3V
IC 3721
NJM2267M
IC 3722
NJM2267M
IC 3511
NJM2068MD
IC 3951
PQ30RV31
VD9
AUDIO MUTE
Q3571
Q3572
Q3573
Q3574
FRONT VIDEO MUTE
BVD
Q3721
Q3722
Q3723
AUDIO SELECTOR
IC 3541
BA3129F
AV8
Q3576
Q3577
Q3578
Q3579
ISOLATOR
IC 3841
TA2050F
Q3781 Q3782
Q3921
SRVDD5
VDD5
Q3541
Q3811
Q3812
Q3813
Q814
ILLUMINATION
REGULATOR
Q3891
Q3990
CN3801
OPTOUT
OPT
OUTPUT
CN3831
FRONTVOUT
REARVOUT
REARLOUT
FRONT VIDEO
OUTPUT
REAR MONITOR
OUTPUT
L ch
AUDIO OUTPUT
CN3841
BUSLO
BUS –
BUS +
IPMUTE1
IP-BUS
OUTPUT
CN3842
IPMUTE2
BUSL +
BUSL –
BUS –
BUS +
ASENB
IP-BUS
INPUT
CN3811
LEDV
REMV
PEEMUTE
RMIN
(MMOTHER)SOSEL
PEE
REMO.SENSE
or AVN
G KEYBOARD UNIT
CN3891
ILLB2
XCLOSSEN
XEJSW
RESETSW
CN4001
ILM
CLOSESENS
EJECTSW
RESETSW
S4003
S4002
S4001

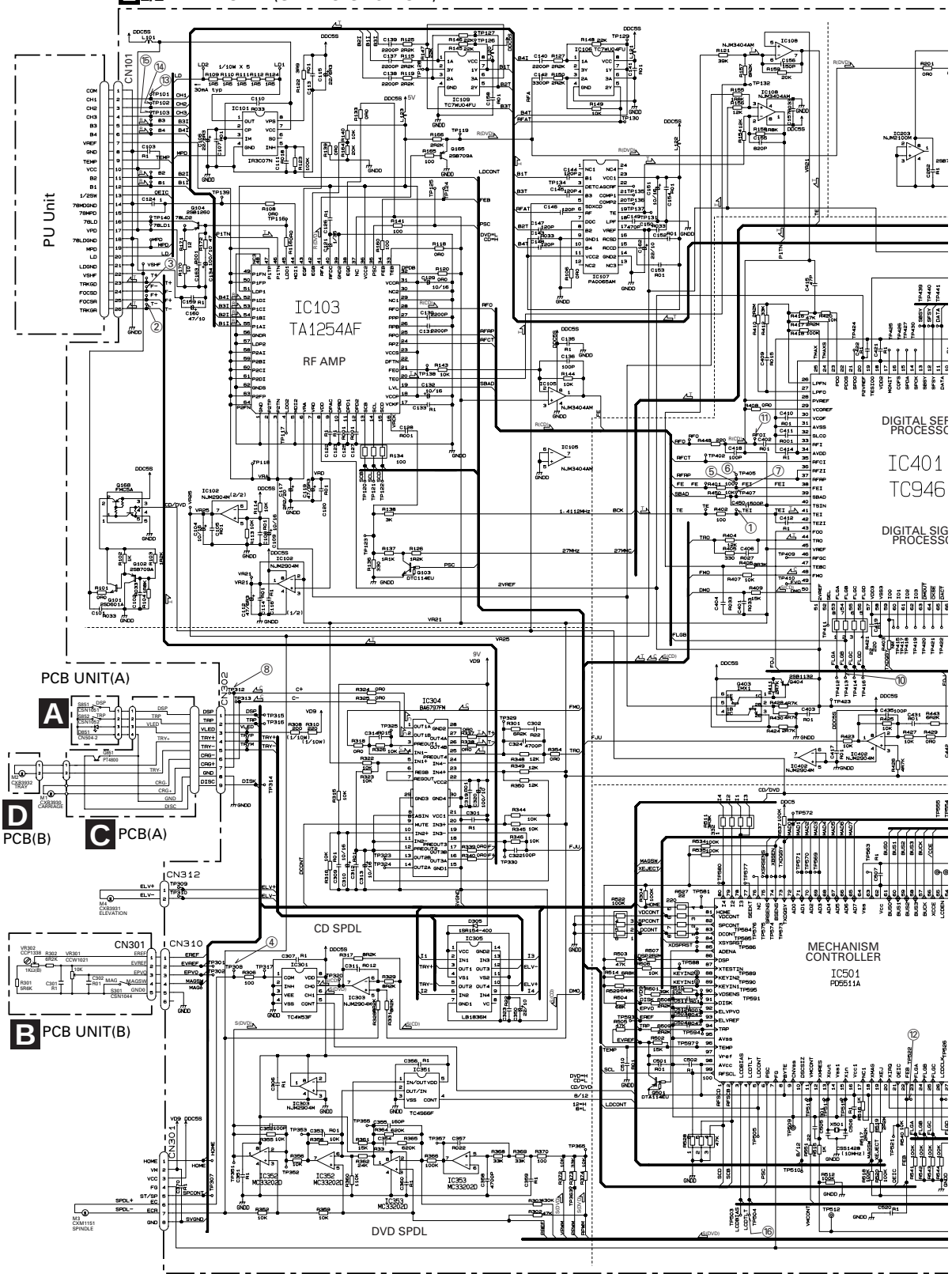
3.2 DVD MECHANISM UNIT, MAIN UNIT(SERVO SECTION)(GUIDE PAGE)

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

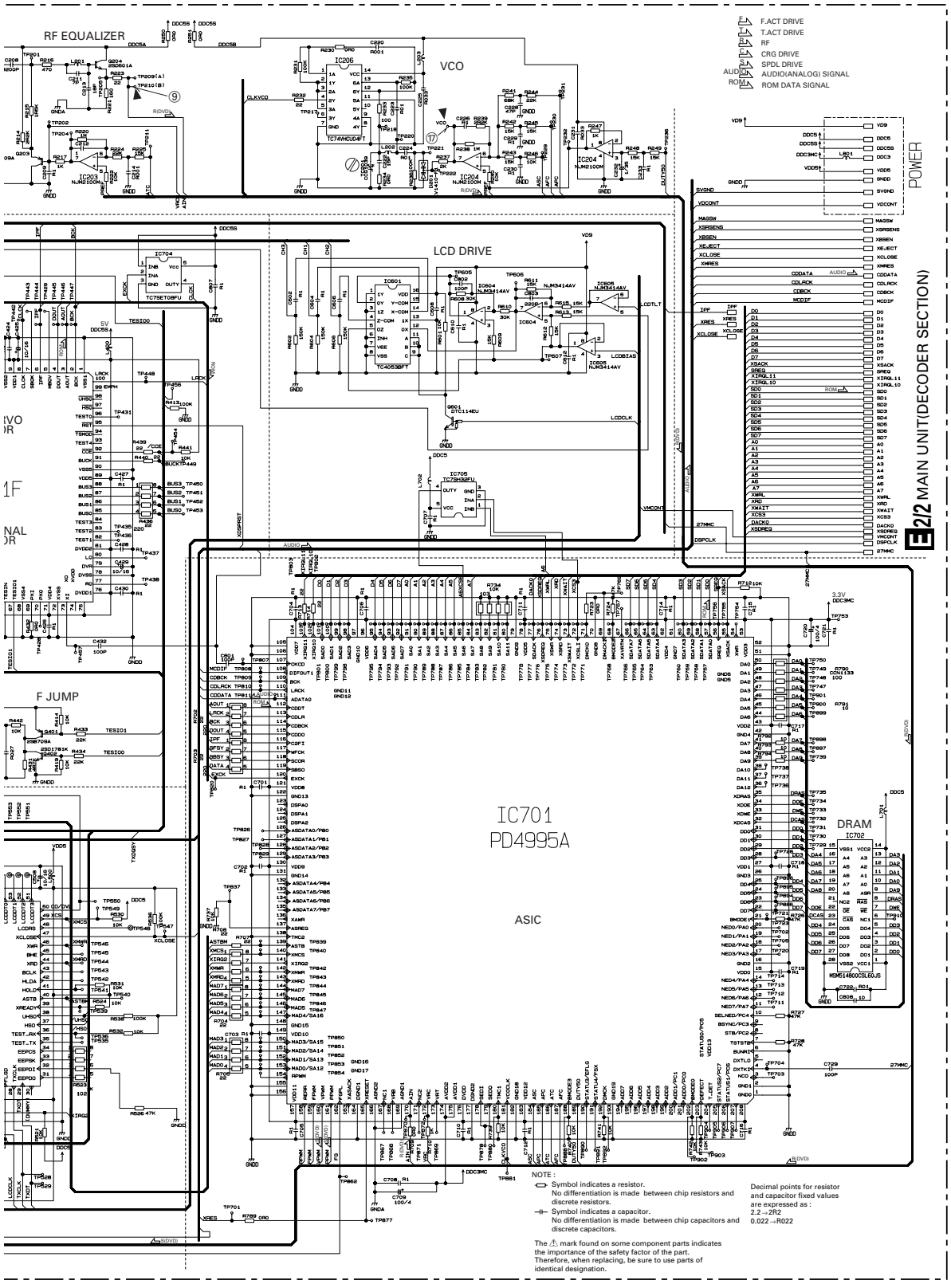
E-a 1/2

E 1/2 MAIN UNIT(SERVO SECTION)

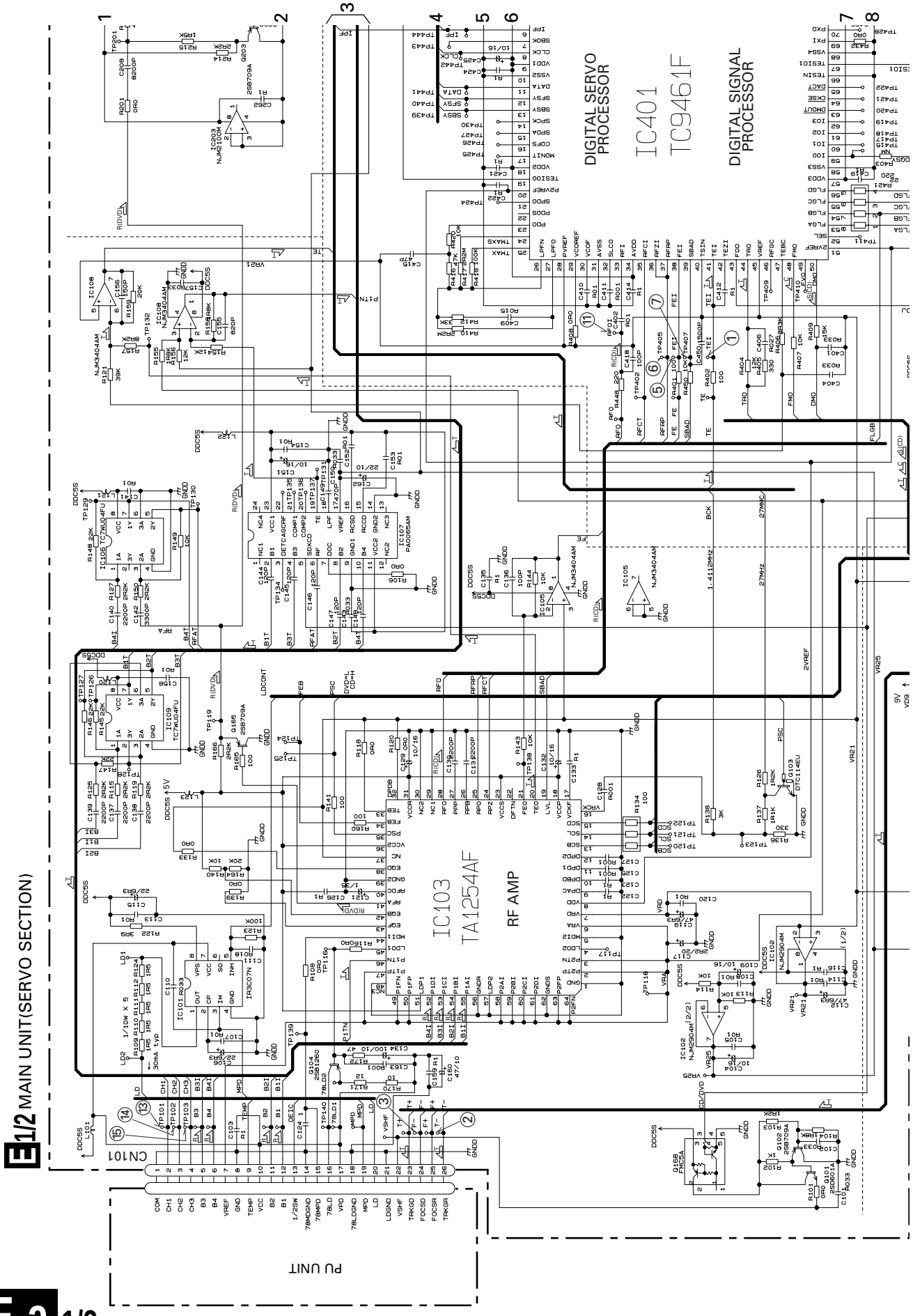


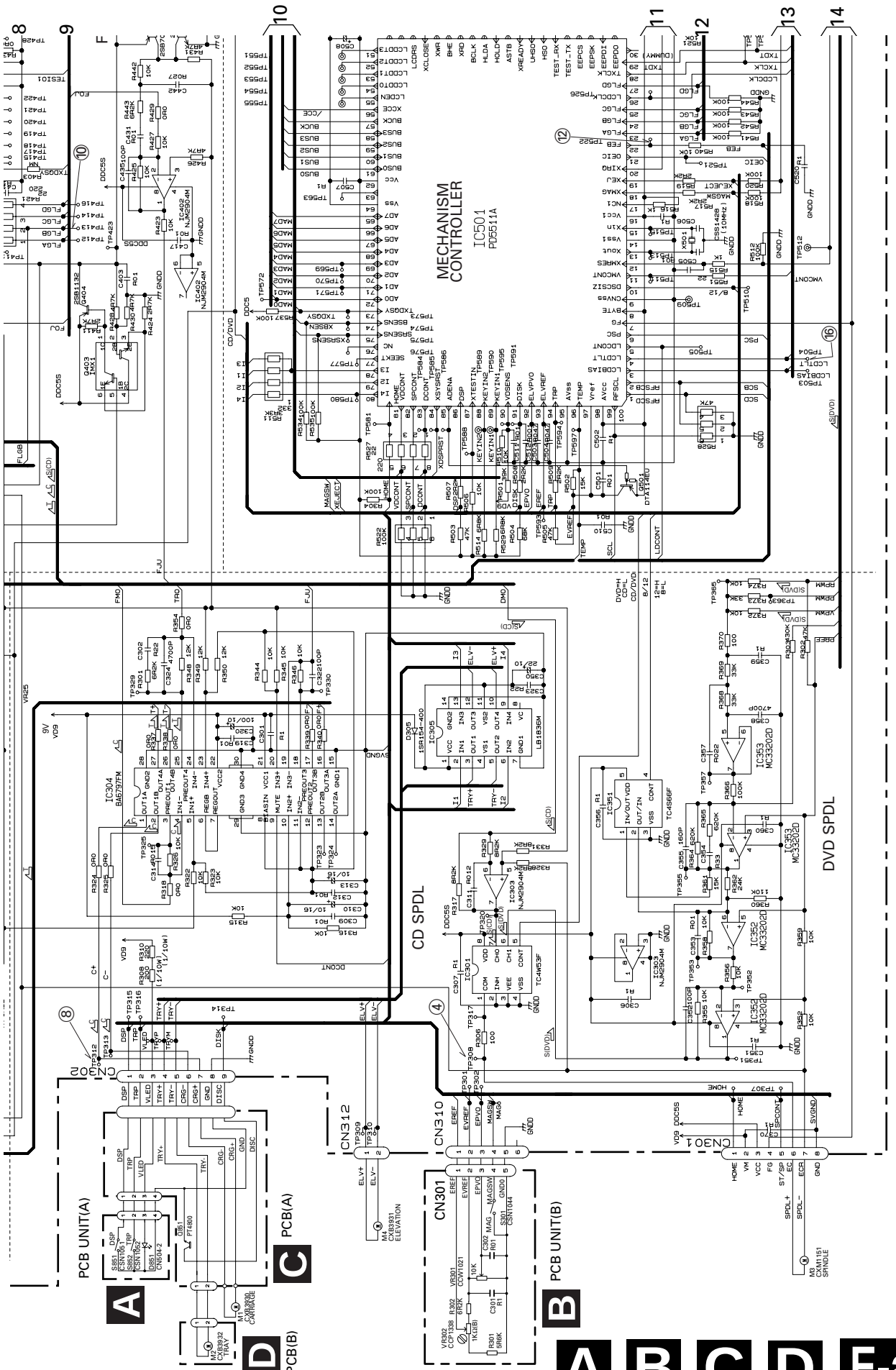


E-b 1/2

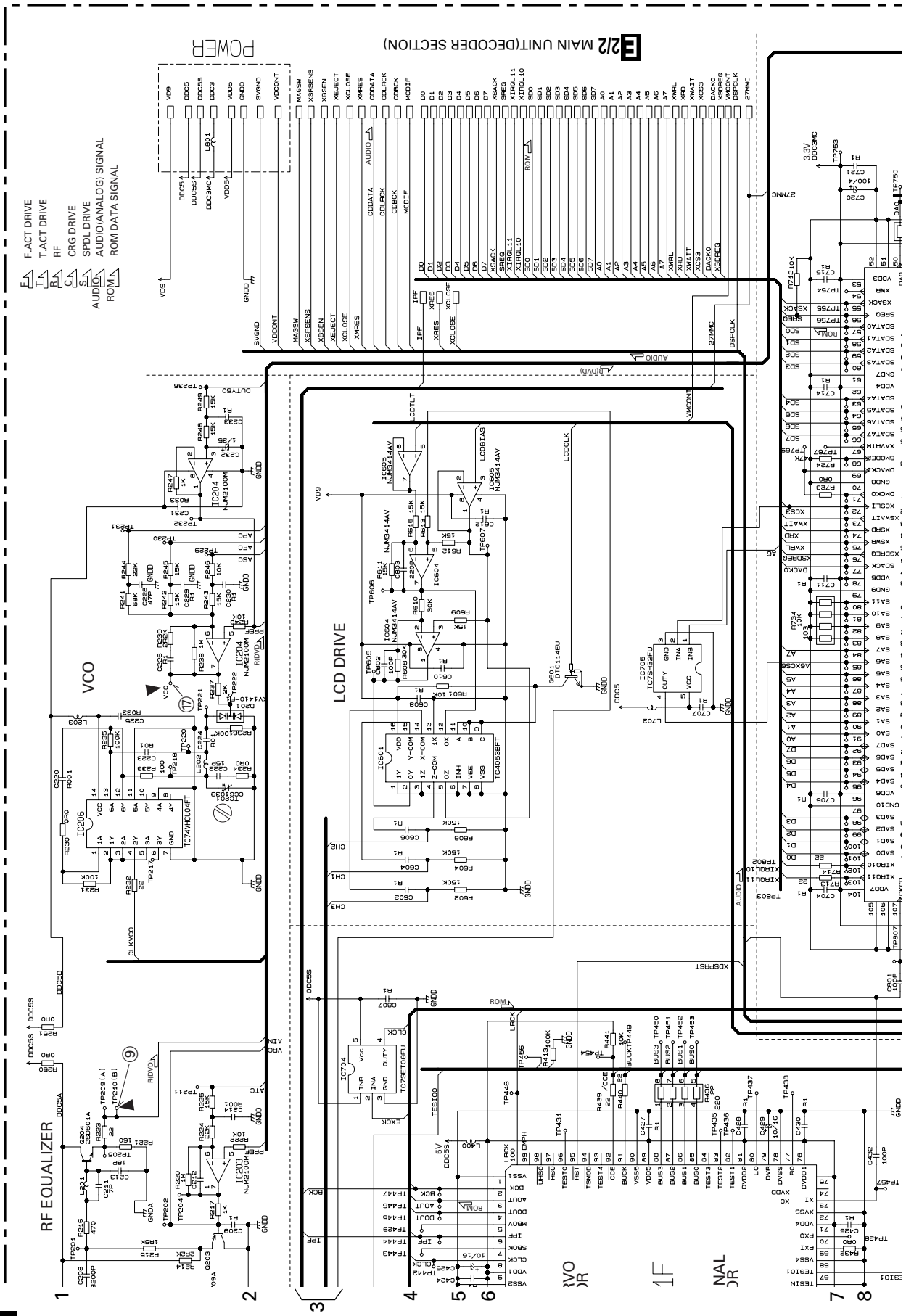

RF EQUALIZER
VCO
LCD DRIVE
POWER
F JUMP
IC701
PD4995A
ASIC
DRAM
IC702
MSM514800CSL60JS
E 2/2 MAIN UNIT(DECODER SECTION)
F.ACT DRIVE
T.ACT DRIVE
RF
CRG DRIVE
SPDL DRIVE
AUDIO(ANALOG) SIGNAL
ROM DATA SIGNAL
NOTE :
Symbol indicates a resistor.
No differentiation is made between chip resistors and discrete resistors.
Symbol indicates a capacitor.
No differentiation is made between chip capacitors and discrete capacitors.
The ⚠ mark found on some component parts indicates the importance of the safety factor of the part.
Therefore, when replacing, be sure to use parts of identical designation.
Decimal points for resistor and capacitor fixed values are expressed as :
2.2→2R2
0.022→R022

E-a E-b

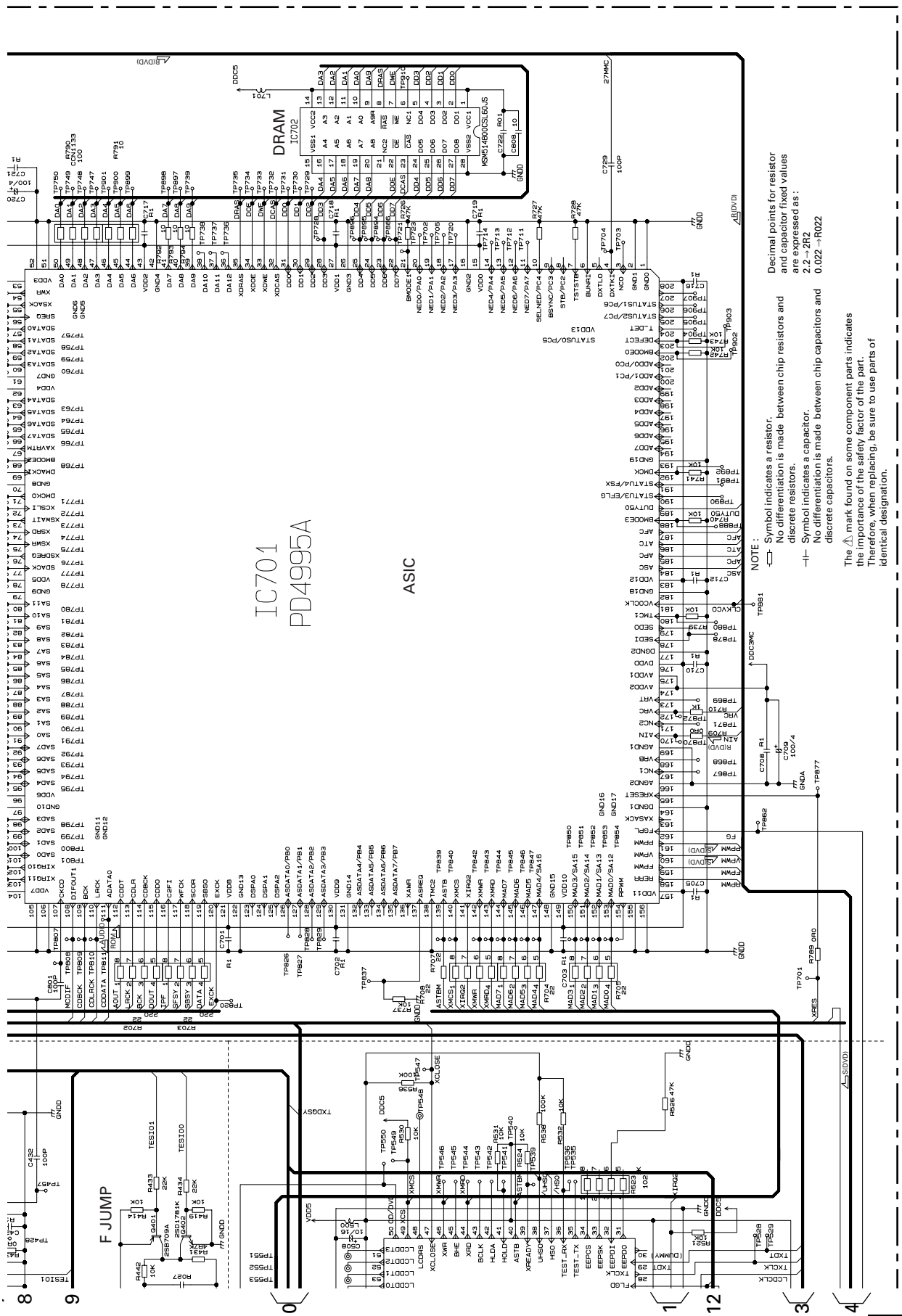

E1/2 MAIN UNIT(SERVO SECTION)
DIGITAL SERVO PROCESSOR
IC401
TC9461F
DIGITAL SIGNAL PROCESSOR
IC103
TA1254AF
RF AMP
CN101
PU UNIT
1.4112MHz
27MHz
2VREF


MECHANISM CONTROLLER
IC501
PD5511A
CD SPDL
DVD SPDL
PCB UNIT(A)
PCB UNIT(B)
PCB(A)
PCB(B)
CN301
CN310
CN312
CN301
CN302
CN303
IC304
BA6797FM
IC305
LB1836M
IC351
TC4W53F
IC352
MC33202D
IC353
MC33202D
IC354
MC33202D
IC303
NJM2904M
IC402
NJM2904M
IC403
NJM2904M
IC404
NJM2904M
M1
CXB3931
CARRIAGE
M2
CXB3932
TRAY
M3
CXM1151
SPINDLE
M4
CXB3931
ELEVATION
E-a
E-b

E-a E-b


E2/2 MAIN UNIT(DECODER SECTION)
POWER
F.ACT DRIVE
T.ACT DRIVE
RF
CRG DRIVE
SPDL DRIVE
AUDIO(ANALOG) SIGNAL
ROM DATA SIGNAL
VCO
LCD DRIVE
RF EQUALIZER
IC206
TC74VHCU04FT
IC704
TC7SET08FU
IC601
TC4053BFT
IC705
TC75H32FU
IC604
NJM3414AV
IC605
NJM3414AV
IC606
NJM3414AV
IC204
NJM2100M
IC203
NJM2100M
Q601
DTC114EU
Q204
2SD601A
Q203
2SA1213
VDD
GND
GNDA
DDC5
DDC5S
DDC3
DDC3MC
VDD5
SVGND
VDCONT
MAGSW
XSRSENS
XBSEN
XEJECT
XCLOSE
XMRES
CDDATA
CDLRCK
CDBCK
MCDIF
AUDIO
ROM
D0
D1
D2
D3
D4
D5
D6
D7
XSACK
SREQ
XTRQL11
XTRQL10
SD0
SD1
SD2
SD3
SD4
SD5
SD6
SD7
A0
A1
A2
A3
A4
A5
A6
A7
XWRL
XRD
XWAIT
XCS3
DACK0
XSDREQ
VMCONT
DSPCLK
27MMC
3.3V
DDC3MC
5V
DDC5S
LCDTLT
LCDBIAS
LCDCLK
VMCONT
CLKVCO
VCO
AIN
RIDVD
XDSPRST
TES100
EXCK
BCK
LRCK
IPF
SBCK
DOUT
AOUT
MBOV
ROM
AUDIO
DUT150
APC
ASC
DACKO
XSDREQ
XSACK
XWAIT
XCS3
XRD
XWRL
DSPCLK
27MMC

E-a E-b

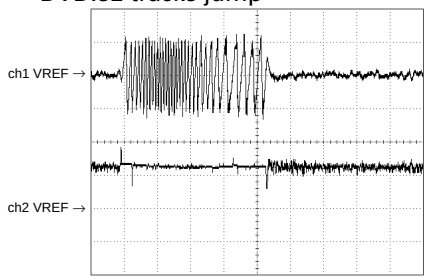

IC701
PD4995A
ASIC
DRAM
IC702
F JUMP
NOTE :
Symbol indicates a resistor.
No differentiation is made between chip resistors and discrete resistors.
Symbol indicates a capacitor.
No differentiation is made between chip capacitors and discrete capacitors.
The ⚠ mark found on some component parts indicates the importance of the safety factor of the part.
Therefore, when replacing, be sure to use parts of identical designation.
Decimal points for resistor and capacitor fixed values are expressed as :
2.2→2R2
0.022→R022

Note:1. The encircled numbers denote measuring pointes in the circuit diagram.
2. Reference voltage
VREF:2.1V

● Waveforms

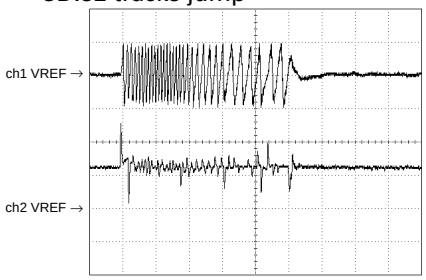
① CH1:TEI 1V/div.
② CH2:T- 2V/div. 2ms/div.

DVD:32 tracks jump



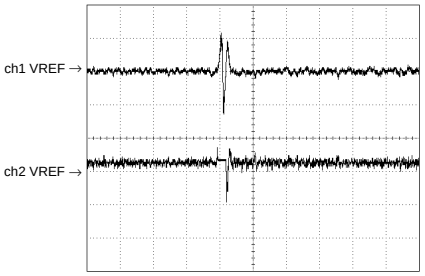
① CH1:TEI 1V/div.
② CH2:T- 2V/div. 2ms/div.

CD:32 tracks jump



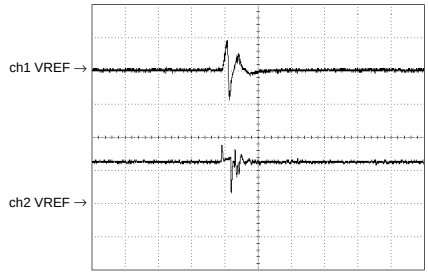
① CH1:TEI 1V/div.
② CH2:T- 2V/div. 2ms/div.

DVD:1 track jump



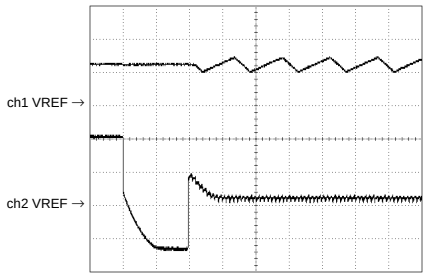
① CH1:TEI 1V/div.
② CH2:T- 2V/div. 2ms/div.

CD:1 track jump



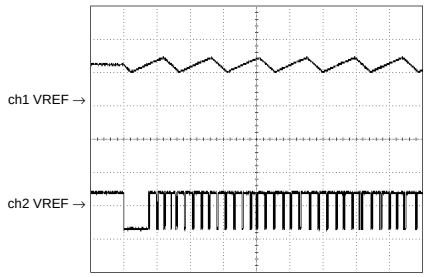
③ CH1:F- 2V/div.
④ CH2:EC(TP308) 1V/div. 500ms/div.

DVD:S curve check
Servo adjustment mode



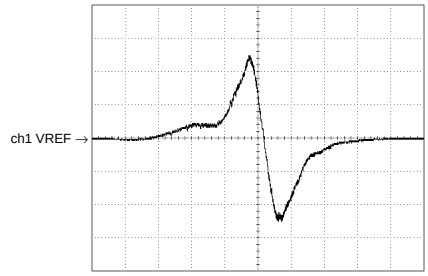
③ CH1:F- 2V/div.
④ CH2:EC(TP308) 1V/div. 500ms/div.

CD:S curve check
Servo adjustment mode



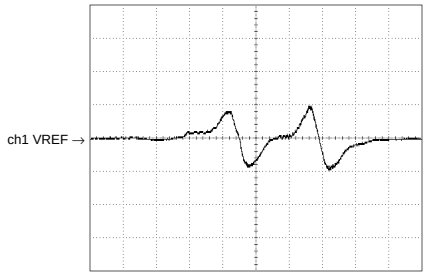
⑤ CH1:FEI 500mV/div. 2ms/div.

DVD:S curve check
Servo adjustment mode



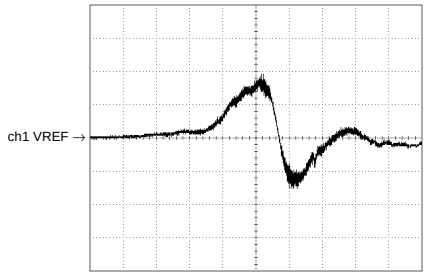
⑤ CH1:FEI 500mV/div. 2ms/div.

2 layer DVD:S curve check
Servo adjustment mode



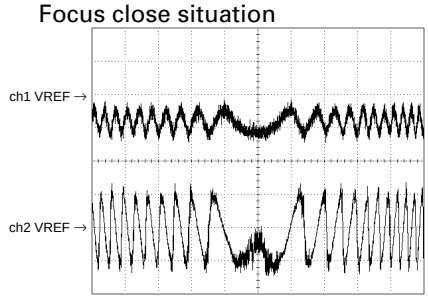
⑤ CH1:FEI 500mV/div. 2ms/div.

CD:S curve check
Servo adjustment mode



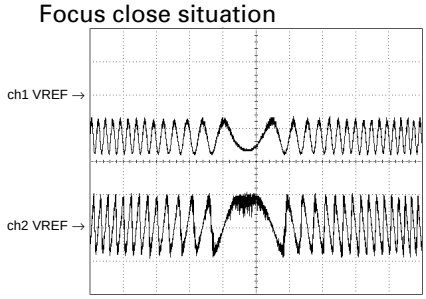
⑥ CH1:RFRP(TP405) 500mV/div.
① CH2:TEI 1V/div. 2ms/div.

CD:RFRP waveform
Focus close situation



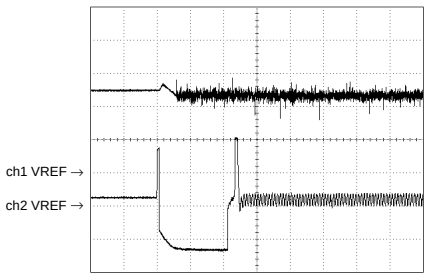
⑥ CH1:RFRP(TP405) 500mV/div.
① CH2:TEI 1V/div. 5ms/div.

CD:RFRP waveform
Focus close situation



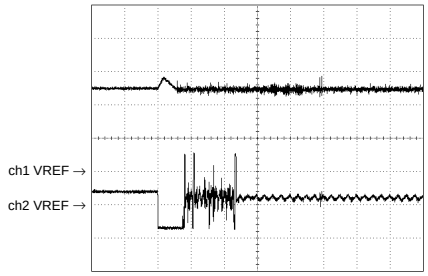
③ CH1:F- 1V/div.
④ CH2:EC(TP308) 1V/div. 500ms/div.

DVD:Focus close situation



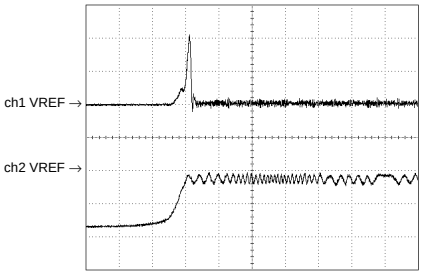
③ CH1:F- 1V/div.
④ CH2:EC(TP308) 1V/div. 500ms/div.

CD:focus close



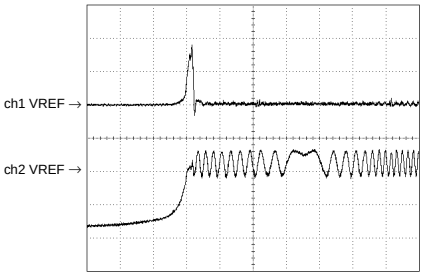
⑤ CH1:FEI 500mV/div.
⑦ CH2:SBAD(TP407) 500mV/div. 10ms/div.

DVD:focus close



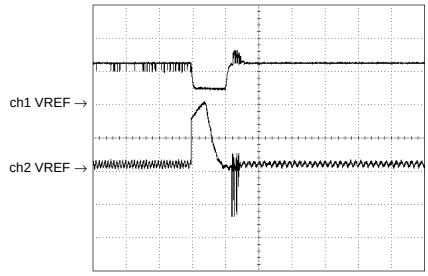
⑤ CH1:FEI 500mV/div.
⑦ CH2:SBAD(TP407) 500mV/div. 10ms/div.

CD:focus close



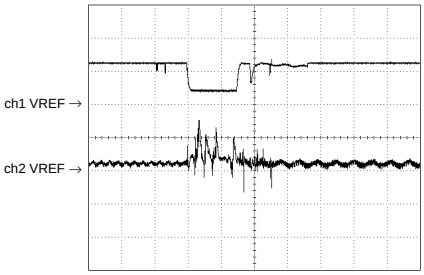
⑧ CH1:C-(TP313) 2V/div.
④ CH2:EC(TP308) 1V/div. 500m/div.

DVD:CRG inside→outside



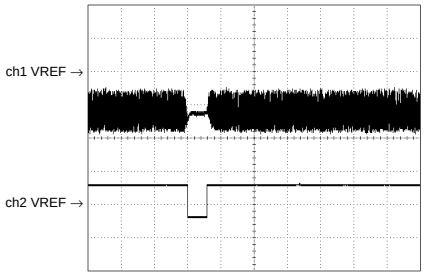
⑧ CH1:C-(TP313) 2V/div.
④ CH2:EC(TP308) 1V/div. 500m/div.

CD:CRG inside→outside



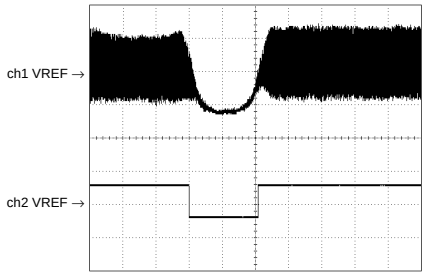
⑨ CH1:Ain(TP210) 1V/div.
⑩ CH2:FLGB(TP413) 5V/div. 500µs/div.

DVD:passing black dot (1mm)



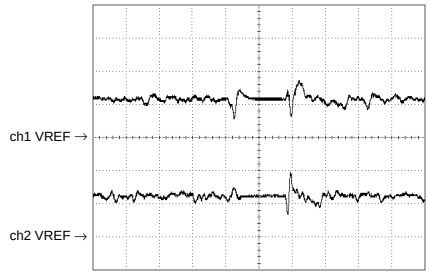
⑪ CH1:RFOI 1V/div.
⑩ CH2:FLGB(TP413) 5V/div. 500µs/div.

CD:passing black dot (1mm)



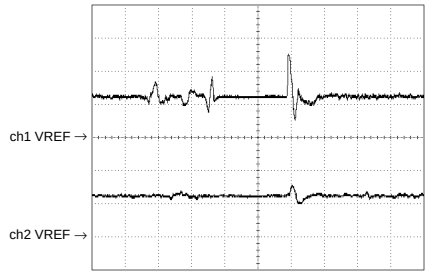
③ CH1:F- 2V/div.
② CH2:T- 2V/div. 200µs/div.

DVD:passing black dot (1mm)



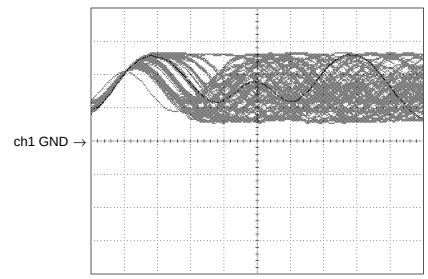
③ CH1:F- 2V/div.
② CH2:T- 2V/div. 500µs/div.

CD:passing black dot (1mm)



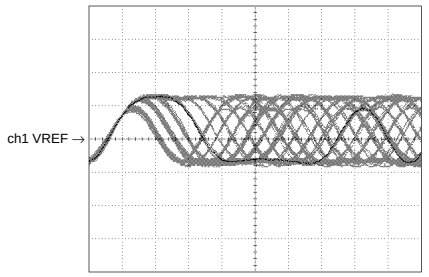
⑨ CH1:Ain(TP210) 500mV/div. 100ns/div.

DVD:during playback Ain waveform



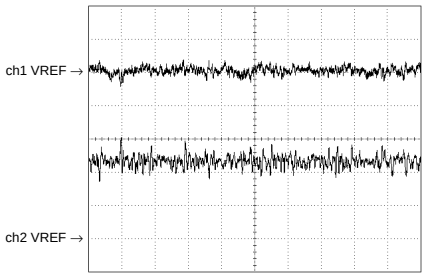
⑩ CH1:RFOI 1V/div. 500ns/div.

CD:during playback RFOI waveform



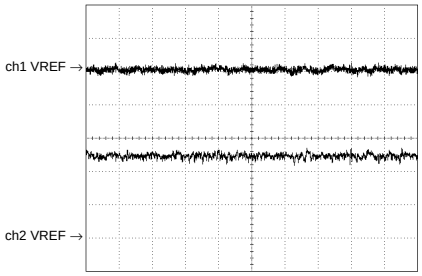
⑤ CH1:FEI 200mV/div.
③ CH2:F- 1V/div. 1ms/div.

DVD:during playback FEI waveform



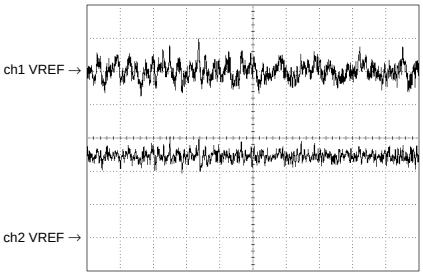
⑤ CH1:FEI 200mV/div.
③ CH2:F- 1V/div. 1ms/div.

CD:during playback FEI waveform



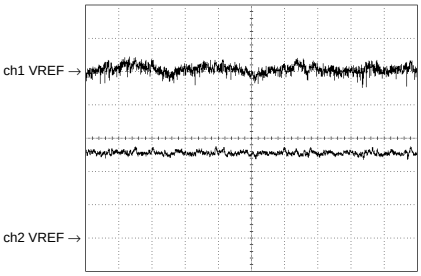
① CH1:TEI 200mV/div.
② CH2:T- 1V/div. 1ms/div.

DVD:during playback TEI waveform



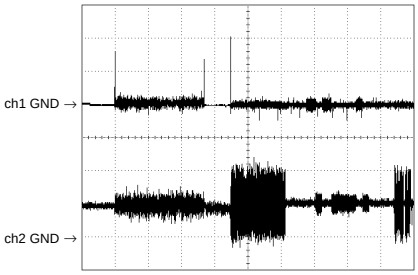
① CH1:TEI 200mV/div.
② CH2:T- 1V/div. 1ms/div.

CD:during playback TEI waveform



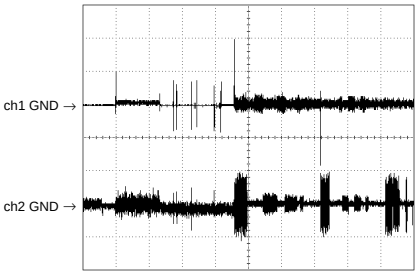
⑤ CH1:FEI 500mV/div.
① CH2:TEI 1V/div. 500ms/div.

DVD:setup



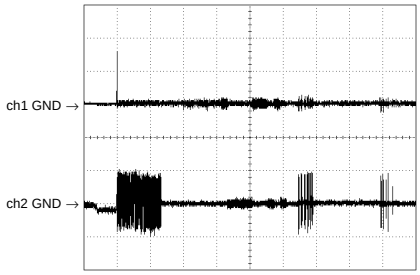
⑤ CH1:FEI 500mV/div.
① CH2:TEI 1V/div. 1s/div.

2 layer DVD:setup



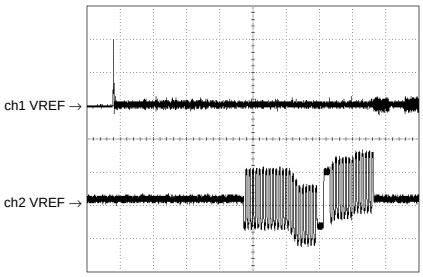
⑤ CH1:FEI 500mV/div.
① CH2:TEI 1V/div. 500ms/div.

CD:setup



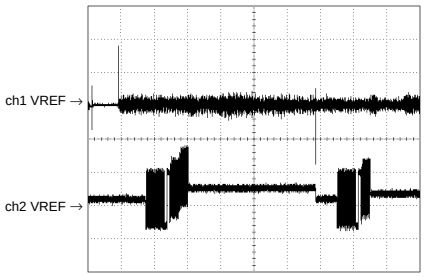
⑤ CH1:FEI 500mV/div.
⑫ CH2:FEB(TP522) 200mV/div. 500ms/div.

DVD:focus balance adjustment



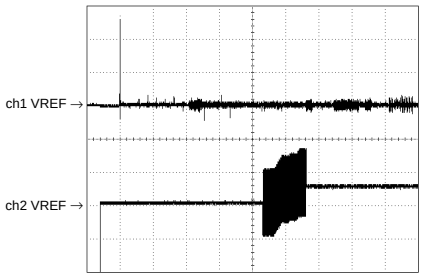
⑤ CH1:FEI 500mV/div.
⑫ CH2:FEB(TP522) 200mV/div. 500ms/div.

2 layer DVD:focus balance adjustment

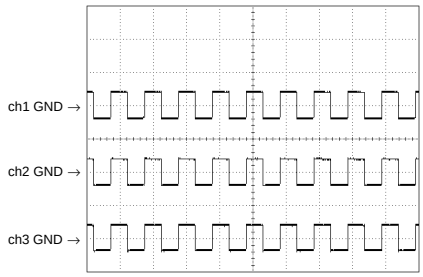


⑤ CH1:FEI 500mV/div.
⑫ CH2:FEB(TP522) 500mV/div. 500ms/div.

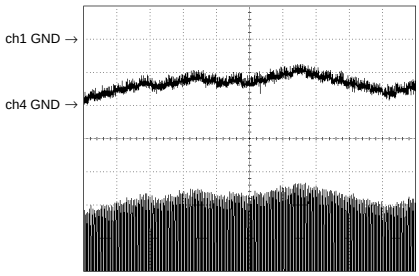
CD:focus balance adjustment



⑬ CH1:TP101 5V/div.
⑭ CH2:TP102 5V/div. 1ms/div.
⑮ CH3:TP103 5V/div.
DVD:LCD tilt servo

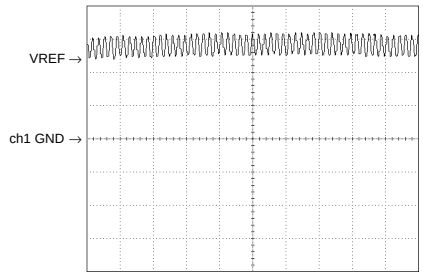


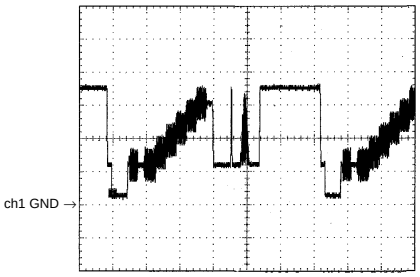
⑯ CH4:LCDTILT(TP504) 100mV/div.
⑬ CH1:TP101 200mV/div. 1s/div.
DVD:LCD tilt servo
CH1, CH2:offset voltage 2.5V



⑰ CH1:VCO 500mV/div. 200ns/div.

