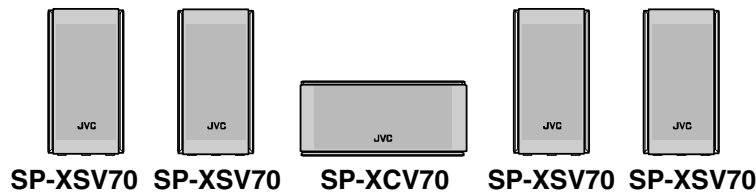


JVC

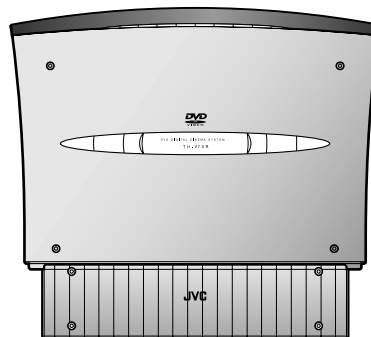
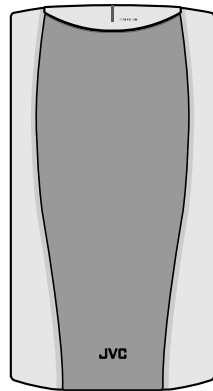
SERVICE MANUAL

DVD DIGITAL CINEMA SYSTEM

TH-V70R



Area suffix
 B ----- U.K.
 E ----- Continental Europe
 EN ----- Northern Europe



Contents

Safety precautions	1-2	Disassembly method	1-6
Preventing static electricity	1-4	Adjustment method	1-21
Important for laser products	1-5	Description of major ICs	1-22~55

