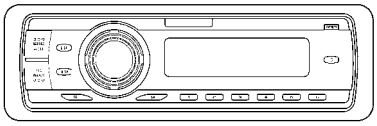
Pioneer sound.vision.soul

Service Manual



DEH-P770MP/XN/UC

ORDER NO.
CRT3333

MULTI-CD CONTROL HIGH POWER CD/MP3/WMA PLAYER WITH FM/AM TUNER

DEH-P770MP/XN/UC
DEH-P7700MP/XN/UC
DEH-P7750MP/XN/ES

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

Model No.	Order No.	Mech.Module	Remarks
CX-3158	CRT3394	S10.1AAC	CD Mech. Module:Circuit Description, Mech. Description, Disassembly

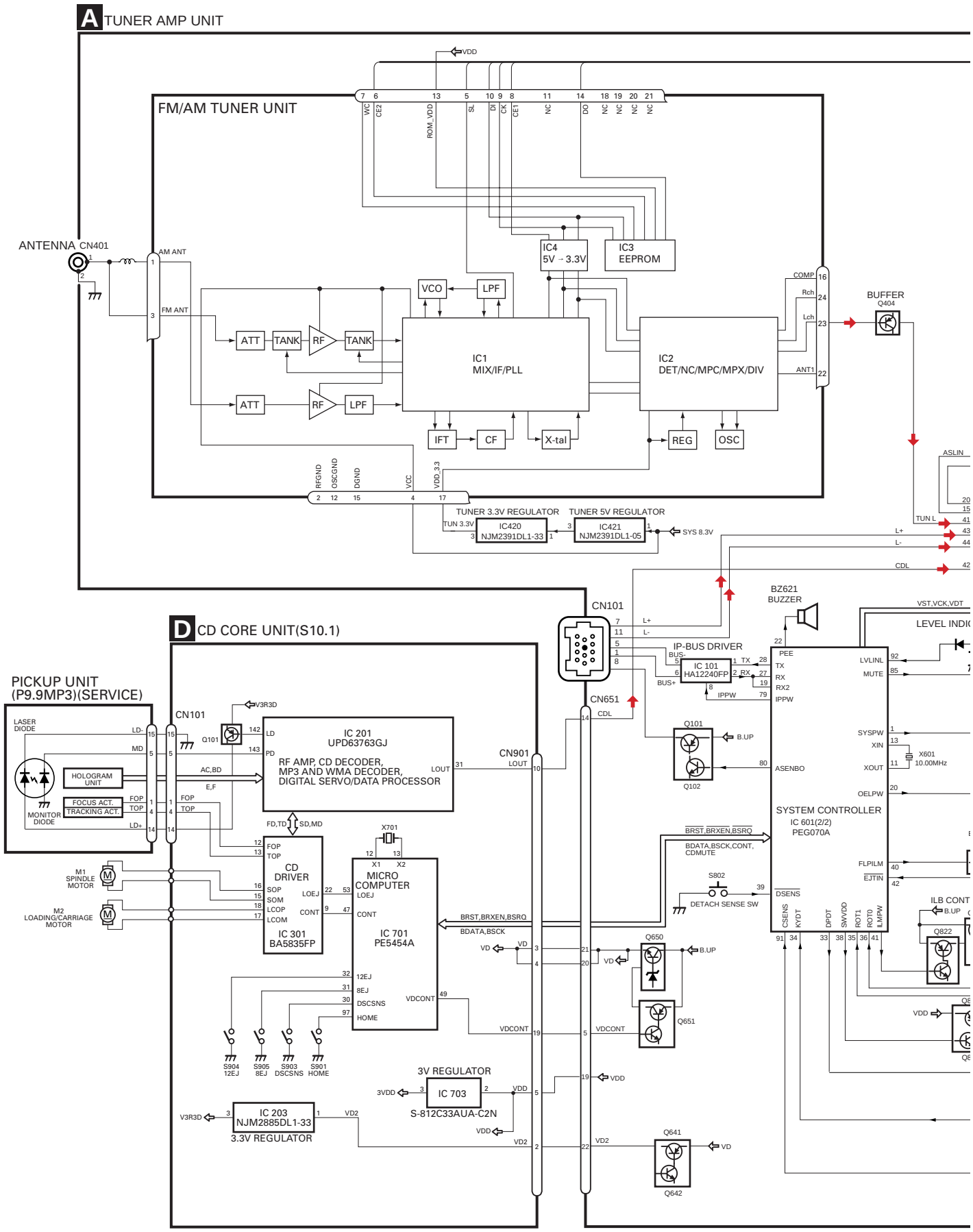
For details, refer to "Important Check Points for Good Servicing".

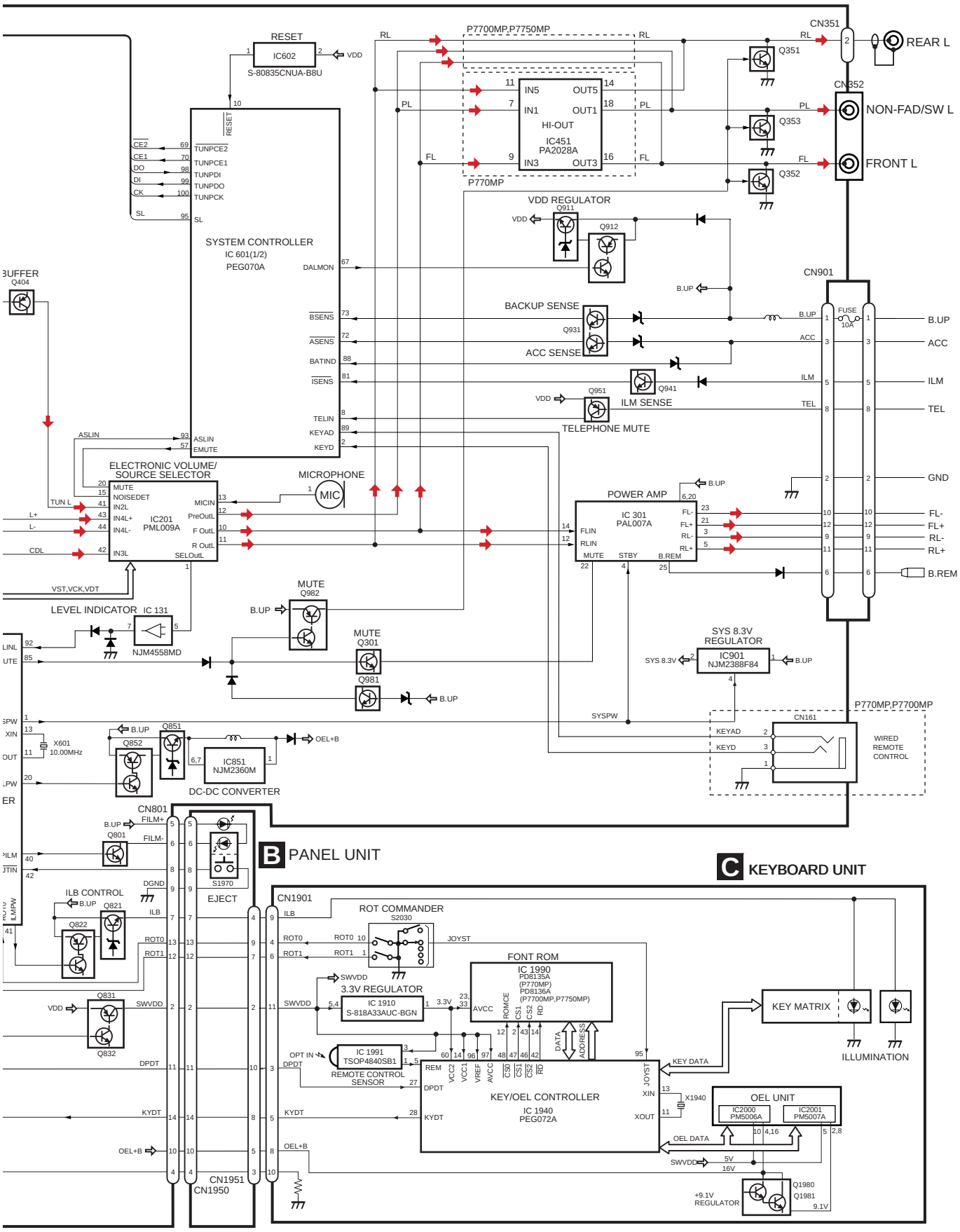
PIONEER CORPORATION 4-1, Meguro 1-chome, Meguro-ku, Tokyo 153-8654, Japan
PIONEER ELECTRONICS (USA) INC. P.O. Box 1760, Long Beach, CA 90801-1760, U.S.A.
PIONEER EUROPE NV Haven 1087, Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS ASIACENTRE PTE. LTD. 253 Alexandra Road, #04-01, Singapore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