DVD:VCO

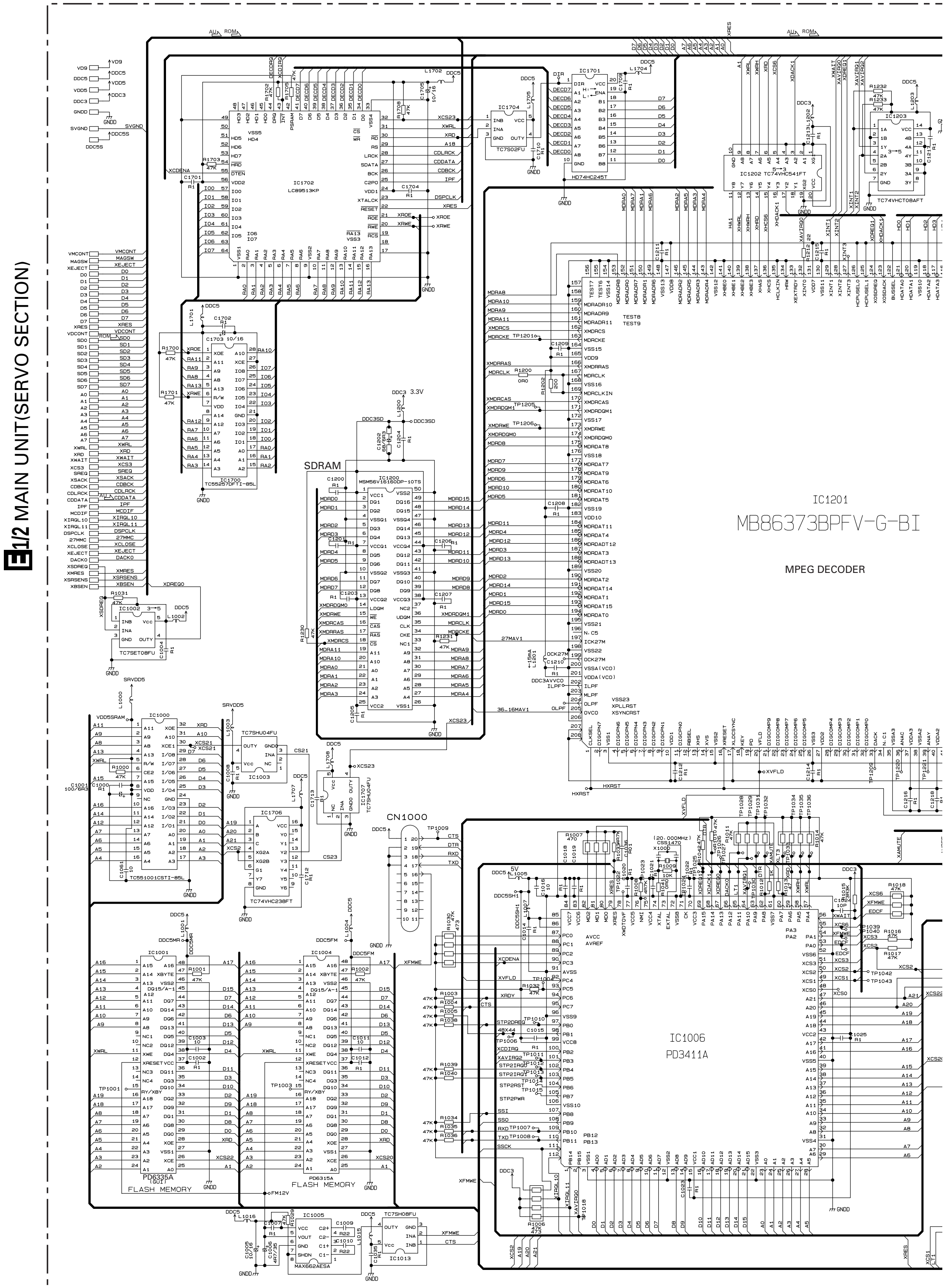


⑱ IC1201 pin 45 200mV/div. 10µs/div. Composite signal output  		

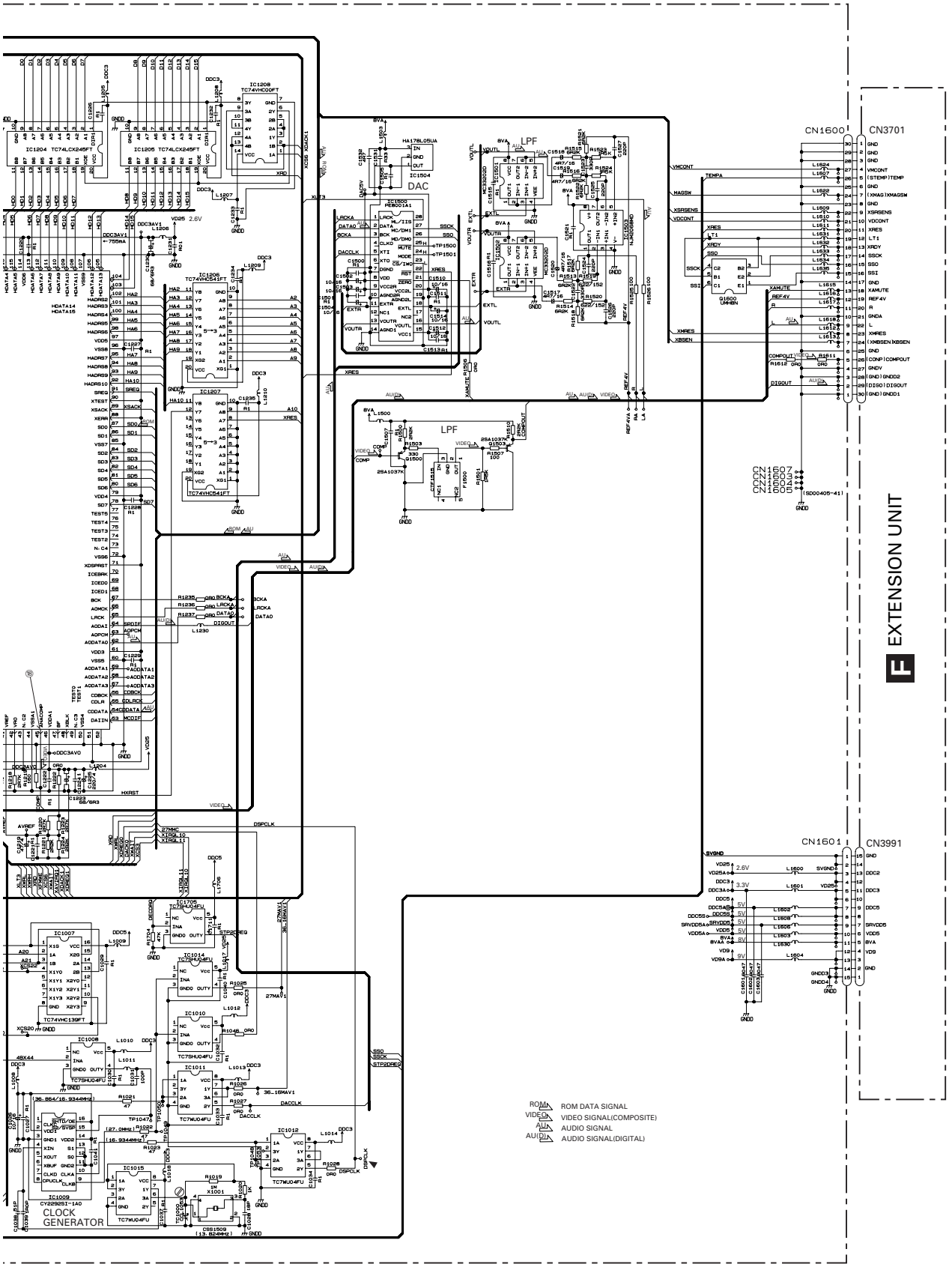
3.3 MAIN UNIT(DECODER SECTION)(GUIDE PAGE)

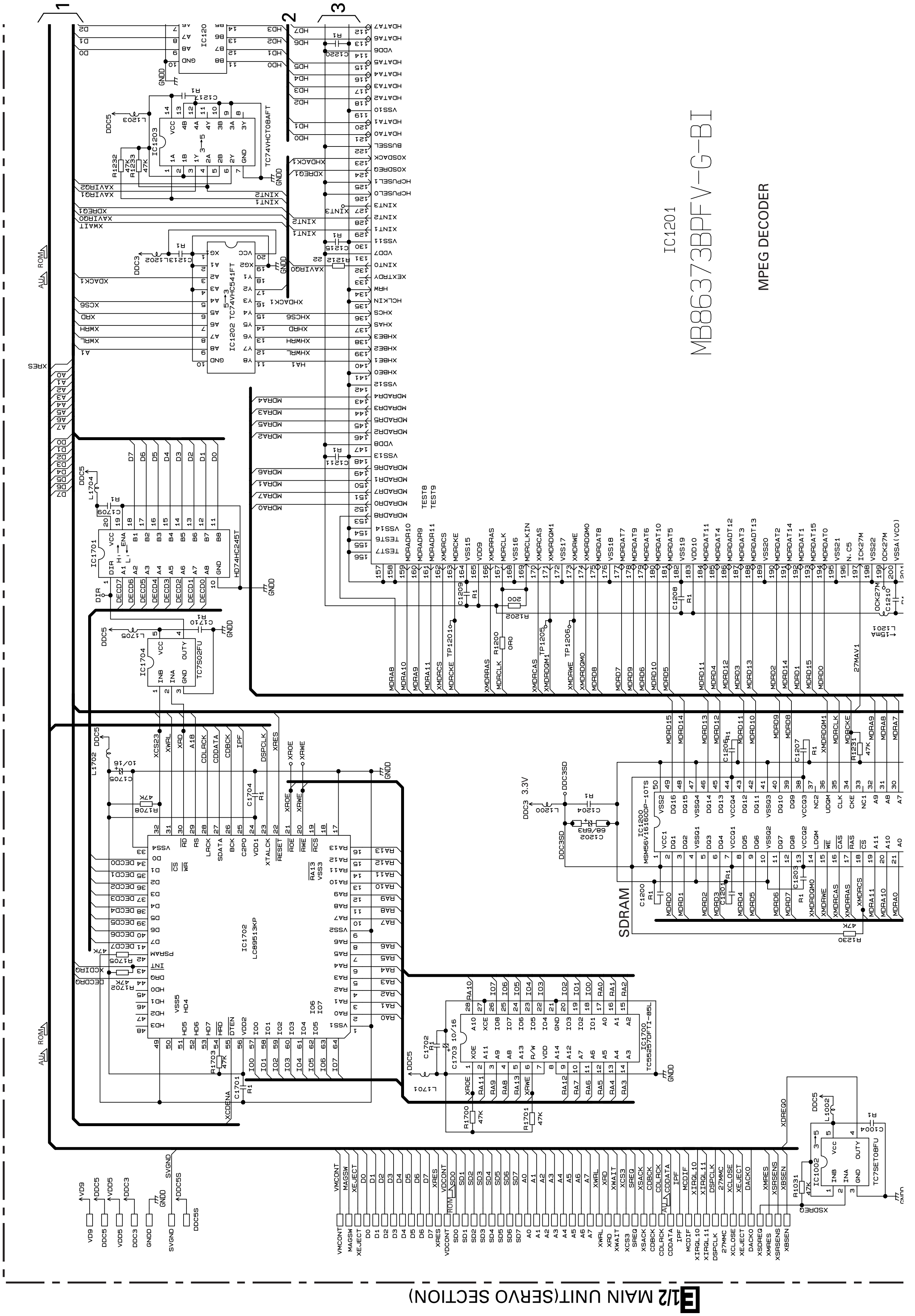
E 2/2 MAIN UNIT(DECODER SECTION)

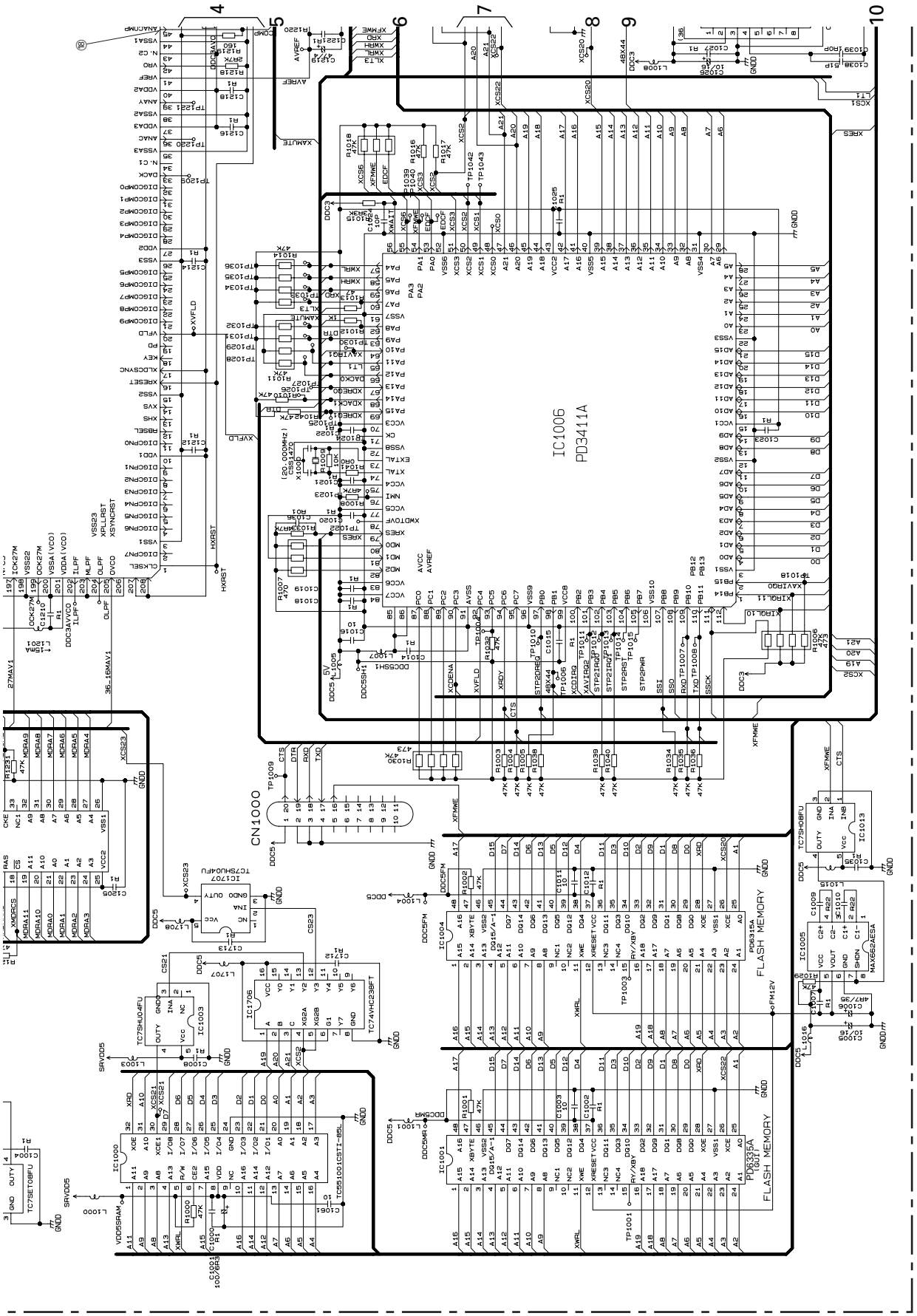
E-a 2/2



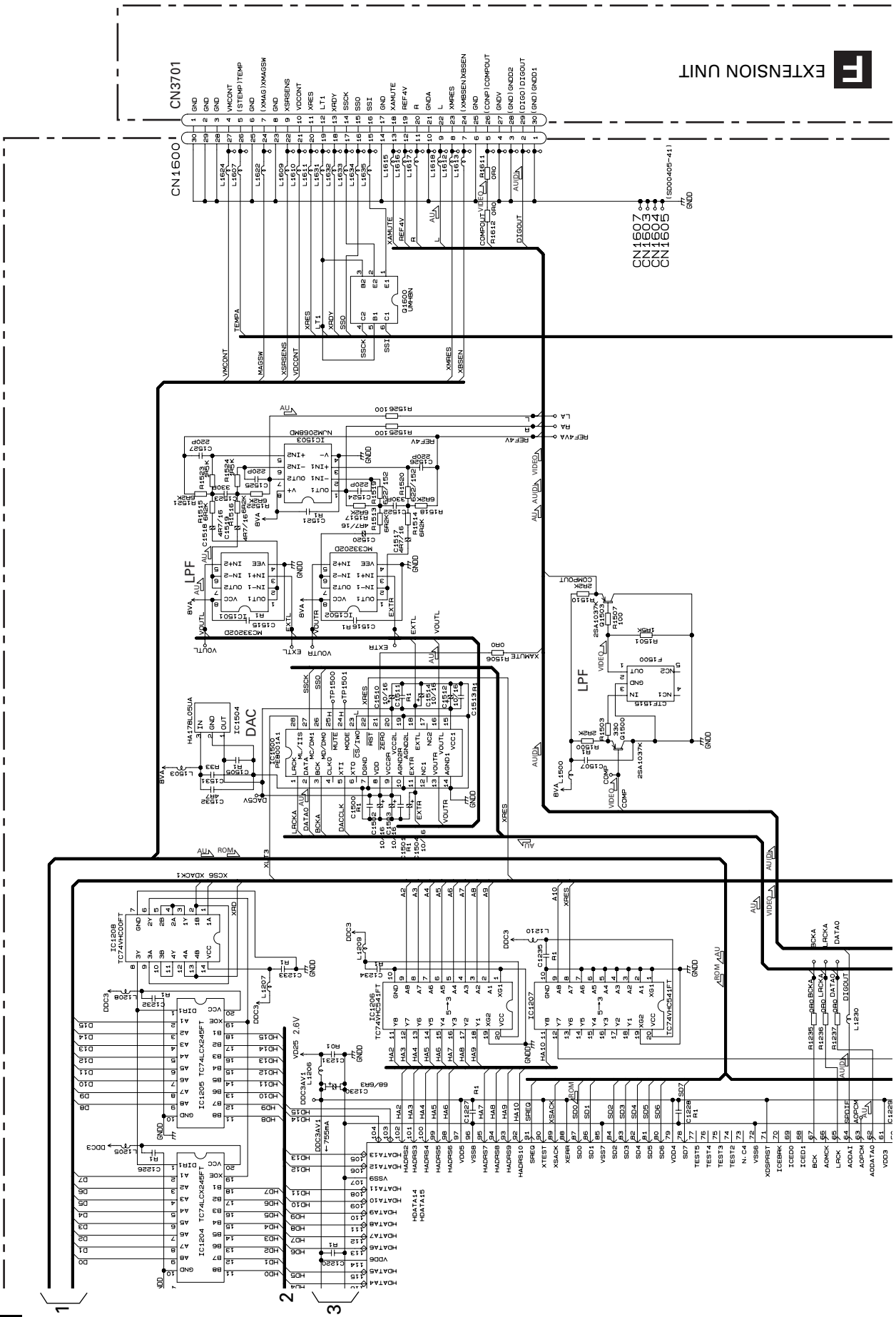
E-b 2/2

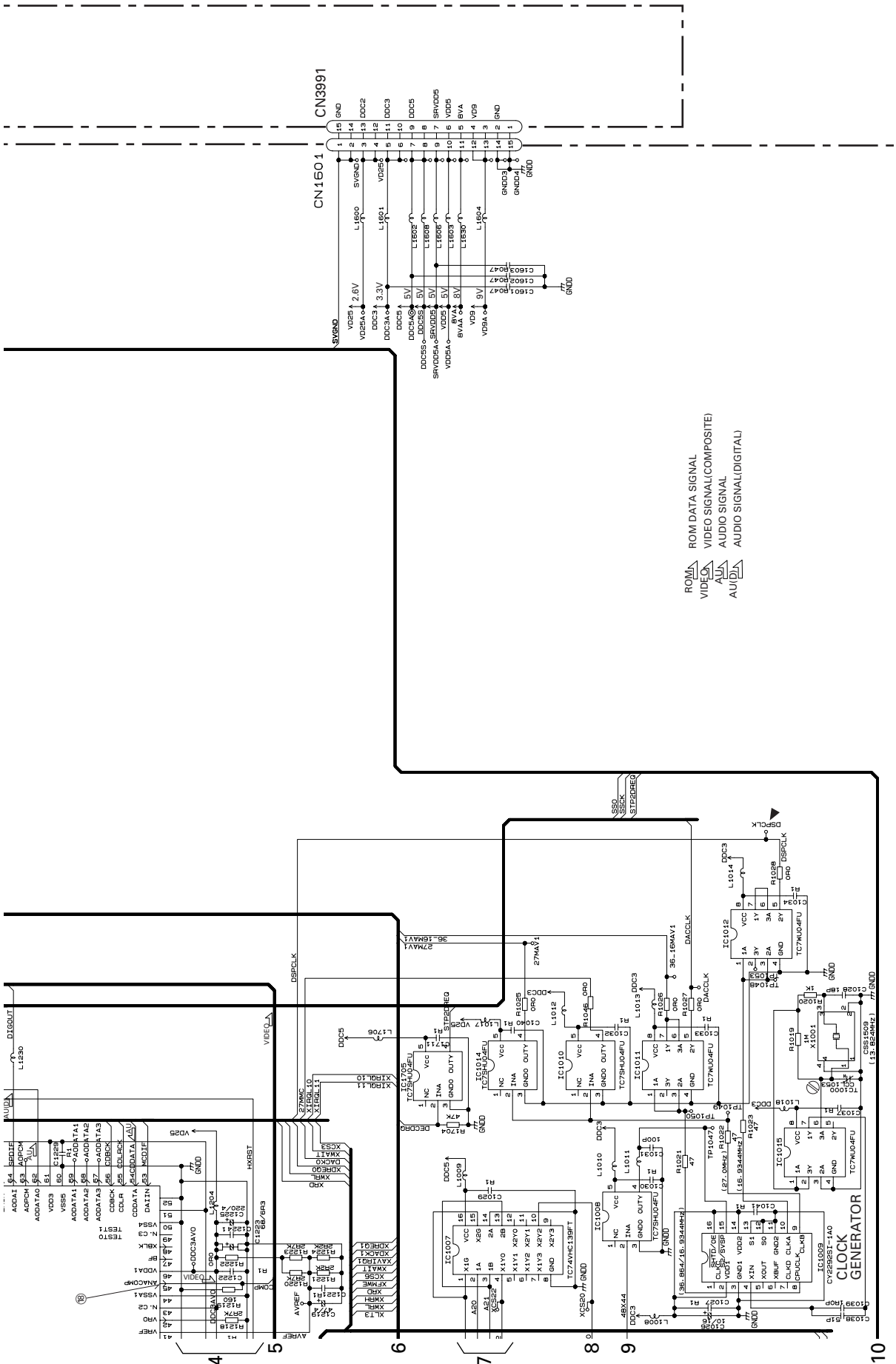

CN1600
CN3701
CN1601
CN3991
E EXTENSION UNIT
DAC
LPF
LPF
CLOCK GENERATOR
ROM ROM DATA SIGNAL
VIDEO VIDEO SIGNAL(COMPOSITE)
AU AUDIO SIGNAL
AUDI AUDIO SIGNAL(DIGITAL)


E 2/2 MAIN UNIT(DECODER SECTION)
E 1/2 MAIN UNIT(SERVO SECTION)
IC1201
MB86373BPFV-G-BI
MPEG DECODER
SDRAM
IC1200 MSM56V16160P-10TS
IC1702 LC89513KP
IC1700 TC55257DFTI-85L
IC1701 HD74HC245T
IC1202 TC74VHC541FT
IC1203 TC74VHCT08AFT
IC1704 TC7S02FU
IC1002 TC7SET08FU



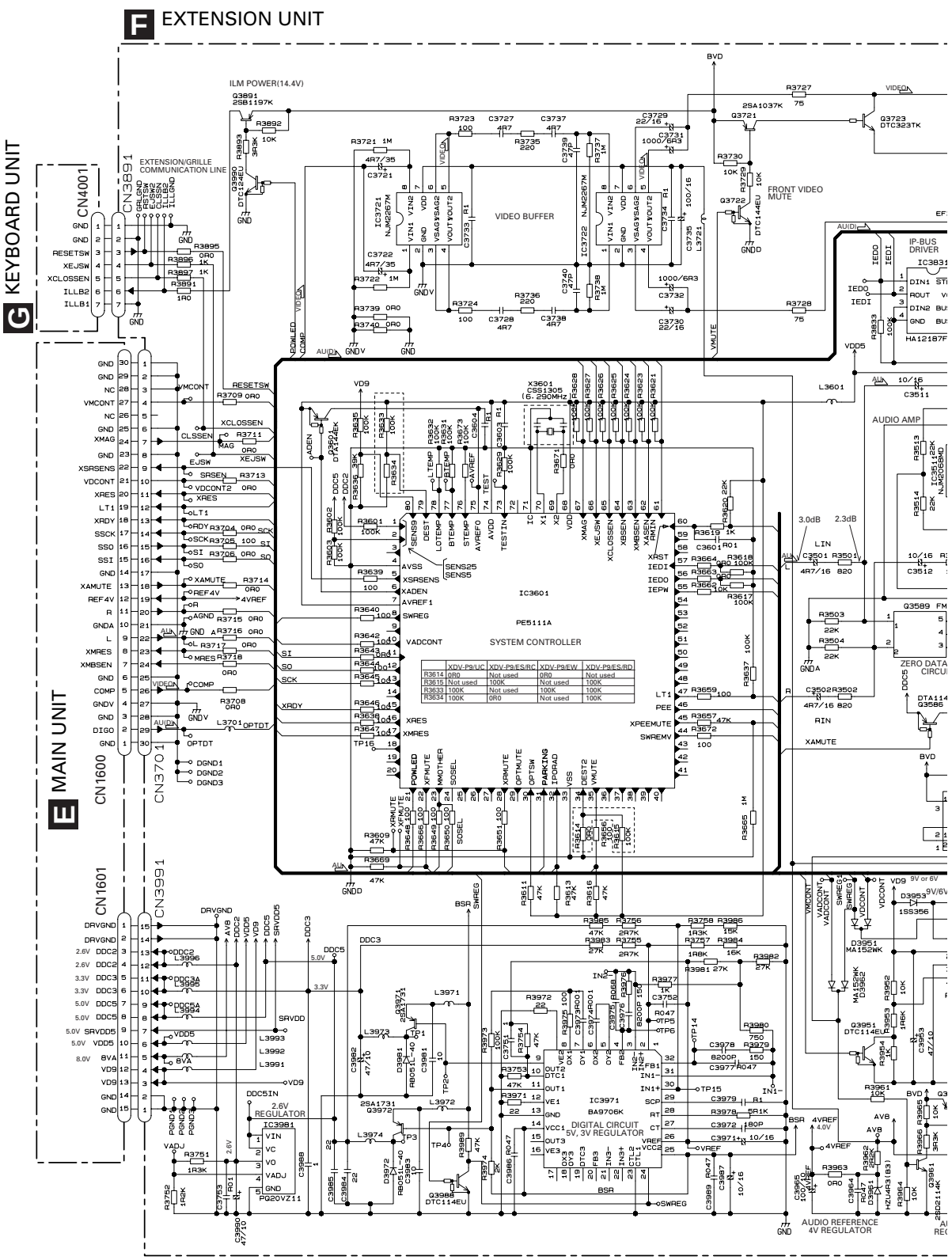
E-a E-b


EXTENSION UNIT
CN3701
CN1600
CN1607
CN1603
CN1604
CN1605
LPF
DAC
ROM
AUDIO
VIDEO

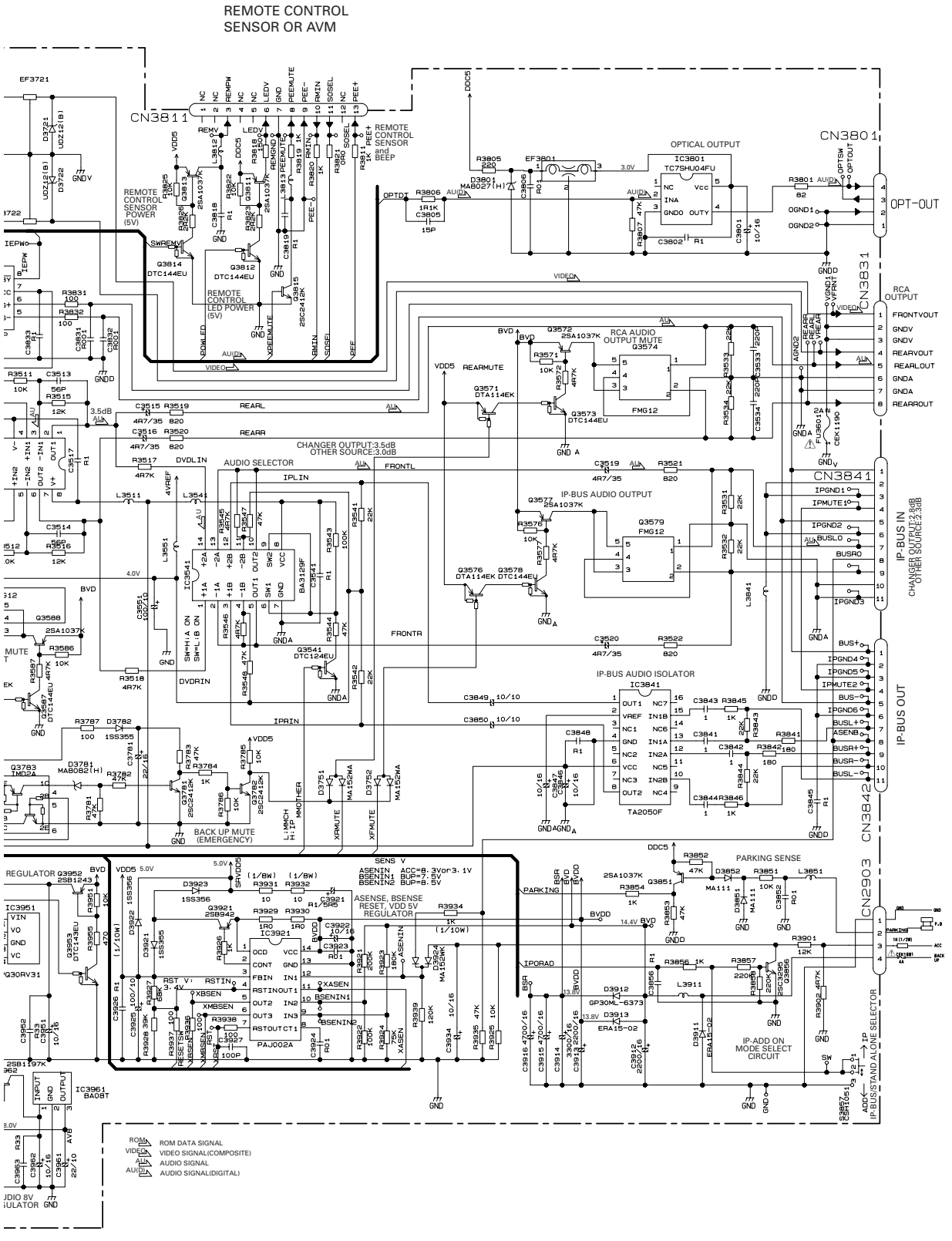

CN3991
CN1601
ROM DATA SIGNAL
VIDEO SIGNAL(COMPOSITE)
AUDIO SIGNAL
AUDIO SIGNAL(DIGITAL)
CLOCK GENERATOR

3.4 EXTENSION UNIT(GUIDE PAGE)

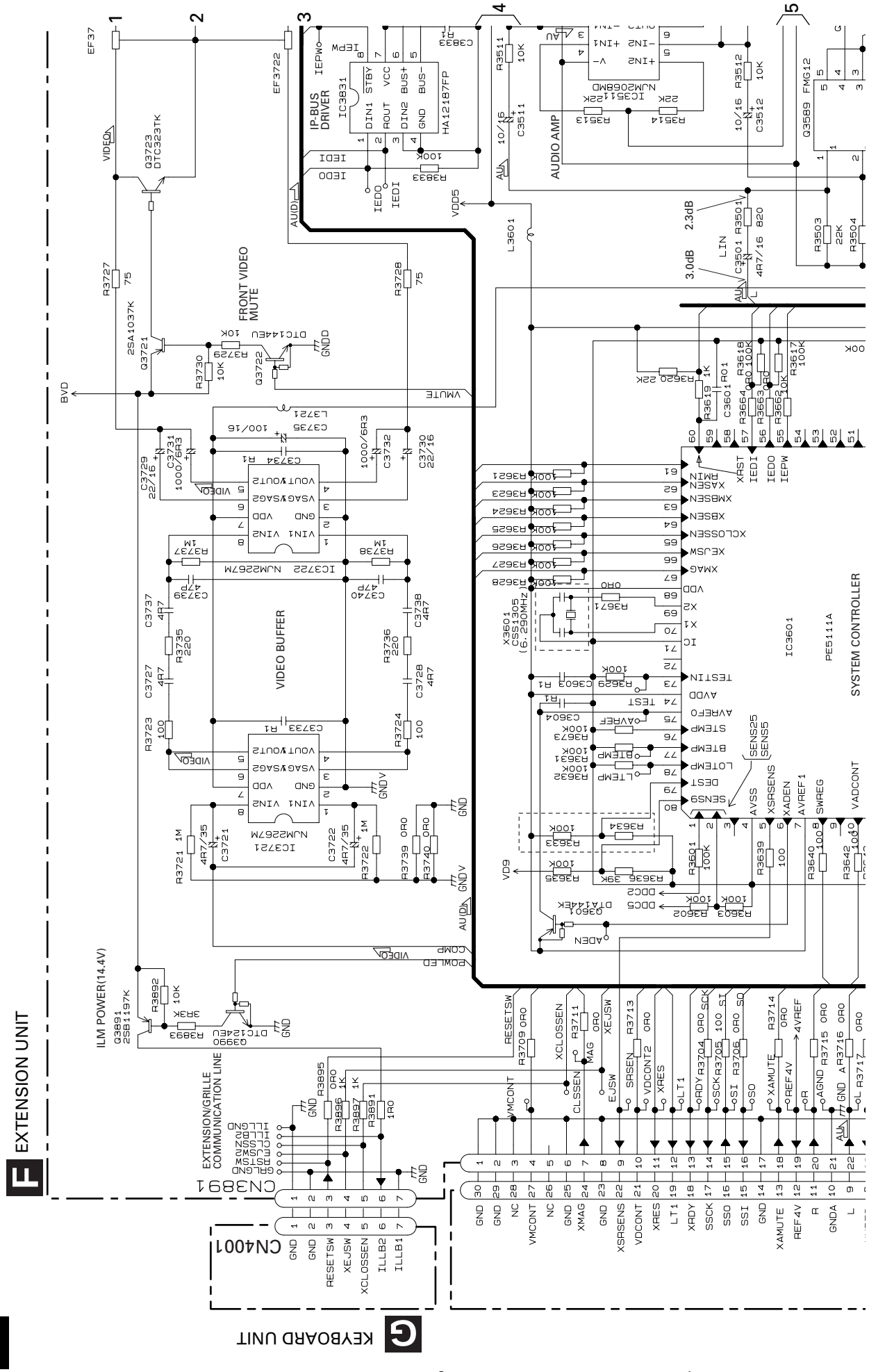
F-a

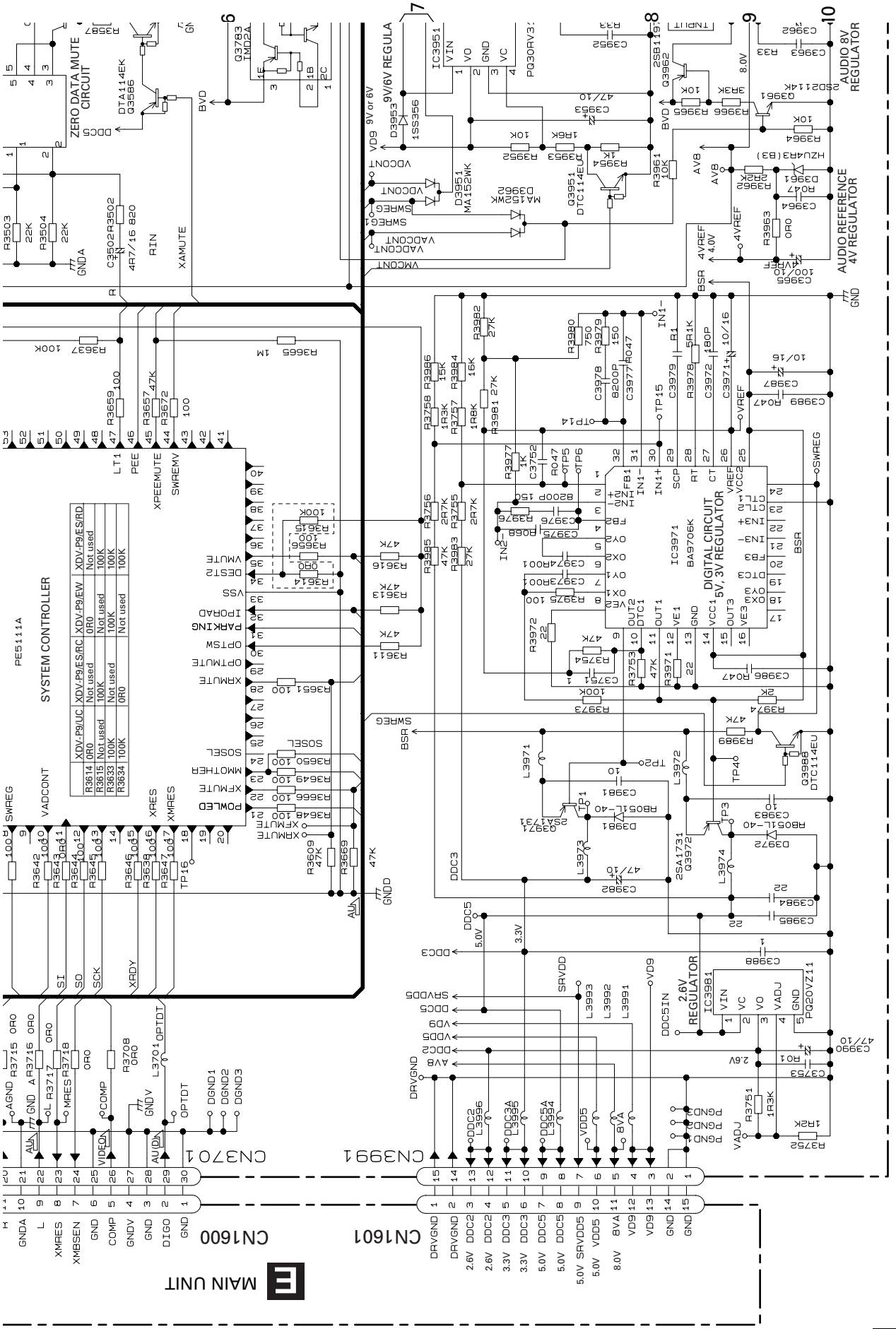


F-b

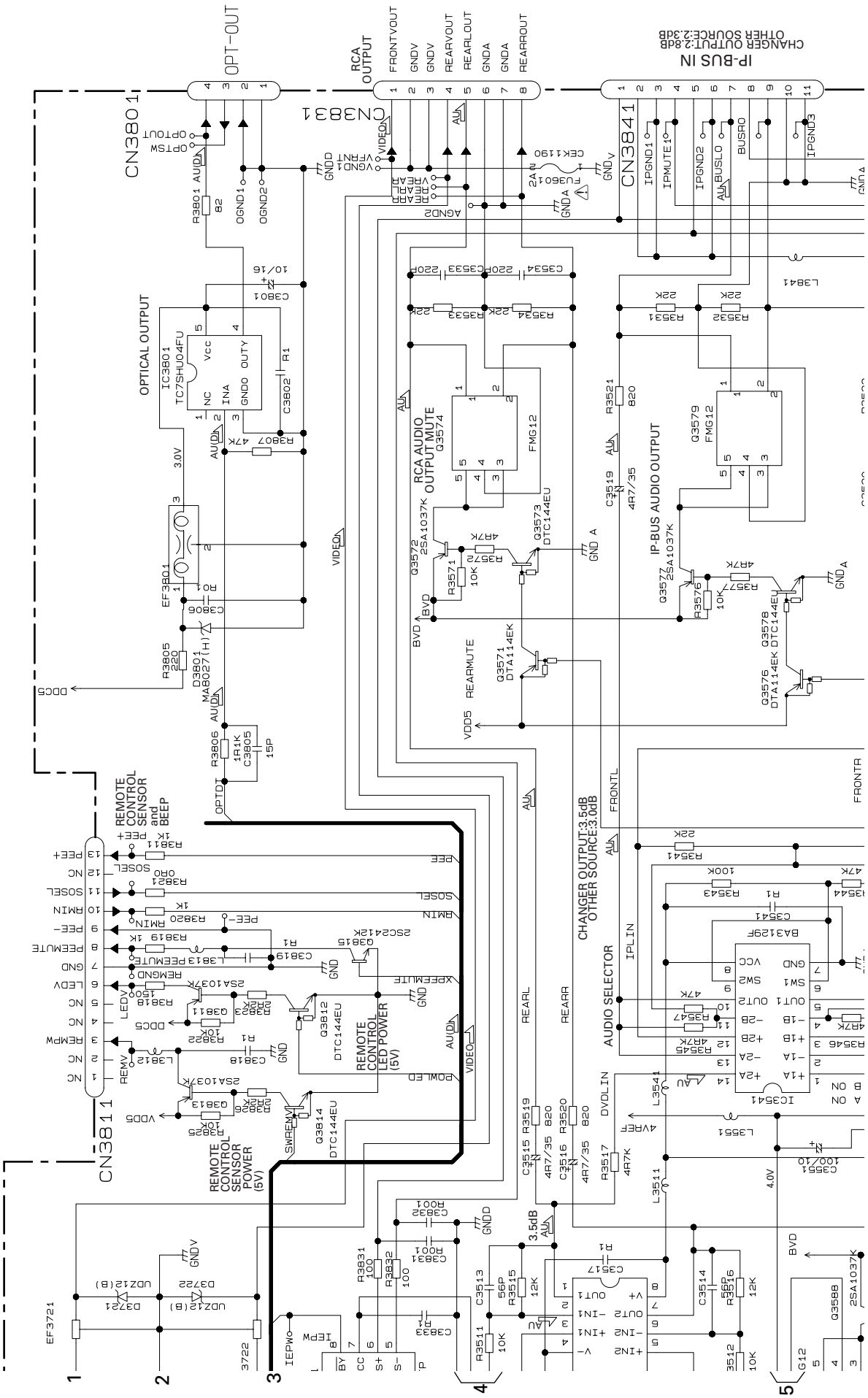

REMOTE CONTROL SENSOR OR AVM
CN3811
CN3801
OPT-OUT
CN3831
RCA OUTPUT
CN3841
IP-BUS IN
CN3842
IP-BUS OUT
CN2903
OPTICAL OUTPUT
RCA AUDIO OUTPUT MUTE
IP-BUS AUDIO OUTPUT
IP-BUS AUDIO ISOLATOR
AUDIO SELECTOR
PARKING SENSE
IP-ADD ON MODE SELECT CIRCUIT
BACK UP MUTE (EMERGENCY)
REGULATOR
ASENSE, BSENSE RESET, VDD 5V REGULATOR
CHANGER OUTPUT:3.5dB
OTHER SOURCE:3.0dB
ROM DATA SIGNAL
VIDEO SIGNAL(COMPOSITE)
AUDIO SIGNAL
AUDIO SIGNAL(DIGITAL)

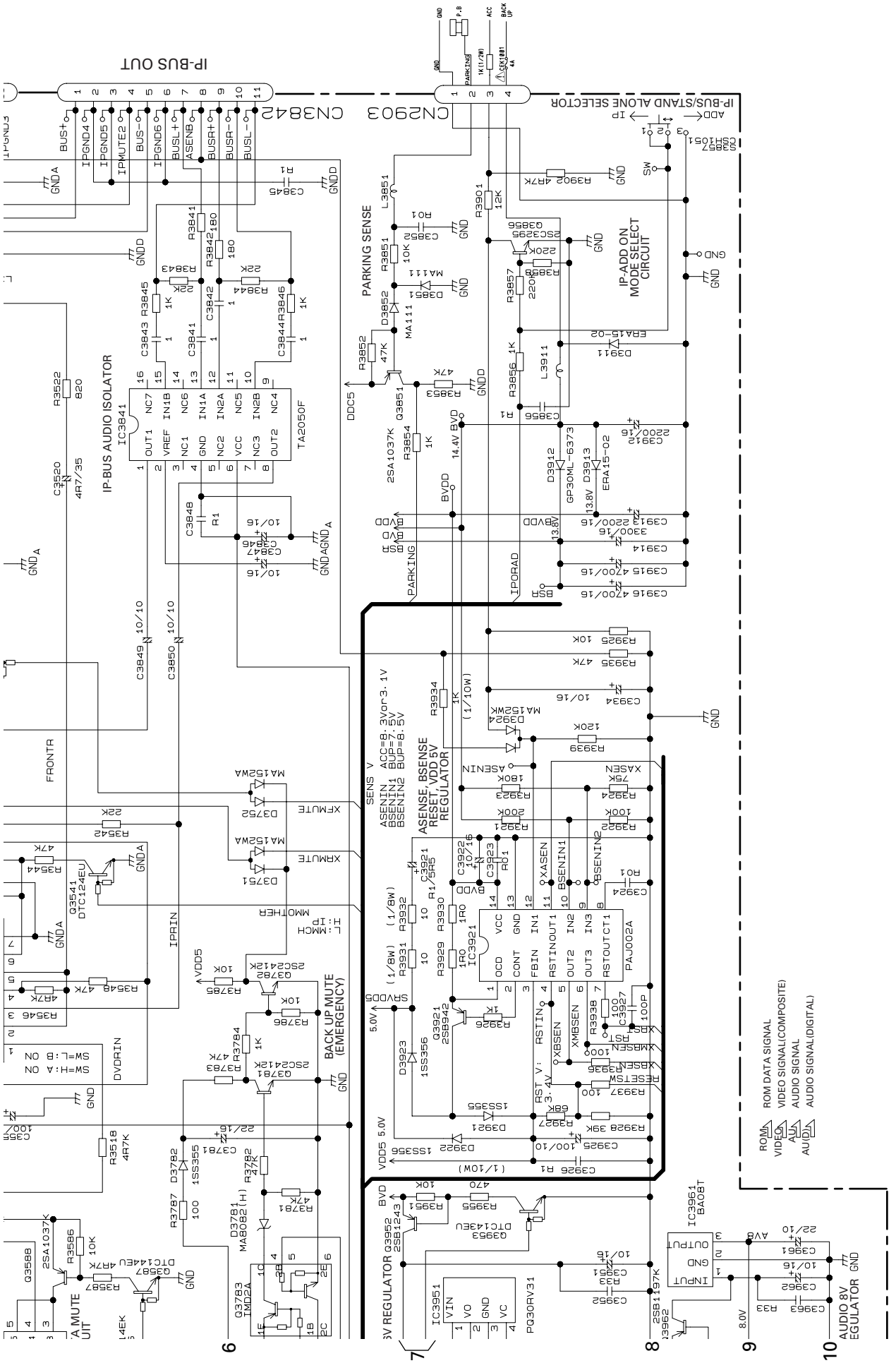
F-a F-b


F EXTENSION UNIT
G KEYBOARD UNIT
SYSTEM CONTROLLER
IC3601
PE5111A
VIDEO BUFFER
FRONT VIDEO MUTE
AUDIO AMP
IP-BUS DRIVER
ILM POWER(14.4V)
EXTENSION/GRILLE COMMUNICATION LINE
CN3891
CN4001

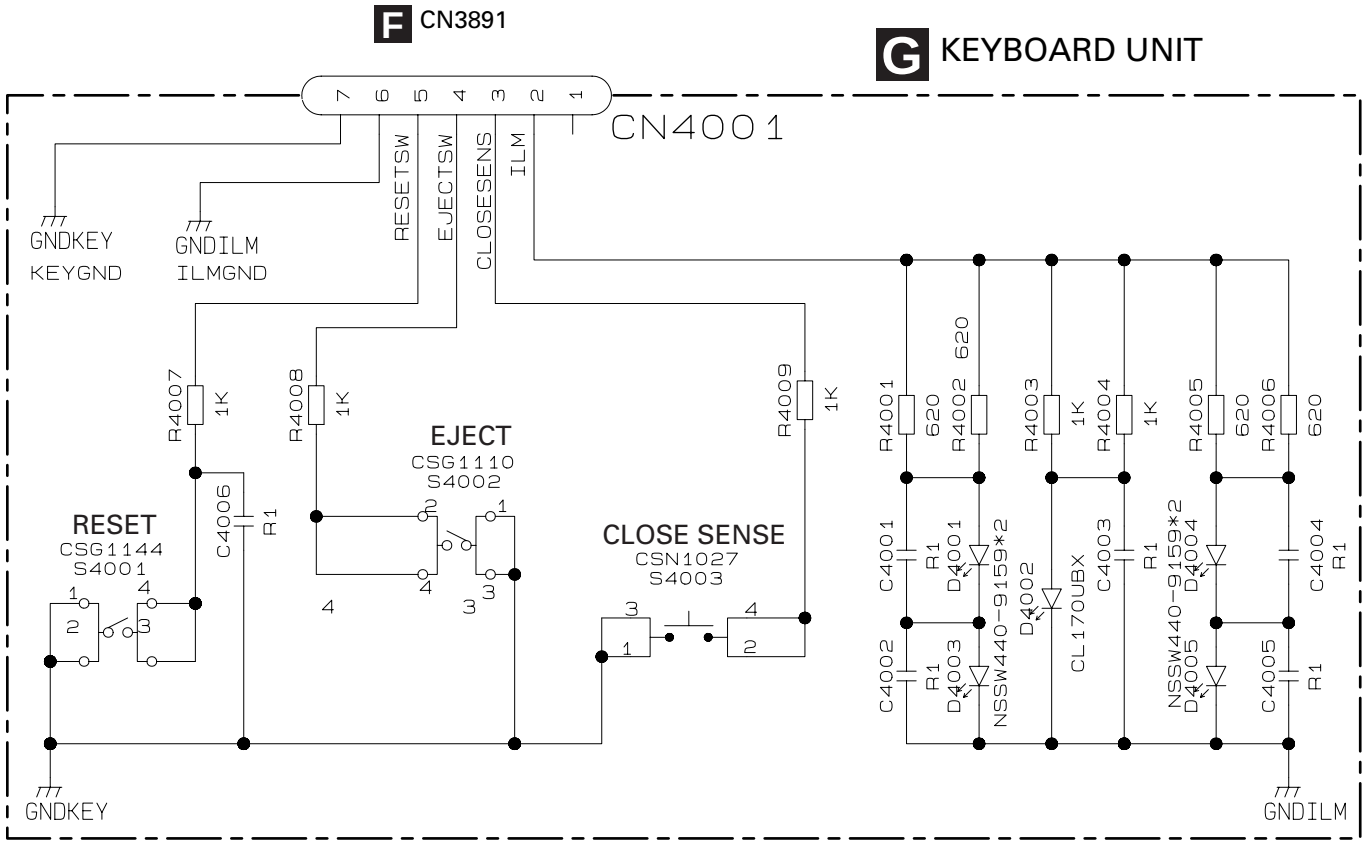

SYSTEM CONTROLLER
PE5111A
DIGITAL CIRCUIT
5V, 3V REGULATOR
IC3971
BA976K
AUDIO REFERENCE
4V REGULATOR
AUDIO 8V
REGULATOR
9V/6V REGULA
ZERO DATA MUTE
CIRCUIT
2.6V
REGULATOR
IC3981
PQ20VZ11
MAIN UNIT
CN3701
CN3991
CN1600
CN1601
XDV-P9/LC
XDV-P9/ES/RC
XDV-P9/EW
XDV-P9/ES/RD
R3614 0R0 Not used Not used Not used
R3615 Not used 100K Not used 100K
R3633 100K Not used 100K 100K
R3634 100K 0R0 Not used 100K

F-a F-b


CN3801
OPT-OUT
CN3831
RCA OUTPUT
FRONTVOUT
REARVOUT
REARLOUT
CN3841
IP-BUS IN
CHANGER OUTPUT:2.8dB
OTHER SOURCE:2.8dB
OPTICAL OUTPUT
IC3801 TC7SHU04FU
RCA AUDIO OUTPUT MUTE
IP-BUS AUDIO OUTPUT
REMOTE CONTROL SENSOR and BEEP
CN3811
REMOTE CONTROL SENSOR POWER (5V)
REMOTE CONTROL LED POWER (5V)
AUDIO SELECTOR
IC3541 BA3129F
CHANGER OUTPUT:3.6dB
OTHER SOURCE:3.0dB
3.5dB
4.0V
VDD5
GNDV
GNDD
GNDA
BVD
REARMUTE
DVDLIN
IPLIN
REARL
REARR
FRONTL
FRONTR