Block diagrams

<Main body section>

■ Overall block diagram

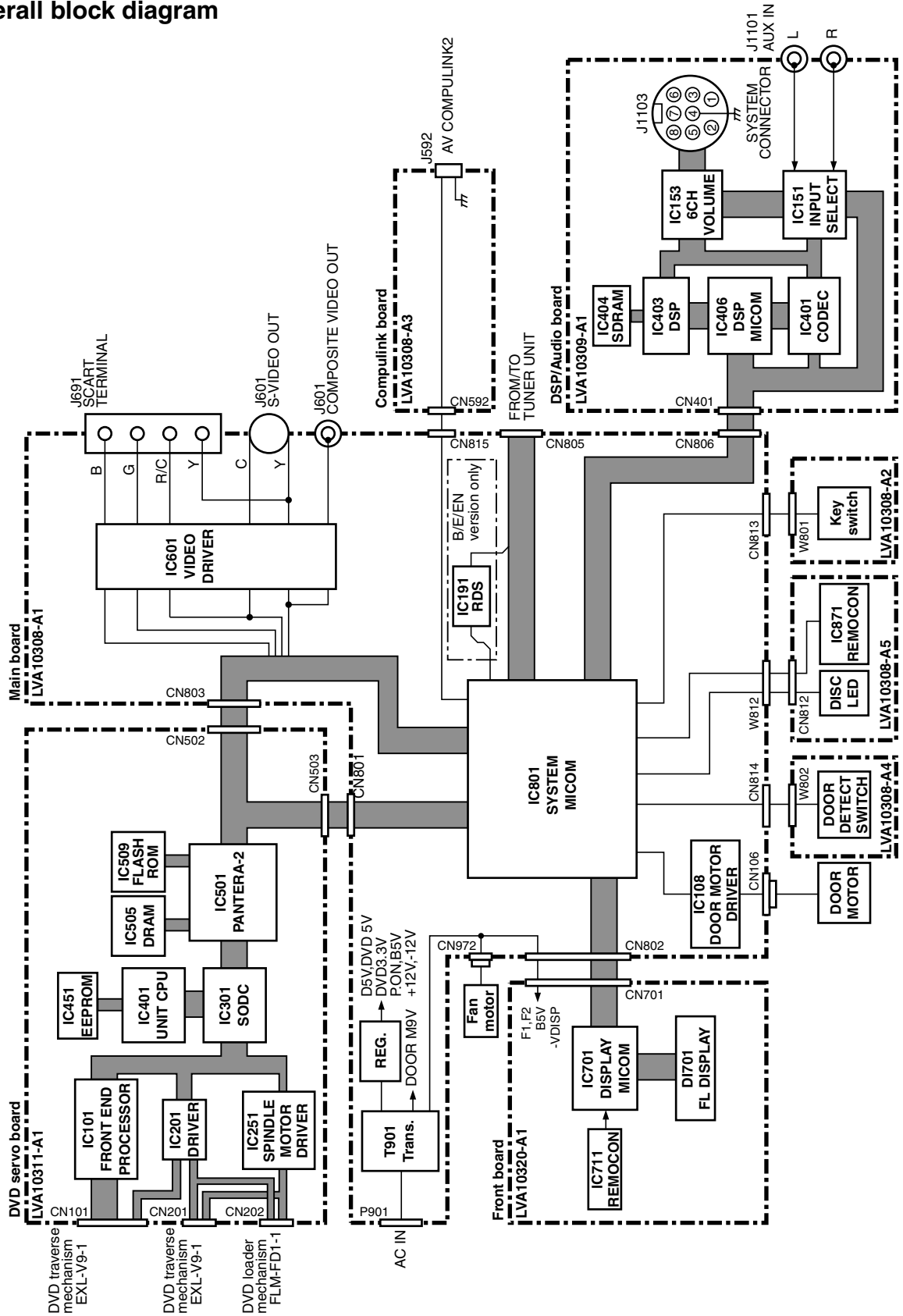
5

4

3

2

1

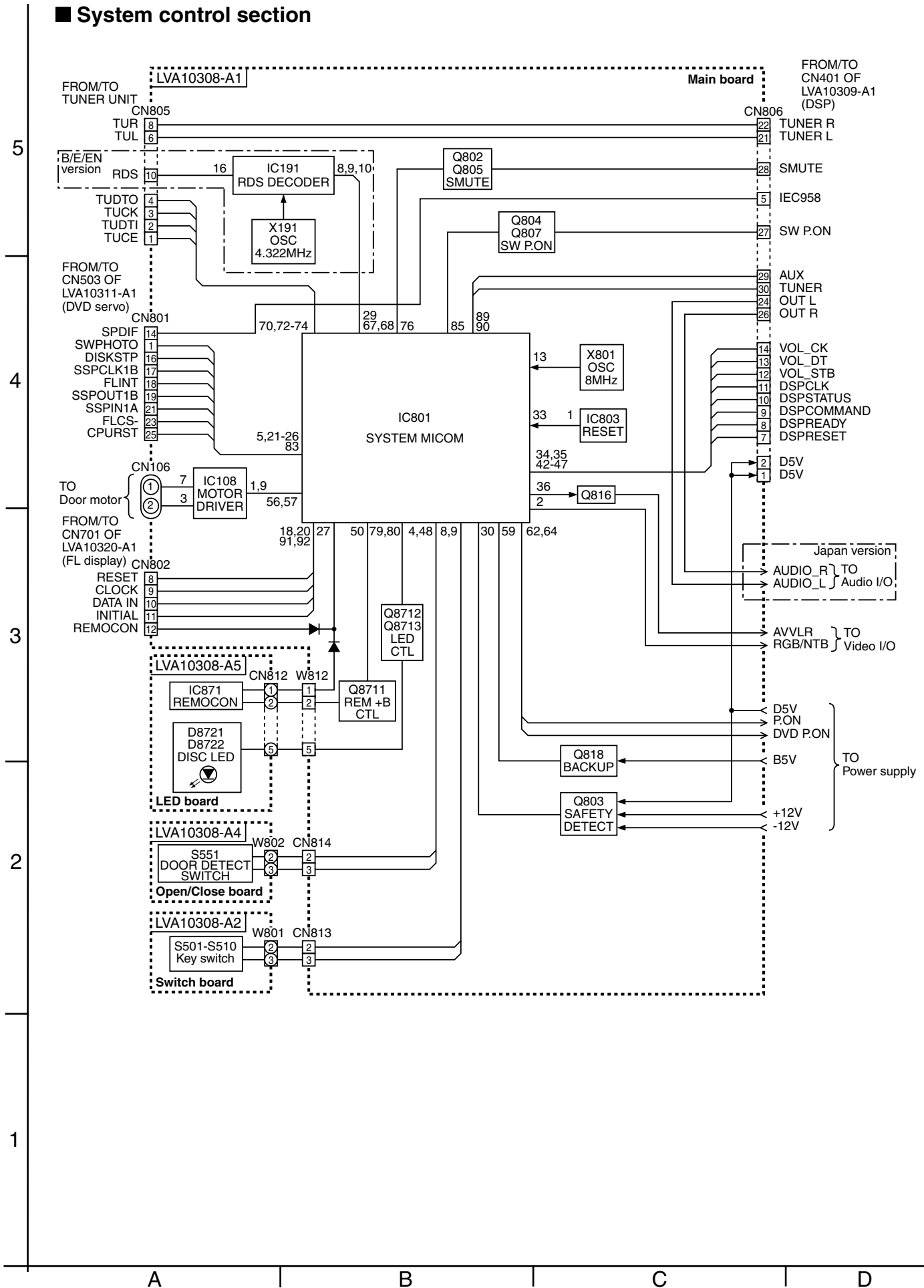


A

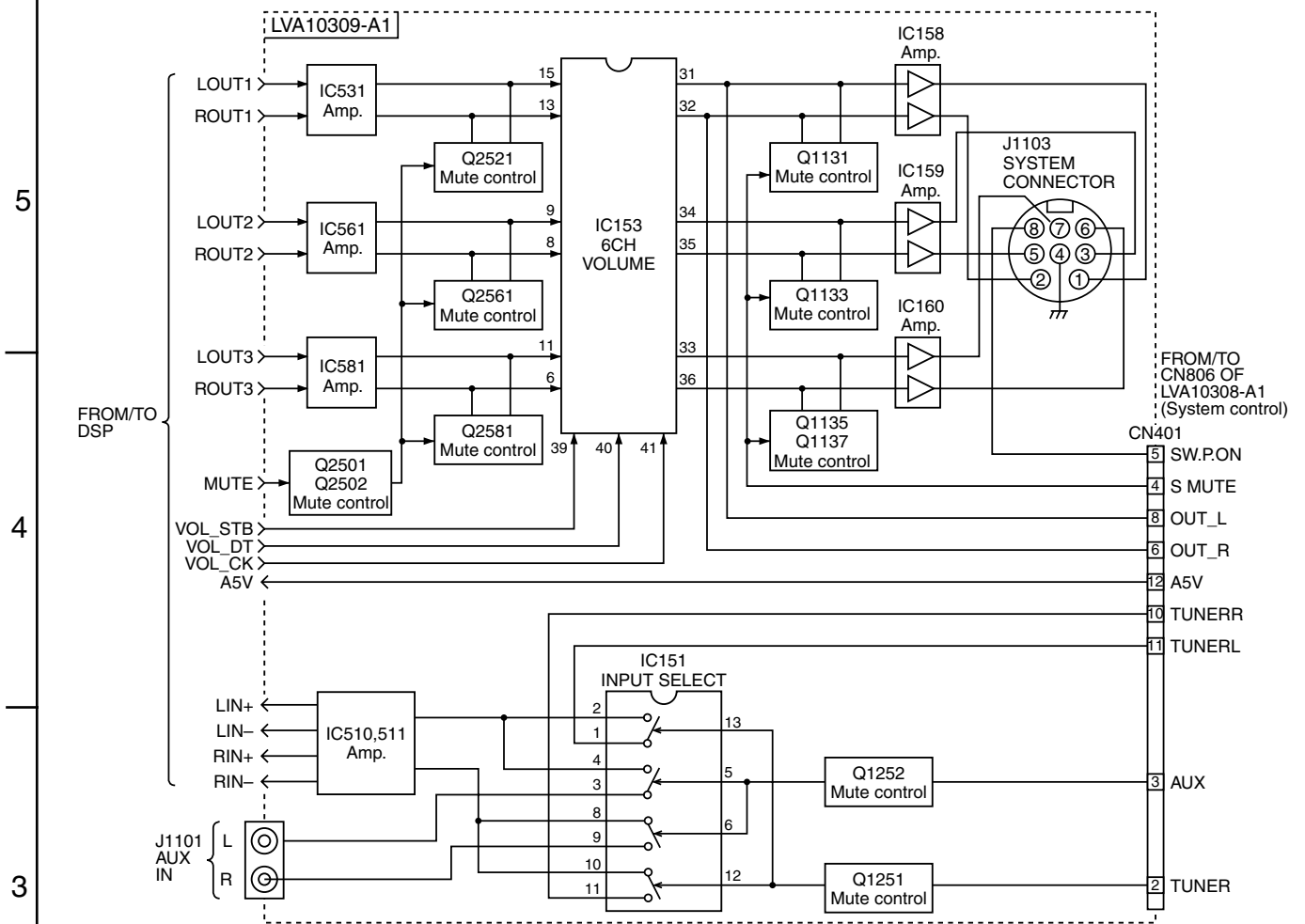
B

C

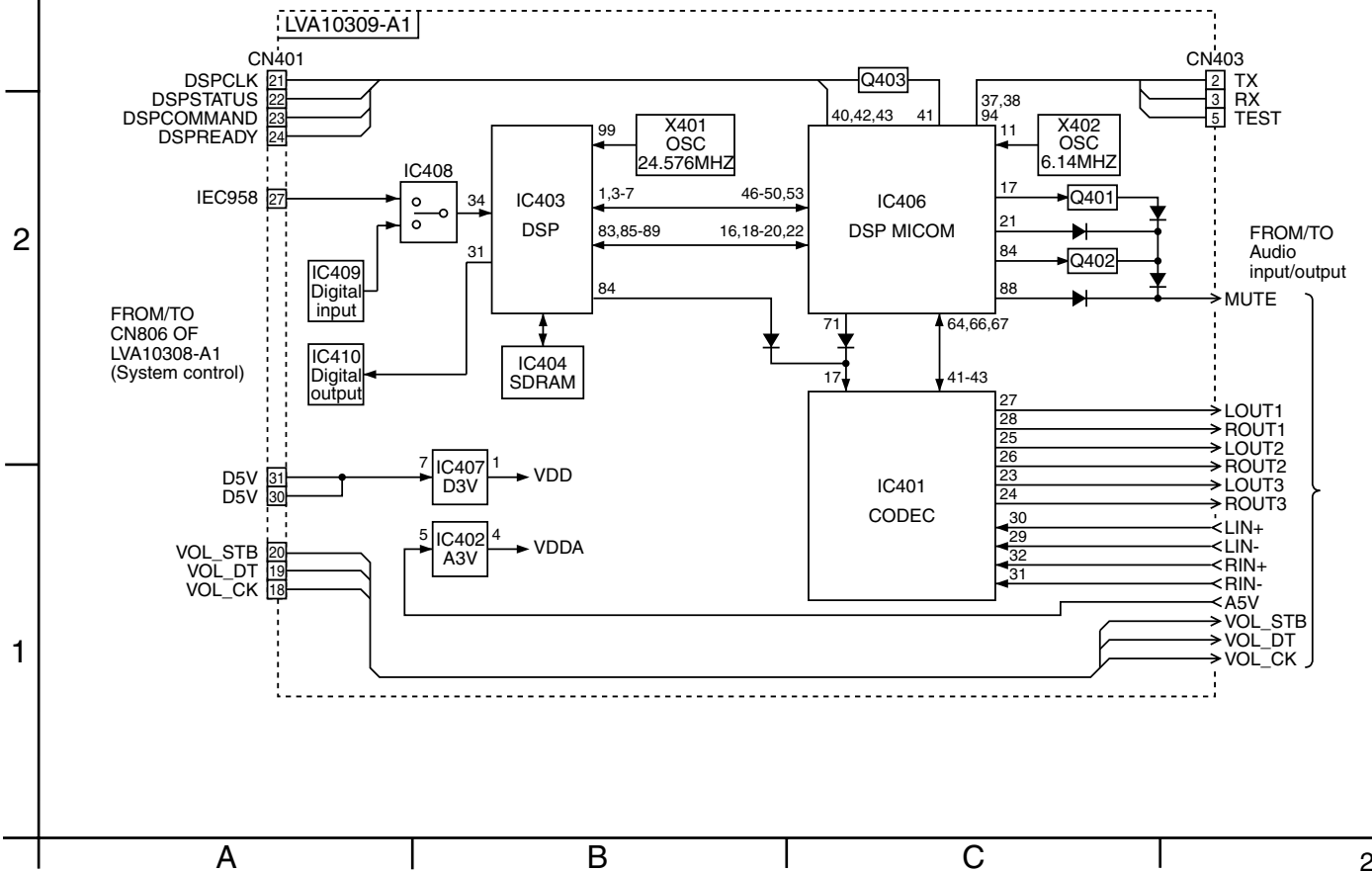
■ System control section



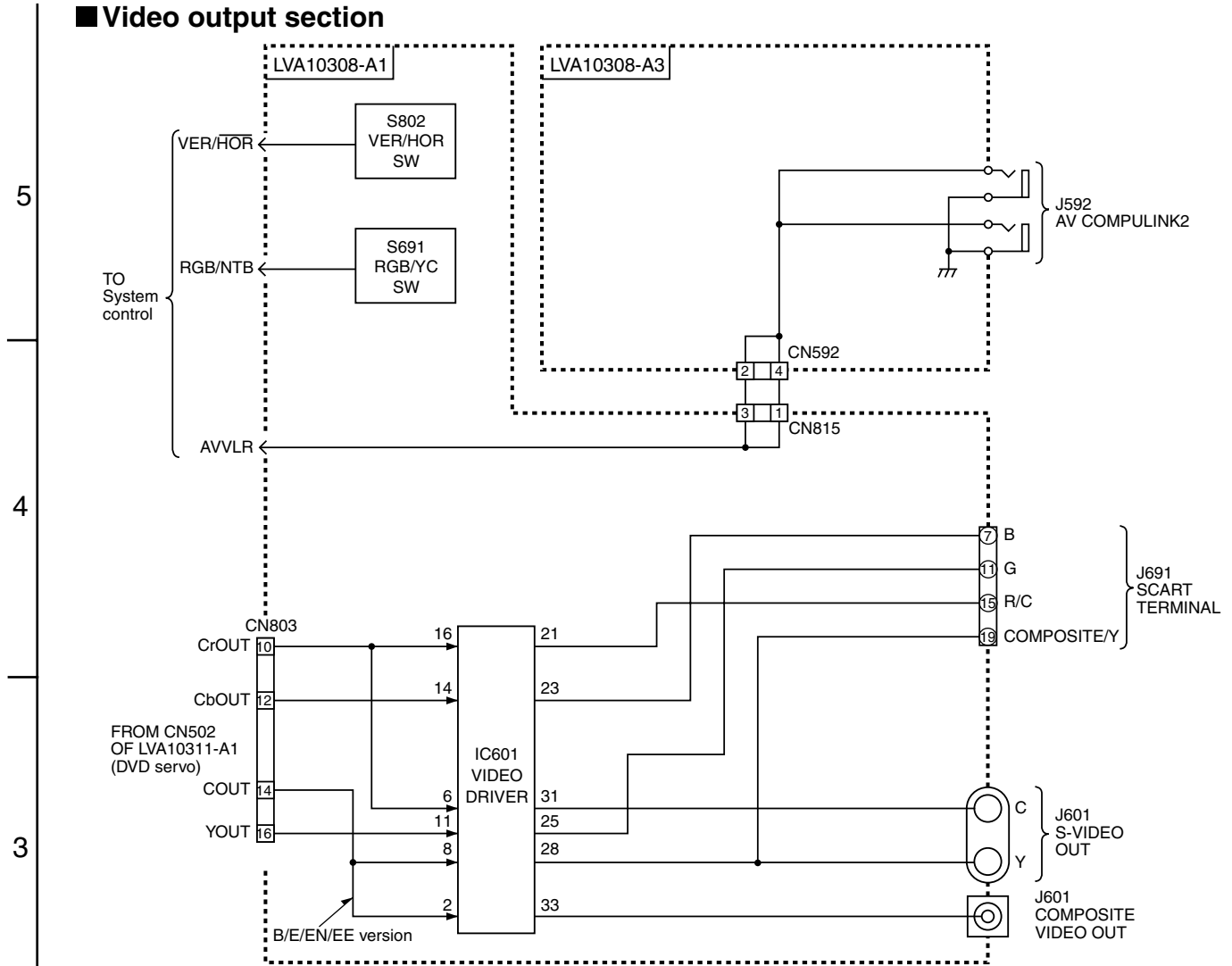
■ Audio input/output section



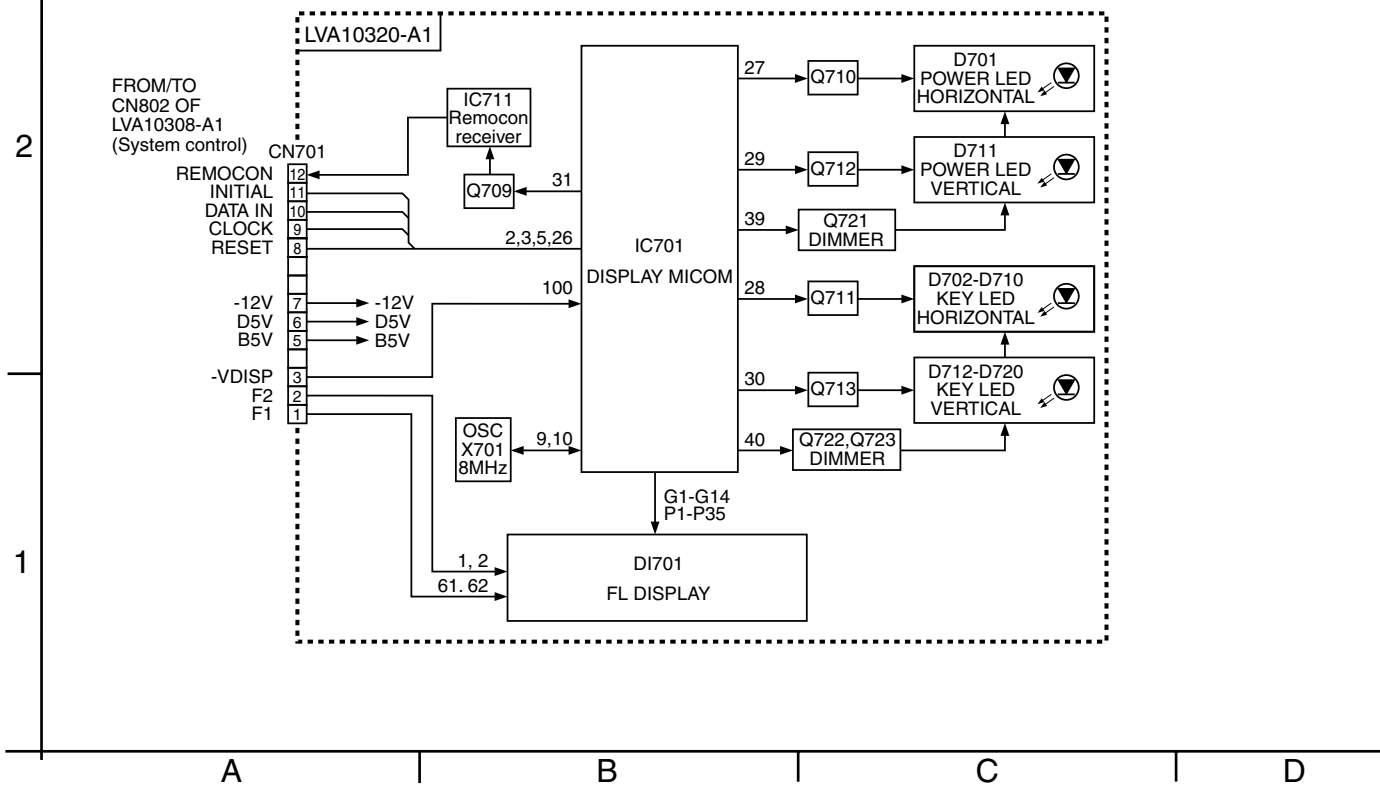
■ DSP section



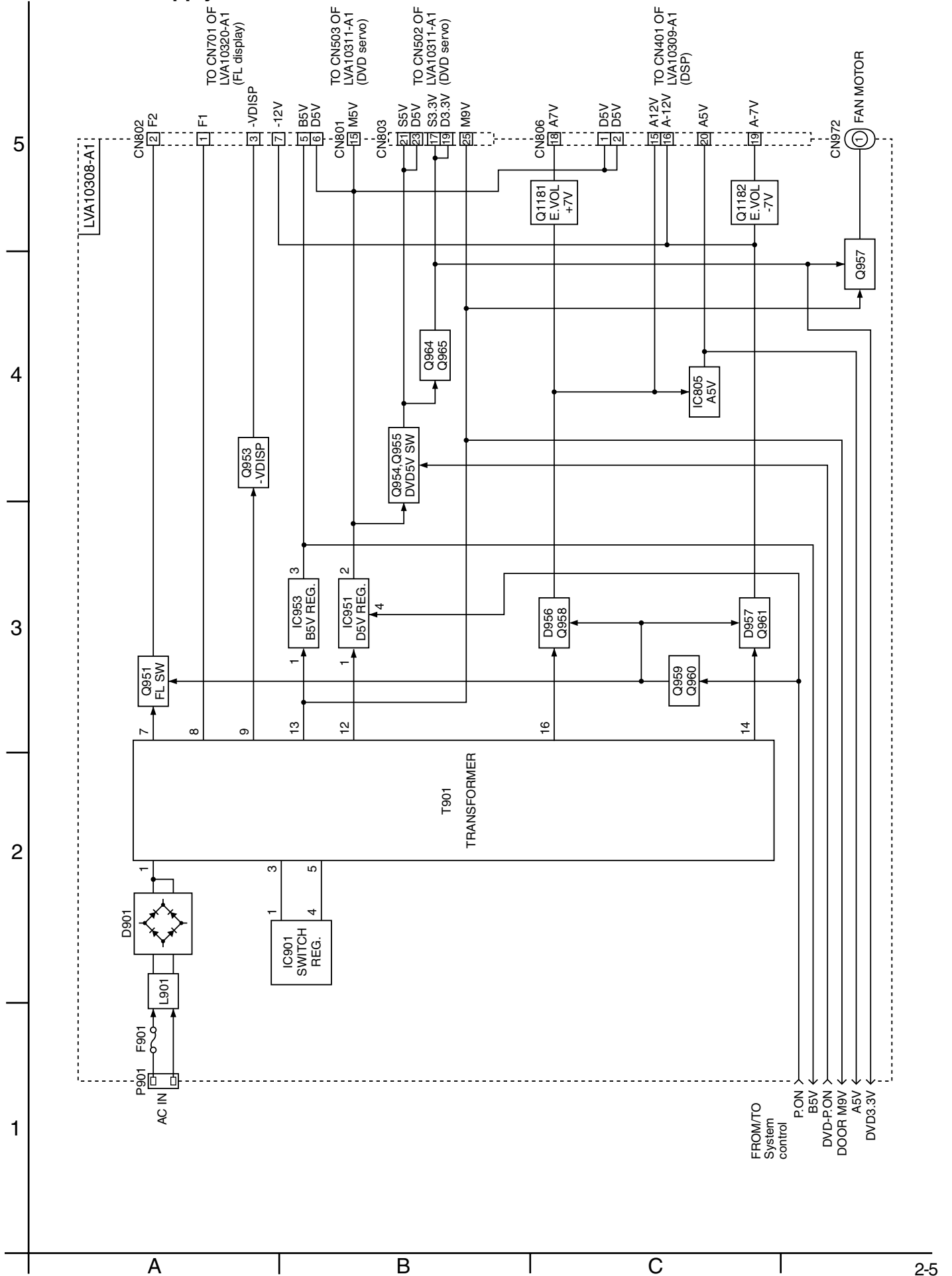
■ Video output section



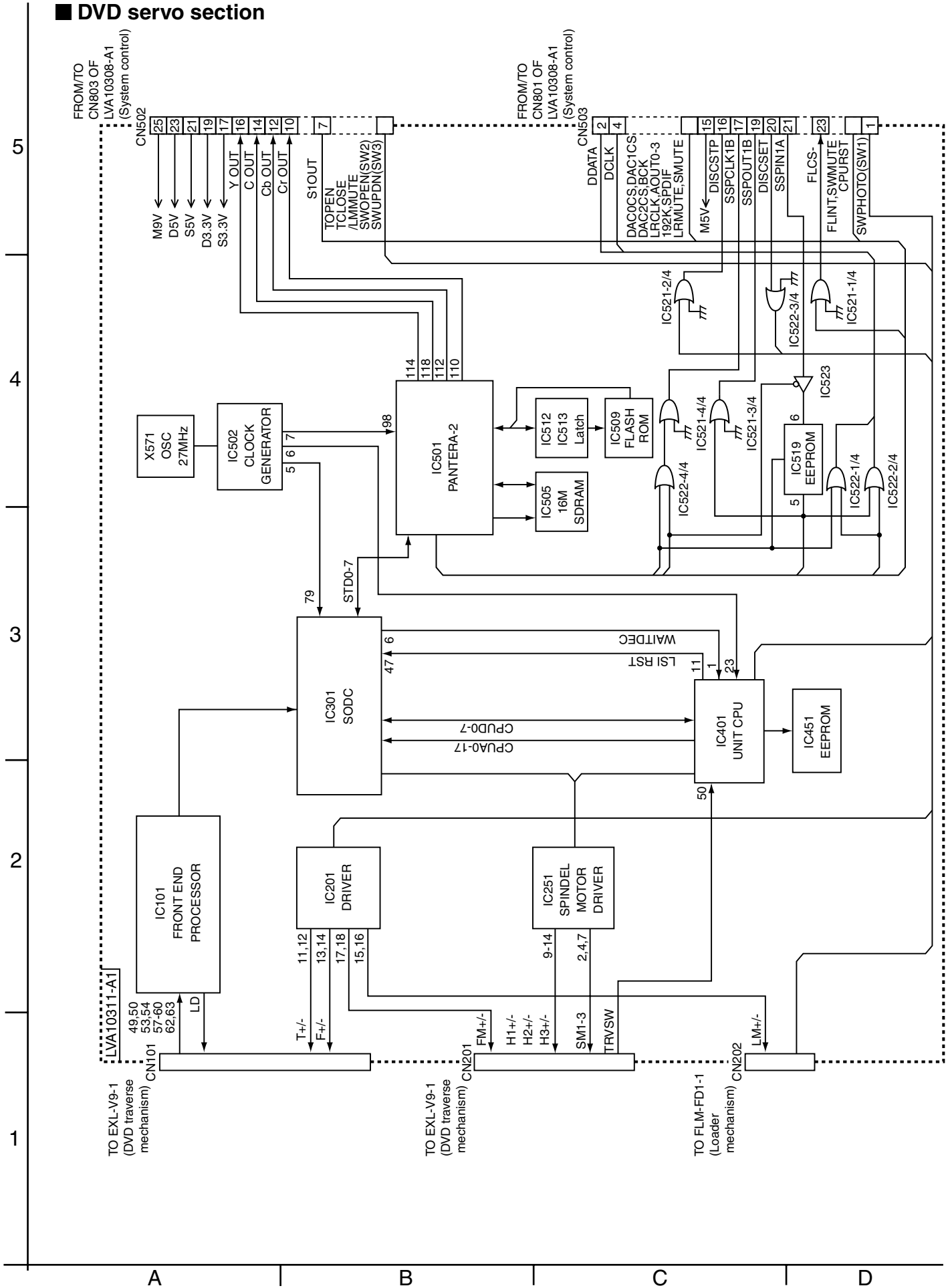
■ FL display section



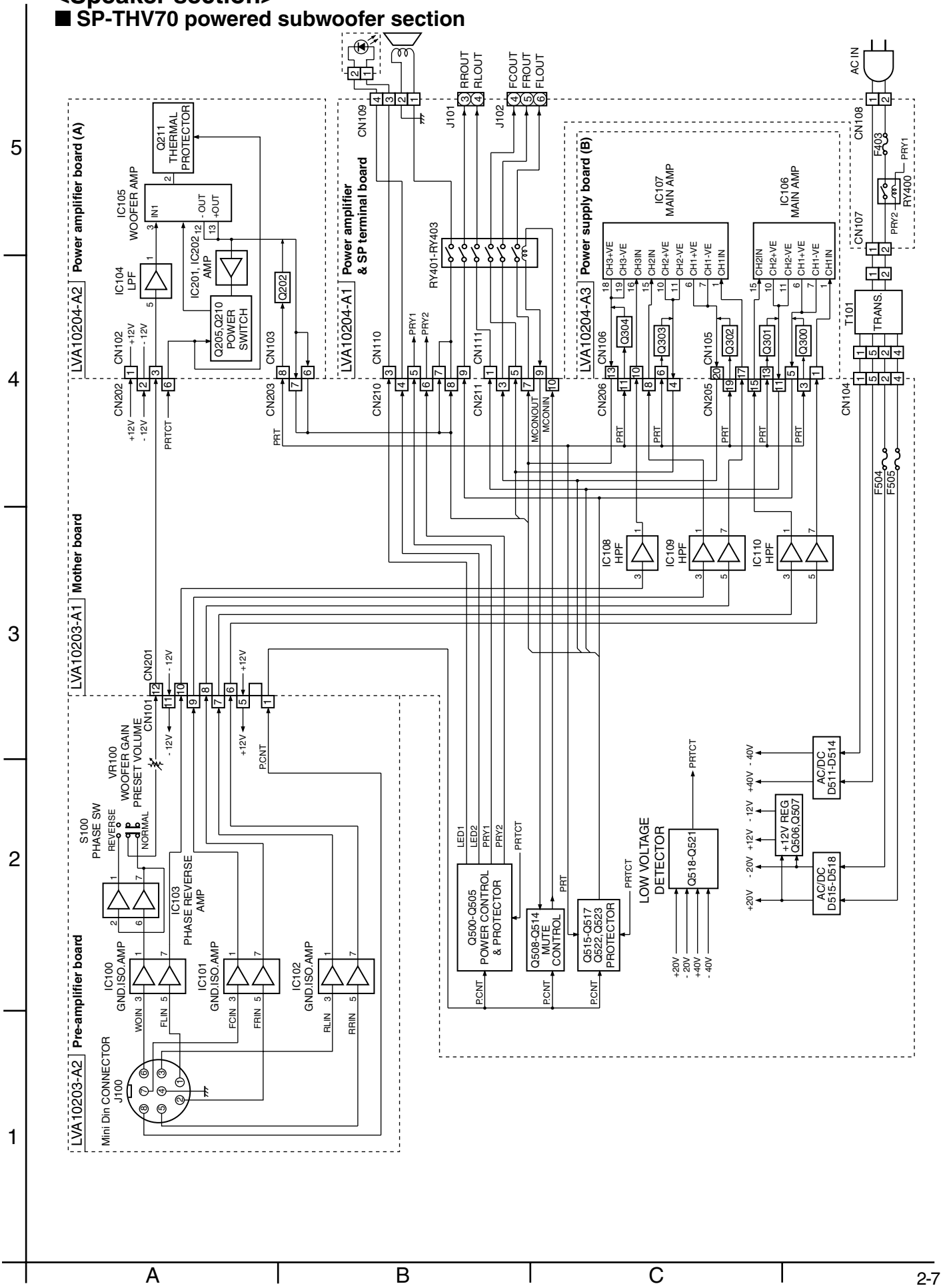
■ Power supply section



DVD servo section



<Speaker section>
■ SP-THV70 powered subwoofer section

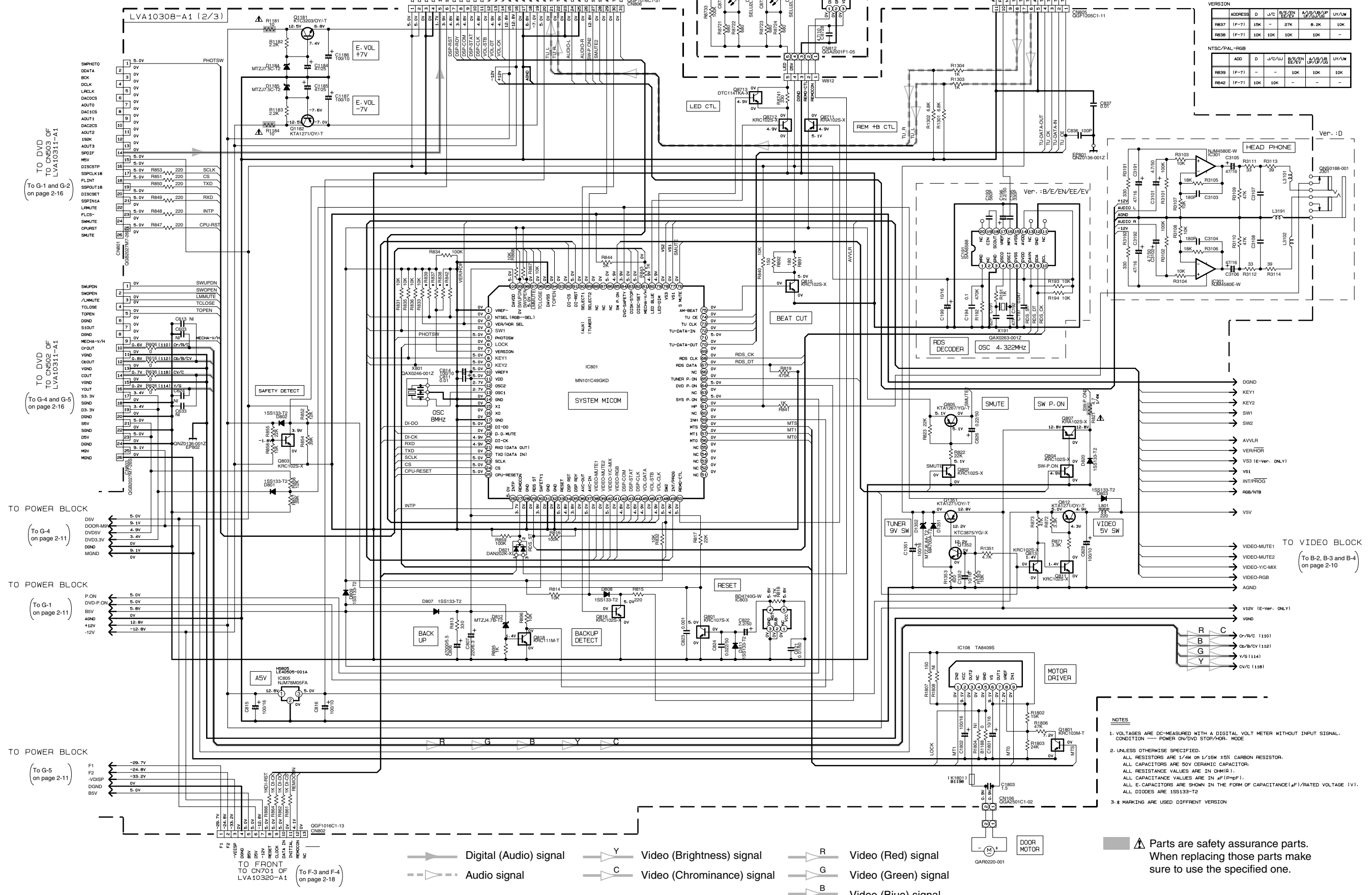


