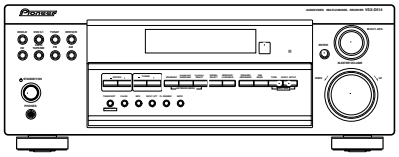
Pioneer sound.vision.soul

Service Manual



VSX-D514-K

ORDER NO.
RRV2901

AUDIO/VIDEO MULTI-CHANNEL RECEIVER

VSX-D514-K
VSX-D514-S
VSX-D414-K
VSX-D414-S

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

Model	Type	Power Requirement	Remarks
VSX-D514-K	KUCXJI	AC120V	
VSX-D514-S	KUCXJI	AC120V	
VSX-D414-K	KUCXJI	AC120V	
VSX-D414-S	KUCXJI	AC120V	

For details, refer to "Important symbols for good services".

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

ZZK FEB. 2004 printed in Japan

SAFETY INFORMATION

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

NOTICE

(FOR CANADIAN MODEL ONLY)

Fuse symbols (fast operating fuse) and/or (slow operating fuse) on PCB indicate that replacement parts must be of identical designation.

REMARQUE

(POUR MODÈLE CANADIEN SEULEMENT)

Les symboles de fusible (fusible de type rapide) et/ou (fusible de type lent) sur CCI indiquent que les pièces de remplacement doivent avoir la même désignation.

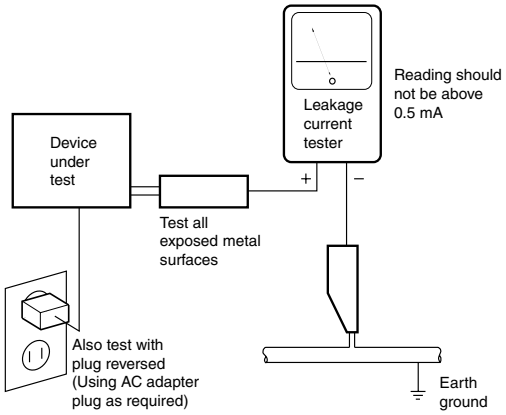
(FOR USA MODEL ONLY)

1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60 Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5 mA.



AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual.

The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

[Important symbols for good services]
In this manual, the symbols shown-below indicate that adjustments, settings or cleaning should be made securely.
When you find the procedures bearing any of the symbols, be sure to fulfill them:

1. Product safety

You should conform to the regulations governing the product (safety, radio and noise, and other regulations), and should keep the safety during servicing by following the safety instructions described in this manual.

2. Adjustments

To keep the original performances of the product, optimum adjustments or specification confirmation is indispensable. In accordance with the procedures or instructions described in this manual, adjustments should be performed.

3. Cleaning

For optical pickups, tape-deck heads, lenses and mirrors used in projection monitors, and other parts requiring cleaning, proper cleaning should be performed to restore their performances.

4. Shipping mode and shipping screws

To protect the product from damages or failures that may be caused during transit, the shipping mode should be set or the shipping screws should be installed before shipping out in accordance with this manual, if necessary.

5. Lubricants, glues, and replacement parts

Appropriately applying grease or glue can maintain the product performances. But improper lubrication or applying glue may lead to failures or troubles in the product. By following the instructions in this manual, be sure to apply the prescribed grease or glue to proper portions by the appropriate amount.For replacement parts or tools, the prescribed ones should be used.

CONTENTS

1. SPECIFICATIONS

Specifications (VSX-D514)

Amplifier Section

Continuous average power output of 100 watts* per channel, min., at 8 ohms, from 20 Hz to 20,000 Hz with no more than 0.2 %** total harmonic distortion (front).

Continuous Power Output (Stereo)
Front .....100 W
(20– 20,000 Hz, THD 0.2 %, 8Ω)

Continuous Power Output (Surround)
Front .....100 W per channel
(1kHz, THD 1.0 %, 8Ω)
Center.....100 W (1kHz, THD 1.0 %, 8Ω)
Surround .....100 W per channel
(1kHz, THD 1.0 %, 8Ω)

Input (Sensitivity/Impedance)
CD, DVR/VCR, CD-R/TAPE/MD,
DVD/LD, TV/SAT.....200 mV/47 kΩ

Frequency Response
CD, DVR/VCR, CD-R/TAPE/MD, DVD/LD,
TV/SAT.....5 Hz to 100,000 Hz $^{+0}_{-3}$dB

Output (Level/Impedance)
DVR/VCR REC, CD-R/TAPE/MD REC
.....200 mV/2.2 kΩ

Tone Control
BASS..... ± 6 dB (100 Hz)
TREBLE.....± 6 dB (10 kHz)
LOUDNESS.... +6.5 dB/+3 dB (100 Hz/10 kHz)
(at volume level–50 dB)

Signal-to-Noise Ratio
(IHF, short circuited, A network)
CD, DVR/VCR, CD-R/TAPE/MD,
DVD/LD, TV/SAT..... 96 dB

Signal-to Noise Ratio
[EIA, at 1 W (1 kHz)]
CD, DVR/VCR, CD-R/TAPE/MD,
DVD/LD, TV/SAT..... 79 dB

Video Section

Input (Sensitivity/Impedance)
DVR/VCR, DVD/LD, TV/SAT..... 1 Vp-p/75Ω

Output (Level/Impedance)
DVR/VCR.....1 Vp-p/75Ω

Frequency Response
DVR/VCR, DVD/LD,
TV/SAT⇨MONITOR.....5 Hz to 7 MHz $^{+0}_{-3}$dB
Signal-to-Noise Ratio ..... 55 dB
Cross Talk ..... 55 dB

FM Tuner Section

Frequency Range.....87.5 MHz to 108 MHz
Usable Sensitivity..... Mono:13.2 dBf, IHF
(1.3 µV/ 75Ω)
50 dB Quieting Sensitivity.....Mono: 20.2 dB
Stereo: 38.6 dBf
Signal-to-Noise Ratio .....Mono: 73 dB
(at 85 dBf)
Stereo: 70 dB (at 85 dBf)
Distortion .....Stereo: 0.5 % (1 kHz)
Alternate Channel Selectivity..... 60 dB
(400 kHz)
Stereo Separation .....40 dB (1 kHz)
Frequency Response.....30 Hz to 15 kHz
(±1 dB)
Antenna Input (DIN) .....75Ω unbalanced

AM Tuner Section

Frequency Range..... 530 kHz to 1,700 kHz
Sensitivity (IHF, Loop antenna).....350 µV/m
Signal-to-Noise Ratio..... 50 dB
Antenna ..... Loop antenna

Miscellaneous

Power Requirements ..... AC 120 V, 60 Hz
Power Consumption ..... 260 W
In Standby..... 0.5 W
AC Outlet .....100 W MAX. (SWITCHED)
Dimensions
..... 420 (W) x 158 (H) x 393 (D) mm
(16-9/16 (W) x 6-1/4 (H) x 15-1/2 (D) in.)
Weight (without package) .....9.3 kg
(20.5 lb)

Furnished Parts

AM loop antenna..... 1
FM wire antenna 1
Dry cell batteries (AA size IEC R6).....2
Remote control 1
Operating instructions 1
Warranty Card 1

Note

Specifications and the design are subject to possible modifications without notice, due to improvements.

* Measured pursuant to the Federal Trade Commission's Trade Regulation rule on Power Output Claims for Amplifiers.

** Measured by Audio Spectrum Analyzer

Specifications (VSX-D414)

Amplifier Section

Continuous Power Output (Stereo RMS)
Front .....120 W
(1 kHz, THD 0.2 %, 8Ω)

Continuous Power Output (Surround RMS)
Front .....120 W per channel
(1kHz, THD 10 %, 8Ω)
Center.....120 W (1kHz, THD 10 %, 8Ω)
Surround .....120 W per channel
(1kHz, THD 10 %, 8Ω)

Input (Sensitivity/Impedance)
CD, DVR/VCR, CD-R/TAPE/MD,
DVD/LD, TV/SAT..... 200 mV/47 kΩ

Frequency Response
CD, DVR/VCR, CD-R/TAPE/MD, DVD/LD,
TV/SAT..... 5 Hz to 100,000 Hz $^{+0}_{-3}$ dB

Output (Level/Impedance)
DVR/VCR REC, CD-R/TAPE/MD REC
..... 200 mV/2.2 kΩ

Tone Control
BASS..... ± 6 dB (100 Hz)
TREBLE..... ± 6 dB (10 kHz)
LOUDNESS.... +6.5 dB/+3 dB (100 Hz/10 kHz)
(at volume level–50 dB)

Signal-to-Noise Ratio
(IHF, short circuitted, A network)
CD, DVR/VCR, CD-R/TAPE/MD,
DVD/LD, TV/SAT.....96 dB

Signal-to Noise Ratio
[EIA, at 1 W (1 kHz)]
CD, DVR/VCR, CD-R/TAPE/MD,
DVD/LD, TV/SAT..... 79 dB

Video Section

Input (Sensitivity/Impedance)
DVR/VCR, DVD/LD, TV/SAT.....1 Vp-p/75Ω

Output (Level/Impedance)
DVR/VCR 1 Vp-p/75Ω

Frequency Response
DVR/VCR, DVD/LD,
TV/SAT⇨MONITOR ..... 5 Hz to 7 MHz $^{+0}_{-3}$dB
Signal-to-Noise Ratio .....55 dB
Cross Talk .....55 dB

FM Tuner Section

Frequency Range.....87.5 MHz to 108 MHz
Usable Sensitivity ..... Mono:13.2 dBf, IHF (1.3 μV/ 75Ω)
50 dB Quieting Sensitivity.....Mono: 20.2 dB
Stereo: 38.6 dBf
Signal-to-Noise Ratio ..... Mono: 73 dB (at 85 dBf)
Stereo: 70 dB (at 85 dBf)
Distortion ..... Stereo: 0.5 % (1 kHz)
Alternate Channel Selectivity..... 60 dB (400 kHz)
Stereo Separation .....40 dB (1 kHz)
Frequency Response.....30 Hz to 15 kHz (±1 dB)
Antenna Input (DIN) .....75 unbalanced

AM Tuner Section

Frequency Range .....530 kHz to 1,700 kHz
Sensitivity (IHF, Loop antenna)..... 350 μV/m
Signal-to-Noise Ratio.....50 dB
Antenna ..... Loop antenna

Miscellaneous

Power Requirements.....AC 120 V,60 Hz
Power Consumption ..... 260 W
In Standby..... 0.5 W
AC Outlet ..... 100 W MAX. (SWITCHED)
Dimensions
..... 420 (W) x 158 (H) x 393 (D) mm
(16-9/16 (W) x 6-1/4 (H) x 15-1/2 (D) in.)
Weight (without package) .....9.3 kg (20.5 lb)

Furnished Parts
AM loop antenna.....1
FM wire antenna 1
Dry cell batteries (AA size IEC R6).....2
Remote control 1
Operating instructions 1
Warranty Card 1

Note

Specifications and the design are subject to possible modifications without notice, due to improvements.

* Measured pursuant to the Federal Trade Commission's Trade Regulation rule on Power Output Claims for Amplifiers.

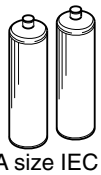
** Measured by Audio Spectrum Analyzer

Accessories

Remote control unit
(XXD3067)

AM loop antenna
(ATB7013)

FM wire antenna
(ADH7030)

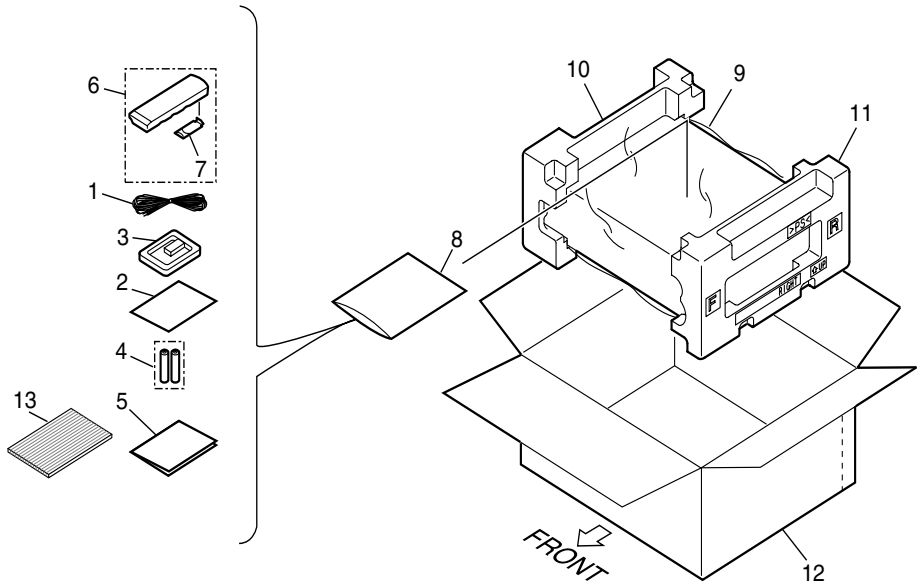


AA size IEC R6
Dry cell batteries (x2)

2. EXPLODED VIEWS AND PARTS LIST

NOTES:
- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Screws adjacent to ▼ mark on product are used for disassembly.*
- *For the applying amount of lubricants or glue, follow the instructions in this manual. (In the case of no amount instructions, apply as you think it appropriate.)*

2.1 PACKING



PACKING parts List

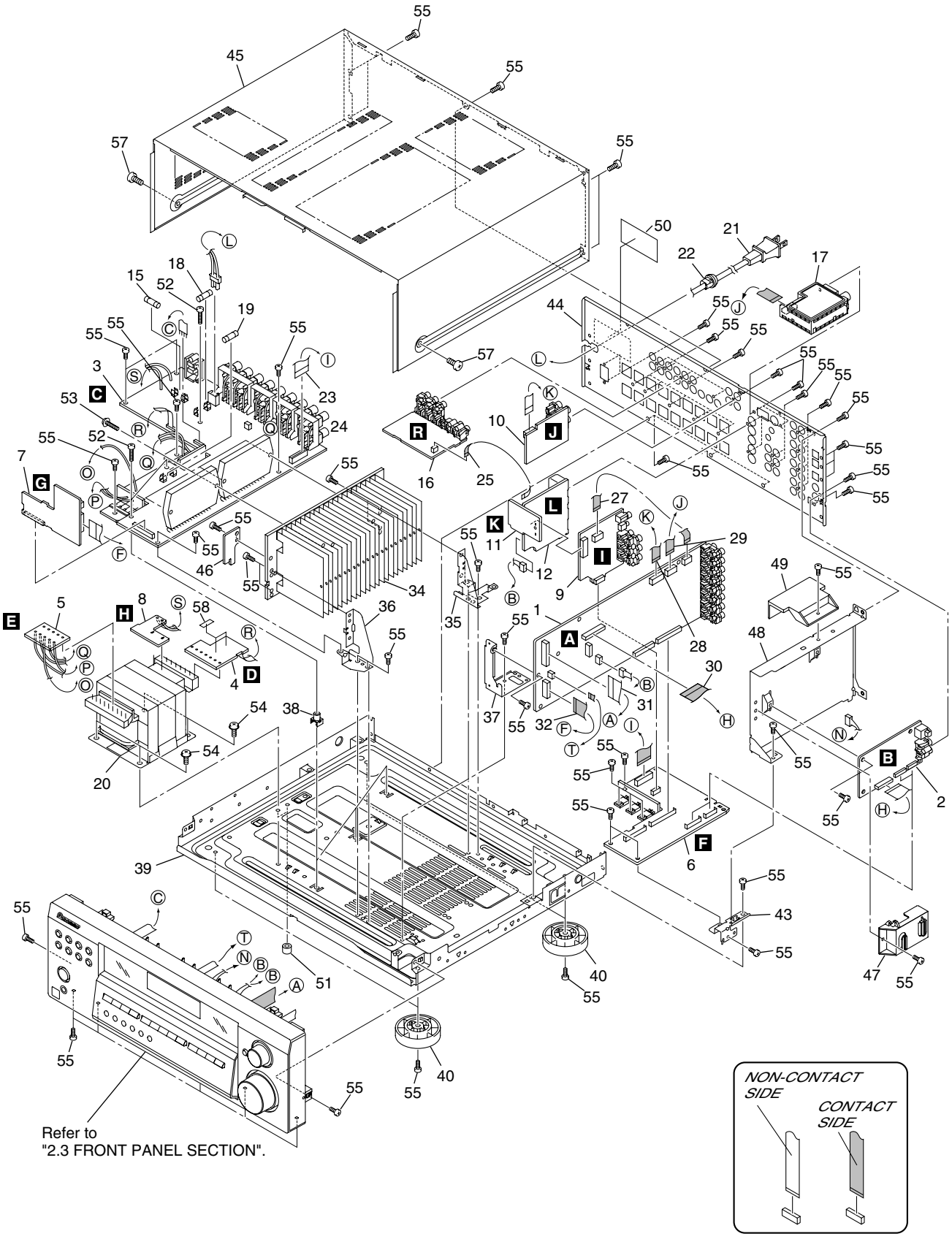
Mark	No.	Description	Part No.
	1	FM wire antenna	ADH7030
NSP	2	Warranty Card	ARY7045
	3	AM loop antenna	ATB7013
NSP	4	Dry cell batteries (AA/R6)	VEM1031
	5	Operating instructions (English)	XRE3077
	6	Remote Control Unit	XXD3067
	7	Battery Cover	XZN3139
NSP	8	Literature Bag	AHG1180
	9	Packing Sheet	AHG7069
	10	Left Pad V1	XHA3141
	11	Right Pad V1	XHA3142
	12	Packing Case	See Contrast table(2)
NSP	13	Accessory Board	XHB3008

(2) CONTRAST TABLE

VSX-D514-K/KUCXJI, VSX-D514-S/KUCXJI, VSX-D414-K/KUCXJI and VSX-D414-S/KUCXJI are constructed the same except for the following :

Mark	No.	Symbol and Description	VSX-D514-K/ KUCXJI	VSX-D514-S/ KUCXJI	VSX-D414-K/ KUCXJI	VSX-D414-S/ KUCXJI
	12	Packing Case	XHD3387	XHD3389	XHD3408	XHD3409

2.2 EXTERIOR SECTION



EXTERIOR SECTION parts List

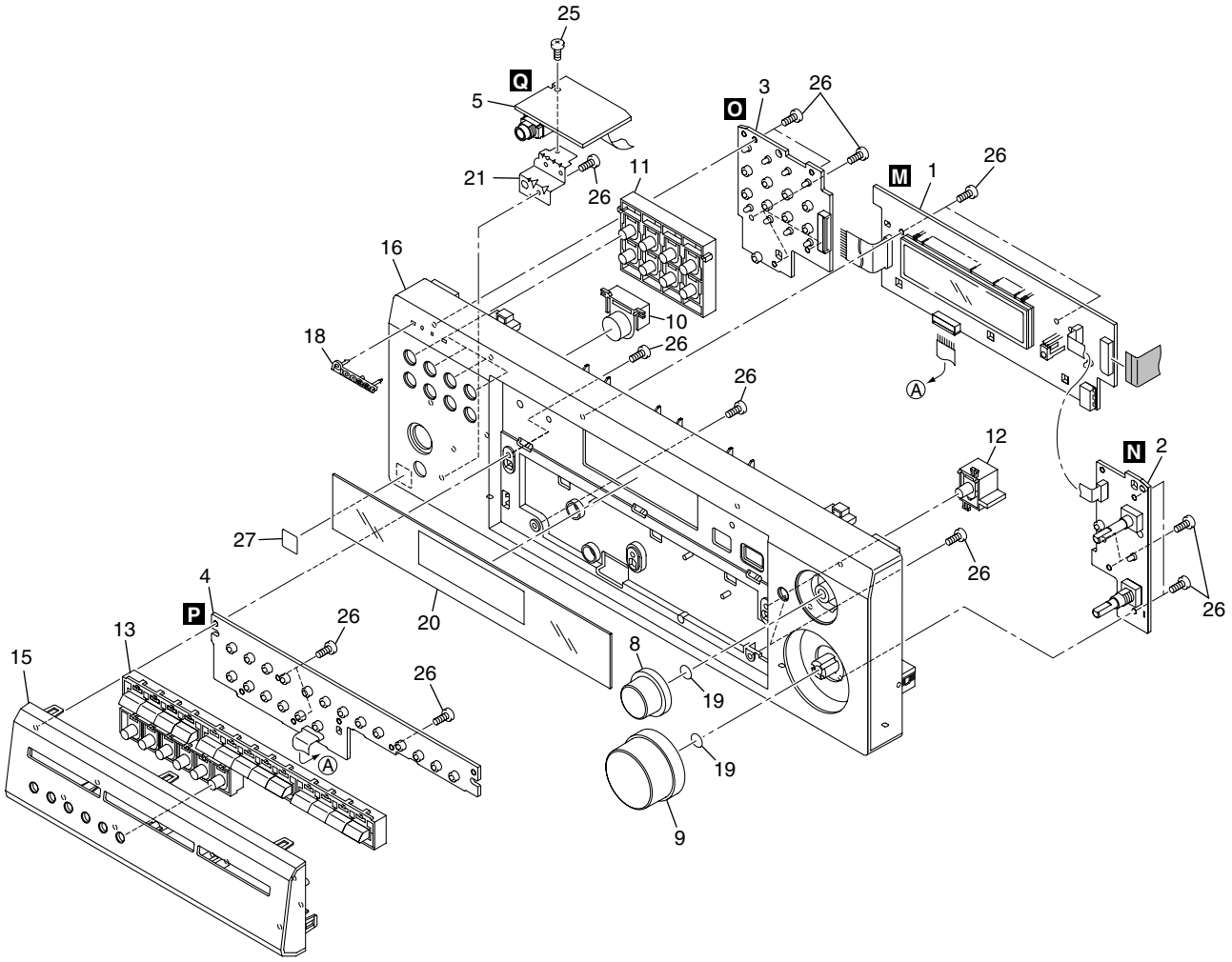
Mark	No.	Description	Part No.
	1	MAIN Assy	See Contrast table(2)
	2	DSP Assy	AWX8418
	3	AMP & PRIMARY Assy	See Contrast table(2)
	4	TRANS2 Assy	XWZ3808
	5	TRANS3 Assy	XWZ3812
	6	REGULATOR Assy	XWZ3796
	7	AMP INPUT Assy	XWZ3800
	8	TRANS1 Assy	XWZ3805
	9	VIDEO Assy	See Contrast table(2)
	10	5.1CH Assy	See Contrast table(2)
	11	B TO B Assy	See Contrast table(2)
	12	S. VIDEO Assy	See Contrast table(2)
	13	••••••••	
	14	••••••••	
⚠	15	FU2 Fuse (8A)	REK1086
	16	COMPONENT Assy	See Contrast table(2)
	17	FM/AM TUNER UNIT	AXX7172
⚠	18	FU1 Fuse (10A)	REK1087
⚠	19	FU701 Fuse (10A)	REK1087
⚠	20	T1 Power Transformer	XTS3084
⚠	21	AC Power Cord	ADG7024
	22	Cord Stopper	CM-22C
	23	J36 23P F.F.C/30V	XDD3102
	24	••••••••	
	25	J38 5P F.F.C/30V	See Contrast table(2)
	26	••••••••	
	27	J33 11P F.F.C/30V	XDD3150
	28	J48 9P F.F.C/30V	XDD3151
	29	J34 13P F.F.C/30V	XDD3149
	30	J43 19P F.F.C/30V	XDD3126
	31	J31 17P F.F.C/30V	XDD3118
	32	J35 19P F.F.C/30V	XDD3101
	33	••••••••	
NSP	34	Heatsink 0.4	ANH7109
	35	Heat Sink Angle R	ANG7252
	36	Heat Sink Angle F	ANG7251
	37	PCB Angle R5	XNG3073
	38	PCB Mold	AMR2533
NSP	39	Under Base R6	XNA3012
	40	Insulator	PNW2766
	41	••••••••	
	42	••••••••	
	43	REG Support R6	XNG3093
	44	Rear Panel	See Contrast table(2)
	45	Bonnet	See Contrast table(2)
NSP	46	HOLDER Assy	XWZ3819
	47	FFC Holder R6	XMR3072
	48	Shield A R6	XNG3068
	49	FFC Cover R6	XMR3060
NSP	50	N Label	See Contrast table(2)
NSP	51	Spacer	AEB7092
	52	Screw	BBZ30P200FTC
	53	Screw 3x23	XBA3012
	54	Screw	FBT40P080FNI
	55	Screw	BBZ30P080FTC
	56	••••••••	
	57	Screw	See Contrast table(2)
NSP	58	ICP Label	XAX3319

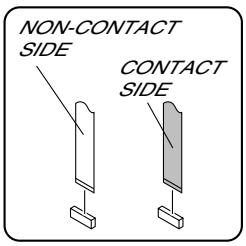
(2) CONTRAST TABLE

VSX-D514-K/KUCXJI, VSX-D514-S/KUCXJI, VSX-D414-K/KUCXJI and VSX-D414-S/KUCXJI are constructed the same except for the following :

Mark	No.	Symbol and Description	VSX-D514-K/ KUCXJI	VSX-D514-S/ KUCXJI	VSX-D414-K/ KUCXJI	VSX-D414-S/ KUCXJI
	1	MAIN ASSY	XWK3116	XWK3116	XWK3148	XWK3148
	3	AMP & PRIMARY ASSY	XWZ3782	XWZ3782	XWZ3894	XWZ3894
	9	VIDEO ASSY	XWZ3823	XWZ3823	XWZ3749	XWZ3749
	10	5.1CH ASSY	XWZ3760	XWZ3760	XWZ3759	XWZ3759
	11	B TO B ASSY	XWZ3781	XWZ3781	Not used	Not used
	12	S.VIDEO ASSY	XWZ3774	XWZ3774	Not used	Not used
	16	COMPONENT ASSY	XWZ3777	XWZ3777	Not used	Not used
	25	J38 5P F.F.C/30V	XDD3104	XDD3104	Not used	Not used
	44	Rear Panel 514K	XNC3246	XNC3246	Not used	Not used
	44	Rear Panel 414K	Not used	Not used	XNC3259	XNC3259
	45	Bonnet K V1	XZN3148	Not used	XZN3148	Not used
	45	Bonnet S V1	Not used	XZN3149	Not used	XZN3149
NSP	50	N Label 514S	Not used	XAL3194	Not used	Not used
NSP	50	N Label 414S	Not used	Not used	Not used	XAL3203
	57	Screw	FBT40P080FZK	FBT40P080FNI	FBT40P080FZK	FBT40P080FNI

2.3 FRONT PANEL SECTION





FRONT PANEL SECTION parts List

Mark	No.	Description	Part No.
	1	FRONT DISPLAY ASSY	See Contrast table(2)
	2	R. ENCODER Assy	See Contrast table(2)
	3	P. SW & FUNC. KEY Assy	See Contrast table(2)
	4	FRONT KEY Assy	See Contrast table(2)
	5	H.P. Assy	See Contrast table(2)
	6	••••••••	
	7	••••••••	
	8	JOG Knob	See Contrast table(2)
	9	VOL Knob	See Contrast table(2)
	10	Standby BTN V1	See Contrast table(2)
	11	FUNC BTN V1	See Contrast table(2)
	12	ENTER BTN V1	See Contrast table(2)
	13	Sub BTN V1	See Contrast table(2)
	14	••••••••	
	15	Sub Panel	See Contrast table(2)
	16	FRT Panel	See Contrast table(2)
	17	••••••••	
	18	Pioneer Badge	See Contrast table(2)
NSP	19	C Ring DIM 8.1	XBH3016
	20	D Panel V1	XAK3427
	21	Earth Plate R5 HP	XNG3066
	22	••••••••	
	23	••••••••	
	24	••••••••	
	25	Screw	BBZ30P080FTC
	26	Screw	BPZ30P100FTC
NSP	27	Energy Star Label	AAX8022

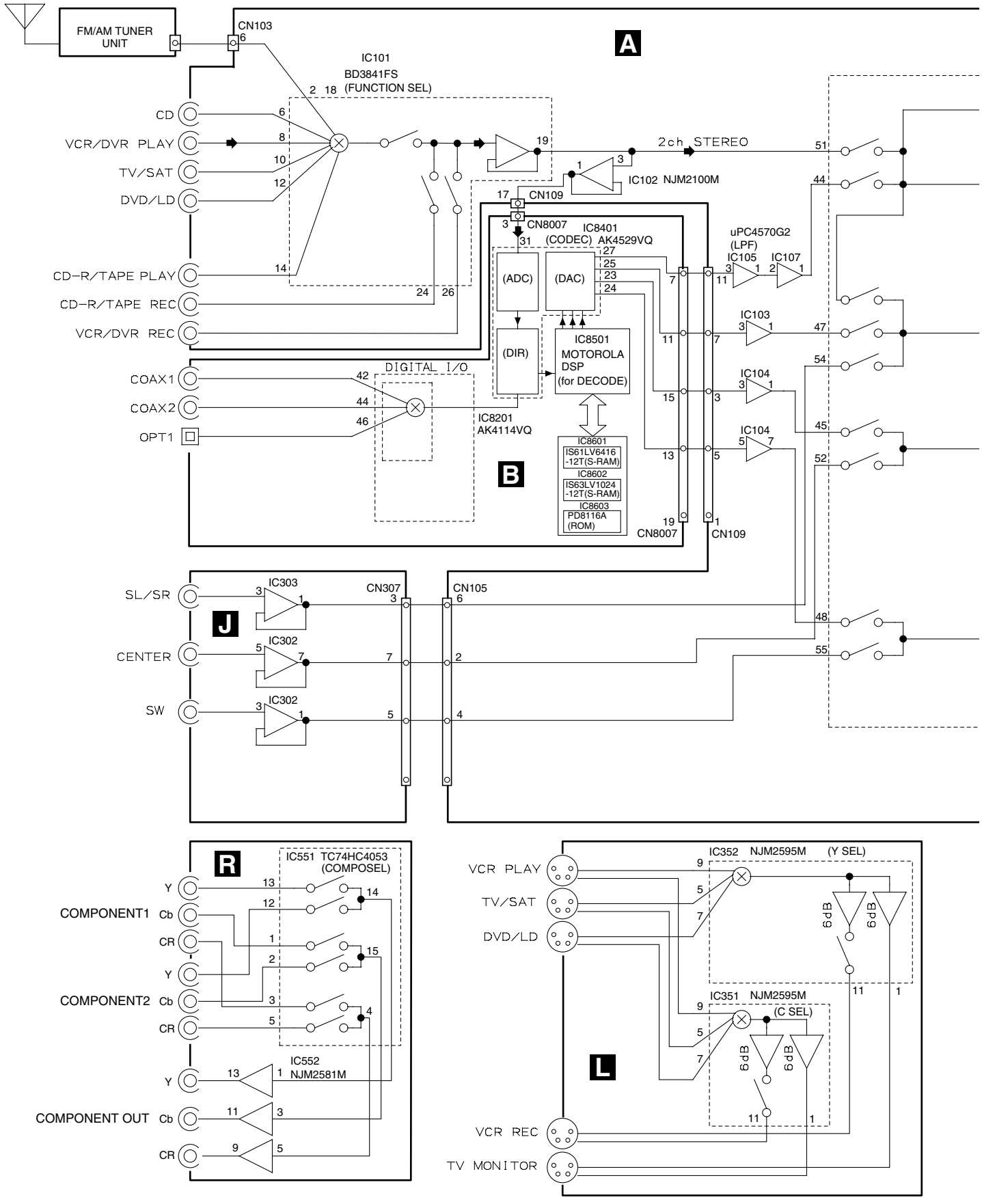
(2) CONTRAST TABLE

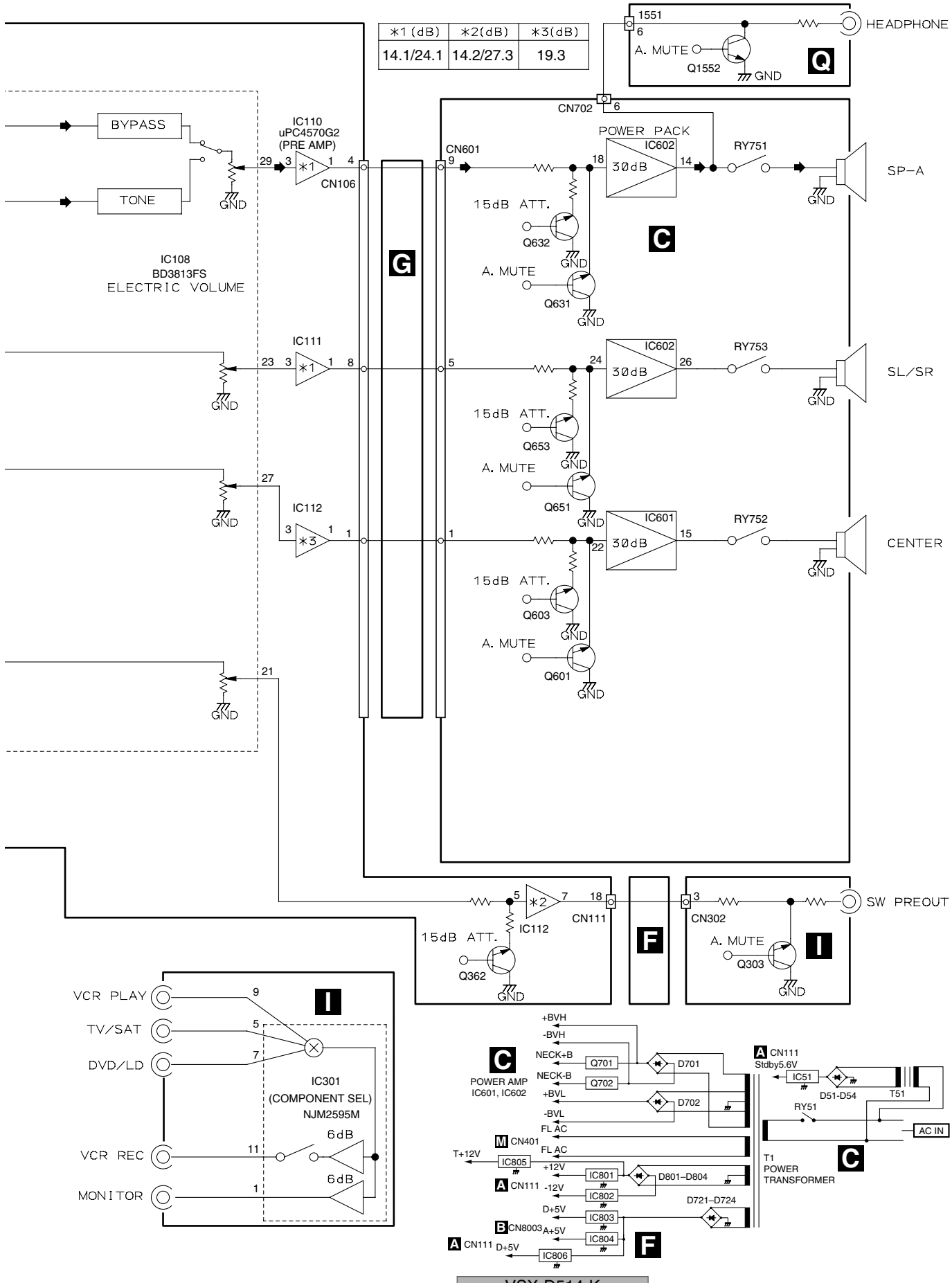
VSX-D514-K/KUCXJI, VSX-D514-S/KUCXJI, VSX-D414-K/KUCXJI and VSX-D414-S/KUCXJI are constructed the same except for the following :