IP-BUS OUT
CN3842
CN2903
IP-BUS/STAND ALONE SELECTOR
IP-BUS AUDIO ISOLATOR
IC3841
TA2050F
PARKING SENSE
IP-ADD ON MODE SELECT CIRCUIT
ASENSE, BSENSE RESET, VDD 5V REGULATOR
IC3921
PAJ002A
BACK UP MUTE (EMERGENCY)
5V REGULATOR
IC3951
PQ30RV31
AUDIO 8V REGULATOR
IC3961
BA08T
ROM DATA SIGNAL
VIDEO SIGNAL(COMPOSITE)
AUDIO SIGNAL
AUDIO SIGNAL(DIGITAL)
FRONTR
IPRIN
DVDRIN
XFMUTE
XRMUTE
MMOTHER
PARKING
IPORAD
BVDD
SAVDD5
VDD5
GNDA
GNDD

3.5 KEYBOARD UNIT

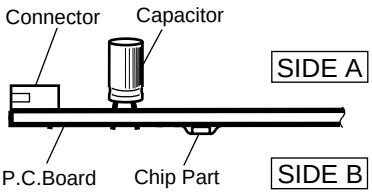


4. PCB CONNECTION DIAGRAM

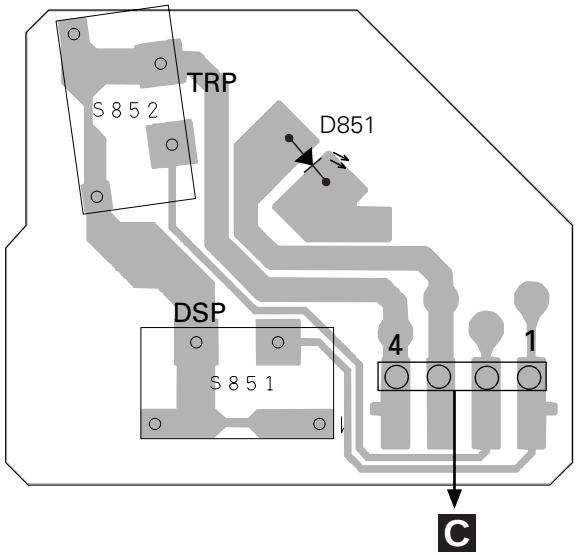
4.1 MECHANISM UNIT

NOTE FOR PCB DIAGRAMS

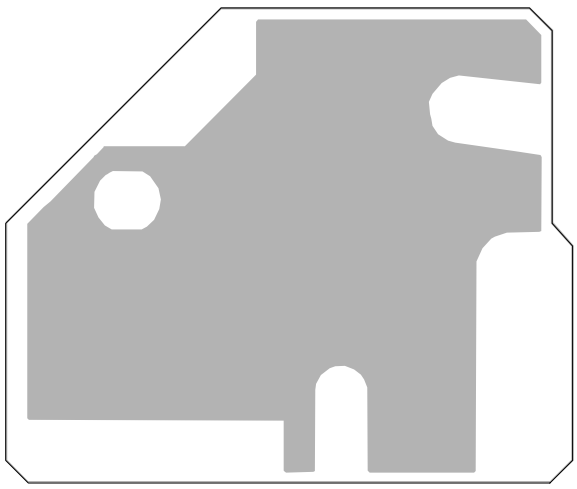
1. The parts mounted on this PCB include all necessary parts for several destination.
   For further information for respective destinations, be sure to check with the schematic diagram.
2. Viewpoint of PCB diagrams



A PCB UNIT(A) SIDE A

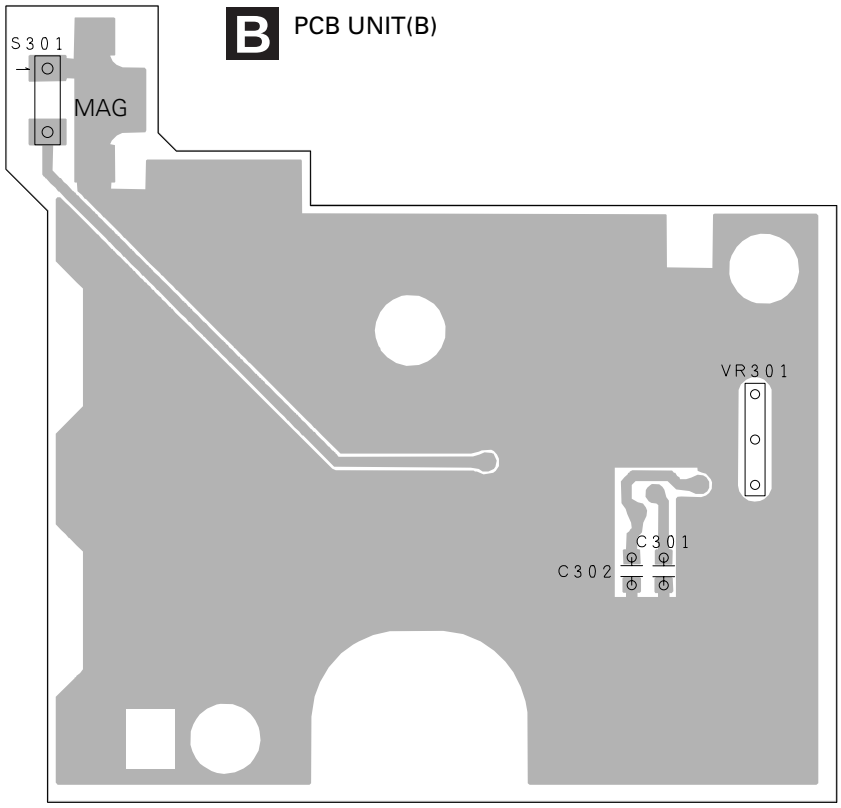


A PCB UNIT(A) SIDE B



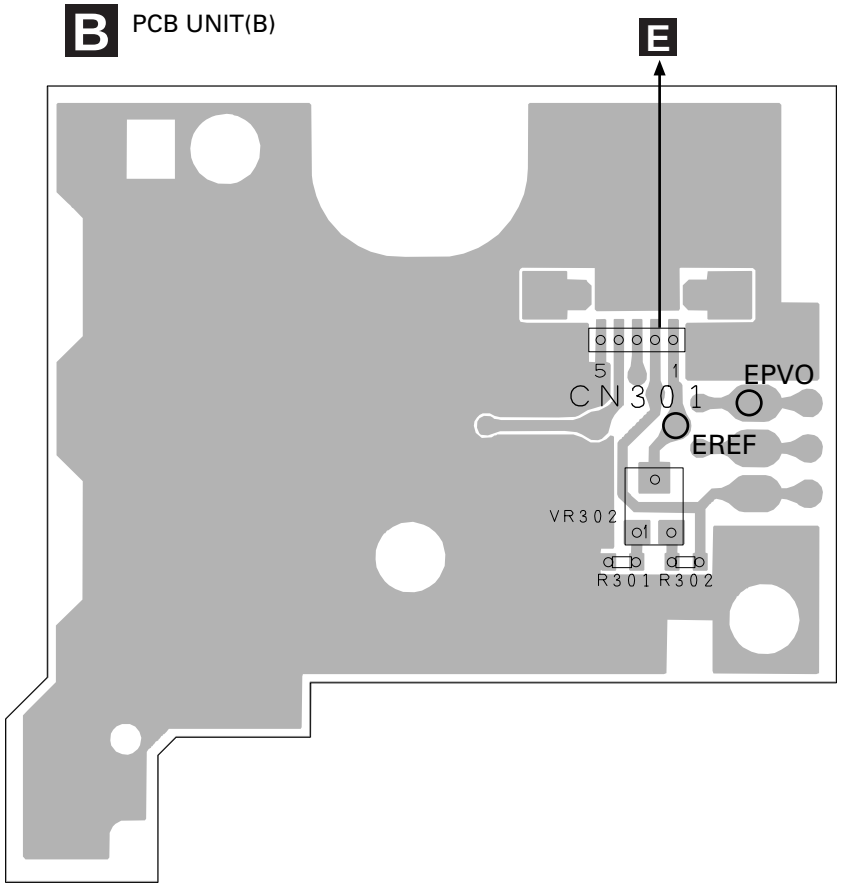
B PCB UNIT(B)

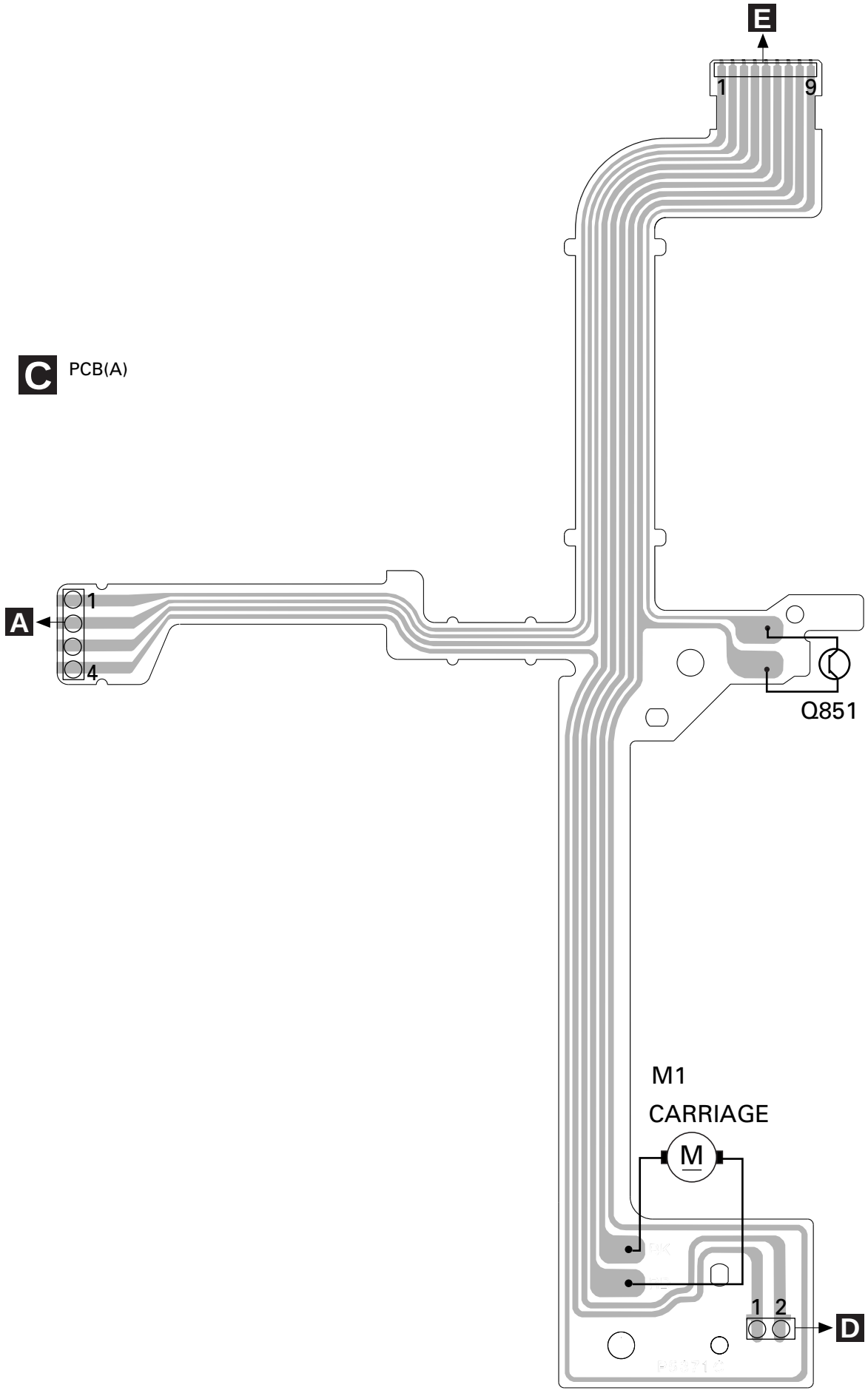
SIDE A



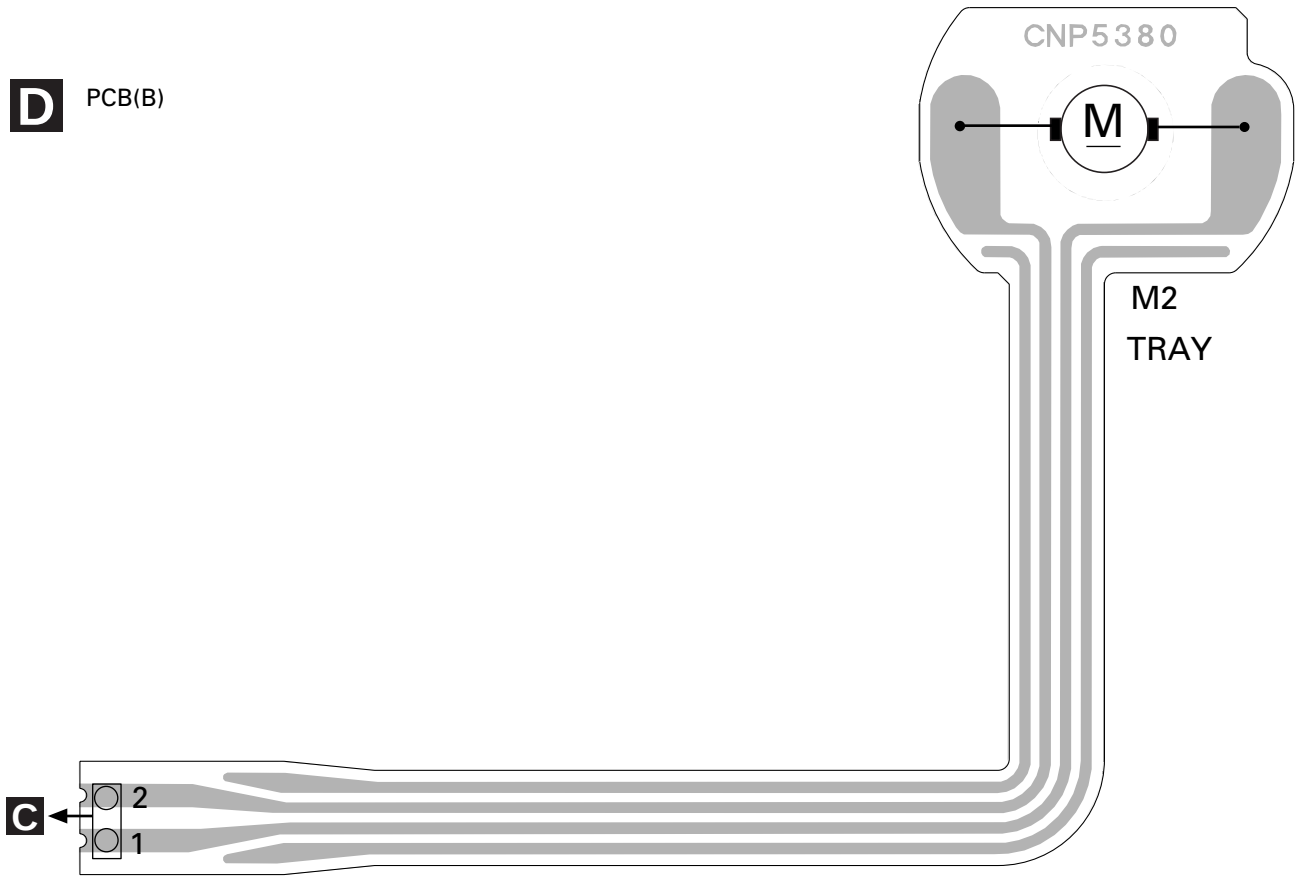
B PCB UNIT(B)

SIDE B



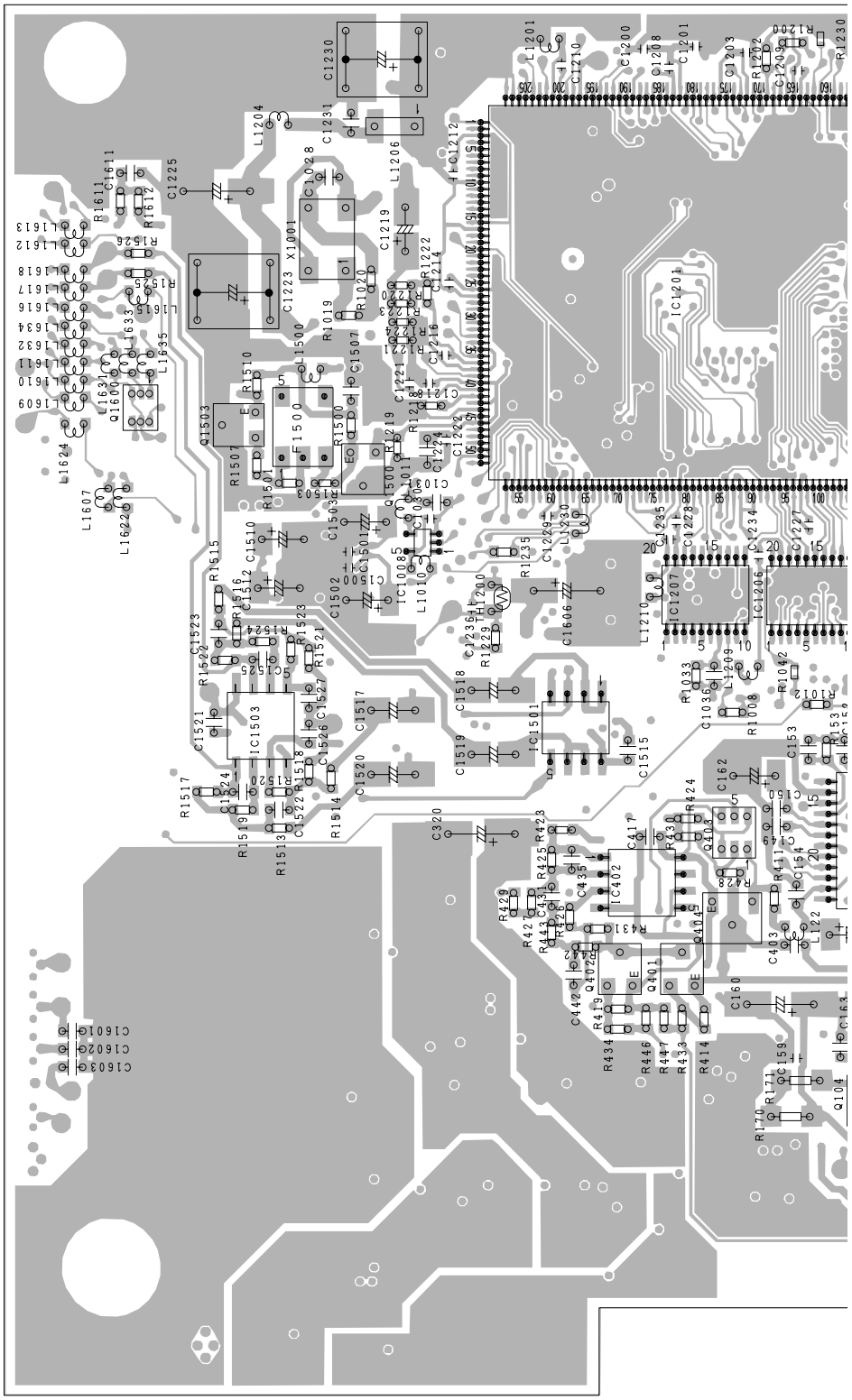

E
1
9
C
PCB(A)
A
1
4
Q851
M1
CARRIAGE
M
1 2
D

D PCB(B)

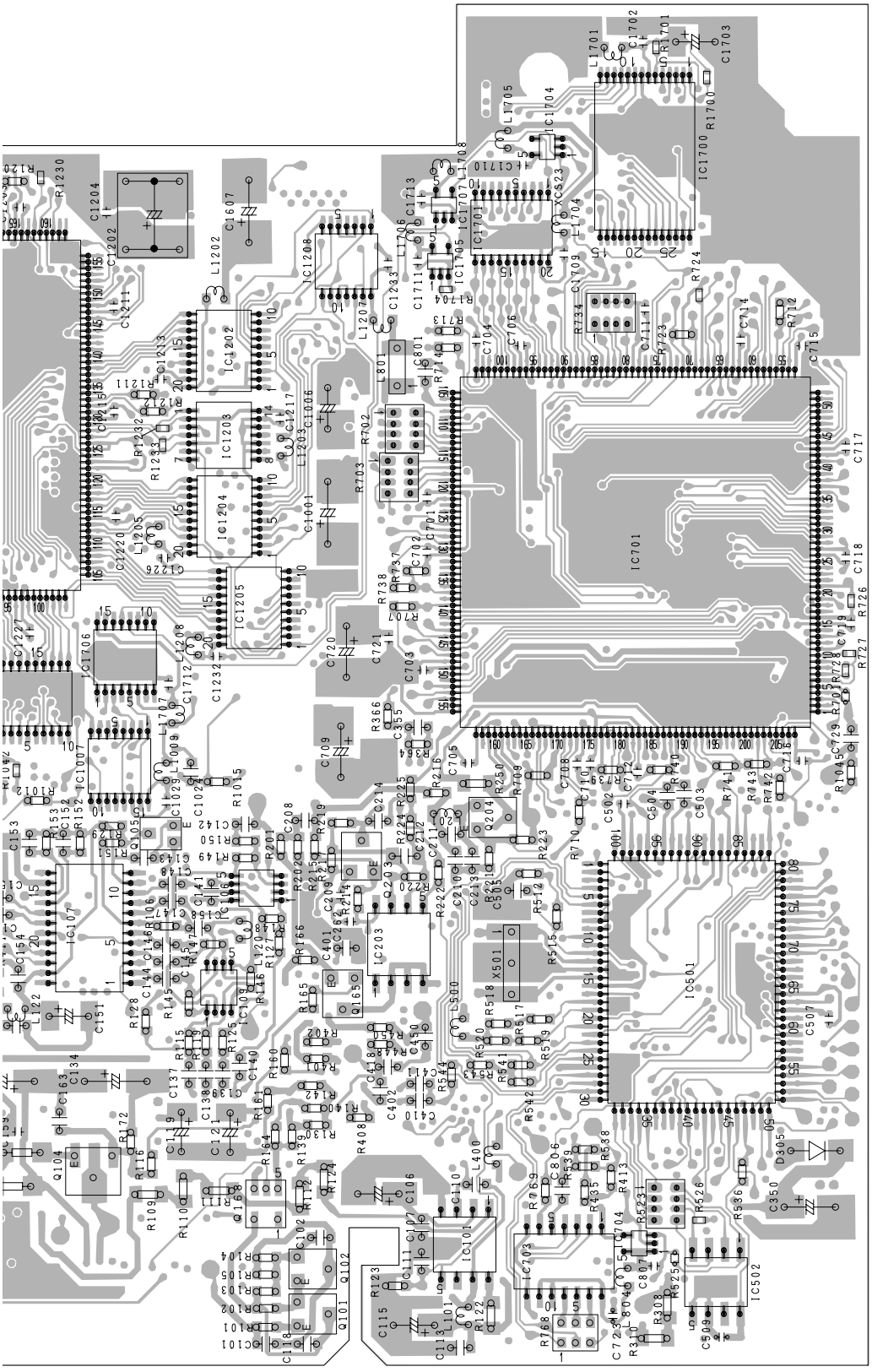


4.2 MAIN UNIT

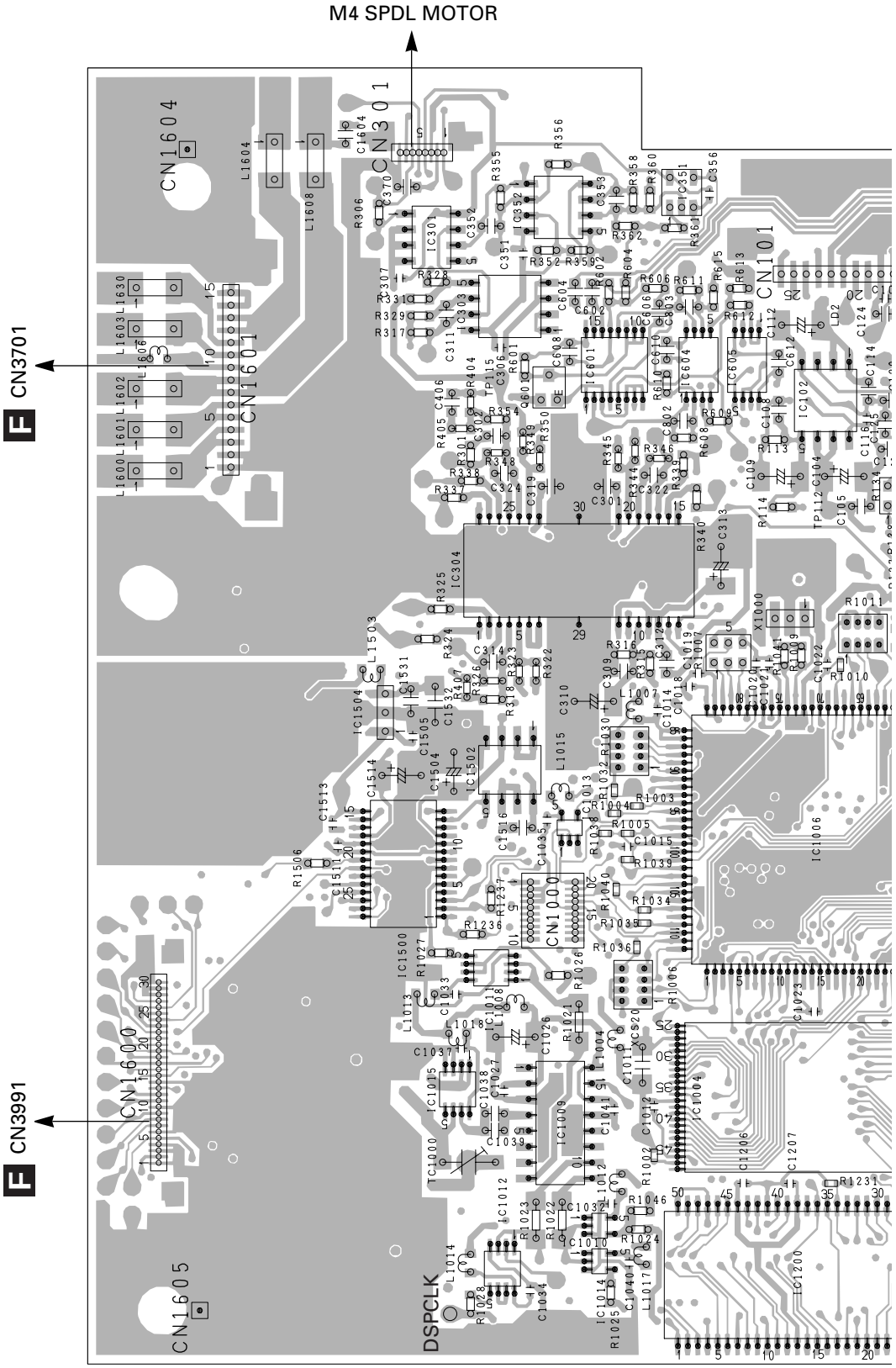
MAIN UNIT



SIDE A


IC107
Q104
IC1007 IC1706
Q105
IC1203
IC109 IC1205
IC106
Q168
Q101 Q102
IC1202 IC1204
IC1208 Q165
Q203 IC203
IC1705 IC1707
Q204
IC1701
IC101 IC703
IC1704
IC704
IC701
IC501
IC1700
IC502

E MAIN UNIT

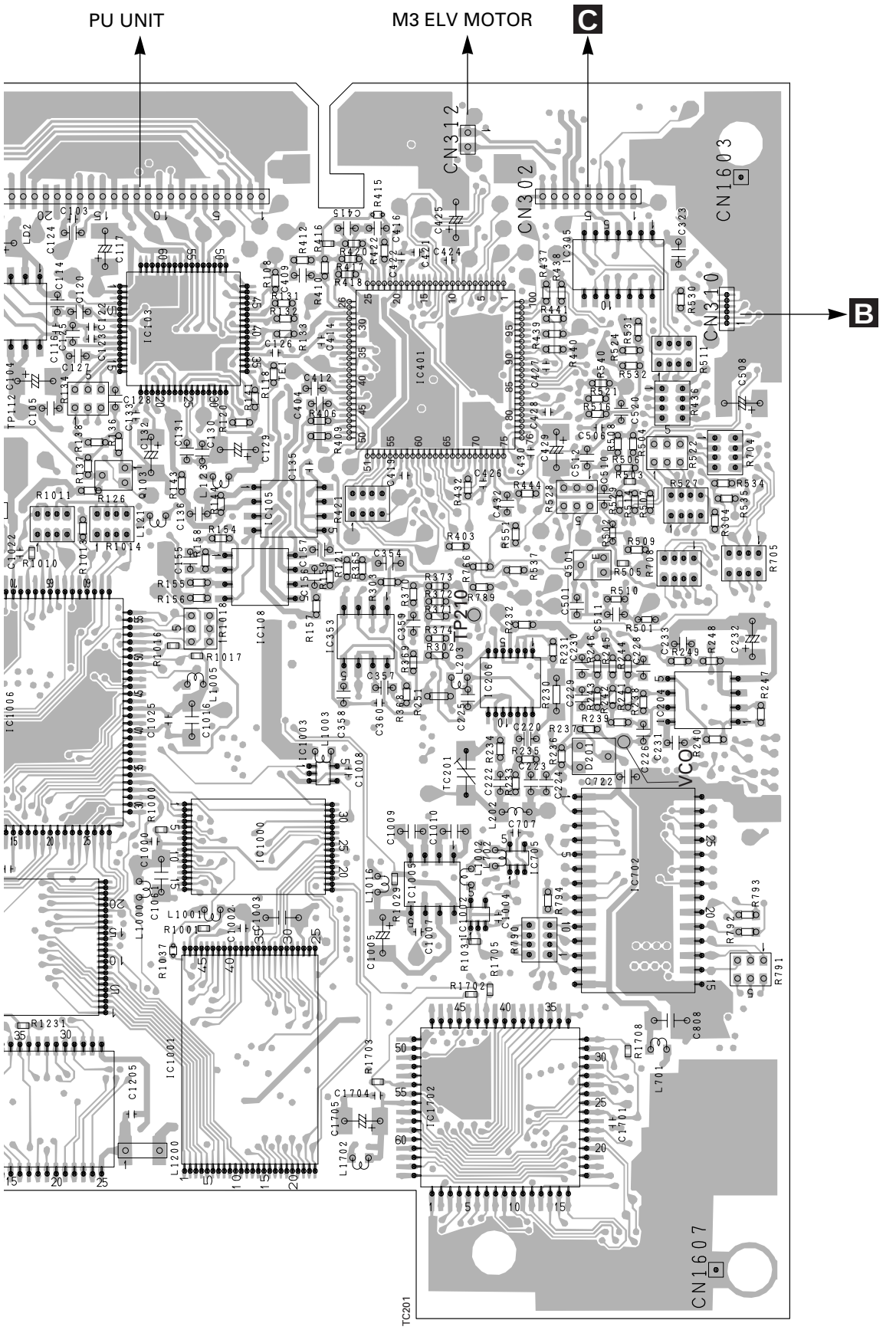


IC,Q ADJ

TC1000

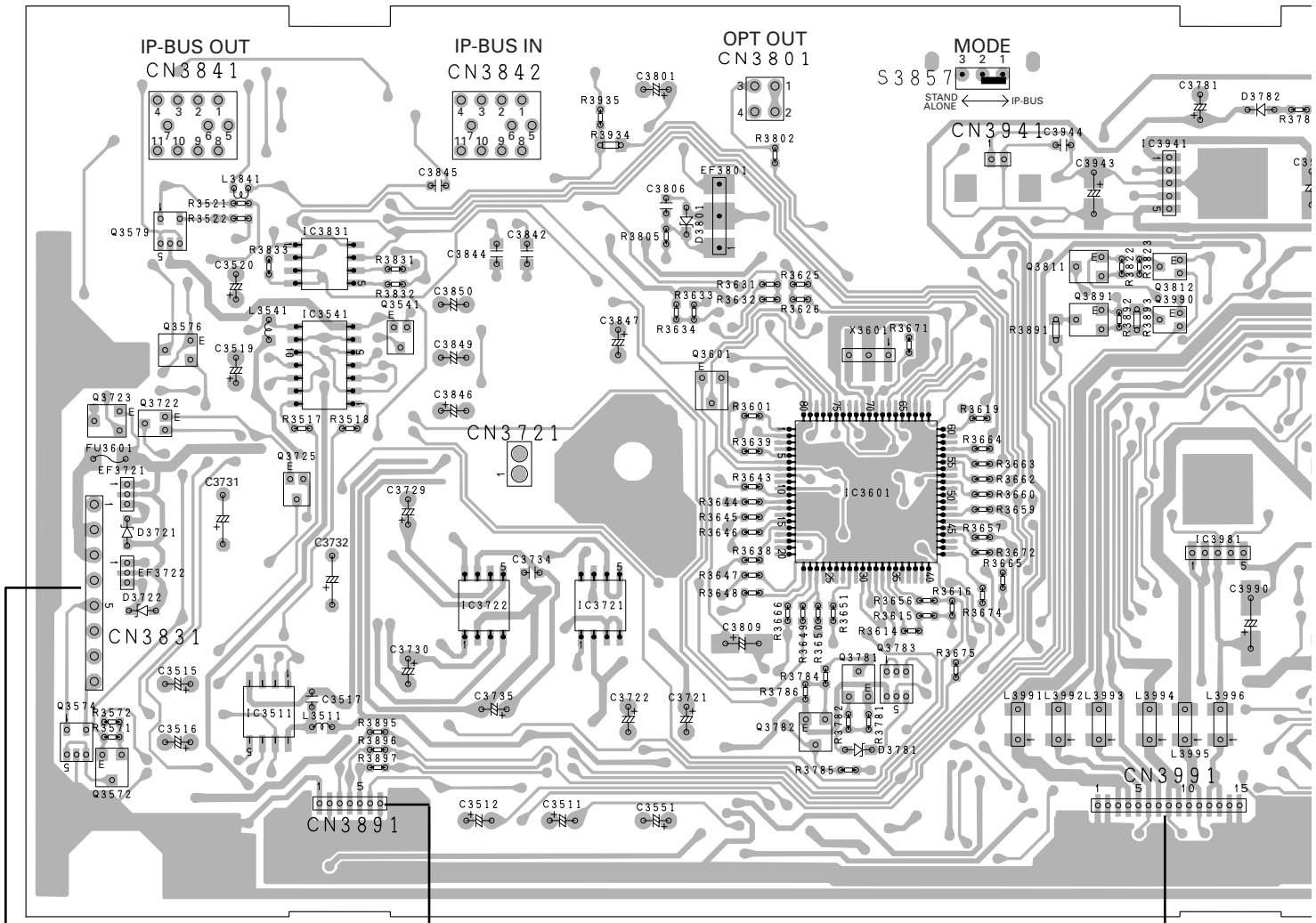
IC1504 IC1500 IC1015 IC1011 IC304 IC1502 IC352 Q601 IC1009 IC601 IC1014 IC1004 IC351 IC605 IC102 IC1200

IC301 IC303 IC1012 IC1013 IC1010 IC604 IC1006

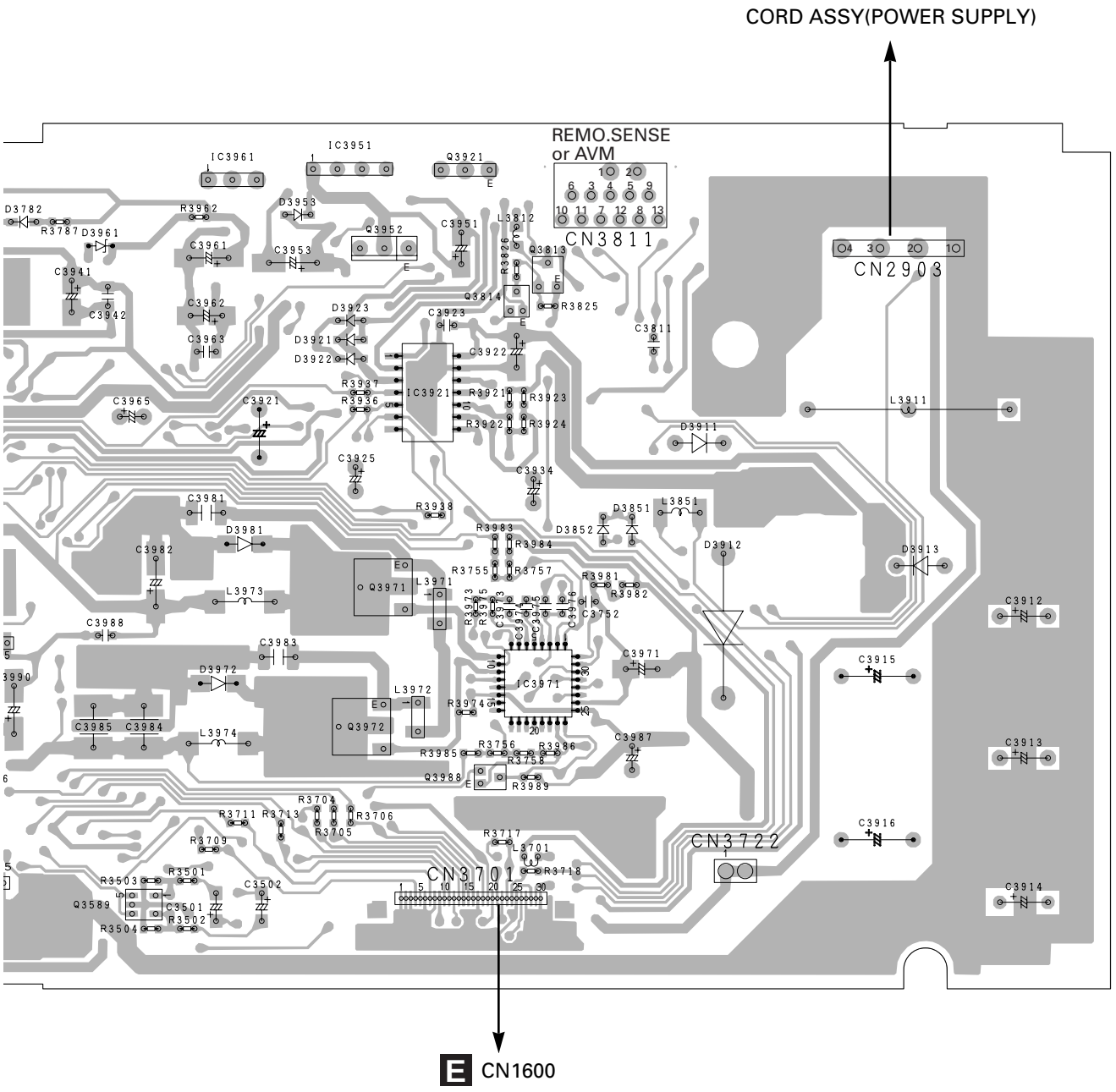

PU UNIT
M3 ELV MOTOR
C
B
SIDE B
CN312
CN302
CN1603
CN310
CN1607
TP210
VCO
IC1006
IC1200
Q103
IC103
IC1001
IC105
IC1000
IC108
IC1003
IC353
IC401
IC1702
IC1005
IC1002
IC206
IC705
IC702
IC305
Q501
IC204
TC201

4.3 EXTENSION UNIT

F EXTENSION UNIT

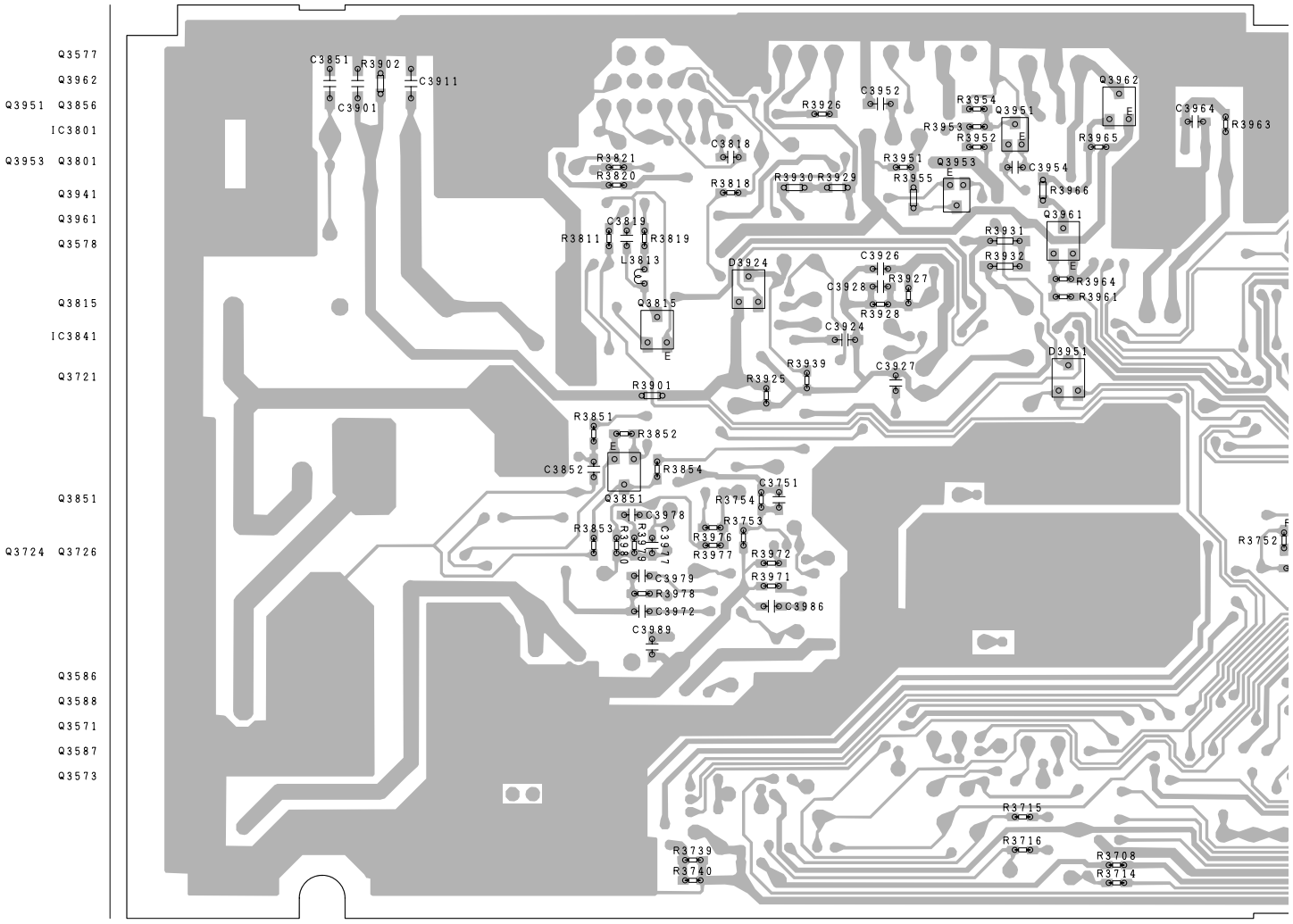


SIDE A

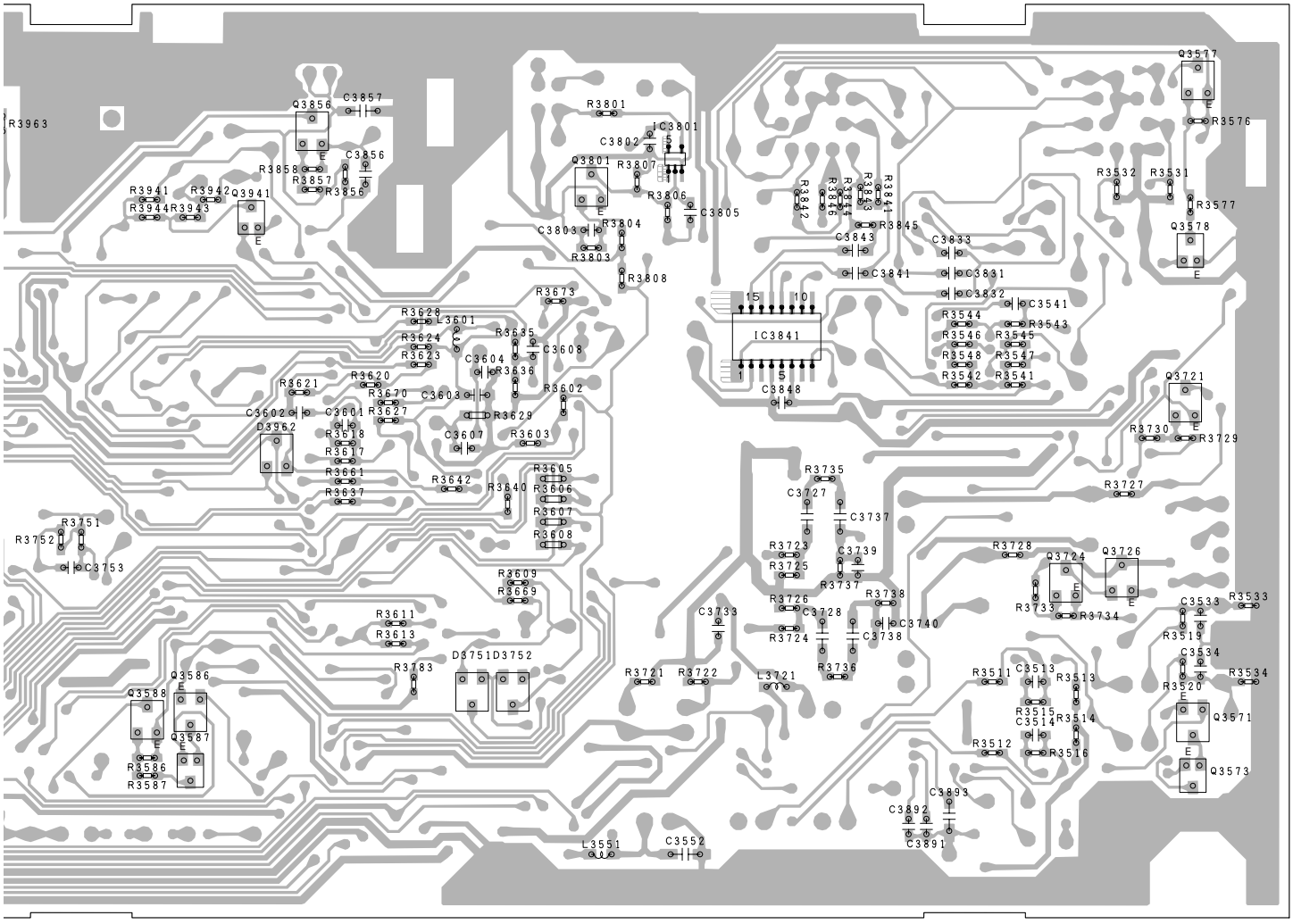


IC3951
IC3961 Q3921
Q3952
Q3813 IC3941
Q3814
IC3831 Q3579
Q3811
Q3812 Q3891
IC3921
Q3990 Q3541
IC3541
Q3576
Q3601
Q3723 Q3722
Q3725
IC3601 Q3971
IC3981
IC3971
IC3722 IC3721
Q3972 Q3783
Q3781
Q3988
Q3574 IC3511
Q3782
Q3572
Q3589

F EXTENSION UNIT



SIDE B


Q3577
R3576
R3532
R3531
R3577
Q3578
Q3856
C3857
R3963
R3801
C3802
IC3801
Q3801
R3807
R3806
C3805
C3856
R3858
R3857
R3856
R3941
R3942
Q3941
R3944
R3943
C3803
R3804
R3803
R3808
R3842
R3844
R3846
R3843
R3841
R3845
C3843
C3833
C3841
C3831
C3832
C3541
R3544
R3543
R3546
R3545
R3548
R3547
R3542
R3541
IC3841
C3848
R3673
R3628
L3601
R3624
R3635
R3623
C3604
C3608
R3636
R3620
R3621
R3670
C3603
R3602
C3602
C3601
R3627
R3629
D3962
R3618
C3607
R3603
R3617
R3661
R3637
R3642
R3640
R3605
R3606
R3607
R3608
R3751
R3752
C3753
R3609
R3669
R3611
R3613
R3783
D3751
D3752
Q3586
Q3588
Q3587
R3586
R3587
R3735
C3727
C3737
R3723
R3725
C3739
R3737
R3738
R3726
C3728
C3740
R3724
C3738
R3736
C3733
R3721
R3722
L3721
Q3721
R3730
R3729
R3727
R3728
Q3724
Q3726
R3733
R3734
C3533
R3533
R3519
C3534
R3534
R3511
C3513
R3513
R3520
R3515
C3514
R3514
Q3571
R3512
R3516
Q3573
C3893
C3892
C3891
L3551
C3552

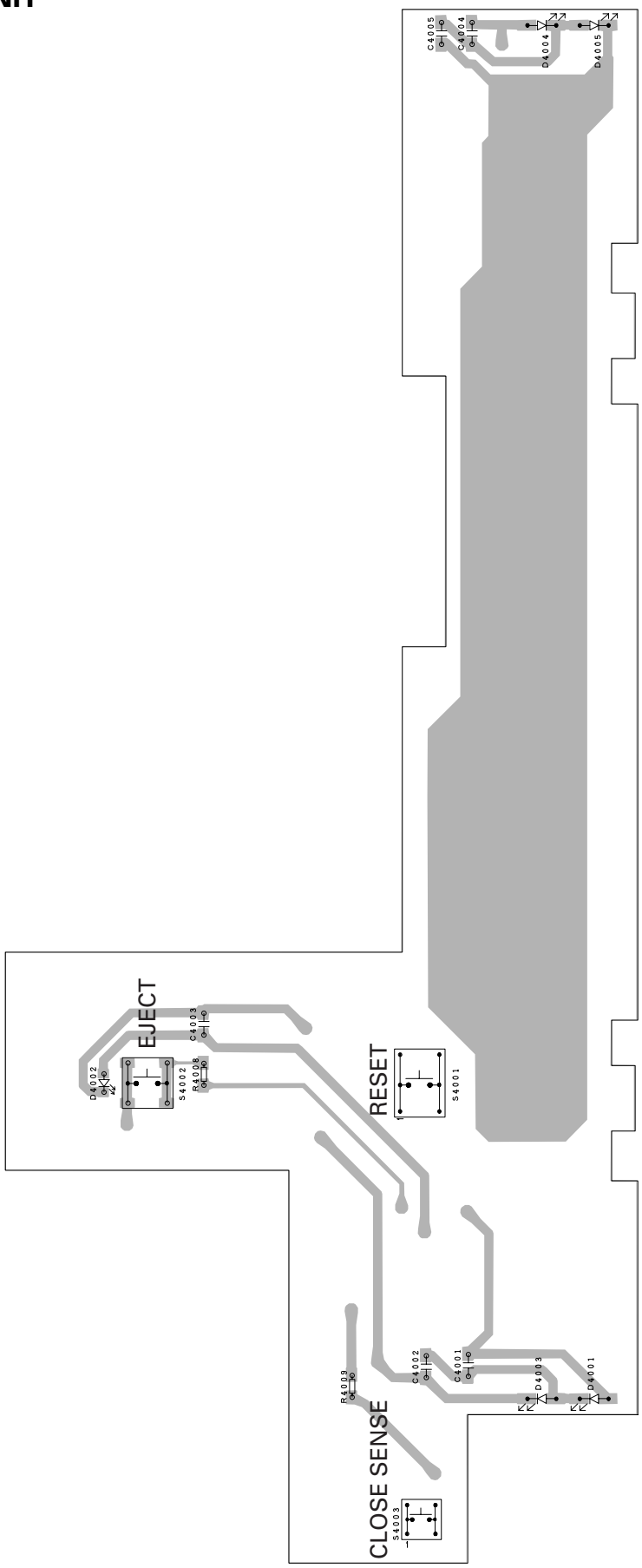
A

B

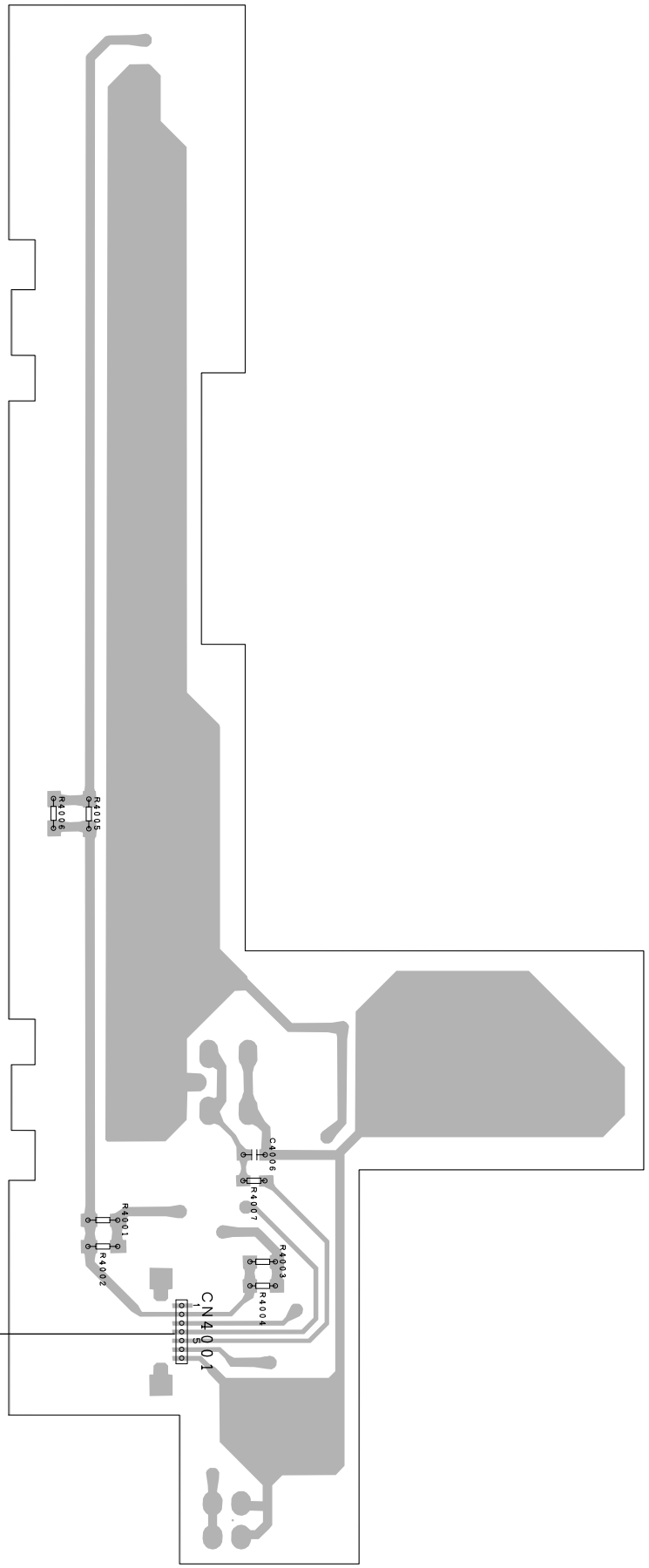
C

D

4.4 KEYBOARD UNIT



SIDE B



F CN3891

G KEYBOARD UNIT

5. ELECTRICAL PARTS LIST

NOTES:

- Parts whose parts numbers are omitted are subject to being not supplied.
- The part numbers shown below indicate chip components.