Standard schematic diagrams

<Main body section>

System control section

5
4
3
2
1



MARK LIST

VERSION	ADDRESS	D	J/C	R/E	E/V	A/S	A/P	U/V	U/W
R837 (F-7)	10K	-	27K	-	-	8.2K	-	10K	-
R838 (F-7)	10K	10K	10K	10K	10K	-	-	-	-

NTSC/PAL-RGB	ADD	D	J/C	R/E	E/V	A/S	A/P	U/V	U/W
R839 (F-7)	-	-	-	-	-	10K	10K	10K	-
R842 (F-7)	10K	10K	-	-	-	-	-	-	-

TO DVD TO CN503 OF LVA10311-A1 (To G-1 and G-2 on page 2-16)

TO DVD TO CN502 OF LVA10311-A1 (To G-4 and G-5 on page 2-16)

TO POWER BLOCK (To G-4 on page 2-11)

TO POWER BLOCK (To G-1 on page 2-11)

TO POWER BLOCK (To G-5 on page 2-11)

TO FRONT TO CN701 OF LVA10320-A1 (To F-3 and F-4 on page 2-18)

NOTES

- VOLTAGES ARE DC-MEASURED WITH A DIGITAL VOLT METER WITHOUT INPUT SIGNAL. CONDITION --- POWER ON/DVD STOP/HOR. MODE