Mark	No.	Symbol and Description	VSX-D514-K/ KUCXJI	VSX-D514-S/ KUCXJI	VSX-D414-K/ KUCXJI	VSX-D414-S/ KUCXJI
	1	FRONT DISPLAY ASSY	XWZ3755	XWZ3755	XWZ3754	XWZ3754
	2	R. ENCODER ASSY	XWZ3766	XWZ3766	XWZ3765	XWZ3765
	3	P. SW & FUNCTION ASSY	XWZ3763	XWZ3763	XWZ3762	XWZ3762
	4	FRONT KEY ASSY	XWZ3758	XWZ3758	XWZ3757	XWZ3757
	5	H.P. ASSY	XWZ3768	XWZ3768	XWZ3767	XWZ3767
	8	JOG Knob V1K	XAB3038	Not used	XAB3038	Not used
	8	JOG Knob V1S	Not used	XAB3042	Not used	XAB3042
	9	VOL Knob V1K	XAB3039	Not used	XAB3039	Not used
	9	VOL Knob V1S	Not used	XAB3043	Not used	XAB3043
	10	Standby BTN V1K	XAD3173	Not used	XAD3173	Not used
	10	Standby BTN V1S	Not used	XAD3178	Not used	XAD3178
	11	FUNC BTN V1K	XAD3174	Not used	XAD3174	Not used
	11	FUNC BTN V1S	Not used	XAD3180	Not used	XAD3180
	12	ENTER BTN V1K	XAD3175	Not used	XAD3175	Not used
	12	ENTER BTN V1S	Not used	XAD3181	Not used	XAD3181
	13	Sub BTN V1K	XAD3176	Not used	XAD3176	Not used
	13	Sub BTN V1S	Not used	XAD3177	Not used	XAD3177
	15	Sub Panel 514K	XAK3425	Not used	XAK3425	Not used
	15	Sub Panel 514S	Not used	XAK3432	Not used	XAK3432
	16	FRT Panel 514K	XMB3138	Not used	Not used	Not used
	16	FRT Panel 514S	Not used	XMB3143	Not used	Not used
	16	FRT Panel 414K	Not used	Not used	XMB3152	Not used
	16	FRT Panel 414S	Not used	Not used	Not used	XMB3153
	18	Pioneer Badge	XAM3006	VAM1129	XAM3006	VAM1129

3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

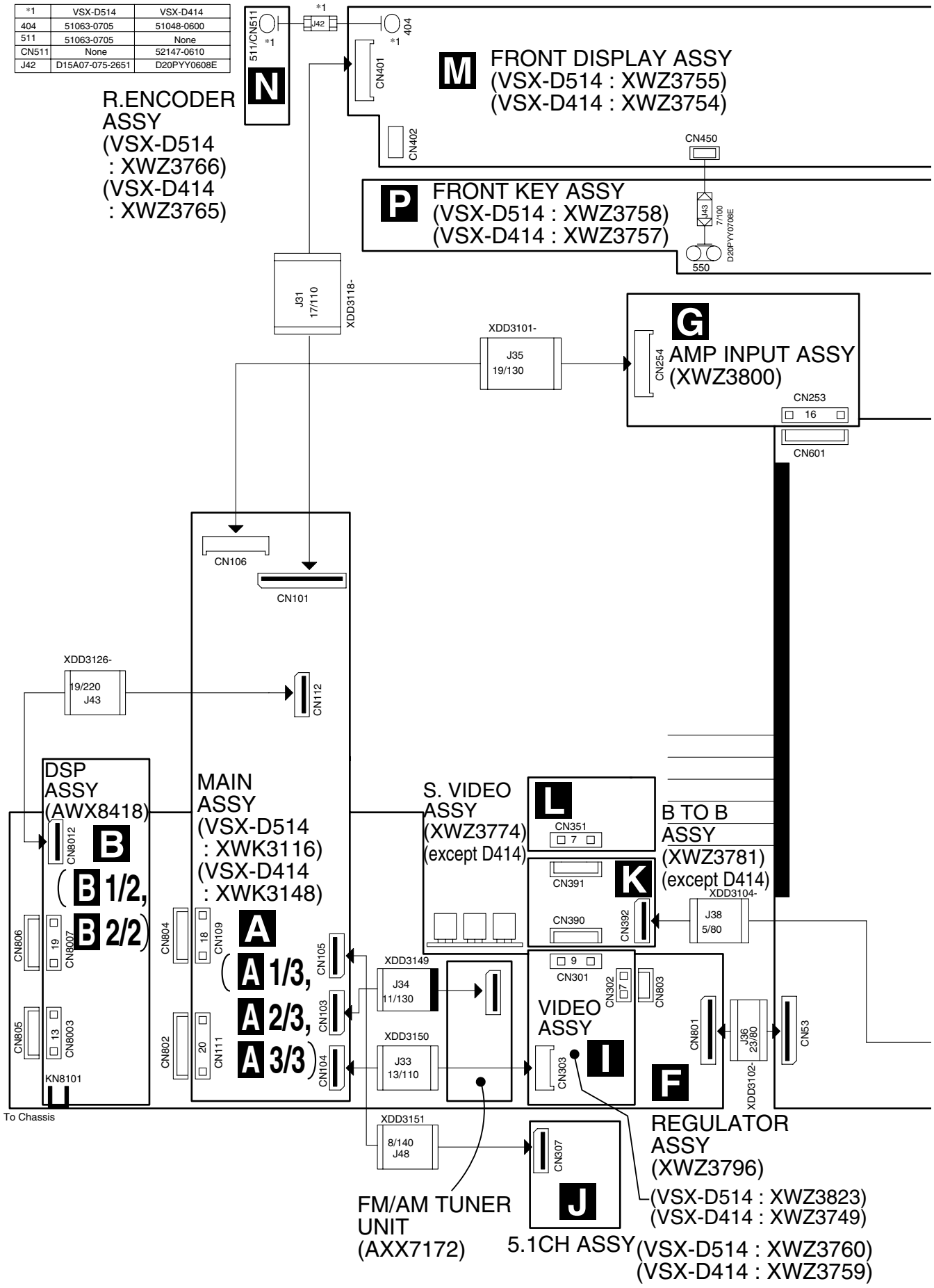
3.1 BLOCK DIAGRAM

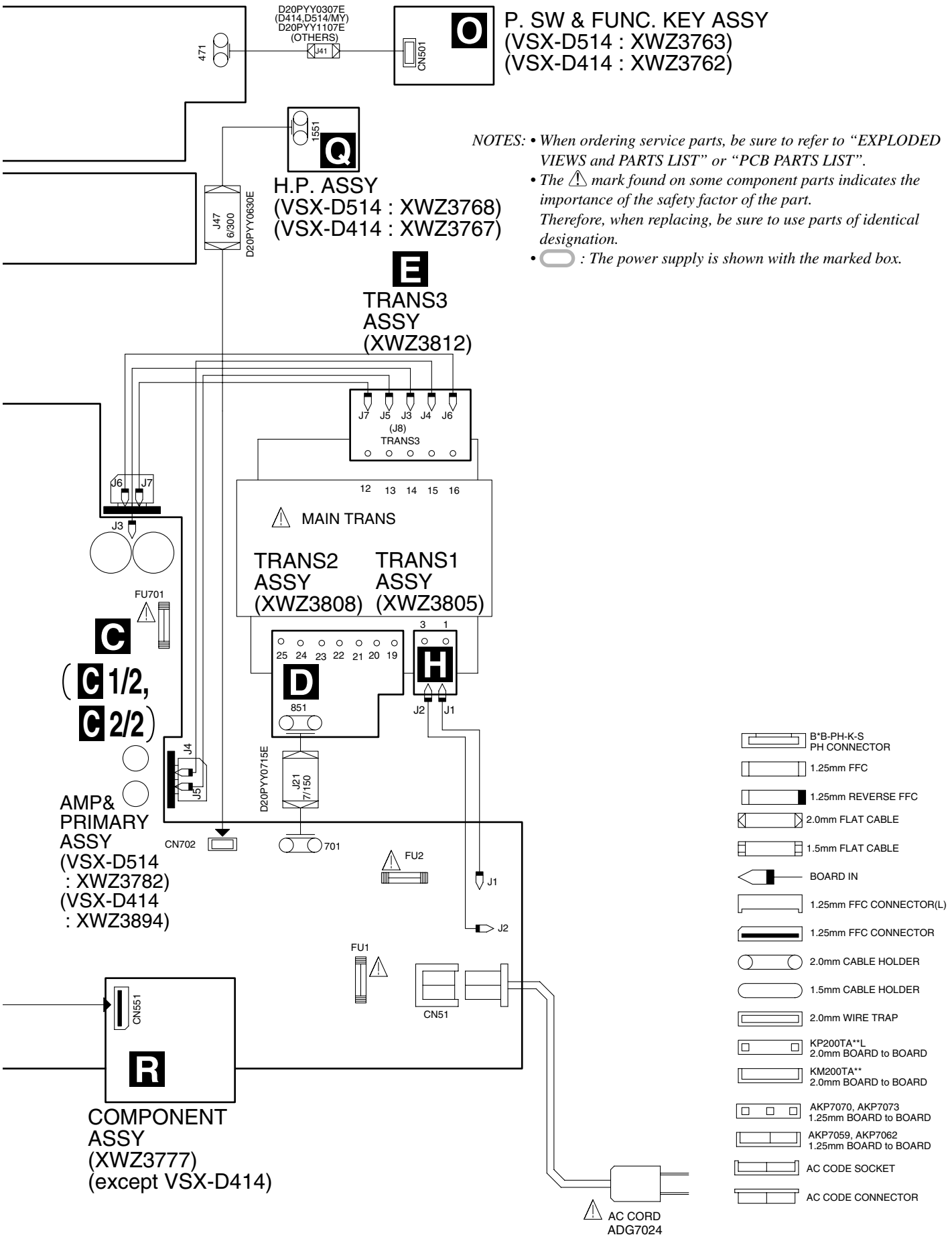



∗1 (dB) ∗2(dB) ∗3(dB)
14.1/24.1 14.2/27.3 19.3
HEADPHONE
A. MUTE
Q1552
GND
Q
1551
6
CN702
POWER PACK
IC602
30dB
RY751
SP-A
BYPASS
TONE
IC110
uPC4570G2
(PRE AMP)
CN106
CN601
15dB ATT.
Q632
A. MUTE
Q631
C
G
IC108
BD3813FS
ELECTRIC VOLUME
IC111
RY753
SL/SR
Q653
Q651
IC112
IC601
RY752
CENTER
Q603
Q601
∗2
CN111
F
CN302
SW PREOUT
Q303
I
Q362
VCR PLAY
TV/SAT
DVD/LD
IC301
(COMPONENT SEL)
NJM2595M
6dB
VCR REC
MONITOR
POWER AMP
IC601, IC602
NECK+B
NECK-B
+BVL
-BVL
FL AC
Q701
Q702
D701
D702
M CN401
T+12V
IC805
+12V
-12V
IC801
IC802
D801–D804
D+5V
IC803
A+5V
IC804
D721–D724
B CN8003
A CN111 D+5V
IC806
A CN111
Stdby5.6V
IC51
D51-D54
T51
RY51
AC IN
T1
POWER
TRANSFORMER

3.2 OVERALL WIRING CONNECTION DIAGRAM

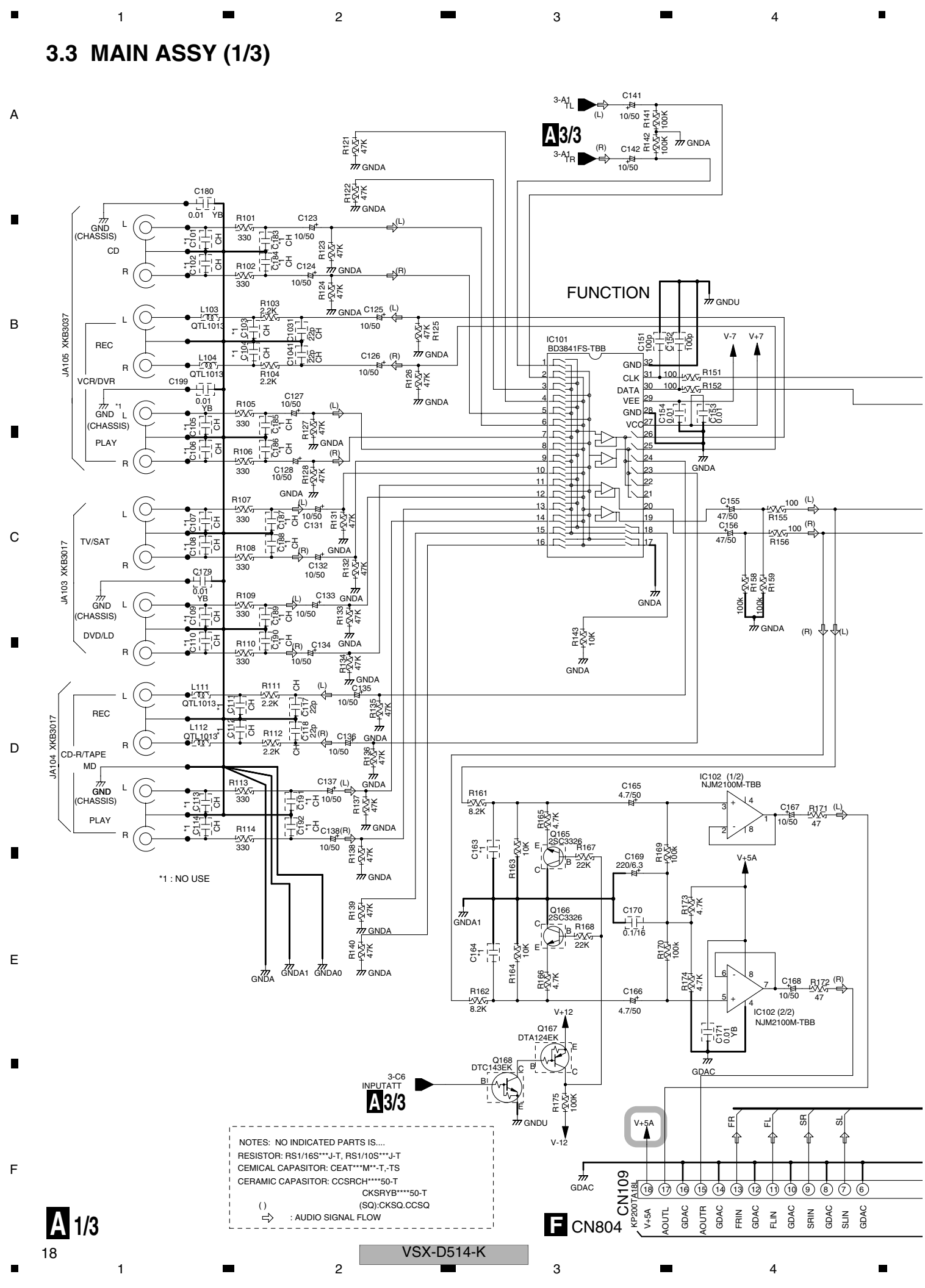
*1	VSX-D514	VSX-D414
404	51063-0705	51048-0600
511	51063-0705	None
CN511	None	52147-0610
J42	D15A07-075-2651	D20PYY0608E





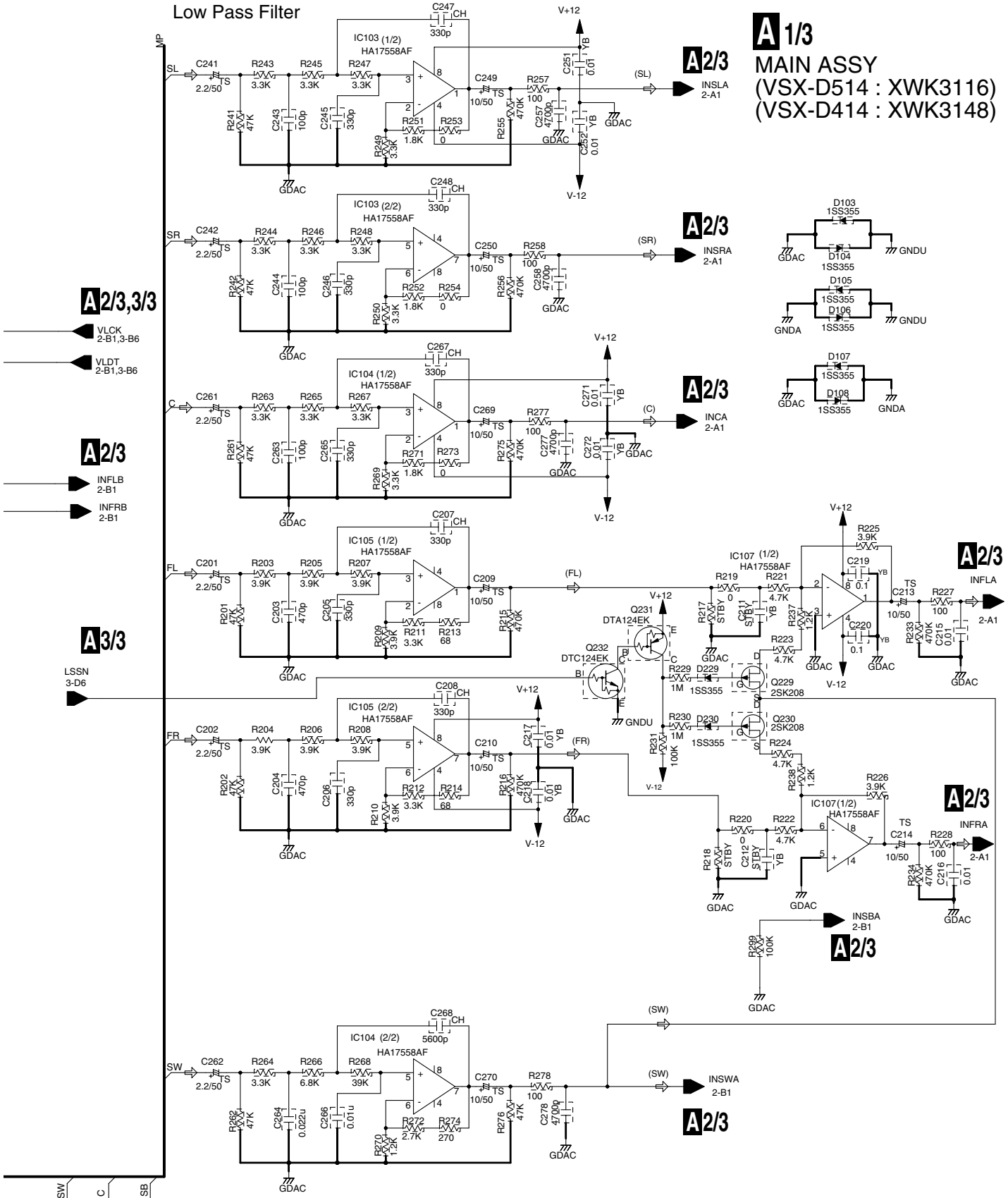
NOTES:
- *When ordering service parts, be sure to refer to "EXPLODED VIEWS and PARTS LIST" or "PCB PARTS LIST".*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *: The power supply is shown with the marked box.*

3.3 MAIN ASSY (1/3)

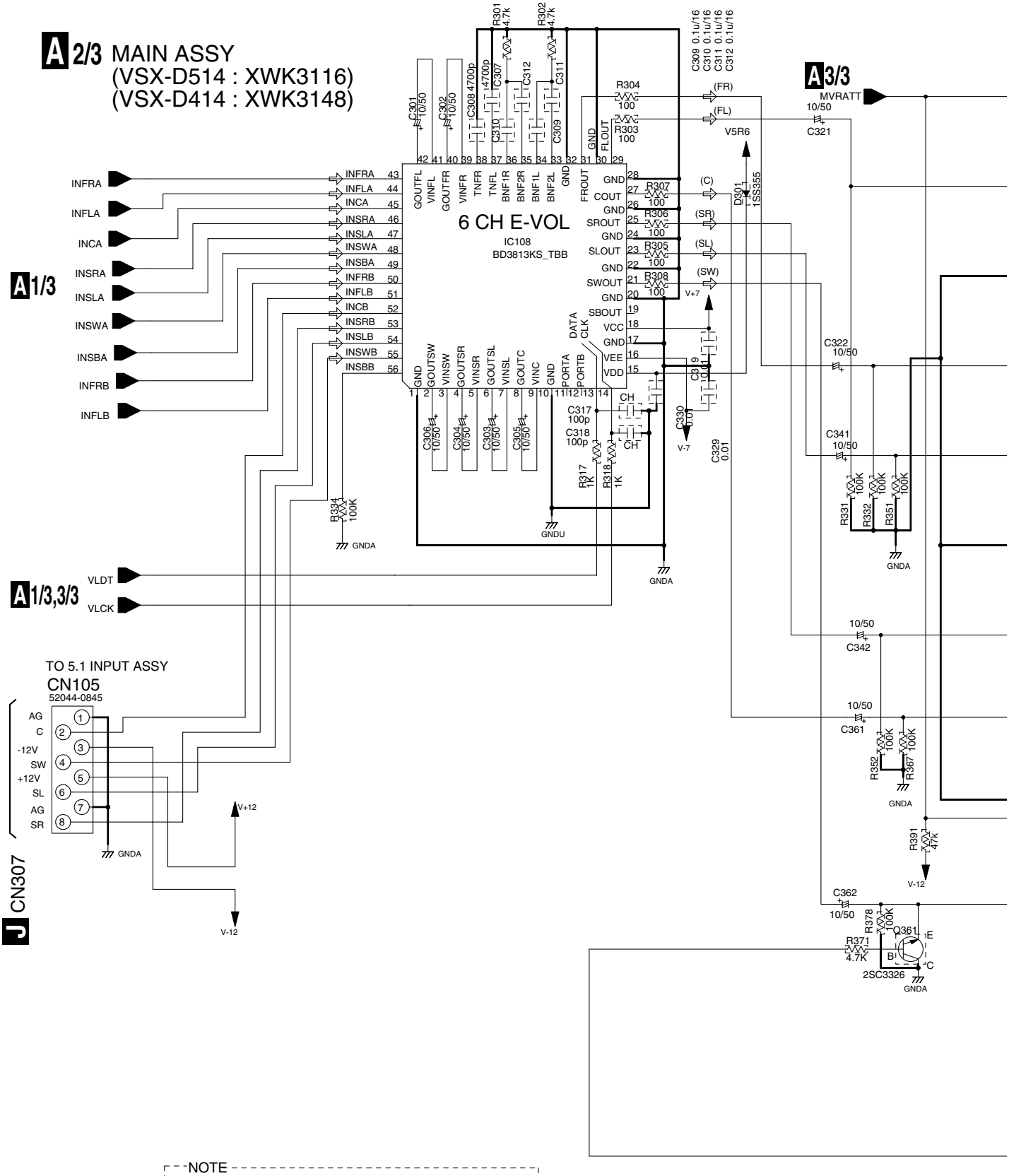


Low Pass Filter

A 1/3
MAIN ASSY
(VSX-D514 : XWK3116)
(VSX-D414 : XWK3148)



3.4 MAIN ASSY (2/3)



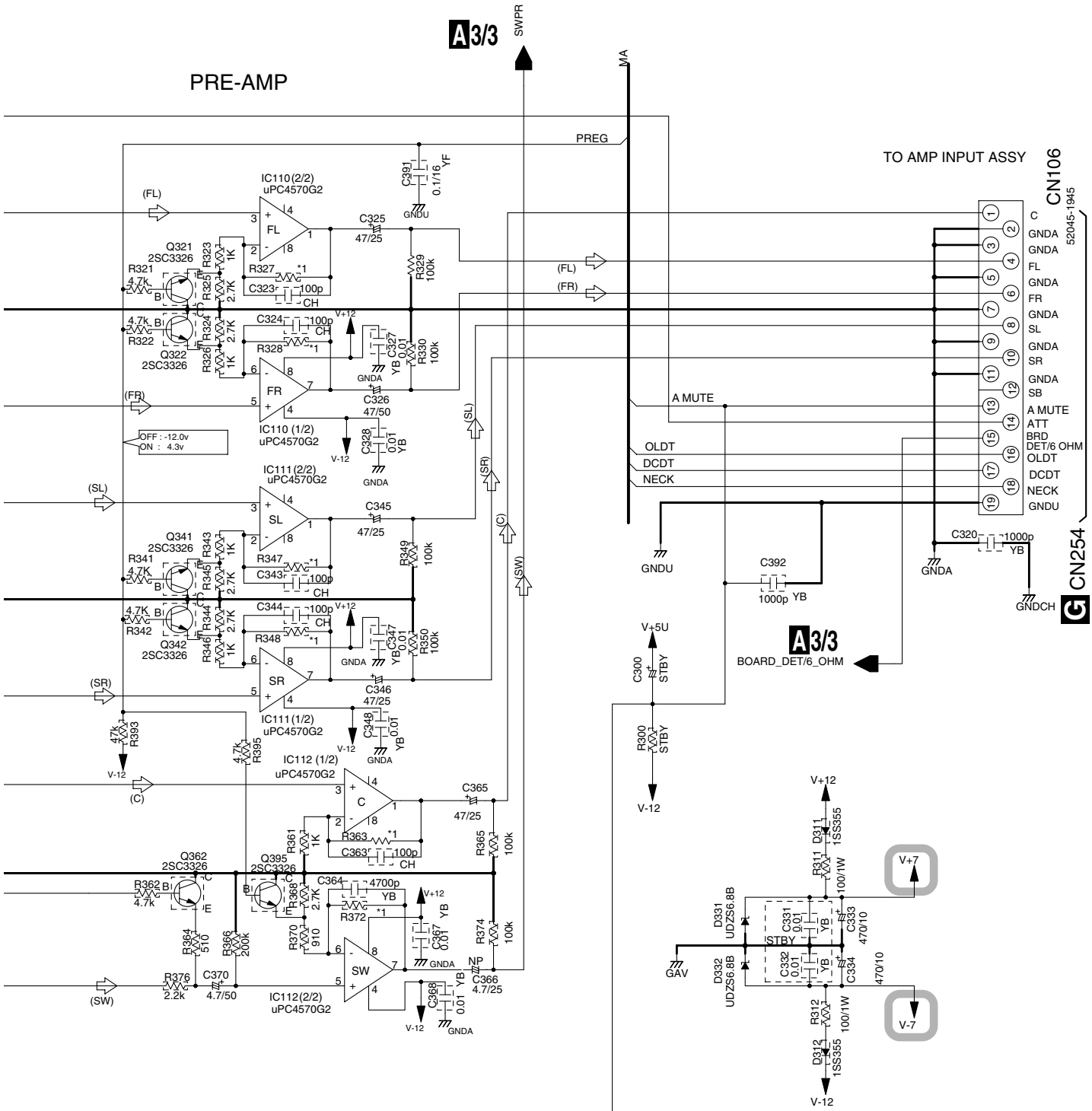
NOTE

1.RESISTORS
- Unit: k-kΩ, M-MΩ or Ω unless otherwise noted.
- Rated power: 1/10W unless otherwise noted.
- Tolerance: (J) ± 5% unless otherwise noted.