K-ZZU.DEC. 2004 Printed in Japan

3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

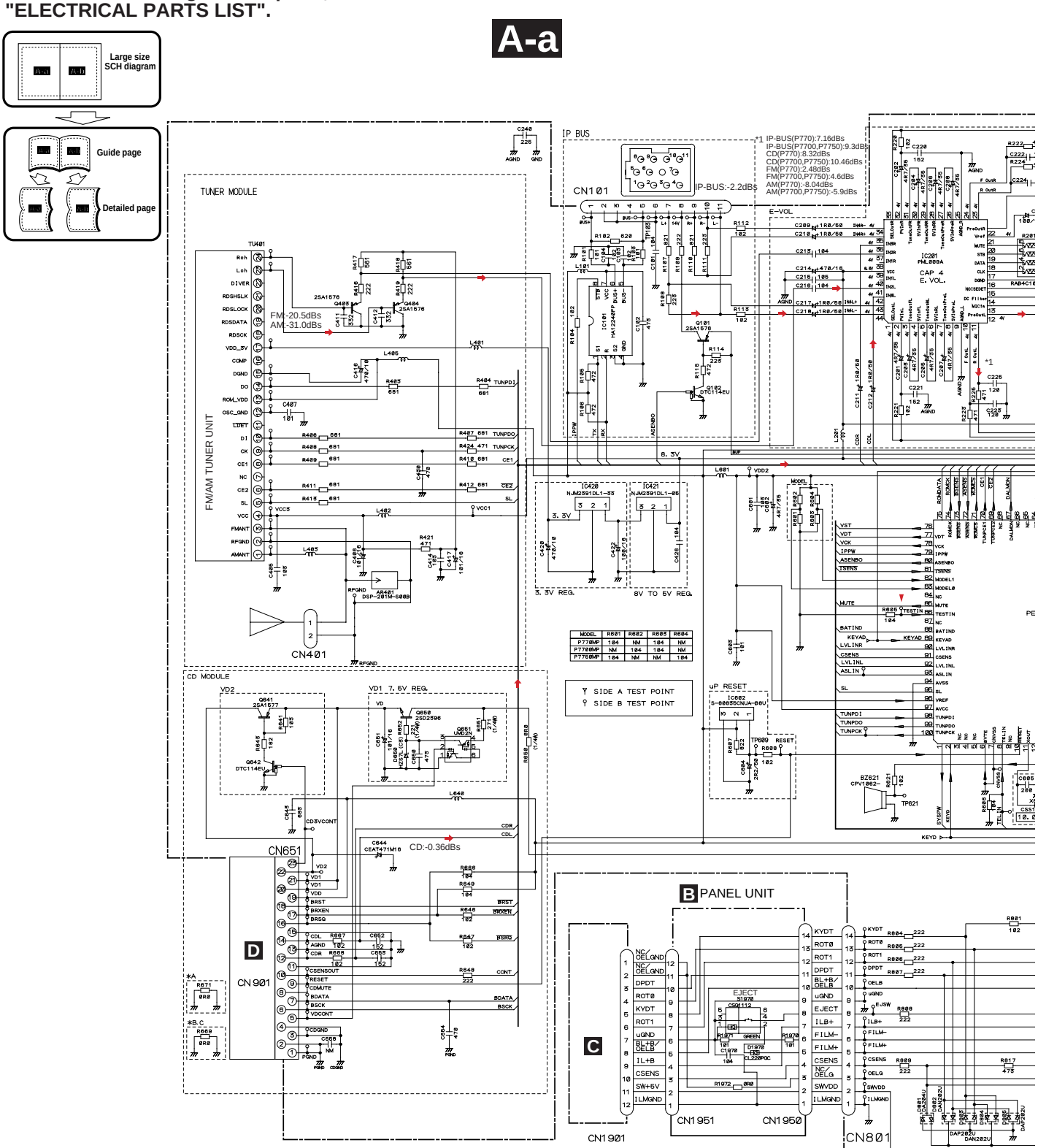
3.1 BLOCK DIAGRAM




RESET
IC602
S-80835CNUA-B8U
VDD
P7700MP,P7750MP
P770MP
IN5
OUT5
IN1
OUT1
HI-OUT
IC451
PA2028A
IN3
OUT3
CN351
REAR L
CN352
NON-FAD/SW L
FRONT L
Q351
Q353
Q352
RL
PL
FL
CE2
CE1
DO
DI
CK
SL
TUNPCE2
TUNPCE1
TUNPDI
TUNPDO
TUNPCK
SYSTEM CONTROLLER
IC 601(1/2)
PEG070A
DALMON
BSENS
ASENS
BATIND
ISENS
TELIN
KEYAD
KEYD
ASLIN
EMUTE
VDD REGULATOR
Q911
Q912
BUFFER
Q404
BACKUP SENSE
Q931
ACC SENSE
ILM SENSE
Q951
Q941
TELEPHONE MUTE
CN901
FUSE
10A
B.UP
ACC
ILM
TEL
GND
FL-
FL+
RL-
RL+
B.REM
ELECTRONIC VOLUME/
SOURCE SELECTOR
IC201
PML009A
MUTE
NOISEDET
IN2L
IN4L+
IN4L-
IN3L
MICIN
PreOutL
F OutL
R OutL
SELOutL
TUN L
L+
L-
CDL
VST,VCK,VDT
MICROPHONE
MIC
POWER AMP
IC 301
PAL007A
FLIN
RLIN
STBY
B.REM
LEVEL INDICATOR
IC 131
NJM4558MD
MUTE
Q982
Q301
Q981
SYS 8.3V
REGULATOR
IC901
NJM2388F84
SYS 8.3V
SYSPW
P770MP,P7700MP
CN161
KEYAD
KEYD
WIRED
REMOTE
CONTROL
X601
10.00MHz
Q852
Q851
IC851
NJM2360M
OEL+B
DC-DC CONVERTER
CN801
FILM+
FILM-
Q801
DGND
S1970
EJECT
ILB CONTROL
Q821
Q822
ILB
ROT0
ROT1
Q831
Q832
SWVDD
DPDT
KYDT
OEL+B
CN1951
CN1950
B PANEL UNIT
C KEYBOARD UNIT
CN1901
ROT COMMANDER
S2030
JOYST
FONT ROM
IC 1990
PD8135A
(P770MP)
PD8136A
(P7700MP,P7750MP)
3.3V REGULATOR
IC 1910
S-818A33AUC-BGN
3.3V
AVCC
ROMCE
CS1
CS2
RD
DATA
ADDRESS
KEY MATRIX
ILLUMINATION
OPT IN
IC 1991
TSOP4840SB1
REMOTE CONTROL
SENSOR
REM
VCC2
VCC1
VREF
AVCC
CS0
CS1
CS2
RD
KEY/OEL CONTROLLER
IC 1940
PEG072A
KEY DATA
XIN
XOUT
X1940
OEL UNIT
IC2000
PM5006A
IC2001
PM5007A
OEL DATA
5V
16V
+9.1V
REGULATOR
Q1980
Q1981
9.1V

3.2 OVERALL CONNECTION DIAGRAM(GUIDE PAGE)

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



MODEL	R601	R602	R603	R604
P770MP	184	NM	184	NM
P7700MP	NM	184	184	NM
P7750MP	184	NM	NM	184

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.

For resistors and capacitors in the circuit diagrams, their resistance values or capacitance values are expressed in codes:

Ex. *Resistors

Code	Practical value
123	12k ohms
103	10k ohms

*Capacitors

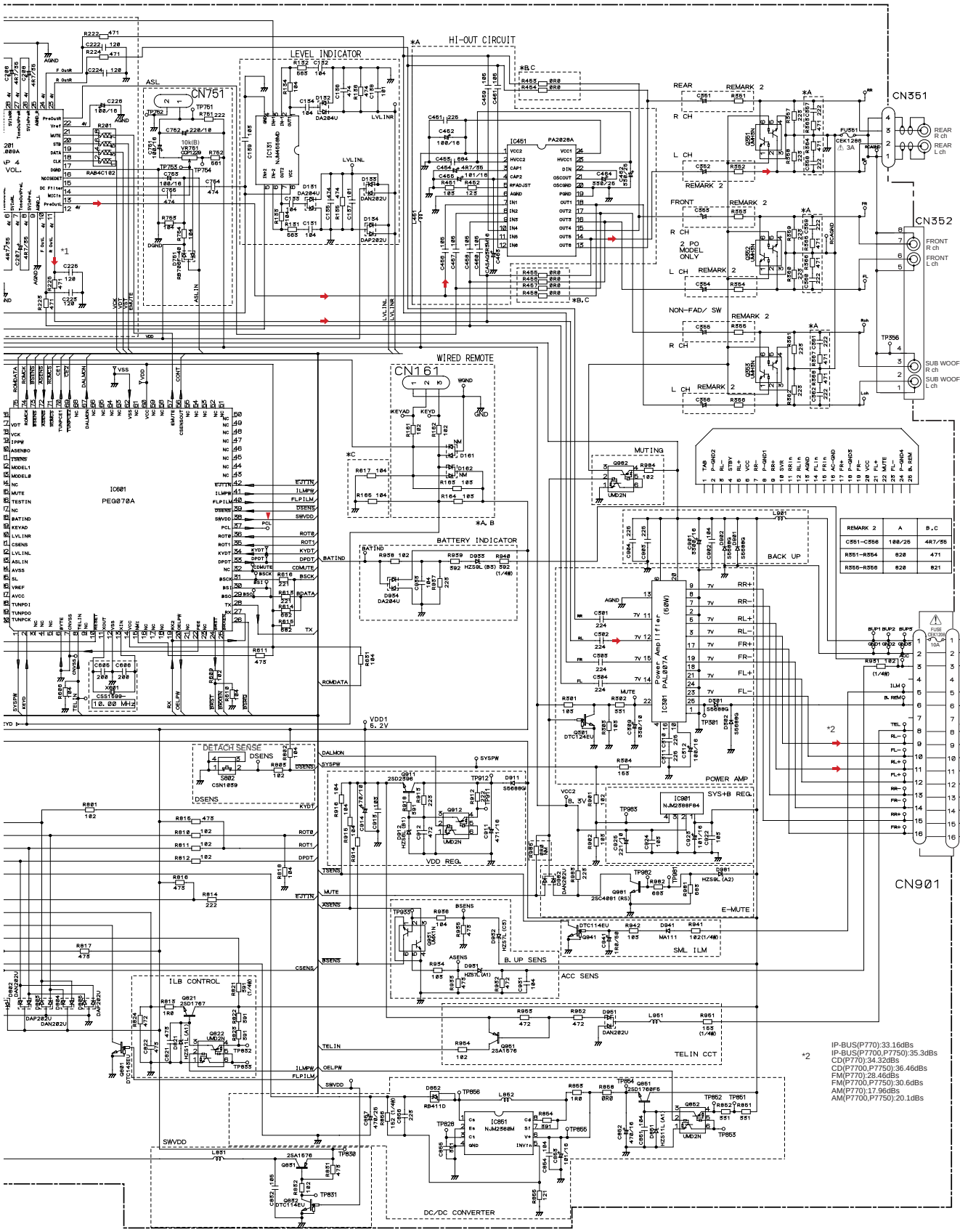
Code	Practical value
103	0.01uF
101/10	100uF/10V