- UNLESS OTHERWISE SPECIFIED, ALL RESISTORS ARE 1/4W OR 1/16W 1% CARBON RESISTOR. ALL CAPACITORS ARE 50V CERAMIC CAPACITOR. ALL RESISTANCE VALUES ARE IN OHM (Ω). ALL CAPACITANCE VALUES ARE IN PICO (pF). ALL E. CAPACITORS ARE SHOWN IN THE FORM OF CAPACITANCE (μF)/RATED VOLTAGE (V).
- * MARKING ARE USED DIFFERENT VERSION

➡ Digital (Audio) signal Y Video (Brightness) signal R Video (Red) signal
 - - - Audio signal C Video (Chrominance) signal G Video (Green) signal
 B Video (Blue) signal

⚠ Parts are safety assurance parts. When replacing those parts make sure to use the specified one.

Video output section

5

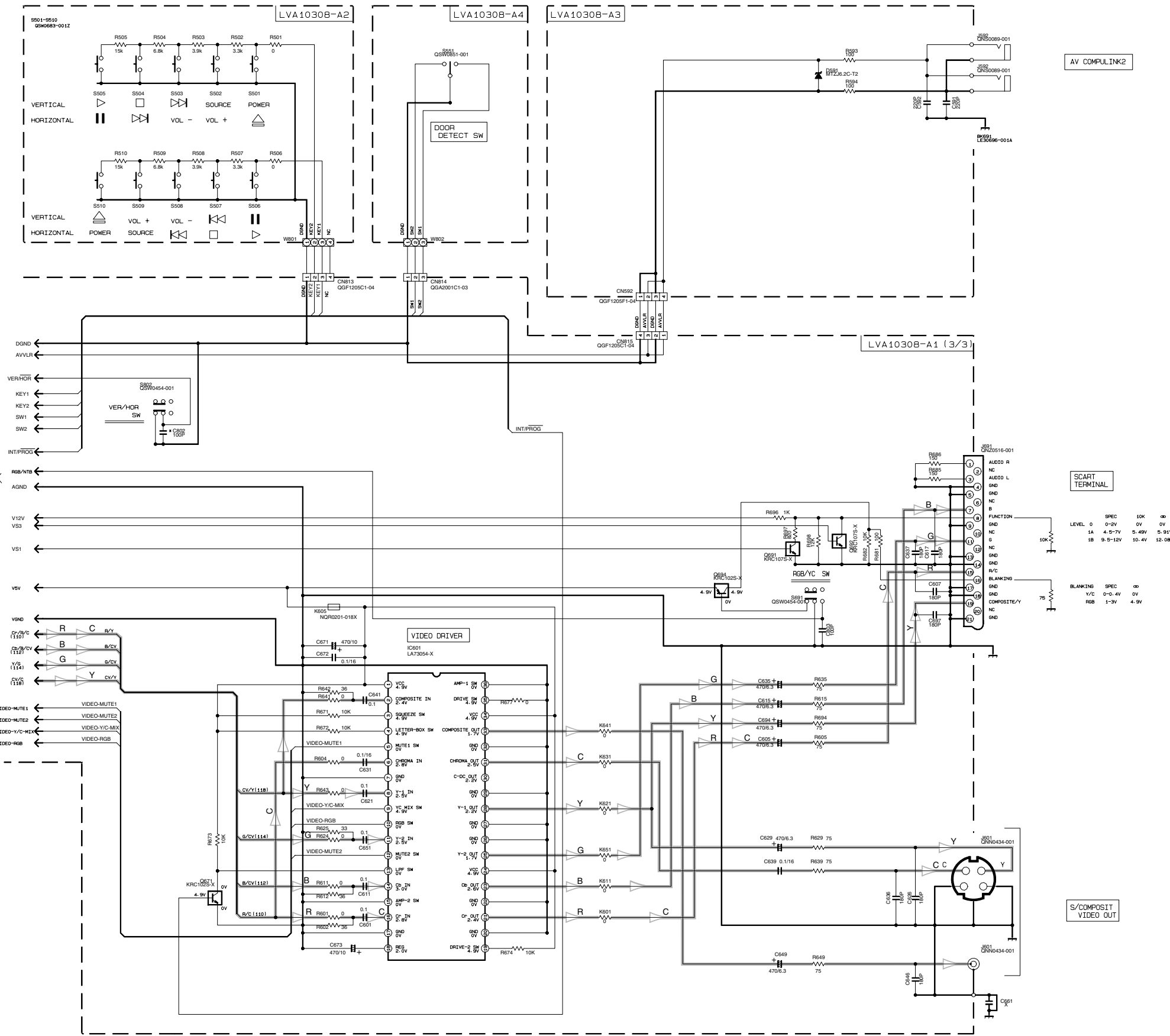
4

3

2

1

TO MICOM BLOCK
TO LVA1030B-A1
(To G-2 and G-3 on page 2-9)