2.CAPACITORS
- Unit: p-pF or μF unless otherwise noted.
- Ratings: Capacity(μF)/Voltage(V) unless otherwise noted.
- Rated Voltage: 50V expect for electrolytic capacitors.
- JA:CEJA

⇨ : AUDIO SIGNAL FLOW

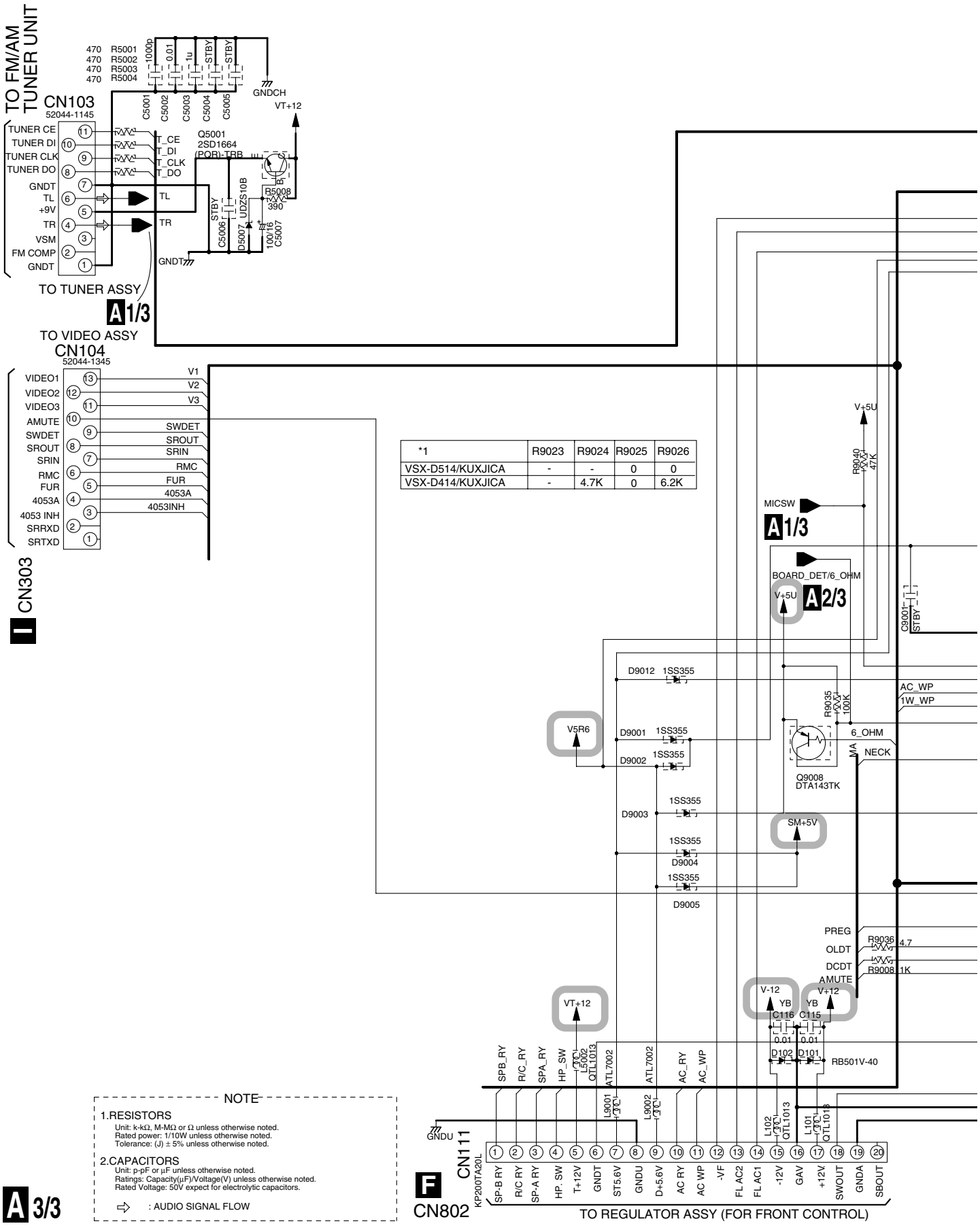
A 2/3

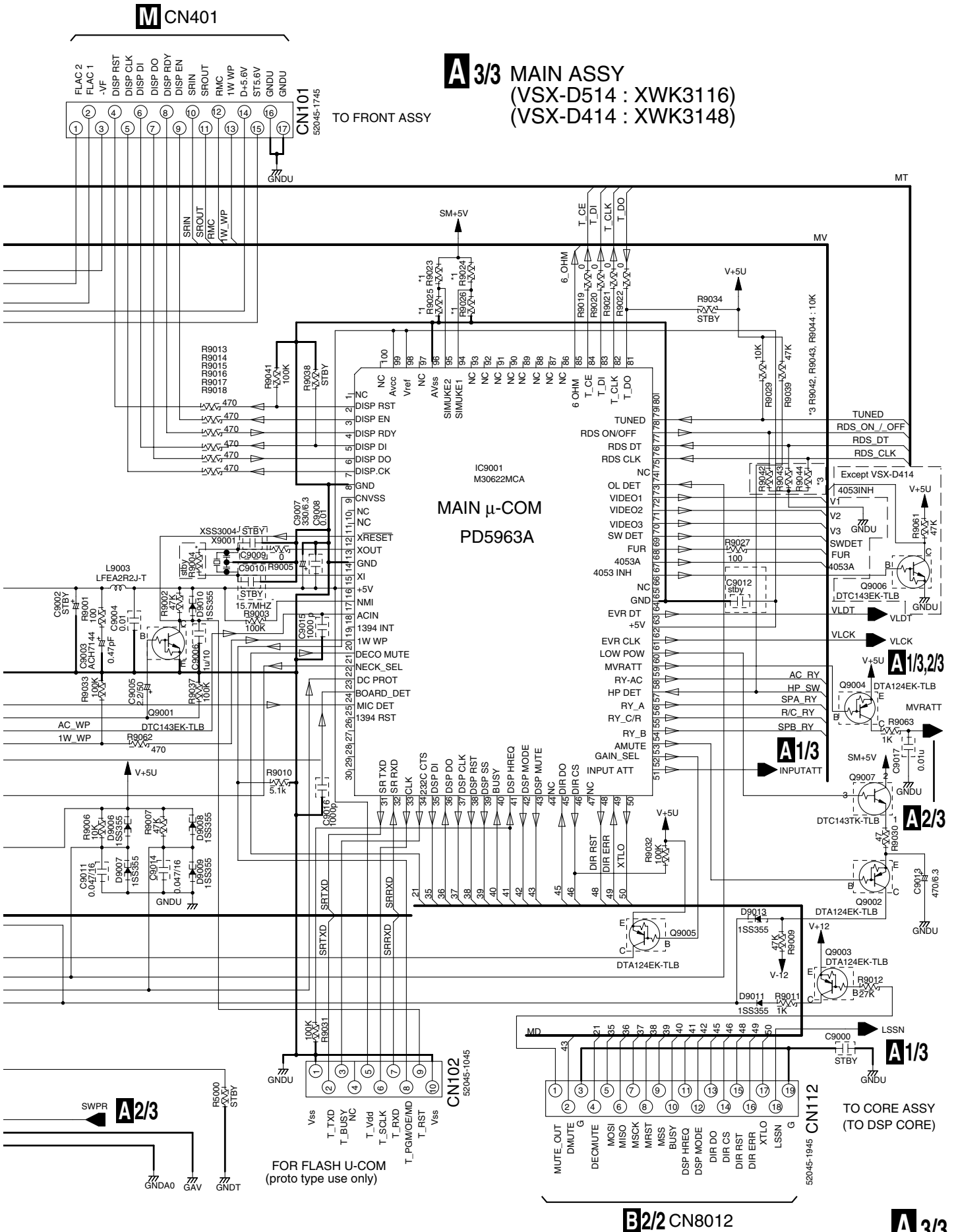


	FRONT, REAR		Center		SW	
*1	R327 R328 R347 R348 (Ohm)	GAIN(dB)	R363 (Ohm)	GAIN(dB)	R372 (Ohm)	GAIN(dB)
	15K	14.1/24.1	8.2K	19.3	15K	14.2/27.3

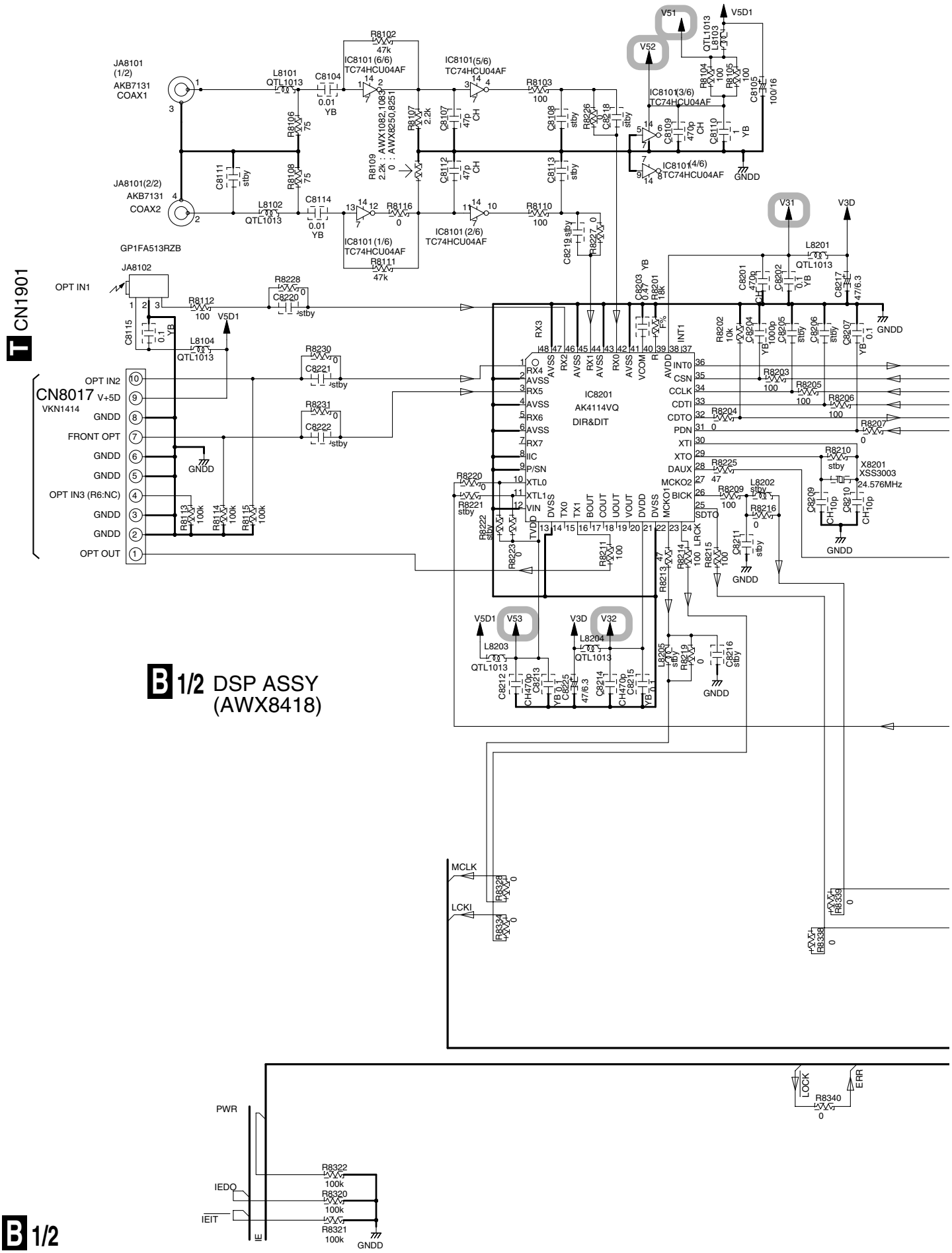
A2/3

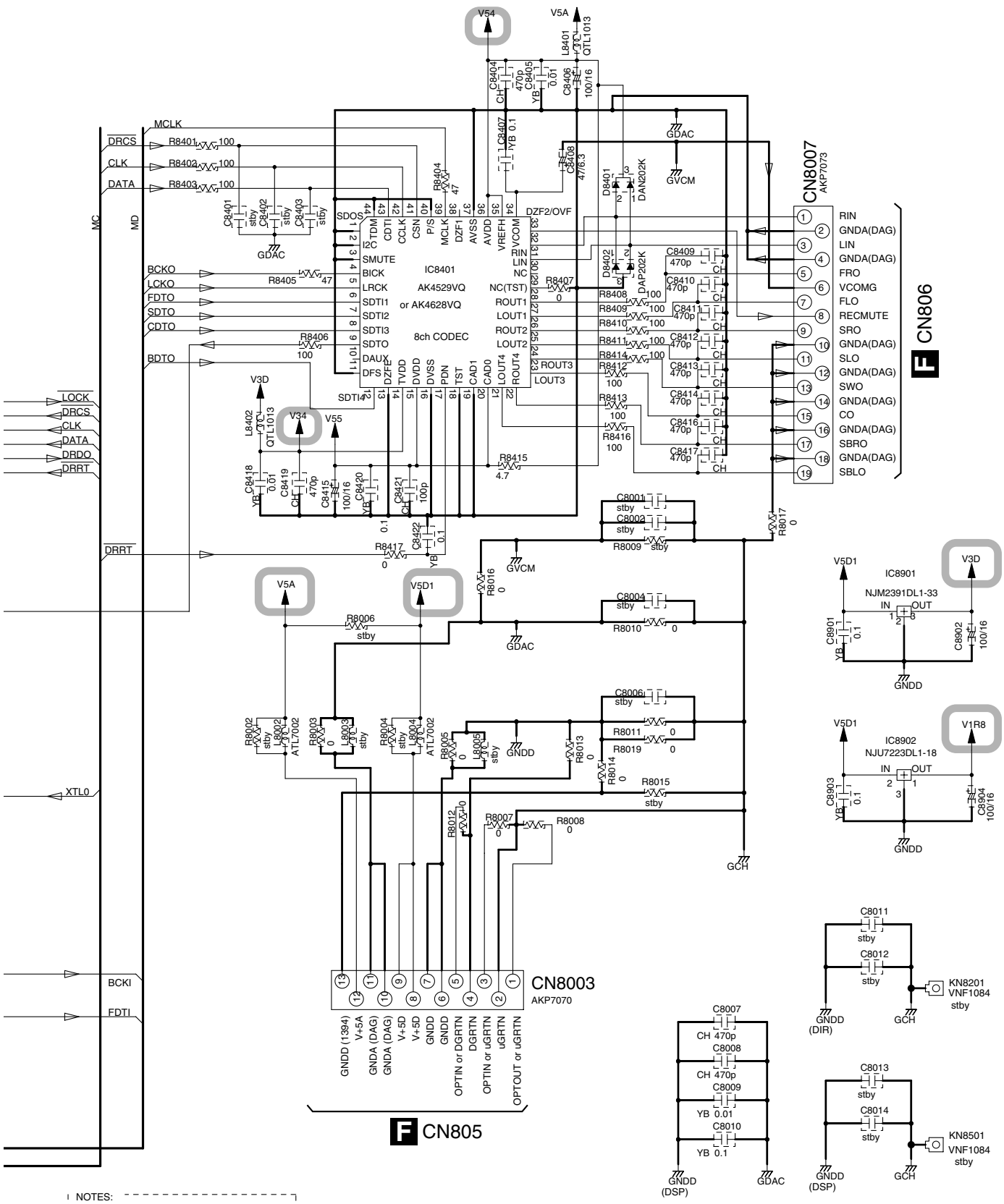
3.5 MAIN ASSY (3/3)




M CN401
A 3/3 MAIN ASSY
(VSX-D514 : XWK3116)
(VSX-D414 : XWK3148)
TO FRONT ASSY
CN101
52045-1745
FLAC 2
FLAC 1
-VF
DISP RST
DISP CLK
DISP DI
DISP DO
DISP RDY
DISP EN
SRIN
SROUT
RMC
1W WP
D+5.6V
ST5.6V
GNDU
GNDU
SM+5V
MT
MV
T_CE
T_DI
T_CLK
T_DO
6_OHM
V+5U
R9034
STBY
IC9001
M30622MCA
MAIN µ-COM
PD5963A
TUNED
RDS ON/OFF
RDS DT
RDS CLK
Except VSX-D414
4053INH
SWDET
FUR
4053A
4053 INH
VLDT
VLCK
MVRATT
AC_RY
HP_SW
SPA_RY
R/C_RY
SPB_RY
INPUTATT
A 1/3,2/3
A 1/3
A 2/3
DTA124EK-TLB
DTC143EK-TLB
DTC143TK-TLB
Q9001
Q9002
Q9003
Q9004
Q9005
Q9006
Q9007
AC_WP
1W_WP
XSS3004
X9001
15.7MHZ
L9003
LFEA2R2J-T
SR TXD
SR RXD
CLK
DSP DI
DSP DO
DSP CLK
DSP RST
DSP SS
BUSY
DSP HREQ
DSP MODE
DSP MUTE
DIR DO
DIR CS
DIR RST
DIR ERR
XTLO
INPUT ATT
GAIN_SEL
AMUTE
RY_B
RY_C/R
RY_A
HP DET
MVRATT
RY-AC
LOW POW
EVR CLK
EVR DT
+5V
SW DET
VIDEO3
VIDEO2
VIDEO1
OL DET
NC
FUR
V1
V2
V3
SRTXD
SRRXD
MD
LSSN
CN102
52045-1045
CN112
52045-1945
TO CORE ASSY
(TO DSP CORE)
FOR FLASH U-COM
(proto type use only)
SWPR
GNDA0
GAV
GNDT
B 2/2 CN8012
A 3/3
VSX-D514-K
23

3.6 DSP ASSY (1/2)





NOTES:

NO INDICATED PARTS IS...

CCSRCH****50-T
CKSRYB****50-T
CKSRYB333K16-T
CKSRYB104K16-T
CKSRYB105K6R3-T

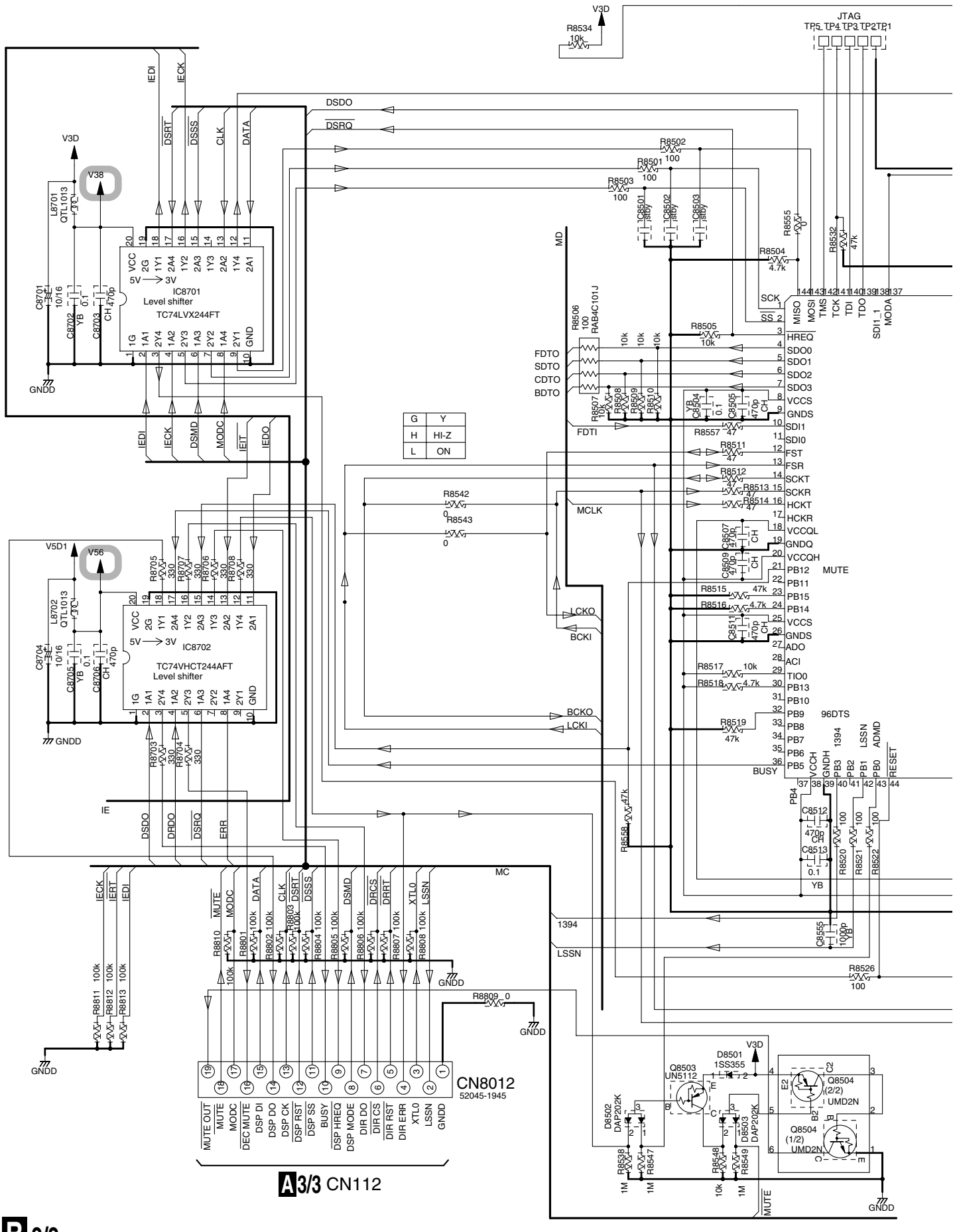
CEV***M**-T

RS1/16S***J-T

UNLESS OTHERWISE NOTED

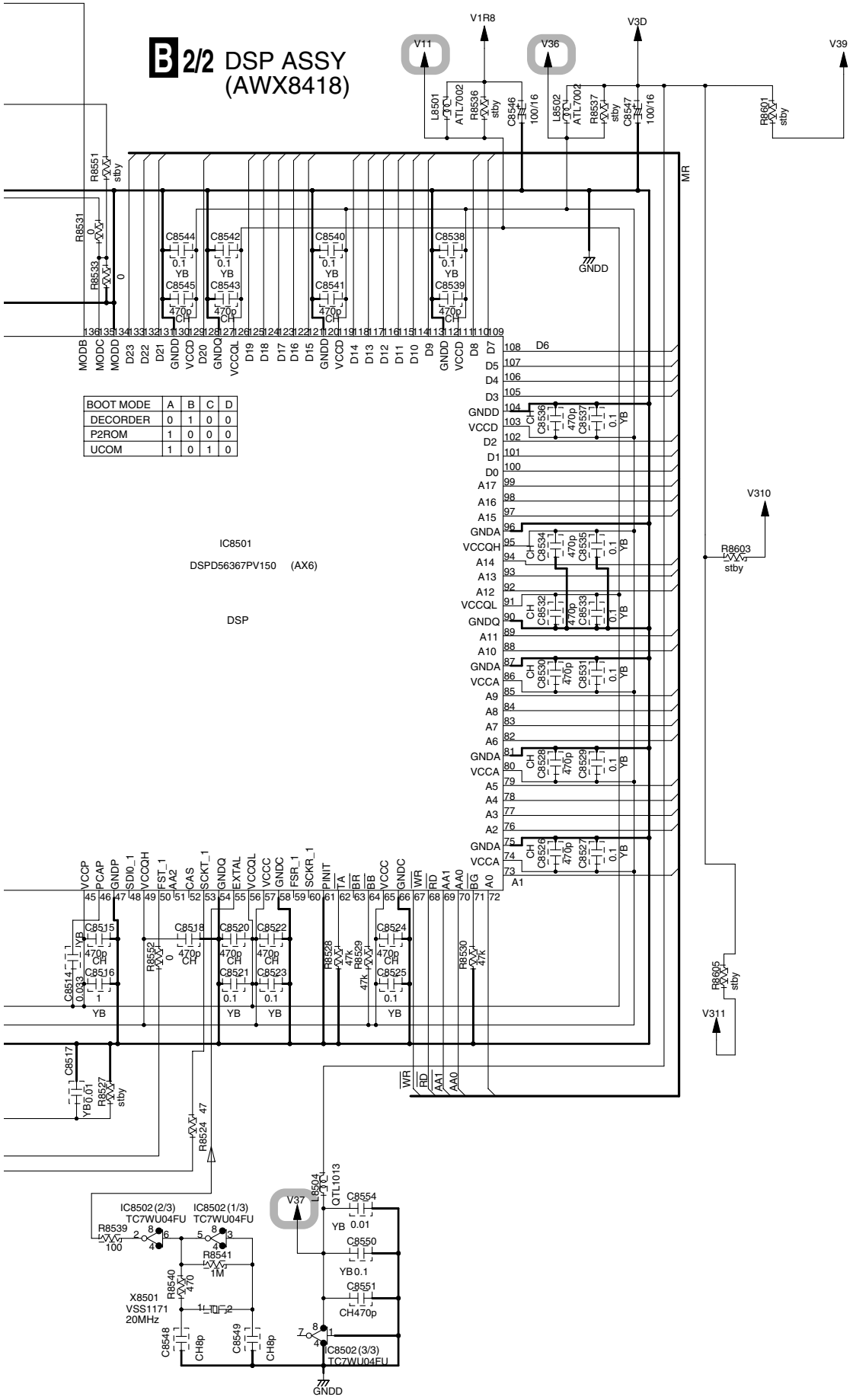
B 1/2

3.7 DSP ASSY (2/2)



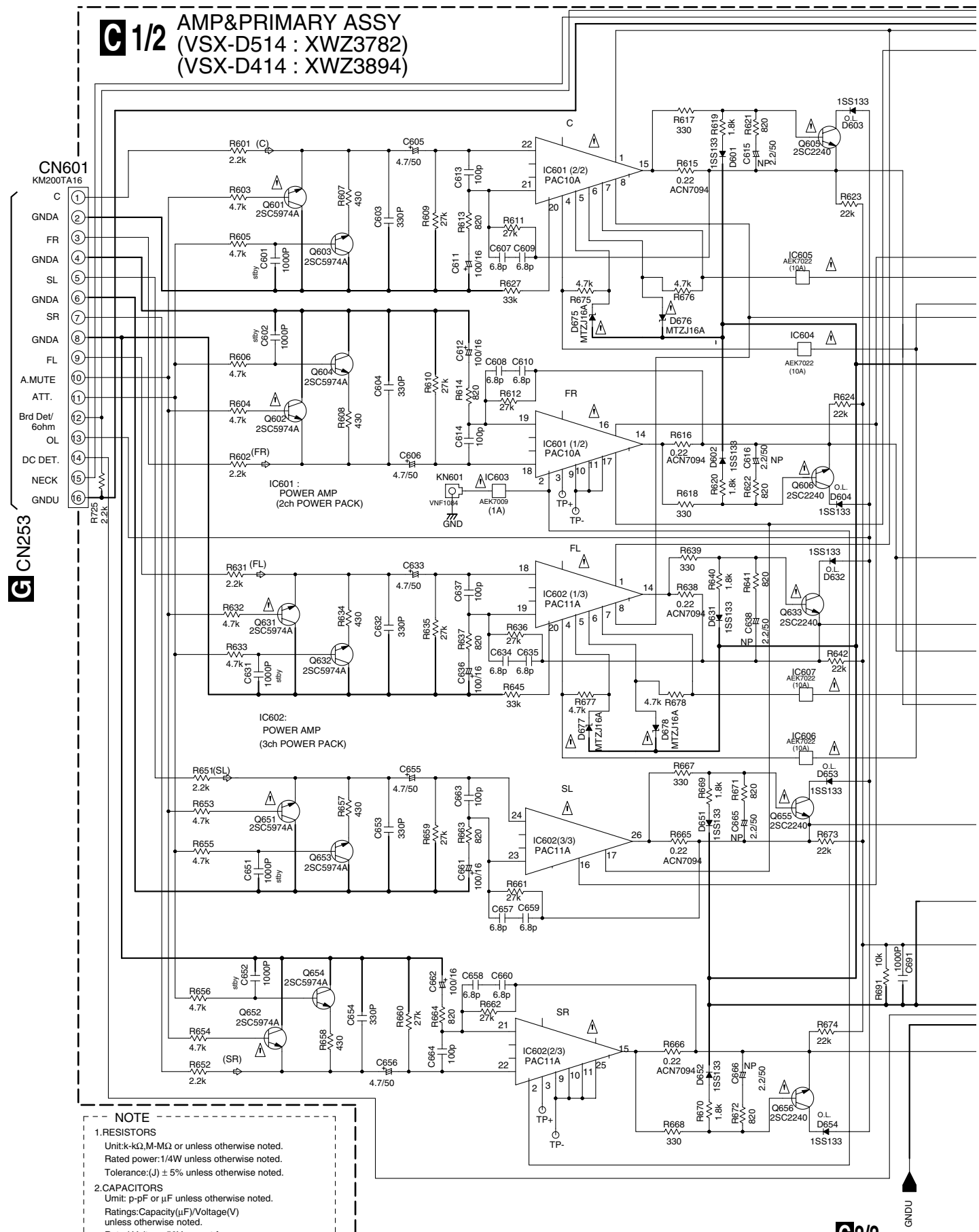
G	Y
H	HI-Z
L	ON

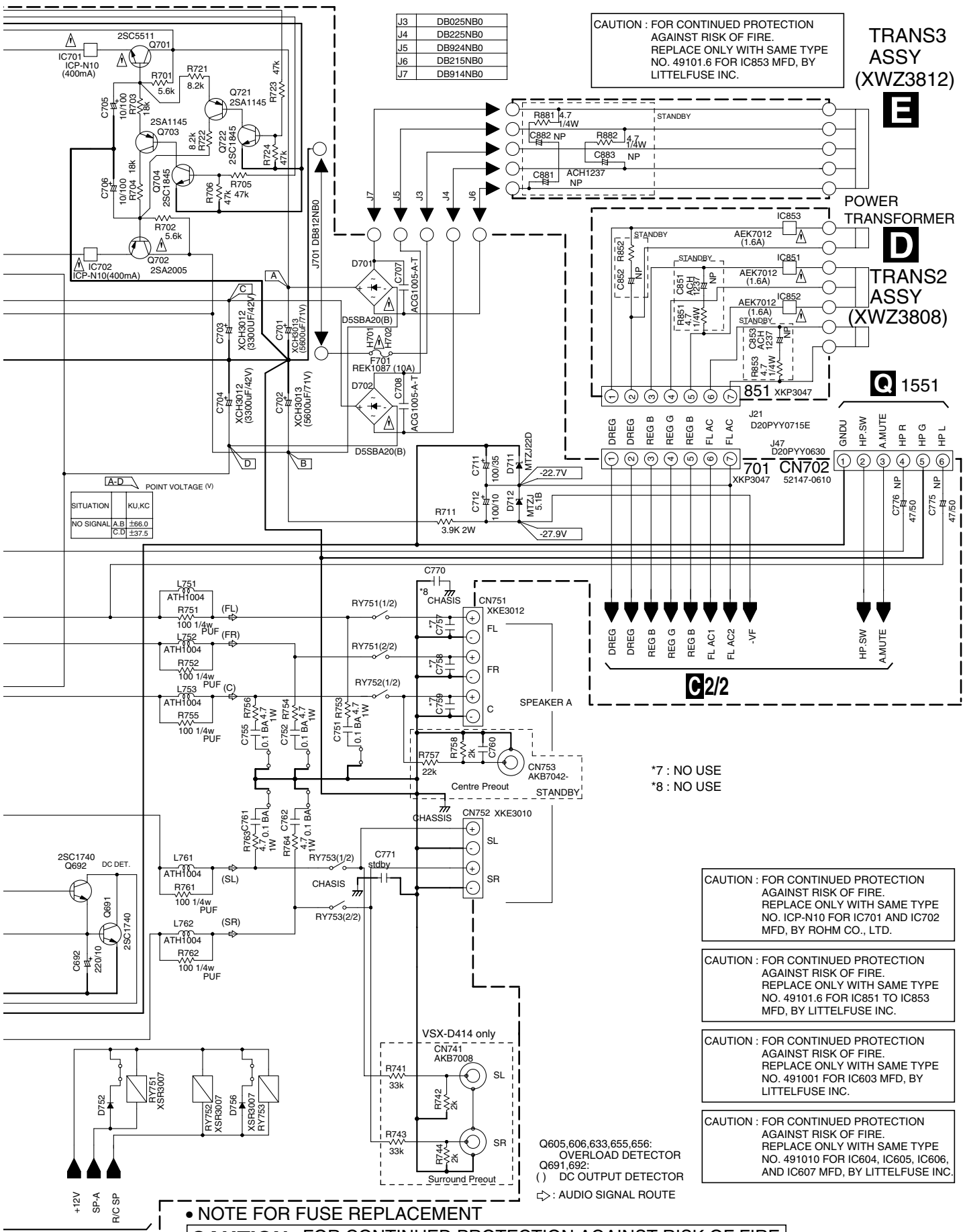
B 2/2 DSP ASSY (AWX8418)



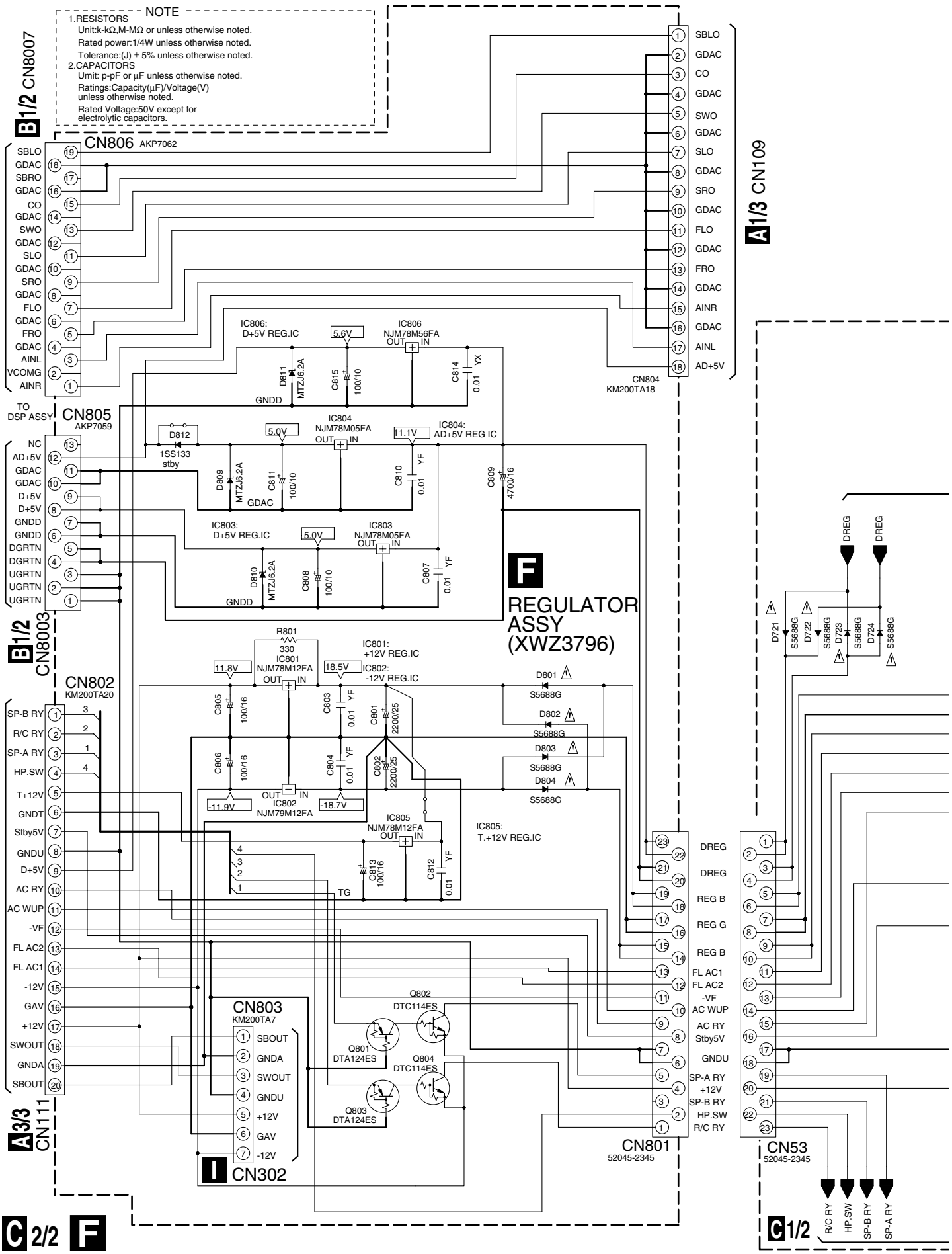
BOOT MODE	A	B	C	D
DECORDER	0	1	0	0
P2ROM	1	0	0	0
UCOM	1	0	1	0