Chip Resistor

RS1/○S○○○J,RS1/○○S○○○J

Chip Capacitor (except for CQS.....)

CKS....., CCS....., CSZS.....

E Unit Number : CWM7264
Unit Name : Main Unit

MISCELLANEOUS

=====Circuit Symbol and No.		===Part Name	Part No.
IC	101	IC	IR3C07N
IC	102	IC	NJM2904M
IC	103	IC	TA1254AF
IC	105	IC	NJM3404AM
IC	106	IC	TC7WU04FU
IC	107	IC	PA0065AM
IC	108	IC	NJM3404AM
IC	109	IC	TC7WU04FU
IC	203	IC	NJM2100M
IC	204	IC	NJM2100M
IC	206	IC	TC74VHCU04FT
IC	301	IC	TC4W53F
IC	303	IC	NJM2904M
IC	304	IC	BA6797FM
IC	305	IC	LB1836M
IC	351	IC	TC4S66F
IC	352	IC	MC33202D
IC	353	IC	MC33202D
IC	401	IC	TC9461F
IC	402	IC	NJM2904M
IC	501	IC	PD5511A
IC	601	IC	TC4053BFT
IC	604	IC	NJM3414AV
IC	605	IC	NJM3414AV
IC	701	IC	PD4995A
IC	702	IC	MSM514800CSL60JS
IC	704	IC	TC7SET08FU
IC	705	IC	TC7SH32FU
IC	1000	IC	TC551001CSTI-85L
IC	1001	IC	PD6335A
IC	1002	IC	TC7SET08FU
IC	1003	IC	TC7SHU04FU
IC	1004	IC	PD6315A
IC	1005	IC	MAX662AESA
IC	1006	IC	PD3411A
IC	1007	IC	TC74VHC139FT
IC	1008	IC	TC7SHU04FU
IC	1009	IC	CY2292SI-1A0
IC	1010	IC	TC7SHU04FU
IC	1011	IC	TC7WU04FU
IC	1012	IC	TC7WU04FU
IC	1013	IC	TC7SH08FU
IC	1014	IC	TC7SHU04FU
IC	1015	IC	TC7WU04FU
IC	1200	IC	MSM56V16160DP-10TS
IC	1201	IC	MB86373BPFV-G-BI
IC	1202	IC	TC74VHC541FT
IC	1203	IC	TC74VHCT08AFT
IC	1204	IC	TC74LCX245FT
IC	1205	IC	TC74LCX245FT
IC	1206	IC	TC74VHC541FT
IC	1207	IC	TC74VHC541FT
IC	1208	IC	TC74VHC00FT
IC	1500	IC	PE8001A1
IC	1501	IC	MC33202D
IC	1502	IC	MC33202D
IC	1503	IC	NJM2068MD
IC	1504	IC	HA178L05UA
IC	1700	IC	TC55257DFTI-85L
IC	1701	IC	HD74HC245T
IC	1702	IC	LC89513KP
IC	1704	IC	TC7S02FU
IC	1705	IC	TC7SHU04FU
IC	1706	IC	TC74VHC238FT
IC	1707	IC	TC7SHU04FU
Q	101	Transistor	2SD601A
Q	102	Transistor	2SB709A
Q	103	Transistor	DTC114EU
Q	104	Transistor	2SB1260
Q	165	Transistor	2SB709A
Q	168	Transistor	FMC5A
Q	203	Transistor	2SB709A
Q	204	Transistor	2SD601A
Q	401	Transistor	2SB709A
Q	402	Transistor	2SD1781K
Q	403	Transistor	IMX1
Q	404	Transistor	2SB1132
Q	501	Transistor	DTA114EU
Q	601	Transistor	DTC114EU
Q	1500	Transistor	2SA1037K
Q	1503	Transistor	2SA1037K
Q	1600	Transistor	UMH8N
D	201	Diode	KV1410-F1
D	305	Diode	1SR154-400
L	101	Inductor	CTF1473
L	120	Inductor	CTF1473
L	121	Inductor	CTF1473
L	122	Inductor	CTF1473
L	123	Inductor	CTF1473
L	201	Inductor	LCTB4R7K2125
L	202	Inductor	LCTA1R5J2520
L	203	Inductor	CTF1473
L	400	Inductor	CTF1473
L	500	Inductor	CTF1473
L	701	Inductor	CTF1473
L	702	Inductor	CTF1473
L	801	Inductor	CTF1453
L	1000	Inductor	CTF1473
L	1001	Inductor	CTF1473
L	1002	Inductor	CTF1473
L	1003	Inductor	CTF1473
L	1004	Inductor	CTF1473
L	1005	Inductor	CTF1473
L	1007	Inductor	CTF1473
L	1008	Inductor	CTF1473

=====Circuit Symbol and No.		===Part Name	Part No.
L	1009	Inductor	CTF1473
L	1010	Inductor	CTF1473
L	1011	Inductor	CTF1470
L	1012	Inductor	CTF1473
L	1013	Inductor	CTF1473
L	1014	Inductor	CTF1473
L	1015	Inductor	CTF1473
L	1016	Inductor	CTF1473
L	1017	Inductor	CTF1473
L	1018	Inductor	CTF1473
L	1200	Inductor	CTF1453
L	1201	Inductor	CTF1473
L	1202	Inductor	CTF1473
L	1203	Inductor	CTF1473
L	1204	Inductor	CTF1473
L	1205	Inductor	CTF1473
L	1206	Inductor	CTF1453
L	1207	Inductor	CTF1473
L	1208	Inductor	CTF1473
L	1209	Inductor	CTF1473
L	1210	Inductor	CTF1473
L	1230	Inductor	CTF1470
L	1500	Inductor	CTF1473
L	1503	Inductor	CTF1473
L	1600	Inductor	CTF1453
L	1601	Inductor	CTF1453
L	1602	Inductor	CTF1453
L	1603	Inductor	CTF1453
L	1604	Inductor	CTF1453
L	1606	Inductor	CTF1473
L	1607	Inductor	CTF1470
L	1608	Inductor	CTF1453
L	1609	Inductor	CTF1470
L	1610	Inductor	CTF1470
L	1611	Inductor	CTF1470
L	1612	Inductor	CTF1470
L	1613	Inductor	CTF1470
L	1615	Inductor	CTF1470
L	1616	Inductor	CTF1470
L	1617	Inductor	CTF1470
L	1618	Inductor	CTF1470
L	1622	Inductor	CTF1470
L	1624	Inductor	CTF1470
L	1630	Inductor	CTF1453
L	1631	Inductor	CTF1470
L	1632	Inductor	CTF1470
L	1633	Inductor	CTF1470
L	1634	Inductor	CTF1470
L	1635	Inductor	CTF1470
L	1701	Inductor	CTF1473
L	1702	Inductor	CTF1473
L	1704	Inductor	CTF1473
L	1705	Inductor	CTF1473
L	1706	Inductor	CTF1473
L	1707	Inductor	CTF1473
L	1708	Inductor	CTF1473
TC	201	Trimmer	CCG1039
TC	1000	Trimmer	CCL1053
X	501	Radiator 10.00MHz	CSS1428
X	1000	Radiator 20.00MHz	CSS1470
X	1001	Radiator 13.824MHz	CSS1509
F	1500	Filter	CTF1515

RESISTORS

R	101		RS1/16S0R0J
R	102		RS1/16S102J
R	103		RS1/16S122J
R	104		RS1/16S182J
R	106		RS1/16S0R0J
R	108		RS1/16S0R0J
R	109		RS1/10S1R5J
R	110		RS1/10S1R5J
R	111		RS1/10S1R5J
R	112		RS1/10S1R5J
R	113		RS1/16S103J
R	114		RS1/16S103J
R	115		RS1/16S222J
R	116		RS1/16S0R0J
R	118		RS1/16S0R0J
R	119		RS1/16S222J
R	120		RS1/16S0R0J
R	121		RS1/16S393J
R	122		RS1/10S3R9J
R	123		RS1/16S104J
R	124		RS1/10S1R5J
R	125		RS1/16S222J
R	126		RS1/16S122J
R	127		RS1/16S222J
R	133		RS1/16S0R0J
R	134		RA3C101J
R	136		RS1/16S331J
R	137		RS1/16S112J
R	138		RS1/16S302J
R	139		RS1/16S0R0J
R	140		RS1/16S103J
R	141		RS1/16S101J
R	143		RS1/16S103J
R	144		RS1/16S103J
R	145		RS1/16S223J
R	146		RS1/16S223J
R	147		RS1/16S223J
R	148		RS1/16S223J
R	149		RS1/16S103J
R	150		RS1/16S222J
R	154		RS1/16S123J
R	155		RS1/16S182J
R	156		RS1/16S123J
R	157		RS1/16S822J
R	158		RS1/16S182J
R	159		RS1/16S203J
R	160		RS1/16S101J
R	164		RS1/16S203J
R	165		RS1/16S101J
R	166		RS1/16S222J
R	170		RS1/8S100J
R	171		RS1/8S120J
R	172		RS1/16S470J
R	201		RS1/16S0R0J
R	214		RS1/16S222J
R	215		RS1/16S152J
R	216		RS1/16S471J
R	217		RS1/16S102J
R	220		RS1/16S105J
R	221		RS1/16S161J
R	222		RS1/16S103J
R	223		RS1/16S220J
R	224		RS1/16S223J
R	225		RS1/16S153J
R	230		RS1/8S0R0J
R	231		RS1/16S104J
R	232		RS1/16S220J
R	233		RS1/16S101J
R	234		RS1/16S0R0J
R	235		RS1/16S104J
R	236		RS1/16S104J
R	237		RS1/16S202J
R	238		RS1/16S105J
R	239		RS1/16S222J
R	240		RS1/16S103J

=====Circuit Symbol and No.		===Part Name	Part No.
R	241		RS1/16S683J
R	242		RS1/16S153J
R	243		RS1/16S153J
R	244		RS1/16S223J
R	245		RS1/16S153J
R	246		RS1/16S103J
R	247		RS1/16S102J
R	248		RS1/16S153J
R	249		RS1/16S153J
R	250		RS1/10S0R0J
R	251		RS1/10S0R0J
R	301		RS1/16S622J
R	302		RS1/16S473J
R	303		RS1/16S434J
R	304		RS1/16S104J
R	306		RS1/16S101J
R	308		RS1/10S201J
R	310		RS1/10S221J
R	315		RS1/16S103J
R	316		RS1/16S103J
R	317		RS1/16S822J
R	318		RS1/16S0R0J
R	322		RN1/16SE1002D
R	323		RN1/16SE1002D
R	324		RS1/16S0R0J
R	325		RS1/16S0R0J
R	326		RN1/16SE1002D
R	328		RS1/16S822J
R	329		RS1/16S822J
R	331		RS1/16S822J
R	337		RS1/16S0R0J
R	338		RS1/16S0R0J
R	339		RS1/16S0R0J
R	340		RS1/16S0R0J
R	344		RN1/16SE1002D
R	345		RN1/16SE1002D
R	346		RN1/16SE1002D
R	348		RN1/16SE1202D
R	349		RN1/16SE1202D
R	350		RN1/16SE1202D
R	352		RS1/16S103J
R	354		RS1/16S0R0J
R	355		RS1/16S103J
R	356		RS1/16S103J
R	358		RS1/16S103J
R	359		RS1/16S103J
R	360		RS1/16S114J
R	361		RS1/16S153J
R	362		RS1/16S243J
R	364		RS1/16S624J
R	365		RS1/16S624J
R	366		RS1/16S104J
R	368		RS1/16S333J
R	369		RS1/16S333J
R	370		RS1/16S101J
R	372		RS1/16S103J
R	373		RS1/16S333J
R	374		RS1/16S103J
R	401		RS1/16S101J
R	402		RS1/16S101J
R	404		RN1/16SE1202D
R	405		RN1/16SE3300D
R	406		RS1/16S332J
R	407		RN1/16SE1002D
R	408		RS1/16S0R0J

=====Circuit Symbol and No.		===Part Name	Part No.
R	409		RS1/16S153J
R	410		RS1/16S225J
R	411		RS1/16S272J
R	412		RS1/16S333J
R	413		RS1/16S104J
R	414		RS1/16S103J
R	416		RS1/16SS473J
R	417		RS1/16S225J
R	418		RS1/16S104J
R	419		RS1/16S103J
R	420		RS1/16S103J
R	421	22Ω	CCN1111
R	423		RN1/16SE1002D
R	424		RS1/16S272J
R	425		RS1/16S103J
R	426		RS1/16S472J
R	427		RS1/16S103J
R	428		RS1/16S472J
R	429		RS1/16S0R0J
R	430		RS1/16S472J
R	431		RS1/16S472J
R	432		RS1/16S0R0J
R	433		RS1/16S223J
R	434		RS1/16S223J
R	436	22Ω	CCN1111
R	439		RS1/16S220J
R	440		RS1/16S220J
R	441		RS1/16S103J
R	442		RS1/16S103J
R	443		RS1/16S622J
R	448		RS1/16S221J
R	450		RS1/16S103J
R	501		RN1/16SE3902D
R	502		RN1/16SE1502D
R	503		RS1/16SS473J
R	504		RS1/16S683J
R	505		RS1/16SS473J
R	506		RS1/16S103J
R	507		RS1/16S222J
R	508		RS1/16S222J
R	509		RS1/16S222J
R	510		RN1/16SE1002D
R	511	3.3kΩ	CCN1122
R	512		RS1/16S104J
R	514		RS1/16S682J
R	515		RS1/16S102J
R	516		RS1/16S102J
R	517		RS1/16S222J
R	518		RS1/16S104J
R	519		RS1/16S222J
R	520		RS1/16S104J
R	521		RS1/16S103J
R	522		RA3C104J
R	523	1kΩ	CCN1120
R	524		RS1/16S103J
R	526		RS1/16SS473J
R	527	22Ω	CCN1111
R	528		RA3C473J
R	529		RS1/16S682J
R	530		RS1/16S103J
R	531		RS1/16S103J
R	532		RS1/16S103J
R	534		RS1/16S104J
R	535		RS1/16S104J
R	536		RS1/16S104J

Circuit Symbol and No.			Part Name	Part No.
R	537			RS1/16S104J
R	538			RS1/16S104J
R	540			RS1/16S103J
R	541			RS1/16S104J
R	542			RS1/16S104J
R	543			RS1/16S104J
R	544			RS1/16S104J
R	551			RS1/16S220J
R	601			RS1/16S103J
R	602			RS1/16S154J
R	604			RS1/16S154J
R	606			RS1/16S154J
R	608			RS1/16S303J
R	609			RS1/16S153J
R	610			RS1/16S303J
R	611			RS1/16S153J
R	612			RS1/16S153J
R	613			RS1/16S153J
R	615			RS1/16S153J
R	702	22Ω		CCN1111
R	703	22Ω		CCN1111
R	704	22Ω		CCN1111
R	705	22Ω		CCN1111
R	707			RS1/16S220J
R	708	22Ω		CCN1111
R	709			RS1/16S0R0J
R	710			RS1/16S102J
R	712			RS1/16S103J
R	713			RS1/16S220J
R	714			RS1/16S220J
R	723			RS1/16S0R0J
R	724			RS1/16SS473J
R	726			RS1/16SS473J
R	727			RS1/16SS473J
R	728			RS1/16SS473J
R	734	10kΩ		CCN1125
R	737			RS1/16S103J
R	739			RS1/16S103J
R	740			RS1/16S103J
R	741			RS1/16S103J
R	742			RS1/16S103J
R	743			RS1/16S103J
R	789			RS1/16S0R0J
R	790	10Ω		CCN1133
R	791			RA3C100J
R	792			RS1/16S100J
R	793			RS1/16S100J
R	794			RS1/16S100J
R	1000			RS1/16SS473J
R	1001			RS1/16SS473J
R	1002			RS1/16SS473J
R	1003			RS1/16SS473J
R	1004			RS1/16SS473J
R	1005			RS1/16SS473J
R	1006	47kΩ		CCN1131
R	1007			RA3C471J
R	1008			RS1/16S472J
R	1009			RS1/16S103J
R	1010			RS1/16SS473J
R	1011	47kΩ		CCN1131
R	1012			RS1/16S102J
R	1013			RS1/16S470J
R	1014	47kΩ		CCN1131
R	1015			RS1/16S332J
R	1016			RS1/16SS473J

Circuit Symbol and No.			Part Name	Part No.
R	1017			RS1/16SS473J
R	1018			RA3C473J
R	1019			RS1/16S105J
R	1020			RS1/16S102J
R	1021			RS1/8S470J
R	1022			RS1/8S470J
R	1023			RS1/8S470J
R	1025			RS1/16S0R0J
R	1026			RS1/16S0R0J
R	1027			RS1/16S0R0J
R	1028			RS1/16S0R0J
R	1029			RS1/16SS473J
R	1030	47kΩ		CCN1131
R	1031			RS1/16SS473J
R	1032			RS1/16SS473J
R	1033			RS1/16S472J
R	1034			RS1/16SS473J
R	1035			RS1/16SS473J
R	1036			RS1/16SS473J
R	1038			RS1/16SS473J
R	1039			RS1/16SS473J
R	1040			RS1/16SS473J
R	1041			RS1/16S0R0J
R	1042			RS1/16SS473J
R	1046			RS1/16S0R0J
R	1200			RS1/16S0R0J
R	1202			RS1/16S201J
R	1212			RS1/16S220J
R	1218			RN1/16SE2701D
R	1219			RN1/16SE1600D
R	1220			RN1/16SE2701D
R	1221			RN1/16SE2201D
R	1222			RS1/16S0R0J
R	1223			RN1/16SE2701D
R	1224			RN1/16SE2201D
R	1230			RS1/16SS473J
R	1231			RS1/16SS473J
R	1232			RS1/16SS473J
R	1233			RS1/16SS473J
R	1235			RS1/16S0R0J
R	1236			RS1/16S0R0J
R	1237			RS1/16S0R0J
R	1500			RS1/16S222J
R	1501			RS1/16S152J
R	1503			RN1/16SE3300D
R	1506			RS1/16S0R0J
R	1507			RS1/16S101J
R	1510			RS1/16S222J
R	1513			RS1/16S622J
R	1514			RS1/16S622J
R	1515			RS1/16S622J
R	1516			RS1/16S622J
R	1517			RS1/16S622J
R	1518			RS1/16S622J
R	1519			RS1/16S152J
R	1520			RS1/16S152J
R	1521			RS1/16S622J
R	1522			RS1/16S622J
R	1523			RS1/16S152J
R	1524			RS1/16S152J
R	1525			RS1/16S101J
R	1526			RS1/16S101J
R	1611			RS1/16S0R0J
R	1612			RS1/16S0R0J
R	1700			RS1/16SS473J

=====Circuit Symbol and No.	Part Name	Part No.
R 1701		RS1/16SS473J
R 1702		RS1/16SS473J
R 1703		RS1/16SS473J
R 1704		RS1/16SS473J
R 1705		RS1/16SS473J
R 1708		RS1/16SS473J

CAPACITORS

C 101		CKSRYB333K16
C 102		CKSRYB333K16
C 103		CKSSYB104K10
C 104		CSZSR100M16
C 105		CKSRYB103K50
C 106		CEV220M6R3
C 107		CKSRYB103K50
C 108		CKSRYB103K50
C 109		CSZSR100M16
C 110		CKSRYB333K16
C 111		CKSRYB183K25
C 112		CSZSR470M6R3
C 113		CKSRYB103K50
C 114		CKSRYB103K50
C 115		CEV220M6R3
C 116		CKSSYB104K10
C 117		CSZSR2R2M20
C 119		CSZSR470M6R3
C 120		CKSRYB103K50
C 121		CSZSR1R0M35
C 122		CKSSYB104K10
C 123		CKSSYB104K10
C 124		CKSRYB105K6R3
C 125		CKSRYB102K50
C 126		CKSSYB104K10
C 127		CKSRYB102K50
C 128		CKSRYB102K50
C 129		CSZSR100M16
C 130		CKSRYB222K50
C 131		CKSRYB222K50
C 132		CSZSR100M16
C 133		CKSSYB104K10
C 134		CEV101M10
C 135		CKSSYB104K10
C 136		CCSRCH101J50
C 137		CKSRYB222K50
C 138		CKSRYB222K50
C 139		CKSRYB222K50
C 140		CKSRYB222K50
C 141		CKSRYB103K50
C 142		CKSRYB332K50
C 143		CKSRYB333K16
C 144		CCSRCH121J50
C 145		CCSRCH121J50
C 146		CCSRCH121J50
C 147		CCSRCH121J50
C 148		CCSRCH121J50
C 149		CCSRCH471J50
C 150		CKSRYB333K16
C 151		CSZSR100M16
C 152		CKSRYB103K50
C 153		CKSRYB103K50
C 154		CKSRYB103K50
C 155		CCSRCH821J50
C 156		CCSRCH151J50

=====Circuit Symbol and No.	Part Name	Part No.
C 157		CKSRYB333K16
C 158		CKSRYB103K50
C 159		CKSSYB104K10
C 160		CEV470M10
C 162		CSZSR220M10
C 163		CKSRYB102K50
C 208		CKSRYB822K50
C 209		CKSSYB104K10
C 211		CCSRCH7R0D50
C 212		CKSQYB105K16
C 213		CCSRCH180J50
C 214		CKSRYB102K50
C 220		CKSRYB102K50
C 222		CCSRCH150J50
C 223		CKSRYB103K50
C 224		CKSRYB103K50
C 225		CKSRYB333K16
C 226		CKSRYB104K16
C 228		CCSRCH470J50
C 229		CKSRYB104K16
C 230		CKSRYB104K16
C 231		CKSRYB333K16
C 232		CSZSR1R0M35
C 233		CKSRYB104K16
C 262		CKSSYB104K10
C 301		CKSRYB104K16
C 302		CKSRYB224K10
C 306		CKSSYB104K10
C 307		CKSSYB104K10
C 309		CKSRYB103K50
C 310		CSZSR100M16
C 311		CKSRYB123K25
C 312		CKSRYB103K50
C 313		CSZSR100M16
C 314		CKSRYB153K25
C 319		CKSRYB103K50
C 320		CEV101M10
C 322		CCSRCH101J50
C 323		CKSQYB224K16
C 324		CKSRYB472K50
C 350		CEV220M10
C 351		CKSSYB104K10
C 352		CCSRCH101J50
C 353		CKSRYB103K50
C 354		CKSQYB334K16
C 355		CCSRCH161J50
C 356		CKSSYB104K10
C 357		CKSRYB223K25
C 358		CKSRYB472K50
C 359		CKSRYB104K16
C 360		CKSSYB104K10
C 370		CKSRYB104K16
C 401		CKSRYB333K16
C 402		CKSRYB103K50
C 403		CKSRYB103K50
C 404		CKSRYB333K16
C 406		CKSRYB273K25
C 409		CKSRYB153K25
C 410		CKSRYB103K50
C 411		CKSRYB102K50
C 412		CKSRYB104K16
C 414		CKSSYB104K10
C 415		CCSRCH470J50
C 417		CKSRYB103K50
C 418		CCSRCH101J50

=====Circuit Symbol and No.	Part Name	Part No.
C 419		CKSSYB104K10
C 421		CKSSYB104K10
C 422		CKSSYB104K10
C 424		CKSSYB104K10
C 425		CSZSR100M16
C 426		CKSSYB104K10
C 427		CKSSYB104K10
C 428		CKSSYB104K10
C 429		CSZSR100M16
C 430		CKSSYB104K10
C 431		CKSRYB103K50
C 432		CCSRCH101J50
C 435		CCSRCH101J50
C 442		CKSRYB273K25
C 450		CKSRYB152K50
C 501		CKSRYB103K50
C 502		CKSSYB104K10
C 503		CKSRYB473K16
C 504		CKSRYB473K16
C 505		CKSRYB103K50
C 506		CKSSYB104K10
C 507		CKSSYB104K10
C 508		CSZSR100M16
C 510		CKSRYB103K50
C 511		CKSRYB103K50
C 512		CKSRYB102K50
C 520		CKSRYB104K16
C 602		CKSRYB104K16
C 604		CKSRYB104K16
C 606		CKSRYB104K16
C 608		CKSRYB104K16
C 610		CKSRYB104K16
C 612		CKSRYB104K16
C 701		CKSSYB104K10
C 702		CKSSYB104K10
C 703		CKSSYB104K10
C 704		CKSSYB104K10
C 705		CKSSYB104K10
C 706		CKSSYB104K10
C 707		CKSSYB104K10
C 708		CKSSYB104K10
C 709		CEV101M4
C 710		CKSSYB104K10
C 711		CKSSYB104K10
C 712		CKSSYB104K10
C 714		CKSSYB104K10
C 715		CKSSYB104K10
C 716		CKSSYB104K10
C 717		CKSSYB104K10
C 718		CKSSYB104K10
C 719		CKSSYB104K10
C 720		CEV101M4
C 721		CKSSYB104K10
C 722		CKSRYB103K50
C 729		CCSRCH101J50
C 801		CCSRCH101J50
C 802		CCSRCH101J50
C 803		CCSRCH221J50
C 807		CKSSYB104K10
C 808		CKSYB106K6R3
C 1000		CKSSYB104K10
C 1001		CEV101M6R3
C 1002		CKSSYB104K10
C 1003		CKSYB106K6R3
C 1004		CKSSYB104K10

=====Circuit Symbol and No.	Part Name	Part No.
C 1005		CSZSR100M16
C 1006		CEV4R7M35
C 1007		CKSSYB104K10
C 1008		CKSSYB104K10
C 1009		CKSQYB224K25
C 1010		CKSQYB224K25
C 1011		CKSYB106K6R3
C 1012		CKSSYB104K10
C 1014		CKSSYB104K10
C 1015		CKSSYB104K10
C 1016		CKSYB106K6R3
C 1018		CKSSYB104K10
C 1019		CKSSYB104K10
C 1020		CKSSYB104K10
C 1021		CKSSYB104K10
C 1022		CKSSYB104K10
C 1023		CKSSYB104K10
C 1024		CCSRCH100D50
C 1025		CKSSYB104K10
C 1026		CSZSR100M16
C 1027		CKSSYB104K10
C 1028		CCSRCH180J50
C 1029		CKSSYB104K10
C 1030		CKSSYB104K10
C 1031		CCSRCH101J50
C 1032		CKSSYB104K10
C 1033		CKSSYB104K10
C 1034		CKSSYB104K10
C 1035		CKSSYB104K10
C 1036		CKSRYB103K50
C 1037		CKSSYB104K10
C 1038		CCSRCH510J50
C 1039		CCSRCK1R0C50
C 1040		CKSSYB104K10
C 1041		CKSSYB104K10
C 1061		CKSYB106K6R3
C 1200		CKSSYB104K10
C 1201		CKSSYB104K10
C 1202	68µF/6.3V	CCH1385
C 1203		CKSSYB104K10
C 1204		CKSSYB104K10
C 1205		CKSSYB104K10
C 1206		CKSSYB104K10
C 1207		CKSSYB104K10
C 1208		CKSSYB104K10
C 1209		CKSSYB104K10
C 1210		CKSSYB104K10
C 1211		CKSSYB104K10
C 1212		CKSSYB104K10
C 1213		CKSSYB104K10
C 1214		CKSSYB104K10
C 1215		CKSSYB104K10
C 1216		CKSSYB104K10
C 1217		CKSSYB104K10
C 1218		CKSSYB104K10
C 1219		CEV470M4
C 1220		CKSSYB104K10
C 1221		CKSSYB104K10
C 1222		CKSSYB104K10
C 1223	68µF/6.3V	CCH1385
C 1224		CKSQYB105K16
C 1225		CEV221M4
C 1226		CKSSYB104K10
C 1227		CKSSYB104K10
C 1228		CKSSYB104K10

=====Circuit Symbol and No.		===Part Name	Part No.
C	1229		CKSSYB104K10
C	1230	68µF/6.3V	CCH1385
C	1231		CKSRYB103K50
C	1232		CKSSYB104K10
C	1233		CKSSYB104K10
C	1234		CKSSYB104K10
C	1235		CKSSYB104K10
C	1500		CKSSYB104K10
C	1501		CKSSYB104K10
C	1502		CSZSR100M16
C	1503		CSZSR100M16
C	1504		CSZSR100M16
C	1505		CKSSYB104K10
C	1507		CKSRYB104K16
C	1510		CSZSR100M16
C	1511		CKSSYB104K10
C	1512		CSZSR100M16
C	1513		CKSSYB104K10
C	1514		CSZSR100M16
C	1515		CKSRYB104K16
C	1516		CKSRYB104K16
C	1517		CEVNP4R7M16
C	1518		CEVNP4R7M16
C	1519		CEVNP4R7M16
C	1520		CEVNP4R7M16
C	1521		CKSRYB104K16
C	1522		CCSRCH331J50
C	1523		CCSRCH331J50
C	1524		CCSRCH221J50
C	1525		CCSRCH221J50
C	1526		CCSRCH221J50
C	1527		CCSRCH221J50
C	1531		CKSQYB334K16
C	1532		CKSYB475K10
C	1601		CKSRYB473K25
C	1602		CKSRYB473K25
C	1603		CKSRYB473K25
C	1701		CKSSYB104K10
C	1702		CKSSYB104K10
C	1703		CSZSR100M16
C	1704		CKSSYB104K10
C	1705		CSZSR100M16
C	1709		CKSSYB104K10
C	1710		CKSSYB104K10
C	1711		CKSSYB104K10
C	1712		CKSSYB104K10
C	1713		CKSSYB104K10

F Unit Number : CWM7079(XDV-P9/UC)
Unit Number : CWM7081(XDV-P9/ES/RC)
Unit Number : CWM7082(XDV-P9/ES/RD)
Unit Number : CWM7080(XDV-P9/EW)
Unit Name : Extension Unit

MISCELLANEOUS

IC	3511	IC	NJM2068MD
IC	3541	IC	BA3129F
IC	3601	IC	PE5111A
IC	3721	IC	NJM2267M
IC	3722	IC	NJM2267M
IC	3801	IC	TC7SHU04FU
IC	3831	IC	HA12187FP
IC	3841	IC	TA2050F
IC	3921	IC	PAJ002A
IC	3951	IC	PQ30RV31

=====Circuit Symbol and No.		===Part Name	Part No.
IC	3961	IC	BA08T
IC	3971	IC	BA9706K
IC	3981	IC	PQ20VZ11
Q	3541	Transistor	DTC124EU
Q	3571	Transistor	DTA114EK
Q	3572	Transistor	2SA1037K
Q	3573	Transistor	DTC144EU
Q	3574	Transistor	FMG12
Q	3576	Transistor	DTA114EK
Q	3577	Transistor	2SA1037K
Q	3578	Transistor	DTC144EU
Q	3579	Transistor	FMG12
Q	3586	Transistor	DTA114EK
Q	3587	Transistor	DTC144EU
Q	3588	Transistor	2SA1037K
Q	3589	Transistor	FMG12
Q	3601	Transistor	DTA144EK
Q	3721	Transistor	2SA1037K
Q	3722	Transistor	DTC144EU
Q	3723	Transistor	DTC323TK
Q	3781	Transistor	2SC2412K
Q	3782	Transistor	2SC2412K
Q	3783	Transistor	IMD2A
Q	3811	Transistor	2SA1037K
Q	3812	Transistor	DTC144EU
Q	3813	Transistor	2SA1037K
Q	3814	Transistor	DTC144EU
Q	3815	Transistor	2SC2412K
Q	3851	Transistor	2SA1037K
Q	3856	Transistor	2SC3295
Q	3891	Transistor	2SB1197K
Q	3921	Transistor	2SB942
Q	3951	Transistor	DTC114EU
Q	3952	Transistor	2SB1243
Q	3953	Transistor	DTC143EU
Q	3961	Transistor	2SD2114K
Q	3962	Transistor	2SB1197K
Q	3971	Transistor	2SA1731
Q	3972	Transistor	2SA1731
Q	3988	Transistor	DTC114EU
Q	3990	Transistor	DTC124EU
D	3721	Diode	UDZ12(B)
D	3722	Diode	UDZ12(B)
D	3751	Diode	MA152WA
D	3752	Diode	MA152WA
D	3781	Diode	MA8082(H)
D	3782	Diode	1SS355
D	3801	Diode	MA8027(H)
D	3851	Diode	MA111
D	3852	Diode	MA111
D	3911	Diode	ERA15-02
D	3912	Diode	GP30ML-6373
D	3913	Diode	ERA15-02
D	3921	Diode	1SS355
D	3922	Diode	1SS356
D	3923	Diode	1SS356
D	3924	Diode	MA152WK
D	3951	Diode	MA152WK
D	3953	Diode	1SS356
D	3961	Diode	HZU4R3(B3)
D	3962	Diode	MA152WK
D	3972	Diode	RB051L-40
D	3981	Diode	RB051L-40
L	3511	Inductor	CTF1399
L	3541	Inductor	CTF1399
L	3551	Inductor	CTF1399
L	3601	Inductor	CTF1399
L	3701	Inductor	CTF1470
L	3721	Inductor	CTF1399
L	3812	Inductor	CTF1399

=====Circuit Symbol and No.		===Part Name	Part No.
L	3813	Inductor	CTF1470
L	3841	Inductor	CTF1378
L	3851	Inductor	LCTA2R2J4532
L	3911	Coil	CTH1113
L	3971	Inductor	CTF1453
L	3972	Inductor	CTF1453
L	3973	Coil	CTH1238
L	3974	Coil	CTH1238
L	3991	Inductor	CTF1453
L	3992	Inductor	CTF1453
L	3993	Inductor	CTF1453
L	3994	Inductor	CTF1453
L	3995	Inductor	CTF1453
L	3996	Inductor	CTF1453
X	3601	Ceramic Resonator 6.290MHz	CSS1305
S	3857	Switch(MODE)	CSH1051
FU	3601	Micro-Fuse 2A	CEK1190
EF	3721	EMI Filter	CCG1082
EF	3722	EMI Filter	CCG1082
EF	3801	EMI Filter	CCG1030

RESISTORS

R	3501		RS1/16S821J
R	3502		RS1/16S821J
R	3503		RS1/16S223J
R	3504		RS1/16S223J
R	3511		RS1/16S103J
R	3512		RS1/16S103J
R	3513		RS1/16S223J
R	3514		RS1/16S223J
R	3515		RS1/16S123J
R	3516		RS1/16S123J
R	3517		RS1/16S472J
R	3518		RS1/16S472J
R	3519		RS1/16S821J
R	3520		RS1/16S821J
R	3521		RS1/16S821J
R	3522		RS1/16S821J
R	3531		RS1/16S223J
R	3532		RS1/16S223J
R	3533		RS1/16S223J
R	3534		RS1/16S223J
R	3541		RS1/16S223J
R	3542		RS1/16S223J
R	3543		RS1/16S104J
R	3544		RS1/16S473J
R	3545		RS1/16S472J
R	3546		RS1/16S472J
R	3547		RS1/16S473J
R	3548		RS1/16S473J
R	3571		RS1/16S103J
R	3572		RS1/16S472J
R	3576		RS1/16S103J
R	3577		RS1/16S472J
R	3586		RS1/16S103J
R	3587		RS1/16S472J
R	3601		RS1/16S104J
R	3602		RS1/16S104J
R	3603		RS1/16S104J
R	3609		RS1/16S473J
R	3611		RS1/16S473J
R	3613		RS1/16S473J
R	3614	(XDV-P9/UC, EW)	RS1/16S0R0J
R	3615	(XDV-P9/ES/RC, ES/RD)	RS1/16S104J
R	3616		RS1/16S473J
R	3617		RS1/16S104J
R	3618		RS1/16S104J

=====Circuit Symbol and No.		===Part Name	Part No.
R	3619		RS1/16S102J
R	3620		RS1/16S223J
R	3621		RS1/16S104J
R	3623		RS1/16S104J
R	3624		RS1/16S104J
R	3625		RS1/16S104J
R	3626		RS1/16S104J
R	3627		RS1/16S104J
R	3628		RS1/16S104J
R	3629		RS1/10S104J
R	3631		RS1/16S104J
R	3632		RS1/16S104J
R	3633	(XDV-P9/UC, ES/RD, EW)	RS1/16S104J
R	3634	(XDV-P9/UC, /ES/RD)	RS1/16S104J
R	3634	(XDV-P9/ES/RC)	RS1/16S0R0J
R	3635		RS1/16S104J
R	3636		RS1/16S393J
R	3637		RS1/16S104J
R	3638		RS1/16S101J
R	3639		RS1/16S101J
R	3640		RS1/16S101J
R	3642		RS1/16S101J
R	3643		RS1/16S0R0J
R	3644		RS1/16S101J
R	3645		RS1/16S101J
R	3646		RS1/16S101J
R	3647		RS1/16S101J
R	3648		RS1/16S101J
R	3649		RS1/16S101J
R	3650		RS1/16S101J
R	3651		RS1/16S101J
R	3656		RS1/16S101J
R	3657		RS1/16S473J
R	3659		RS1/16S101J
R	3662		RS1/16S103J
R	3663		RS1/16S0R0J
R	3664		RS1/16S0R0J
R	3665		RS1/16S105J
R	3666		RS1/16S101J
R	3669		RS1/16S473J
R	3671		RS1/16S0R0J
R	3672		RS1/16S101J
R	3673		RS1/16S104J
R	3704		RS1/16S0R0J
R	3705		RS1/16S101J
R	3706		RS1/16S0R0J
R	3708		RS1/16S0R0J
R	3709		RS1/16S0R0J
R	3711		RS1/16S0R0J
R	3713		RS1/16S0R0J
R	3714		RS1/16S0R0J
R	3715		RS1/16S0R0J
R	3716		RS1/16S0R0J
R	3717		RS1/16S0R0J
R	3718		RS1/16S0R0J
R	3721		RS1/16S105J
R	3722		RS1/16S105J
R	3723		RS1/16S101J
R	3724		RS1/16S101J
R	3727		RS1/16S750J
R	3728		RS1/16S750J
R	3729		RS1/16S103J
R	3730		RS1/16S103J
R	3735		RS1/16S221J
R	3736		RS1/16S221J

Circuit Symbol and No.	Part Name	Part No.
R 3737		RS1/16S105J
R 3738		RS1/16S105J
R 3739		RS1/16S0R0J
R 3740		RS1/16S0R0J
R 3751		RN1/16SE1301D
R 3752		RN1/16SE1201D
R 3753		RS1/16S473J
R 3754		RS1/16S473J
R 3755		RS1/16S272J
R 3756		RS1/16S272J
R 3757		RS1/16S182J
R 3758		RS1/16S132J
R 3781		RS1/16S473J
R 3782		RS1/16S473J
R 3783		RS1/16S473J
R 3784		RS1/16S102J
R 3785		RS1/16S103J
R 3786		RS1/16S103J
R 3787		RS1/16S101J
R 3801		RS1/16S820J
R 3805		RS1/16S221J
R 3806		RS1/16S112J
R 3807		RS1/16S473J
R 3811		RS1/16S102J
R 3818		RS1/16S151J
R 3819		RS1/16S102J
R 3820		RS1/16S102J
R 3821		RS1/16S0R0J
R 3822		RS1/16S103J
R 3823		RS1/16S222J
R 3825		RS1/16S103J
R 3826		RS1/16S222J
R 3831		RS1/16S101J
R 3832		RS1/16S101J
R 3833		RS1/16S104J
R 3841		RS1/16S181J
R 3842		RS1/16S181J
R 3843		RS1/16S223J
R 3844		RS1/16S223J
R 3845		RS1/16S102J
R 3846		RS1/16S102J
R 3851		RS1/16S103J
R 3852		RS1/16S473J
R 3853		RS1/16S473J
R 3854		RS1/16S102J
R 3856		RS1/16S102J
R 3857		RS1/16S224J
R 3858		RS1/16S224J
R 3891		RS1/10S1R0J
R 3892		RS1/16S103J
R 3893		RS1/10S332J
R 3895		RS1/16S0R0J
R 3896		RS1/16S102J
R 3897		RS1/16S102J
R 3901		RS1/10S123J
R 3902		RS1/10S472J
R 3921		RS1/16S204J
R 3922		RS1/16S104J
R 3923		RS1/16S184J
R 3924		RS1/16S753J
R 3925		RS1/16S103J
R 3926		RS1/16S102J
R 3927		RS1/16S683J
R 3928		RS1/16S393J
R 3929		RS1/10S1R0J
R 3930		RS1/10S1R0J
R 3931		RS1/8S100J
R 3932		RS1/8S100J
R 3934		RS1/10S102J
R 3935		RS1/16S473J
R 3936		RS1/16S101J
R 3937		RS1/16S101J
R 3938		RS1/16S101J
R 3939		RS1/16S124J
R 3951		RS1/16S103J
R 3952		RS1/16S103J
R 3953		RS1/16S162J
R 3954		RS1/16S102J
R 3955		RS1/10S471J
R 3961		RS1/16S103J
R 3962		RS1/16S222J
R 3963		RS1/16S0R0J
R 3964		RS1/16S103J
R 3965		RS1/16S103J
R 3966		RS1/10S332J
R 3971		RS1/16S220J
R 3972		RS1/16S220J
R 3973		RS1/16S104J
R 3974		RS1/16S202J
R 3975		RS1/16S101J
R 3976		RS1/16S151J
R 3977		RS1/16S102J
R 3978		RS1/16S512J
R 3979		RS1/16S151J
R 3980		RS1/16S751J
R 3981		RS1/16S273J
R 3982		RS1/16S273J
R 3983		RN1/16SE2702D
R 3984		RN1/16SE1602D
R 3985		RN1/16SE4702D
R 3986		RN1/16SE1502D
R 3989		RS1/16S473J

CAPACITORS

Circuit Symbol and No.	Part Name	Part No.
C 3501		CSZS4R7M16
C 3502		CSZS4R7M16
C 3511		CEAL100M16
C 3512		CEAL100M16
C 3513		CCSRCH560J50
C 3514		CCSRCH560J50
C 3515		CEAL4R7M35
C 3516		CEAL4R7M35
C 3517		CKSRYB104K16
C 3519		CEAL4R7M35
C 3520		CEAL4R7M35
C 3533		CKSRYB221K50
C 3534		CKSRYB221K50
C 3541		CKSRYB104K16
C 3551		CEAL101M10
C 3601		CKSRYB103K50
C 3603		CKSQYB104K50
C 3604		CKSRYB104K16
C 3721		CEAL4R7M35
C 3722		CEAL4R7M35
C 3727		CKSYB475K10
C 3728		CKSYB475K10
C 3729		CEAL220M16
C 3730		CEAL220M16
C 3731	1000µF/6.3V	CCH1401
C 3732	1000µF/6.3V	CCH1401
C 3733		CKSRYB104K16
C 3734		CKSRYB104K16
C 3735		CEJA101M16
C 3737		CKSYB475K10

=====Circuit Symbol and No.		===Part Name	Part No.
C	3738		CKSYB475K10
C	3739		CCSRCH470J50
C	3740		CCSRCH470J50
C	3751		CKSRYB105K6R3
C	3752		CKSRYB473K25
C	3753		CKSRYB103K50
C	3781		CEAL220M16
C	3801		CEAL100M16
C	3802		CKSRYB104K16
C	3805		CCSRCH150J50
C	3806		CKSRYB103K50
C	3818		CKSRYB104K16
C	3819		CKSRYB104K16
C	3831		CKSRYB102K50
C	3832		CKSRYB102K50
C	3833		CKSRYB104K16
C	3841		CKSQYB105K16
C	3842		CKSQYB105K16
C	3843		CKSQYB105K16
C	3844		CKSQYB105K16
C	3845		CKSRYB104K16
C	3846		CEAL100M16
C	3847		CEAL100M16
C	3848		CKSRYB104K16
C	3849		CEALNP100M10
C	3850		CEALNP100M10
C	3852		CKSRYB103K50
C	3856		CKSQYB104K50
C	3912	2200µF/16V	CCH1186
C	3913	2200µF/16V	CCH1186
C	3914	3300µF/16V	CCH1018
C	3915	4700µF/16V	CCH1346
C	3916	4700µF/16V	CCH1346
C	3921	0.1F/5.5V	CCL1023
C	3922		CEV100M16
C	3923		CKSRYB103K50
C	3924		CKSQYB103K50
C	3925		CEAL101M10
C	3926		CKSRYB104K16
C	3927		CCSRCH101J50
C	3934		CEJA100M16
C	3951		CEV100M16
C	3952		CKSQYB334K16
C	3953		CEV470M10
C	3961		CEV220M10
C	3962		CEV100M16
C	3963		CKSQYB334K16
C	3964		CKSRYB473K25
C	3965		CEAL101M10
C	3971		CEV100M16
C	3972		CCSRCH181J50
C	3973		CKSRYB102K50
C	3974		CKSRYB102K50
C	3975		CKSRYB683K16
C	3976		CKSRYB822K50
C	3977		CKSRYB473K25
C	3978		CKSRYB822K50
C	3979		CKSRYB104K16
C	3981	10µF	CCG1138
C	3982		CEV470M10
C	3983	10µF	CCG1138
C	3984	22µF	CCG1139
C	3985	22µF	CCG1139
C	3986		CKSRYB473K25
C	3987		CEAL100M16
C	3988		CKSRYB105K6R3
C	3989		CKSRYB473K16
C	3990		CEV470M10

=====Circuit Symbol and No.		===Part Name	Part No.