AV COMPUTINK2

SCART TERMINAL

LEVEL 0	SPEC	10K	∞
1A	0-2V	0V	0V
1B	4.5-7V	5-49V	5-91V
1B	9.5-12V	10-4V	12-08V

BLANKING	SPEC	∞
Y/C	0-0.4V	0V
RGB	1-3V	4-9V

DVD VIDEO OUT

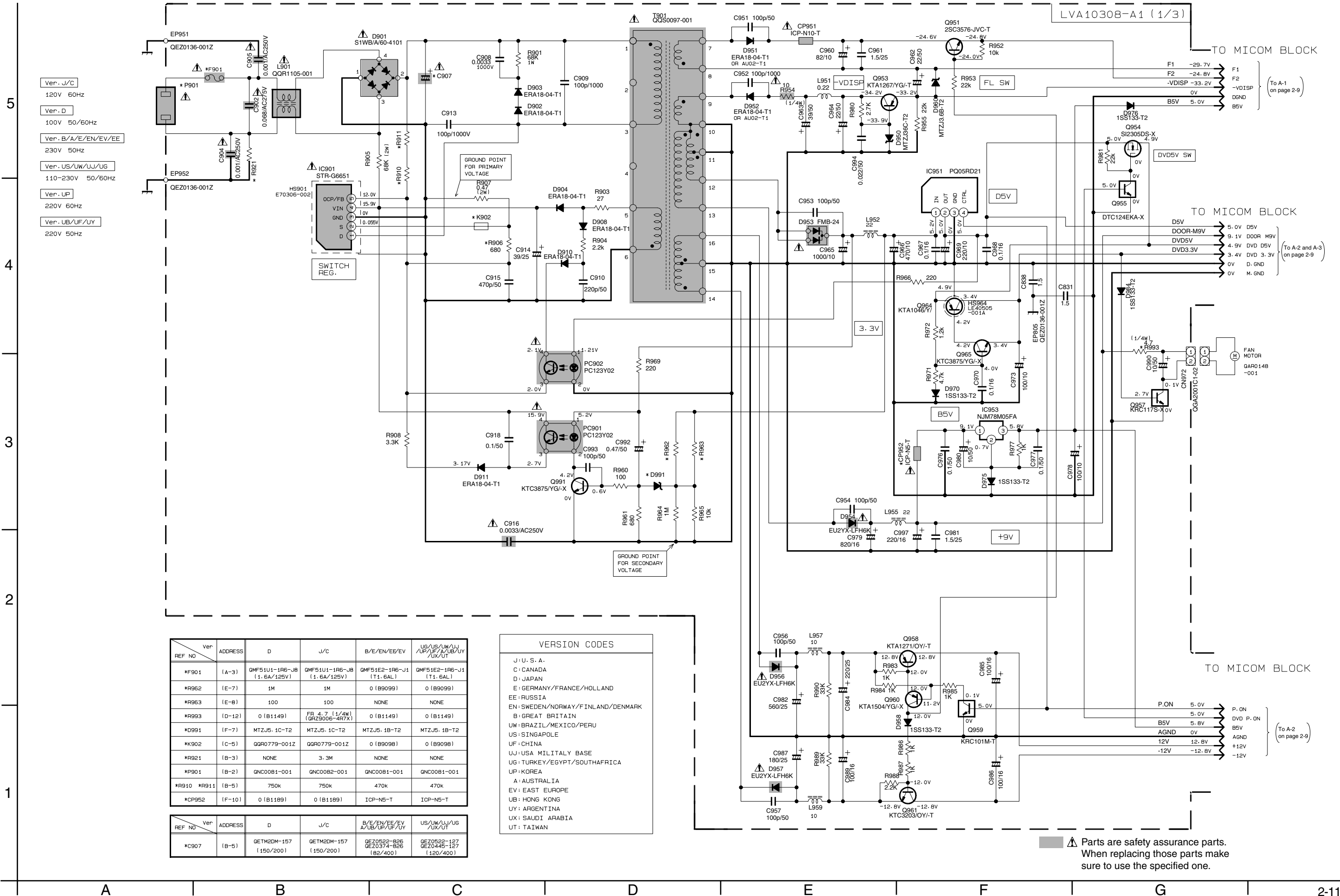
(Y/C) (110)	RGB	Y/C
(Y/C) (111)	CV	Y
(Y/C) (112)	G	CV
(Y/C) (113)	B	CV
(Y/C) (114)	R	C

IC601 INPUT SIGNAL

S/COMPOSITE IN	RGB	Y/C
S/CHROMA IN	R	C
B/Y-1 IN	CV	Y
11/Y-2 IN	G	CV
14/CB IN	B	CV
16/Cr IN	R	C

- Video (Composite) signal
- Video (Chrominance) signal
- Video (Green) signal
- Video (Brightness) signal
- Video (Red) signal
- Video (Blue) signal

Power supply section



- Ver. J/C
120V 60Hz
- Ver. D
100V 50/60Hz
- Ver. B/A/E/EN/EV/EE
230V 50Hz
- Ver. US/UW/UJ/UG
110-230V 50/60Hz
- Ver. UP
220V 60Hz
- Ver. UB/UF/UY
220V 50Hz

Ver	ADDRESS	D	J/C	B/E/EN/EE/EV	UG/US/UW/UJ/UP/UF/UY/UX/UT
*F901	(A-3)	GMF51U1-1R6-JB (1.6A/125V)	GMF51U1-1R6-JB (1.6A/125V)	GMF51E2-1R6-J1 (1.6A)	GMF51E2-1R6-J1 (1.6A)
*R962	(E-7)	1M	1M	0 (B9099)	0 (B9099)
*R963	(E-8)	100	100	NONE	NONE
*R993	(D-12)	0 (B1149)	FR 4.7 (1/4W) (GRZ9006-4R7X)	0 (B1149)	0 (B1149)
*D991	(F-7)	MTZJ5.1C-T2	MTZJ5.1C-T2	MTZJ5.1B-T2	MTZJ5.1B-T2
*K902	(C-5)	QQR0779-001Z	QQR0779-001Z	0 (B9098)	0 (B9098)
*R921	(B-3)	NONE	3.3M	NONE	NONE
*P901	(B-2)	QNC00B1-001	QNC00B2-001	QNC00B1-001	QNC00B1-001
*R910 *R911	(B-5)	750k	750k	470k	470k
*CP952	(F-10)	0 (B1189)	0 (B1189)	ICP-N5-T	ICP-N5-T

Ver	ADDRESS	D	J/C	B/E/EN/EE/EV/UP/UF/UY	US/UW/UJ/UG/UX/UT
*C907	(B-5)	QETM20M-157 (150/200)	QETM20M-157 (150/200)	QE20522-826 (82/400)	QE20522-127 (120/400)

VERSION CODES	
J	: U.S.A.
C	: CANADA
D	: JAPAN
E	: GERMANY/FRANCE/HOLLAND
EE	: RUSSIA
EN	: SWEDEN/NORWAY/FINLAND/DENMARK
B	: GREAT BRITAIN
UW	: BRAZIL/MEXICO/PERU
US	: SINGAPOLE
UF	: CHINA
UJ	: USA MILITARY BASE
UG	: TURKEY/EGYPT/SOUTHAFRICA
UP	: KOREA
A	: AUSTRALIA
EV	: EAST EUROPE
UB	: HONG KONG
UY	: ARGENTINA
UX	: SAUDI ARABIA
UT	: TAIWAN

Parts are safety assurance parts. When replacing those parts make sure to use the specified one.