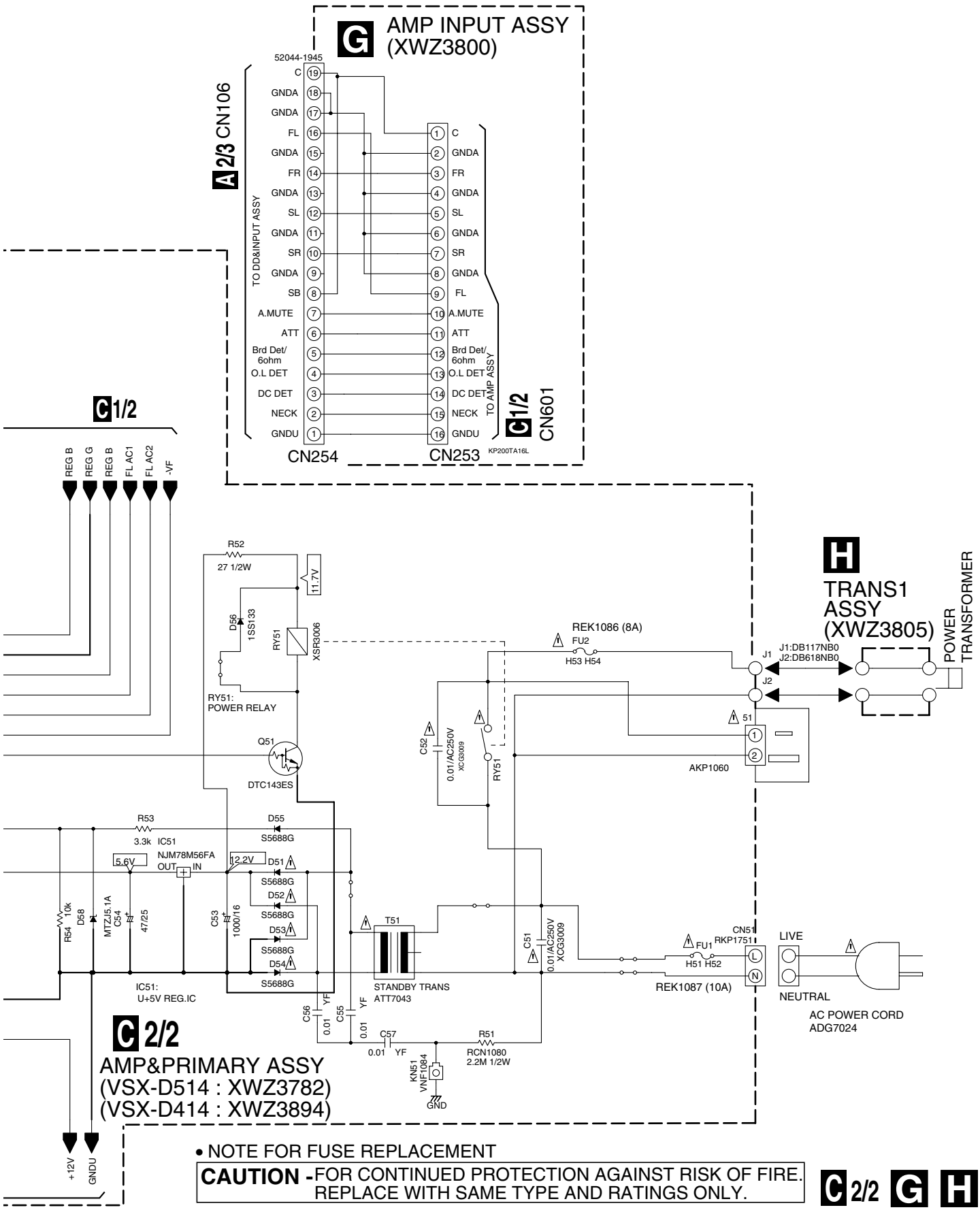
3.8 AMP & PRIMARY (1/2), TRANS2 and TRANS3 ASSYS



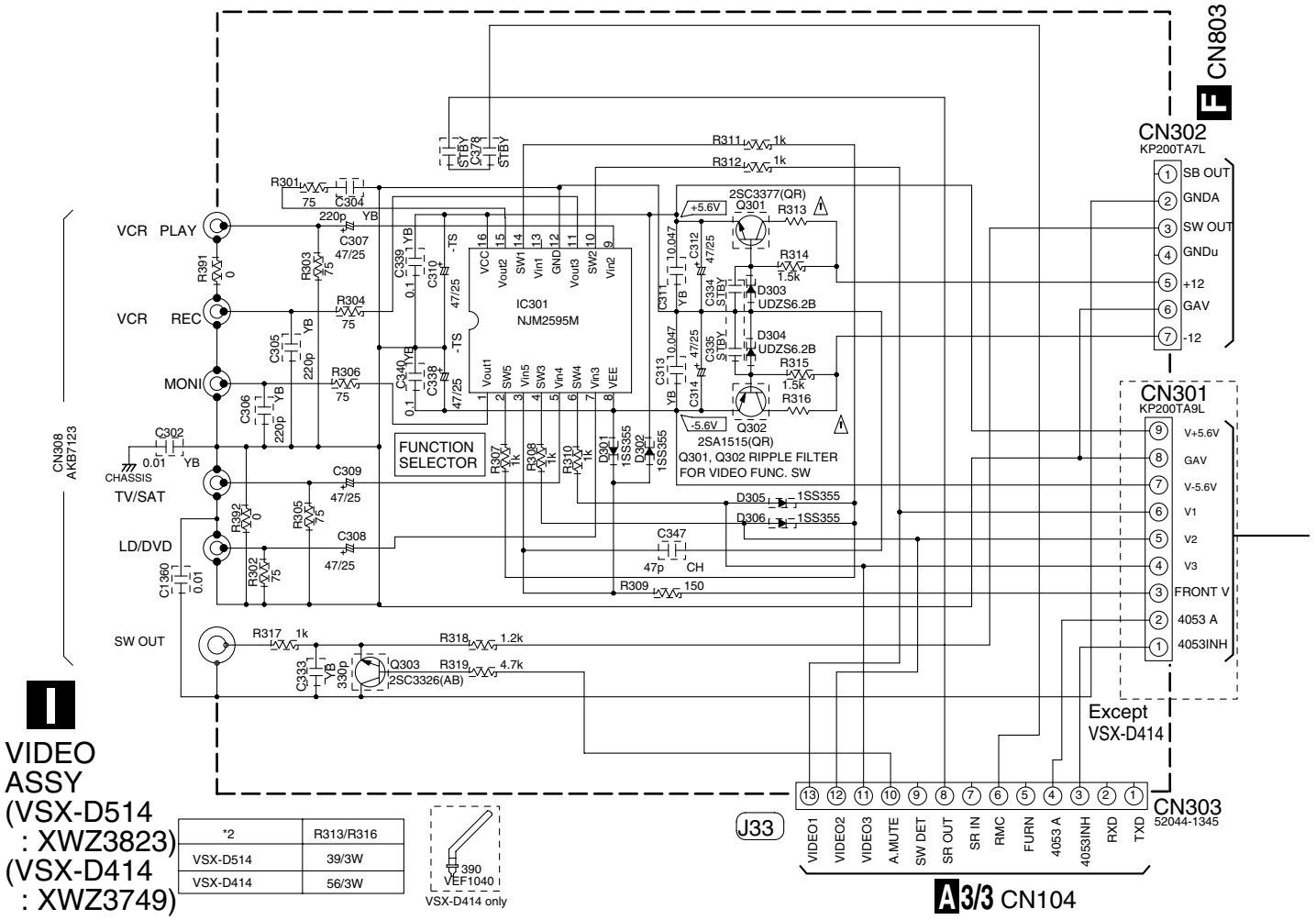

TRANS3 ASSY (XWZ3812)
E
POWER TRANSFORMER
D
TRANS2 ASSY (XWZ3808)
Q 1551
C 2/2
C 1/2 D E
J3 DB025NB0
J4 DB225NB0
J5 DB924NB0
J6 DB215NB0
J7 DB914NB0
CAUTION : FOR CONTINUED PROTECTION AGAINST RISK OF FIRE. REPLACE ONLY WITH SAME TYPE NO. 49101.6 FOR IC853 MFD, BY LITTELFUSE INC.
IC701 ICP-N10 (400mA)
IC702 ICP-N10(400mA)
2SC5511 Q701
2SA1145 Q703
2SC1845 Q704
2SA1145 Q721
2SC1845 Q722
Q702 2SA2005
J701 DB812NB0
D701 D5SBA20(B)
D702 D5SBA20(B)
F701 REK1087 (10A)
IC851 AEK7012 (1.6A)
IC852 AEK7012 (1.6A)
IC853 AEK7012 (1.6A)
851 XKP3047
701 XKP3047
CN702 52147-0610
J21 D20PYY0715E
J47 D20PYY0630
POINT VOLTAGE (V)
SITUATION | KU,KC
NO SIGNAL | A,B ±66.0 | C,D ±37.5
-22.7V
-27.9V
CN751 XKE3012
CN752 XKE3010
CN753 AKB7042-
SPEAKER A
Centre Preout
Surround Preout
VSX-D414 only
CN741 AKB7008
2SC1740 Q692
Q691 2SC1740
RY751 XSR3007
RY752 XSR3007
RY753
*7 : NO USE
*8 : NO USE
Q605,606,633,655,656: OVERLOAD DETECTOR
Q691,692: ( ) DC OUTPUT DETECTOR
⇨ : AUDIO SIGNAL ROUTE
CAUTION : FOR CONTINUED PROTECTION AGAINST RISK OF FIRE. REPLACE ONLY WITH SAME TYPE NO. ICP-N10 FOR IC701 AND IC702 MFD, BY ROHM CO., LTD.
CAUTION : FOR CONTINUED PROTECTION AGAINST RISK OF FIRE. REPLACE ONLY WITH SAME TYPE NO. 49101.6 FOR IC851 TO IC853 MFD, BY LITTELFUSE INC.
CAUTION : FOR CONTINUED PROTECTION AGAINST RISK OF FIRE. REPLACE ONLY WITH SAME TYPE NO. 491001 FOR IC603 MFD, BY LITTELFUSE INC.
CAUTION : FOR CONTINUED PROTECTION AGAINST RISK OF FIRE. REPLACE ONLY WITH SAME TYPE NO. 491010 FOR IC604, IC605, IC606, AND IC607 MFD, BY LITTELFUSE INC.
• NOTE FOR FUSE REPLACEMENT
CAUTION -FOR CONTINUED PROTECTION AGAINST RISK OF FIRE. REPLACE WITH SAME TYPE AND RATINGS ONLY.

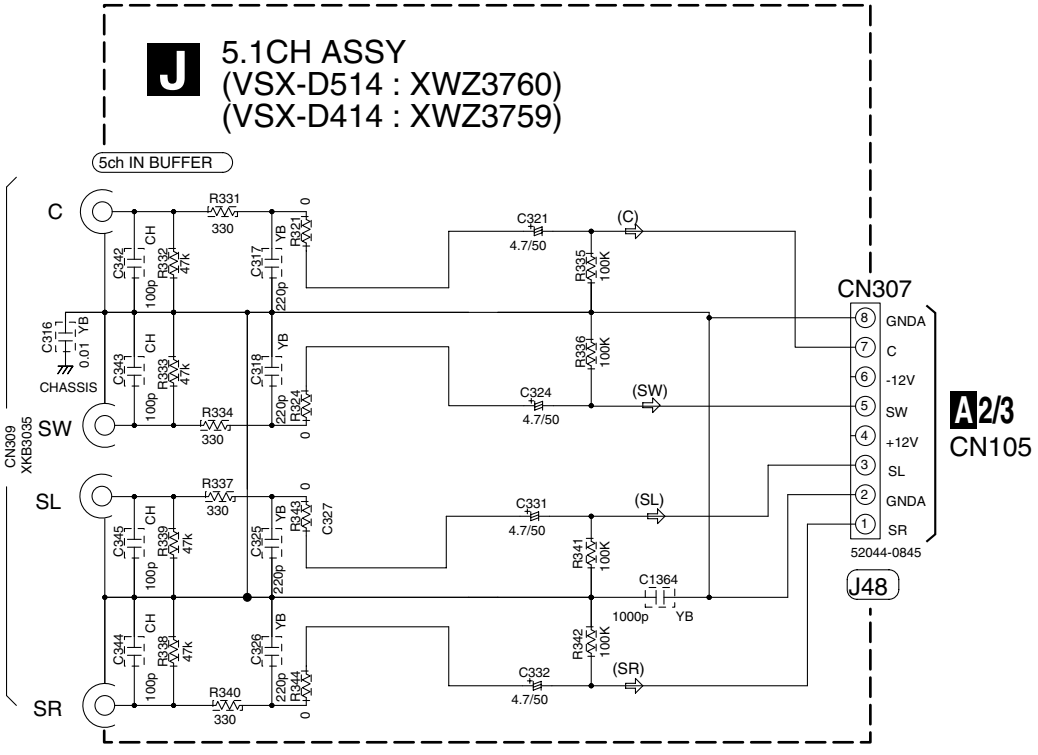
3.9 AMP & PRIMARY (2/2), REGULATOR, AMP INPUT and TRANS1 ASSYS




G AMP INPUT ASSY (XWZ3800)
52044-1945
A 2/3 CN106
TO DD&INPUT ASSY
C GNDA GNDA FL GNDA FR GNDA SL GNDA SR GNDA SB A.MUTE ATT Brd Det/ 6ohm O.L DET DC DET NECK GNDU
CN254
CN253
C 1/2 CN601
TO AMP ASSY
KP200TA16L
C 1/2
REG B REG G REG B FL AC1 FL AC2 -VF
R52 27 1/2W
11.7V
D56 1SS133
RY51 XSR3006
RY51: POWER RELAY
Q51 DTC143ES
R53 3.3k
IC51 NJM78M56FA
5.6V OUT IN 12.2V
D55 S5688G
D51 S5688G
D52 S5688G
D53 S5688G
D54 S5688G
R54 10k
D58 MTZJ5.1A
C54 47/25
C53 1000/16
IC51: U+5V REG.IC
T51 STANDBY TRANS ATT7043
C56 0.01 YF
C55 0.01 YF
C57 0.01 YF
R51 RCN1080 2.2M 1/2W
KN51 VNF1084
GND
C52 0.01/AC250V XCG3009
C51 0.01/AC250V XCG3009
REK1086 (8A)
FU2 H53 H54
J1 J1:DB117NB0 J2:DB618NB0
J2
51
AKP1060
H TRANS1 ASSY (XWZ3805)
POWER TRANSFORMER
FU1 H51 H52
REK1087 (10A)
CN51 RKP1751
LIVE
NEUTRAL
AC POWER CORD ADG7024
C 2/2
AMP&PRIMARY ASSY
(VSX-D514 : XWZ3782)
(VSX-D414 : XWZ3894)
+12V GNDU
• NOTE FOR FUSE REPLACEMENT
CAUTION -FOR CONTINUED PROTECTION AGAINST RISK OF FIRE. REPLACE WITH SAME TYPE AND RATINGS ONLY.
C 2/2 G H

3.10 VIDEO, 5.1CH, B TO B and S. VIDEO ASSYS





NOTE

1.RESISTORS
Unit: k-kΩ, M-MΩ or Ω unless otherwise noted.
Rated power: 1/10W unless otherwise noted.
Tolerance: (J) ± 5% unless otherwise noted.

2.CAPACITORS
Unit: p-pF or μF unless otherwise noted.
Ratings: Capacity(μF)/Voltage(V) unless otherwise noted.
Rated Voltage: 50V expect for electrolytic capacitors.

NJM2296D control port status

SW1	SW2	SW3	SW4	SW5	Vout1	Vout2	Vout3
1	0	(1)	0	1	Vin2	Vin2	mute
1	1	(1)	0	1	Vin3	Vin3	Vin3
1	1	0	1	1	Vin4	Vin4	Vin4
1	1	1	1	1	Vin5	Vin5	Vin5
0	0	(0)	(0)	0	mute	mute	mute

VIN 2.VCR
VIN 3.DVD/LD
VIN 4.TV/SAT
VIN 5.FRONT
Vout1. MON out
Vout2. MR out
Vout3. VCR out

K B TO B ASSY (XWZ3781)

Except VSX-D414

STBY
VEF1040
392 391

CN390 KM200TA9
CN391 KM200TA7
CN351 KP200TA7L

V+5.6V
ADG
V-5.6V
V1
V2
V3
FRONT V

+5.6V
-5.6V

CN392 52045-0545
4053 A
4053 INH
V-5.6V
GAV
V+5.6V
J38

U CN551

L S. VIDEO ASSY (XWZ3774)
Except VSX-D414

IC352 NJM2595M
IC351 NJM2595M
VCC Vout2 SW1 Vin1 GND Vout3 SW2 Vin2
Vout1 SW5 Vin5 SW3 Vin4 SW4 Vin3 VEE

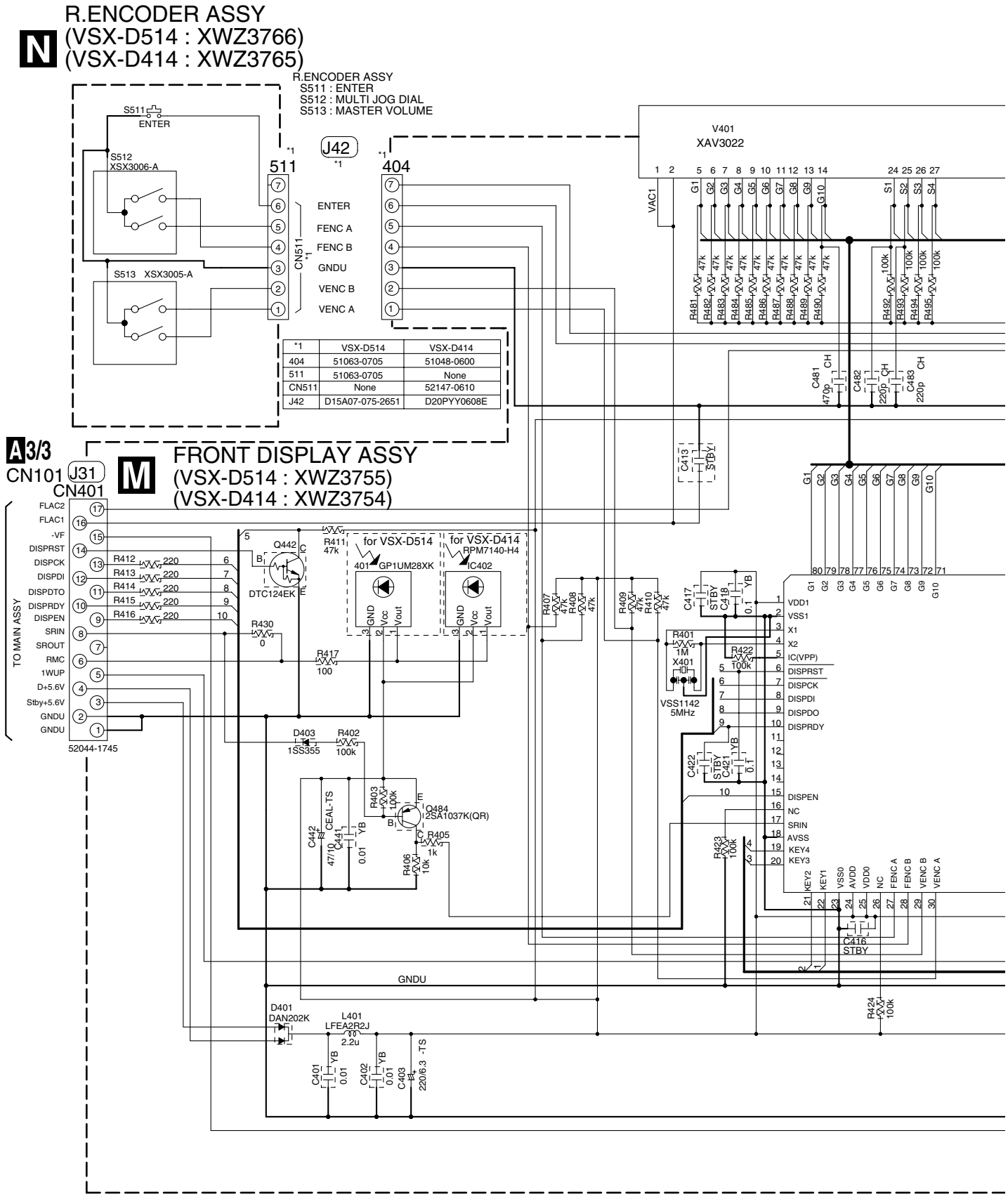
S-Y FUNC.SELECTOR
S-C FUNC.SELECTOR

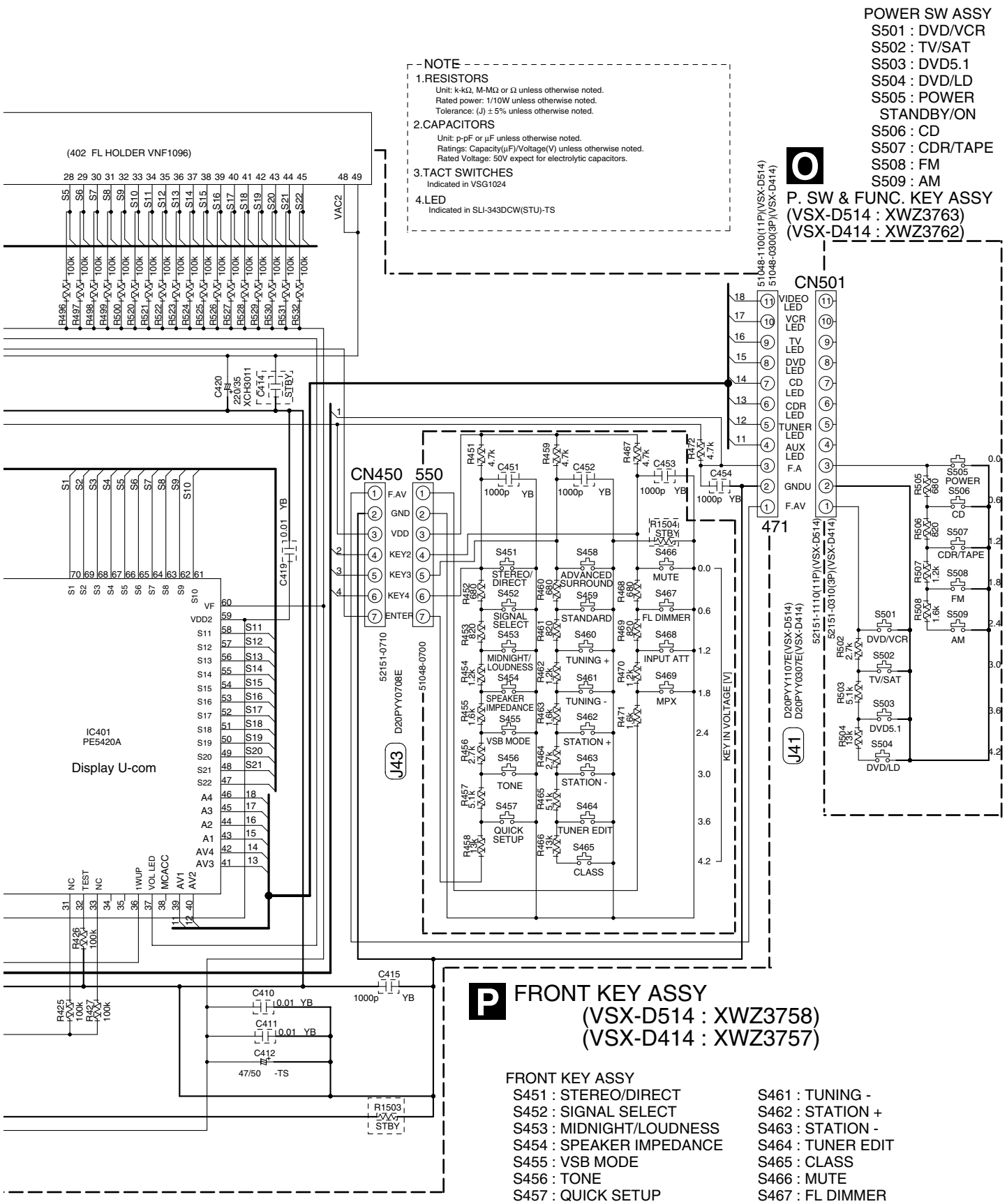
CN353(1/2) AKP7020 LD/DVD
CN353(2/2) AKP7020 TV/SAT
VCR1 CN352(3/3) AKP7043
CN352(1/3) AKP7043
CN352(2/3) AKP7043
MON OUT
VCR OUT
CHASSIS

→ VIDEO SIGNAL FLOW
⇨ AUDIO SIGNAL FLOW

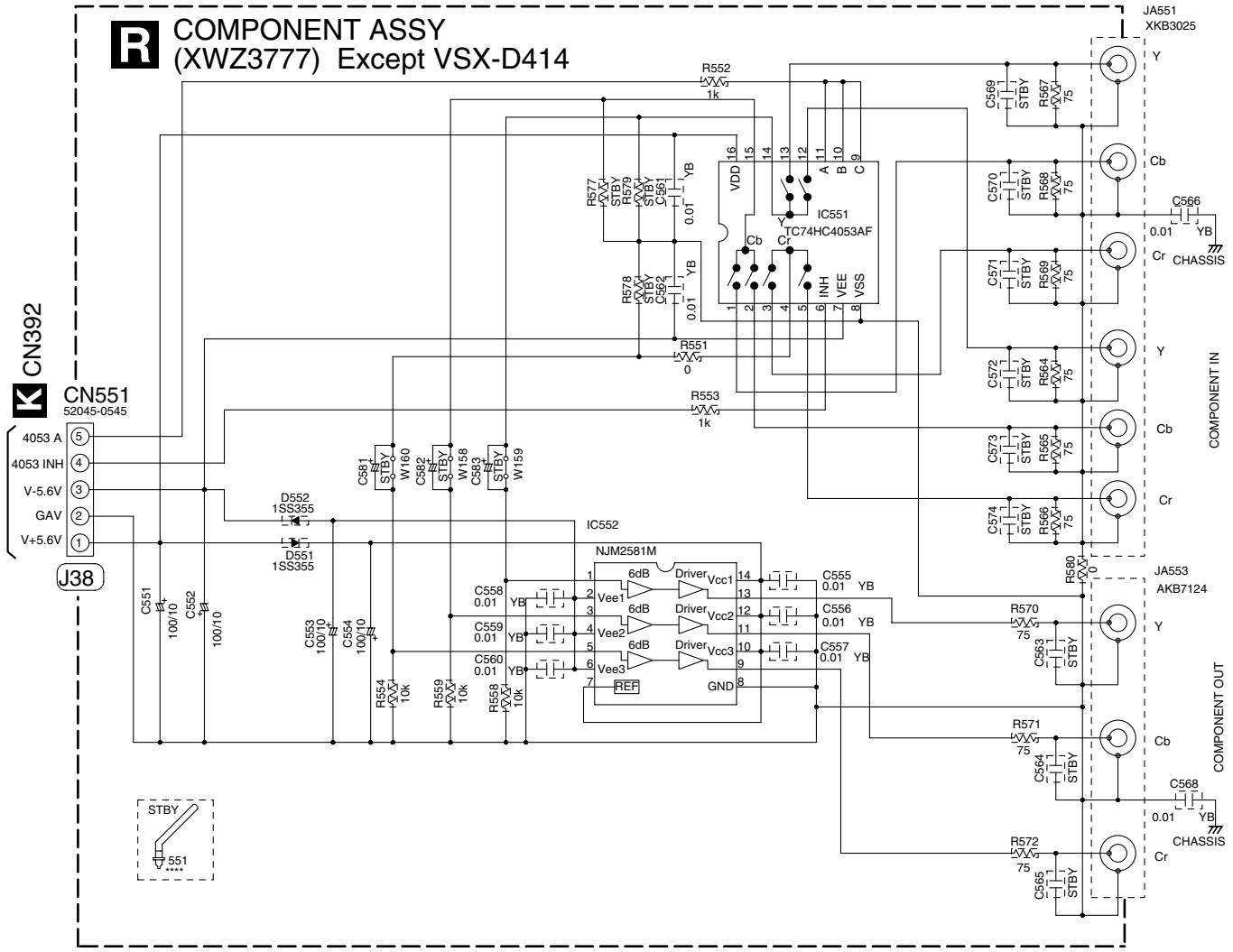
K L

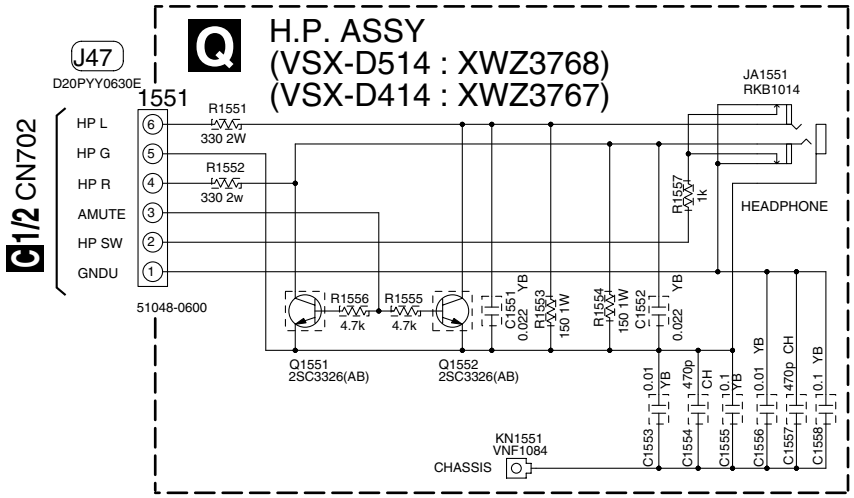
3.11 FRONT DISPLAY, R. ENCODER, P. SW&FUNC KEY and F. KEY ASSYS




POWER SW ASSY
S501 : DVD/VCR
S502 : TV/SAT
S503 : DVD5.1
S504 : DVD/LD
S505 : POWER
STANDBY/ON
S506 : CD
S507 : CDR/TAPE
S508 : FM
S509 : AM
O
P. SW & FUNC. KEY ASSY
(VSX-D514 : XWZ3763)
(VSX-D414 : XWZ3762)
NOTE
1.RESISTORS
Unit: k-kΩ, M-MΩ or Ω unless otherwise noted.
Rated power: 1/10W unless otherwise noted.
Tolerance: (J) ±5% unless otherwise noted.
2.CAPACITORS
Unit: p-pF or μF unless otherwise noted.
Ratings: Capacity(μF)/Voltage(V) unless otherwise noted.
Rated Voltage: 50V expect for electrolytic capacitors.
3.TACT SWITCHES
Indicated in VSG1024
4.LED
Indicated in SLI-343DCW(STU)-TS
(402 FL HOLDER VNF1096)
CN501
CN450
550
471
J43
J41
IC401
PE5420A
Display U-com
52151-0710
D20PYY0708E
51048-0700
D20PYY1107E(VSX-D514)
D20PYY0307E(VSX-D414)
52151-1110(11P)(VSX-D514)
52151-0310(3P)(VSX-D414)
51048-1100(11P)(VSX-D514)
51048-0300(3P)(VSX-D414)
STANDBY
KEY IN VOLTAGE [V]
P
FRONT KEY ASSY
(VSX-D514 : XWZ3758)
(VSX-D414 : XWZ3757)
FRONT KEY ASSY
S451 : STEREO/DIRECT
S452 : SIGNAL SELECT
S453 : MIDNIGHT/LOUDNESS
S454 : SPEAKER IMPEDANCE
S455 : VSB MODE
S456 : TONE
S457 : QUICK SETUP
S458 : ADVANCED SURROUND
S459 : STANDARD
S460 : TUNING +
S461 : TUNING -
S462 : STATION +
S463 : STATION -
S464 : TUNER EDIT
S465 : CLASS
S466 : MUTE
S467 : FL DIMMER
S468 : INPUT ATT
S476 : MPX
M O P

3.12 H.P. and COMPONENT ASSYS





NOTE

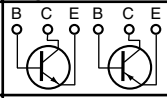
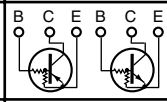
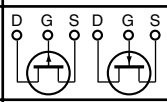
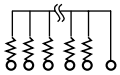
1.RESISTORS
Unit: k-kΩ, M-MΩ or Ω unless otherwise noted.
Rated power: 1/10W unless otherwise noted.
Tolerance: (J) ± 5% unless otherwise noted.

2.CAPACITORS
Unit: p-pF or µF unless otherwise noted.
Ratings: Capacity(µF)/Voltage(V) unless otherwise noted.
Rated Voltage: 50V expect for electrolytic capacitors.