*	
A	DEH-P770MP/XN/UC
B	DEH-P7700MP/XN/UC
C	DEH-P7750MP/XN/ES

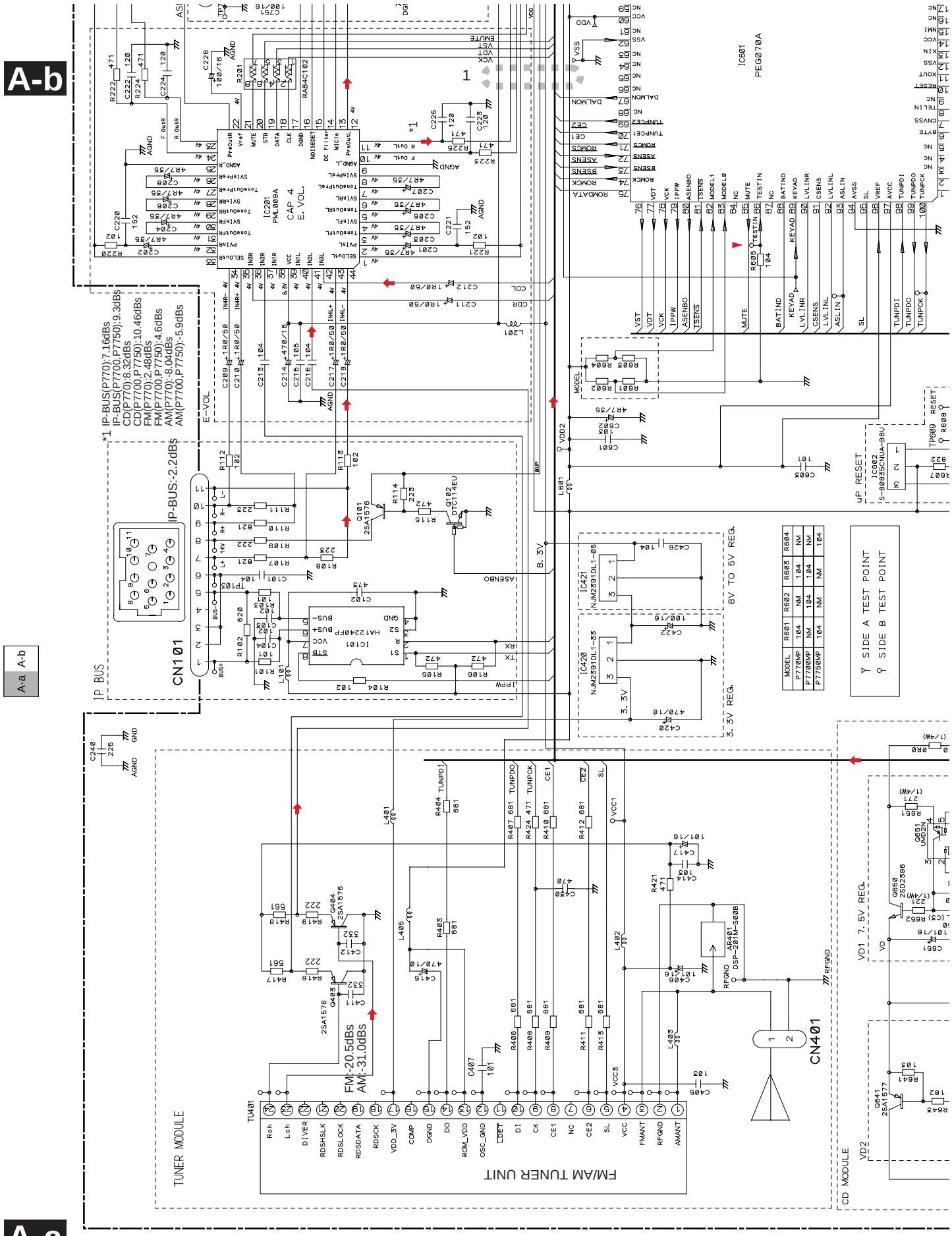
A B

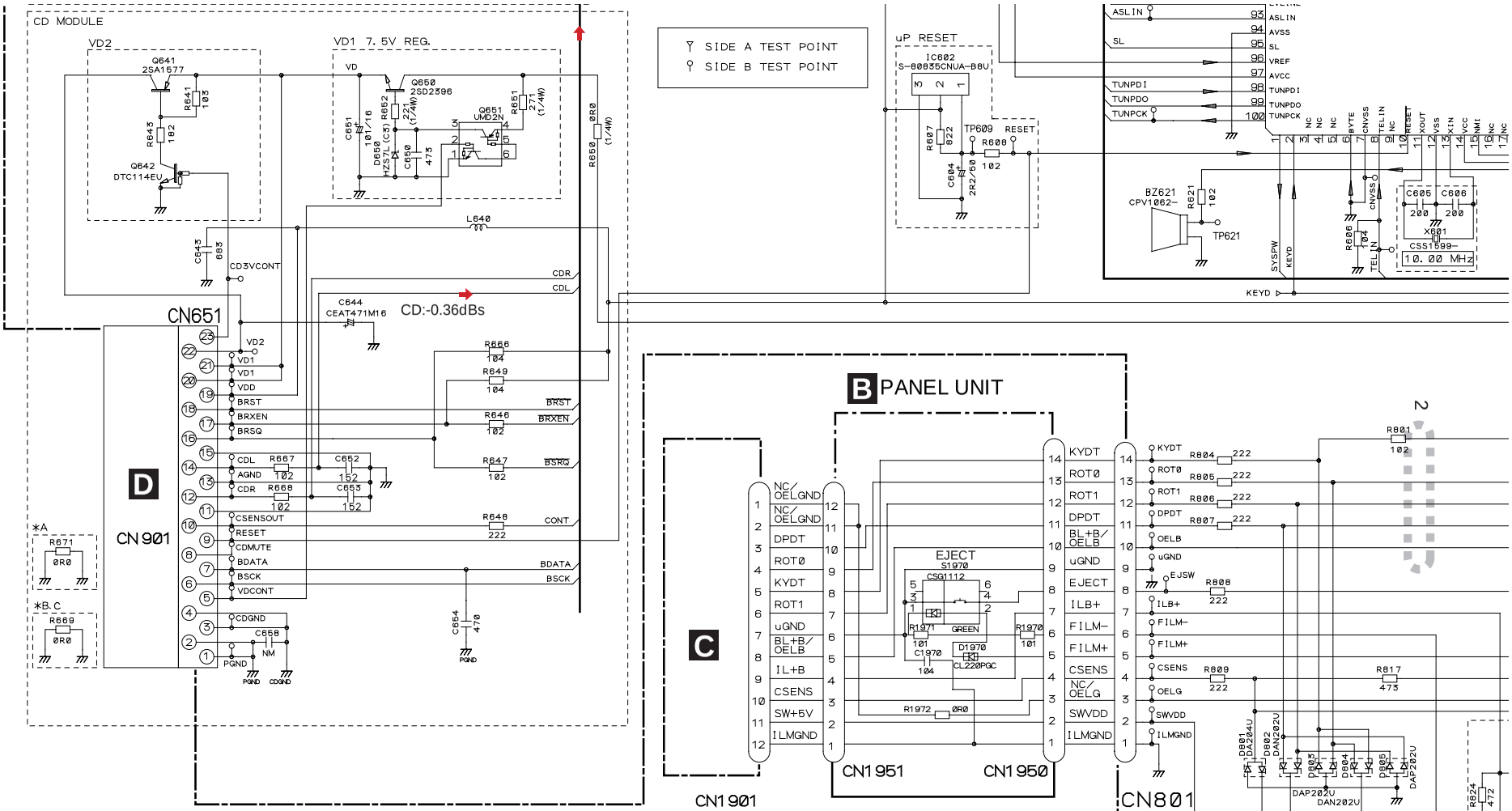
A-b

A TUNER AMP UNIT



REMARK 2	A	B,C
C551-C556	100/25	4R7/35
R551-R554	820	471
R555-R556	820	821


A-b
A-a
IC601
PEG070A
IC201
PML0069A
CAP 4
E. VOL.
IC101
HA12240FP
CN101
IP BUS
IP-BUS:-2.2dB$
IP-BUS(P770):7.16dB
IP-BUS(P770D,P7750):9.3dB
CD(P770):8.32dB
CD(P770D,P7750):10.46dB
FM(P770):2.48dB
FM(P770D,P7750):4.6dB
AM(P770):-8.04dB
AM(P770D,P7750):-5.9dB
FM:-20.5dB
AM:-31.0dB
TUNER MODULE
FM/AM TUNER UNIT
CN401
CD MODULE
IC421
NJM2391DL1-05
8V TO 5V REG.
IC420
NJM2391DL1-33
3.3V REG.
VD1 7.5V REG.
VD2
IC602
S-80835CNUA-BBU
uP RESET
SIDE A TEST POINT
SIDE B TEST POINT
MODEL R601 R602 R603 R604
P770MP 104 NM 104 NM
P770DMP NM 104 104 NM
P7750MP 104 NM NM 104



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.