DSP section

5

4

3

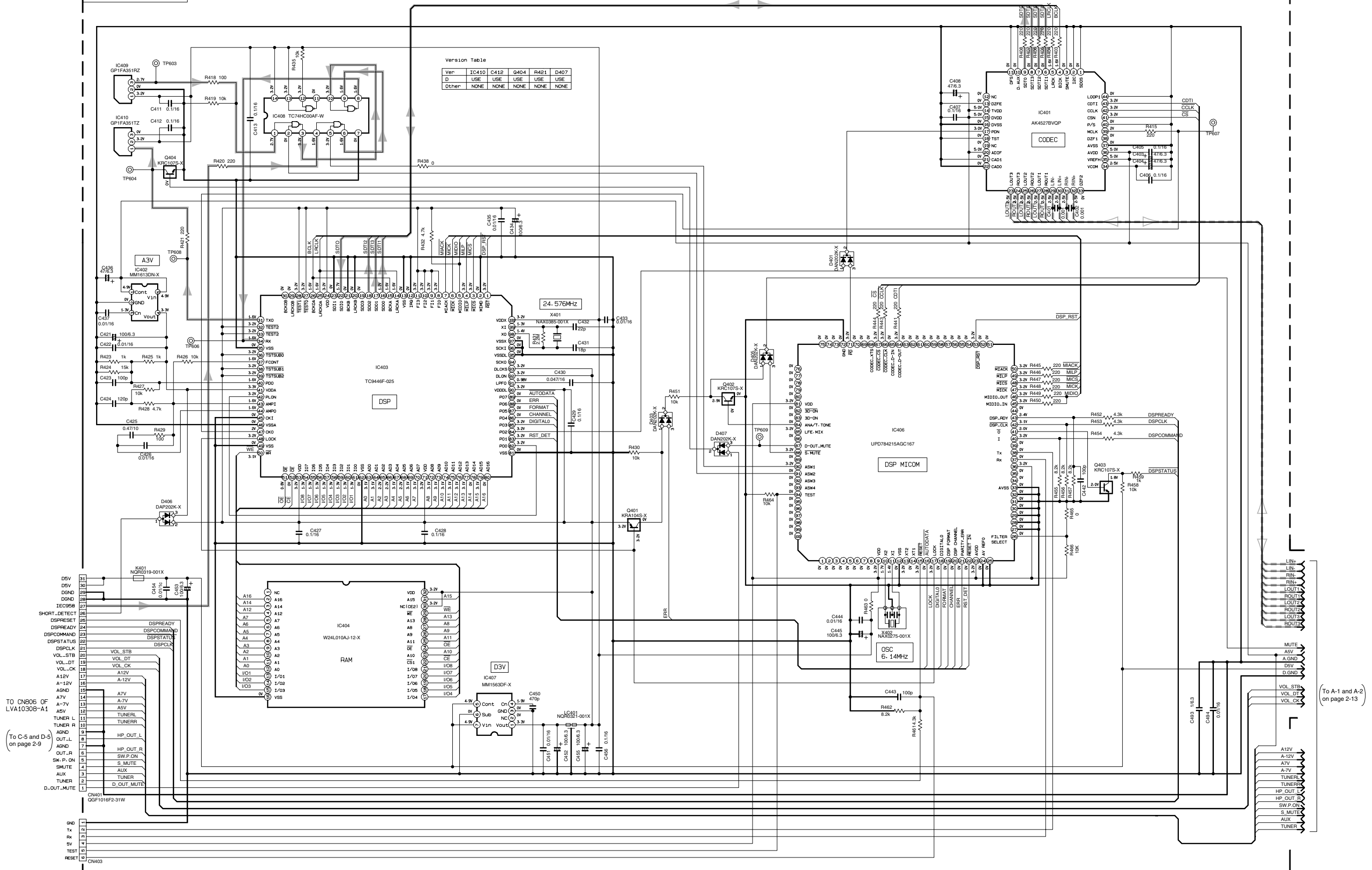
2

1

LVA10309-A1

Version Table

Ver	IC410	C412	Q404	R421	D407
D	USE	USE	USE	USE	USE
Other	NONE	NONE	NONE	NONE	NONE



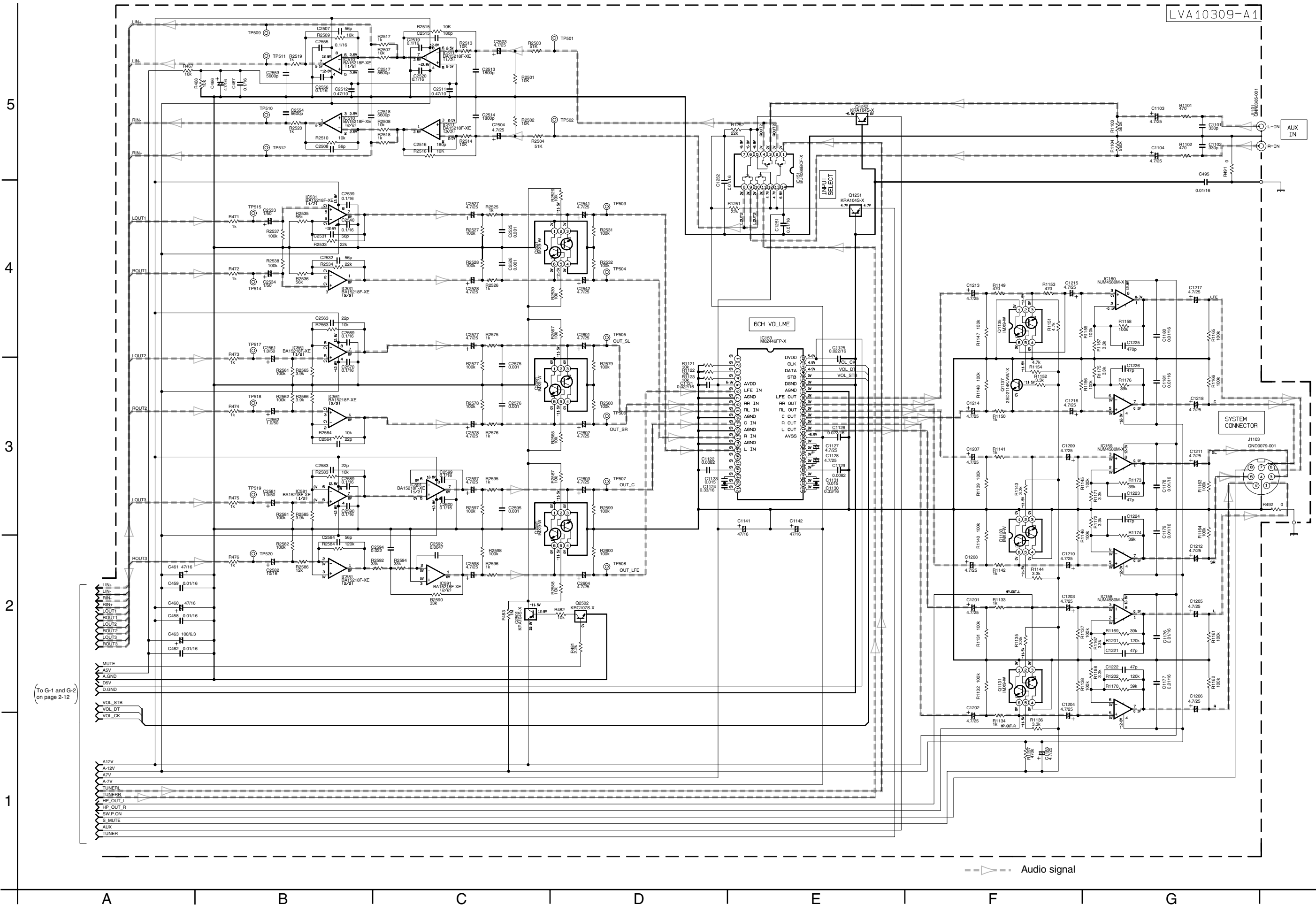
TO CN806 OF LVA10308-A1 (To C-5 and D-5 on page 2-9)

(To A-1 and A-2 on page 2-13)

A B C 2-12 D E F G H

Audio input/output section

LVA10309-A1



To G-1 and G-2 on page 2-12

--- Audio signal

DVD servo section 2/4

LVA10311-A1(2/3)

(To G-5 on page 2-14)

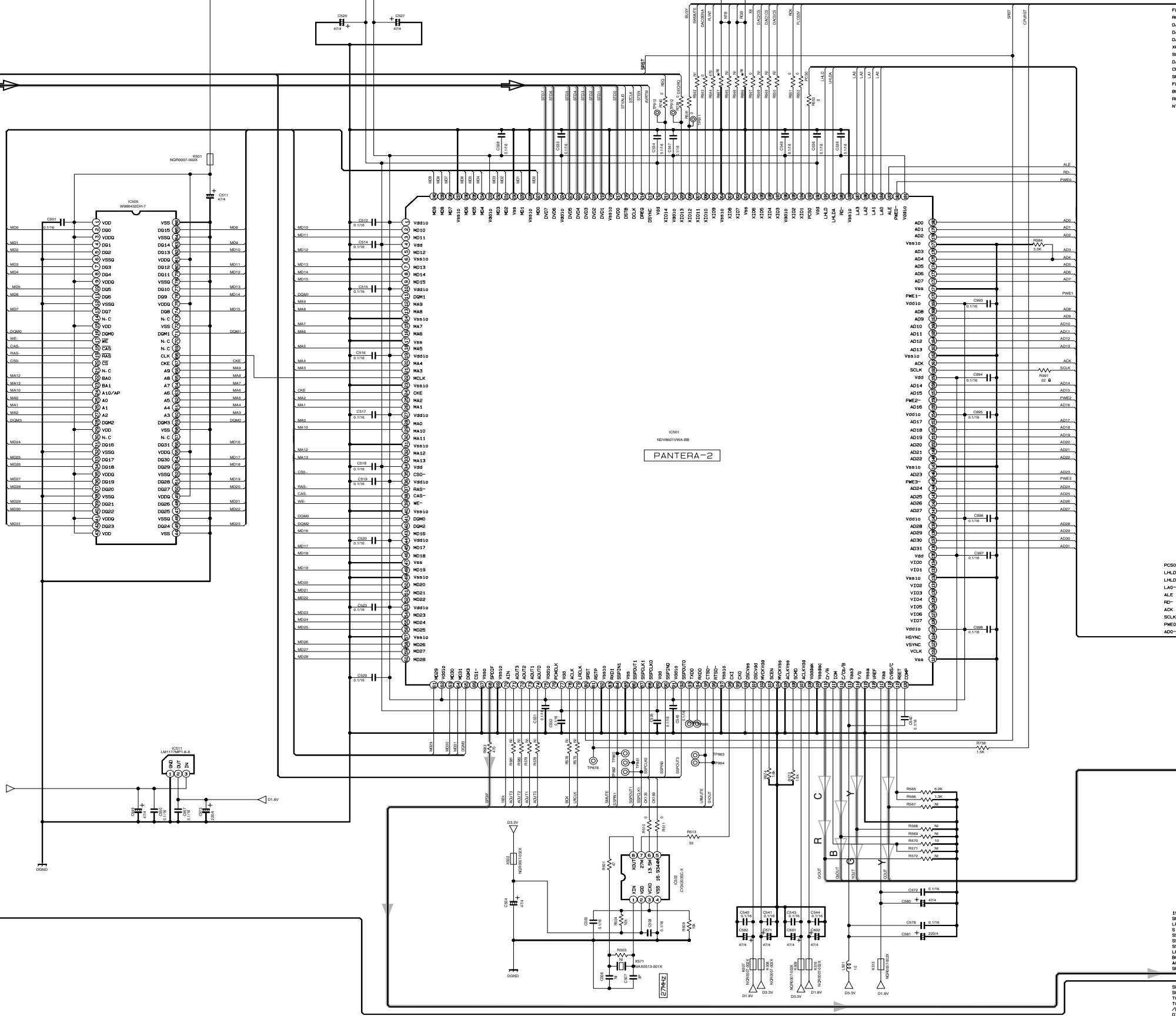
(To G-1 on page 2-14)

(To A-5 on page 2-16)

(To A-2 on page 2-16)

(To A-2 on page 2-16)

(To A-1 on page 2-16)



FLCS3V
RCK
DAC00S
DAC10S
DAC20S
XS
SWWRITE
DAC20NA
CPURST
SRST
FLINT
RUBY
RIB
NTB

PC50
LHED
LHEDR
LAG-LA3
ALE
RD-
AK
SELK
PWE0-PWE3
ADD-AD31

150K
SHUTE
LIMITE
S1OUT
SSPCLK1
SSPCLK2
SSPCLK3
SSPCLK4
SSPCLK5
SSPCLK6
SSPCLK7
SSPCLK8
SSPCLK9
SSPCLK10
SSPCLK11
SSPCLK12
SSPCLK13
SSPCLK14
SSPCLK15
SSPCLK16
SSPCLK17
SSPCLK18
SSPCLK19
SSPCLK20
SSPCLK21
SSPCLK22
SSPCLK23
SSPCLK24
SSPCLK25
SSPCLK26
SSPCLK27
SSPCLK28
SSPCLK29
SSPCLK30
SSPCLK31
SSPCLK32
SSPCLK33
SSPCLK34
SSPCLK35
SSPCLK36
SSPCLK37
SSPCLK38
SSPCLK39
SSPCLK40
SSPCLK41
SSPCLK42
SSPCLK43
SSPCLK44
SSPCLK45
SSPCLK46
SSPCLK47
SSPCLK48
SSPCLK49
SSPCLK50
SSPCLK51
SSPCLK52
SSPCLK53
SSPCLK54
SSPCLK55
SSPCLK56
SSPCLK57
SSPCLK58
SSPCLK59
SSPCLK60
SSPCLK61
SSPCLK62
SSPCLK63
SSPCLK64
SSPCLK65
SSPCLK66
SSPCLK67
SSPCLK68
SSPCLK69
SSPCLK70
SSPCLK71
SSPCLK72
SSPCLK73
SSPCLK74
SSPCLK75
SSPCLK76
SSPCLK77
SSPCLK78
SSPCLK79
SSPCLK80
SSPCLK81
SSPCLK82
SSPCLK83
SSPCLK84
SSPCLK85
SSPCLK86
SSPCLK87
SSPCLK88
SSPCLK89
SSPCLK90
SSPCLK91
SSPCLK92
SSPCLK93
SSPCLK94
SSPCLK95
SSPCLK96
SSPCLK97
SSPCLK98
SSPCLK99
SSPCLK100

Digital data signal
 Digital (Audio) signal
 Video (Brightness) signal
 Video (Chrominance) signal
 Video (Red) signal
 Video (Green) signal
 Video (Blue) signal

A

B

C

D

E

F

G

DVD servo section 3/4

LVA10311-A1(2/3)