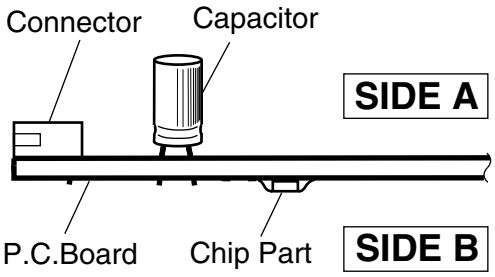
4. PCB CONNECTION DIAGRAM

NOTE FOR PCB DIAGRAMS :

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

Symbol In PCB Diagrams	Symbol In Schematic Diagrams	Part Name
		Transistor
		Transistor with resistor
		Field effect transistor
		Resistor array
		3-terminal regulator

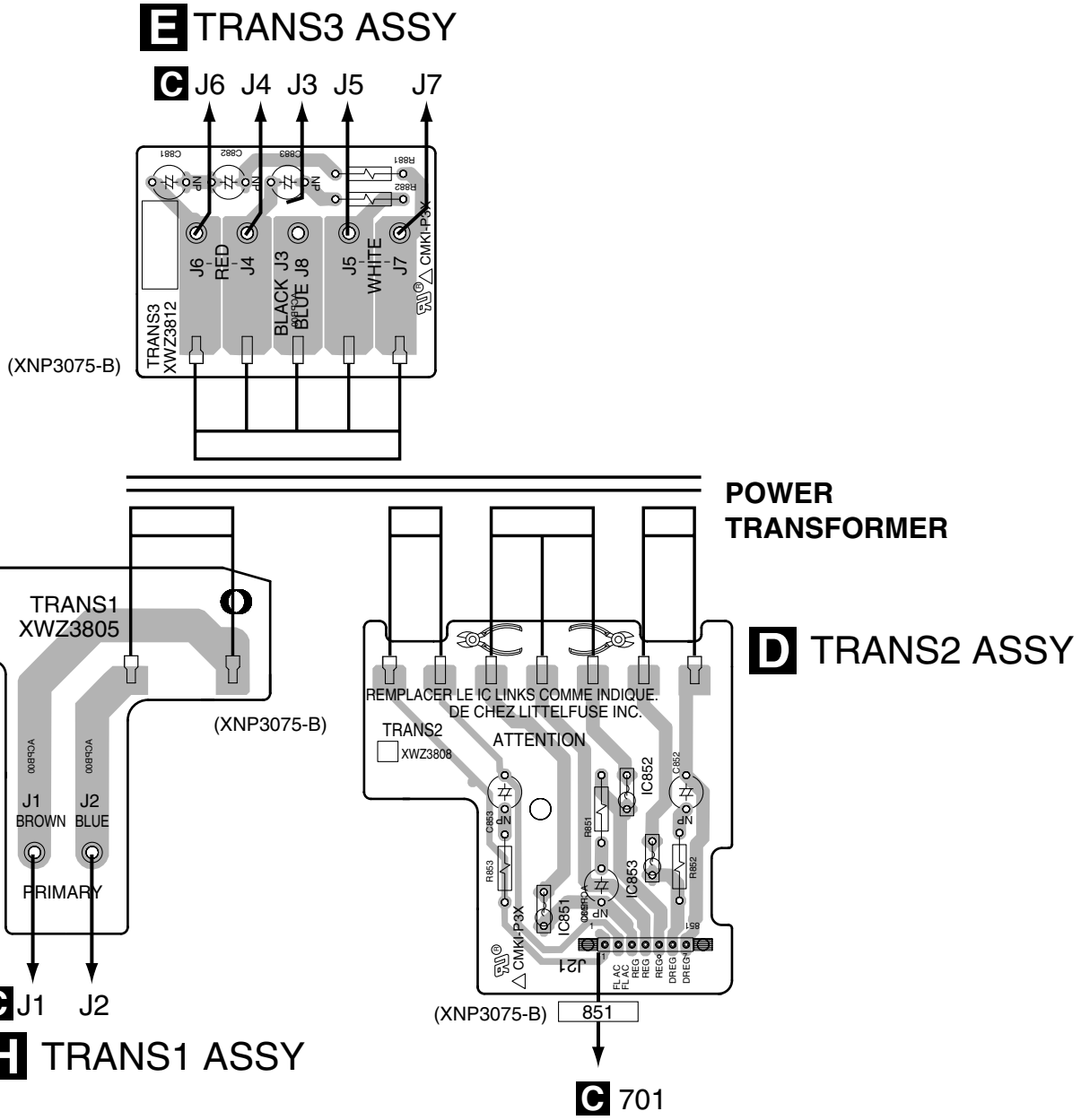
3. The parts mounted on this PCB include all necessary parts for several destinations.
   For further information for respective destinations, be sure to check with the schematic diagram.
4. View point of PCB diagrams.



4.1 TRANS2, TRANS3 and TRANS1 ASSYS

SIDE A

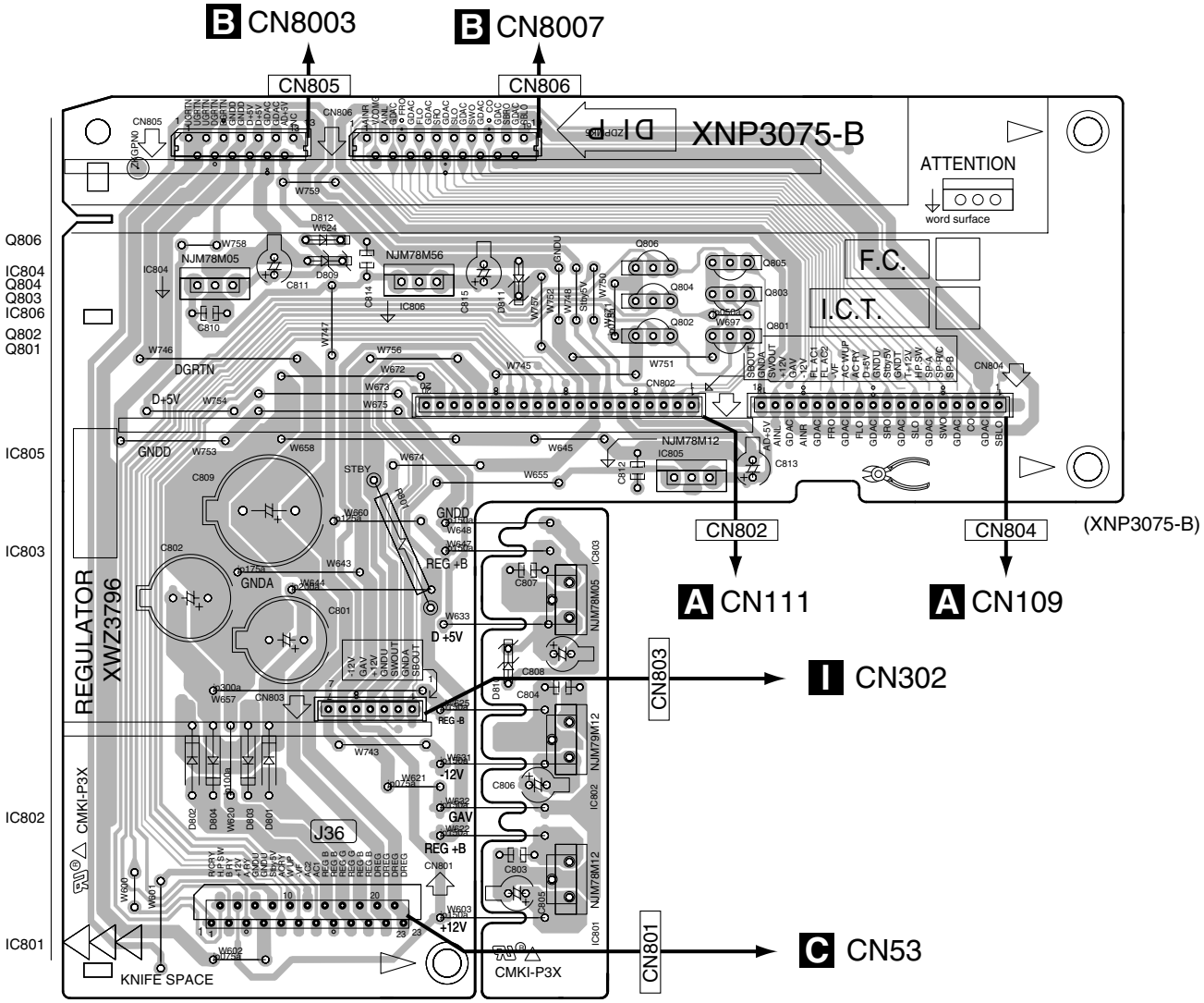
SIDE A



4.2 REGULATOR ASSY

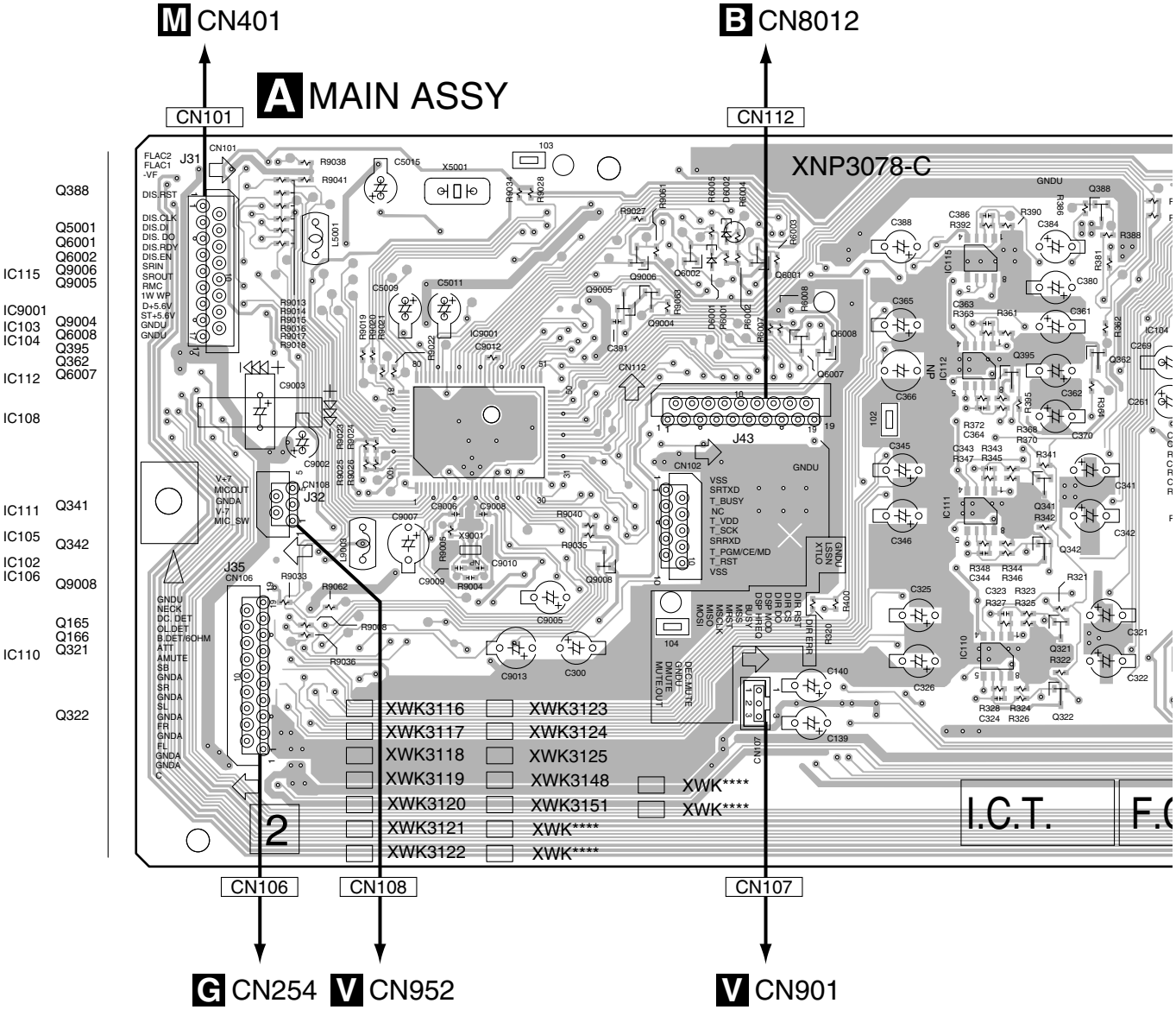
SIDE A **SIDE A**

F REGULATOR ASSY

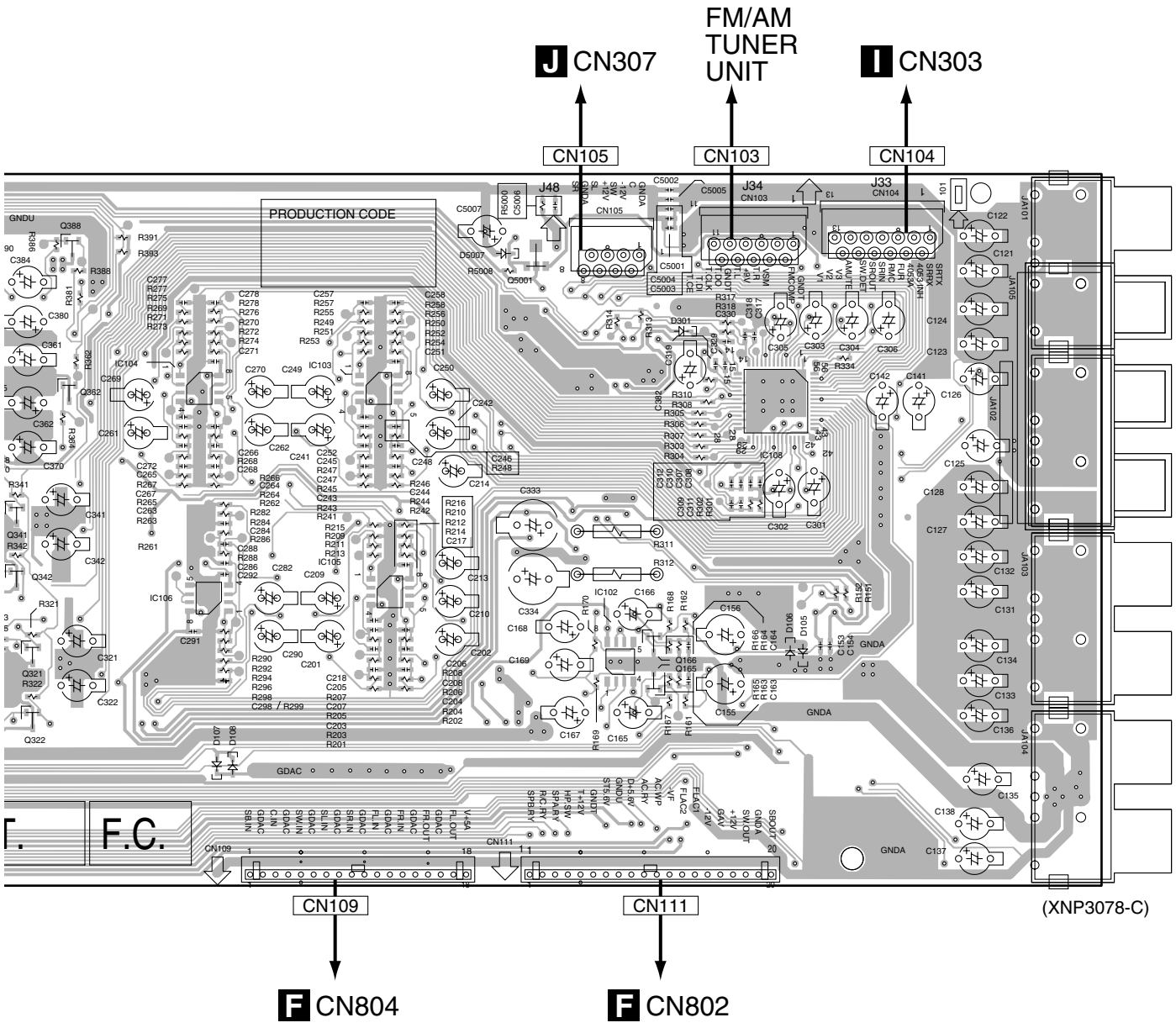


4.3 MAIN ASSY

SIDE A

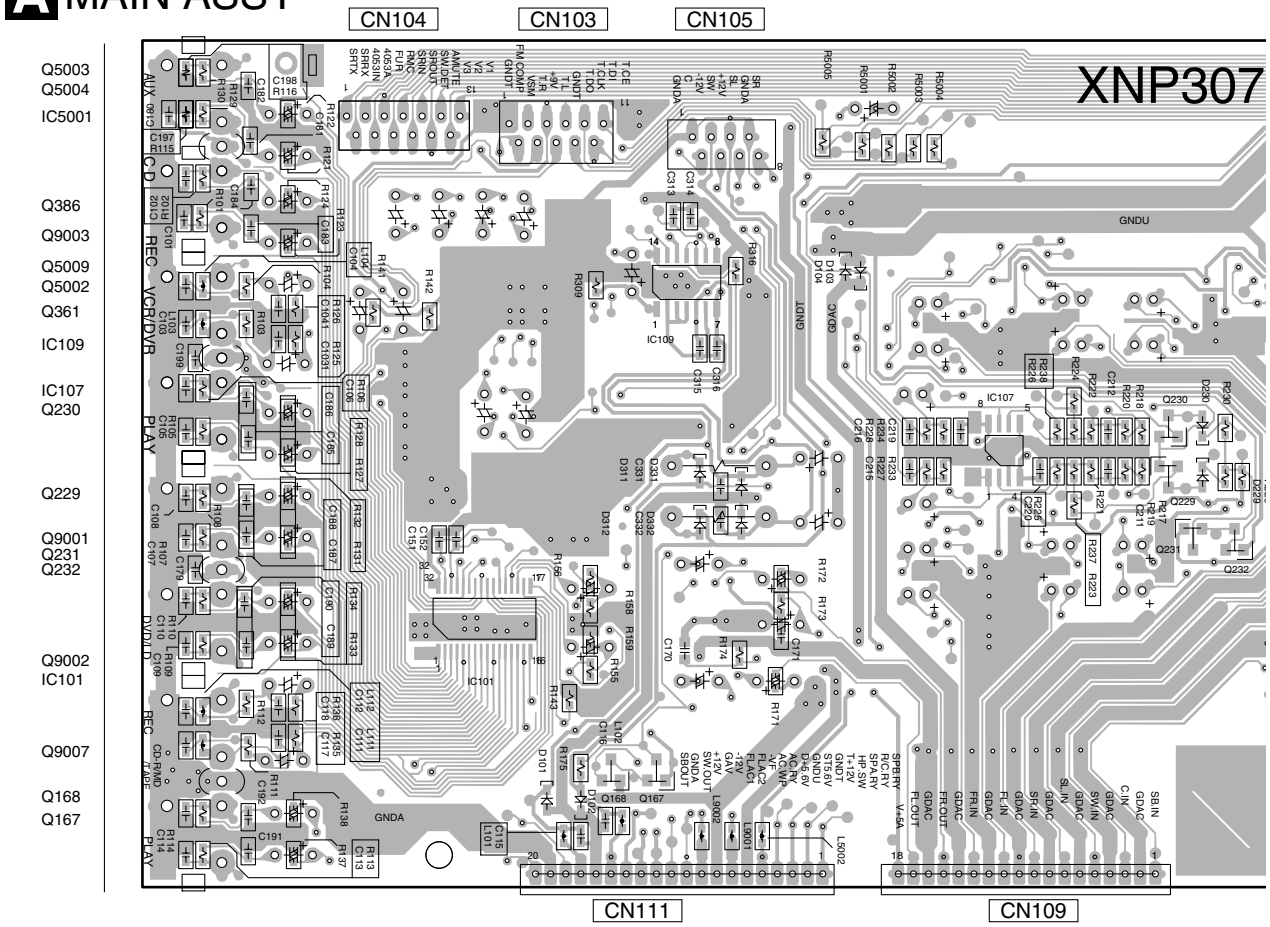


SIDE A


J CN307
FM/AM TUNER UNIT
I CN303
CN105
CN103
CN104
PRODUCTION CODE
CN109
CN111
(XNP3078-C)
F CN804
F CN802

SIDE B

A MAIN ASSY



SIDE B

A

B

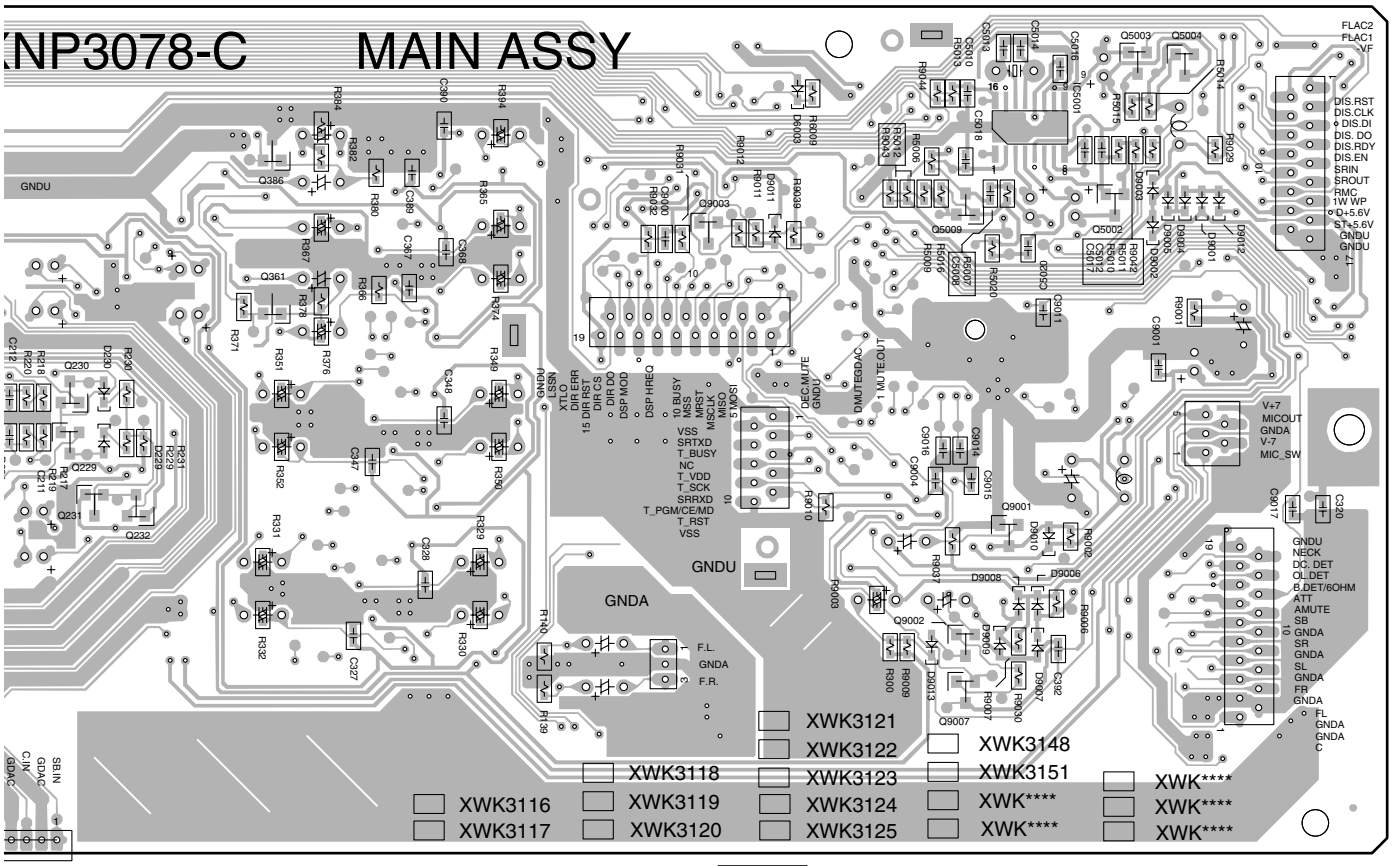
C

D

E

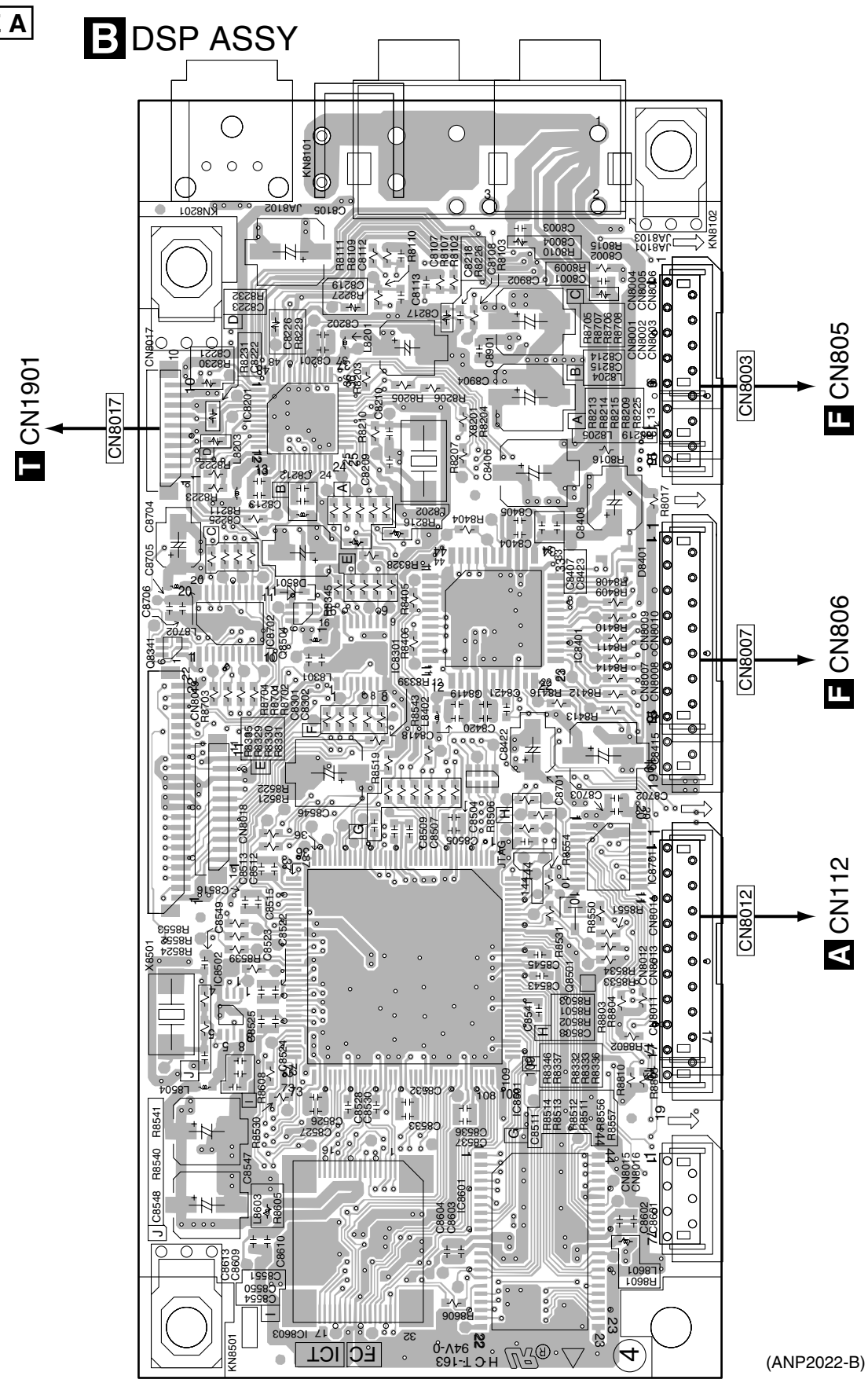
F

CN112



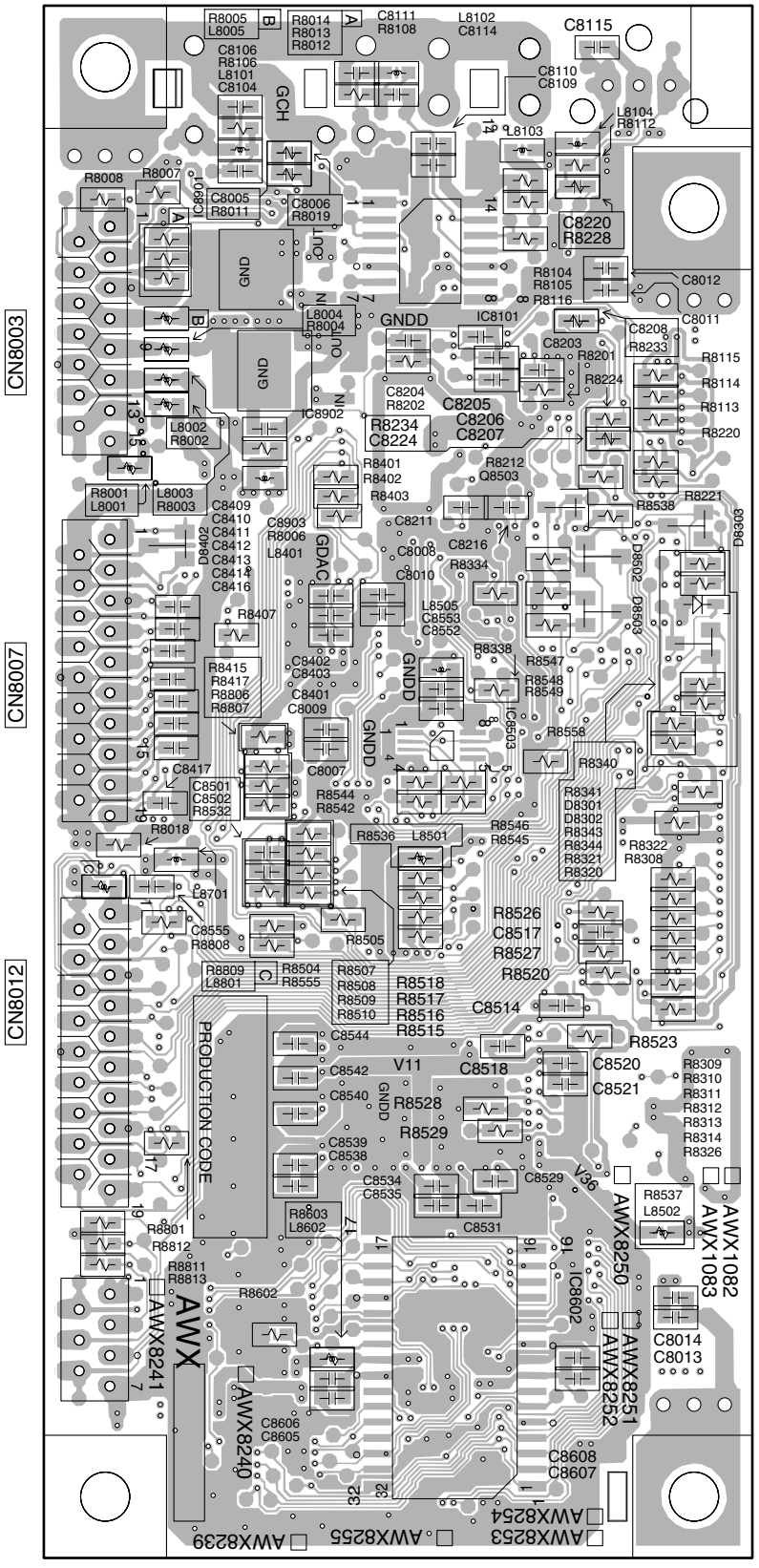
(XNP3078-C)

4.4 DSP ASSY


SIDE A
B DSP ASSY
SIDE A
T CN1901
CN8017
CN8003
F CN805
CN8007
F CN806
CN8012
A CN112
(ANP2022-B)
Q8341
Q8504
Q8501
IC8502
IC8201
IC8702
IC8603
IC8301
IC8601
IC8501
IC8401
IC8701
B
B