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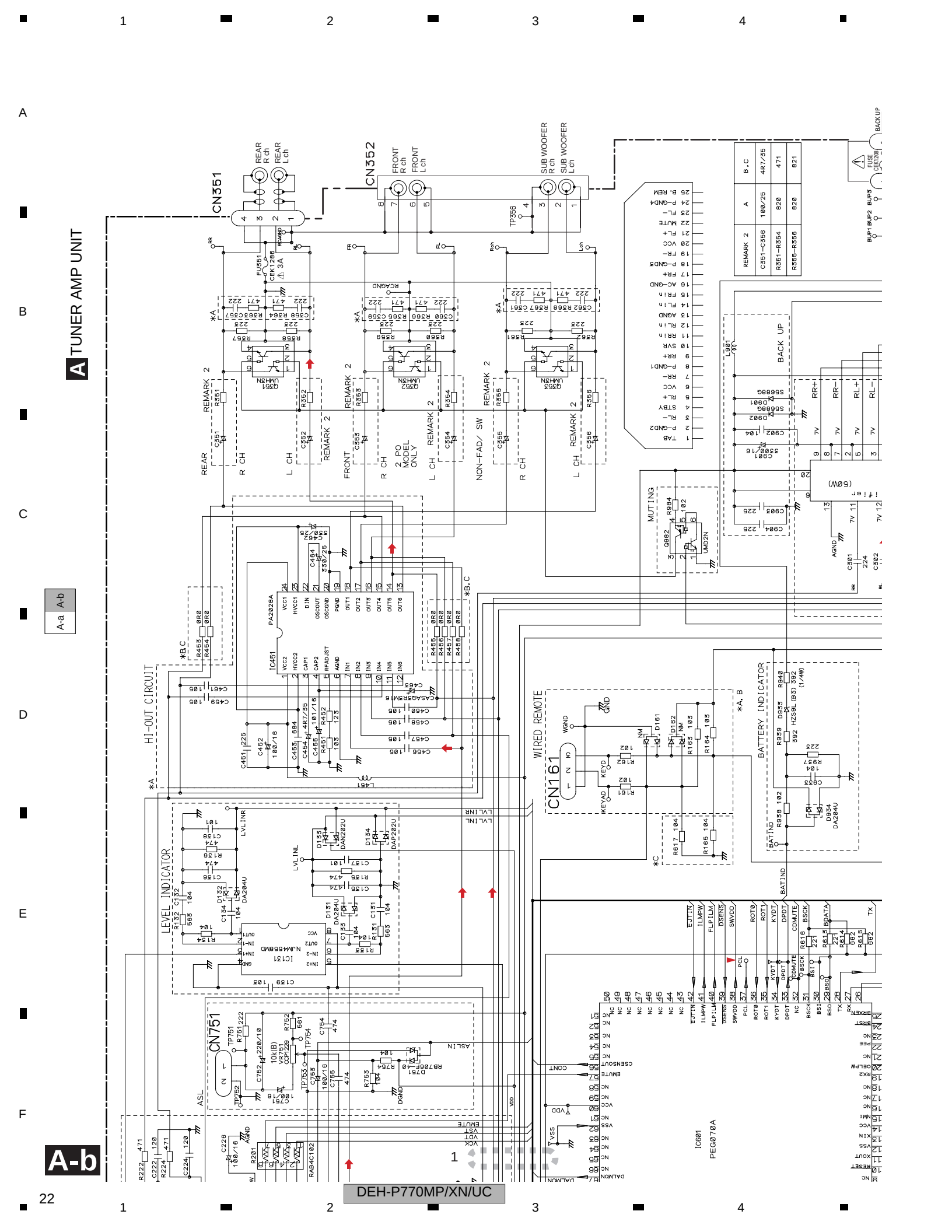
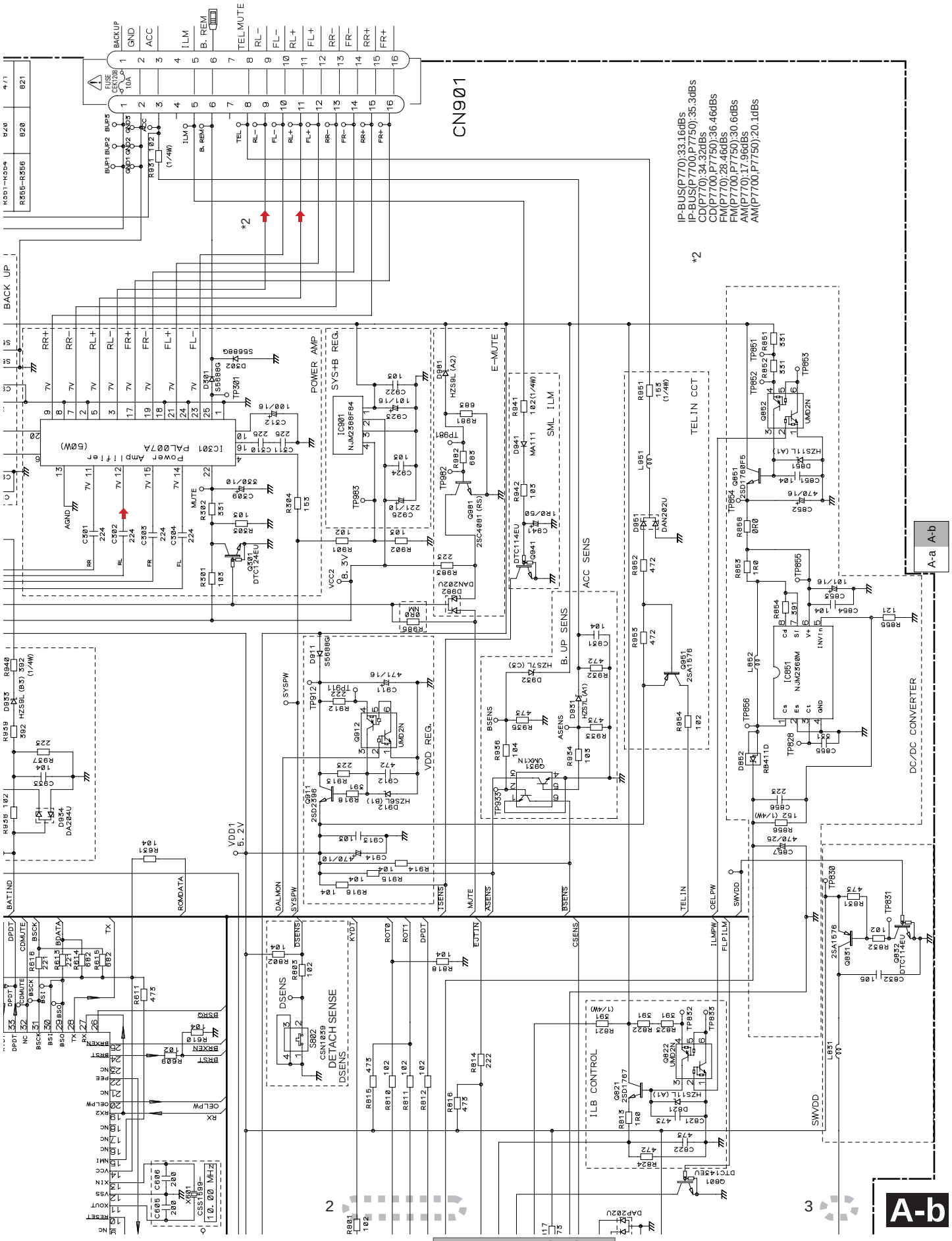
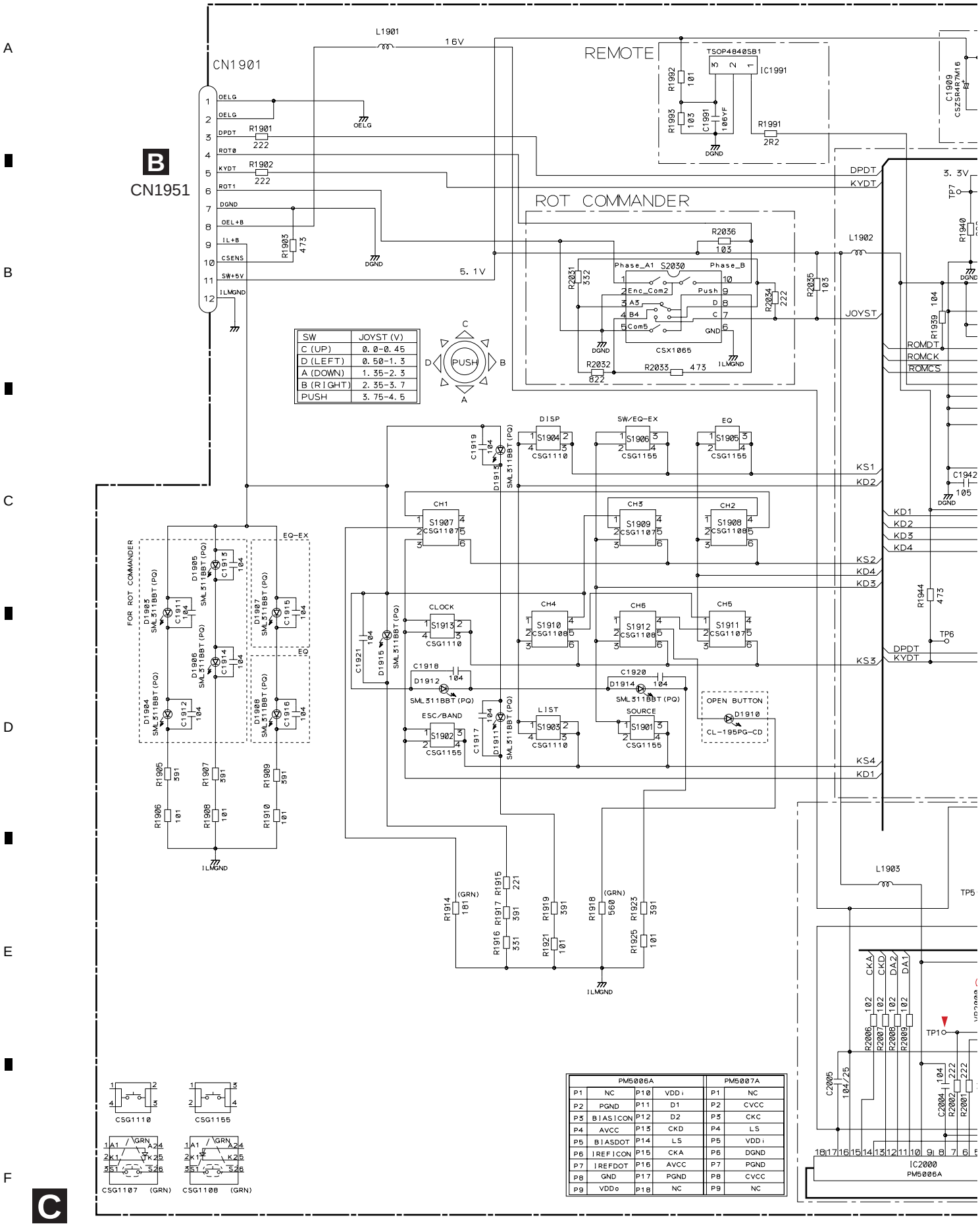
Code	Practical value
103	0.01uF
101/10	100uF/10V

*	
A	DEH-P770MP/XN/UC
B	DEH-P7700MP/XN/UC
C	DEH-P7750MP/XN/ES


A TUNER AMP UNIT
A-a A-b
A-b
CN351
CN352
CN751
CN161
IC451
PA2028A
IC131
N.JM4558MD
IC601
PEG070A
HI-OUT CIRCUIT
LEVEL INDICATOR
WIRED REMOTE
BATTERY INDICATOR
MUTING
BACK UP
REAR R ch
REAR L ch
FRONT R ch
FRONT L ch
SUB WOOFER R ch
SUB WOOFER L ch
REMARK 2
NON-FAD/ SW
2 PO MODEL ONLY