G Unit Number : CWM7084
Unit Name : Keyboard Unit

MISCELLANEOUS

D	4001	LED	NSSW440-9159
D	4002	LED	CL170UBX
D	4003	LED	NSSW440-9159
D	4004	LED	NSSW440-9159
D	4005	LED	NSSW440-9159
S	4001	Push Switch	CSG1144
S	4002	Switch	CSG1110
S	4003	Switch	CSN1027

RESISTORS

R	4001		RS1/8S621J
R	4002		RS1/8S621J
R	4003		RS1/8S102J
R	4004		RS1/8S102J
R	4005		RS1/8S621J
R	4006		RS1/8S621J
R	4007		RS1/10S102J
R	4008		RS1/10S102J
R	4009		RS1/10S102J

CAPACITORS

C	4001		CKSQYB104K16
C	4002		CKSQYB104K16
C	4003		CKSQYB104K16
C	4004		CKSQYB104K16
C	4005		CKSQYB104K16
C	4006		CKSQYB104K16

A Unit Number :
Unit Name : PCB Unit(A)

D	851	LED	CN504-2
S	851	Switch(DSP)	CSN1051
S	852	Switch(TRP)	CSN1052

B Unit Number :
Unit Name : PCB Unit(B)

S	301	Switch(MAG)	CSN1044
VR	301	Volume 10kΩ	CCW1021
VR	302	Semi-fixed 1kΩ(B)	CCP1338
R	301		RS1/16S562J
R	302		RS1/16S622J
C	301		CKSRYB104K16
C	302		CKSRYB103K50

C Unit Number :
Unit Name : PCB(A)

Q	851	Photo Transistor	PT4800

D Unit Number :
Unit Name : PCB(B)

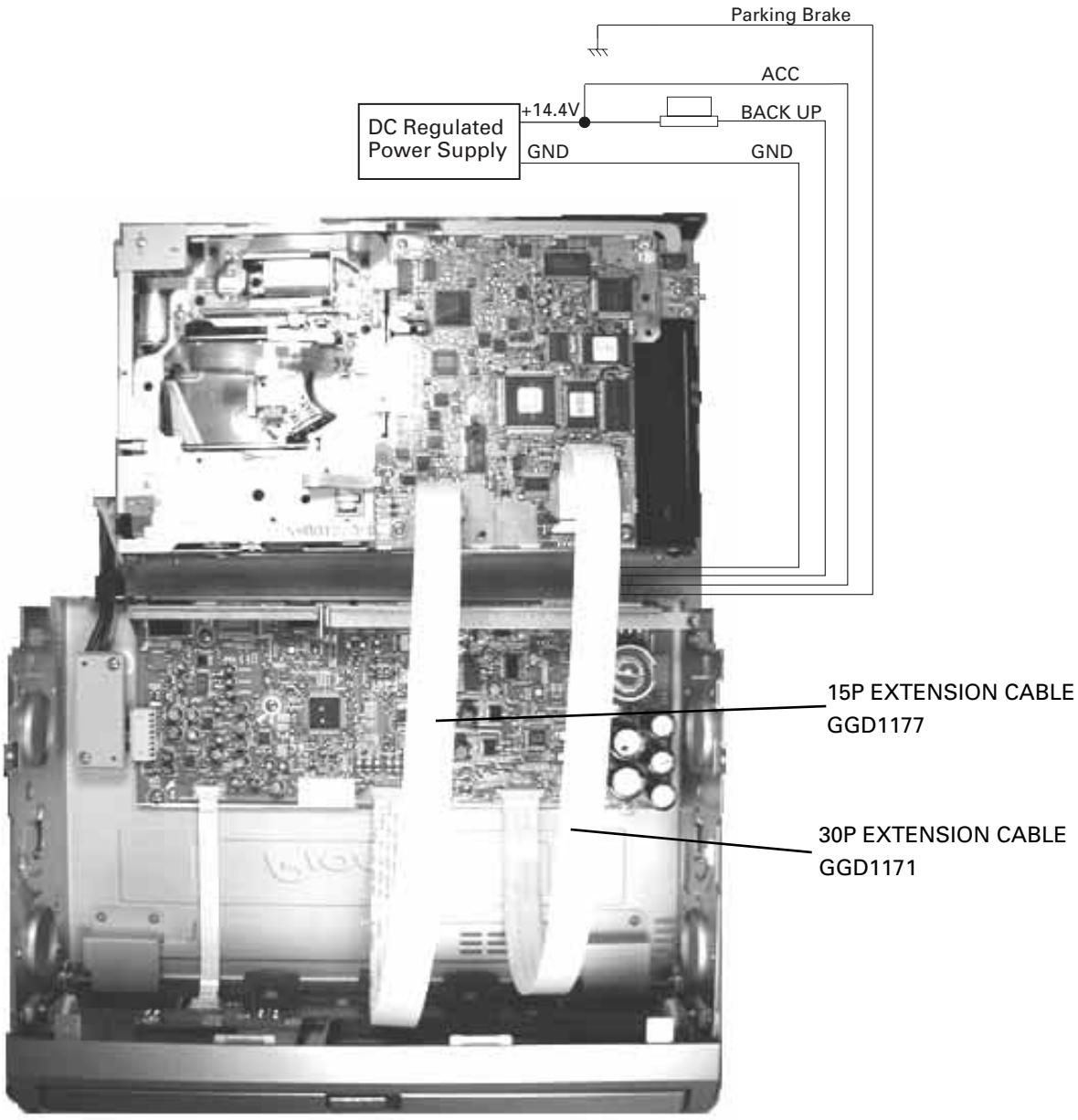
M2		Motor Unit(-A)(TRAY)	CXB3932

Miscellaneous Pats List

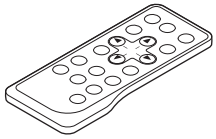
		PU Unit	CGY2020
M	1	Motor Unit(-B)(CARRIAGE)	CXB3930
M	4	Motor Unit(-C)(ELV)	CXB3931

6. ADJUSTMENT

6.1 JIGS



REMOTE CONTROL UNIT
(FOR DEBUG MODE)
GGP1011



6.2 DESTINATION SETTING

When replacing the FLASH MEMORY (IC1004) on the Main unit or Main unit, please set as follows.
When the following setting is done once, you cannot change setting again.
When you mistake setting, please replace the FLASH MEMORY(IC1004) again.

● **Set object destination model**

1.EW
2.ES/RC
3.ES/RD

● **Preparation**

1.Remote controller "GGP1011" for debug mode
2.Remote controller for XDV-P9
3.Magazine
4.Monitor TV

● **Method**

1. Insert an empty magazine in this machine, and turn on the power.
   (The following destination codes set screens are displayed)

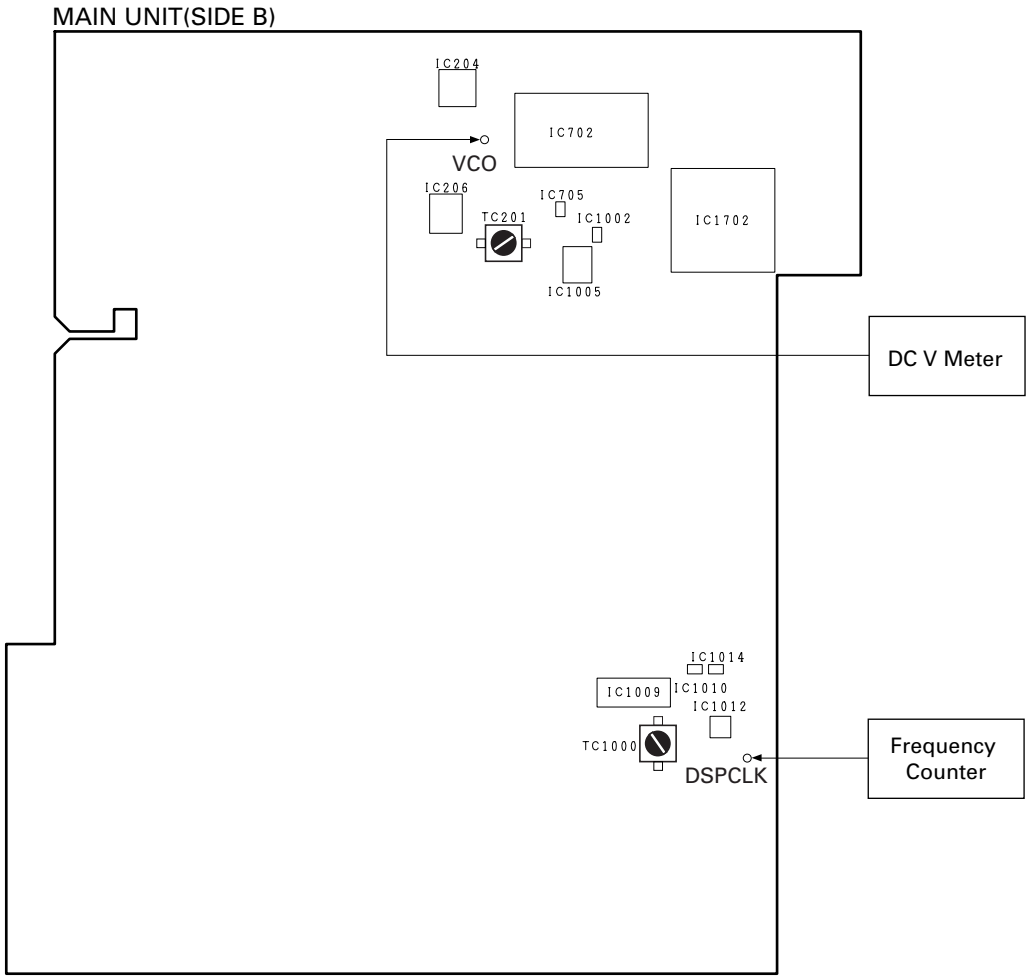
```
[Players : * * * * * setting]

< 1 > : * * * * * 1
< 2 > : * * * * * 2
< 5 > : * * * * * 5

Pick out any of there!
```

*The above-mentioned screen is for EW example of the display. (The number of the selection of the destination code display changes described in the under mentioned clause 2 when ES/RC and RD)
*Actually, the character is displayed above-mentioned ******.

2. Please select the destination code (2-4 keys) by the remote controller of GGP1011.
   (1) EW : setting 2 Push "2" key from among the display of the selection number of 1, 2, and 5.
   (2) ES/RC : setting 3 Push "3" key from among the display of the selection number of 1, 3, and 6.
   (3) ES/RD : setting 4 Push "4" key from among the display of the selection number of 1, 2, 4,and 5.
3 Open the door, push the "EJECT" button, and turn off the power.
   The destination code selected in clause 2 will be written in FLASH MEMORY by doing this operation.
4. Turn off the power.
5. Set DVD DISC sold in the region which corresponds to this machine in the magazine.
   And, insert the magazine in this machine, and confirm whether it is possible to play.
   There is a possibility of mistake of setting in clause 2 if unplayable.
   In that case, please replace FLASH MEMORY(IC1004), and do setting over again from the clause 1.

6.3 MAIN UNIT ADJUSTMENT

● **Connection Diagram**



Setting state : Normal Mode, Without magazine

Item	Adjustment point	Adjustment Method	Symptoms at incomplete adjustment
16MHz Master Clock	TC1000	Frequency Counter : 6.934400MHz ± 80Hz	An image turns from a colored one to a monochromatic one.
VCO Offset	TC201	DC V Meter : 1.4V ± 0.2V	Too much misalignment will result in no playback.

6.4 SKEW ADJUSTMENT

● If skew adjustment is necessary:

1) Replace the pickup unit by a new one.
2) Replace the spindle motor by a new one.
3) Replace the CRG chassis by a new one.
4) Replace the main shaft of the pickup unit by a new one.
5) Replace the sub shaft of the pickup unit by a new one.

* No skew adjustment is necessary for replacement of the CRG motor and the like.

● Procedures (Fig.1)

1) Remove the adhesive of the pickup unit with a pair of tweezers (above 2) to 5) only).

* Take care at this time that no fragments of the adhesive will be scattered, and that no unnatural force will apply to the actuator.

2) Monitor the test point of the TP210 (RF waveform monitor) on the basis of GND in the product state with an oscilloscope.
3) Clamp adjusting disc (GGV1018).

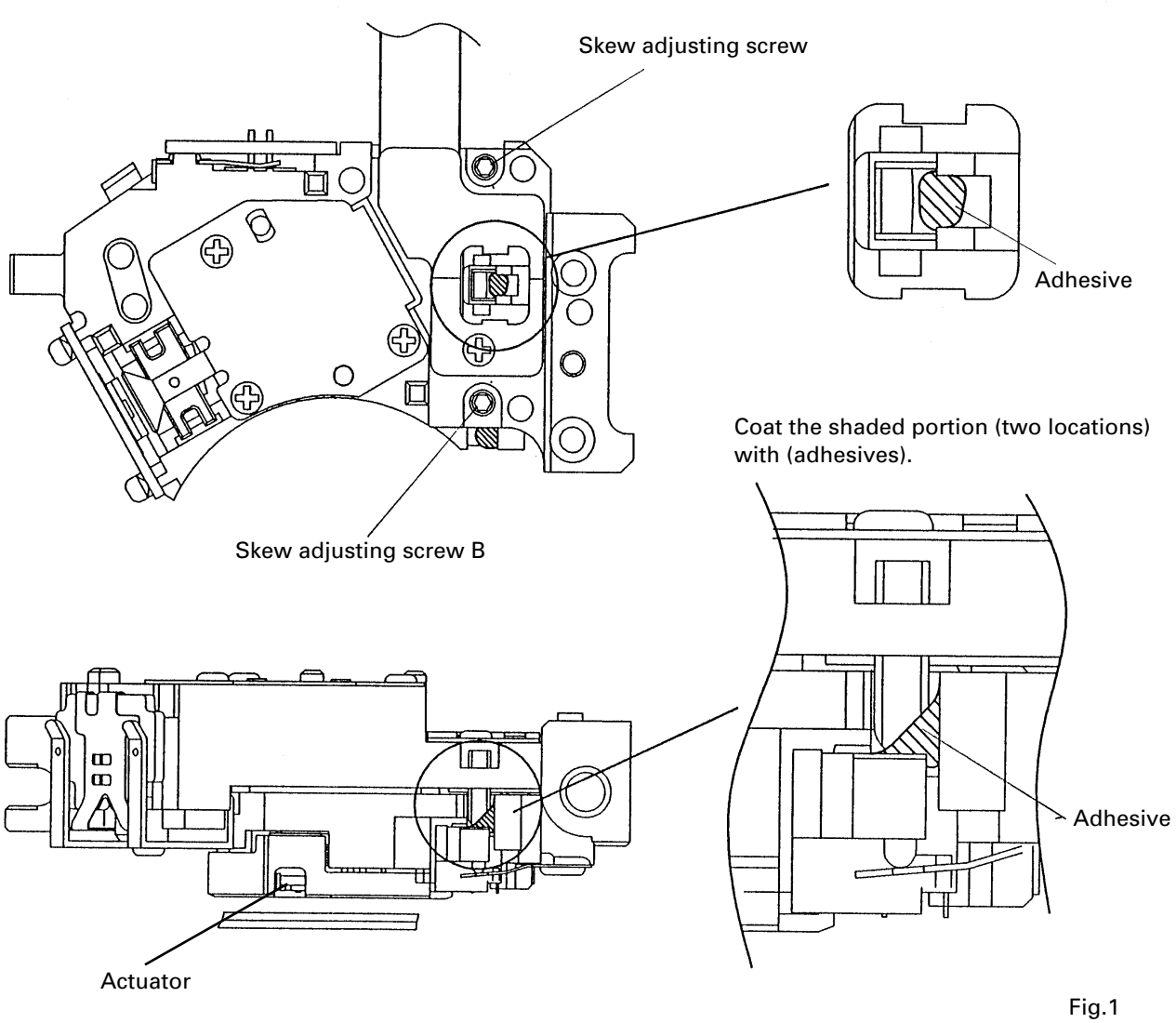


Fig.1

4) Turn on the power in the test mode (F. Offset adjustment is found) and move the pickup to the vicinity of the center of the disc.
5) Turn on the DVD LD and perform Focus Close.
6) Automatically adjust Tracking Balance and perform Tracking Close.
7) Observing RF waveform levels of an oscilloscope, slightly turn skew adjusting screw A and adjust the oscilloscope so that the levels can be maximized. Repeat this operation three times and fix the levels where they are maximized.
8) Mix agents A and B of adhesive 601 at a ratio of 1 to 1 and coat a specified part with both agents of the adhesive. The adhesive is cured about 15 minutes. The coating position is shown in Fig.1.

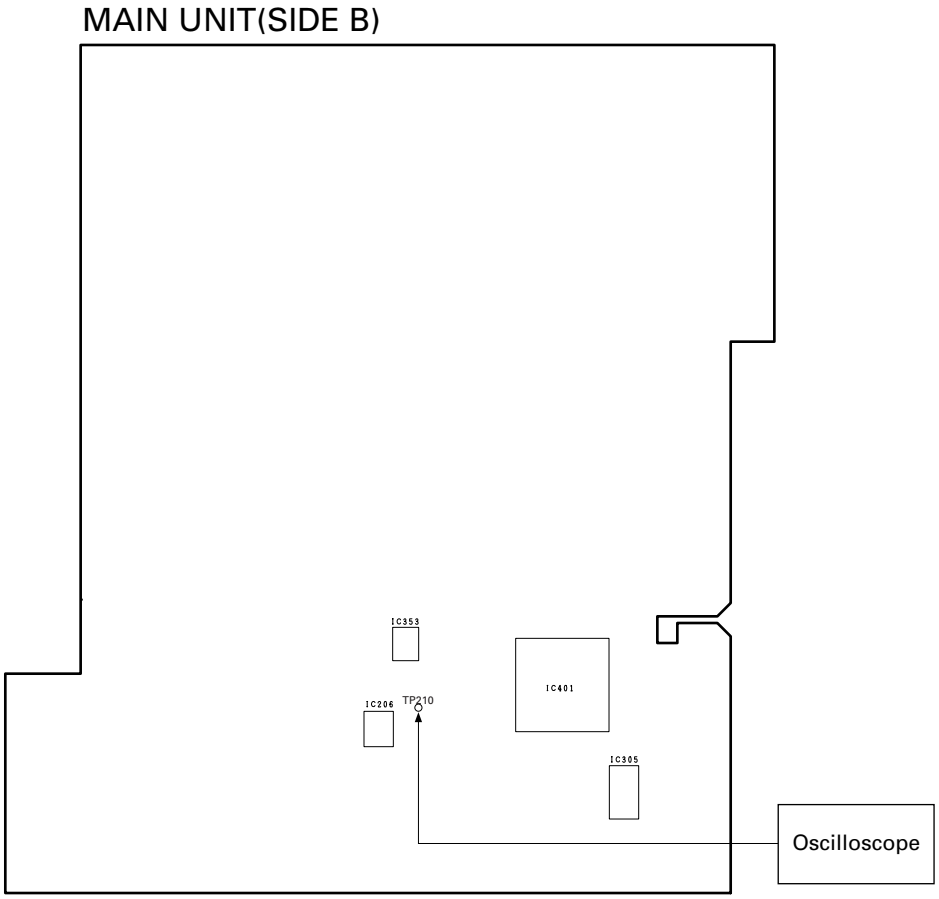
Note) Do not apply the adhesive to the pickup section and the mechanical unit section other than the specified part. Because heat is generated, do not mix a great number of adhesives at a time. Use the same number of adhesives as the original one. Do not apply vibration until the adhesive is fixed.

9) Apply the screw lock to the head of the skew screw and secure it.

● Symptoms at incomplete adjustment

1) Deterioration of error rates
2) Large RF jitters: Waveforms are distorted.
3) Unstable tracking servo: There are such effects as leading-in and unstable servo.

● Connection Diagram



6.5 ELEVATION ADJUSTMENT

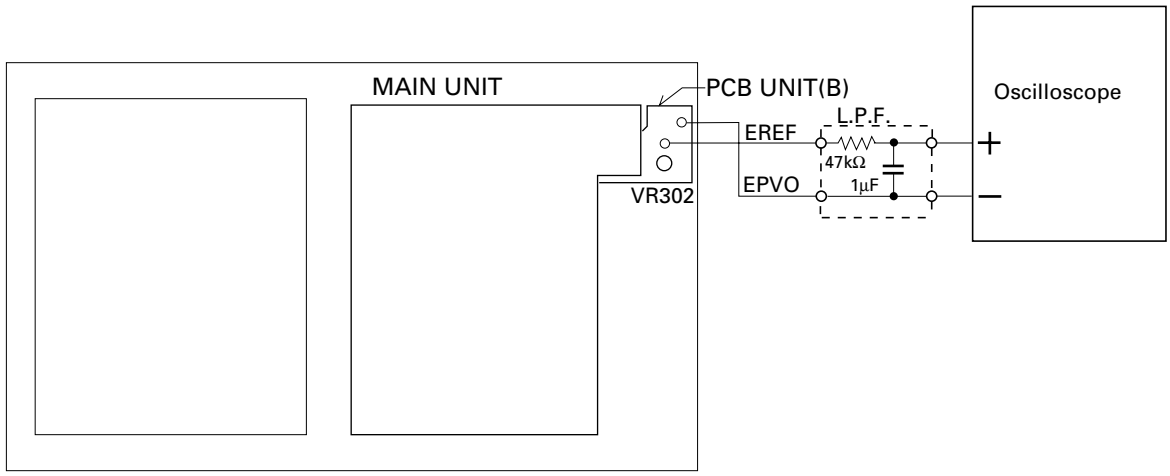
● **This adjustment shall be performed when an error code 84 is displayed for an elevation error.**

• Precautions
This mechanism unit uses a slide variable resistor to detect the height of the stage.
To absorb misalignment of the stage height due to unevenness of the DVD/CD mechanism unit and main unit, the adjustment for each mechanism unit needs to be performed using semi-fixed resistors.
Because adjustment is performed on the production line, readjustment is not necessary usually. However, if an elevation error occurs or when the slide variable resistor, spindle motor and CRG chassis are replaced, elevation needs to be adjusted in the following procedures:

• **Purpose**
Adjust and check that the operation of elevation is normal.

• **Adjustment method**

• Measuring apparatus	Oscilloscope, L.P.F (one piece)
• Measuring point	EREF or EPVO
• Setting state	Without magazine, test mode Place the DVD/CD mechanism unit facedown (place the DVD/CD mechanism unit so that the main unit may be set to the upper side).



• **Check procedures**

For the flowchart of the test mode, refer to Page 76.

1. Enter the test mode and select a multiple DVD/CD player.
2. Set the mechanism unit test mode.

Display on head unit

00800000
20400000

3. Move to the ELV/tray selection mode and press one key to select the ELV mode.

Display on head unit

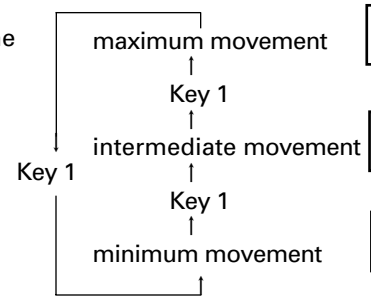
	7 0 4 1 0 0 0 0
ELV	0 0 0 0 0 0 0 0
Tray	0 0 0 0 0 0 0 1

4. Move to the operation mode selection.

7 0 4 2 0 0 0 0

5. Press key 1 to set maximum movement.
Note) At default, intermediate movement is set.
For maximum movement, while the key 1 is being pressed, the stage mechanism unit section continues moving.
For intermediate or minimum movement, whenever the BAND key is pressed once, the stage mechanism section moves.

The amount of movement changes each time key 1 is pressed.



6. Move to the motor forward revolution mode or motor reverse revolution mode and align the magazine slot to graduations on the fourth disc (Fig. 1).

Forward revolution	7 0 4 3 0 0 0 0
Reverse revolution	7 0 4 4 0 0 0 0

7. Adjustment
Adjust the potential difference between EREF and EPVO of PCB (B) to 380 ± 20 mV with VR302.

7 0 4 5 0 0 0 0

8. Termination of adjustment
Move to the mechanism-unit test termination mode and terminate the mechanism-unit test mode.

9. Operation check
Terminate the test mode.
Place the mechanism unit horizontally (set the main unit to the drop side). At this time, take care of short-circuiting of the PCB.

10. Check the height of the stage.
Press the DISC ± key to select DISC 4.
Check that the stopper bend of the clamping lever is fitted in the groove of the frame stopper section. (Fig. 2 to 4)

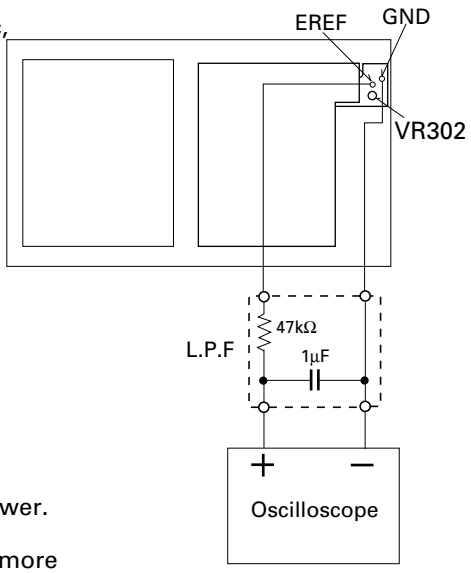
• Precautions
• The stopper bend to be clamped finally is clamped under the groove. Check the stopper bend at the position where it is fitted in the groove.
• Adjustment is completed if the stopper bend enters the center and is clamped under the groove. Go to 14).
• If the stopper bend is dislocated, check misalignment. Go to 11).

11. If the mechanism unit is dislocated:
    Place the mechanism unit facedown.
    When the mechanism unit is dislocated to the direction of the first disc, turn VR302 counterclockwise. (Fig. 2)

    Drop the voltage of EREF by 20 mV which was adjusted in 7. to descend the stage to the direction of the sixth disc by 0.1 mm.

    When the mechanism unit is dislocated to the direction of the sixth disc, turn VR302 clockwise. (Fig. 4)

    Raise the voltage of EREF by 20 mV which was adjusted in 7. to ascend the stage to the direction of the first disc by 0.1 mm.



12. Place the mechanism unit horizontally and recheck from 10.

13. After adjustment has been completed,

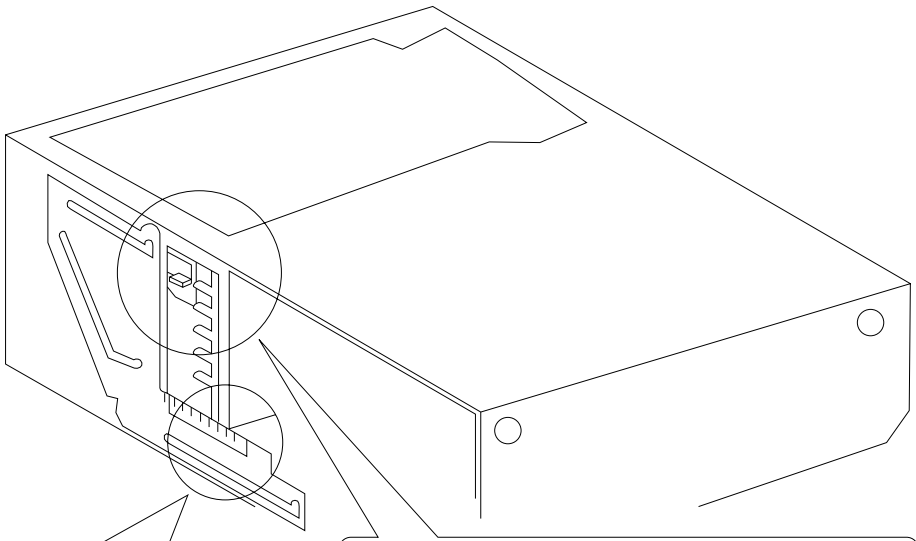
14. Press the EJECT switch.

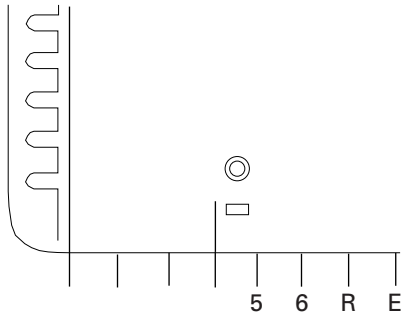
15. After the operation of the mechanism unit has stopped, turn off the power.

16. After the power has be turned off, turn on the power in one minute or more and insert the magazine.

17. Check that the mechanism unit operates normally for the first and fourth discs.

18. Terminate all adjustment for OK (normal operation) and readjust for NG (abnormal operation).



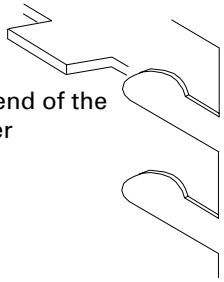


Adjust the insertion gate of magazine to the fourth scale.

Fig. 1

Stopper bend of the clamp lever

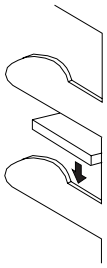
NG



Dislocated toward the first DVD.

Fig. 2

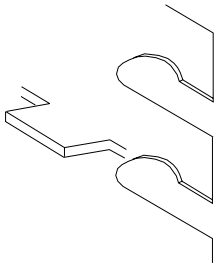
OK



Engaged in the center and pressed downward.

Fig. 3

NG



Dislocated toward the sixth DVD.

Fig. 4

7. GENERAL INFORMATION

7.1 DIAGNOSIS

7.1.1 TEST MODE

1) Precautions on Adjustment

- Because this equipment uses a single voltage (+5 V) in the regulator, the reference voltage of a signal is not GND, but is REFO (VR21, VR25, PREF). If REFO and GND are mixed and touched at product adjustment, correct potential cannot be measured but also the servo malfunctions and an strong shock applies to the pickup. So, note the following items. REFO and GND must not be mixed on the negative side of the probe of the measuring apparatus. In particular, do not connect the negative side of the ch1 probe of the oscilloscope to REFO and the negative side of the ch2 probe to GND. Further, in general, because most main units of measuring apparatuses reach the same potential as the negative side of the probe, make the main unit of the measuring apparatus enter the floating state. If REFO and GND are incorrectly connected, immediately turn off the power.
- Be sure to turn off the power when attaching and detaching the various filters and wire materials required for measurement.
- For the adjustment and measurement after power-on, adjust or measure after having performed running for about one minute until the circuit becomes stable.
- Because various types of protection do not operate by software in the test mode, do not apply a mechanical and electrical shock during adjustment.
- This equipment uses a photo transistor to detect a disc when inserting and removing it to and from the tray. Accordingly, if strong light enters this equipment with the case remove at repair and adjustment, the following malfunctions may occur.
  * Although there is a disc, play is disabled because the disc cannot be used.
  * A disc of 12 cm is incorrectly detected for a disc of 8 cm.

  When a malfunction occurred, take action such as changing the position of the light source, changing the orientation of this equipment or covering a photo transistor.
- In the test mode, after having executed carriage movement during focus search, immediately turn off the power. (The lens is stuck up or down and the actuator may be damaged by fire.)
- During disc replacement, press the key of the disc to be replaced by a new one.

2) Test Mode

- The test mode is used for adjusting the mechanical-unit module section of this equipment.
- How to enter the test mode
  Simultaneously pressing the key 4 and the key 6, enter Reset.
- How to reset the test mode
  Enter ACC and backup OFF.
- After having executed carriage movement during focus search, immediately turn off the power. (Because the lens is stuck, the actuator may be damaged by fire.)
- The TR Jump below 255 TR continues operation even if the key is detached. Other TR Jumps enter the T Close state when the key is detached.
- As soon as the power is turned on/off, the Jump Mode is reset to Single TR and the automatic adjustment value returns to the initial value.
- During disc replacement, press the key of the disc to be replaced by a new one.
- Be sure to load a DVD disc on the first tray of the magazine.

3) Explanation of the flowchart

The operation and specifications of each command are described.

- The 8-digit value in each command box is the number of the command and is displayed on the main unit.
- The horizontal (left or right) movement of each command is performed using the TR up/down key of the main unit.
- The execution of each command is performed using the BAND key of the head unit. At this time, the return value indicating that the command was executed is displayed on the main unit. If "E" is displayed in the high-order digit of the return value, it indicates that an error occurred in the command and the command was not executed.
- After having executed each command, press the BAND key of the main unit to execute the command of the next step. At this time, the number of the command of the next step is displayed on the main unit.
- The explanation about the operation of each command box is given below.

System Controller/Mechanism Controller Test Start : 00860000

Move to the test mode. No return value is provided.

Test Start : 10940000

Start the test mode. The return value is 00000000.

Disc Type : 20070000

Select the type of the disc using the key 1 or key 2 Toggle selection.

The return value is 00000000 when selecting CD, 00000001 when selecting the DVD1 layer, 00000002 when selecting the DVD2 layer or 00000003 for other cases.

Power ON : 20060000

Turn on each power. Use the key 1 or key 2 to select whether or not the adjustment of servo system offset is performed. If the fourth digit from the bottom is

executed with "1", offset adjustment becomes available. Toggle selection. The return value is set to 00000000 regardless of the fact that offset adjustment is available or unavailable.

LD ON : 30130000
Execute the ON/OFF of the laser diode. Use the key 1 or key 2 to select the laser diode to be turned on/off. If the fourth digit from the bottom is executed with "1", the laser diode for CD (780 nm) is turned on/off. If it is executed with "0", the laser diode for DVD (650 nm) is turned on/off. Toggle selection. It is desirable that the type of the disc selected with the disc type and the type of the laser diode should match. The return value is 0007801 when the laser diode for CD turns on, 00007800 when it turns off, 00006501 when the laser diode for DVD turns on or 00006500 when it turns off.

Focus Close : 30080000
Move the actuator up and down to the focus direction. In the S curve confirmation mode, the aforementioned operation is semi-permanently repeated at fixed cycles. In other cases, if the conditions of focus close are satisfied, turn on focus servo. If the conditions are not satisfied, stop focus servo. The return value is 00000000.

S Curve Confirmation : 30090000
Execute the S curve confirmation mode. After this command has been executed, the S curve can be checked by executing the aforementioned focus close command. The return value is 00000000.

EQ Measurement Mode : 30220000
Forcibly turn on focus and tracking servos and the mode for identifying the characteristics of the servo EQ. When executing this command, be sure to remove the connectors of the pickup. (Because the pickup may have been damaged). The return value is 00000000.

OEIC Switching : 30330000
Switch the gain of OEIC. Use the key 1 or key 2 to select High/Low of the OEIC gain. If the fourth digit from the bottom is executed with "1", OEIC is set to the High gain, and if it is executed with "0", OEIC is set to the Low gain. Toggle selection. The return value is 00000001 for the High gain and 00000000 for the Low gain.

TB Automatic Adjustment : 40280000
Execute tracking balance adjustment. The return value is 00000000.

Tracking Close : 40140000
Turn on the tracking servo. The return value is 00000000.

LD ON : 40130000
This command is the same as the aforementioned LD ON command. When exiting from the S curve confirmation mode, be sure to execute this command. (Because the LD may be damaged)

RF Automatic Adjustment : 50250000
Adjust the amplitude gain of the RF. The return value is 00000000.

Focus/Bal Adjustment : 50270000
Execute focus balance adjustment. The return value is 00000000.

Focus Tracking : 50260000
Execute the gain adjustment of focus and tracking. The return value is 00000000.

Tracking Open : 50170000
Turn off the tracking servo. The return value is 00000000.

Tracking Close : 50140000
This command is the same as the aforementioned tracking close command.
The return value is 00000000.

Track JUMP (Inner Circumference) : 50180000
Execute the track jump for the specified number of tracks toward the inner circumference). 1 to 32,767 tracks can be specified. For the specification method, after having executed this command, toggle-select the digit of the number of tracks by changing the third digit below the display between 1 and 8 using the TR up/down key and select a value using the key 1 or key 2. After having selected them, use the BAND key to execute the command. For example, to execute 100 track jumps, use the following selection method.

Key BAND
↓
Specified number of tracks display: 51180100
↓
Key TR up two-time display: 51180300
↓
Key 1 display: 51180301
↓
Key BAND display: 00000064

For the return value, the specified number of tracks is displayed in Hex (hexadecimal) notation. For less than 255 track jumps, because the track jump is repeated at fixed intervals, execute the Tracking Open command after having executed this command and stop the track jump.

Track JUMP (Outer Circumference) : 50190000
Execute the track jump for the specified number of tracks toward the outer circumference. Other items are the same as those of the inner circumference jump.

Focus Jump : 50150000
Execute the focus jump for the DVD two-layer disc. The return value is 00000000 when the layer after focus jump is 0 or 00000001 when the layer is 1.

Tilt Servo Operation Start : 50350000
Turn on the liquid crystal tilt servo. When the tracking servo is ON, the tilt servo operation is validated. At default, the operation stops. The return value is 00000000.

Tilt Servo Operation Stop : 50360000
Turn off the liquid crystal tilt servo. The return value is 00000000.

CD Error Rate Measurement : 50200000
Measure the C1 error rate of the CD by setting the sampling time of 1 to 30 seconds. The setting of the sampling time is the same as the setting method of the number of track jumps. For the return value, the C1 error rate is displayed exponentially. The unit is % if the specified value is multiplied by 100.

Spindle CAV Operation : 50300000
For DVD, revolve the spindle at 10 Hz at a constant speed. The return value is 00000000.

EJECT : 20030000
Eject the magazine. Use the key 1 or key 2 to select whether or not the magazine returns to the carriage home at ejection. If the fourth digit from the bottom is executed with "1", no carriage home occurs, and if it is executed with "0", carriage home occurs. The return value is 00000001 for no carriage home, or 00000000 for carriage home.

Automatic Adjustment Value Request : X0240000
Display the results of various types of automatic adjustment. Use the [!] or ["] key to toggle-select an adjustment value to be displayed. If the fourth digit from the bottom is executed with "0", F. BAL adjustment values are displayed in the first and second digits of the display value, T offset adjustment values are displayed in the third and fourth digits and F offset adjustment values are displayed in the fifth and sixth digits. If it is executed with "1", a T. AGC adjustment value is displayed in the first digit of the display value, T. AGC adjustment values are displayed in the third and fourth digits and F. AGC adjustment values are displayed in the fifth and sixth digits. If it is executed with "2", T. BAL adjustment values are displayed in the first and second digits of the display value, tilt servo adjustment values are displayed in the third and fourth digits and RF gain adjustment values are displayed in the fifth and sixth digits.

Display Data Request : X0040000
Display the state in each mode. The return value is 00000000 in the Power Off mode, 0101101 in the Power On mode, 02020202 if focus servo is ON in the Focus Close mode, 01010101 if it is not ON or ID No. (for DVD) or MSF No. (for CD) if the tracking servo is normally ON in the Tracking Close mode.

Carriage Inner Circumference Movement : X0110000
Move the carriage to the inner circumference side. It moves while the BAND key is being pressed. This movement is validated except when the tracking servo is turned on.

Carriage Outer Circumference Movement : X0100000
Move the carriage to the outer circumference side. It moves while the BAND key is being pressed. This movement is validated when the tracking servo is turned on.

Power OFF : X0050000
Turn off each power. The return value is 00000000.

Normal Mode Setting : X0020000
Move to the Normal mode.

EDC Mode Start :10690000
Normal playback is started by performing control data read for DVD and TOC read for CD. The return value is TOC-WX (X is a tray No.).

EDC Mode 1 DVD/CD : 10700000
Start solid playback from an optional ID No. (for DVD) or MSF No. (for CD). For the ID No. setting method for DVD, select the digit for the ID No. to be specified by changing the third digit from the bottom of the display value in the same manner as the setting of the number of track jumps using the TR up/down key and use the key 1 or key 2 to set the ID No. of the digit. After having set the ID No., execute operation using the BAND key. For CD, use the key 1 or key 2 to set the fourth digit from the bottom of the display value to "1" and set the setting mode according to the MSF No. The subsequent MSF No. setting method is the same as the ID No. setting method for DVD. The return value is EDC10000 for DVD and is the low-order four digits indicating minutes and seconds for CD.

EDC Mode 2 : 10710000
For DVD, start playback which repeats the operation of one block read/pause, and start the same operation as the EDC mode 1 for CD. The setting of the ID No. or MSF No. is the same as EDC mode 1. The return value is EDC2 or later.

Error Rate Measurement : 10720000
Measure the C1 error rate of the DVD by setting one to 64 sampling blocks. For the return value, the C1 error rate is displayed exponentially. The unit is % if the specified value is multiplied by 100. The sampling block setting method is the same as the setting method for the number of track jumps. Normally, the error rate is less than 0.1%.

EDC Mode Termination : 10730000
Terminate the EDC mode. No return value

Disc Tray : X0210000
Set the tray No. of the disc to be clamped and change the disc. Use the key 1 or key 2 to set the fourth digit from the bottom of the display value to the tray No. to be set and to operate it using the BAND key. The return value is 0000000X and X indicates a specified tray No.

Mechanism Test Mode : 20400000
Move to the mechanism test mode. The return value is 00000000.

ELV/Tray Selection : 70410000
For the motor to be moved, select either an ELV motor or a tray motor. Use the key 1 or key 2 to select the motor. Toggle selection. The return value is 00000000 when selecting the ELV motor or 00000001 when selecting the tray motor.

Operation Mode Selection : 70420000
Set the drive amount of the ELV or tray motor. Use the key 1 or key 2 to select the Major, Intermediate and Minor of the drive amount. Toggle selection. The return value is 00000000 when the drive amount is Minor, 00000001 when it is Intermediate or 00000002 when it is Major.

Motor Forward Revolution : 70430000
Drive the motor to the extent of the amount specified by selecting the operation mode. When selecting the ELV motor, the stage operates to the side of the tray 1, and when selecting the tray motor, the tray arm operates to the side of tray return. When the drive amount is Intermediate and Minor, the motor performs one-time operation every time the BAND key is being pressed. When the drive amount is Major, it is driven while the key is being pressed.

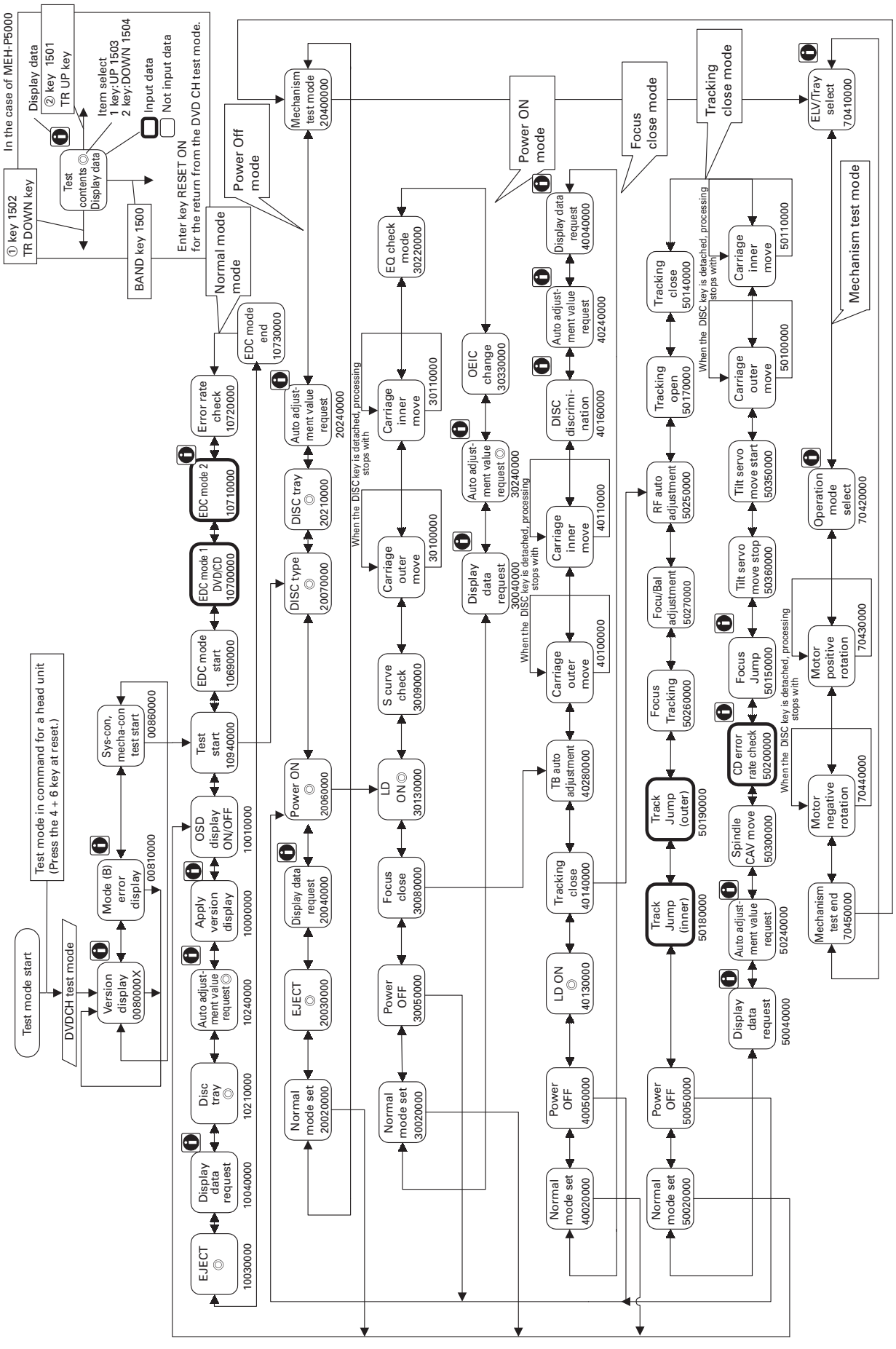
Motor Reverse Revolution : 70440000
Drive the motor to the extent of the amount specified by selecting the operation mode. When selecting the ELV motor, the stage operates to the side of the tray 6, and when selecting the tray motor, the tray arm operates to the side of tray withdrawal. When the drive amount is Intermediate and Minor, the motor performs one-time operation every time the BAND key is being pressed. When the drive amount is Major, it is driven while the key is being pressed.

Mechanism Test Mode Termination
Terminate the mechanism test mode. The return value is 00000000.

Head Units Which Cannot Enter the Test Mode
Because the following head units cannot make this equipment enter the test mode, do not use them in the test mode.

KEH-P818R/UC
KEH-P8600R/UC
KEH-P8600RS/EW
KEH-P8600R/X1B/EW
KEH-P8600R-W/EW
KEH-P8600R-W/X1BEW
KEH-P8600RS/X1B/EW
KEH-P8600R/EW
KEH-P8650-W/ES
KEH-P8650/ES
KEH-P8610/EE
DHE-P700R/UC
DEH-P835R/UC
DEH-P835R-W/UC
DEX-P88R/UC
DEX-P98R/UC
DEH-P835R/X1B/EW
DEH-P835R/EW
DEX-P88R/EW
DEX-P88R/X1B/EW
DEH-P836/ES

● Flow chart


Test mode start
DVDCH test mode
Test mode in command for a head unit
(Press the 4 + 6 key at reset.)
Version display 0080000X
Mode (B) error display 00810000
Sys-con, mecha-con test start 00860000
Test start 10940000
EDC mode start 10690000
EDC mode 1 DVD/CD 10700000
EDC mode 2 10710000
Error rate check 10720000
EDC mode end 10730000
Auto adjustment value request 20240000
Mechanism test mode 20400000
Normal mode
Power Off mode
Power ON mode
Focus close mode
Tracking close mode
Mechanism test mode
In the case of MEH-P5000
Display data
② key 1501
TR UP key
Item select
1 key:UP 1503
2 key:DOWN 1504
Input data
Not input data
Test contents ◎ Display data
① key 1502
TR DOWN key
BAND key 1500
Enter key RESET ON
for the return from the DVD CH test mode.
Apply version display 10000000
OSD display ON/OFF 10010000
Auto adjustment value request◎ 10240000
Disc tray ◎ 10210000
Display data request 10040000
EJECT ◎ 10030000
Display data request 20040000
Power ON ◎ 20060000
DISC type ◎ 20070000
DISC tray ◎ 20210000
EJECT ◎ 20030000
Normal mode set 20020000
Focus close 30080000
LD ON ◎ 30130000
S curve check 30090000
Carriage outer move 30100000
Carriage inner move 30110000
EQ check mode 30220000
OEIC change 30330000
Auto adjustment value request ◎ 30240000
Display data request 30040000
When the DISC key is detached, processing stops with
Power OFF 30050000
Normal mode set 30020000
Carriage outer move 40100000
Carriage inner move 40110000
Tracking close 40140000
TB auto adjustment 40280000
LD ON ◎ 40130000
Power OFF 40050000
Normal mode set 40020000
Display data request 40040000
Auto adjustment value request 40240000
DISC discrimination 40160000
Track Jump (outer) 50190000
Track Jump (inner) 50180000
Focus Tracking 50260000
Focus/Bal adjustment 50270000
RF auto adjustment 50250000
Tracking open 50170000
Tracking close 50140000
Carriage outer move 50100000
Carriage inner move 50110000
Tilt servo move start 50350000
Tilt servo move stop 50360000
Focus Jump 50150000
CD error rate check 50200000
Spindle CAV move 50300000
Auto adjustment value request 50240000
Display data request 50040000
Power OFF 50050000
Normal mode set 50020000
Operation mode select 70420000
ELV/Tray select 70410000
Motor positive rotation 70430000
Motor negative rotation 70440000
Mechanism test end 70450000

● Error No. Display

When the DVD cannot operate or if it stopped due to an error during operation, an error mode occurs and the cause of the error is displayed in numerals. An object of this error No. display is to reduce the nonsense call of the user and aid in the analysis/repair in the service.

1) Summary of error display

Error status from system controller	Error contents	OSD display	Head unit unexpected display
0x07	Flash ROM Overwrite Error	Error-07 + detailed error code	ERROR-07
0x06	Overcurrent Error	Error-06 + detailed error code	ERROR-06
0x05	Mechanical Error	Error-05 + detailed error code	ERROR-05
0x04	No Disc	No Disc	NO□DISC□
0x03	Temperature Error	Thermal Protection	THERMAL□
0x02	Read Error	Error-02 + detailed error code	ERROR-02
0x01	Door Opening	DVD Player Door Open	DOOR□OPN
Status:09	Differences in Region No.	CANNOT BE PLAYED	ERROR-10

2) Detailed error codes

* If major classification error codes are blank, no detailed error codes are not displayed in normal use. Check them for the detailed error codes of the test mode.