5

4

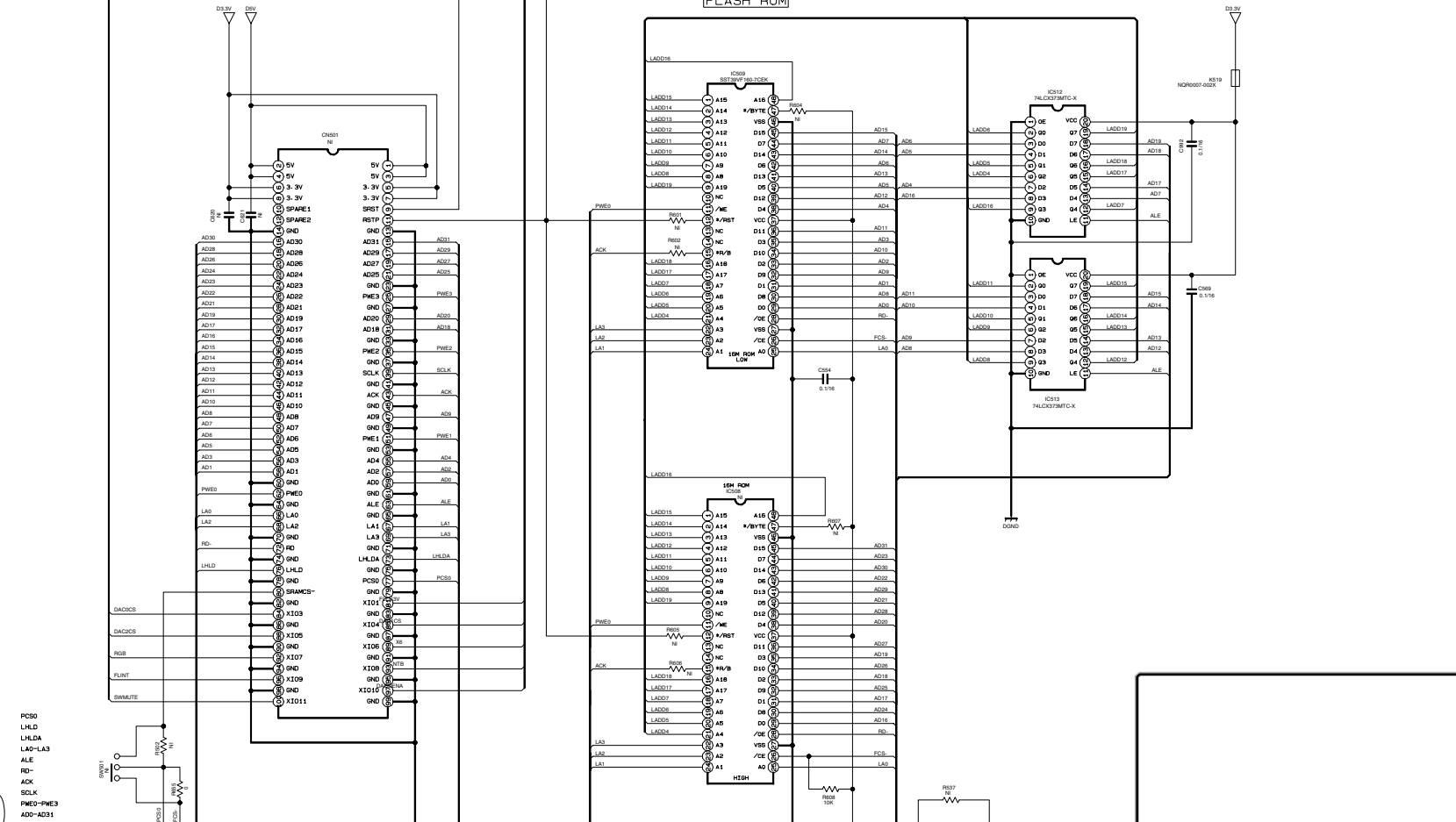
3

2

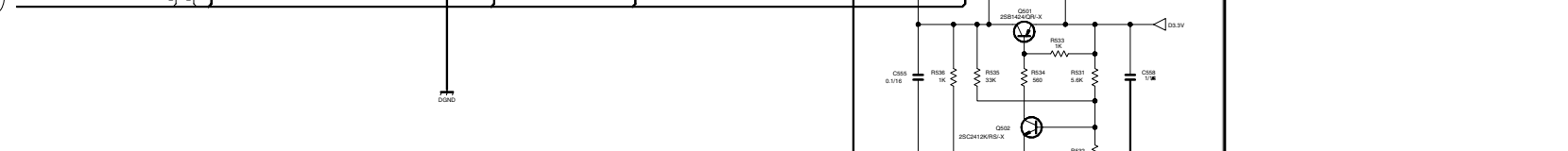
1

(To F-5
on page 2-15)

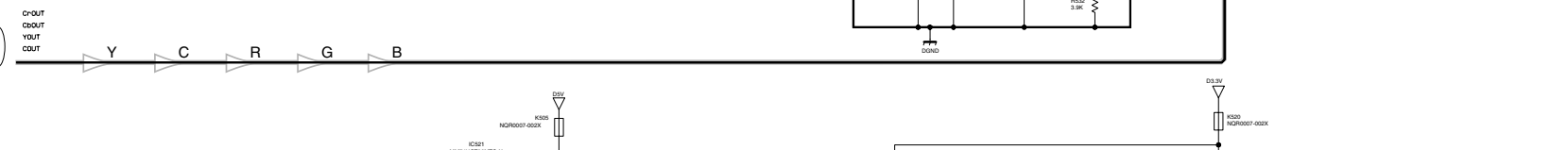
FLCS3V
RCK
DAC1CS
DAC1CS
DAC2CS
DAC2CS
MUTE
DACDEN
CPURST
SRET
FLINT
BUSY
RBB
NTB



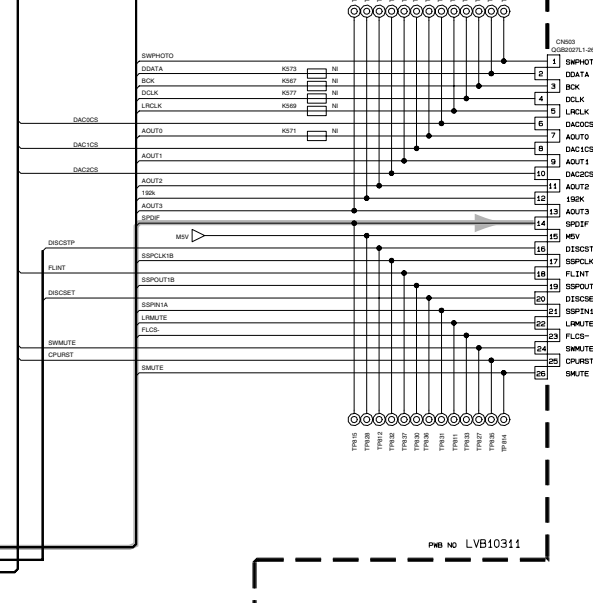
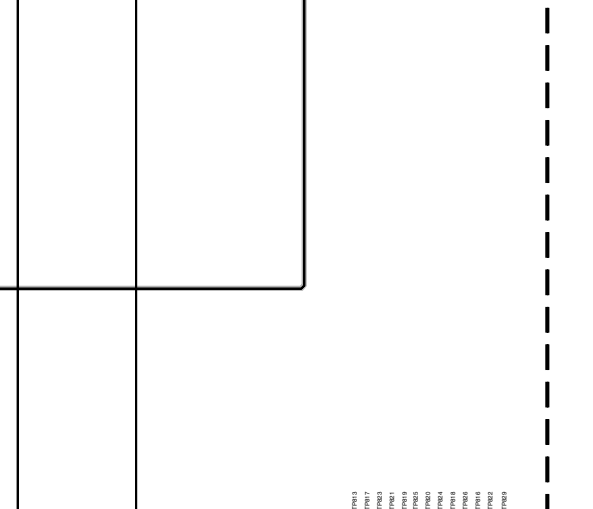
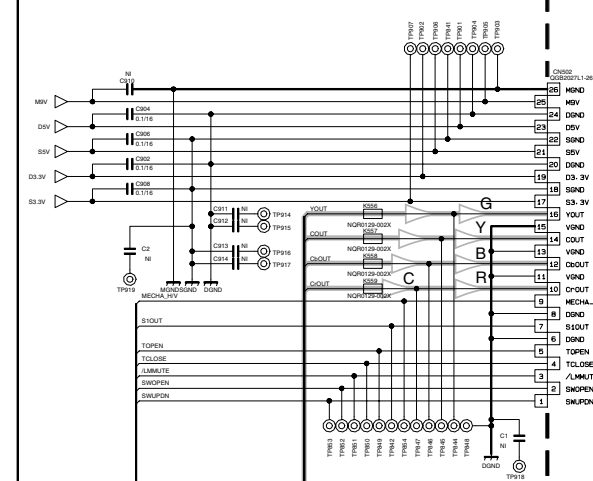
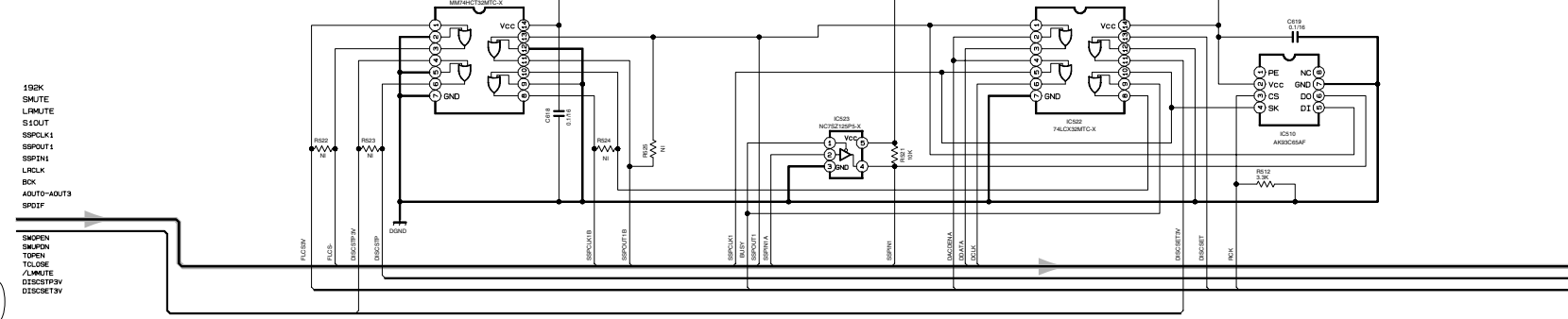
(To F-2
on page 2-15)



(To F-2
on page 2-15)



(To F-1
on page 2-15)



TO MICOM BLOCK
TO CNB03 OF
LVA1030B-A1

(To A-3 and A-4
on page 2-9)

TO MICOM BLOCK
TO CNB01 OF
LVA1030B-A1

(To A-4 and A-5
on page 2-9)

Y Digital (Audio) signal
 Y Video (Brightness) signal
 C Video (Chrominance) signal
 R Video (Red) signal
 G Video (Green) signal
 B Video (Blue) signal

A B C 2-16 D E F G H

■ DVD servo section 4/4 (Voltage value)