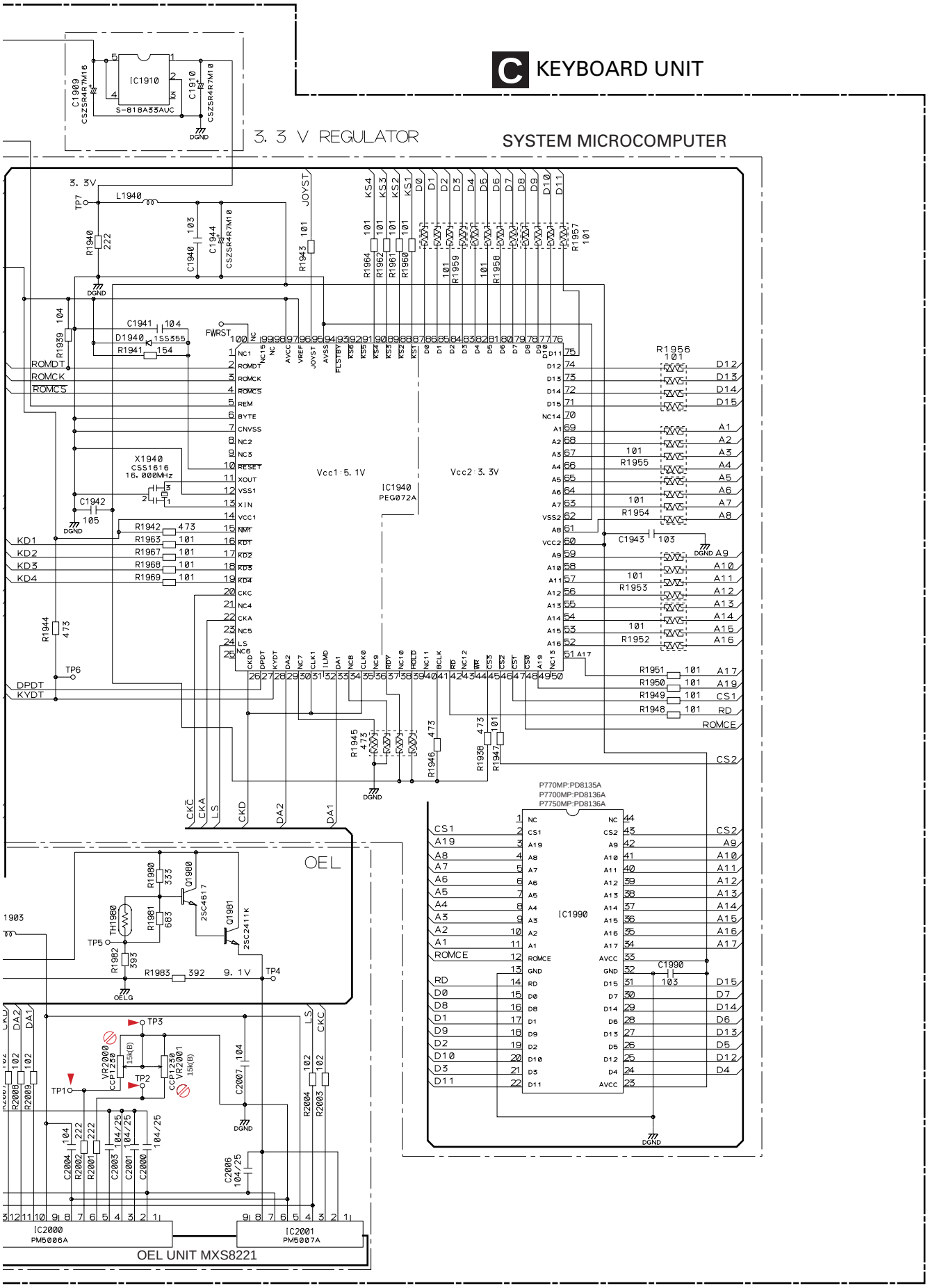

CN901
BACK UP
GND
ACC
ILM
B. REM
TEL MUTE
RL−
FL−
RL+
FL+
RR−
FR−
RR+
FR+
IP-BUS(P770):33.16dBs
IP-BUS(P770,P7750):35.3dBs
CD(P770):34.32dBs
CD(P7700,P7750):36.46dBs
FM(P770):28.46dBs
FM(P7700,P7750):30.6dBs
AM(P770):17.96dBs
AM(P7700,P7750):20.1dBs
IC301 PAL007A (50W)
Power Amplifier
POWER AMP
SYS+B REG.
IC901 NJM2598F84
E-MUTE
SML ILM
TEL IN CCT
ACC SENS
B. UP SENS
VDD REG.
DC/DC CONVERTER
IC861 NJM2360M
DETACH SENSE
CSN1039
ILB CONTROL
VDD1 5.2V
VCC2 8.3V
SWVDD
A-a
A-b

3.3 KEYBOARD UNIT



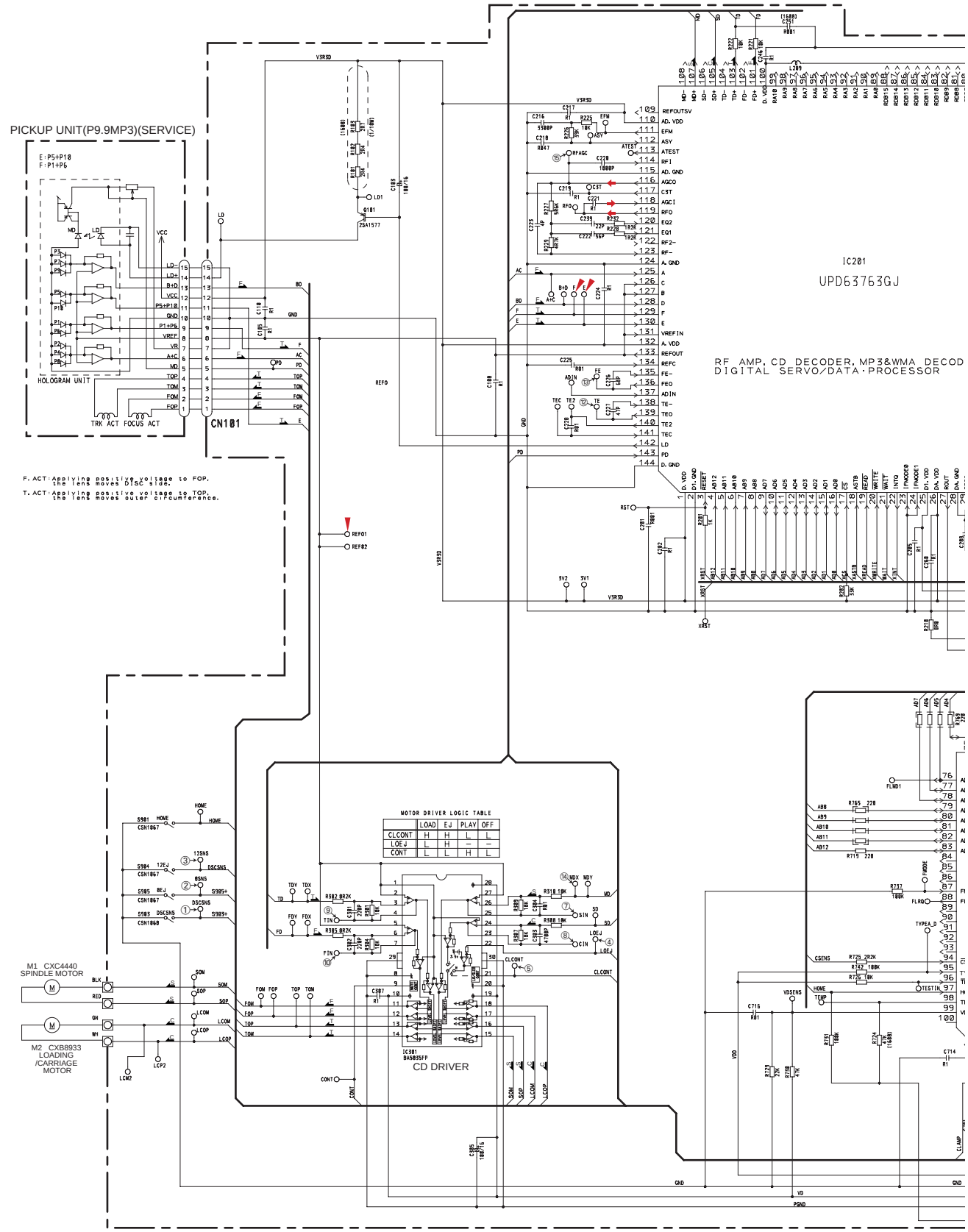
SW	JOYST (V)
C (UP)	0.0-0.45
D (LEFT)	0.50-1.3
A (DOWN)	1.35-2.3
B (RIGHT)	2.35-3.7
PUSH	3.75-4.5

PM5006A				PM5007A	
P1	NC	P10	VDDi	P1	NC
P2	PGND	P11	D1	P2	CVCC
P3	BIASICON	P12	D2	P3	CKC
P4	AVCC	P13	CKD	P4	LS
P5	BIASDOT	P14	LS	P5	VDDi
P6	IREFICON	P15	CKA	P6	DGND
P7	IREFDOT	P16	AVCC	P7	PGND
P8	GND	P17	PGND	P8	CVCC
P9	VDDo	P18	NC	P9	NC


C KEYBOARD UNIT
3. 3 V REGULATOR
SYSTEM MICROCOMPUTER
IC1910
S-818A33AUC
IC1940
PEG072A
Vcc1:5.1V
Vcc2:3.3V
X1940
CSS1616
16.000MHz
IC1990
P770MP:PD8135A
P7700MP:PD8136A
P7750MP:PD8136A
OEL
OEL UNIT MXS8221
IC2000
PM5006A
IC2001
PM5007A
ROMDT
ROMCK
ROMCS
KD1
KD2
KD3
KD4
DPDT
KYDT
ROMCE
CS1
CS2
RD
DGND

3.4 CD MECHANISM MODULE(GUIDE PAGE)

D-a



D

D-b

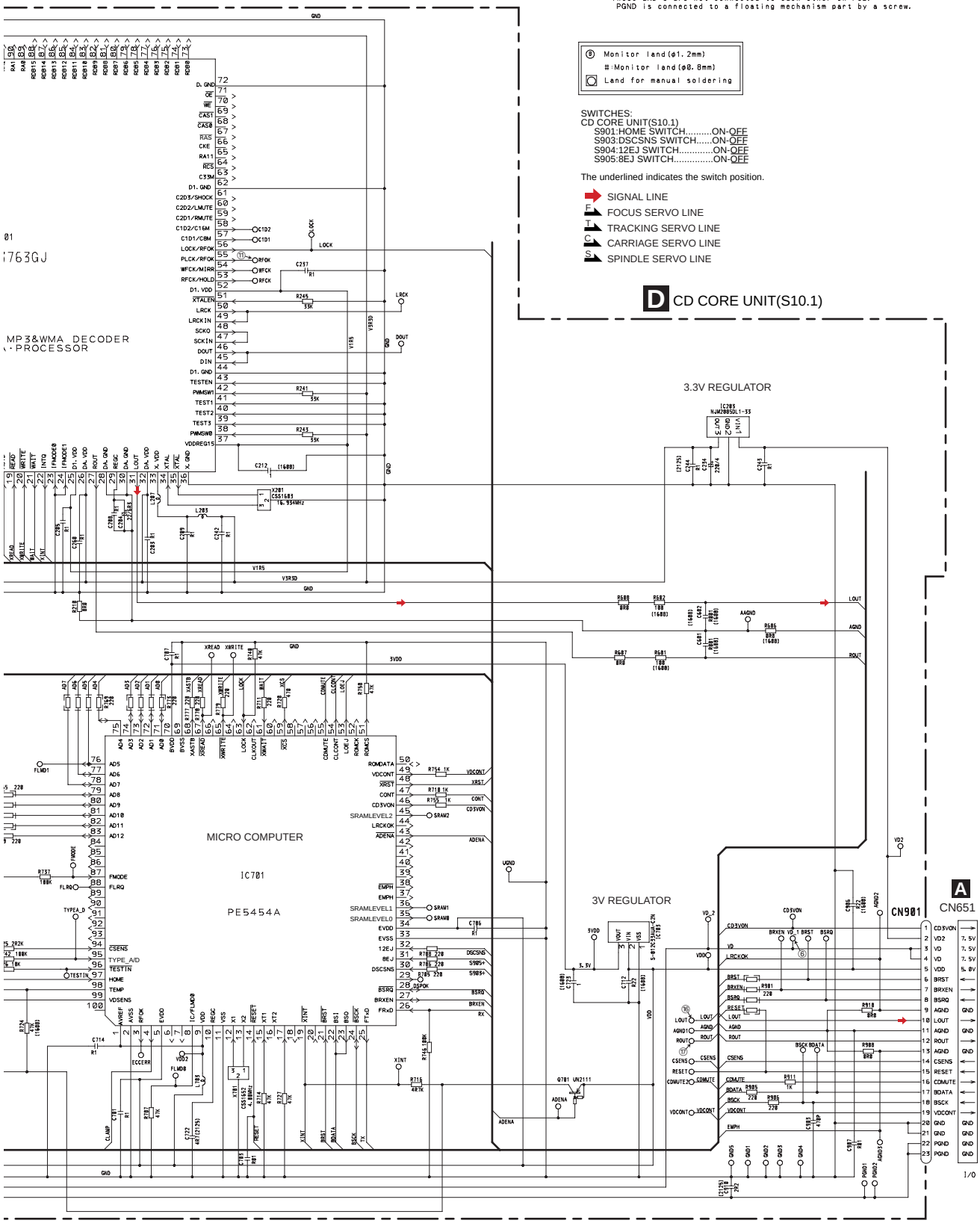
NOTE1) GND ...CD LSI, RFAMP, CPU
PGND ...Actuator, Motor Driver
AGND ...Audio
These GND's are not connected to each other on PCB.
PGND is connected to a floating mechanism part by a screw.