SIDE B

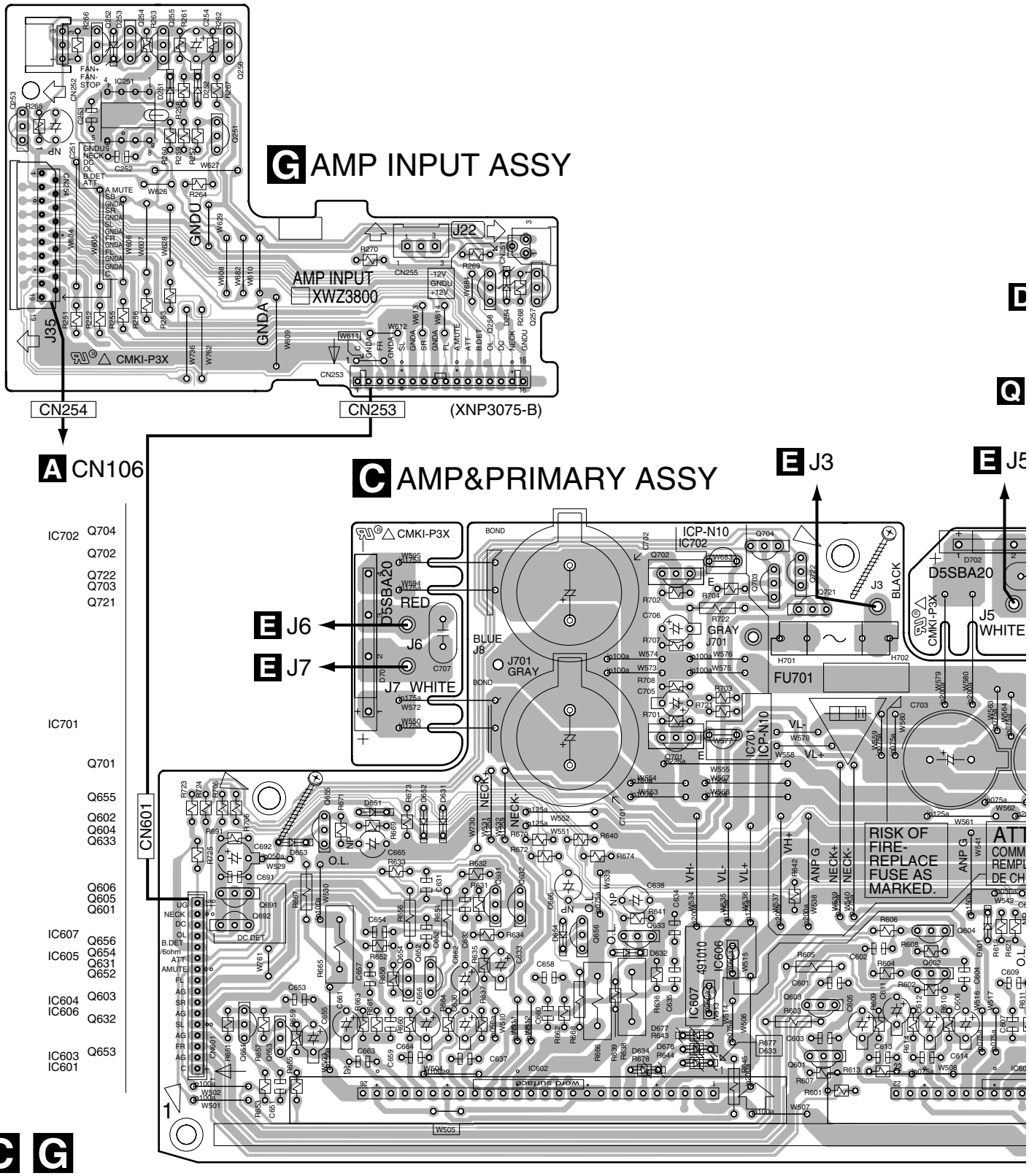
B DSP ASSY

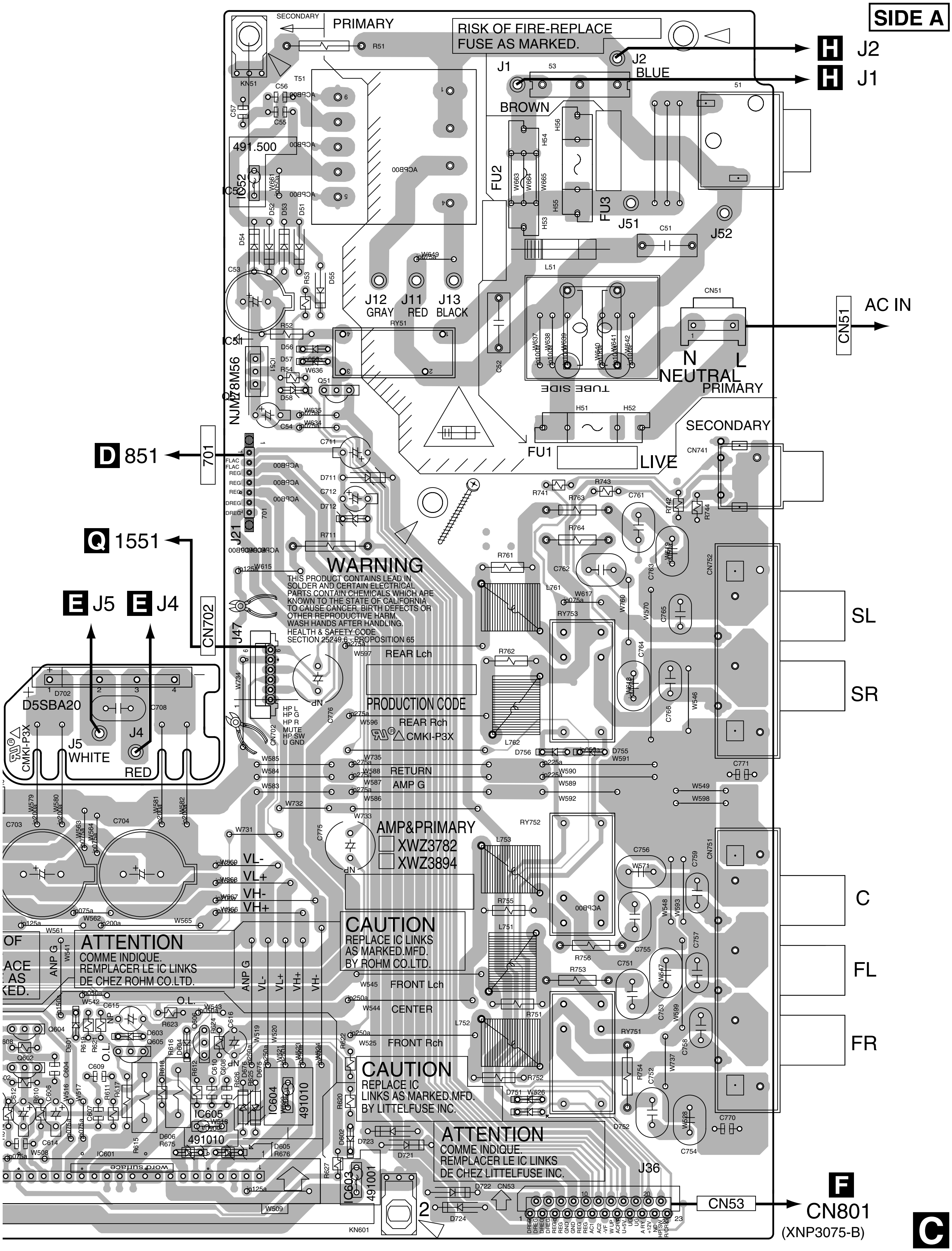


(ANP2022-B)

4.5 AMP & PRIMARY and AMP INPUT ASSYS

SIDE A

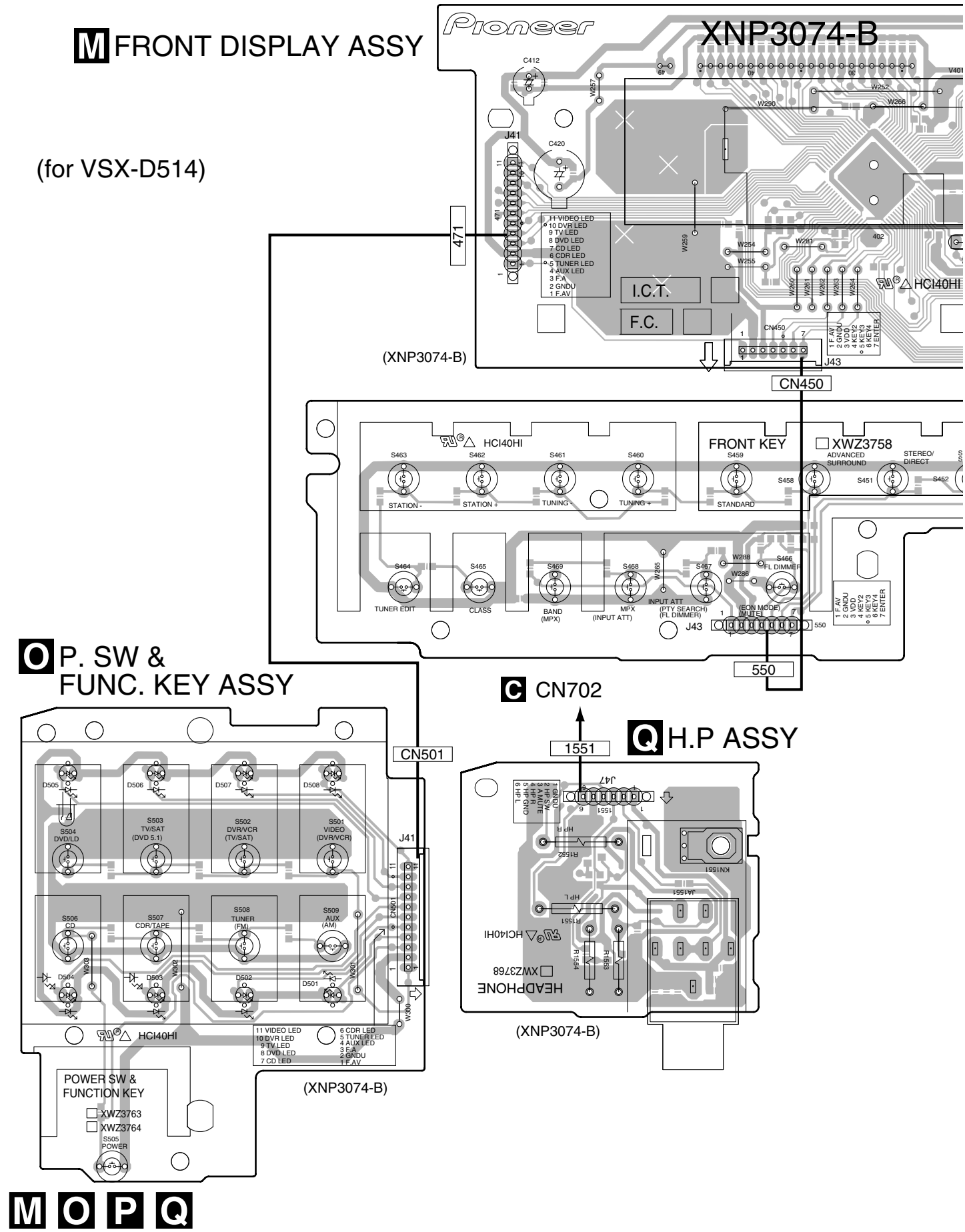




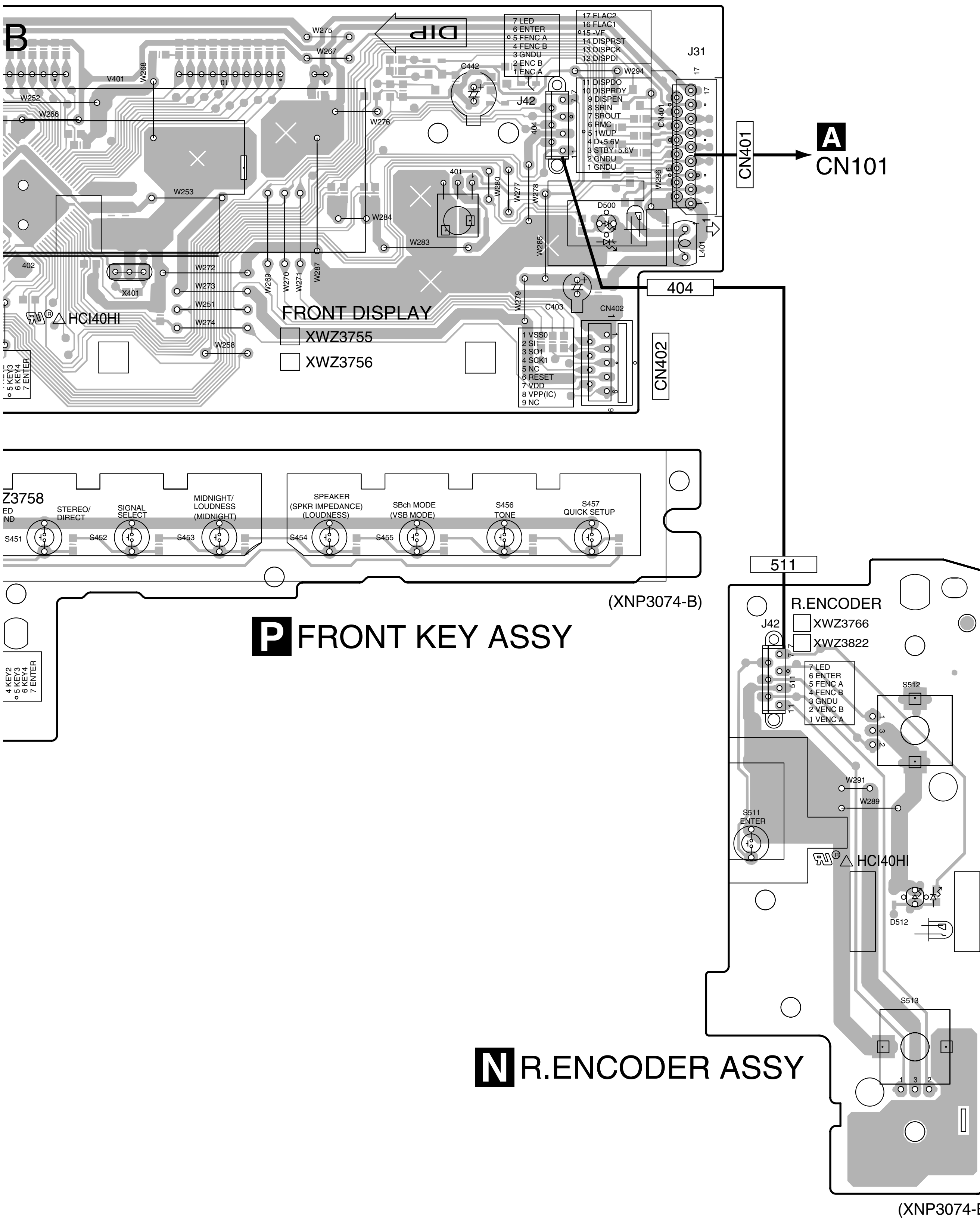
SIDE A
H J2
H J1
RISK OF FIRE-REPLACE FUSE AS MARKED.
SECONDARY
PRIMARY
BLUE
BROWN
491.500
IC52
FU2
FU3
J51
J52
J12 GRAY
J11 RED
J13 BLACK
CN51
AC IN
N
L
NEUTRAL
PRIMARY
TUBE SIDE
SECONDARY
FU1
LIVE
D 851
701
NJM78M56
IC51
Q51
J21
Q 1551
E J5
E J4
CN702
J47
D5SBA20
J5 WHITE
J4 RED
CMKI-P3X
WARNING
THIS 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. WASH HANDS AFTER HANDLING. HEALTH & SAFETY CODE SECTION 25249.6 - PROPOSITION 65
REAR Lch
PRODUCTION CODE
REAR Rch
CMKI-P3X
RETURN
AMP G
AMP&PRIMARY
XWZ3782
XWZ3894
VL-
VL+
VH-
VH+
CAUTION
REPLACE IC LINKS AS MARKED.MFD. BY ROHM CO.LTD.
ATTENTION
COMME INDIQUE. REMPLACER LE IC LINKS DE CHEZ ROHM CO.LTD.
ANP G
FRONT Lch
CENTER
FRONT Rch
O.L.
CAUTION
REPLACE IC LINKS AS MARKED.MFD. BY LITTELFUSE INC.
ATTENTION
COMME INDIQUE. REMPLACER LE IC LINKS DE CHEZ LITTELFUSE INC.
IC604
491010
IC605
491010
IC603
491001
IC601
KN601
J36
CN53
SL
SR
C
FL
FR
CN752
CN751
F CN801
(XNP3075-B)
C

4.6 F. DISPLAY, R. ENCODER, P. SW & FUNC KEY, H. P. and F. KEY ASSYS

SIDE A



SIDE A

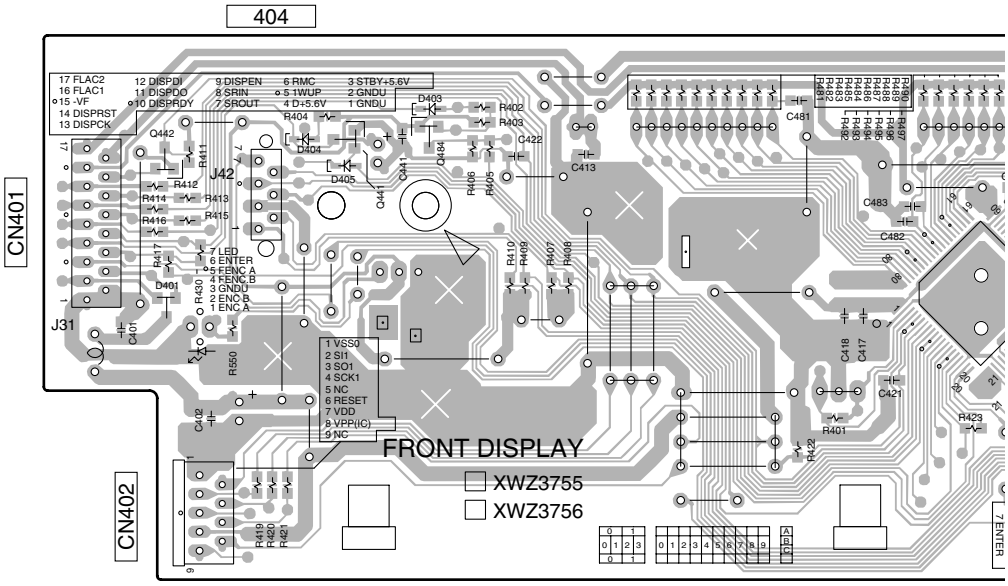


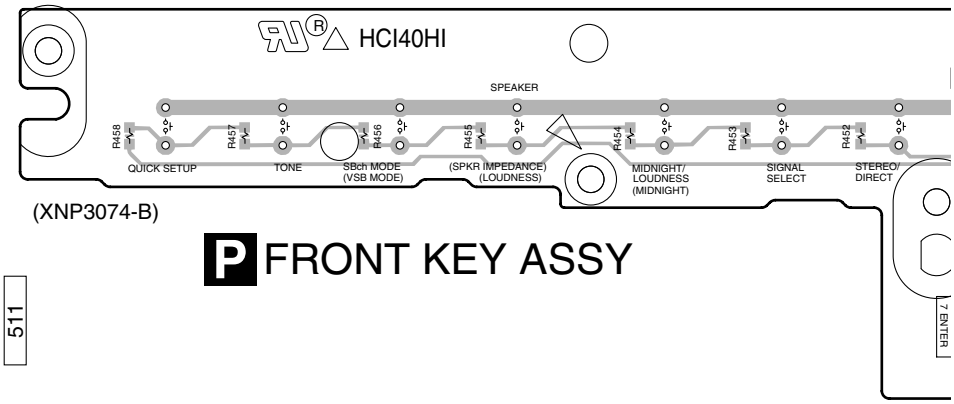
B
DIP
W275
W267
W268
V401
W252
W266
W276
C442
J42
404
7 LED
6 ENTER
5 FENC A
4 FENC B
3 GNDU
2 ENC B
1 ENC A
17 FLAC2
16 FLAC1
15 -VF
14 DISPRST
13 DISPCK
12 DISPDI
W294
11 DISPDO
10 DISPRDY
9 DISPEN
8 SRIN
7 SROUT
6 RMC
5 1WUP
4 D+5.6V
3 STBY+5.6V
2 GNDU
1 GNDU
J31
CN401
A
CN101
W296
D500
L401
401
W280
W277
W278
W253
W284
W283
W285
402
X401
W272
W273
W251
W274
W258
W269
W270
W271
W287
W279
404
C403
CN402
HCI40HI
FRONT DISPLAY
XWZ3755
XWZ3756
1 VSS0
2 SI1
3 SO1
4 SCK1
5 NC
6 RESET
7 VDD
8 VPP(IC)
9 NC
CN402
5 KEY3
6 KEY4
7 ENTER
Z3758
STEREO/ DIRECT
SIGNAL SELECT
MIDNIGHT/ LOUDNESS (MIDNIGHT)
SPEAKER (SPKR IMPEDANCE) (LOUDNESS)
SBch MODE (VSB MODE)
S456 TONE
S457 QUICK SETUP
S451
S452
S453
S454
S455
(XNP3074-B)
P FRONT KEY ASSY
4 KEY2
5 KEY3
6 KEY4
7 ENTER
511
R.ENCODER
J42
XWZ3766
XWZ3822
7 LED
6 ENTER
5 FENC A
4 FENC B
3 GNDU
2 VENC B
1 VENC A
S512
W291
W289
S511 ENTER
HCI40HI
D512
S513
N R.ENCODER ASSY
(XNP3074-B)

M N P

SIDE B

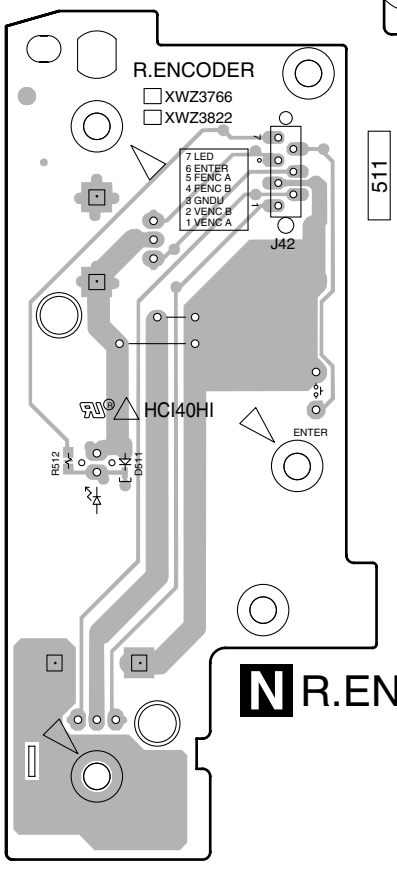
(for VSX-D514)





(XNP3074-B)

P FRONT KEY ASSY



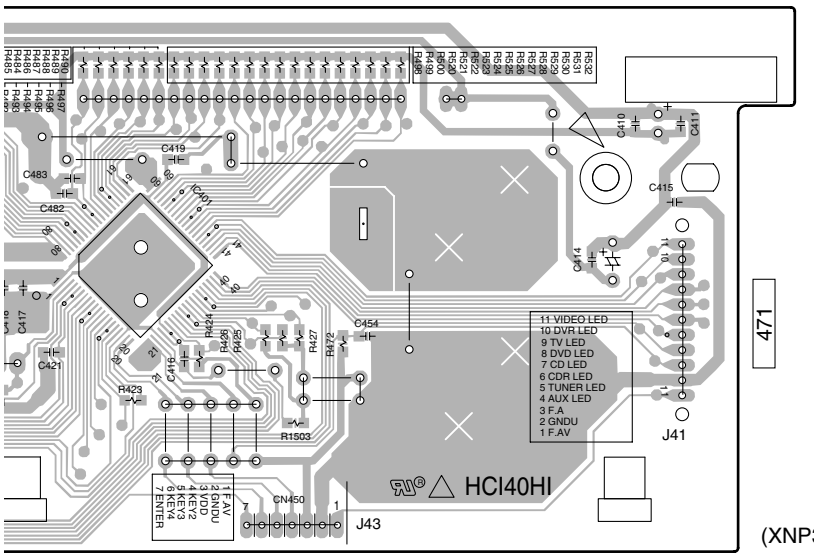
(XNP3074-B)

N R.ENCODER ASSY

M N P

SIDE B

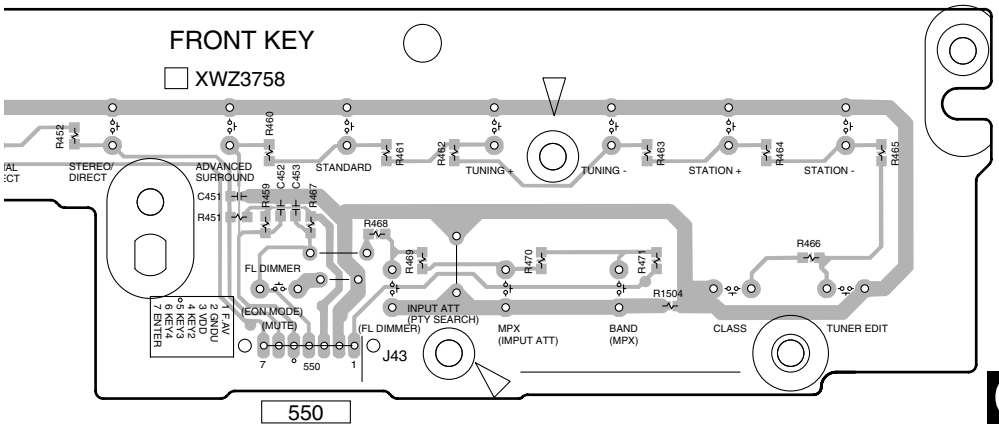
M FRONT DISPLAY ASSY



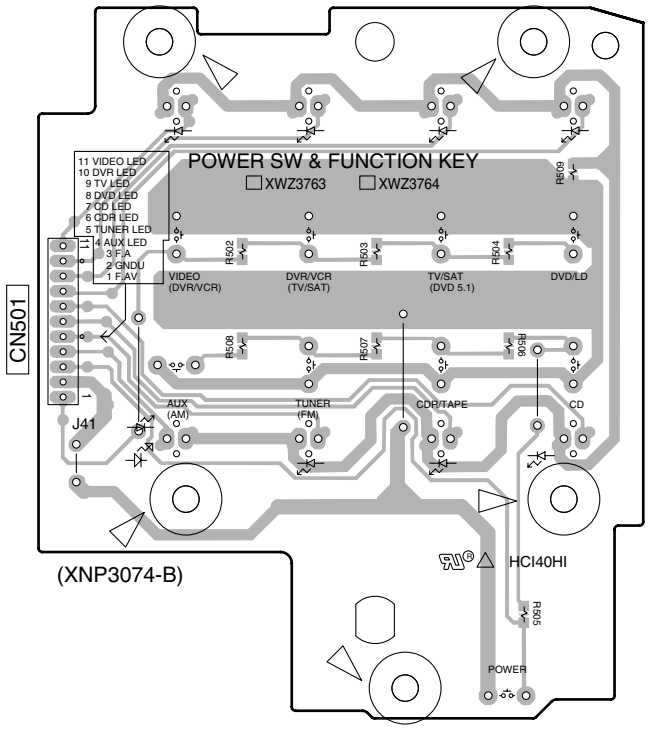
Q441
Q442
Q484

IC401

(XNP3074-B)

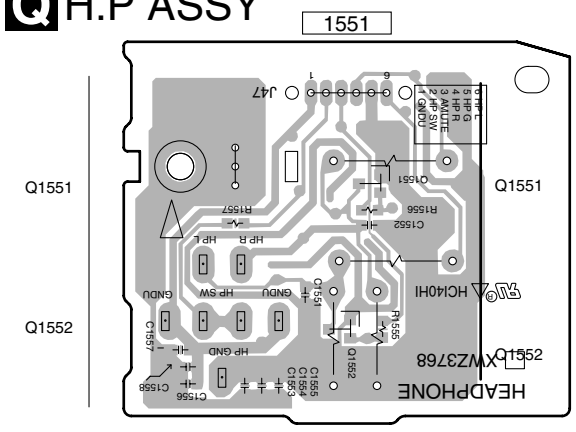


O P. SW & FUNC. KEY ASSY



(XNP3074-B)

Q H.P ASSY



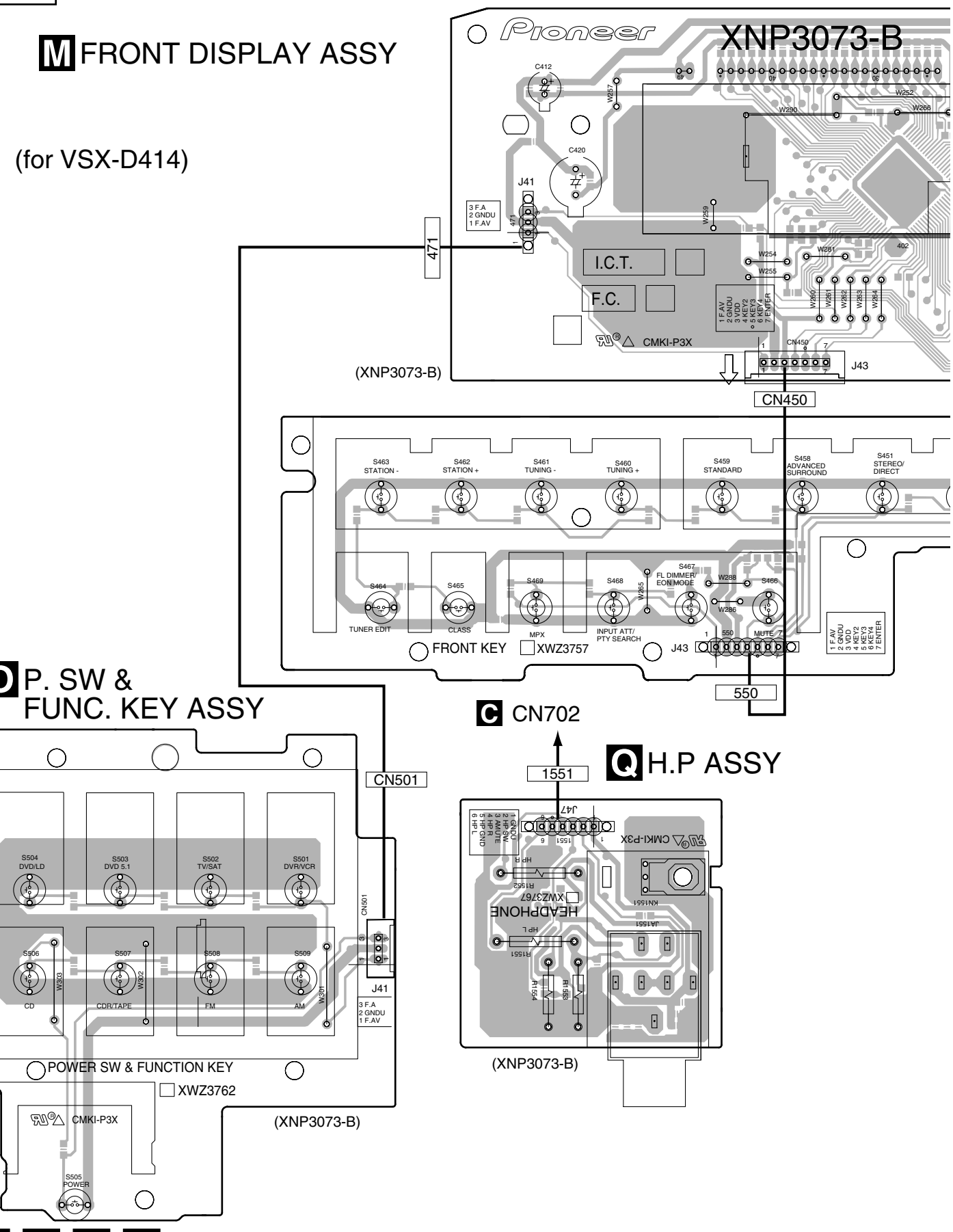
(XNP3074-B)

M O P Q

SIDE A

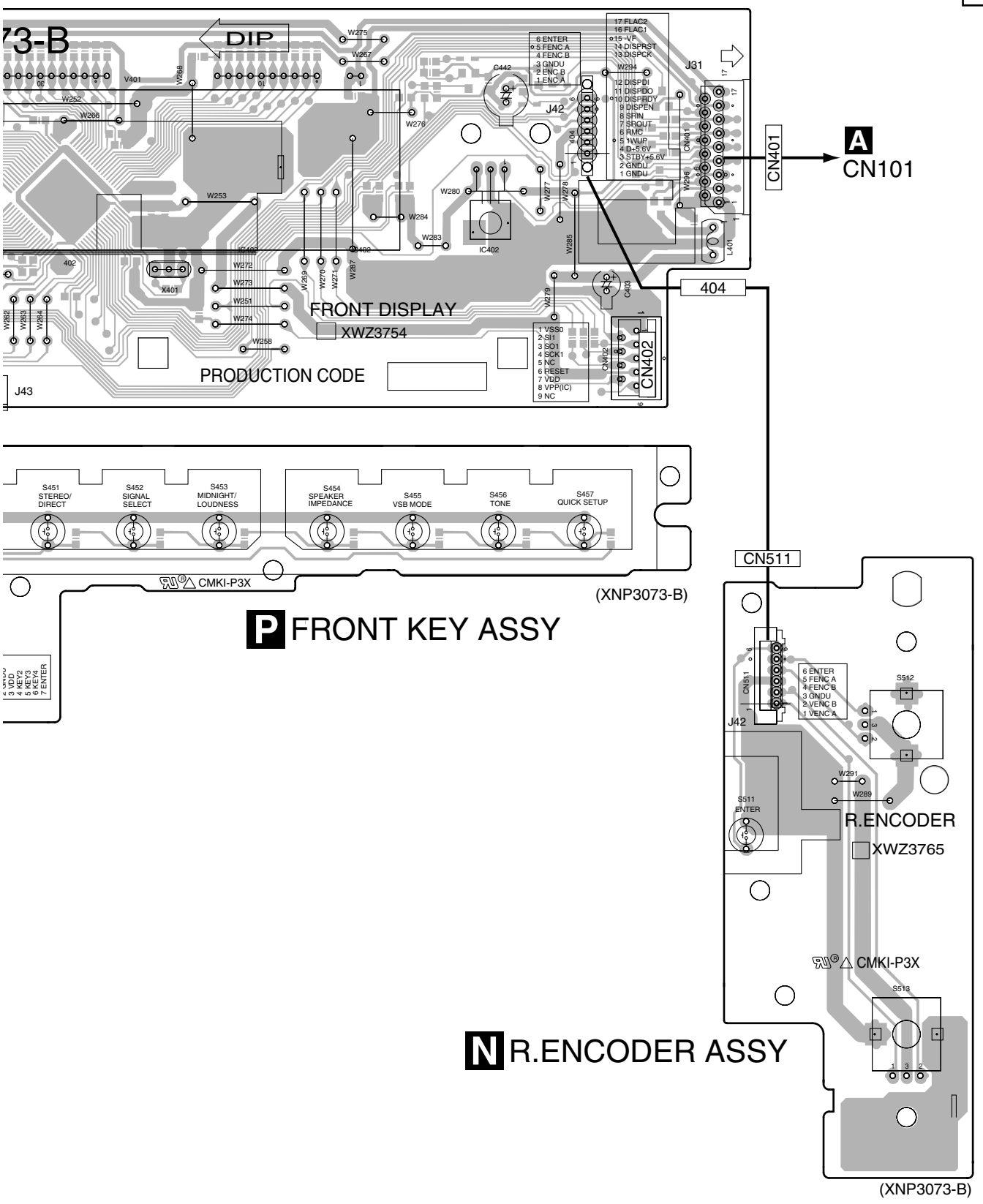
M FRONT DISPLAY ASSY

(for VSX-D414)