Error code			Type	Contents	Details and cause
Mode (A)	Major classification	Detailed code			
		01	Electricity	System Controller Peripheral Check Error	SRAM access check error * 1
		02	Electricity	System Controller Peripheral Check Error	A0-A16 address line check error * 1
		03	Electricity	System Controller Peripheral Check Error	Program flash ROM read access check error * 1
		04	Electricity	System Controller Peripheral Check Error	GUI flash ROM read access check error * 1
		05	Electricity	System Controller Peripheral Check Error	MPEG decoder read access check error * 1
		06	Electricity	System Controller Peripheral Check Error	MY-CHIP access check error * 1
		07	Electricity	System Controller Peripheral Check Error	Track buffer access check error * 1
		08	Electricity	System Controller Peripheral Check Error	Track buffer address line check error * 1
		09	Electricity	System Controller Peripheral Check Error	CD-ROM error correction IC access check error * 1
		0A	Electricity	System Controller Peripheral Check Error	Pull up/down check error * 1
		11	Electricity	Flash ROM Error	Flash ROM ID code differs →Flash ROM contents are damaged
		12	Electricity	Flash ROM Error	Flash ROM ID code differs →Flash ROM contents are damaged
		13	Electricity	Flash ROM Error	Flash ROM silicone signature differs →Flash ROM contents are damaged. Wiring between flash ROM and system controller is disconnected
		14	Electricity	Flash ROM Error	Flash ROM size differs →Flash ROM contents are damaged. Wiring between flash ROM and system controller is disconnected

Error code			Type	Contents	Details and cause
Mode (A)	Major classification	Detailed code			
		15	Electricity	Flash ROM Error	Flash ROM checksum differs →Flash ROM contents are damaged
		16	Electricity	Flash ROM Error	Write protection is not applied to flash ROM →Flash ROM contents are damaged.Wiring between flash ROM and system controller is disconnected.
		17	Electricity	Flash ROM Error	No reset vector is written to the first address of flash ROM →Flash ROM contents are damaged
		31	Electricity	CPU Peripheral Hardware Fault	Undefined interrupt occurs in ROM →Wiring is disconnected or short-circuited on main unit
		32	Electricity	CPU Peripheral Hardware Fault	General invalid instruction occurs in ROM →Wiring is disconnected and short-circuited on main unit
		33	Electricity	CPU Peripheral Hardware Fault	Slot invalid instruction interrupt occurs in ROM →Wiring is disconnected and short-circuited on main unit
		34	Electricity	CPU Peripheral Hardware Fault	CPU address error interrupt →Wiring is disconnected and short-circuited on main unit.
		35	Electricity	CPU Peripheral Hardware Fault	Undefined interrupt occurs in flash ROM →Wiring is disconnected and short-circuited on main unit
		36	Electricity	CPU Peripheral Hardware Fault	General invalid interrupt occurs in flash ROM →Wiring is disconnected and short-circuited on main unit.
		37	Electricity	CPU Peripheral Hardware Fault	Slot invalid instruction occurs in flash ROM →Wiring is disconnected and short-circuited on main unit.
		38	Electricity	CPU Peripheral Hardware Fault	CPU address error occurs in flash ROM →Wiring is disconnected and short-circuited on main unit.
		39	Electricity	CPU Peripheral Hardware Fault	DMA address error is detected in flash ROM →Wiring is disconnected and short-circuited on main unit.
ERROR_CODE_EJECT	Error2 or 5	80	Mechanism	Address Not Found	Mechanism controller error code F2 XXXX
ERROR_CODE_HEAT	Error3	81	Electricity	Heat Error	Pickup section is excessively heated.
ERROR_CODE_MECHA	Error5	82	Mechanism	Eject Error	MAG switch disconnection wait timeout Elevation timeout at ejection
ERROR_CODE_MECHA	Error5	83	Mechanism	Tray Existence/Nonexistence Error	Tray withdrawal or insertion operation timeout Tray is hooked at tray withdrawal
ERROR_CODE_MECHA	Error5	84	Mechanism	Elevation Error	Timeout at elevation operation
ERROR_CODE_READ	Error2	90	Electricity	Focus Search Error	Focus is disabled →Disc upside down, scratches, dirt and vibration are strong
ERROR_CODE_READ	Error5	91	Electricity	Spindle Lock Error	Because spindle lock is not done, subcode cannot be read →Spindle is faulty and disc scratches, dirt and vibration are strong.
ERROR_CODE_READ	Error2	92	Electricity	Carriage Home Error	Movement is disabled to inner circumference and movement is disabled from inner circumference →Home SW is faulty and carriage movement is faulty

Error code			Type	Contents	Details and cause
Mode (A)	Major classification	Detailed code			
ERROR_CODE_READ	Error2	93		FOK Error	Mechanism error code F8 0013
ERROR_CODE_READ	Error2	94	Electricity	ID/SUBCODE Error	Subcode cannot be read →Spindle is faulty and disc scratches, dirt and vibration are strong.
ERROR_CODE_READ	Error2	95	Mechanism	Spindle High Revolution Error	Mechanism error code F8 0015
ERROR_CODE_READ	Error2	96	Mechanism	Spindle Low Revolution Error	Mechanism error code F8 0016
ERROR_CODE_VDNG	Error6	97	Electricity	Mechanism Unit Reference Voltage Error	Elevation positioning is disabled →Power fault and control volume resistor is faulty.
		98	Electricity	TOC Error	Mechanism error code FA XXXX
		B0	Electricity	Mechanism controller Communication Error	Communication is disabled between mechanism controller and system controller. →Wiring is disconnected and short-circuited on main unit.
		B1	Electricity	Mechanism controller Communication Timeout	Mechanism controller does not respond. →Wiring is disconnected and short-circuited on main unit.
		B2	Electricity	Unexpected Error in Mechanism Controller Communication	
		B3	Electricity	Communication Error between BUS Microcomputer and System Controller	No communication is done from BUS microcomputer. →Wiring between main unit and extension unit is disconnected and short-circuited.
CANNOT_BE_PLAYED	←	A0	Electricity	Region Code Error	DVD disc having region code which cannot be played back
ERROR_CODE_READ		A1	Electricity	Digital Copy Guard Error	DVD disc violated against digital copy guard
ERROR_CODE_READ		A2	Electricity	DVD File System Read Error	DVD data read error →Defective carriage/tracking and disc scratches
ERROR_CODE_READ		A3	Electricity	DVD Search Timeout Error	Target address could not be reached. →Defective carriage/tracking and disc scratches
ERROR_CODE_READ		A4	Electricity	CD-ROM Read Error	Disc data cannot be read →Spindle is faulty and disc scratches, dirt and vibration are strong.
		C0	Electricity	System Controller Communication Error	Communication is disabled between system controller and BUS microcomputer. →Wiring between main unit and extension unit is disconnected and short-circuited.
Thermal Protection		C1	Electricity	Low Temperature Detection	Equipment temperature is lower than operable ... temperature.
ERROR_CODE_VDNG	Error-06	C4	Electricity	Power Supply Fault	Higher or lower than specified voltage in 9 V-system power supply, otherwise no power is issued. →Defective switching transistor and power supply fault

Error code			Type	Contents	Details and cause
Mode (A)	Major classification	Detailed code			
ERROR_CODE_VDNG	Error-06	C5	Electricity	Power Supply Fault	Higher or lower than specified voltage in 5 V-system power supply, otherwise no power is issued. →Defective switching transistor and power supply fault
ERROR_CODE_VDNG	Error-06	C6	Electricity	Power Supply Fault	Higher or lower than specified voltage in 2.5 V-system power supply, otherwise no power is issued. →Defective switching transistor and power supply fault
ERROR_CODE_VDNG	Error-06	C7	Electricity	Power Supply Fault	Higher or lower than specified voltage, otherwise no power is issued. →Defective switching transistor and power supply fault
OPEN	←		Mechanism	Door Opens.	Because door opens, this equipment mechanism stops
NO-DISC	←		Mechanism	Empty Magazine Insertion	There is no disc.

* 1: This code is detected only when the system controller peripheral test was executed in the test mode.

● Debug Mode

An object of this debug mode is to aid in the analysis/repair in the service by displaying the version display, error rate and error history of the microcomputer when this equipment was stopped due to a fault.

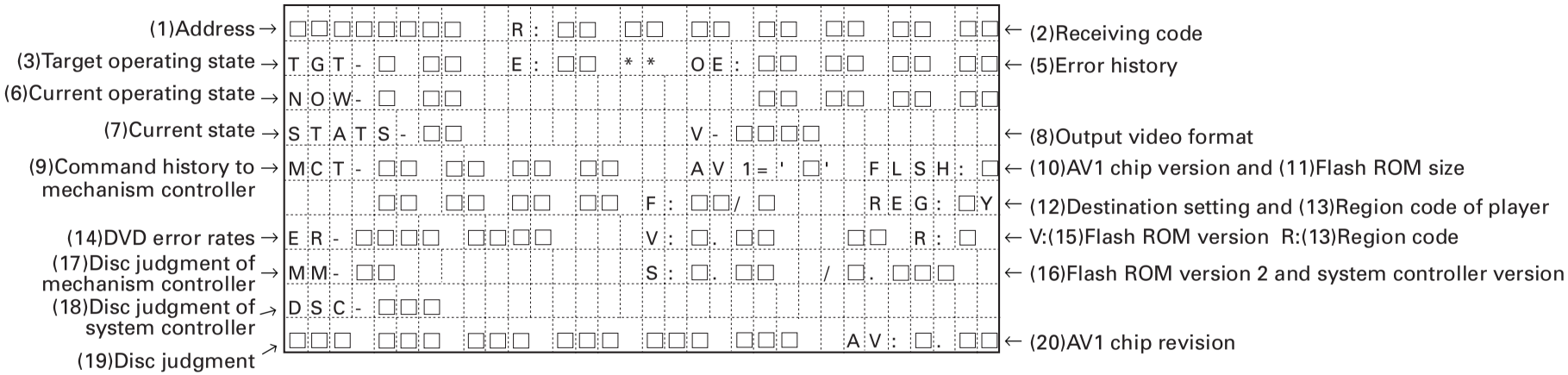
• How to enter the debug mode

After having pressed the key 1→5→4→VICS→4 in this order by remote controller (GGP1011) for debug mode, use DVD changer remote controller to press the key CLR to key 0 in this order.

• Debug mode reset

Key RESET ON.

• Screen configuration



● Explanation of Display Contents by Item

(1) Address display

This item displays the address which is being traced currently.

DVD	******* ID display (8 hexadecimal digits)
CD/VCD	0000**** A-TIME (minutes and seconds)

(2) Receiving code — R: ** ** ** ** ** ** ** **

This item displays the command transferred from the BUS microcomputer to the system controller.

(3) Target operating state — TGT: * **

This item displays the number of the tray to which playback operation is being attempted and the internal state of the player.

Number of tray	1-6	
Internal state of player	01	Disc changing
	02	Waiting for power-off
	03	Stopping
	04	Disc being detected
	05	During setup
	06	TOC being read
	07	During playback
	08	Searching

(4) Error number — E : ** **

This item displays the current error number.

(5) Error history — OE : ** ** ** **
** ** ** **

This item displays the past error history.

(6) Current operating state — NOW : * **

This item displays the number of the current tray and the internal state of the player.

Number of tray	1-6	
Internal state of player	01	Disc changing
	02	Waiting for power-off
	03	Stopping
	04	Disc being detected
	05	During setup
	06	TOC being read
	07	During playback
	08	Searching

(7) Status display — STATS- **

This item displays the internal state of the current player.

(8) Output video formats — V-****

NTSC (National Television System Committee) method	[NTSC]
PAL (Programmable Array Logic) method	[PAL]
Automatic setting	[AUTO]

(9) Command history to mechanism controller — MCT : ** ** ** ** **
** ** ** ** **

This item displays past commands from left to right and from up to down.

Commands

01	Communication Start
02	Stop
03	Seek
04	Read
05	Pause
06	Fast Forward
07	Reverse
08	Disc Replacement
09	Get Address
0A	Get Power Startup State
0B	Get Disc Information

	0C	Get Final Mechanism Controller Error Status
	0D	Communication Reset
	0E	Test Mode ON
	10	Get Control Data
	11	Get TOC Information (CD Only)
	12	Get Magazine Information
	14	Get CD Address
	15	EJECT
	16	Power-Off Processing
	17	EJECT Interrupt

(10) AV1 chip revision — AV1 = '*'
This item displays a revision of the AV1 chip.

(11) Flash ROM size — FLSH : *
This item displays a size of flash ROM. "MByte"

(12) Destination setting — F : *** / *

**:	J	J
	UC	UC
	EW	EW
	EC	ES1(Asia)
	ED	ES2(Australia)
/ *	J	OSD display : Japanese
	E	OSD display : English

(13) Region setting — REG : *Y
This item displays the region setting of the player. — R : *

(14) Error rate display — ER- **** ****
This item displays a DVD error rate.

(15) Flash ROM version 1 — V : *. *** *
This item displays a version of a high-level module in flash ROM.

(16) Flash ROM version 2 and system controller version display
These items display a version of a low-level module in flash ROM. — S : *. **
The version of the ROM incorporated in the system controller. — *. ***

(17) Disc judgment — MM- : ***
Do the indication of the kind of disc which the mechanism controller judged.

DSC	The kind of DISC is unjudged.
DOK	For DVD
CDA	For CD-DA
CDR	For CD-ROM
VC1	For VCD(Ver1.1)
VC2	For VCD(Ver2.0)

(18) Disc judgment — DSC : ***
Do the indication of the kind of disc which the system controller judged.

DVD	For DVD
CD	For CD
VCD	For VCD

(19) The kind of disc in the magazine is distinguished.

DSC	The kind of disc is unjudged.
NON	Non disc
DOK	For DVD
CDA	For CD-DA
CDR	For CD-ROM
VC1	For VCD(Ver1.1)
VC2	For VCD(Ver2.0)

(18) AV1 chip version — AV1:*.***

7.1.2 DISASSEMBLY

● **Removing the Upper Case (not shown)**

1. Remove the eight screws.
2. Remove the upper case.

● **Removing the DVD/CD Mechanism Unit (Fig.1)**

2 Remove the two screws.

3 Remove the four dampers.

4 Remove the two springs.

Disconnect the connector and then remove the DVD/CD mechanism unit.

● **Removing the Grille Assy (Fig.1)**

Disconnect the connector

1 Remove the four screws and then Remove the Grille Assy.

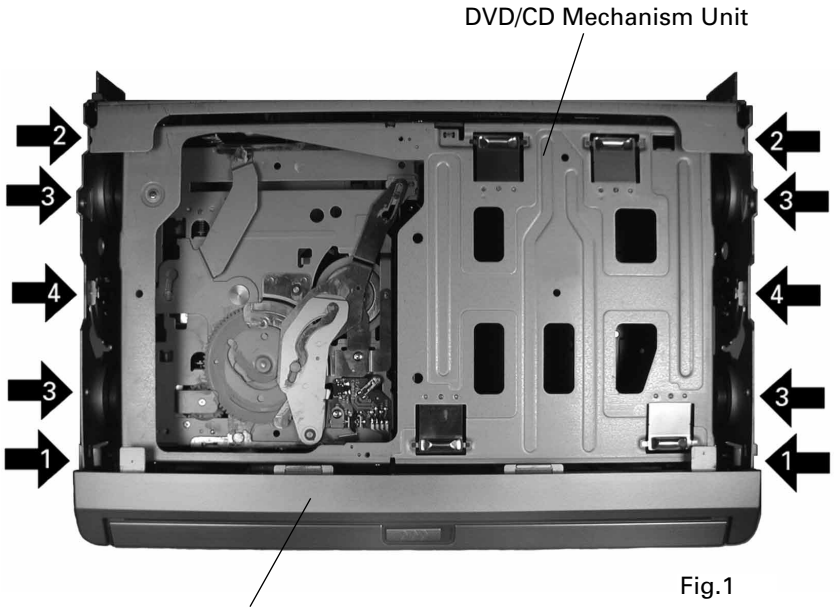


Fig.1

● **Removing the Extension Unit (Fig.2)**

1 Remove the screw.

2 Remove the five screws.

3 Remove the three screws and then remove the stopper.

Disconnect the connector and then remove the extension unit.

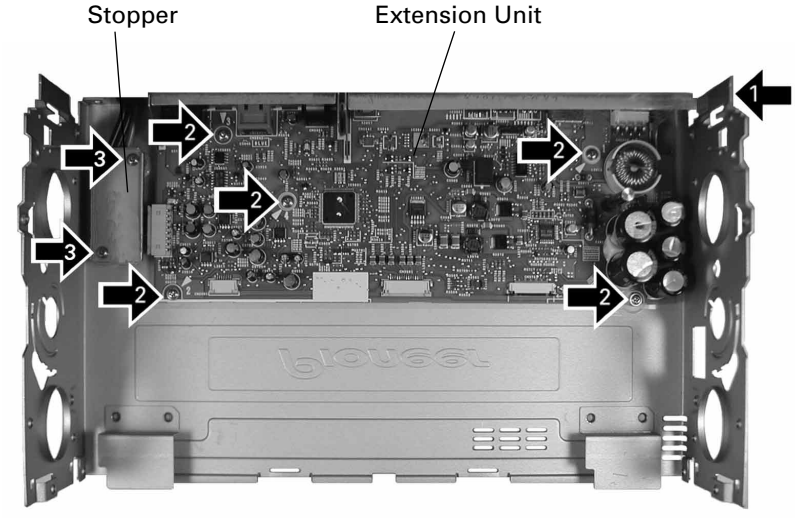
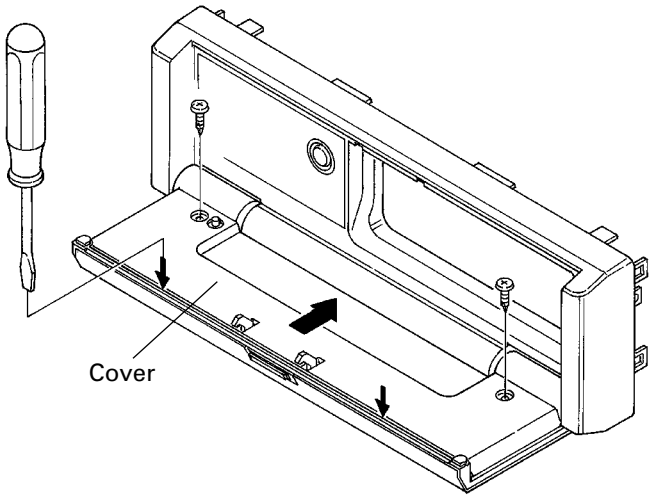


Fig.2

● Removing the Cover

1. Remove the two screws.
2. Insert minus (standard) screwdrivers in the arrow view section to remove the claw and the cover.

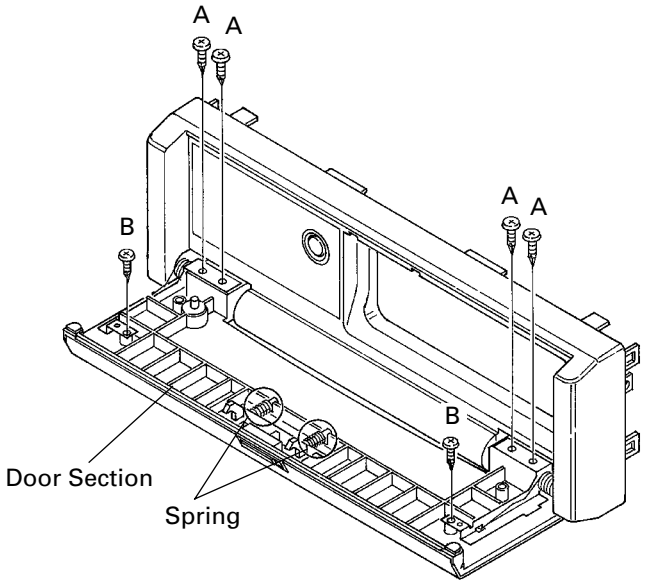


● Removing the Door Section

1. Remove the four screws A, two screws B and then remove the door section.

● Grease Coating

When replacing the springs by new ones, be sure to apply grease (ZLB-PG641).

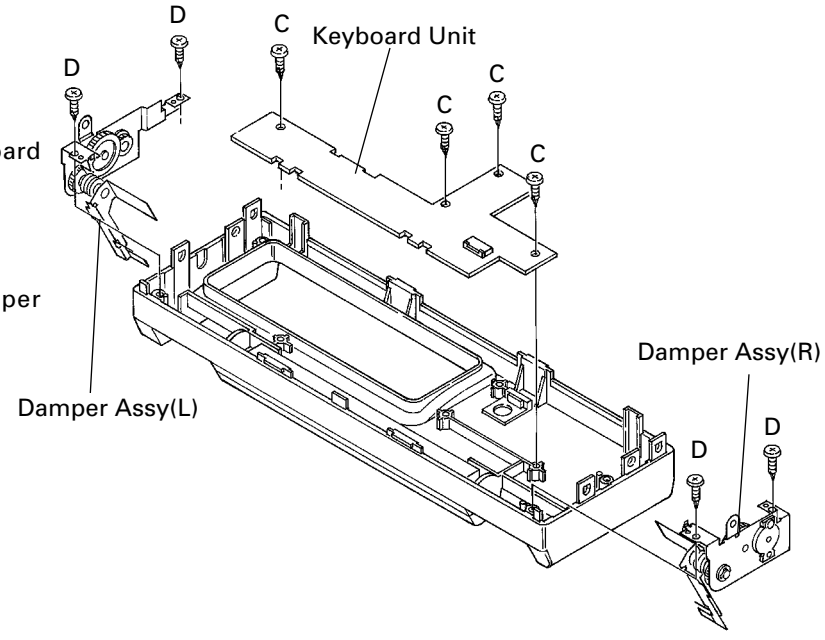


● Removeing the Keyboard Unit

1. Remove the four screws C and then the keyboard unit.

● Removeing the Damper Assy(L), (R)

1. Remove the four screws D and then the damper assy(L), (R).



● **Removing the Damper Unit**

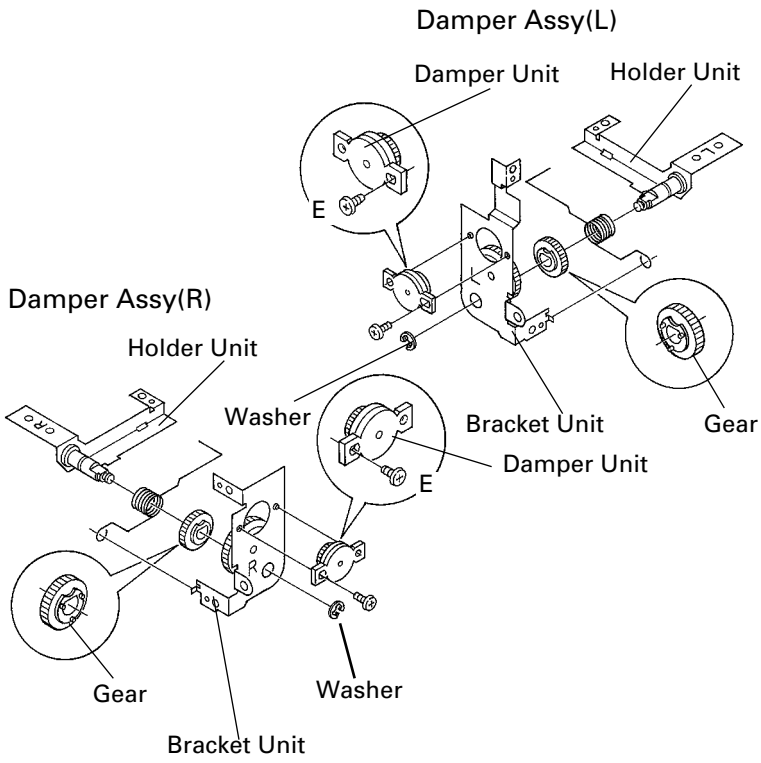
1. Remove the screw E and then the damper unit.

● **Removing the Holder Unit**

1. Remove the washer and then the holder unit.

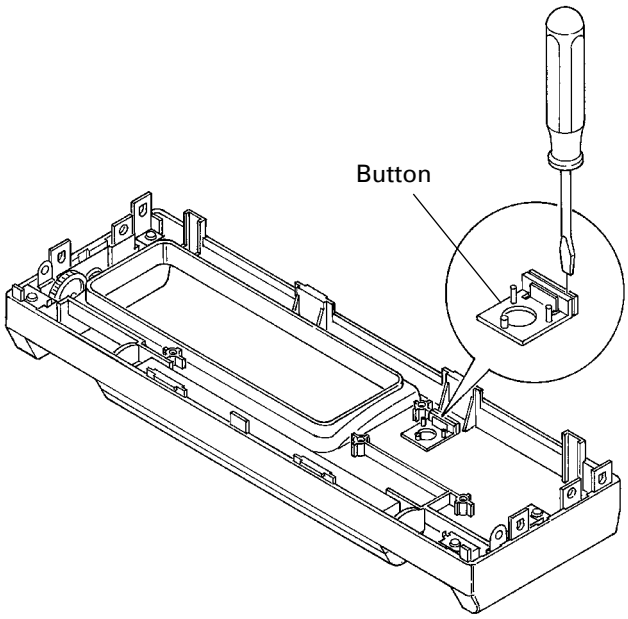
● **Precautions on the assembly of the damper Assy**

1. The damper unit has long and round holes. Engage the round hole with the boss of the holder unit and tighten the long hole with screw E.
2. The gear has its orientation. Mount the gear which has three protrusions on the bracket unit side.



● **Removing the Button**

1. Insert minus (standard) screwdrivers to the arrow view section to remove the stopper and the button.



Precautions when making servicing works

1) Since the upper surface of the arrowed magazine slot in the DVD/CD mechanism unit can be deformed comparatively easily, do not hold this section when making servicing work. (Refer to Fig. 3.)

2) The stage mechanism projects downward beyond the low end of the chassis when it is reset. Consequently, the stage mechanism may be damaged to cause functional failures when handled carelessly. When placing the mechanism, pay great attention not to damage the gear and the pickup unit.

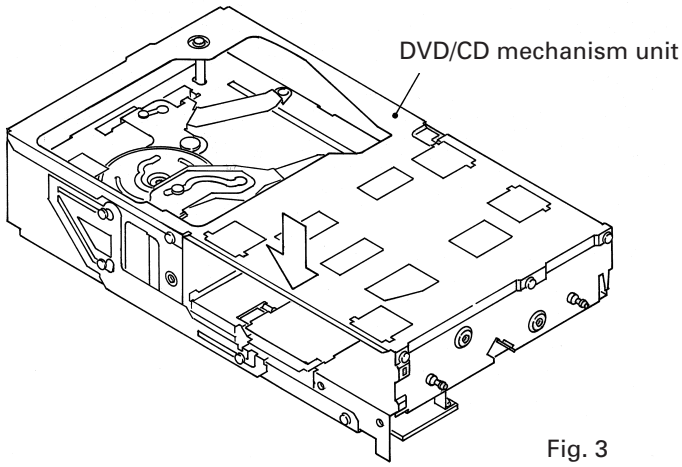


Fig. 3

● **Removing the pickup unit**

1. Set the short switch of the pickup unit to the SHORT side.
2. Remove the flexible PCB from the connector.
3. Unscrew one screw A to remove the grease cover.
4. Unscrew one screw B to remove the plate spring A.
5. Unscrew one screw C to remove the plate spring B.
6. Remove the pickup unit together with the main shaft.
7. Remove the cushion from one side only to pull out the main shaft. AT this time, pay attention not to lose the removed cushion.

● **Removing the PCB unit(B)**

1. Remove soldering from the linear position sensor (VR301).
2. Unscrew the two screws D to remove the PCB unit(B).

● **Precautions when installing the linear position sensor**

1. If the linear position sensor (VR301) is not being properly inserted into the U-groove provided in the detection lever, elevation movement failures can occur.

When installing the linear position sensor to the DVD/CD mechanism unit, be sure to insert it into the U-groove provided in the detection lever securely.

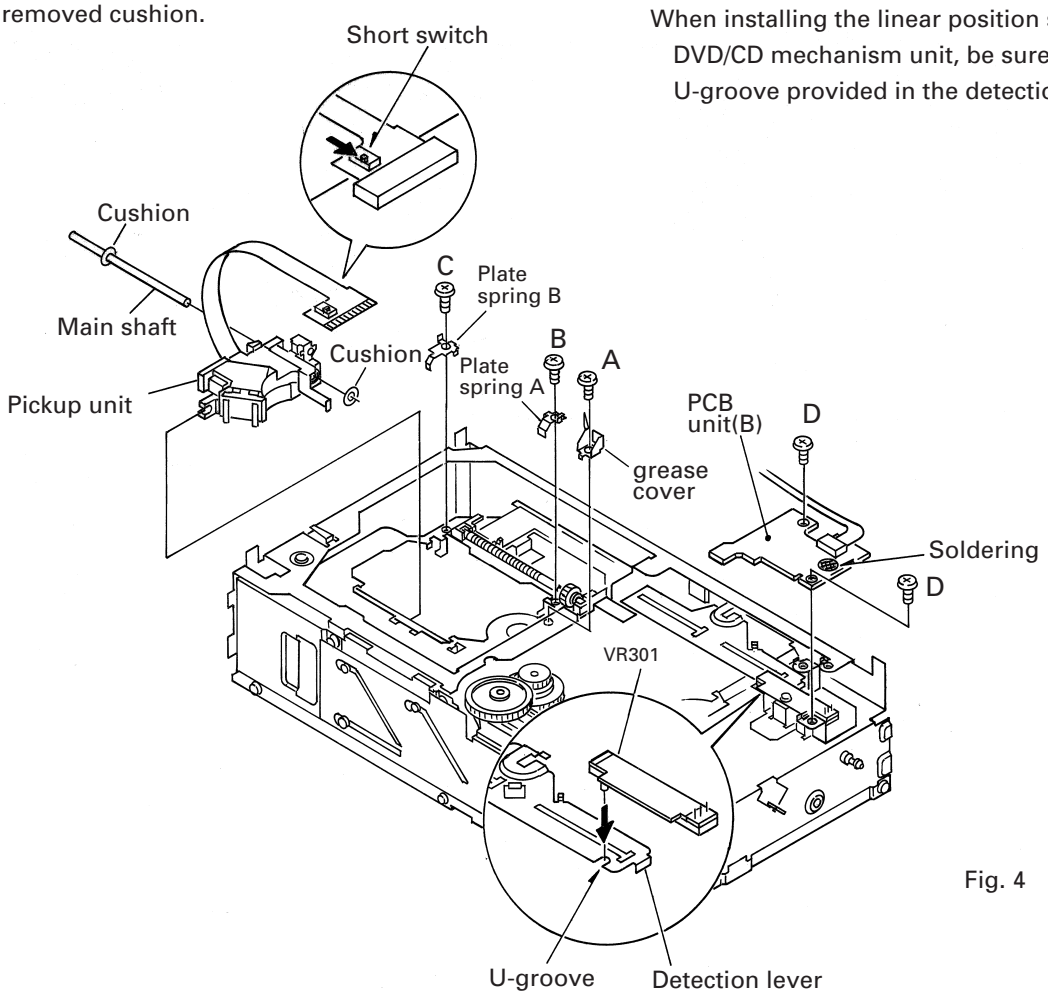
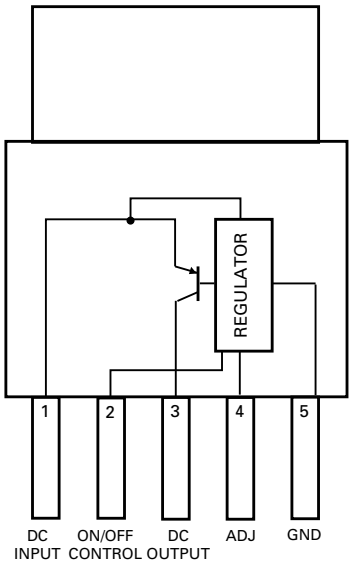


Fig. 4

7.2.1 IC

PQ20VZ11	MC33202D	MB86373BPFV-G-BI
TC7SHU04FU	NJM3414AV	PD3411A
PQ30RV31	TC551001CSTI-85L	TC74LCX245FT
PE5111A	TC74VHCU04FT	MSM514800CSL60JS
BA08T	TA1254AF	MSM56V16160DP-10TS
TC74VHC238FT	TC55257DFTI-85L	TC74VHC139FT
PD5511A	PE8001A1	PD4995A
TC9461F	TC74VHCT08AFT	HA178L05UA
LC89513KP	PD6335A	BA9706K
TC7WU04FU	PD6315A	
TC4053BFT	MAX662AESA	
HD74HC245T	CY2292SI-1A0	

PQ20VZ11



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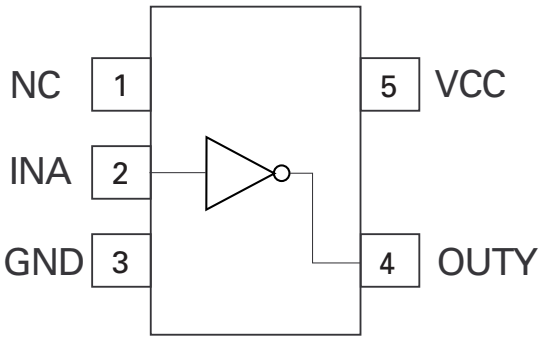

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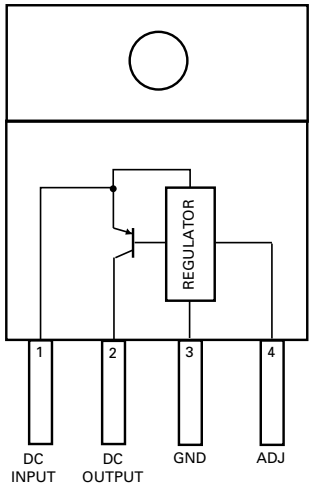
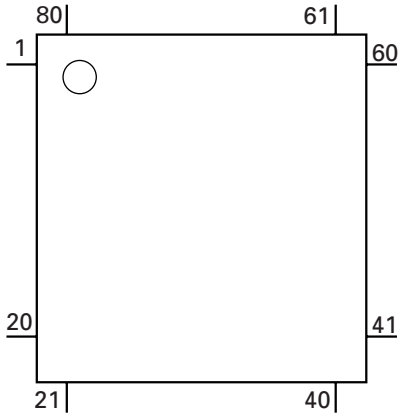


● **Pin Functions (PE5111A)**

Pin No.	Pin Name	I/O	Format	Function and Operation
1	SENS25	I		VD short sense 2.5V
2	SENS5	I		VD short sense 5V
3	NC			Open
4	AVSS			GND
5	XSRSENS	O	C	SWREG information output to mechanism controller (H : Off, L : On)
6	XADEN	O	C	AVREF0 control output
7	AVREF1			D/A converter reference voltage
8	SWREG	O	C	System power supply voltage
9	XILL			Open
10	VADCONT	O	C	Servo, liquid tilt power supply, audio power supply control output
11	SI	I		System controller communication data input
12	SO	O	C	System controller communication data output
13	SCK	O	C	System controller communication clock output
14	NC			Open
15	XRDY	O	C	Communication request to system controller (L : Communication permission)
16	XRES	O	C	System reset output (L : Reset)
17	XMRES	O	C	Mechanism controller reset output
18-20	NC			Open
21	POWLED	O	C	Power indicator LED driver output
22	XIPMUTE	O	C	Mute
23	MMOTHER	O	C	Audio select output
24-27	NC			Open
28	XRMUTE	O	C	Mute output for rear RCA
29	NC			Open
30	OPTSW	I		OPT output connector connect information input (H : Connected)
31	PARKING	I		Parking sense input (H : Parking)
32	IPORAD	I		Operating mode SW input
33	VSS			GND
34	DEST2	I		Destination set input
35	VMUTE	O	C	Front video mute output (H : Mute on)
36-43	NC			Open
44	SWREMV	O	C	Remote controller optical receiving unit power supply SW
45	XPEEMUTE	O	C	Mute output for PEE output (L : Mute on)
46	PEE	O	C	PEE output
47	LT1	I		Communication response from system controller (L : Communication permission)
48-54	NC			Open
55	IEPW	O	C	IE-BUS driver STBY control output
56	IEDO	O	C	Data output for IE-BUS driver
57	IEDI	I		Data input for IE-BUS driver
58,59	NC			Open
60	XRST	I		System reset input
61	RMIN	I		Remote control input
62	XASEN	I		ACC on/off state detection input (7, 7.5 V sense)
63	XMBSEN	I		Backup state detection input (8.5 V sense)
64	XBSEN	I		Backup state detection input (7, 7.5 V sense)
65	XCLOSSEN	I		Door detection (L : Door close)
66	XEJ	I		Eject SW detection (L : Eject key)
67	XMAG	I		Magazine insert detection (L : Magazine)
68	VDD			Positive power supply
69	X2			System clock oscillation
70	X1	I		System clock oscillation input
71	IC			Connect to GND
72	NC			Open
73	TESTIN	I		Chip test mode input
74	AVDD			A/D converter analog power supply
75	AVREF0			A/D converter reference voltage

Pin No.	Pin Name	I/O	Format	Function and Operation
76	STEMP	I		System controller section high-temperature sense A/D input
77	BTEMP	I		BUS microcomputer section high-temperature sense A/D input
78	LOTEMP	I		Low-temperature sense A/D input
79	DEST	I		Destination set A/D input
80	SENS9	I		VD short sense 9V group

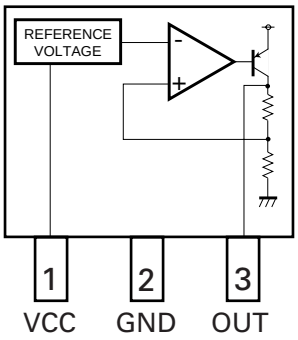
*PE5111A



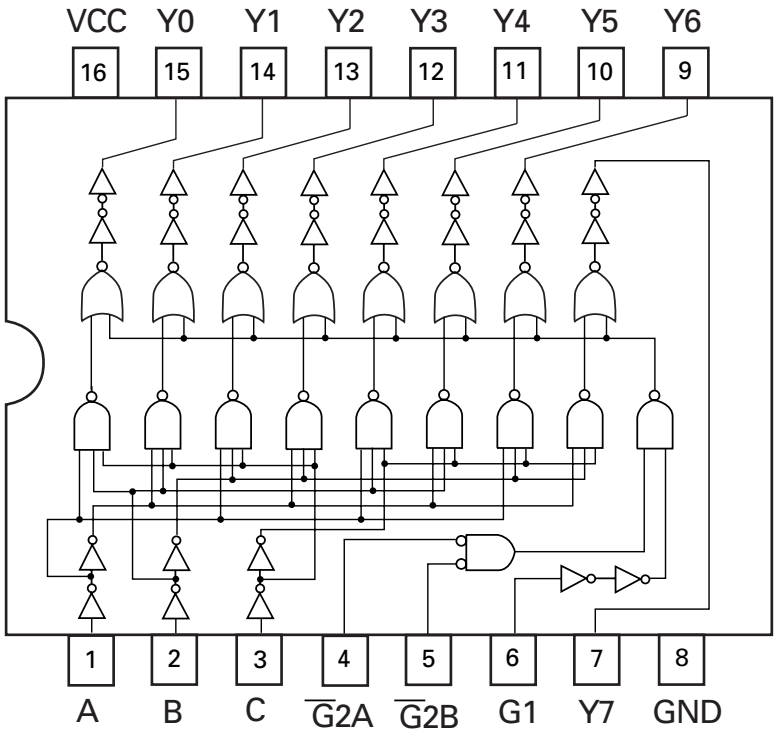
Format	Meaning
C	C MOS

IC's marked by* are MOS type.
Be careful in handling them because they are very liable to be damaged by electrostatic induction.

*BA08T



*TC74VHC238FT

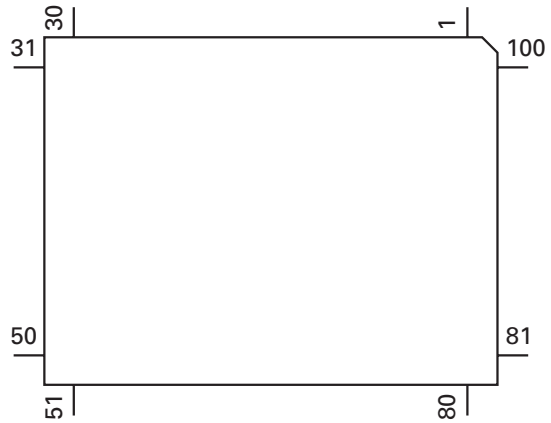


● **Pin Functions (PD5511A)**

Pin No.	Pin Name	I/O	Format	Function and Operation
1	RFSCD	O	C	TA1254AF serial data
2	RFSCB			TA1254AF bit clock
3	LCDBIAS			Liquid crystal temperature augment output
4	LCDTLT			Liquid crystal tilt augmenter control output
5	LDCONT	O	C	LD ON/OFF control output
6	PSC	O	C	VRCK deviding ON/OFF
7	FG	I		FG pulse input
8	BYTE	I		Connect to VCC
9	CNVSS			Connect to VSS
10	DSCSIZ	O	C	8cm/12cm select
11	VMCONT	O	C	9V regulator output voltage control output
12	XMRES	I		Reset input
13	XOUT	O		Main clock oscillation terminal
14	VSS			GND
15	XIN	I		Main clock oscillation terminal
16	VCC			Power supply terminal
17	NC			Not used
18	XMAG	I		Magazine detection switch input
19	NC			Not used
20	XIRQ	I		Interruption input
21	OEIC	O	C	OEIC gain select output
22	FEB			FE balance control output
23	FLGA	I		TC9461 internal signal monitor input
24	FLGB	I		TC9461 internal signal monitor input
25	FLGC	I		TC9461 internal signal monitor input
26	LCDCLK			Liquid tilt driver clock output
27	FLGD	I		TC9461 internal signal monitor input
28	TXCLK			CD-TEXT clock output
29, 30	NC			Not used
31	EEPDO	O	C	EEPROM data output
32	EEPDI	I		EEPROM data input
33	EEPSK	O	C	EEPROM clock output
34	EEPCS	O	C	EEPROM chip select
35	TEST_TX	O	C	RS232C communication data output
36	TEST_RX	I		RS232C communication data input
37	HSO	I		Play speed mode flag
38	UHSO	I		Play speed mode flag
39	XREADY	I		Wait signal input
40	ASTB	O	C	Address latch output
41	XHOLD	I		Hold signal input
42, 43	NC			Not used
44	XRD	O	C	Read signal output
45	NC			Not used
46	XWR	O	C	Write signal input
47	NC			Not used
48	LCDRS	O	C	LCD register select
49	XCS	O	C	Chip select signal output
50	CD/DVD	O	C	CD/DVD select output
51-54	LCDDT3-0	O	C	LCD display data
55	LCDEN	O	C	LCD enable
56	XCCE	O	C	Servo processor i/f
57	BUCK	O	C	Servo processor i/f
58-61	BUS3-0	I/O	C	Servo processor i/f
62	VCC			Power supply terminal
64	VSS			GND
65-72	AD7-0	I/O	C	Address/data input/output
73	TXDQSY	I		CD-TEXT sub-code synchronous input
74	BSENS	I		Backup sense input
75	SRSENS	I		DDC sense input

Pin No.	Pin Name	I/O	Format	Function and Operation
76	OPEN			Open
77	SEEKT	O	C	SEEK time monitor output
78	I13	O	C	Motor driver control output
79	I2	O	C	Motor driver control output
80	I4	O	C	Motor driver control output
81	HOME	I		Home position detection output
82	VDCONT	O	C	VD control output
83	SPCONT	O	C	Spindle control output
84	DCONT	O	C	Driver power ON output
85	XSYSRST	O	C	Reset output
86	ADENA	O		Reference voltage supply output for A/D
87	DSP	I		Disk detection timing input
88	XTESTIN	I		Unit check start input
89,90	KEYIN2,1			Key sense
91	VDSENS	I		VD short detection input
92	DISK			Disk/No disk sense, 8/12cm detection
93	ELVPVO	I		Slide voltage input for ELV detection
94	ELVREF	I		ELV reference voltage input
95	TRP	I		Tray position input
96	AVSS			Analog ground
97	TEMP	I		Temperature detection input
98	VREF	I		Reference voltage input
99	AVCC			Analog power supply
100	RFSLC	O	C	TA1254AF data latch

*PD5511A



Format	Meaning
C	C MOS

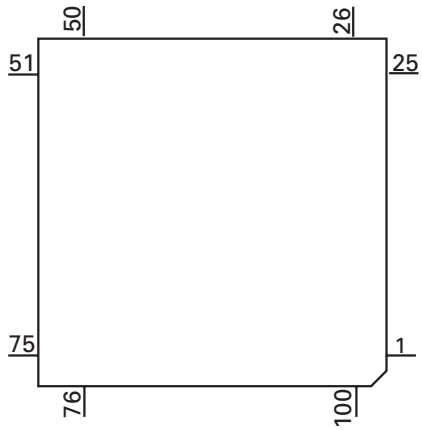
● **Pin Functions (TC9461F)**

Pin No.	Pin Name	I/O	Function and Operation
1	VSS		GND
2	BCK	O	Bit clock (1.4122MHz) output
3	AOUT	O	Audio data output terminal
4	DOUT	O	Digital out output terminal
5	MBOV	O	Buffer memory over signal output terminal
6	IPF	O	Augment flag output terminal
7	SBOK	O	CRCC decision result output terminal of subcode Q data
8	CLCK	I/O	Clock output/input terminal for subcode P-W data reading
9	VDD		Positive power supply terminal
10	VSS		GND
11	DATA	O	Subcode P-W data output terminal
12	SFSY	O	Play group frame synchronous signal output terminal
13	SBSY	O	Subcode block synchronous output signal
14	SPCK	O	Clock output terminal for processor status signal reading
15	SPDA	O	Processor status signal output terminal
16	COFS	O	Correct group frame clock (7.35 kHz) output terminal
17	MONIT	O	LSI internal signal monitor terminal
18	VDD		Positive power supply terminal
19	TESIO0	I	Test input/output terminal
20	P2VREF		2VREF terminal for PLL group only
21	SPDO	O	VCO center frequency shift terminal
22	PDOS	O	Phase error signal output terminal of EFM signal and PLCK signal
23	PDO	O	Phase error signal output terminal of EFM signal and PLCK signal
24	TMAXS	O	TMAX detection result output terminal
25	TMAX	O	TMAX detection result output terminal
26	LPFN	I	Inverted input terminal of low-pass filter amplifier
27	LPFO	O	Output terminal of low-pass filter amplifier
28	PVREF		VREF terminal for PLL group only
29	VCOREF	I	VCO center frequency reference level terminal
30	VCOF	O	Filter terminal for VCO
31	AVSS		Analog group ground
32	SLCO	O	Output terminal for data slice level generator DAC
33	RFI	I	RF signal input terminal
34	AVDD		Analog group power supply terminal
35	RFCT	I	RFRP signal center level input terminal
36	RFZI	I	Input terminal for RFRP zero cross
37	RFRP	I	RF ripple signal input terminal
38	FEI	I	Focus error signal input terminal
39	SBAD	I	Sub beam summing signal input terminal
40	TSIN	I	Test input terminal
41	TEI	I	Tracking error input terminal
42	TEZI	I	Input terminal for tracking error zero cross
43	FOO	O	Focus equalizer output terminal
44	TRO	O	Tracking equalizer output terminal
45	VREF		Analog reference power supply terminal
46	RFGC	O	RF amplitude adjustment control signal output terminal
47	TEBC	O	Tracking balance control signal output terminal
48	FMO	O	Feed equalizer output terminal
49	FVO	O	Speed error or Feed search EQ output terminal
50	DMO	O	Disk equalizer output terminal
51	2VREF		Analog reference power supply terminal
52	SEL	O	APC circuit ON/OFF signal output terminal
53	FLGA	O	External flag output terminal for internal signal monitor
54	FLGB	O	External flag output terminal for internal signal monitor
55	FLGC	O	External flag output terminal for internal signal monitor
56	FLGD	O	External flag output terminal for internal signal monitor
57	VDD		Digital power supply terminal
58	VSS		Digital GND
59-62	IO0-3	I/O	General purpose I/O port

Pin No.	Pin Name	I/O	Function and Operation
63	/DMOUT	I	A terminal for setting the mode to output binary PWM for a feed equalizer from I/O terminals 0 and 1, and binary PWM for disc equalizer from I/O terminal 2 and 3
64	/CKSE	I	X'tal select terminal
65	/DACT	I	Test terminal
66	TESIN	I	Test input terminal
67	TESIO1	I	Test input/output terminal
68	VSS		Digital GND
69	PXI	I	DSP group clock oscillation circuit input terminal
70	PXO	O	DSP group clock oscillation circuit input terminal
71	VDD		Digital power supply terminal
72	XVSS		Ground terminal for system clock oscillation circuit
73	XI	I	System clock oscillation circuit input terminal
74	XO	O	System clock oscillation circuit output terminal
75	XVDD		Power supply terminal for system clock oscillation circuit
76	DVDD		D/A converter power supply terminal
77	RO	O	R channel data positive rotation output terminal
78	DVSS		D/A converter analog ground terminal
79	DVR		D/A converter reference voltage terminal
80	LO	O	L channel data positive rotation output terminal
81	DVDD		D/A converter power supply terminal
82-84	TEST1-3	I	Test terminal
85-88	BUS0-3	I/O	Data input/output terminal for microcomputer interface
89	VDD		Digital power supply terminal
90	VSS		Digital GND
91	BUCK	I	Clock input terminal for microcomputer interface
92	/CCE	I	Chip enable signal input terminal for microcomputer interface
93	TEST4	I	Test terminal
94	/TSMOD	I	Local test mode select terminal
95	/RST	I	Reset signal input terminal
96	TEST0	I	Test terminal
97	/HSO	O	Play speed mode flag output terminal
98	/UHSO	O	
99	EMPH	O	Emphasis flag output terminal of subcode Q data
100	LRCK	O	Channel clock (44.1 kHz) output terminal

/UHSO	/HSO	Play speed
H	H	Once speed play
H	L	Twice speed play
L	H	Four times speed play
L	L	Eight times speed play

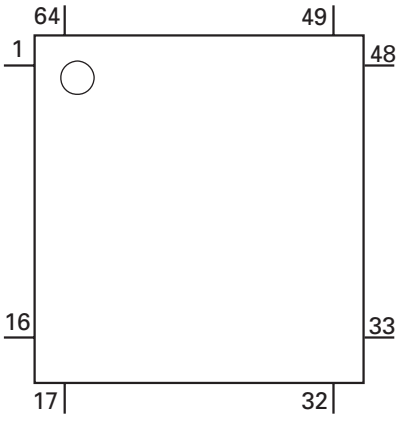
*TC9461F



● **Pin Functions (LC89513KP)**

Pin No.	Pin Name	I/O	Function and Operation
1	VSS		GND
2-8	RA0-6	O	Address signal output
9	VSS		GND
10-16	RA7-13	O	Address signal output
17	VSS		GND
18	$\overline{\text{RA13}}$	O	Address signal output
19	$\overline{\text{RCS}}$	O	Chip select
20	$\overline{\text{RWE}}$	O	Drata write signal
21	$\overline{\text{ROE}}$	O	Data read signal
22	$\overline{\text{RESET}}$	I	Reset input
23	XTALCK	I	Oscillator input
24	VDD		Power supply
25	C2PO	I	C2 pointer input
26	BCK	I	Serial data clock input
27	SDATA	O	Serial data output
28	LRCK	I/O	44.1kHz strobe input
29	RS	I	Register select signal input
30	$\overline{\text{RD}}$	I	Data read signal input
31	$\overline{\text{WR}}$	I	Data write signal input
32	$\overline{\text{CS}}$	I	Chip select
33	VSS		GND
34-41	D0-7		CPU data signal
42	PSRAM	I	SRAM select
43	$\overline{\text{INT}}$	O	Interrupt request signal output
44	DRQ	O	DRQ signal output
45-48	HD0-3	O	Data output
49	VSS		GND
50-53	HD4-7	O	Data output
54	$\overline{\text{HRD}}$	I	Data reading request input
55	$\overline{\text{DTEN}}$	O	Data enable output
56	VDD		Power supply
57-64	IO0-7		Data buffer RAM data signal