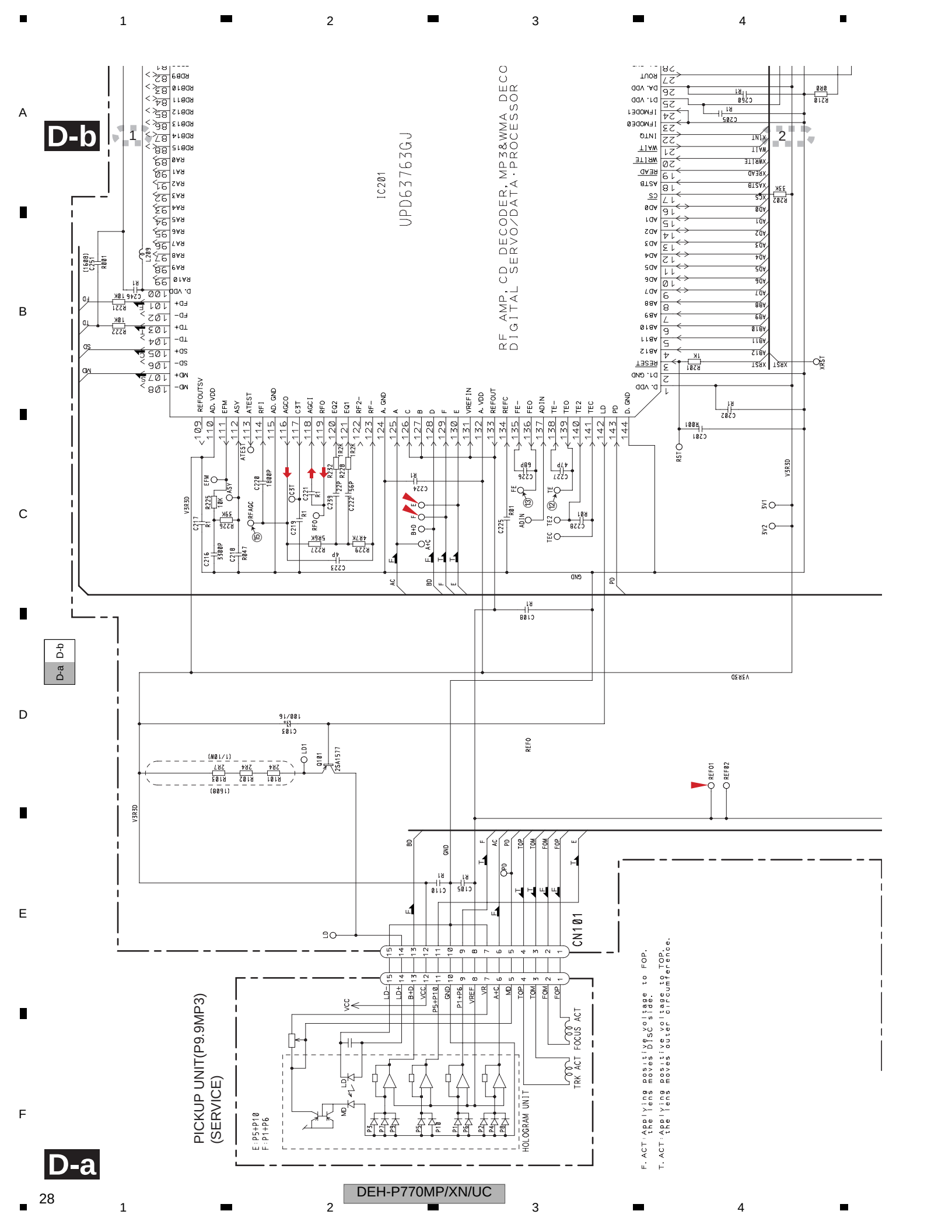
Ⓑ Monitor land(ø1.2mm)
#:Monitor land(ø0.8mm)
Land for manual soldering

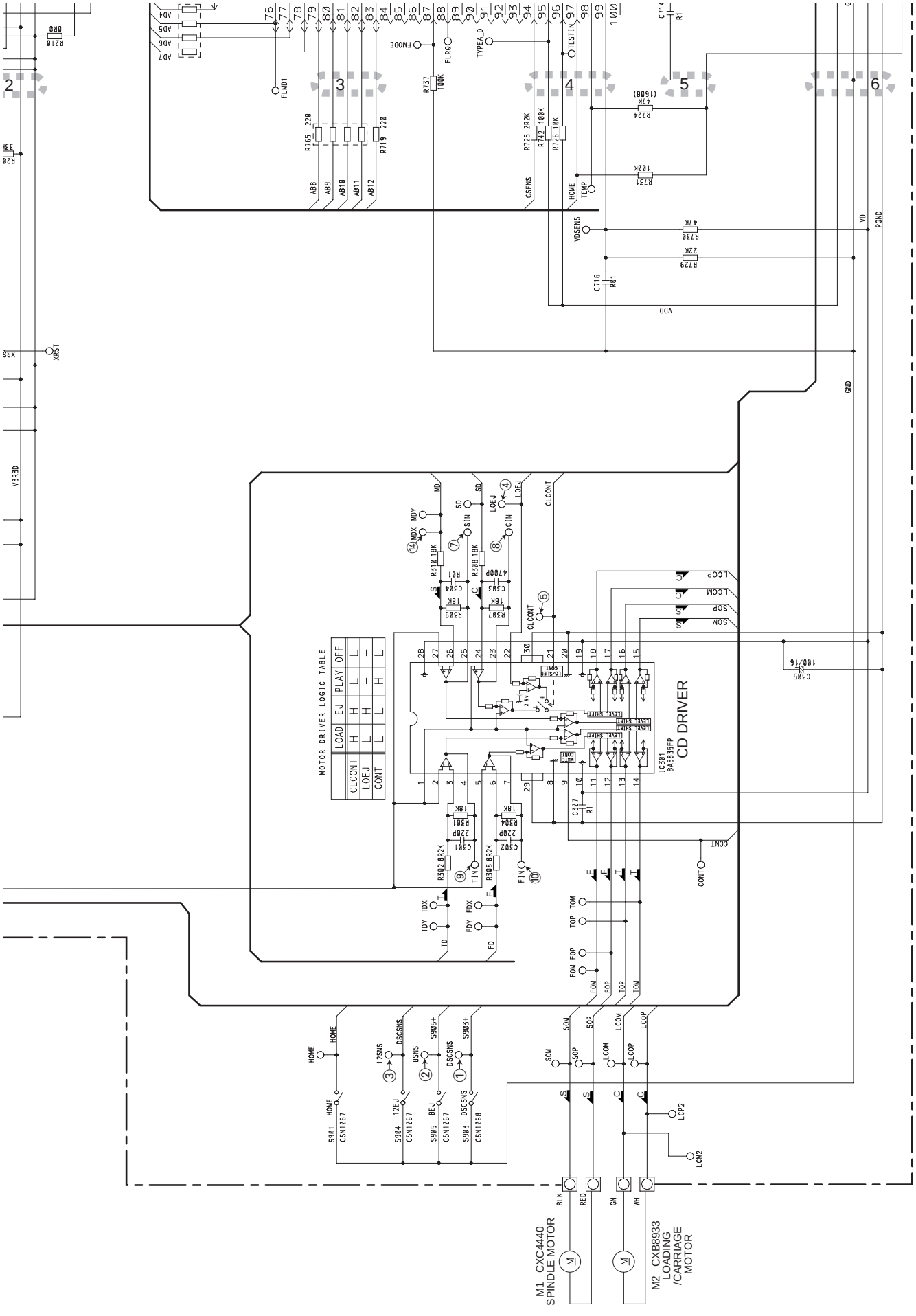
SWITCHES:
CD CORE UNIT(S10.1)
S901:HOME SWITCH.....ON-OFF
S903:DSCSNS SWITCH.....ON-OFF
S904:12EJ SWITCH.....ON-OFF
S905:8EJ SWITCH.....ON-OFF

The underlined indicates the switch position.

SIGNAL LINE
FOCUS SERVO LINE
TRACKING SERVO LINE
CARRIAGE SERVO LINE
SPINDLE SERVO LINE




D-b
D-a
IC201
UPD63763GJ
RF AMP, CD DECODER, MP3&WMA DECO
DIGITAL SERVO/DATA·PROCESSOR
CN101
PICKUP UNIT(P9.9MP3)
(SERVICE)
HOLOGRAM UNIT
TRK ACT FOCUS ACT
F. ACT : Applying positive voltage to FOP, the lens moves DISC side.
T. ACT : Applying positive voltage to TOP, the lens moves outer circumference.