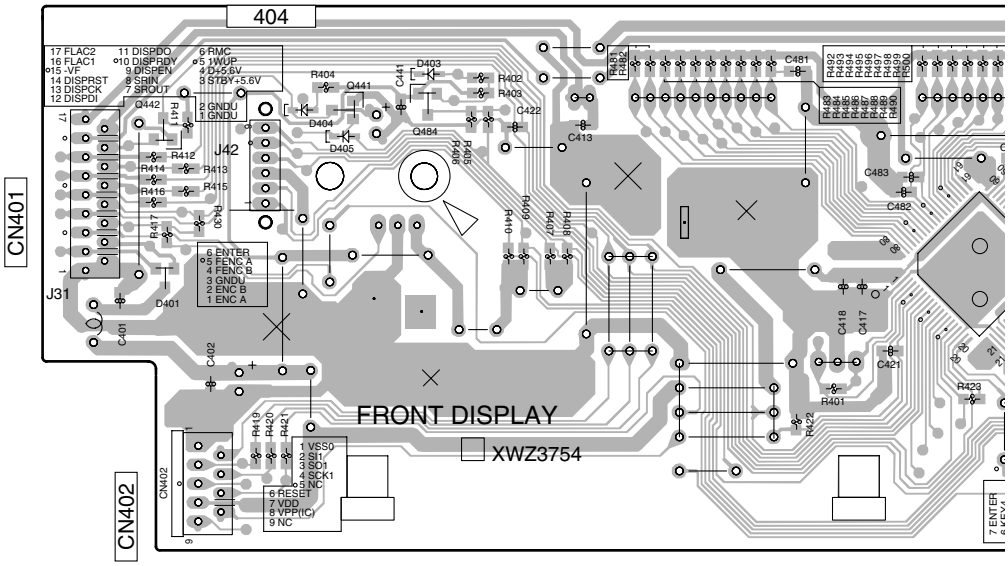
M O P Q

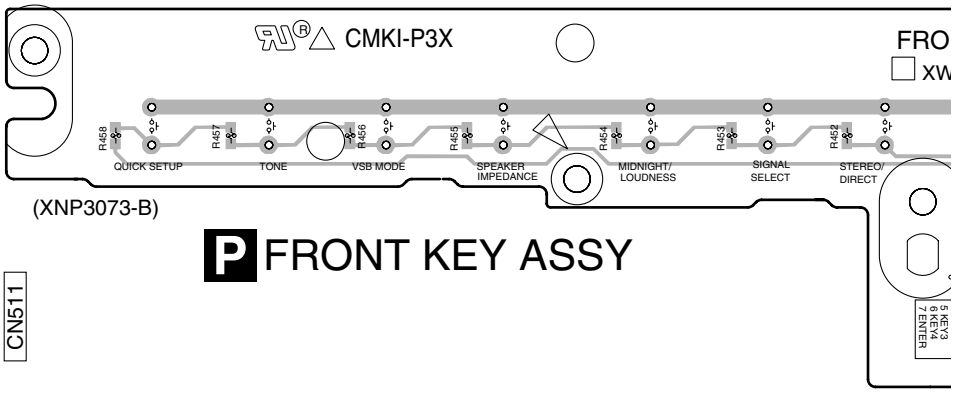
SIDE A


73-B
DIP
FRONT DISPLAY
XWZ3754
PRODUCTION CODE
J43
J42
J31
CN401
A
CN101
404
CN402
S451 STEREO/ DIRECT
S452 SIGNAL SELECT
S453 MIDNIGHT/ LOUDNESS
S454 SPEAKER IMPEDANCE
S455 VSB MODE
S456 TONE
S457 QUICK SETUP
CMKI-P3X
(XNP3073-B)
P FRONT KEY ASSY
CN511
S511 ENTER
S512
S513
R.ENCODER
XWZ3765
CMKI-P3X
(XNP3073-B)
N R.ENCODER ASSY

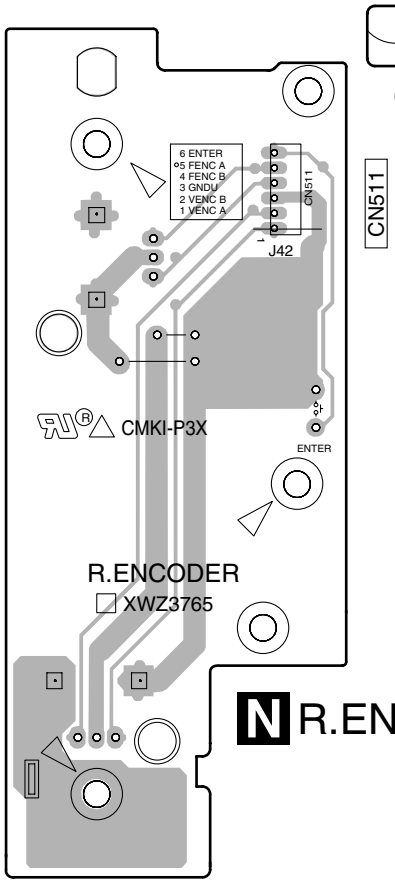
SIDE B

(for VSX-D414)





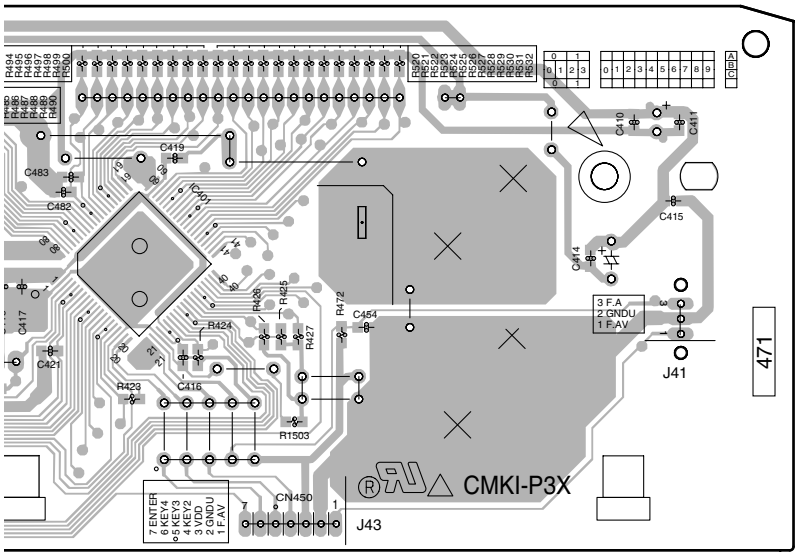
P FRONT KEY ASSY



N R.ENCODER ASSY

M N P

M FRONT DISPLAY ASSY

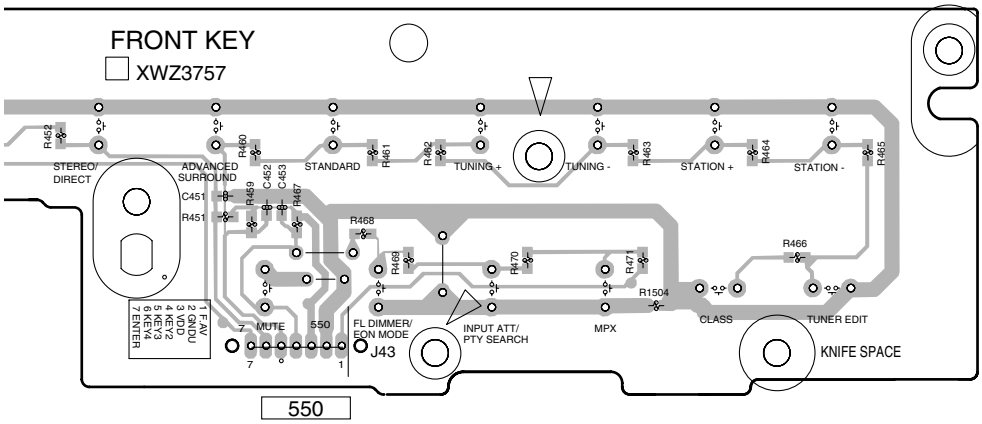


Q441
Q442
Q484

IC401

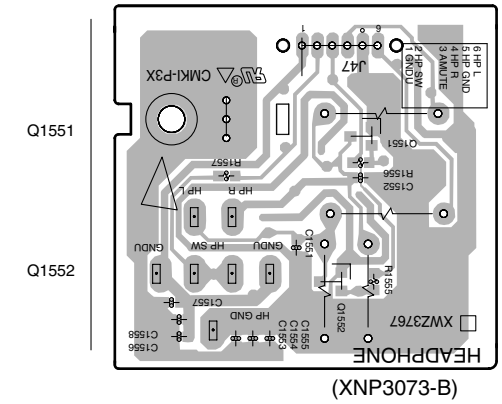
(XNP3073-B)

CN450



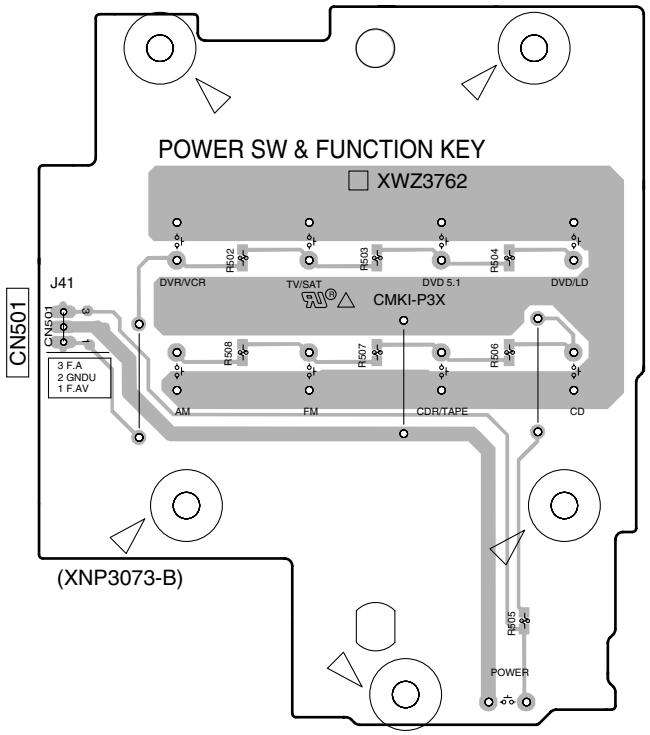
Q H.P ASSY

1551



(XNP3073-B)

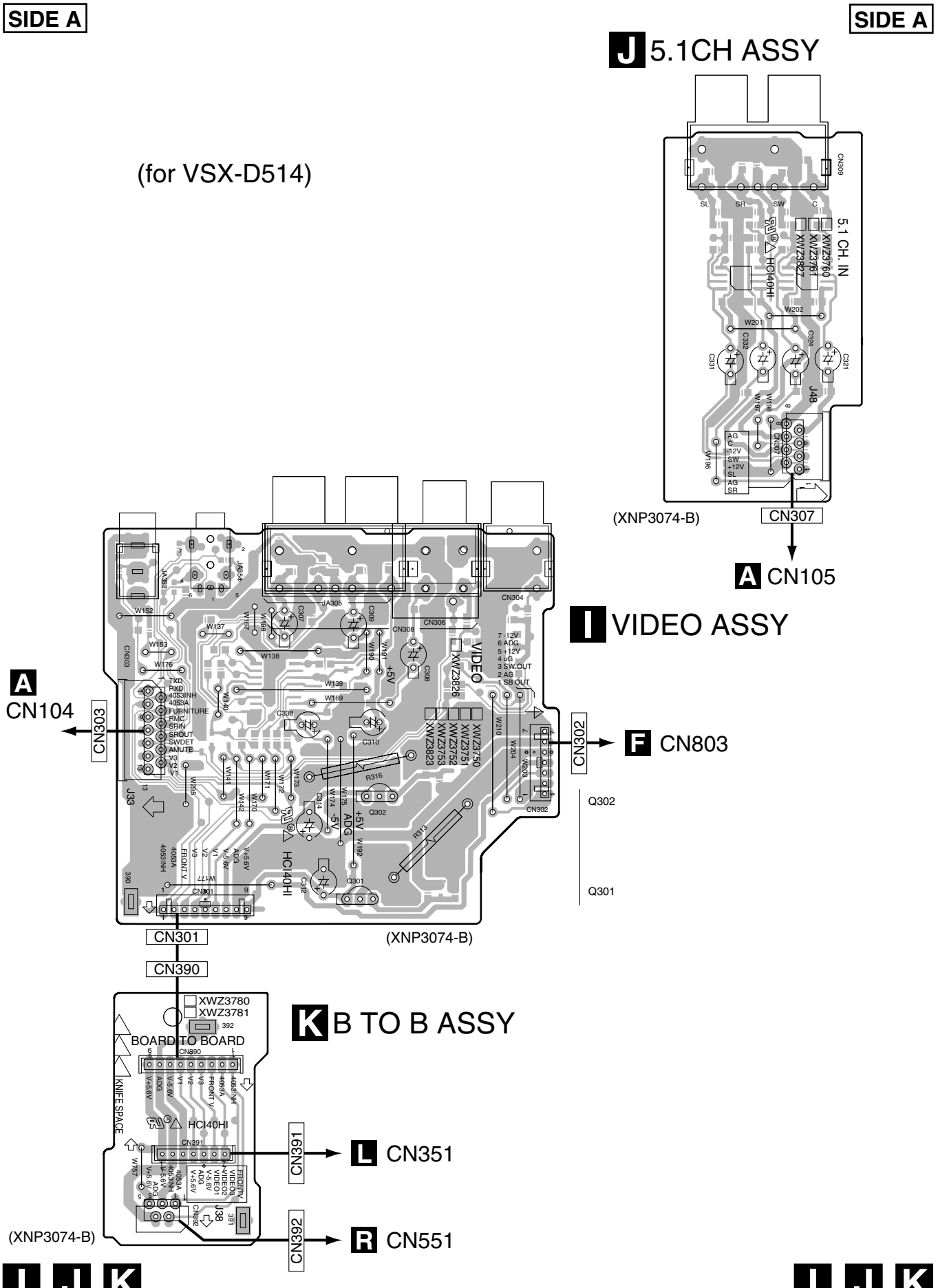
O P. SW & FUNC. KEY ASSY



(XNP3073-B)

M O P Q

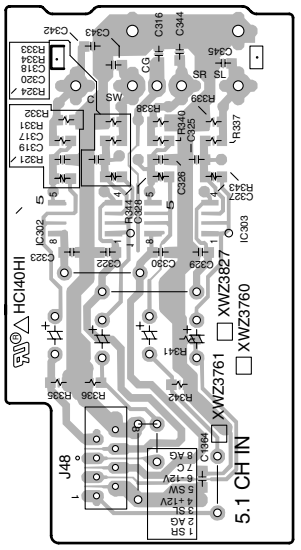
4.7 B TO B, VIDEO and 5.1CH ASSYS



SIDE B

SIDE B

J 5.1CH ASSY

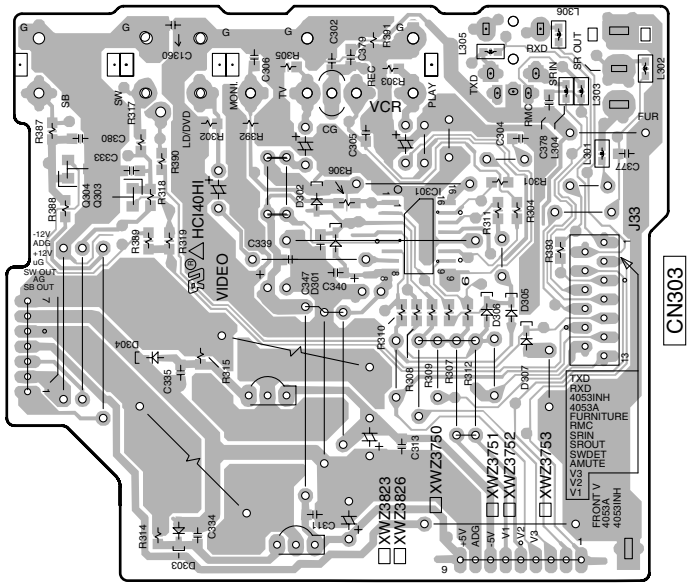


CN307

(XNP3074-B)

(for VSX-D514)

I VIDEO ASSY



CN302

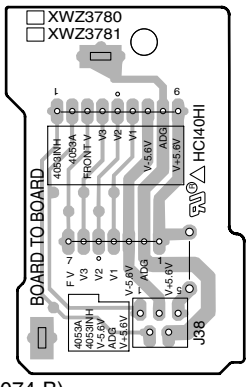
CN303

(XNP3074-B)

CN301

CN390

K B TO B ASSY



CN391

CN392

(XNP3074-B)

I J K

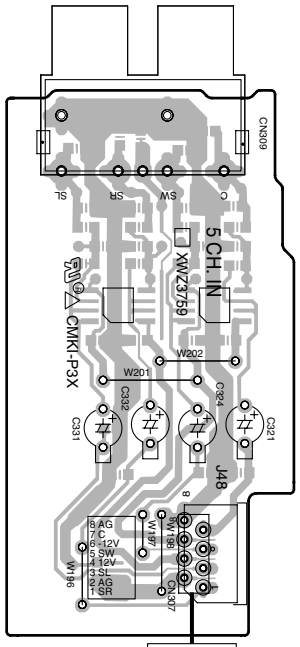
I J K

SIDE A

SIDE A

J 5.1CH ASSY

(for VSX-D414)



(XNP3073-B)

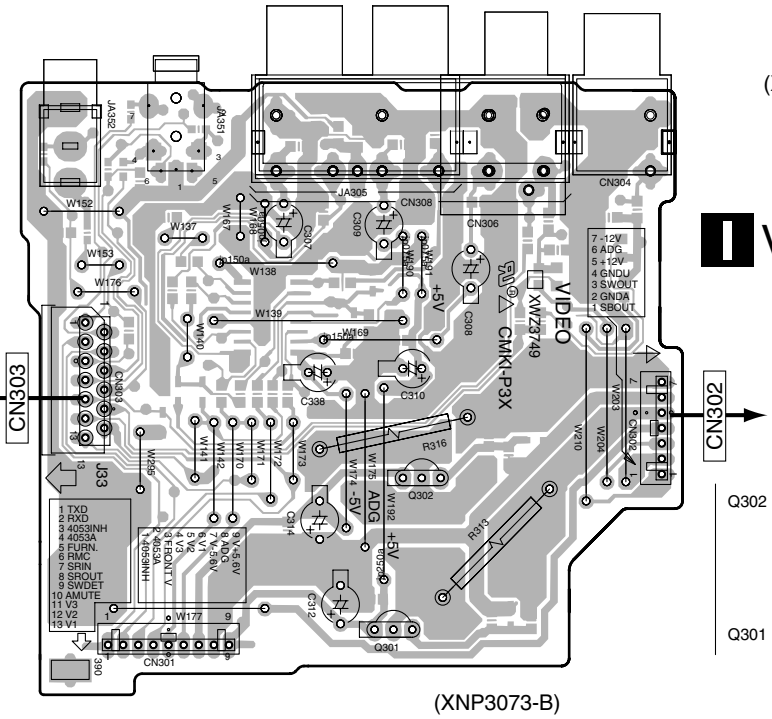
CN307

A CN105

I VIDEO ASSY

A CN104

CN303



CN302

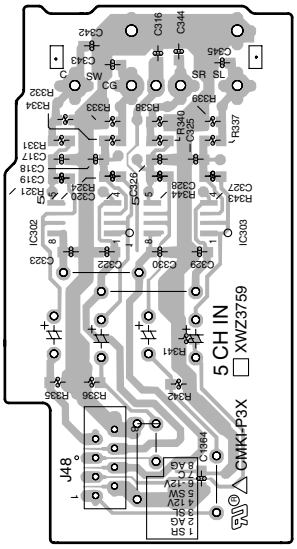
F CN803

(XNP3073-B)

SIDE B

SIDE B

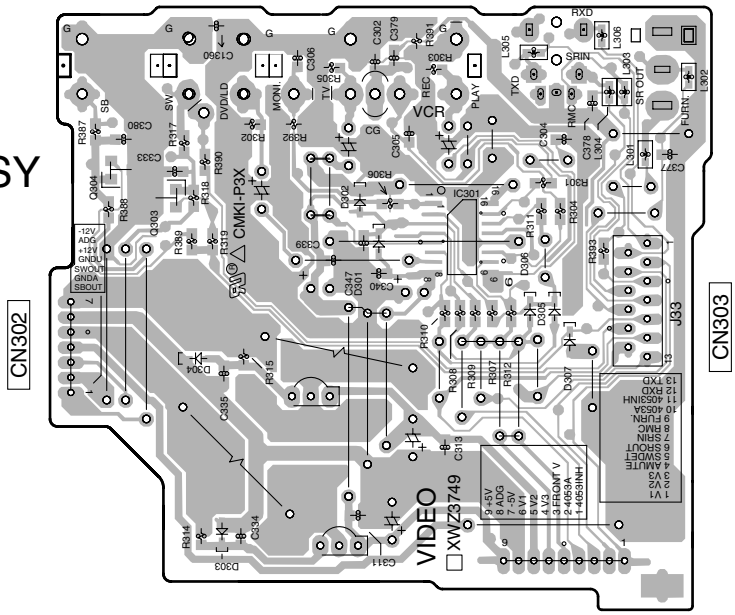
J 5.1CH ASSY



(XNP3073-B)

(for VSX-D414)

I VIDEO ASSY



(XNP3073-B)

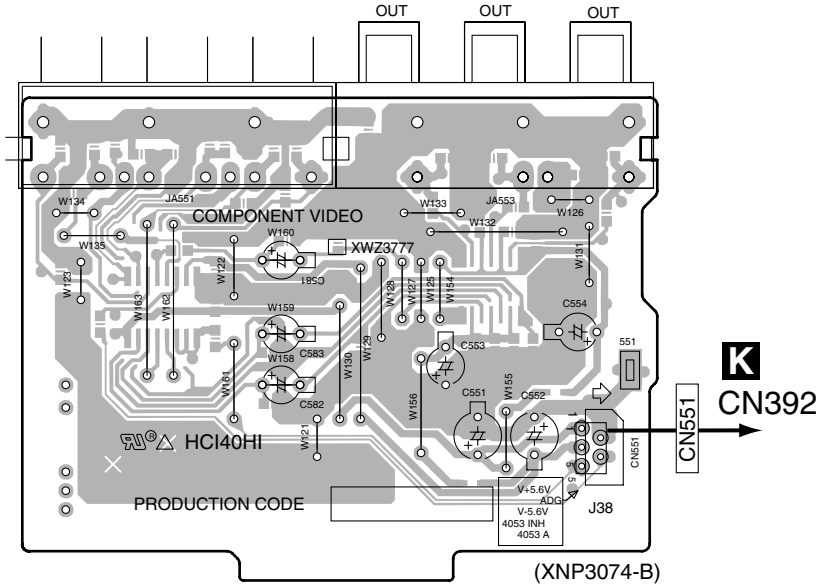
4.8 S.VIDEO and COMPONENT ASSYS

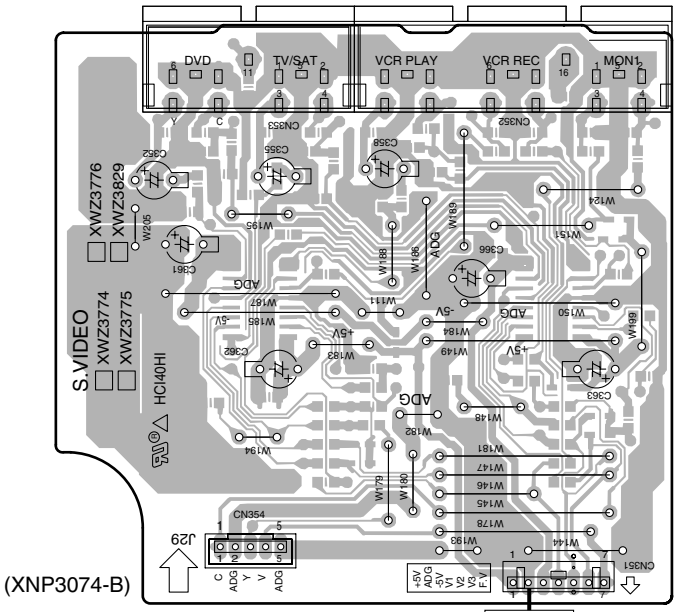
SIDE A

R COMPONENT ASSY

SIDE A

(Except VSX-D414)





L S. VIDEO ASSY

L **R**

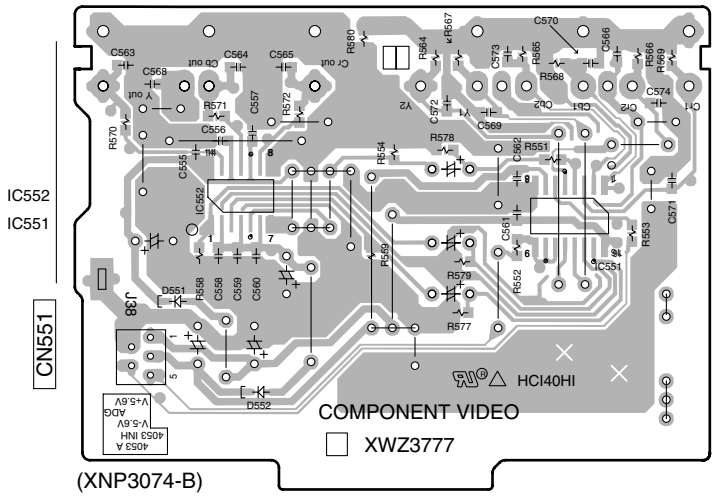
L **R**

SIDE B

SIDE B

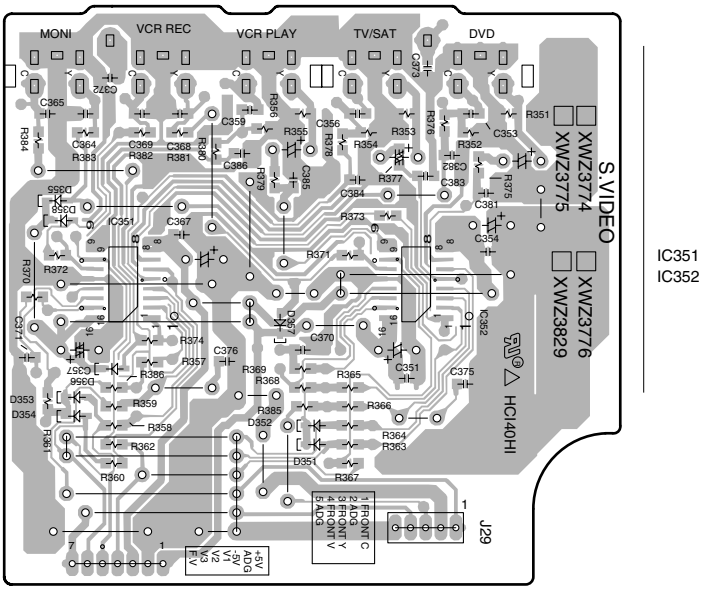
R COMPONENT ASSY

(Except VSX-D414)



(XNP3074-B)

L S. VIDEO ASSY



(XNP3074-B)

5. PCB PARTS LIST

NOTES: ● *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
● *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
● *When ordering resistors, first convert resistance values into code form as shown in the following examples.*
Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).

560 Ω → 56 x 10[1] → 561 ..... RD1/4PU 5 6 1 J
47k Ω → 47 x 10[3] → 473 ..... RD1/4PU 4 7 3 J
0.5 Ω → R50 ..... RN2H R 5 0 K
1 Ω → 1R0 ..... RS1P 1 R 0 K

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

5.62k Ω → 562 x 10[1] → 5621 ..... RN1/4PC 5 6 2 1 F

LIST OF WHOLE PCB ASSEMBLIES

Mark	Symbol and Description	VSX-D514-K/ KUCXJI	VSX-D514-S/ KUCXJI	VSX-D414-K/ KUCXJI	VSX-D414-S/ KUCXJI
	1..MAIN ASSY	XWK3116	XWK3116	XWK3148	XWK3148
	1..DSP ASSY	AWX8418	AWX8418	AWX8418	AWX8418
NSP	1..AMP & PS ASSY	XWK3132	XWK3132	XWK3152	XWK3152
	2..AMP & PRIMARY ASSY	XWZ3782	XWZ3782	XWZ3894	XWZ3894
	2..TRANS2 ASSY	XWZ3808	XWZ3808	XWZ3808	XWZ3808
	2..TRANS3 ASSY	XWZ3812	XWZ3812	XWZ3812	XWZ3812
	2..REGULATOR ASSY	XWZ3796	XWZ3796	XWZ3796	XWZ3796
	2..AMP INPUT ASSY	XWZ3800	XWZ3800	XWZ3800	XWZ3800
	2..TRANS1 ASSY	XWZ3805	XWZ3805	XWZ3805	XWZ3805
NSP	1..COMPLEX ASSY	XWK3147	XWK3147	XWK3126	XWK3126
	2..VIDEO ASSY	XWZ3823	XWZ3823	XWZ3749	XWZ3749
	2..5.1CH ASSY	XWZ3760*	XWZ3760*	XWZ3759*	XWZ3759*
	2..B TO B ASSY	XWZ3781	XWZ3781	Not used	Not used
	2..S. VIDEO ASSY	XWZ3774	XWZ3774	Not used	Not used
	2..FRONT DISPLAY ASSY	XWZ3755	XWZ3755	XWZ3754	XWZ3754
	2..R.ENCODER ASSY	XWZ3766	XWZ3766	XWZ3765	XWZ3765
	2..P.SW & FUNC.KEY ASSY	XWZ3763	XWZ3763	XWZ3762	XWZ3762
	2..FRONT KEY ASSY	XWZ3758*	XWZ3758*	XWZ3757*	XWZ3757*
	2..H.P. ASSY	XWZ3768*	XWZ3768*	XWZ3767*	XWZ3767*
	2..COMPONENT ASSY	XWZ3777	XWZ3777	Not used	Not used
	1..FM/AM TUNER UNIT	AXX7172	AXX7172	AXX7172	AXX7172

* : Costructed same.

COMPLEX ASSY

XWK3147 and XWK3126 are constructed the same except for the following :

Mark	Symbol and Description	XWK3147	XWK3126
	J41 Jumper Wire 11P	D20PYY1107	Not used
	J41 Jumper Wire 3P	Not used	D20PYY0307E
	J42 Jumper Wire 7P	D15A07-075-2651	Not used
	J42 Jumper Wire 6P	Not used	D20PYY0608E

A MAIN ASSY

XWK3116 and XWK3148 are constructed the same except for the following :

Mark	Symbol and Description	XWK3116	XWK3148
	Q9006	DTC143EK	Not used
	R9024	Not used	RS1/16S472J
	R9026	RS1/16S0R0J	RS1/16S622J
	R9061	RS1/16S473J	Not used

C AMP & PRIMARY ASSY

XWZ3782 and XWZ3894 are constructed the same except for the following :

Mark	Symbol and Description	XWZ3782	XWZ3894
	R741, R743	Not used	RD1/4PU333J
	R742, R744	Not used	RD1/4PU202J
	CN741	Not used	AKB7008

I VIDEO ASSY

XWZ3823 and XWZ3749 are constructed the same except for the following :

Mark	Symbol and Description	XWZ3823	XWZ3749
	R313, R316	RS3LMF390J	RS3LMF560J
	CN301	KP200TA9L	Not used
	390 PCB Binder	Not used	VEF1040

M FRONT DISPLAY ASSY

XWZ3755 and XWK3754 are constructed the same except for the following :

Mark	Symbol and Description	XWZ3755	XWZ3754
	401	GP1UM28XK	Not used
	IC402	Not used	RPM7140-H4
	3P Cable Holder	Not used	51048-0300
	6P Cable Holder	Not used	51048-0600
	7P Cable Holder	51063-0705	Not used
	11P Cable Holder	51048-1100	Not used

N R.ENCODER ASSY

XWZ3766 and XWZ3765 are constructed the same except for the following :

Mark	Symbol and Description	XWZ3766	XWZ3765
	6P Cable Holder	Not used	52147-0610
	7P Cable Holder	51063-0705	Not used

O P.SW & FUNC. KEY ASSY

XWZ3763 and XWZ3762 are constructed the same except for the following :

Mark	Symbol and Description	XWZ3763	XWZ3762
NSP	CN501	52151-1110	Not used
	CN501	Not used	52151-0310

Mark	No.	Description	Part No.