*LC89513KP



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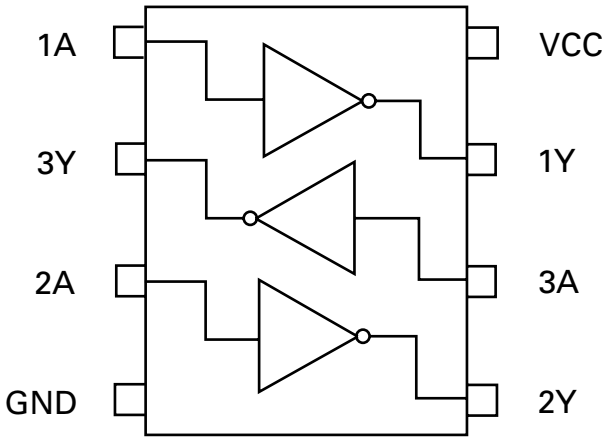
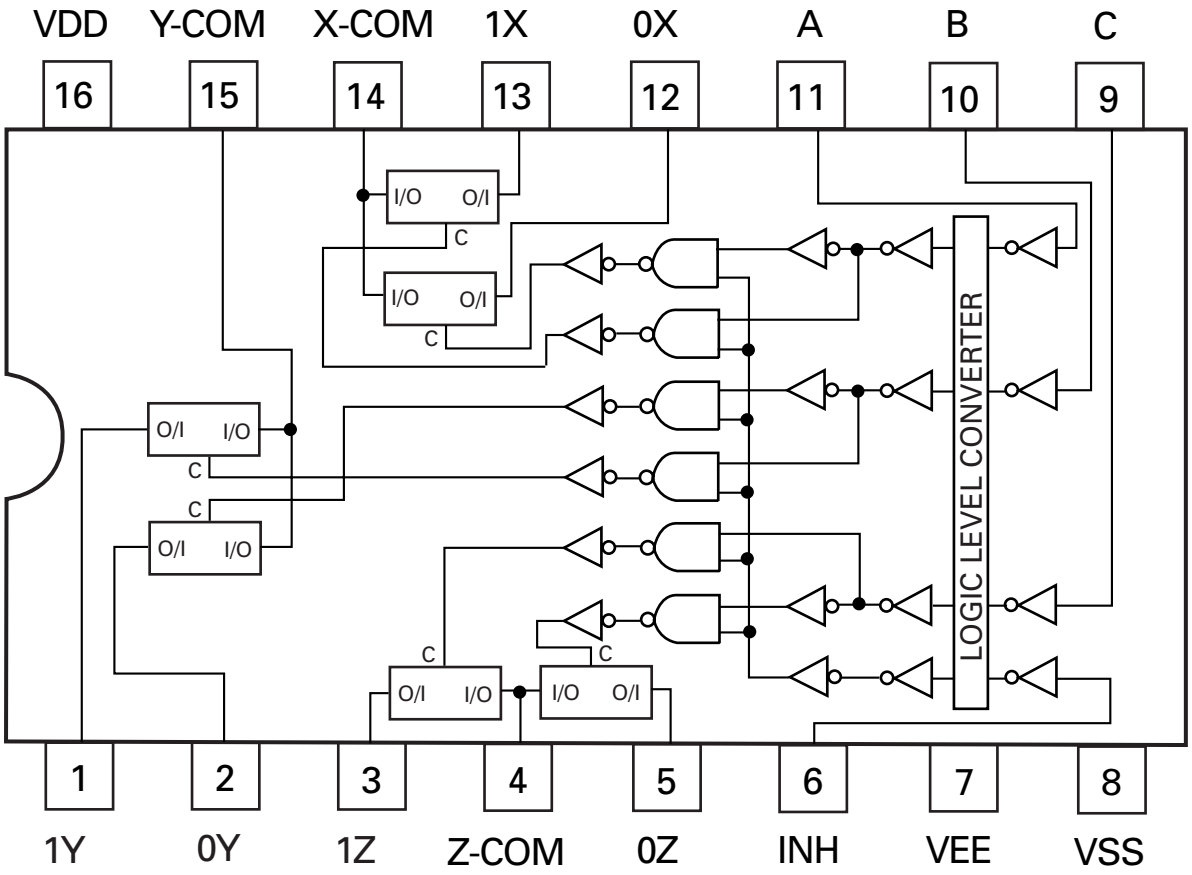
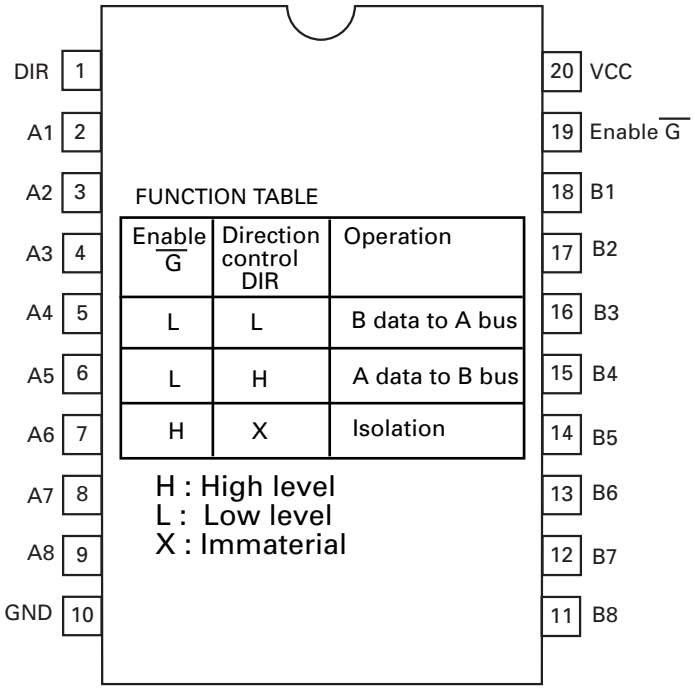


*TC4053BFT



*HD74HC245T

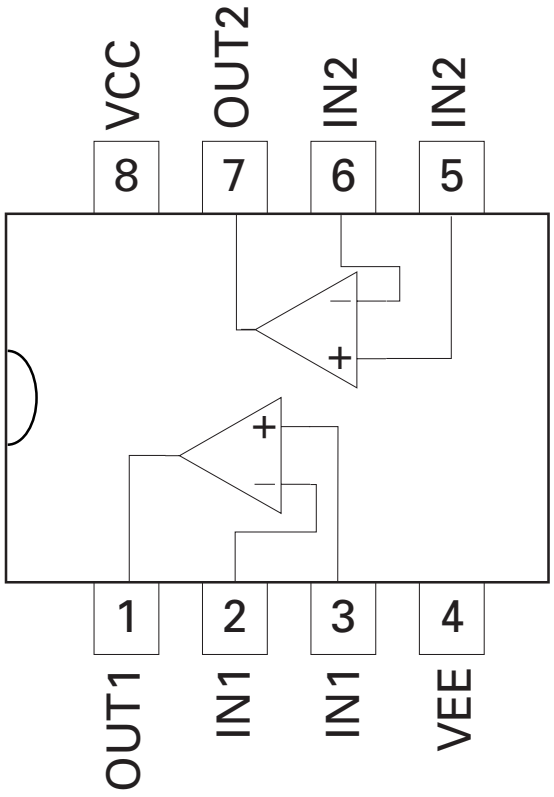


FUNCTION TABLE

Enable $\overline{G}$	Direction control DIR	Operation
L	L	B data to A bus
L	H	A data to B bus
H	X	Isolation

H : High level
L : Low level
X : Immaterial

MC33202D



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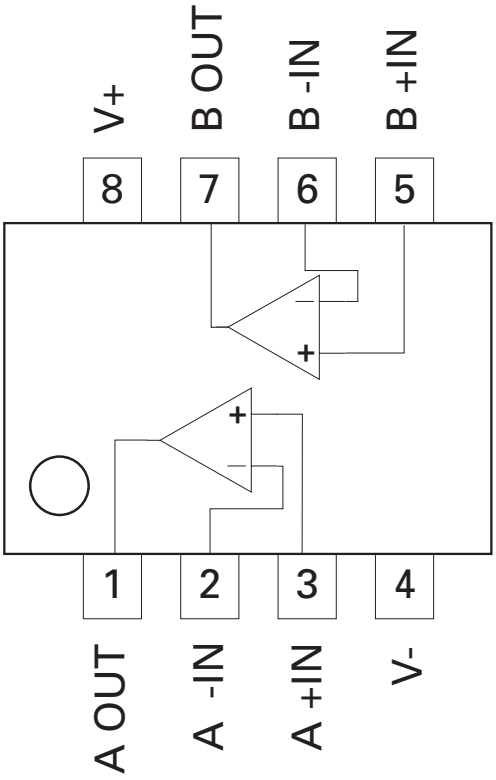

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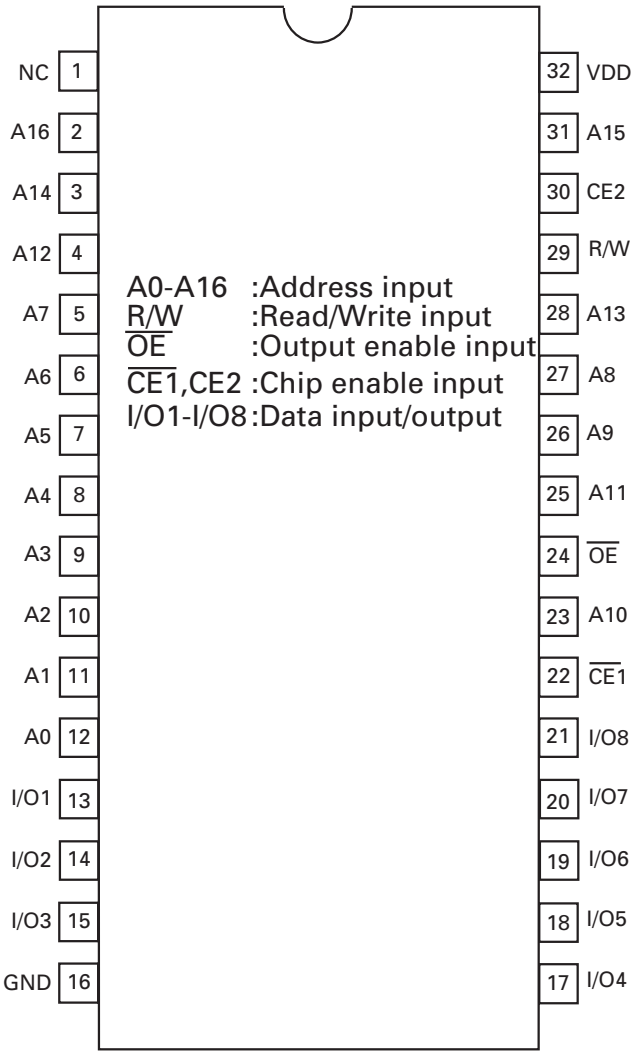

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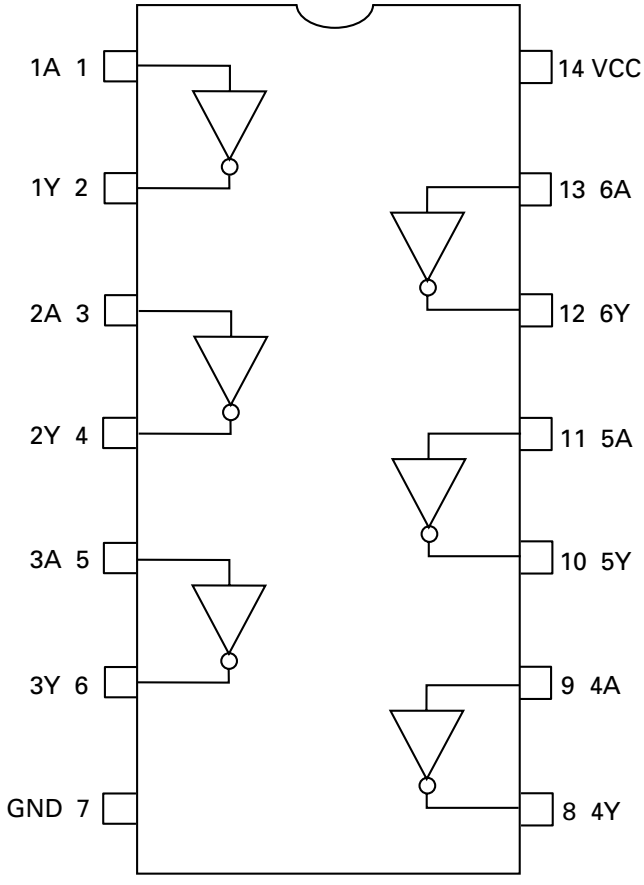
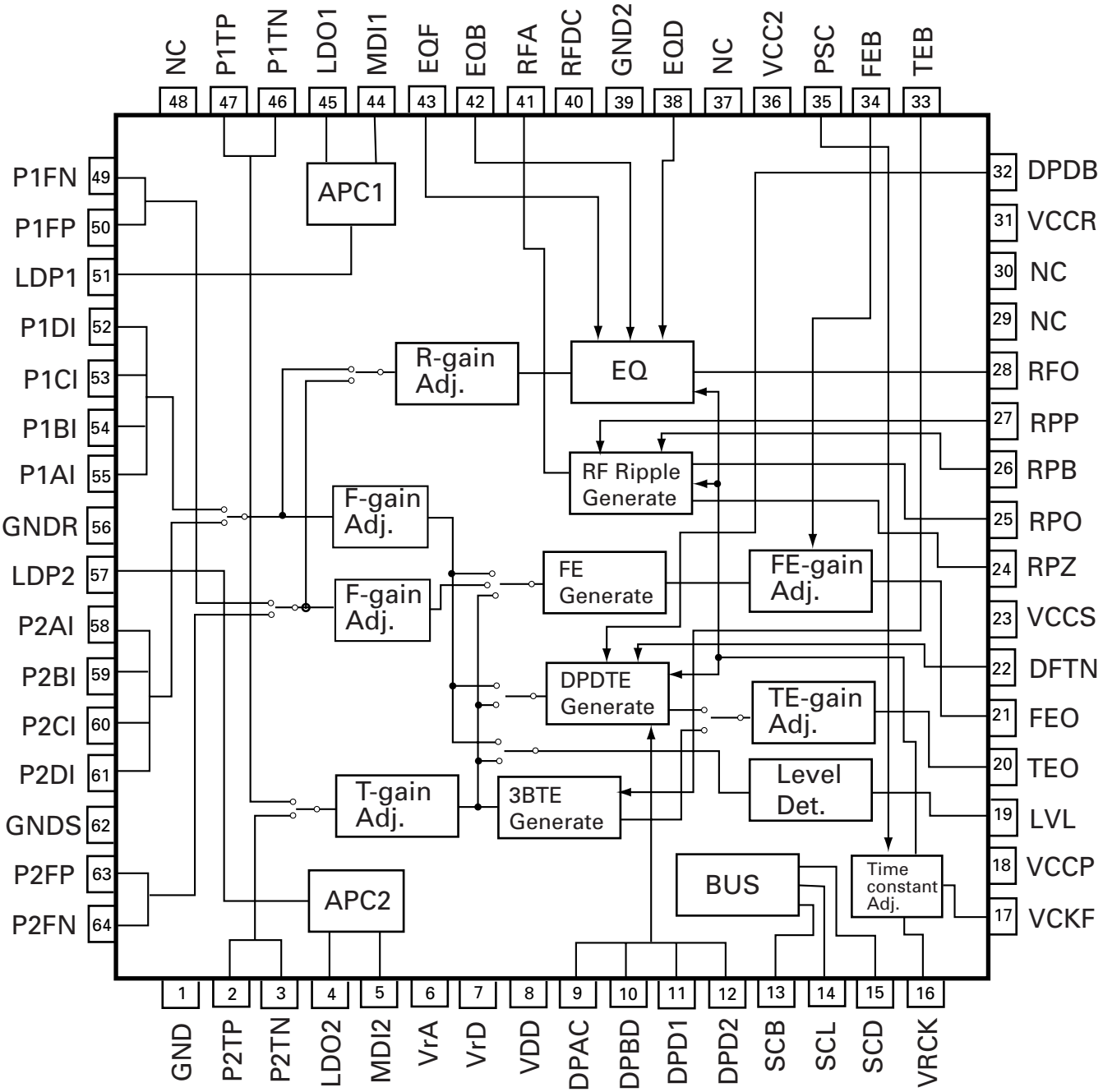


*TA1254AF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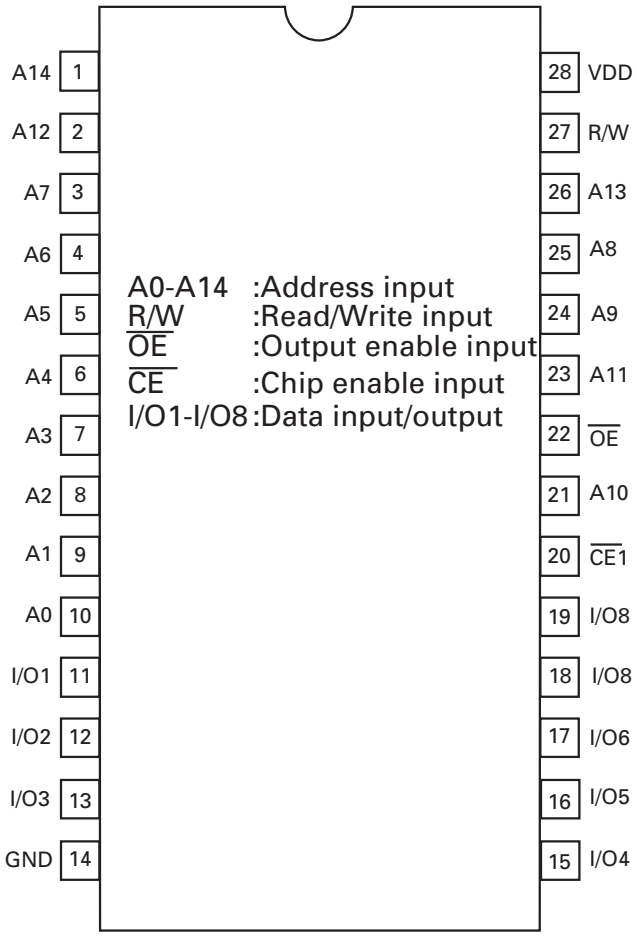
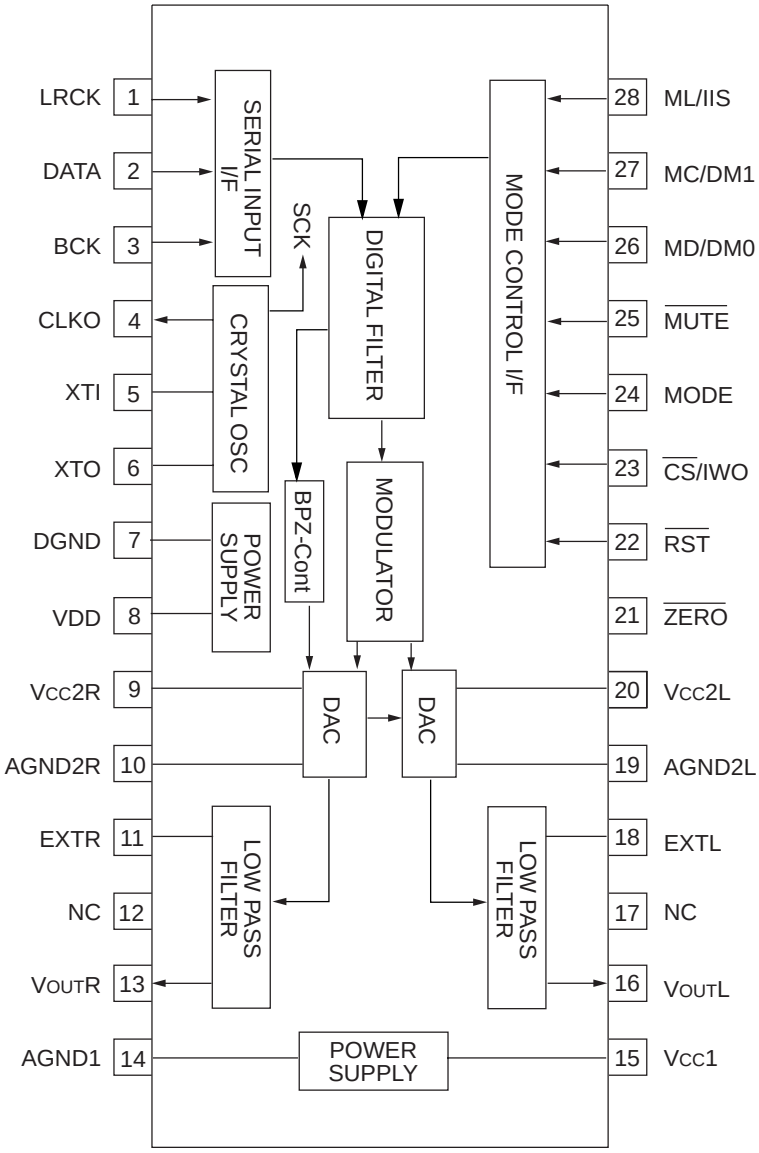
P1TP 47
P1TN 46
LDO1 45
MDI1 44
EQF 43
EQB 42
RFA 41
RFDC 40
GND2 39
EQD 38
NC 37
VCC2 36
PSC 35
FEB 34
TEB 33
P1FN 49
P1FP 50
LDP1 51
P1DI 52
P1CI 53
P1BI 54
P1AI 55
GNDR 56
LDP2 57
P2AI 58
P2BI 59
P2CI 60
P2DI 61
GNDS 62
P2FP 63
P2FN 64
DPDB 32
VCCR 31
NC 30
NC 29
RFO 28
RPP 27
RPB 26
RPO 25
RPZ 24
VCCS 23
DFTN 22
FEO 21
TEO 20
LVL 19
VCCP 18
VCKF 17
APC1
R-gain Adj.
EQ
RF Ripple Generate
F-gain Adj.
F-gain Adj.
FE Generate
FE-gain Adj.
DPDTE Generate
TE-gain Adj.
Level Det.
T-gain Adj.
3BTE Generate
BUS
Time constant Adj.
APC2
GND 1
P2TP 2
P2TN 3
LDO2 4
MDI2 5
VrA 6
VrD 7
VDD 8
DPAC 9
DPBD 10
DPD1 11
DPD2 12
SCB 13
SCL 14
SCD 15
VRCK 16

*TC55257DFTI-85L



*PE8001A1



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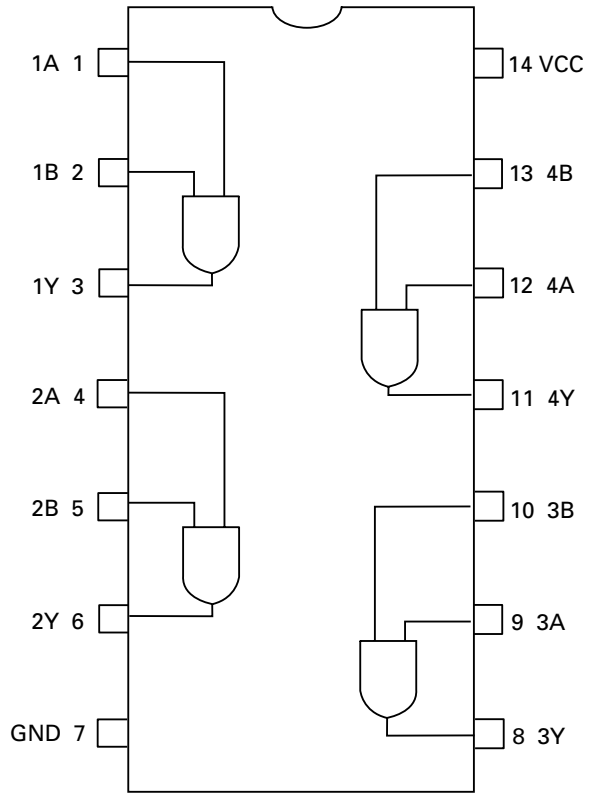
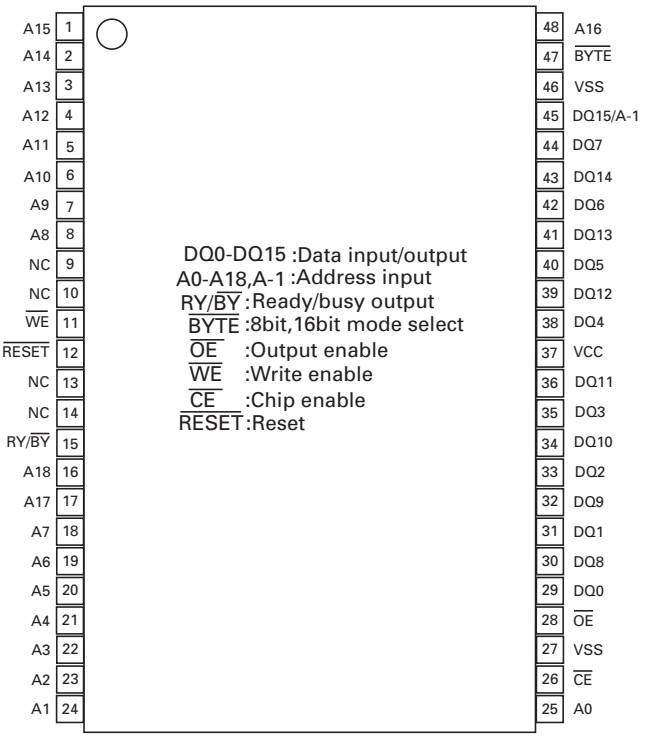


*PD6335A, *PD6315A



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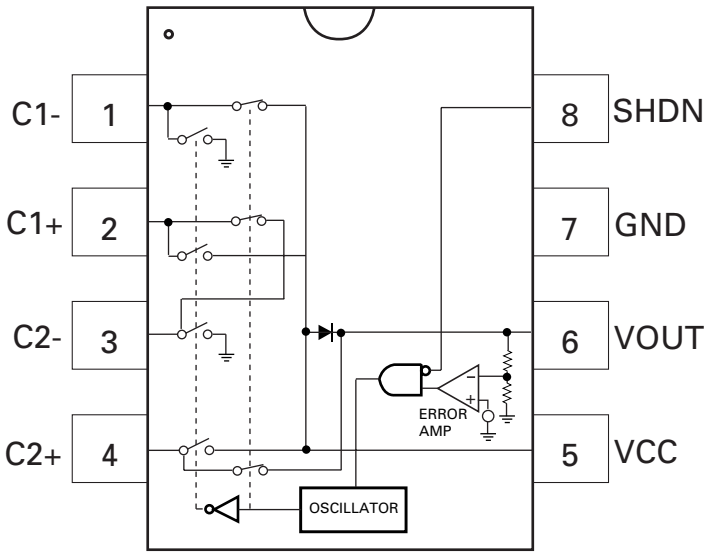
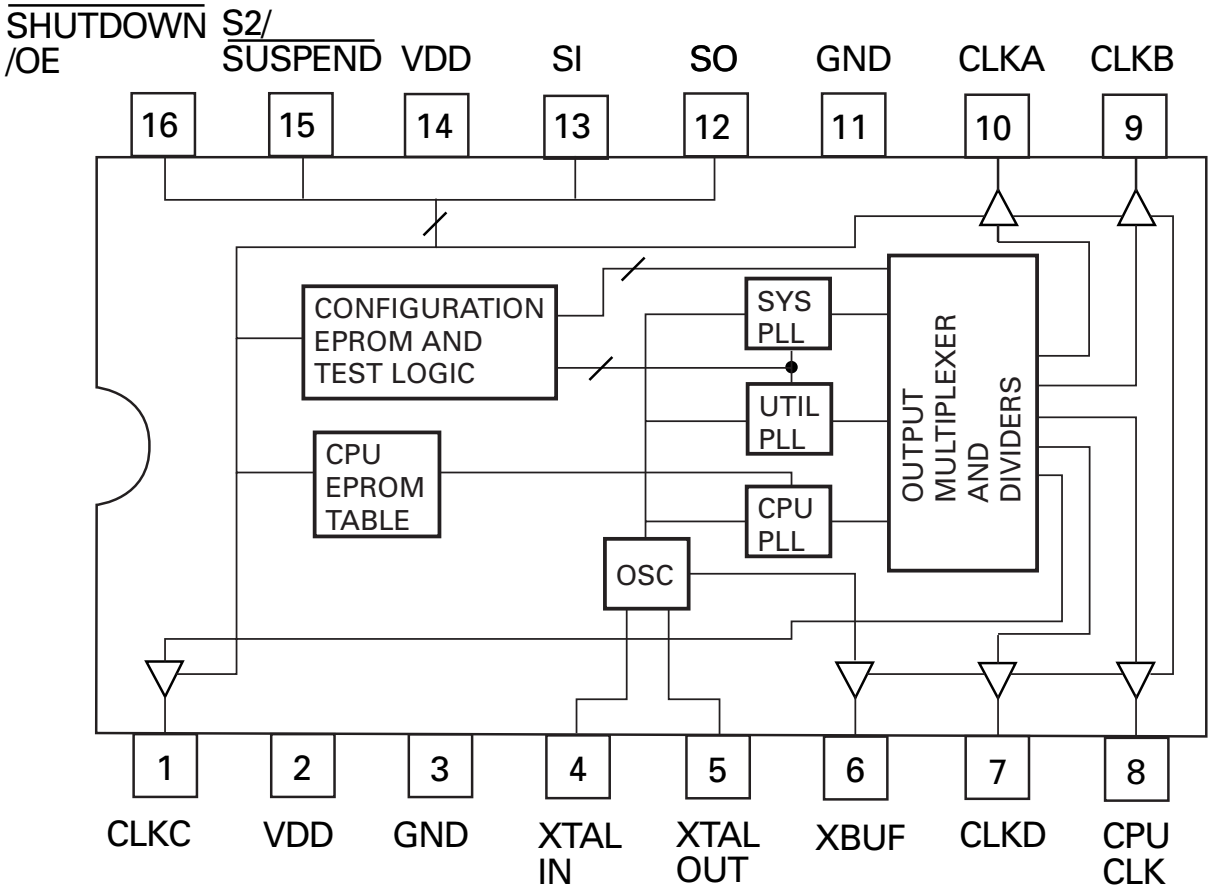


*CY2292SI-1A0



● **Pin Functions (MB86373BPFV-G-BI)**

Pin No.	Pin Name	I/O	Function and Operation
1	CLKSEL	I	ON/OFF signal of PLL
2	DIGCPN7	O	Digital component signal output
3	VSS		GND
4-9	DIGCPN6-1	O	Digital component signal output
10	VDD		2.5V Power supply
11	DIGCPN0	O	Digital component signal output
12	RBSEL	O	Cb, Cr identification signal of during digital component signal output
13	XHS	O	Horizontal synchronizing output signal
14	XVS	O	Vertical synchronizing output signal
15	VSS		GND
16	XRESET	I	Reset
17	XLDCSYNC	I	External synchronizing signal input (LD mode)
18	KEY	O	KEY signal for LD, OSD overlay (LD mode)
19	PD	O	Phase comparing result output signal of horizontal synchronous
20	VFLD	O	Field discrimination signal of digital signal output
21-25	DIGCOMP9-5	O	Digital composite signal output
26	VSS		GND
27	VDD		2.5V Power supply
28-32	DIGCOMP4-0	O	Digital composite signal output
33	DACK	O	27MHz clock output terminal
34	NC		Not used
35	VSSA3		GND (D/A converter)
36	ANAC	O	Analog color (C) output signal
37	VDDA3		2.5V power supply (internal D/A converter only)
38	VSSA2		GND (D/A converter)
39	ANAY	O	Analog brightness (Y) output signal
40	VDDA2		2.5V Power supply (internal D/A converter only)
41	VREF	I	Reference voltage for D/A converter
42	VRO	O	D/A converter inner current set terminal
43	VDDA4		2.5V Power supply (internal D/A converter only)
44	VSSA1		GND (D/A converter)
45	ANACOMP	O	Analog composite output terminal
46	VDDA1		2.5V Power supply (internal D/A converter only)
47	BF	O	Burst flag signal
48	XBLK	O	H/V complex blanking signal
49	TEST4	O	Open
50	VSS		GND
51	TEST0	I	Open
52	TEST1	I	Test terminal
53	DAIIN	I	External input digital data input (SPDIF)
54	CDDATA	I	External input audio data input (for CD)
55	CDLR	I	External input data channel clock input (for CD)
56	CDBCK	I	External input data clock input (for CD)
57-59	AODATA3-1	O	Audio decode data
60	VSS		GND
61	VDD		2.5V Power supply
62	AODATA0	O	Audio decode data
63	AOPCM	O	Digital audio interface output
64	AODAI	O	Digital audio interface output
65	LRCK	O	Data channel clock for D/A, digital filter
66	AOMCK	O	Master clock for D/A, digital filter
67	BCK	O	Bit clock for D/A, digital filter
68-69	TEST2,3	I	open
70	NC		Not used
71	XDSPRST	I	Open
72	VSS		GND
73	TEST5	O	Open
74-77	NC		Not used
78	SD7	I	Parallel data input
79	VDD		2.5V Power supply

Pin No.	Pin Name	I/O	Function and Operation
80-84	SD6-2	I	Parallel data input
85	VSS		GND
86,87	SD1,0	I	Parallel data input
88	XERR	I	Error input signal
89	XSACK	I	Acknowledge signal
90	XTEST	I	Test terminal
91	SREQ	O	Data request signal
92-95	HADRS10-7	I	CPU address bus signal
96	VSS		GND
97	VDD		2.5V Power supply
98-102	HADRS6-2	I	CPU address bus signal
103-106	HDATA15-12	I/O	CPU data bus signal
107	VSS		GND
108-113	HDATA11-6	I/O	CPU data bus signal
114	VDD		2.5V Power supply
115-118	HDATA5-2	I/O	CPU data bus signal
119	VSS		GND
120,121	HDATA1,0	I/O	CPU data bus signal
122	BUSSEL	I	Bus width select signal
123	XOSDACK	I	OSD data acknowledge signal
124	XOSDREQ	O	OSD data request signal
125,126	HCPUSEL1,0	I	CPU select signal
127-129	XINT3-1	O	Interruption request signal to CPU
130	VSS		GND
131	VDD		2.5V Power supply
132	XINT0	O	Interruption request signal to CPU
133	XEXTRDY	O	Acknowledge signal to CPU
134	HRW	I	CPU read/write signal
135	HCLKIN	I	Host clock input
136	XHCS	I	LSI chip select signal
137	XHAS	I	CPU address status
138-141	XHBE3-0	I	CPU byte enable signal
142	VSS		GND
143	MDRADR4	O	Address signal for SDRAM
144	MDRADR3	O	Address signal for SDRAM
145	MDRADR5	O	Address signal for SDRAM
146	MDRADR2	O	Address signal for SDRAM
147	VDD		2.5V Power supply
148	VSS		GND
149	MDRADR6	O	Address signal for SDRAM
150	MDRADR1	O	Address signal for SDRAM
151	MDRADR7	O	Address signal for SDRAM
152	MDRADR0	O	Address signal for SDRAM
153	MDRADR8	O	Address signal for SDRAM
154	VSS		GND
155-158	TEST6-9	I	Test terminal
159	MDRADR10	O	Address signal for SDRAM
160	MDRADR9	O	Address signal for SDRAM
161	MDRADR11	O	Address signal for SDRAM
162	XMDRCS	O	Chip select signal for SDRAM
163	MDRCKE	O	Clock enable signal for SDRAM
164	VSS		GND
165	VDD		2.5V Power supply
166	XMDRRAS	O	RAS signal for SDRAM
167	MDRCLK	O	Clock output signal for SDRAM
168	VSS		GND
169	MDRCLKIN	I	Clock input signal for SDRAM
170	XMDRCAS	O	CAS signal for SDRAM

Pin No.	Pin Name	I/O	Function and Operation
171	XMDRDQM1	O	Input mask/output enable signal for SDRAM
172	VSS		GND
173	XMDRWE	O	Write enable signal for SDRAM
174	XMDRDQM0	O	Input mask/output enable signal for SDRAM
175	MDRDAT8	I/O	Data bus signal for SDRAM
176	VSS		GND
177	MDRDAT7	I/O	Data bus signal for SDRAM
178	MDRDAT9	I/O	Data bus signal for SDRAM
179	MDRDAT6	I/O	Data bus signal for SDRAM
180	MDRDAT10	I/O	Data bus signal for SDRAM
181	MDRDAT5	I/O	Data bus signal for SDRAM
182	VSS		GND
183	VDD		2.5V Power supply
184	MDRDAT11	I/O	Data bus signal for SDRAM
185	MDRDAT4	I/O	Data bus signal for SDRAM
186	MDRDAT12	I/O	Data bus signal for SDRAM
187	MDRDAT3	I/O	Data bus signal for SDRAM
188	MDRDAT13	I/O	Data bus signal for SDRAM
189	VSS		GND
190	MDRDAT2	I/O	Data bus signal for SDRAM
191	MDRDAT14	I/O	Data bus signal for SDRAM
192	MDRDAT1	I/O	Data bus signal for SDRAM
193	MDRDAT15	I/O	Data bus signal for SDRAM
194	MDRDAT0	I/O	Data bus signal for SDRAM
195	VSS		GND
196	NC		Not used
197	ICK27M	I	System clock output
198	VSS		GND
199	OCK27M	O	System clock input
200	VSSA		GND (VCO only)
201	VDDA		2.5V Power supply (VCO only)
202	ILPF	O	PLL section inverter output for audio
203	MLPF	I	PLL section inverter input for audio
204	OLPF	O	Phase detector output for audio
205	OVCO	I	VCO input for audio clock
206	VSS		GND
207	XPLLRST	I	PLL section reset signal
208	XSYNCRST		Connect to VDD

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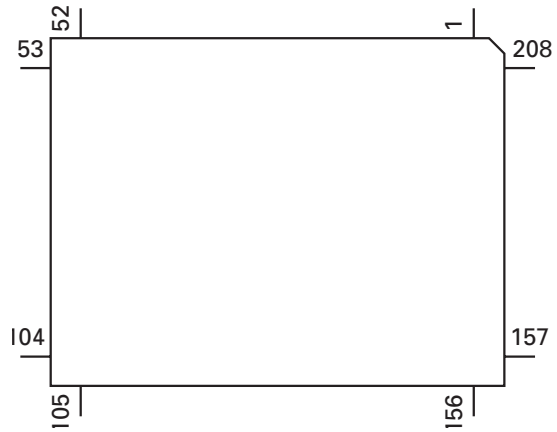
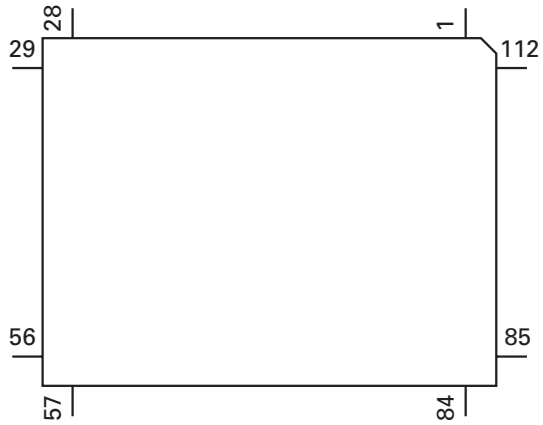


● **Pin Functions (PD3411A)**

Pin No.	Pin Name	I/O	Function and Operation
1	PB14	I	MY-Chip interruption #1
2	PB15	I	AV Chip interruption #0
3	VSS		GND
4-11	AD0-7	I/O	Data bus
12	VSS		GND
13,14	AD8,9	I/O	Data bus
15	VCC		Power supply terminal
16-21	AD10-15	I/O	Data bus
22	VSS		GND
23-30	A0-7	O	Address bus
31	VSS		GND
32-39	A8-15	O	Address bus
40	VSS		GND
41,42	A16,17	O	Address bus
43	VCC		Power supply terminal
44-47	A18-21	O	Address bus
48	CS0		Not used
49	CS1		CARNET 4 chip select
50	CS2		External memory area chip select
51	CS3		MY-Chip chip select
52	VSS		GND
53	PA0		DVD EDC error detection
54	PA1		Flash ROM write enable
55	PA2		AV Chip chip select
56	PA3		External wait input
57	PA4		Low Byte write pulse
58	PA5		High Byte write pulse
59	PA6		Read pulse
60	PA7		Serial data latch pulse
61	VSS		GND
62	PA8	I	Audio output last step mute
63	PA9	I	RS-232 ready for sending output
64	PA10	I	AV Chip interruption #1
65	PA11	I	Communication response to BUS microcomputer
66	PA12	O	DMA CH0 transfer request
67	PA13	I	DMA CH0 transfer request
68	PA14	O	DMA CH0 transfer request
69	PA15	I	DMA CH0 transfer request
70	VCC		Power supply terminal
71	CK	O	Not used
72	VSS		GND
73	EXTAL	I	Clock oscillator
74	XTAL	I	Clock oscillator
75	VCC		Power supply terminal
76	NMI	I	Not used
77	VCC		Power supply terminal
78	WDTOVF		Not used
79	RES	I	Chip enable of after power on
80-82	MD0-2	I	Mode 2
83,84	VCC		Power supply terminal
85	AVCC		Power supply terminal
86	AVREF		Power supply terminal
87-89	PC0-2		Not used
90	PC3	I	Data lead enable
91	AVSS		GND
92	PC4	I	V field discrimination signal input
93	PC5	I	Test mode entry
94	PC6	I	Communication request from BUS microcomputer
95	PC7	I	Request of RS-232 ready for communicating

Pin No.	Pin Name	I/O	Function and Operation
96	VSS		GND
97	PB0	I	STEP 2 DMA transfer DREQ
98	PB1	I	Power supply terminal
99	VCC		Power supply terminal
100	PB2	I	Transfer end interruption
101	PB3	I	AV Chip interruption #2
102	PB4	I	STEP 2 receive interruption
103	PB5	I	STEP 2 transmit interruption #1
104	PB6	I	CARNET4 chip select
105	PB7	I	CARNET4 chip power
106	VSS		GND
107	PB8	I	Serial bus data input
108	PB9	I	Serial bus data output
109	PB10	I	RS232C RxD
110	PB11	I	RS232C TxD
111	PB12	I	Serial bus clock input/output
112	PB13	I	MY-Chip interruption #0

*PD3411A



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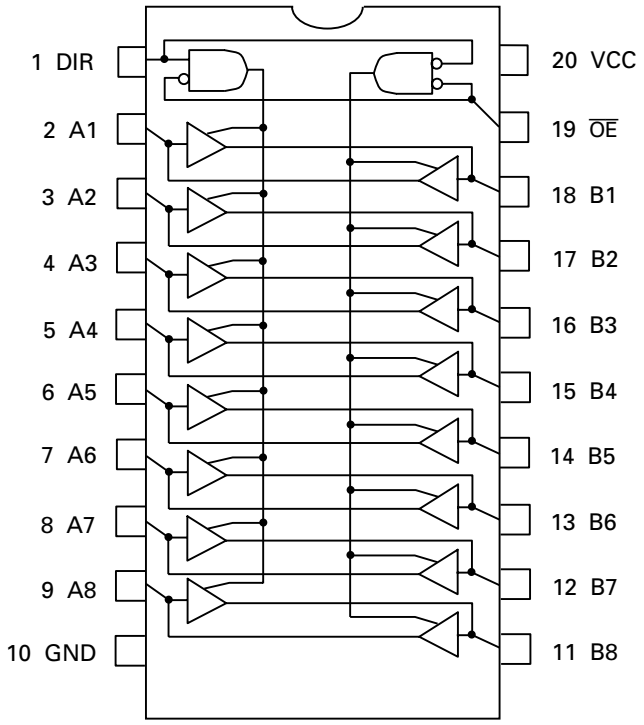

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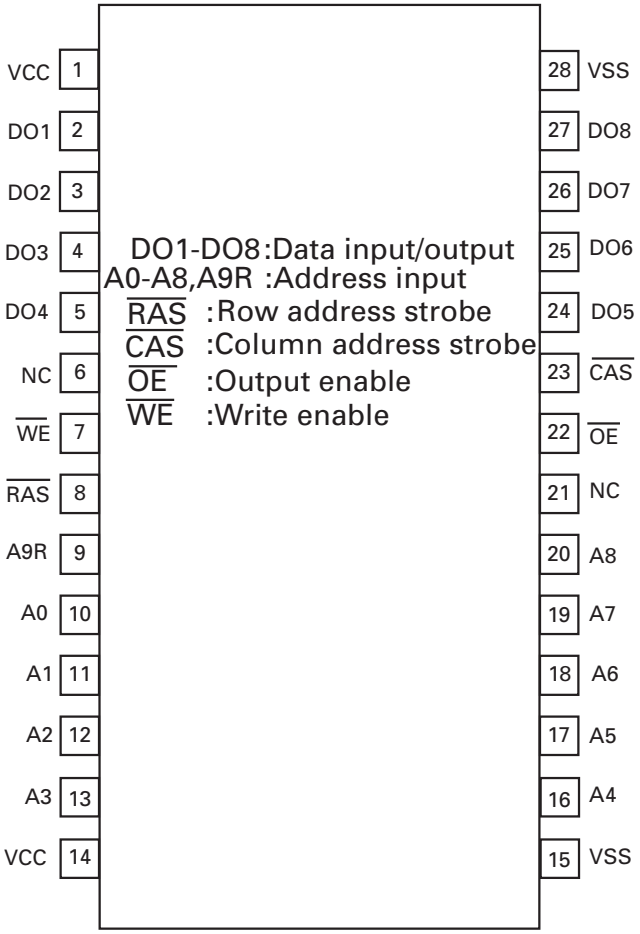

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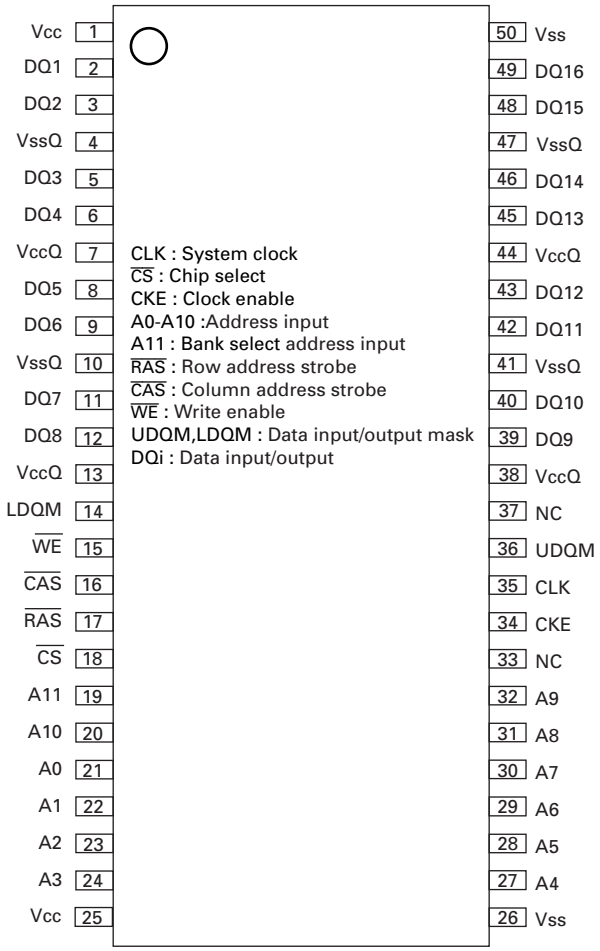

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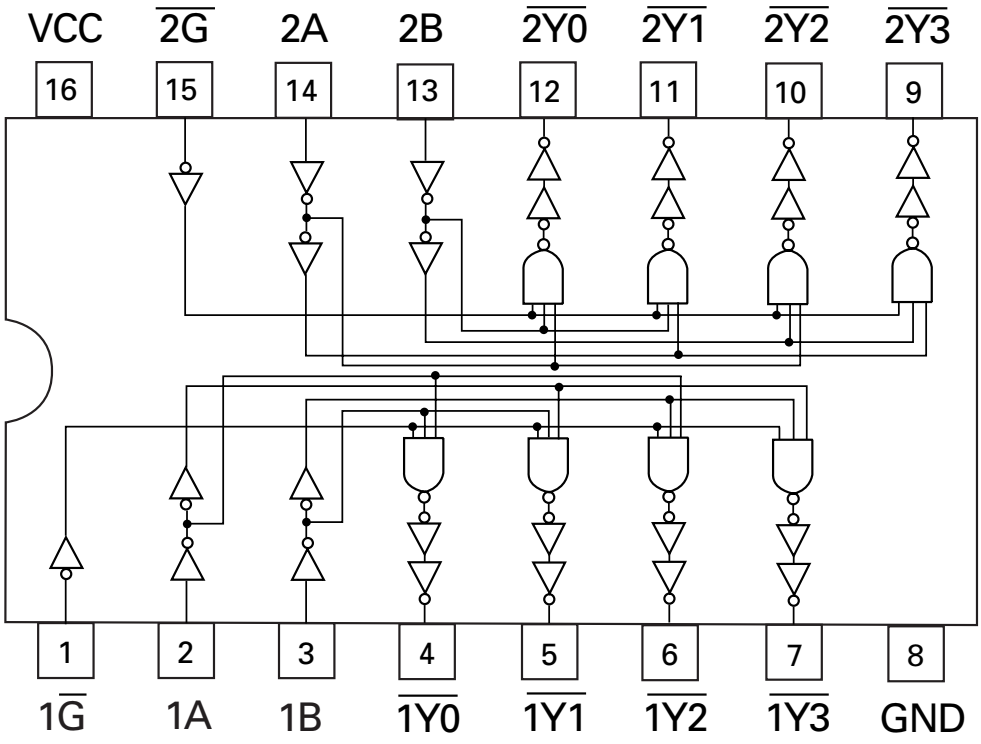