D-b
D-a
CD DRIVER
IC301
BA5835FP
MOTOR DRIVER LOGIC TABLE
CLCONT
LOEJ
CONT
LOAD
EJ
PLAY
OFF
M1 CXC4440
SPINDLE MOTOR
M2 CXB8933
LOADING
/CARRIAGE
MOTOR
BLK
RED
GN
WH
LCP2
LCM2
S901 CSN1067
S904 CSN1067
S905 CSN1067
S903 CSN1068
HOME
12SNS
DSCSNS
BSNS
S905+
S903+
12EJ
BEJ
SOM
SOP
LCOM
LCOP
TOM
TOP
FOM
FOP
TDX
TDY
FDX
FDY
TIN
FIN
CONT
VDD
GND
PGND
VD
VDSENS
TEMP
CSENS
FLMD1
FMODE
FLRQ
TYPEA_D
TESTIN
XRST
V3R3D
R210
0R0
R733
100K
R765
220
R719
220
R725
282K
R742
100K
R726
10K
R724
4.7K
(160B)
R731
100K
R730
4.7K
R729
22K
C714
R1
C716
R01
C305
100/16
C307
R1
R302
82K
R305
82K
R301
18K
R304
18K
C301
220P
C302
220P
R309
18K
R307
18K
C304
C303
4700P
R310
10K
R308
10K
R01
LOEJ
CLCONT
SD
SIN
CIN
WD
WDX
WDY
LCOP
LCOM
SOP
SOM
LEVEL SHIFT
MOTE CONT
LOSTEP CONT

D-b

D-a D-b

NOTE1) GND ...CD LSI、RFAMP、CPU
PGND ...Actuator, Motor Driver
AGND ...Audio
These GND's are not connected to each other on PCB.
PGND is connected to a floating mechanism part by a screw.

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#:Monitor land(φ0.8mm)
◯ Land for manual soldering

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S903:DSCSNS SWITCH.....ON-OFF
S904:12EJ SWITCH.....ON-OFF
S905:8EJ SWITCH.....ON-OFF

The underlined indicates the switch position.

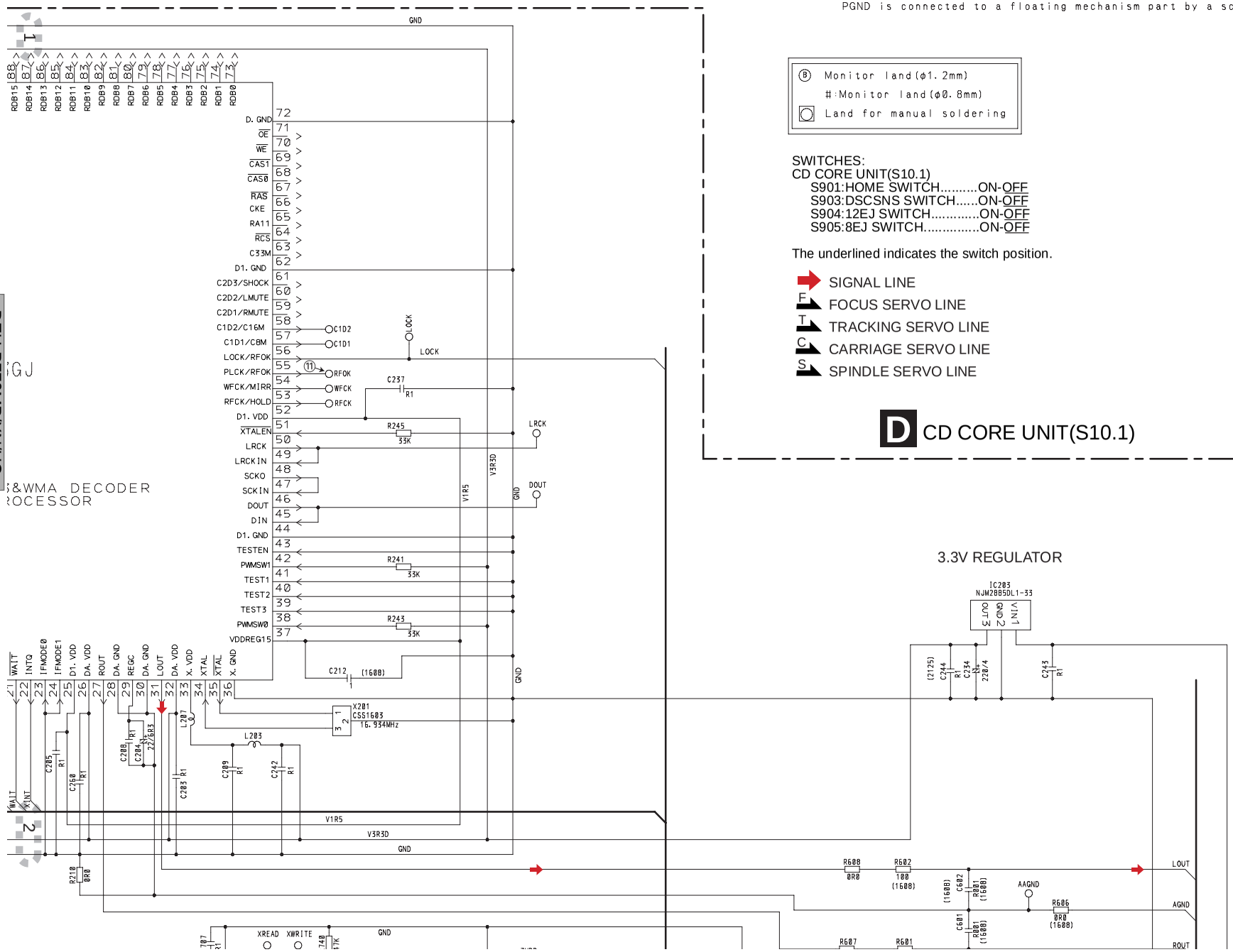
SIGNAL LINE
FOCUS SERVO LINE
TRACKING SERVO LINE
CARRIAGE SERVO LINE
SPINDLE SERVO LINE

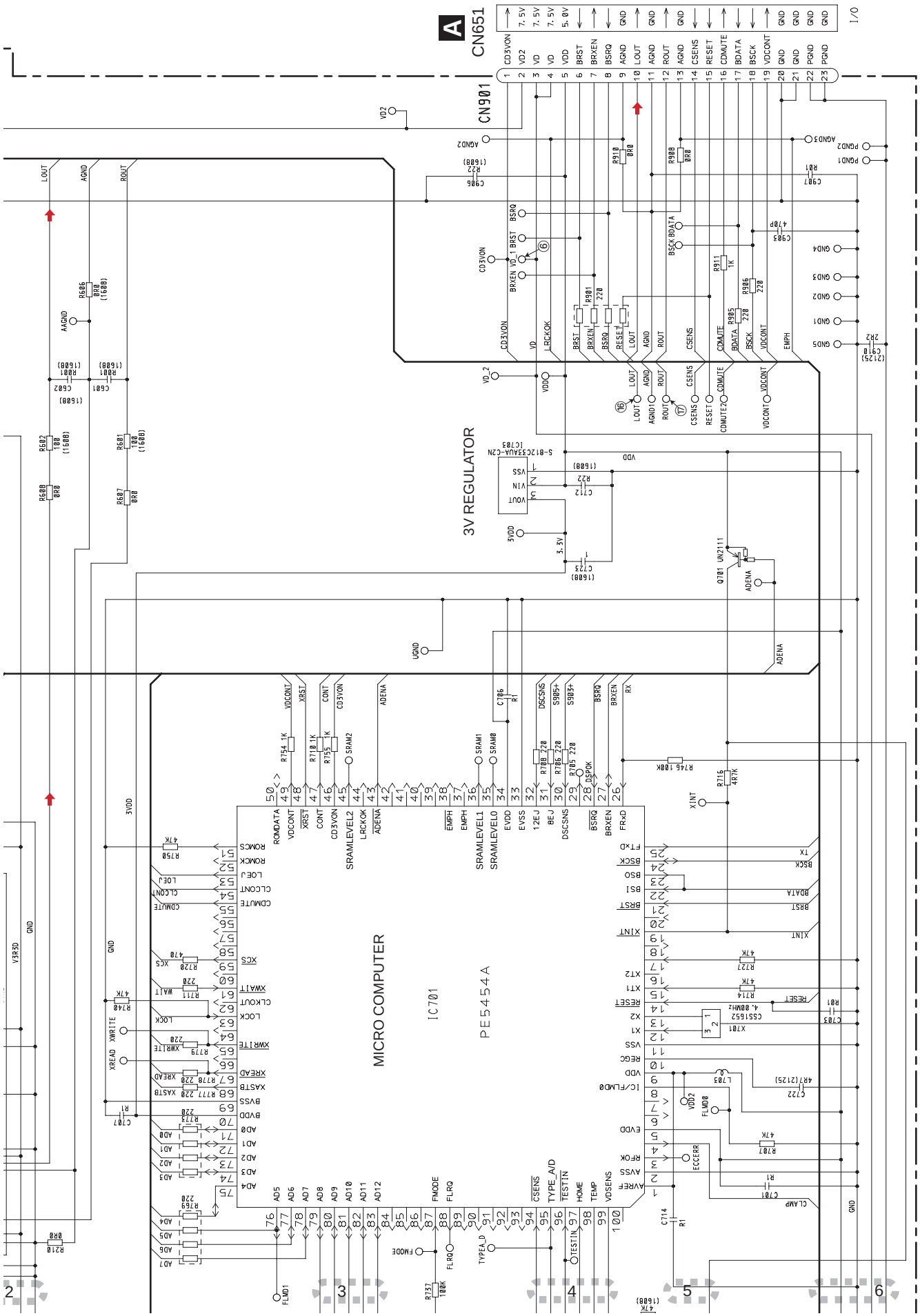
D CD CORE UNIT(S10.1)

DEH-P770MP/XN/UC

GJ

&WMA DECODER
ROCESSOR




CN651
CN901
3V REGULATOR
MICRO COMPUTER
IC701
PE5454A
Q701 UN2111
X701 4.00MHZ
ADENA
XINT
XREAD
XWRITE
XRESET
CLAMP
FLMD1
FLMD0
FMODE
FLRQ
TYPE_A/D
TESTIN
ECCERR
VDD2
3VDD
VDD
GND
V3R3D
UGND

D-a D-b

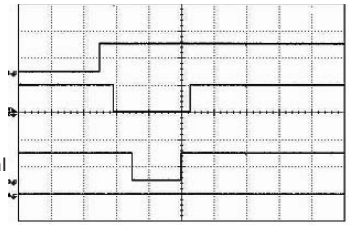
D-b

● Waveforms

Note : 1. The encircled numbers denote measuring points in the circuit diagram.
2. Reference voltage REFO1(1.65V)

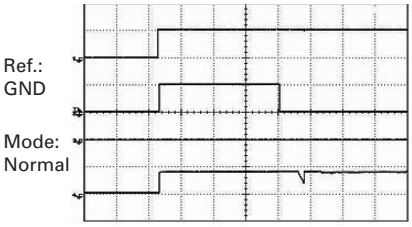
① DSCSNS 5V/div 500ms/div
② 8SNS 5V/div
③ 12SNS 5V/div
④ LOEJ 5V/div