5

4

3

2

1

IC101		IC201	
NO	DC(V)	NO	DC(V)
1	0V	51	2.1V
2	4.4V	52	2.1V
3	3.7V	53	2.1V
4	4.4V	54	2.1V
5	0V	55	4.9V
6	1.7V	56	2.1V
7	1.7V	57	2.1V
8	1.9V	58	2.1V
9	3.3V	59	2.1V
10	0V	60	2.1V
11	3.3V	61	0V
12	3.3V	62	2.1V
13	3.3V	63	2.1V
14	3.3V	64	0V
15	0V		
16	1.7V		
17	1.8V		
18	1.7V		
19	1.7V		
20	0V		
21	1.7V		
22	0V		
23	1.7V		
24	0.9V		
25	1.7V		
26	0V		
27	1.7V		
28	0.9V		
29	1.7V		
30	0V		
31	0V		
32	0V		
33	0V		
34	0V		
35	0.9V		
36	3.3V		
37	1.3V		
38	0.9V		
39	3.3V		
40	3.3V		
41	1.7V		
42	1.7V		
43	1.7V		
44	1.0V		
45	1.7V		
46	2.1V		
47	2.1V		
48	2.1V		
49	2.1V		
50	2.1V		

IC201	
NO	DC(V)
1	1.7V
2	1.7V
3	1.7V
4	1.7V
5	1.7V
6	1.7V
7	1.7V
8	0V
9	3.2V
10	5.0V
11	2.5V
12	5.0V
13	2.5V
14	2.5V
15	0V
16	4.3V
17	4.3V
18	4.3V
19	5.0V
20	0V
21	1.67V
22	1.7V
23	1.7V
24	1.7V
25	0V
26	0V
27	1.7V
28	9.2V
29	0V
30	9.2V

IC251	
NO	DC(V)
1	0.8V
2	0.8V
3	0.8V
4	0.8V
5	0V
6	0V
7	0.8V
8	0V
9	5.0V
10	5.0V
11	5.0V
12	5.0V
13	5.0V
14	5.0V
15	0V
16	0V
17	0V
18	0V
19	5.0V
20	5.0V
21	1.67V
22	1.67V
23	0V
24	3.3V
25	5.0V
26	0V
27	9.2V
28	9.2V
29	0V
30	0V

IC301	
NO	DC(V)
1	0V
2	2.9V
3	3.3V
4	0V
5	3.3V
6	3.3V
7	0V
8	0V
9	0V
10	0V
11	3.3V
12	3.3V
13	3.3V
14	0V
15	1.4V
16	0.3V
17	1.4V
18	1.7V
19	0V
20	1.7V
21	0V
22	2.2V
23	2.2V
24	1.7V
25	1.5V
26	1.5V
27	1.5V
28	1.5V
29	3.3V
30	0.5V
31	3.3V
32	0V
33	3.3V
34	3.3V
35	3.3V
36	3.3V
37	0V
38	0V
39	0V
40	0V
41	0V
42	0V
43	1.0V
44	0V
45	0V
46	0V
47	3.3V
48	0V
49	0V
50	0V

IC401	
NO	DC(V)
1	3.3V
2	3.3V
3	0V
4	3.3V
5	0V
6	3.3V
7	0V
8	0V
9	3.3V
10	0V
11	3.3V
12	3.3V
13	3.3V
14	1.8V
15	1.5V
16	1.5V
17	3.3V
18	0V
19	0V
20	0V
21	0V
22	3.3V
23	1.7V
24	1.7V
25	5.0V
26	3.3V
27	0V
28	3.3V
29	3.3V
30	3.3V
31	3.3V
32	0V
33	3.3V
34	3.3V
35	0V
36	3.3V
37	3.3V
38	3.3V
39	0V
40	0V
41	0V
42	0V
43	0V
44	0V
45	3.3V
46	0V
47	0V
48	0V
49	3.3V
50	3.3V

IC451	
NO	DC(V)
1	0V
2	3.2V
3	0V
4	0V
5	0V
6	0V
7	0V
8	0V

IC501	
NO	DC(V)
1	3.2V
2	0.5V
3	0.4V
4	1.8V
5	0.4V
6	0V
7	0.4V
8	0.4V
9	0V
10	3.2V
11	0V
12	0V
13	0V
14	0V
15	3.0V
16	1.3V
17	0V
18	0.4V
19	3.2V
20	1.4V
21	1.7V
22	1.7V
23	0V
24	3.2V
25	0.5V
26	2.5V
27	3.2V
28	1.2V
29	0V
30	0V
31	0V
32	2.0V
33	1.3V
34	1.7V
35	2.2V
36	3.1V
37	3.2V
38	0V
39	3.2V
40	0V
41	0V
42	0V
43	0.7V
44	3.2V
45	0.7V
46	0.5V
47	0V
48	0.5V
49	0V
50	0.4V
51	0.4V
52	0.4V

IC502	
NO	DC(V)
1	1.5V
2	3.3V
3	1.7V
4	0V
5	1.7V
6	1.7V
7	1.7V
8	1.7V

IC505	
NO	DC(V)
1	3.2V
2	0.8V
3	3.2V
4	0.8V
5	0.8V
6	0V
7	0.6V
8	0.6V
9	3.2V
10	0.8V
11	1.0V
12	0V
13	0.4V
14	0V
15	3.2V
16	0V
17	3.2V
18	0V
19	3.2V
20	2.2V
21	0V
22	2.0V
23	1.3V
24	0V
25	1.2V
26	2.5V
27	0.5V
28	1.0V
29	3.2V
30	0V
31	0.4V
32	0V
33	0.4V
34	0.4V
35	3.2V
36	0.4V
37	0.4V
38	0V
39	0.5V
40	0.5V
41	3.2V
42	3.2V
43	3.2V
44	0V
45	0.4V
46	0V
47	0.4V
48	0.4V
49	3.2V
50	0.4V

IC509	
NO	DC(V)
1	0V
2	0V
3	0V
4	0V
5	0V
6	0V
7	0V
8	0V
9	0V
10	0V
11	3.2V
12	0V
13	0V
14	0V
15	0V
16	0V
17	0V
18	0V
19	0V
20	0V
21	0V
22	0V
23	0V
24	3.2V
25	0V
26	3.2V
27	0V
28	3.2V
29	0V
30	0V
31	0V
32	0V
33	0V
34	0V
35	0V
36	0V
37	3.2V
38	0V
39	0V
40	0V
41	0V
42	0V
43	0V
44	0V
45	0V
46	0V
47	0V
48	0V

IC510	
NO	DC(V)
1	0V
2	3.2V
3	0V
4	3.2V
5	3.2V
6	3.2V
7	0V
8	0V

IC511	
NO	DC(V)
1	0V
2	1.8V
3	3.2V

IC512	
NO	DC(V)
1	0V
2	0V
3	0V
4	0V
5	0V
6	0V
7	0V
8	0V
9	0V
10	0V
11	0V
12	0V
13	0V
14	0V
15	0V
16	0V
17	0V
18	0V
19	0V
20	3.2V

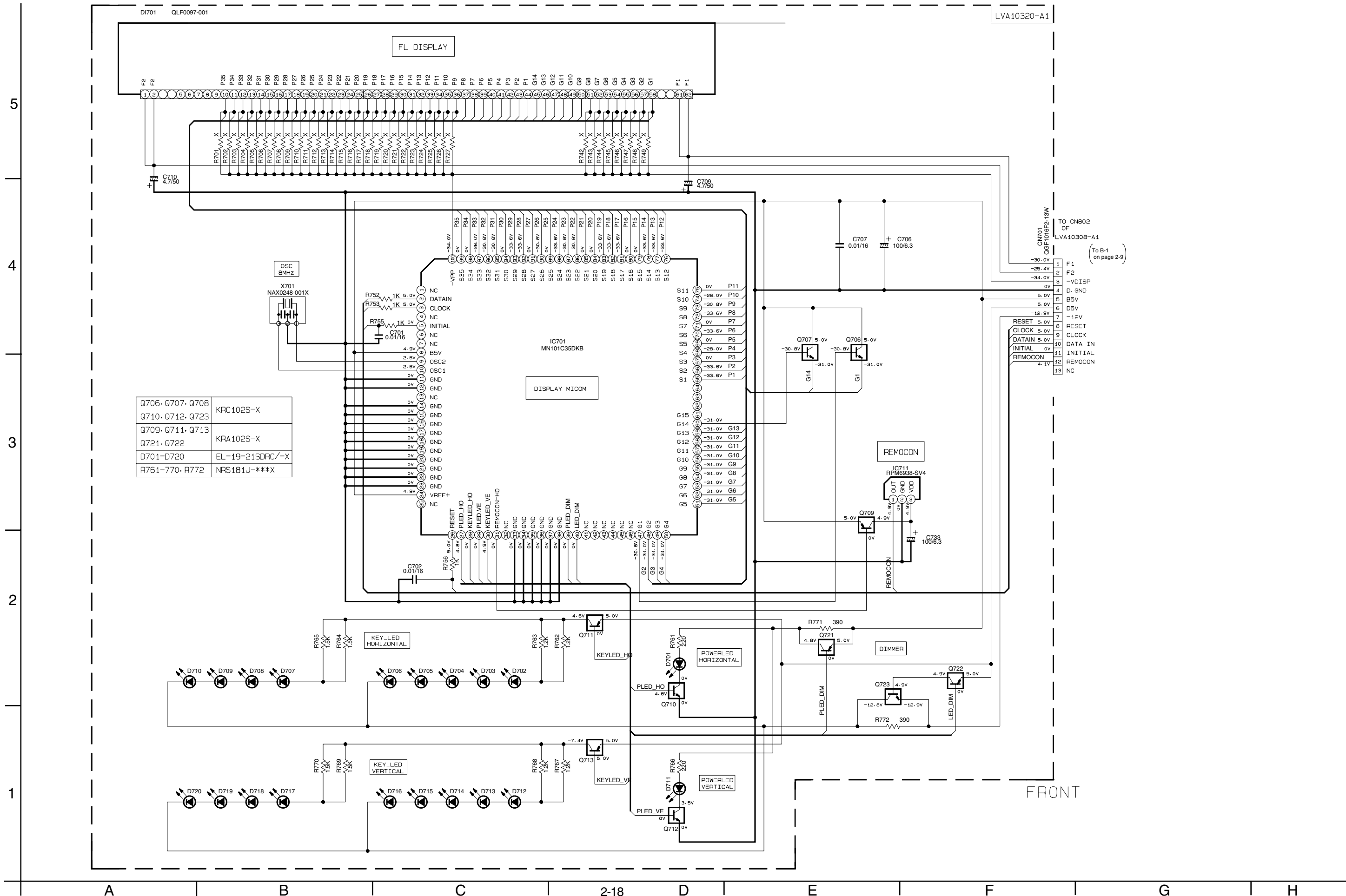
IC513	
NO	DC(V)
1	0V
2	0V
3	0V
4	0V
5	0V
6	0V
7	0V
8	0V
9	0V
10	0V
11	0V
12	0V
13	0V
14	0V
15	0V
16	0V
17	0V
18	0V
19	0V
20	3.2V

IC521	
NO	DC(V)
1	3.2V
2	0V
3	5.0V
4	3.2V
5	0V
6	5.0V
7	0V
8	5.0V
9	0V
10	3.2V
11	5.0V
12	0V
13	5.0V
14	5.0V

IC522	
NO	DC(V)
1	3.2V
2	3.2V
3	3.2V
4	3.2V
5	0V
6	3.2V
7	0V
8	0V
9	3.2V
10	3.2V
11	3.2V
12	0V
13	5.0V
14	3.2V

NOTES
1. VOLTAGES ARE DC-MEASURED WITH A DIGITAL VOLT METER WITHOUT INPUT SIGNAL. ____
CONDITION --- POWER ON DVD STOP

FL display section



FRONT