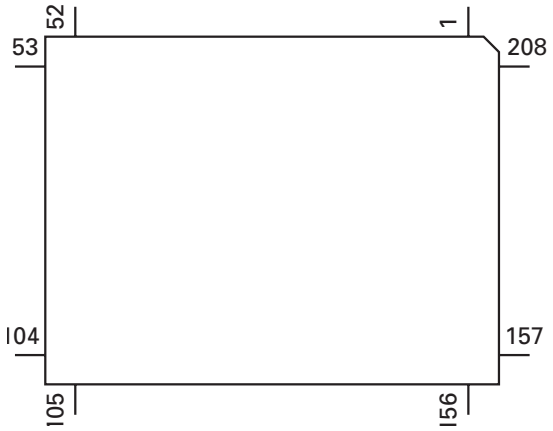
● **Pin Functions (PD4995A)**

Pin No.	Pin Name	I/O	Function and Operation
1,2	GND		Digital circuit GND
3	NC		Not used
4	DXTLI	I	27MHz crystal connection terminal which oscillates reference clock signals of the spindle and PLL
5	DXTLO	O	Not used
6	BUNRI	I	Separation test control terminal for internal RAM
7	TSTSTB	I	Test mode setting input
8	PC2/STB	I/O	Not used
9	PC3/BSYNC	I/O	Not used
10	PC4/SELNED	I	I/O setting terminals for NED (7:0), STM and BSYNC terminals
11	PA7/NED7	I/O	Not used
12	PA6/NED6	I/O	Not used
13	PA5/NED5	I/O	Not used
14	PA4/NED4	I/O	Not used
15	VDD		Digital circuit power supply
16	GND		Digital circuit GND
17	PA3/NED3	I/O	Not used
18	PA2/NED2	I/O	Not used
19	PA1/NED1	I/O	Not used
20	PA0/NED0	I/O	Not used
21	BMODE1	I	Sets which test is done in the test mode
22-25	DD7-4	I/O	DRAM data bus for VBR buffer
26	GND		Digital circuit GND
27	VDD		Digital circuit power supply
28-31	DD3-0	I/O	DRAM data bus for VBR buffer
32	XDCAS	O	DRAM CAS signal for VBR buffer
33	XDWE	O	DRAM WE signal for VBR buffer
34	XDOE	O	DRAM OE signal for VBR buffer
35	XDRAS	O	DRAM RAS signal for VBR buffer
36-38	DA12-10	O	Not used
39-41	DA9-7	O	DRAM address signal for VBR buffer
42	GND		Digital circuit GND
43	VDD		Digital circuit power supply
44-50	DA6-0	O	DRAM address signal for VBR buffer
51,52	GND		Digital circuit GND
53	VDD		Digital circuit power supply
54	XWR	O	Not used
55	XSACK	O	Transfer response terminal for VIDEO_DMA channel
56	SREQ	I	Data transfer request terminal for VIDEO_DMA channel
57-60	SDATA0-3	O	Data output bus for VIDEO=DMA channel
61	GND		Digital circuit GND
62	VDD		Digital circuit power supply
63-66	SDATA4-7	O	Data output bus for VIDEO=DMA channel
67	XAVTRM	O	Signal indicating the head of the sector of the transfer data for VIDEO_DMA channel
68	BMODE2	I	Sets which test is done in the test mode
69	DMACKI	I	System clock input of DVD/CD ROM data
70	GND		Digital circuit GND
71	DMACKO	O	Outputs reference crystal clock signals of the spindle and PLL
72	XSCL1	I	Chip select signal from the main CPU
73	XSWAIT	O	WAIT output to the main CPU
74	XSRD	I	RD signal for the main CPU
75	XSWR	I	WR signal for the main CPU
76	XSDREQ	O	DMA request for the main CPU
77	SDACK	I	DMA response signal
78	VDD		Digital circuit power supply
79	GND		Digital circuit GND
80-91	SA11-0	I	Main CPU address
92-95	SAD7-4	I/O	Main CPU data bus
96	VDD		Digital circuit power supply
97	GND		Digital circuit GND
98-101	SAD3-0	I/O	Main CPU data bus

Pin No.	Pin Name	I/O	Function and Operation
102,103	XIRQ10,11	O	Interrupt request for the main CPU
104	VDD		Digital circuit power supply
105,106	GND		Digital circuit GND
107	CKCD	I	Master clock of audio I/F block
108	DIFOUT	O	Digital audio output
109	BCK	O	Bit clock output to DAC
110	LRCK	O	LRCK signal output to DAC
111	ADATAO	O	Serial data output to DAC
112	CDDT	I	Audio data input from CD decoder
113	CDLR	I	LRCK signal input from CD decoder
114	CDBCK	I	Bit clock input from CD decoder
115	CDDO	I	Digital out signal input from CD decoder
116	C2FI	I	Input terminal for the C2 error flag from CD decoder
117	WFCK	I	CD frame clock signal
118	SCOR	I	CD subcode sync input terminal
119	SBSO	I	CD subcode data input terminal
120	EXCK	O	Shift clock which generates the timing at which data is sent to the SBSO terminal
121	VDD		Digital circuit power supply
122	GND		Digital circuit GND
123	DSPA0	O	Not used
124	DSPA1	O	Not used
125	DSPA2	O	Not used
126	ASDATA0/PB0	I/O	Not used
127	ASDATA1/PB1	I/O	Not used
128	ASDATA2/PB2	I/O	Not used
129	ASDATA3/PB3	I/O	Not used
130	VDD		Digital circuit power supply
131	GND		Digital circuit GND
132	ASDATA4/PB4	I/O	Not used
133	ASDATA5/PB5	I/O	Not used
134	ASDATA6/PB6	I/O	Not used
135	ASDATA7/PB7	I/O	Not used
136	XAWR	O	Not used
137	ASREQ	I	Transfer request terminal for AUDIO_DMA channel
138	TMC2	I	Terminal test control terminal
139	ASTB	I	Strobe signal indicating that address information is provided in the address data bus (7:0) of the sub CPU
140	XMCS	I	Chip select signal from the sub CPU
141	XIRQ2	O	Interrupt request for the sub CPU
142	XMWR	I	Sub CPU WR signal
143	XMRD	I	Sub CPU RD signal
144	MAD7/PE7	I/O	Connected to the multiplex bus of the sub CPU address data
145	MAD6/PE6	I/O	Connected to the multiplex bus of the sub CPU address data
146	MAD5/PE5	I/O	Connected to the multiplex bus of the sub CPU address data
147	MAD4/SA16/PE4	I/O	Connected to the multiplex bus of the sub CPU address data
148	GND		Digital circuit GND
149	VDD		Digital circuit power supply
150	MAD3/SA15/PE3	I/O	Connected to the multiplex bus of the sub CPU address data
151	MAD2/SA14/PE2	I/O	Connected to the multiplex bus of the sub CPU address data
152	MAD1/SA13/PE1	I/O	Connected to the multiplex bus of the sub CPU address data
153	MAD0/SA12/PE0	I/O	Connected to the multiplex bus of the sub CPU address data
154	RPWM	O	Not used
155,156	GND		Digital circuit GND
157	VDD		Digital circuit power supply
158	RERR	O	Control output for rough servo
159	FPWM	O	7-bit PWM output terminal for FG servo
160	VPWM	O	5-bit PWM output terminal for velocity servo
161	PPWM	O	PWM output terminal for phase servo
162	FGPL	I	Rotational pulse input from the spindle motor
163	XASACK	O	Not used

Pin No.	Pin Name	I/O	Function and Operation
164	GND		Digital circuit GND
165	XRESET	I	Terminal for initializing the entire LSI system
166	AGND		GND for A/D converter
167	NC		Not used
168	VRB	I	Not used
169	AGND		GND for A/D converter
170	AIN	I	Analog RF signal input terminal to A/D converter
171	NC		Not used
172	VRC	I	Reference voltage input terminal for A/D converter
173	VRT	I	Not used
174,175	AVDD		Power supply for A/D converter
176	VDD		Digital circuit power supply
177	GND		Digital circuit GND
178	SEDI	I	Serial data input after BITABI decoding
179	SEDO	O	Serial data output after BITABI decoding
180	TMC1	I	Terminal test control terminal
181	VCOCLK	I	System clock signals of the spindle and demodulator
182	GND		Digital circuit GND
183	VDD		Digital circuit power supply
184	ASC	O	Outputs the frequency error of the sync cycle as a PWM pulse
185	APC	O	Outputs the phase error of the PLL as a PWM pulse
186	ATC	O	Outputs the DC error of the RF signal as a PWM pulse
187	AFC	O	Outputs the frequency errors of VCOCLK and reference clock as PWM pulses
188	BMODE3	I	Sets which test is done in the test mode
189	DUTY50	O	Outputs a duty 50% pulse at any time
190	FSX/STATUS4	I/O	Not used
191	EFLG/STATUS3	I/O	Not used
192	DMCK/RF_A	O	Reference clock input terminals of the spindle and PLL for DVD double-speed playback
193	GND		Digital circuit GND
194	ADD7/PD7	I/O	Not used
195	ADD6/PD6	I/O	Not used
196	ADD5/PD5	I/O	Not used
197	ADD4/PD4	I/O	Not used
198	ADD3/PD3	I/O	Not used
199	ADD2/PD2	I/O	Not used
200	ADD1/PD1	I/O	Not used
201	ADD0/PD0	I/O	Not used
202	BMODE0	I	Sets which test is done in the test mode
203	DEFECT	I	External defect signal input
204	T_DET	O	Not used
205	PC7/STATUS2	O	Not used
206	PC6/STATUS1	O	Not used
207	PC5/STATUS0	O	Not used
208	VDD		Digital circuit power supply

*PD4995A



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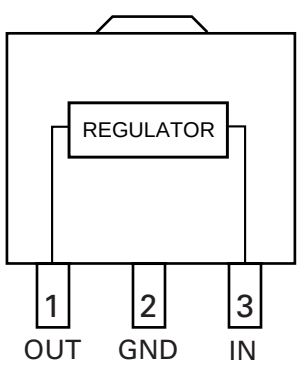

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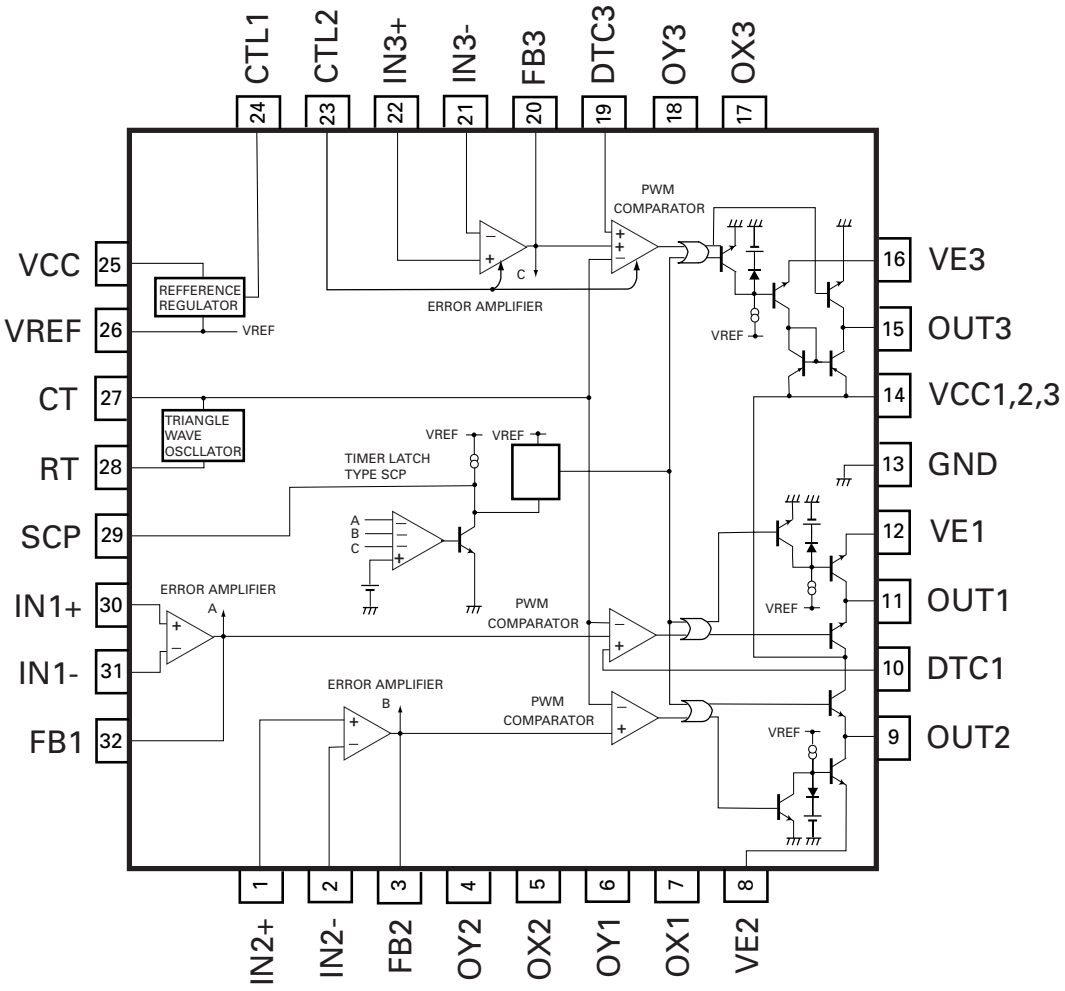
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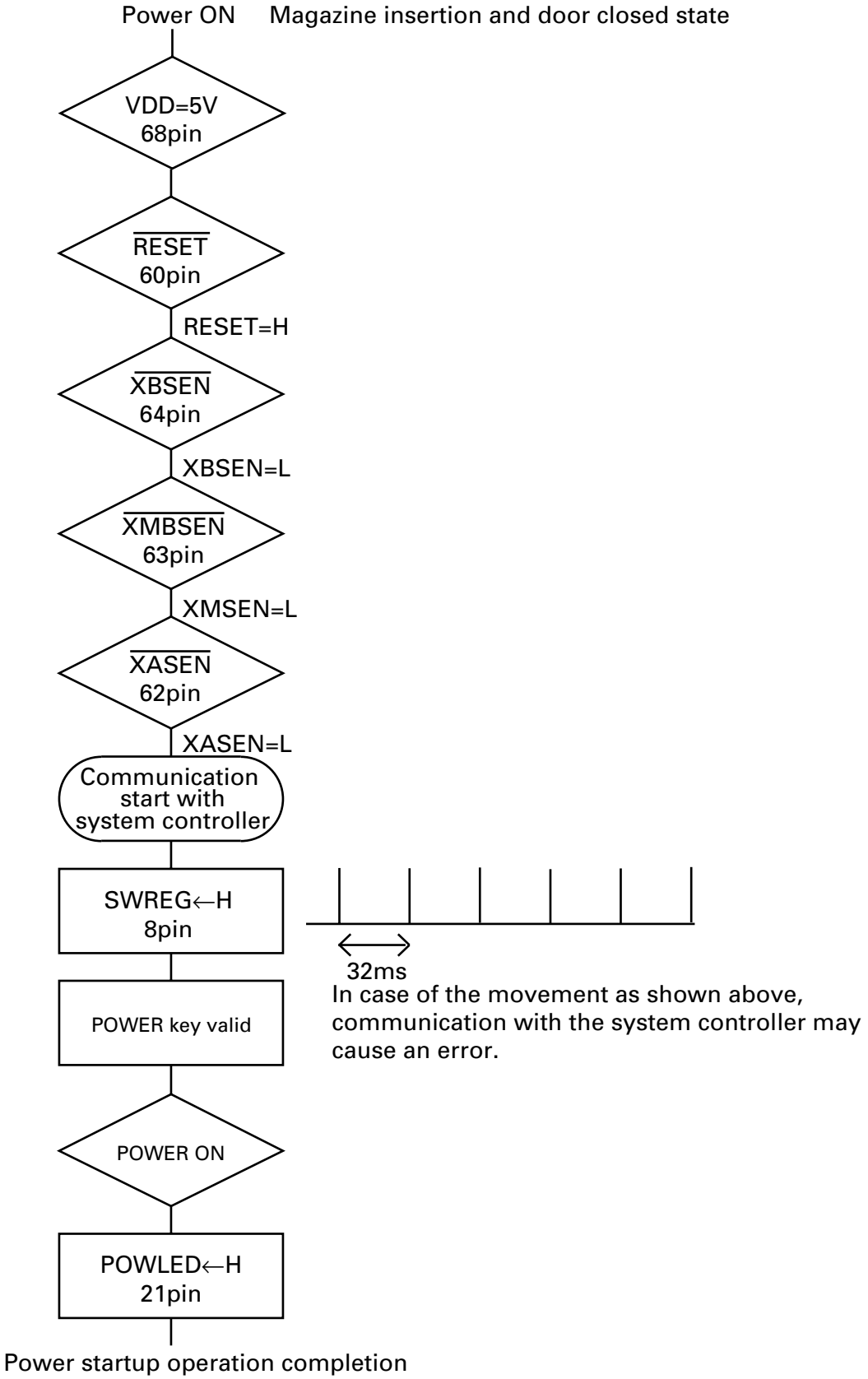
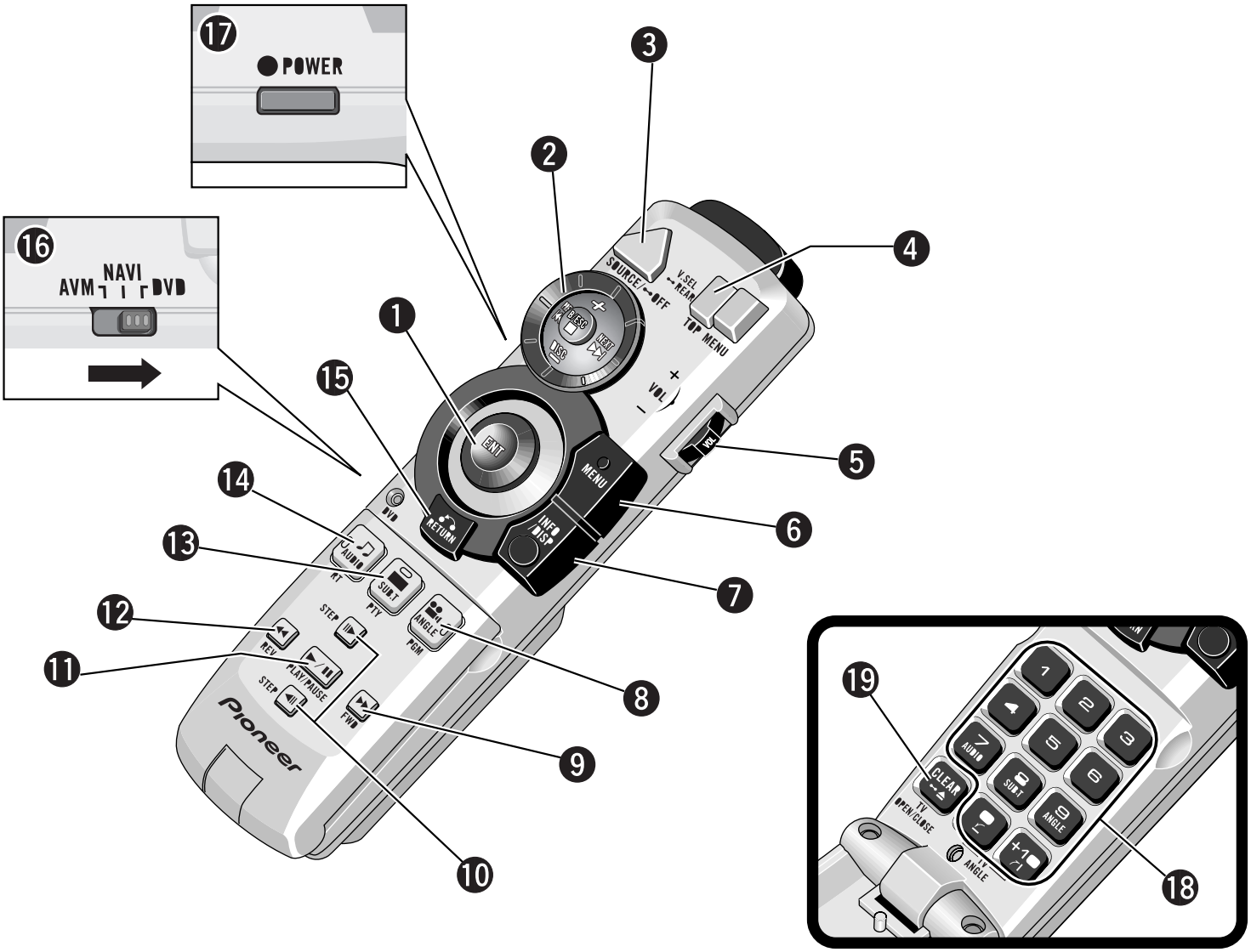
CTL2
IN3+
IN3-
FB3
DTC3
OY3
OX3
24
23
22
21
20
19
18
17
VCC
VREF
CT
RT
SCP
IN1+
IN1-
FB1
25
26
27
28
29
30
31
32
REFFERENCE REGULATOR
VREF
TRIANGLE WAVE OSCLLATOR
TIMER LATCH TYPE SCP
ERROR AMPLIFIER
A
B
C
PWM COMPARATOR
16
15
14
13
12
11
10
9
VE3
OUT3
VCC1,2,3
GND
VE1
OUT1
DTC1
OUT2
1
2
3
4
5
6
7
8
IN2+
IN2-
FB2
OY2
OX2
OY1
OX1
VE2

7.3 OPERATIONAL FLOW CHART



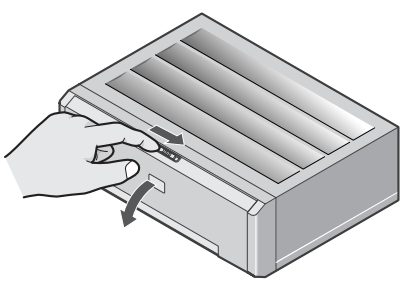
8. OPERATIONS AND SPECIFICATIONS

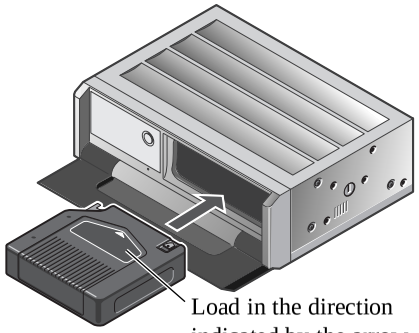
● **Remote Controller(XDV-P9/UC, XDV-P9/ES/RC, XDV-P9/ES/RD)**



① Joystick/ENTER button
② Small joystick/STOP (■) button
③ SOURCE button (For AV Master Unit)
④ TOP MENU button
⑤ VOLUME (For AV Master Unit)
⑥ MENU button
⑦ DISPLAY button
⑧ ANGLE button
⑨ FORWARD (►►) button
⑩ STEP (◄II)/(II►) buttons
⑪ PLAY/PAUSE (►/II) button
⑫ REVERSE (◄◄) button
⑬ SUBTITLE button
⑭ AUDIO button
⑮ RETURN button
⑯ Remote control operation mode switch
⑰ POWER button
⑱ Number buttons
⑲ CLEAR button

Loading the Magazine



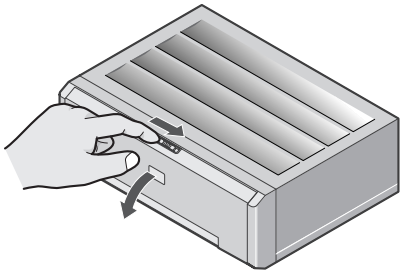


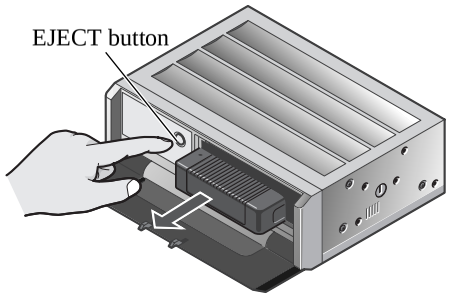
1 **Slide the OPEN lever to the right.**
The front door opens.

2 **Load the magazine in the direction indicated by the arrow.**

3 **Close the front door.**

Removing the Magazine





1 **Slide the OPEN lever to the right.**
The front door opens.

2 **Press the EJECT button.**

3 **Remove the magazine.**

4 **Close the front door.**

- Do not put your fingers in the magazine tray as this may lead to incorrect operation and damage to the player.
- If the label on the magazine is coming off or wrinkled up, it may damage the eject mechanism, and in some cases, the magazine may not be ejected. Therefore, remove a damaged label completely before use.
- Be sure the front door is closed except when loading or removing a magazine. Playback is not

Switching Power ON/OFF

Switching Power ON

When Using the IP-BUS Mode

Operate after confirming the Operation mode switch is set to DVD (or AVM).

Press the SOURCE button.
Press repeatedly until DVD is selected, and the disc starts playing.

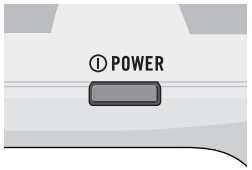
With a head unit other than a Multi-Channel AV Master Unit (e.g. AVM-P9000R, AVM-P9000), operation with this remote control is not possible.

When Using the STAND ALONE Mode

Operate after confirming the Operation mode switch is set to DVD.

1 **Switch the display image source to this product.**
For details, refer to the connected unit's manual.

2



Press the POWER button on the side of the remote control.
Power to this product switches ON and a disc starts playing. The remote sensor indicator lights.

Note:
- When you have reloaded the magazine, playback starts from the first disc.
- If you were previously playing a DVD, playback of that disc resumes from where you left off.
- If power to this product is switched ON/OFF with the POWER button, playback does not resume from where you left off.
- Playback cannot resume from where you left off until information on all of the discs has been read.
- With some discs, a menu may be displayed.

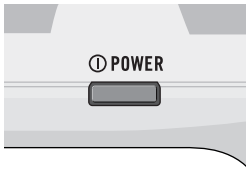
Switching Power OFF

When Using the IP-BUS Mode

Press the SOURCE button for 1 second.

Power to the Multi-Channel AV Master Unit switches OFF.

When Using the STAND ALONE Mode



Press the POWER button on the side of the remote control.

Power to this product switches OFF. The remote sensor indicator goes out.

When using a rear display in the IP-BUS Mode

- Even if the source selected with the head unit is not DVD, if you switch power to this product ON with the POWER button, you can watch the DVD picture from this product on the rear display.
- Regardless of whether the head unit is switched ON/OFF, you can switch power to this product ON/OFF.

Precautions concerning the IP-BUS Mode

- When you have switched power to this product ON by pressing the POWER button, be sure not to forget to switch power to this product OFF. If you switch power to this product OFF after switching to DVD video display, the display shows that power to this product has been switched OFF.
- When you eject a source disc (CD or MD) selected with the head unit, power to the head unit switches OFF. Depending on the connection method, the picture on the rear display may disappear.

Disc (DVD/Video CD/CD) Playback

Press the PLAY/PAUSE (▶/❚❚) button.

The playback mark ( ) is displayed for 4 seconds and the disc starts playing.

Note:

- Pressing the PLAY/PAUSE (▶/❚❚) button when a disc is playing, pauses playback.
- If the last disc played was a DVD, playback starts from the point on that disc where you stopped play previously. With some discs, a menu may be displayed and playback may not be possible from where you left off previously. (See the next item.)

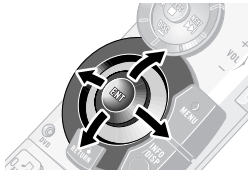
Working with the Menu Screen

DVD Video CD

When DVDs offering menu or Video CDs featuring the PBC (Playback Control) function start playing, a menu is displayed.

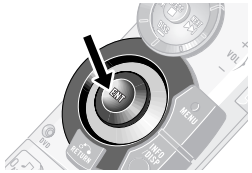
With DVDs

1



Use the joystick to select the desired MENU option.

2



Press the ENTER button.

Playback starts from the selected menu option.

■ To Display the Menu

You can display the menu by pressing the MENU button or TOP MENU button while a disc is playing. Pressing either of these buttons again lets you start playback from the location selected from the menu. For details, refer to the instructions provided with the disc.

Note:

- The way to display the menu differs depending on the disc.

With Video CDs

Press the number buttons to select a desired menu option.

Playback starts from the selected menu option.
Operation with the joystick is not possible.

■ To Display the Menu

You can display the menu by pressing the RETURN button while PBC playback. For details, refer to the instructions provided with the disc.

Note:

- When menu are two or more pages long, move the small joystick left/right (PREV I◄◄/NEXT ►►I) to switch between displays.
- To play a disc without using a menu (without PBC playback), when the disc is stopped press the appropriate number button to select the desired track. To return to PBC playback, stop playback and press the PLAY/PAUSE (►/II) button.

Chapter and Track Advance/Return

Skipping to the Next Chapter/Track

During play, move the small joystick to the right (NEXT ►►I) .

Chapter/track numbers are displayed for 4 seconds and you advance to the next chapter/track.

Returning to the Previous Chapter/Track

During play, move the small joystick to the left (PREV I◄◄).

Chapter/track numbers are displayed for 4 seconds and you return to the beginning of the current chapter/track.
Moving the small joystick to the left (PREV I◄◄) twice in succession takes you to the beginning of the chapter/track before the current chapter/track.

Specifying Title/Chapter/Track (Direct Search)

Specifying Title

DVD

Press the number button corresponding to a desired title number when the disc is stopped.

Title number is displayed for 4 seconds and playback starts from the selected title.
To select 3, press button 3.
To select 10, press buttons +10 and 0 in order.
To select 23, press buttons +10, +10 and 3 in order.

Specifying Chapter

DVD

Press the number button corresponding to a desired chapter number during playback.

Chapter number is displayed for 4 seconds and playback starts from the selected chapter.
To select 3, press button 3.
To select 10, press buttons +10 and 0 in order.
To select 23, press buttons +10, +10 and 3 in order.

Specifying Track

Video CD

Press the number button corresponding to a desired track number.

Track number is displayed for 4 seconds and playback starts from the selected track.
To select 3, press button 3.
To select 10, press buttons +10 and 0 in order.
To select 23, press buttons +10, +10 and 3 in order.

Note:

- With some discs, the prohibited mark " ⃠ " may be displayed and operation may not be possible.
- With Video CD, Direct Search is not possible during PBC playback.

Disc Fast Forward/Reverse

Fast Forward

1

During play, continue pressing the FORWARD (►►) button.

The fast forward mark ( ) is displayed while pressing the button and disc fast forward is performed.

2

Release the FORWARD (►►) button at the point you want to watch/listen.

Playback resumes from that point.

Note:

- If you continue pressing the FORWARD (►►) button for 5 seconds, the color of the fast forward mark ( ) changes from blue to yellow. When this happens, fast forward continues even if you release the FORWARD (►►) button. To resume playback at a desired point, press the PLAY/PAUSE (►/II) button.
- If you fast forward to the end of a CD, fast forward continues from the beginning of the disc.
- Fast forward may not be possible at certain locations on some discs. If this happens, normal playback automatically resumes.

Fast Reverse

1

During play, continue pressing the REVERSE (◄◄) button.

The fast reverse mark ( ) is displayed while pressing the button and disc fast reverse is performed.

2

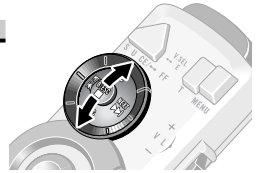
Release the REVERSE (◄◄) button at the point you want to watch/listen.

Playback resumes from that point.

Note:

- If you continue pressing the REVERSE (◄◄) button for 5 seconds, the color of the fast reverse mark ( ) changes from blue to yellow. When this happens, fast reverse continues even if you release the REVERSE (◄◄) button. To resume playback at a desired point, press the PLAY/PAUSE (►/II) button.
- If you fast reverse to the beginning of a CD, normal playback resumes.
- Fast reverse may not be possible at certain locations on some discs. If this happens, normal playback automatically resumes.

Changing Discs



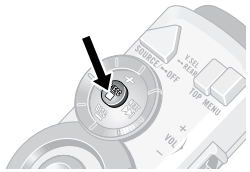
Move the small joystick up/down (DISC +/ DISC −).

Disc numbers are displayed for 4 seconds and the previous or next disc in the magazine is selected. Repeat the operation to select the desired disc.

Note:

- Empty disc trays are skipped during disc selection.
- After a desired disc is selected, it automatically starts playing.

Stopping Playback



Press the STOP (■) button.

Note:

- When you stop DVD or Video CD playback (during PBC playback only) by pressing the STOP (■) button, that location on the disc is memorized enabling playback from that point when you play the disc again.
- The playback stop point on a disc is erased from memory if you change the disc, remove the magazine or switch power to this product ON/OFF with the POWER button.

● Specifications

General

System ..... DVD-Video, Video CD, Compact disc audio system
Usable discs .... DVD-Video, Video CD, Compact disc
Signal format
..... Sampling frequency: 44.1/48/96 kHz
Number of quantization bits: 16/20/24; linear
Power source ..... 14.4 V DC (10.8 – 15.1 V allowable)
Grounding system ..... Negative type
Max. current consumption ..... 1.3 A
Region Number
..... For U.S. and Canadian models: 1
For European models: 2
For Southeast Asian models: 3
For South American and Oceanian models: 4

Audio

(with DVD, at Sampling frequency 96 kHz)
Frequency response ..... 5 – 44,000 Hz
Signal-to-noise ratio [For U.S. and Canadian models]
..... DVD: 96 dB (1 kHz) (IHF-A network)
CD: 99 dB (1 kHz) (IHF-A network)
Signal-to-noise ratio [Other area models]
..... DVD: 96 dB (1 kHz) (IEC-A network)
CD: 99 dB (1 kHz) (IEC-A network)
Dynamic range ..... DVD: 97 dB (1 kHz)
CD: 96 dB (1 kHz)
Distortion ..... 0.003 % (1 kHz)
Output Level ..... 1000 mV (1 kHz, 0 dB)
Number of channels ..... 2 (stereo)

Player

Dimensions ..... 275 (W) × 88 (H) × 202 (D) mm
[10-7/8 (W) × 3-1/2 (H) × 8 (D) in.]
Weight ..... 2.9 kg (6.4 lbs)

Remote Sensor

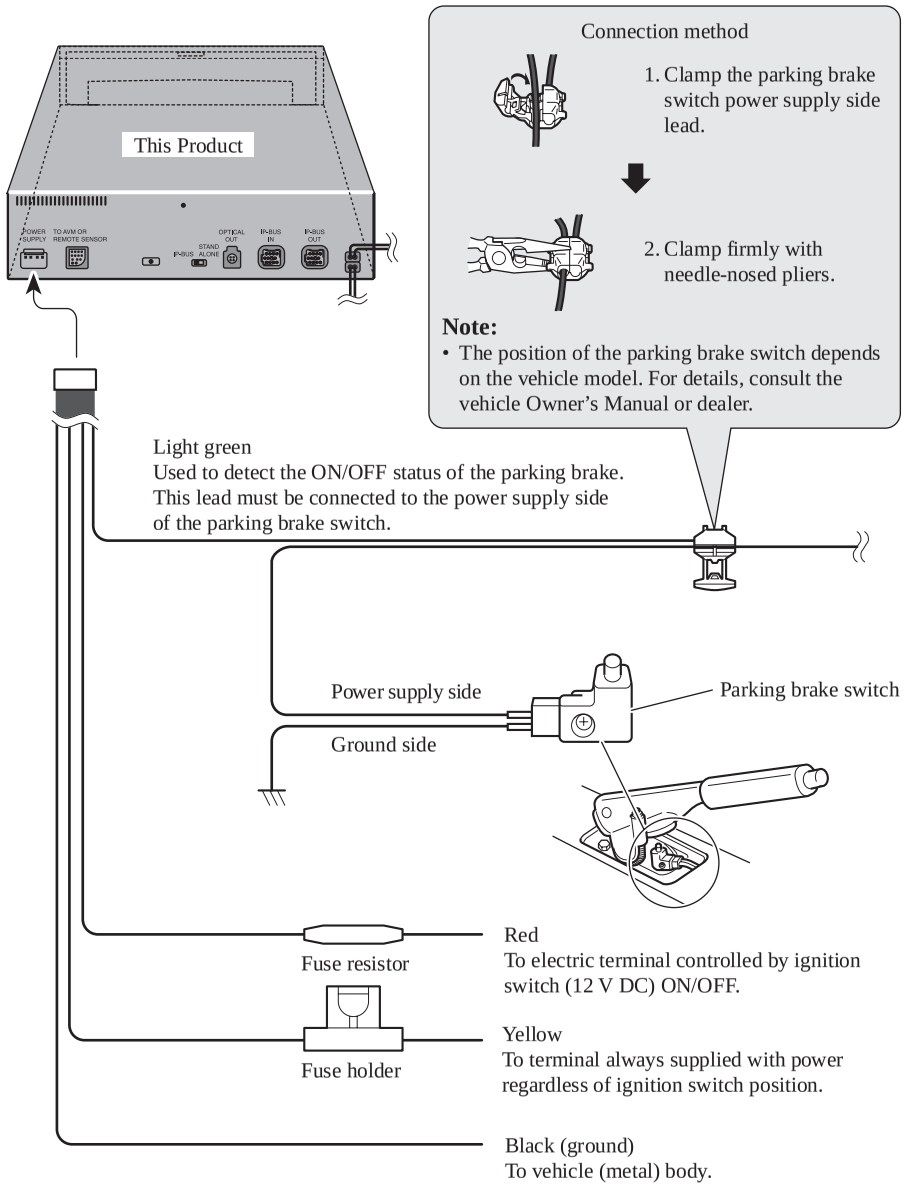
[For models except European models]
Dimensions ..... 38 (W) × 28 (H) × 15 (D) mm
[1-1/2 (W) × 1-1/8 (H) × 5/8 (D) in.]
Weight ..... 0.015 kg (0.033 lbs)

Video

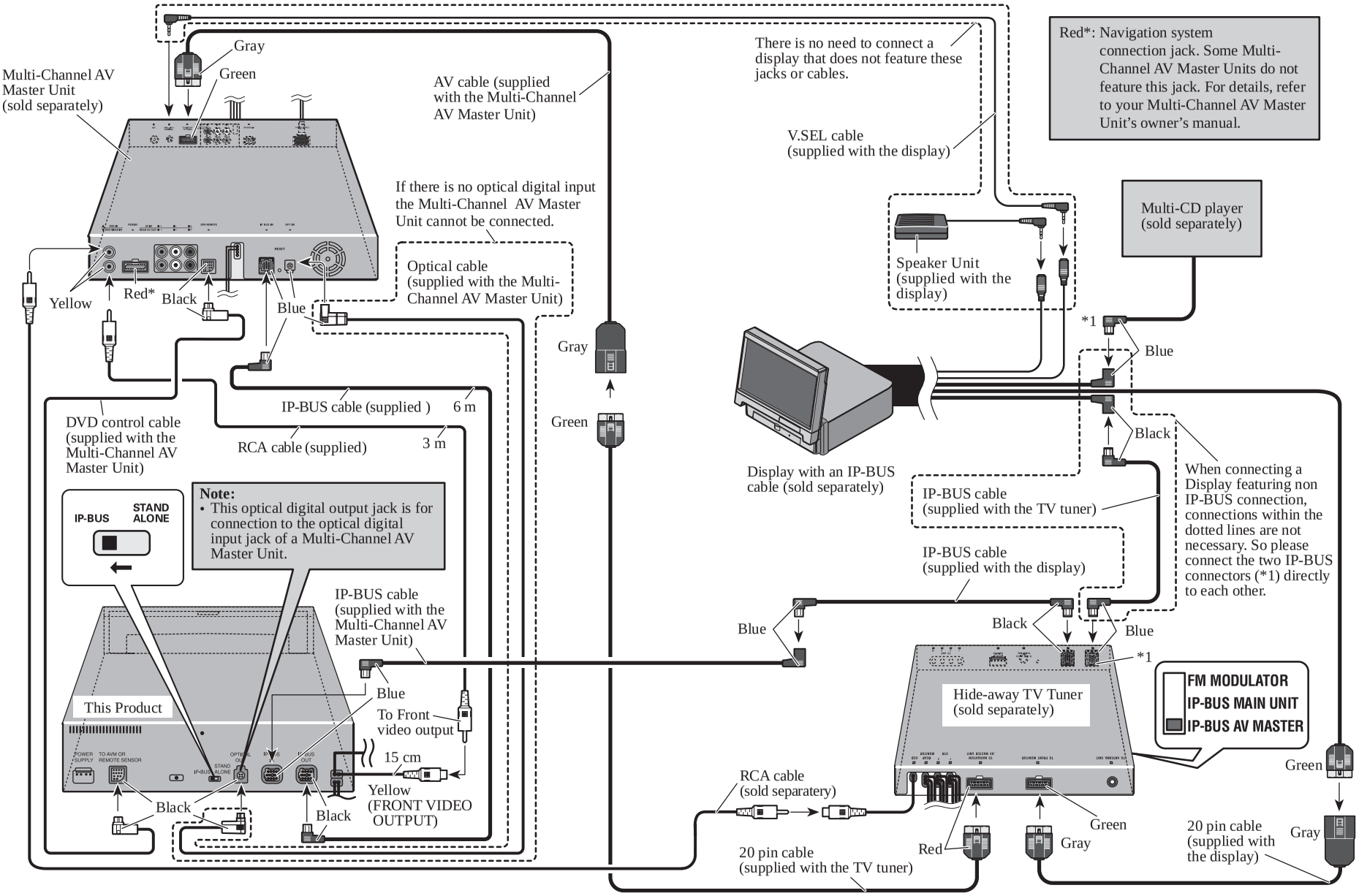
Output level ..... 1000 mVp-p/75 Ω (±0.2 V)

Note:
- Specifications and the design are subject to possible modification without notice due to improvements.

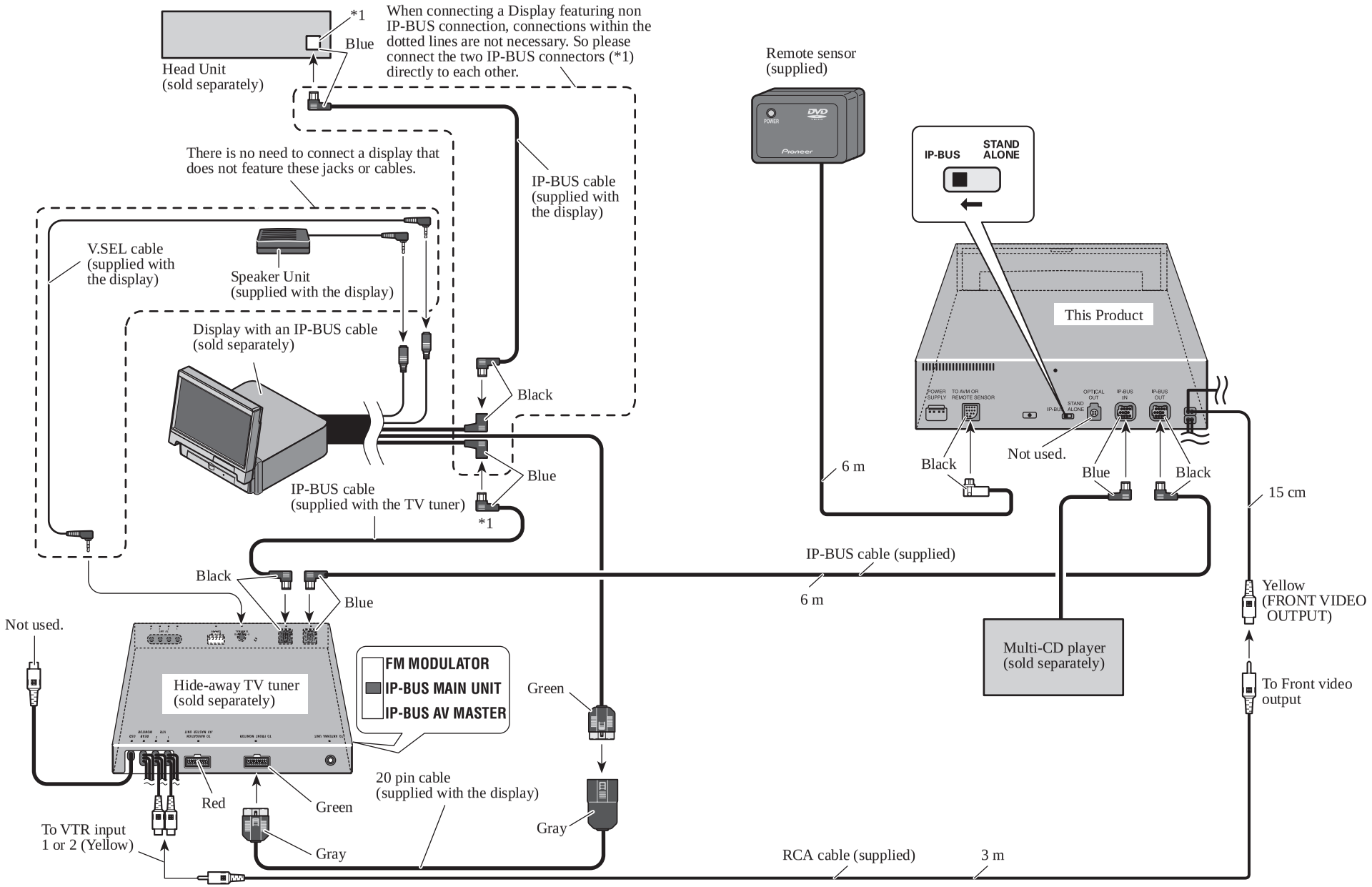
● Connecting the Power Cord



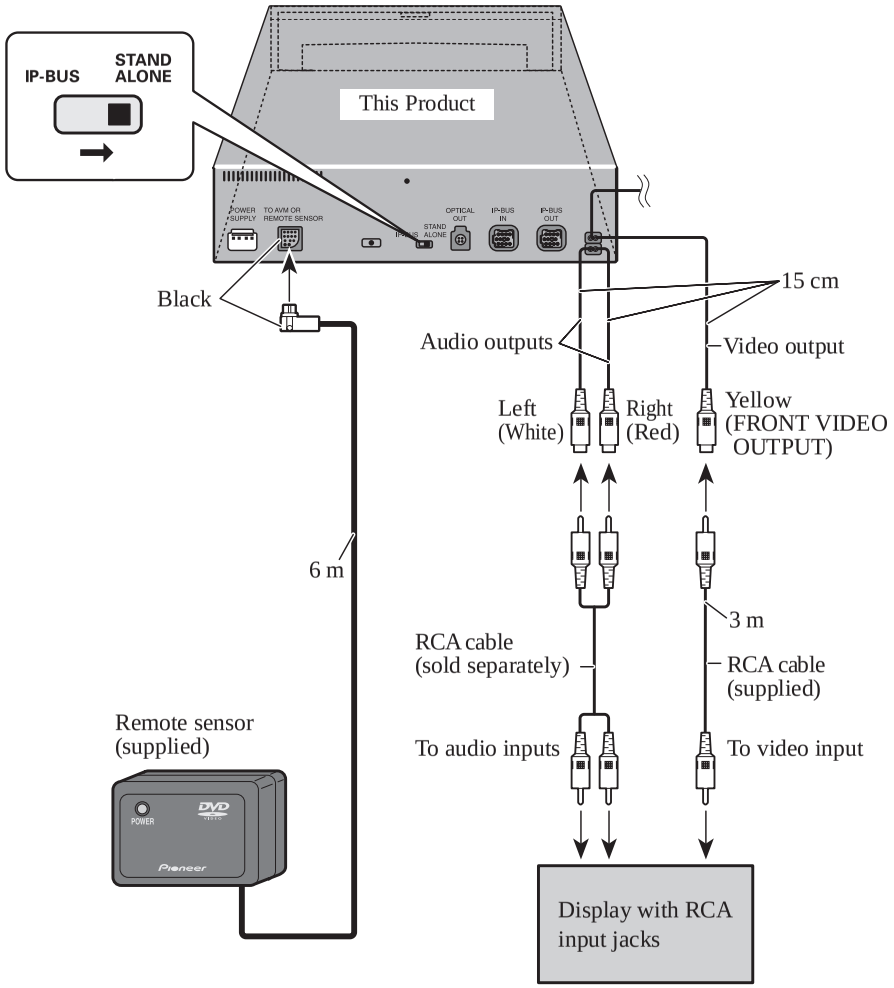
● When connecting the Multi-Channel AV Master Unit



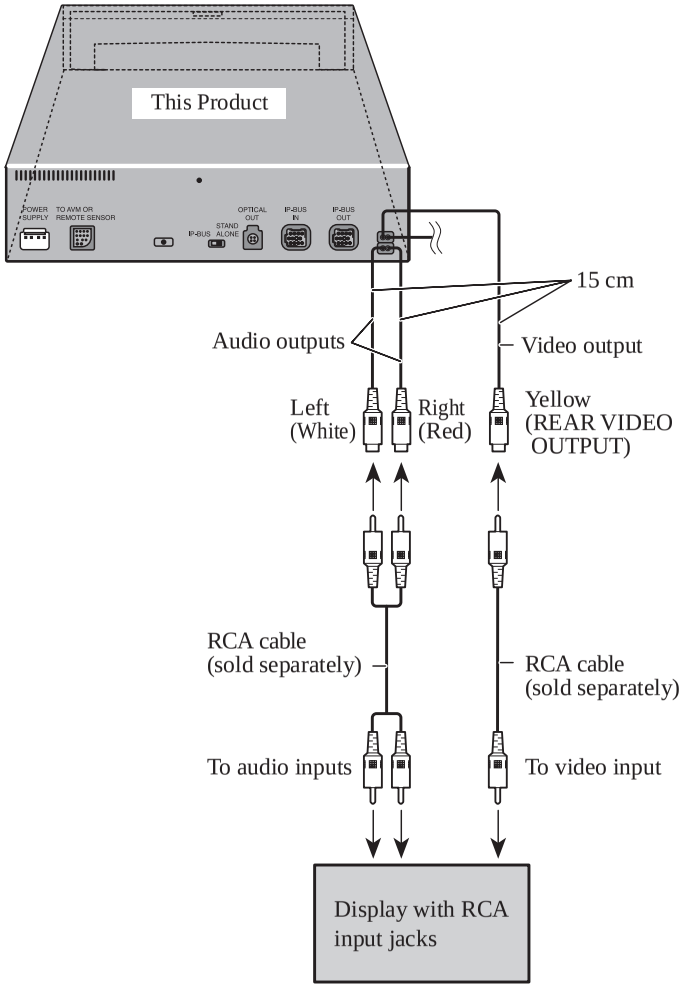
● When connecting the Head Unit



● When connecting the display with RCA input jacks



● When Using a Display connected Rear Video Output



Connecting a rear display
Instead of video output for viewing on a front display, you can connect for video output enabling viewing on a rear display (for passengers in the rear of the car).