12 cm CD Loading operation



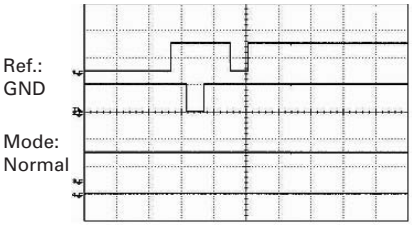
① DSCSNS 5V/div 500ms/div
⑤ CLCONT 5V/div
④ LOEJ 5V/div
⑥ VD 10V/div

12 cm CD Loading operation



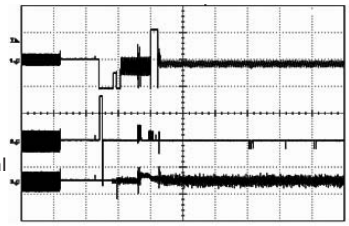
① DSCSNS 5V/div 500ms/div
② 8SNS 5V/div
③ 12SNS 5V/div
④ LOEJ 5V/div

8 cm CD Loading operation



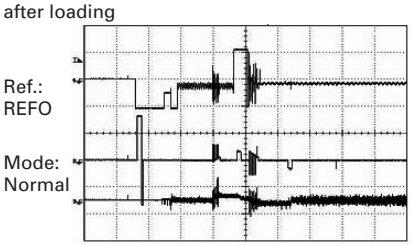
⑦ SIN 1V/div 2s/div
⑧ CIN 500mV/div
⑨ TIN 500mV/div

12 cm CD-DA setup operation after loading



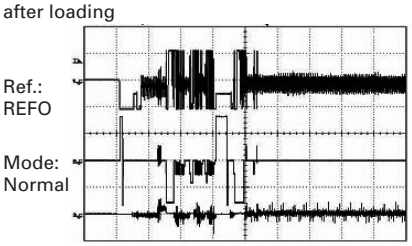
⑦ SIN 1V/div 1s/div
⑧ CIN 500mV/div
⑨ TIN 500mV/div

12 cm CD-ROM(1 session) setup operation after loading



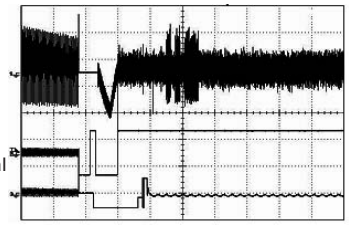
⑦ SIN 1V/div 2s/div
⑧ CIN 500mV/div
⑨ TIN 500mV/div

12 cm CD-ROM(3 sessions) setup operation after loading



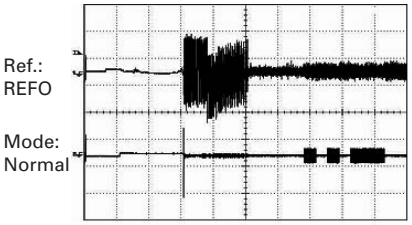
⑩ FIN 200mV/div 500ms/div
⑪ RFOK 2V/div
⑦ SIN 2V/div

12 cm CD-DA Source On setup operation



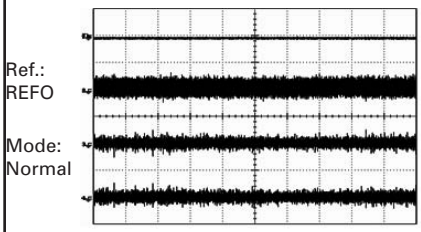
⑫ TE 500mV/div 200ms/div
⑬ FE 500mV/div

Source On setup operation



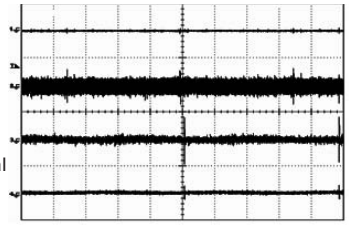
⑬ FE 500mV/div 20ms/div
⑩ FIN 500mV/div
⑫ TE 500mV/div
⑨ TIN 500mV/div

CD-DA Play operation



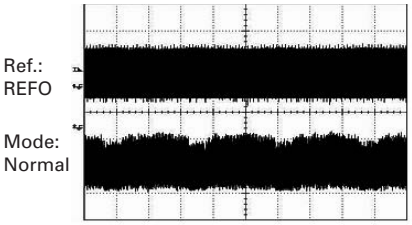
⑬ FE 500mV/div 20ms/div
⑩ FIN 500mV/div
⑫ TE 500mV/div
⑨ TIN 500mV/div

CD-ROM play operation(Regular track Jump)



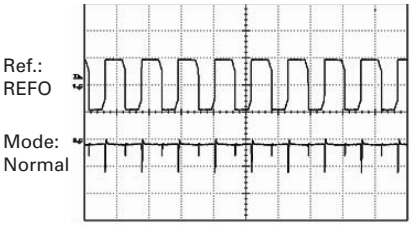
⑭ MDX 1V/div 50ms/div
⑦ SIN 200mV/div

Spindle waveform during play operation



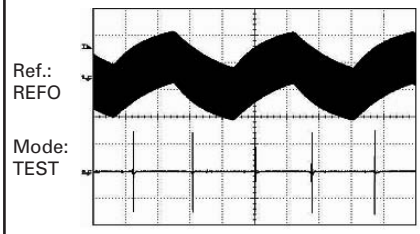
⑭ MDX 2V/div 5µs/div
⑦ SIN 1V/div

Spindle waveform during play operation (Wider)



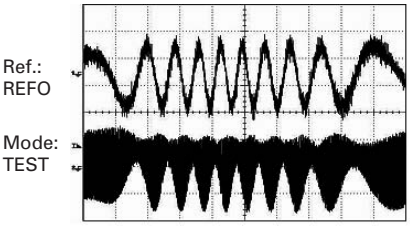
⑩ FIN 500mV/div 200ms/div
⑬ FE 500mV/div

Focus Search waveform



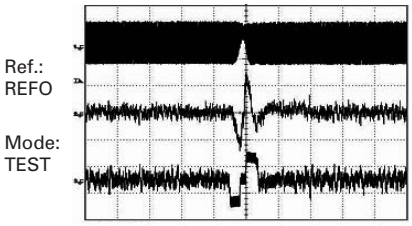
⑫ TE 500mV/div 2ms/div
⑮ RFAGC 500mV/div

Track Open waveform



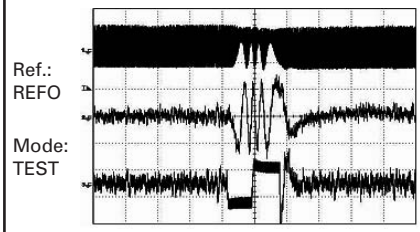
⑮ RFAGC 1V/div 500µs/div
⑫ TE 500mV/div
⑨ TIN 500mV/div

1 Track Jump waveform



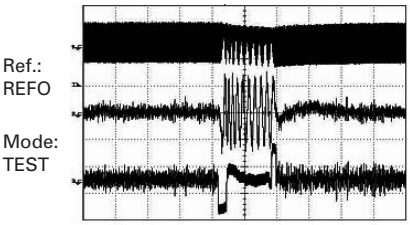
⑮ RFAGC 1V/div 500µs/div
⑫ TE 500mV/div
⑨ TIN 500mV/div

4 Tracks Jump waveform



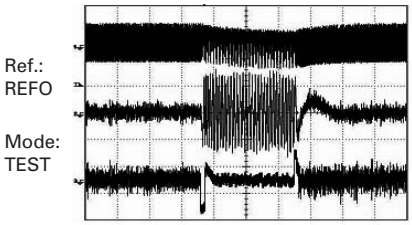
⑮ RFAGC 1V/div 1ms/div
⑫ TE 500mV/div
⑨ TIN 500mV/div

10 Tracks Jump waveform



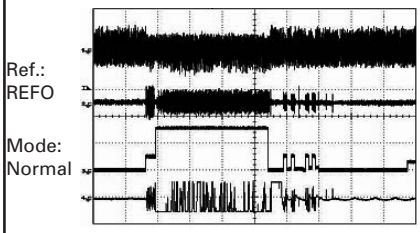
⑮ RFAGC 1V/div 2ms/div
⑫ TE 500mV/div
⑨ TIN 500mV/div

32 Tracks Jump waveform



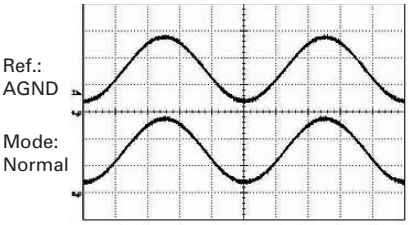
⑮ RFAGC 1V/div 200ms/div
⑫ TE 1V/div
⑧ CIN 500mV/div
⑦ SIN 2V/div

Search operation(Outter to Inner)



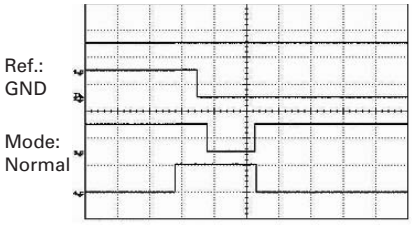
⑯ LOUT 1V/div 200µs/div
⑰ ROUT 1V/div

Analog audio waveform



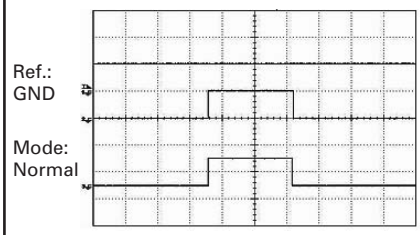
① DSCSNS 5V/div 500ms/div
② 8SNS 5V/div
③ 12SNS 5V/div
④ LOEJ 5V/div

12 cm CD Eject operation



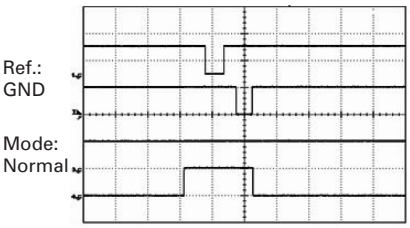
① DSCSNS 5V/div 500ms/div
⑤ CLCONT 5V/div
④ LOEJ 5V/div

12 cm CD Eject operation



① DSCSNS 5V/div 500ms/div
② 8SNS 5V/div
③ 12SNS 5V/div
④ LOEJ 5V/div

8 cm CD Eject operation



⑦ SIN 1V/div 500ms/div
⑧ CIN 500mV/div
⑨ TIN 500mV/div

CD-DA >> CD-ROM mode change(Band key)