AMP & PS ASSY

OTHERS

	J21	Jumper Wire	D20PYY0715E
	J6	Lead wire Unit	DB215NB0

COMPLEX ASSY

OTHERS

	J42	Jumper Wire	D15A07-075-2651
	J47	Jumper Wire	D20PYY0630E
	J43	Jumper Wire 7P	D20PYY0708E
	J41	Jumper Wire 11P	D20PYY1107E

A MAIN ASSY

SEMICONDUCTORS

	IC108	BD3813KS
	IC101	BD3841FS
	IC103-IC105, IC107	HA17558AF
	IC102	NJM2100M
	IC9001	PD5963A
	IC110-IC112	UPC4570G2
	Q165, Q166, Q321, Q322	2SC3326
	Q341, Q342, Q361, Q362, Q395	2SC3326
	Q5001	2SD1664
	Q229, Q230	2SK208
	Q167, Q231, Q9002-Q9005	DTA124EK
	Q9008	DTA143TK
	Q232	DTC124EK
	Q168, Q9001, Q9006	DTC143EK
	Q9007	DTC143TK
	D103-D108, D229, D230, D301	1SS355
	D311, D312, D9001-D9013	1SS355
	D101, D102	RB501V-40
	D5007	UDZS10B
	D331, D332	UDZS6.8B

COILS AND FILTERS

	L9001, L9002	Chip Solid Inductor	ATL7002

Mark	No.	Description	Part No.
	L9003		LFEA2R2J
	L101-L104, L111, L112, L5002		QTL1013
	Chip Solid Inductor		

CAPACITORS

	C9003 (0.22F/5.6V)	ACH7144
	C151, C152, C243, C244, C263	CCSRCH101J50
	C317, C318, C323, C324	CCSRCH101J50
	C343, C344, C363	CCSRCH101J50
	C1031, C1041, C117, C118	CCSRCH220J50
	C205-C208, C245-C248, C265	CCSRCH331J50
	C267	CCSRCH331J50
	C203, C204	CCSRCH471J50
	C366	CEANP4R7M50
B	C123-C128, C131-C138	CEAT100M50
	C141, C142, C167, C168	CEAT100M50
	C209, C210, C213, C214	CEAT100M50
	C249, C250, C269, C270	CEAT100M50
	C301-C306, C321, C322	CEAT100M50
	C341, C342, C361, C362	CEAT100M50
	C5007	CEAT101M16
	C169	CEAT221M6R3
	C201, C202, C241, C242	CEAT2R2M50
	C261, C262, C9005	CEAT2R2M50
	C9007	CEAT331M6R3
C	C325, C326, C345, C346, C365	CEAT470M25
	C155, C156	CEAT470M50
	C333, C334	CEAT471M10
	C9013	CEAT471M6R3
	C165, C166, C370	CEAT4R7M50
	C170	CKSQYB104K16
	C320, C392, C5001, C9015, C9016	CKSRYB102K50
	C115, C116, C153, C154, C171	CKSRYB103K50
	C179, C180, C199, C215-C218	CKSRYB103K50
	C251, C252, C266, C271, C272	CKSRYB103K50
	C319, C327-C330, C347, C348	CKSRYB103K50
D	C367, C368, C5002, C9004, C9008	CKSRYB103K50
	C9017	CKSRYB103K50
	C219, C220, C309-C312	CKSRYB104K16
	C5003, C9006	CKSRYB105K10
	C264	CKSRYB223K25
	C257, C258, C277, C278	CKSRYB472K50
	C307, C308, C364	CKSRYB472K50
	C9011, C9014	CKSRYB473K16
	C268	CKSRYB562K50
	C391	CKSRYF104Z16

E

RESISTORS

⚠	R171, R172	RS1/16S470J
⚠	R173, R174	RS1/16S472J
⚠	R311, R312	RS1LMF101J
	Other Resistors	RS1/16S###J

OTHERS

	X9001 (15.7MHz)	XSS3004
	CN105 8P Connector	52044-0845
	CN103 11P Connector	52044-1145
	CN104 13P Connector	52044-1345
	CN101 17P Conector	52045-1745
F	CN106, CN112 19P Connector	52045-1945
	CN109 18P Socket	KP200TA18L
	CN111 20P Socket	KP200TA20L
	JA103, JA104 PCB Binder	XKB3017
	JA105 6P Pin Jack	XKB3037

B DSP ASSY

SEMICONDUCTORS

	IC8201	AK4114VQ
	IC8401	AK4628VQ
	IC8501	DSPD56367PV150
	IC8901	NJM2391DL1-33
	IC8902	NJU7223DL1-18
	IC8101	TC74HCU04AF
	IC8701	TC74LVX244FT
	IC8702	TC74VHCT244AFT
	IC8502	TC7WU04FU
	Q8504	UMD2N
	Q8503	UN5112
	D8501	1SS355
	D8401	DAN202K
	D8402, D8502, D8503	DAP202K

COILS AND FILTERS

	L8002, L8004, L8501, L8502	ATL7002
	Chip Solid Inductor	
	L8101-L8104, L8201, L8203, L8204	QTL1013
	L8401, L8402, L8504, L8701, L8702	QTL1013
	Chip Solid Inductor	

CAPACITORS

	C8209, C8210	CCSRCH100D50
	C8421	CCSRCH101J50
	C8107, C8112	CCSRCH470J50
	C8007, C8008, C8109, C8201, C8212	CCSRCH471J50
	C8214, C8404, C8409-C8414	CCSRCH471J50
	C8416, C8417, C8419, C8505, C8507	CCSRCH471J50
	C8509, C8511, C8512, C8515, C8518	CCSRCH471J50
	C8520, C8522, C8524, C8526, C8528	CCSRCH471J50
	C8530, C8532, C8534, C8536, C8539	CCSRCH471J50
	C8541, C8543, C8545, C8551, C8703	CCSRCH471J50
	C8706	CCSRCH471J50
	C8548, C8549	CCSRCH8R0D50
	C8701, C8704	CEVW100M16
	C8105, C8406, C8415, C8546, C8547	CEVW101M16
	C8902, C8904	CEVW101M16
	C8217, C8225, C8408	CEVW470M6R3
	C8204, C8555	CKSRYB102K50
	C8009, C8104, C8114, C8405, C8418	CKSRYB103K50
	C8517, C8554	CKSRYB103K50
	C8010, C8115, C8202, C8207, C8213	CKSRYB104K16
	C8215, C8407, C8420, C8422, C8504	CKSRYB104K16
	C8513, C8521, C8523, C8525, C8527	CKSRYB104K16
	C8529, C8531, C8533, C8535	CKSRYB104K16
	C8537, C8538, C8540, C8542, C8544	CKSRYB104K16
	C8550, C8702, C8705, C8901, C8903	CKSRYB104K16
	C8110, C8516	CKSRYB105K6R3
	C8514	CKSRYB333K16
	C8203	CKSRYB473K50

RESISTORS

	R8506	RAB4C101J
	R8201	RS1/16S1802F
	Other Resistors	RS1/16S###J

OTHERS

Mark	No.	Description	Part No.
		X8501 (20MHz)	VSS1171
		X8201 (24.576MHz)	XSS3003
		CN8012 19P Connector	52045-1945
		JA8101 2P Pin Jack	AKB7131
		CN8003 13P Socket	AKP7070
		CN8007 19P Socket	AKP7073
		JA8102 OPT. Link In	GP1FA513RZB
		CN8017 10P Connector	VKN1414

C AMP & PRIMARY ASSY

SEMICONDUCTORS

⚠	IC603	AEK7009
⚠	IC604-IC607	AEK7022
⚠	IC701, IC702	ICP-N10
	IC51	NJM78M56FA
⚠	IC601	PAC010A
⚠	IC602	PAC011A
	Q703, Q721	2SA1145
	Q702	2SA2005
	Q691, Q692	2SC1740S
	Q704, Q722	2SC1845
	Q605, Q606, Q633, Q655, Q656	2SC2240
	Q701	2SC5511
	Q601-Q604, Q631, Q632	2SC5974A
	Q651-Q654	2SC5974A
	Q51	DTC143ES
	D56, D601-D604, D631, D632	1SS133
	D651-D654, D752, D756	1SS133
⚠	D701, D702	D5SBA20(B)
	D675-D678	MTZJ16A
	D711	MTZJ22D
	D58, D712	MTZJ5.1B
⚠	D51-D55, D721-D724	S5688G

COILS AND FILTERS

	L751-L753, L761, L762 Coil	ATH1004

SWITCHES AND RELAYS

	RY51	XSR3006
	RY751-RY753	XSR3007

CAPACITORS

	C707, C708 (0.01/AC250V)	ACG1005
	C607-C610, C634, C635	CCPUCH6R8K50
	C657-C660	CCPUCH6R8K50
	C615, C616, C638, C665, C666	CEANP2R2M50
	C775, C776	CEANP470M50
	C712	CEAT101M10
	C611, C612, C636, C661, C662	CEAT101M16
	C711	CEAT101M35
	C53	CEAT102M16
	C692	CEAT221M10
	C54	CEAT470M25
	C605, C606, C633, C655, C656	CEAT4R7M50
	C705, C706	CEHAT100M2A
	C613, C614, C637, C663, C664	CKPUYB101K50
	C691	CKPUYB102K50
	C603, C604, C632, C653, C654	CKPUYB331K50
	C55-C57	CKPUYF103Z25
	C751, C752, C755, C761, C762	CQMBA104J50
	C51, C52 (10000pF/AC250V)	XCG3009
	C703, C704 (3300/42V)	XCH3012
	C701, C702 (5600/71V)	XCH3013

RESISTORS

⚠	R615, R616, R638, R665	ACN7094
⚠	R666 (0.22 /5W)	ACN7094
⚠	R51 (2.2M 1/2W)	RCN1080
⚠	R52	RD1/2PM270J
⚠	R751, R752, R755, R761, R762	RD1/4PUF101J
⚠	R753, R754, R756, R763, R764	RS1LMF4R7J
⚠	R711	RS2LMF392J
	Other Resistors	RD1/4PU###J

OTHERS

	CN53 23P Connector	52045-2345
	CN702 6P Jumper Connector	52147-0610
	51 AC Socket 1-P	AKP1060
	H51-H54, H701, H702 Fuse Clip	AKR7001
⚠	T51 Standby Transformer	ATT7043
	CN601 16P Plug	KM200TA16
	CN51 AC Cord Socket	RKP1751
	KN51, KN601 Earth Metal Fitting	VNF1084
	CN752 4P Speaker Terminal	XKE3010
	CN751 6P Speaker terminal	XKE3012
	701 7P Cable Holder	XKP3047

D TRANS2 ASSY

SEMICONDUCTORS

⚠	IC851-IC853	AEK7012

OTHERS

	851 7P Cable Holder	XKP3047

E TRANS3 ASSY

TRANS3 ASSY has no service part.

F REGULATOR ASSY

SEMICONDUCTORS

	IC803, IC804	NJM78M05FA
	IC801, IC805	NJM78M12FA
	IC806	NJM78M56FA
	IC802	NJM79M12FA
	Q801, Q803	DTA124ES
	Q802, Q804	DTC114ES
	D809-D811	MTZJ6.2B
⚠	D801-D804	S5688G

CAPACITORS

	C811, C815	CEAT101M10
	C813	CEAT101M16
	C801, C802	CEAT222M25
	C809	CEAT472M16
	C808	CEHAT101M10
	C805, C806	CEHAT101M16
	C803, C804, C807, C810, C812	CKPUYF103Z25
	C814	CKPUYF103Z25

RESISTORS

Mark	No.	Description	Part No.
	R801		RS3LMF331J
	OTHERS		
	CN801	23P Connector	52045-2345
	CN805	13P Plug	AKP7059
	CN806	19P Plug	AKP7062
	CN804	18P Plug	KM200TA18
	CN802	20P Plug	KM200TA20
	CN803	7P Plug	KM200TA7

G AMP INPUT ASSY

OTHERS

CN254	19P Connector	52044-1945
CN253	16P Socket	KP200TA16L

H TRANS1 ASSY

TRANS1 ASSY has no service part.

I VIDEO ASSY

SEMICONDUCTORS

IC301		NJM2595M
Q302		2SA1515
Q303		2SC3326
Q301		2SC3377
D301, D302, D305, D306		1SS355
D303, D304		UDZS6.2B

CAPACITORS

C347		CCSRCH470J50
C307-C310, C312, C314, C338		CEAT470M25
C1360, C302		CKSRYB103K50
C339, C340		CKSRYB104K25
C304-C306		CKSRYB221K50
C333		CKSRYB331K50
C311, C313		CKSRYB473K25

RESISTORS

⚠ R313, R316		RS3LMF390J
Other Resistors		RS1/16S###J

OTHERS

CN303	13P Connector	52044-1345
CN308	6P Pin Jack	AKB7123
CN302	7P Socket	KP200TA7L
CN301	9P Socket	KP200TA9L

J 5.1CH ASSY

CAPACITORS

C342-C345		CCSRCH101J50
C321, C324, C331, C332		CEAT4R7M50
C1364		CKSRYB102K50
C316		CKSRYB103K50
C317, C318, C325, C326		CKSRYB221K50

RESISTORS

Other Resistors		RS1/16S###J

OTHERS

CN307	8P Connector	52044-0845
CN309	4P Pin Jack	XKB3035

K B TO B ASSY

OTHERS

CN392	5P Connector	52045-0545
CN391	7P Plug	KM200TA7
CN390	9P Plug	KM200TA9
391	PCB Binder	VEF1040

L S.VIDEO ASSY

SEMICONDUCTORS

IC351, IC352		NJM2595M
D351-D358		1SS355

CAPACITORS

C375, C376, C381-C386		CCSRCH470J50
C352, C355, C358, C361-C363		CEAT470M25
C366		CEAT470M25
C372, C373		CKSRYB103K50
C351, C353, C354, C356, C357		CKSRYB104K25
C359, C367		CKSRYB104K25
C364, C365, C368-C371		CKSRYB221K50

RESISTORS

Other Resistors		RS1/16S###J

OTHERS

CN353	2-4P Mini DIN Socket	AKP7020
CN352	3-4P Mini DIN Socket	AKP7043
CN351	7P Socket	KP200TA7L

M FRONT DISPLAY ASSY

SEMICONDUCTORS

IC401		PE5420A
Q484		2SA1037K
Q442		DTC124EK
D403		1SS355
D401		DAN202K

COILS AND FILTERS

L401		LFEA2R2J

CAPACITORS

C482, C483		CCSRCH221J50
C481		CCSRCH471J50
C442		CEAL470M10
C403		CEAT221M6R3
C412		CEAT470M50
C415, C454		CKSRYB102K50
C401, C402, C410, C411, C419		CKSRYB103K50
C441		CKSRYB103K50
C418, C421		CKSRYB104K16
C420		XCH3011

RESISTORS

Other Resistors		RS1/16S###J

OTHERS

X401 (5MHz)		VSS1142
401	Remote Receiver Unit	GP1UM28XK
471	11P Cable Holder	51048-1100
404	7P Cable Holder	51063-0705

Mark No.	Description	Part No.
	CN401 17P Cable Holder	52044-1745
	CN450 7P Jumper Connector	52151-0710
	V401 FL Tube	XAV3022

N R.ENCODER ASSY

SWITCHES AND RELAYS

	S511	VSG1024
	S513	XSX3005
	S512	XSX3006

OTHERS

	511 7P Cable Hoder	51063-0705

O P.SW & FUNC. ASSY

SWITCHES AND RELAYS

	S501-S509	VSG1024

RESISTORS

	Other Resistors	RS1/16S###J

P FRONT KEY ASSY

SWITCHES AND RELAYS

	S451-S469	VSG1024

CAPACITORS

	C451-C453	CKSRYB102K50

RESISTORS

	Other Resistors	RS1/16S###J

OTHERS

	550 7P Cable Holder	51048-0700

Q H.P. ASSY

SEMICONDUCTORS

	Q1551, Q1552	2SC3326

CAPACITORS

	C1554, C1557	CCSRCH471J50
	C1553, C1556	CKSRYB103K50
	C1555, C1558	CKSRYB104K16
	C1551, C1552	CKSRYB223K50

RESISTORS

⚠	R1553, R1554	RS1LMF151J
⚠	R1551, R1552	RS2LMF331J
	Other Resistors	RS1/16S###J

OTHERS

	1551 6P Cable Holder	51048-0600
	JA1551 Headphone Jack	RKB1014
	KN1551 Earth Metal Fitting	VNF1084

R COMPONENT ASSY

SEMICONDUCTORS

	IC552	NJM2581M
	IC551	TC74HC4053AF
	D551, D552	1SS355

Mark No.	Description	Part No.

CAPACITORS

	C551-C554	CEAT101M10
	C555-C562, C566, C568	CKSRYB103K50

RESISTORS

	Other Resistors	RS1/16S###J

OTHERS

	CN551 5P Connector	52045-0545
	JA553 3P RCA Pin Jack	AKB7124
	JA551 6P RCA Pin Jack	XKB3025

FM/AM TUNER UNIT

FM/AM TUNER UNIT has no service part.

6. ADJUSTMENT

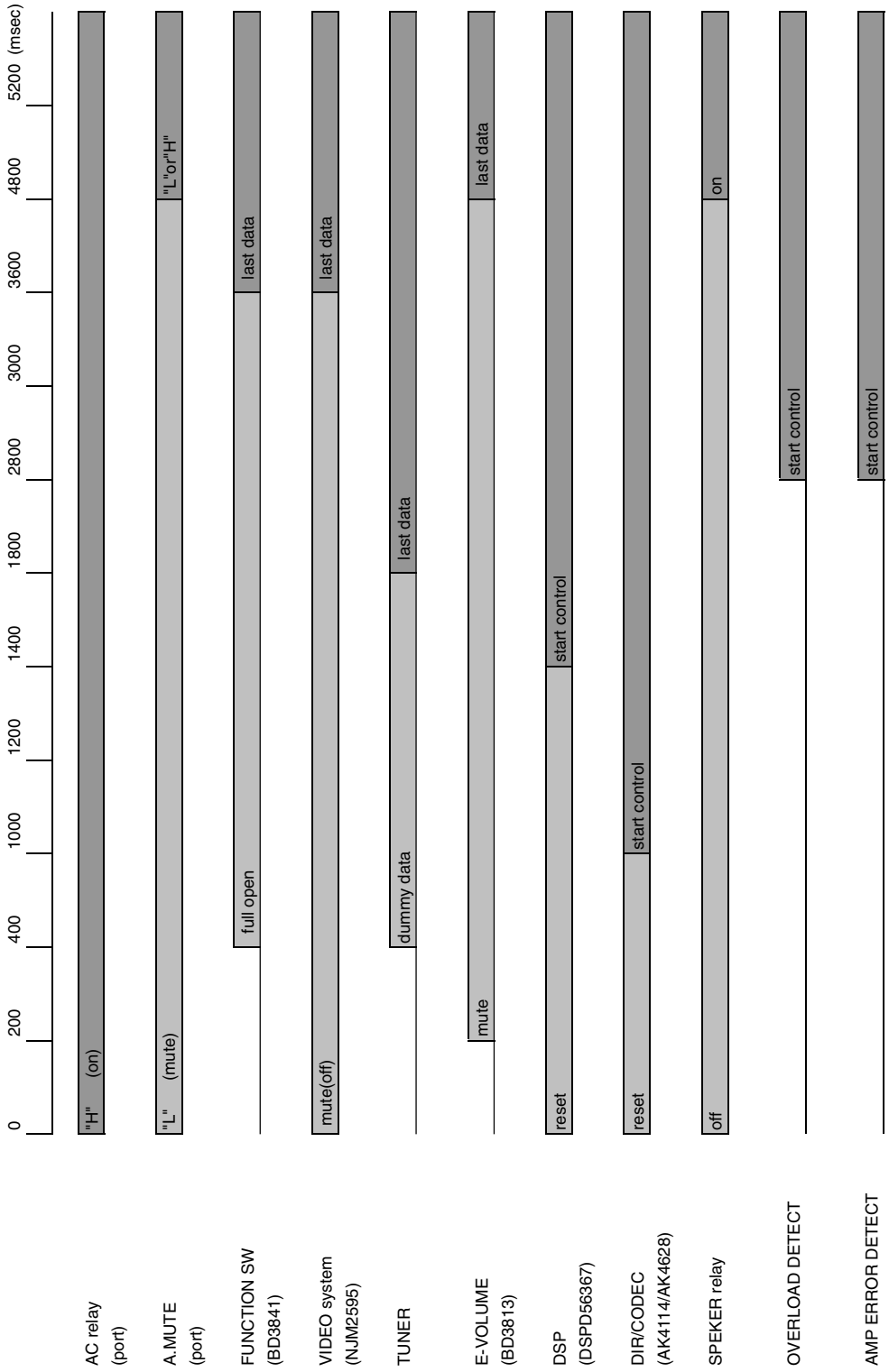
There is no information to be shown in this chapter.

7. GENERAL INFORMATION

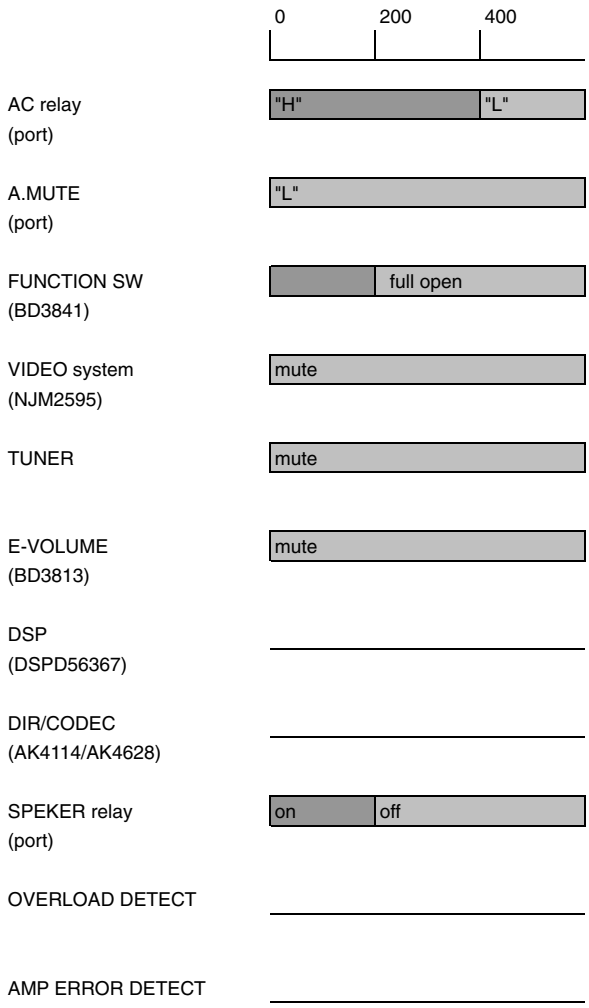
7.1 DIAGNOSIS

7.1.1 POWER ON AND OFF INITIAL TIMING CHART

■ **POWER ON INITIAL TIMING CHART**



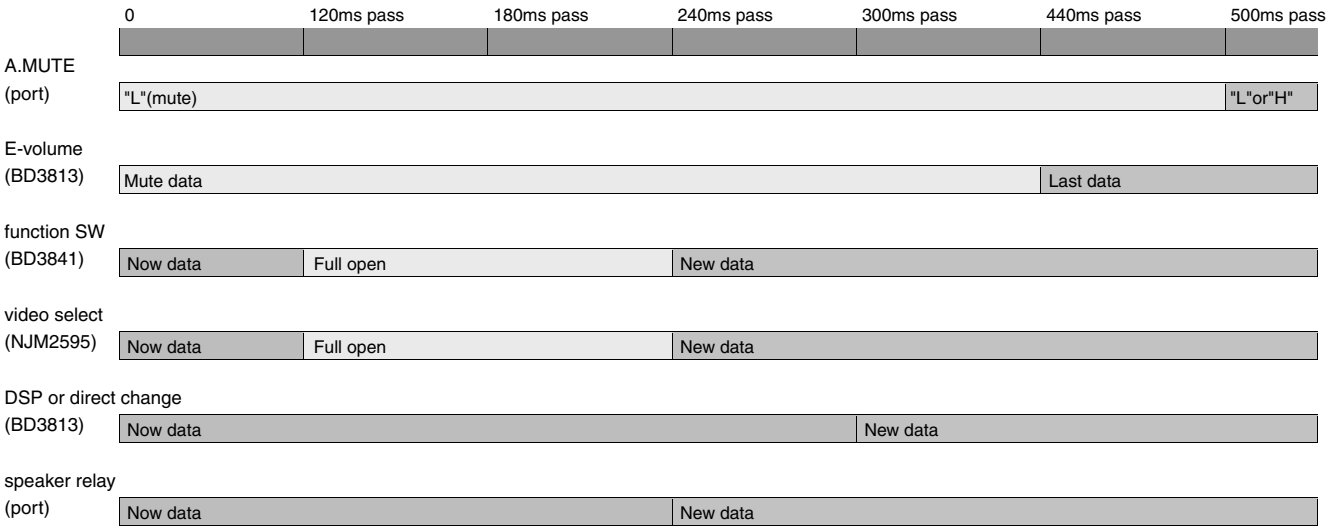
■ POWER OFF INITIAL TIMING CHART



7.1.2 IC DATA TRANSMISSION TIMING CHART

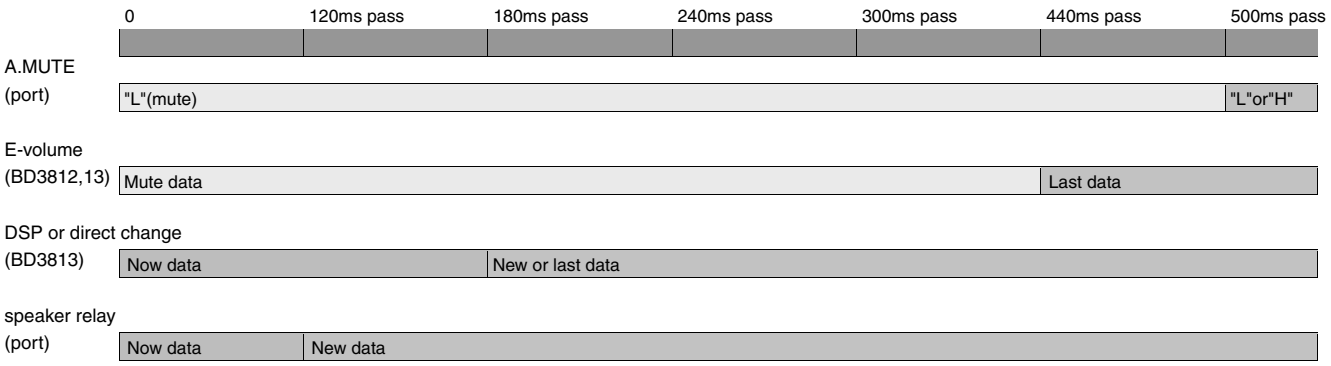
■ IC data transmission timing chart

1.When function chage



condition of mute cancel (system mute & E-volume mute)
1) when tuner mute during Tuner function
2) when communicate to DSP
3) when initial processing
4) when detect trouble of AMP DC
5) when detect overload of AMP
6) when Power off
7) when muting by key input

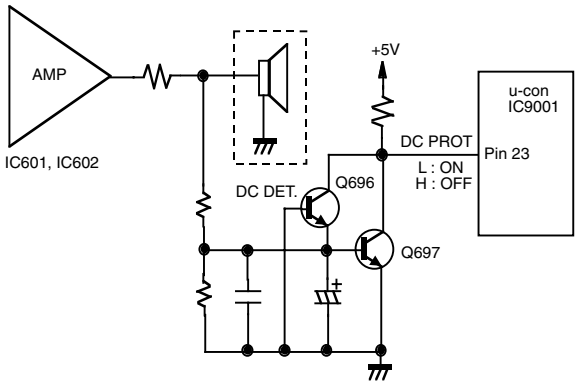
2.When except function chage



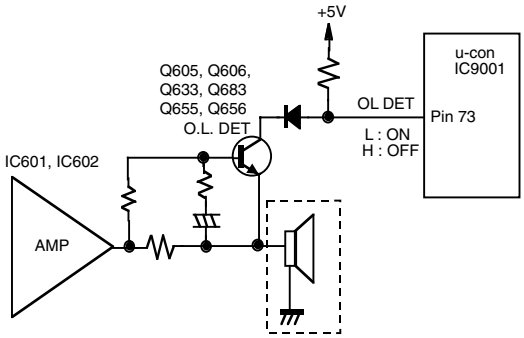
condition of mute cancel (system mute & E-volume mute)
1) when tuner mute during Tuner function
2) when communicate to DSP
3) when initial processing
4) when detect trouble of AMP DC
5) when detect overload of AMP
6) when Power off
7) when muting by key input

7.1.3 DETECTION CIRCUIT

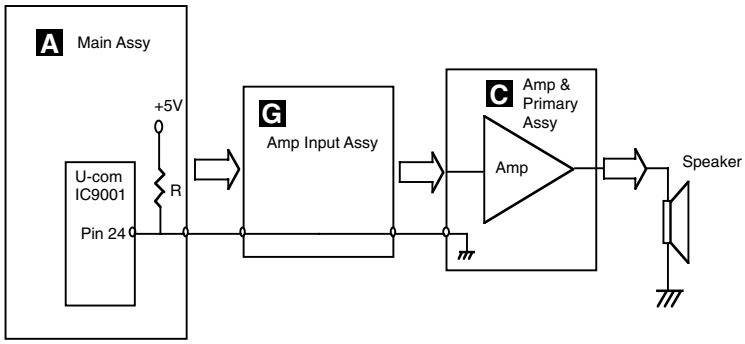
1.DC Detection Circuit Diagram:



2. Overload Detection Circuit Diagram:



3. PCB Board Protection Circuit Diagram



7.1.4 AMPLIFIER SYSTEM PROTECTION OPERATION SPECIFICATION

1. DC-abnormality detection

DC detection is only enabled 2 seconds after power-on.
If there is a fault in the power amplifier or a high-level signal lower than 5 Hz is input, the DC_DET port becomes “L”.
If the “L” is detected, the microprocessor will perform as following flow chart.

In the case of simultaneous detection with the overload protection circuit, DC-abnormality detection is performed preferentially to overload detection.

When a DC abnormality is detected, A.MUTE* is turned on, speaker relay is turned off, then "AMP_ERR" flashes on the display.

*A.MUTE : Audio mute command

↓

The abnormality continues for 3 seconds.

↓ Continues.

The power is shut off.

↓

The power key is disabled and Standby LED blinks.

↓ Recovery

The program restarts.

But be switched on with the following methods.
① TESTMODE ON (A55F+A55F)
② When power off, push FRONT ENTER key + ADVANCED SURROUND key continuously 2sec.
(②: When a DC abnormality is detected and the power is shut off.)

2. Overload detection

If the speaker terminals are short-circuited or low-load driving is detected, the OL_DET port becomes “L”.
If the “L” is detected, the microprocessor will perform as following flow chart.

When an overload is detected, A.MUTE* is turned on, speaker relay is turned off, then "OVERLOAD" flashes on the display.

↓

The abnormality continues for 3 seconds.

↓ Continues.

The power is shut off.

↓ Recovery

The power is shut off even if the unit recovers.

3. Board detection

If the board connection from MAIN ASSY to AM & PRIMARY ASSY is interrupted, the BOARD_DET port becomes “H”.
If the “H” is detected, the microprocessor will perform as following flow chart.

In the case of simultaneous detection with the overload protection circuit, Board detection is performed preferentially to DC-abnormality detection and Overload detection.

When an boad error is detected, A.MUTE* is turned on, speaker relay is turned off, then "BOAD ERR" flashes on the display.

↓

The abnormality continues for 3 seconds.

↓ Continues.

The power is shut off.

↓ Recovery

The power is shut off even if the unit recovers.

7.1.5 AMPLIFIER FAILURE DIAGNOSIS FLOW CHART

■ **Amplifier failure diagnosis flow chart**

When DC detection is activated ("AMP_ERR" flashes on the display), failure (damage) of the power amplifier section is considered.

Caution:
When release the lock state of power key before repair, please be careful because there is the possibility that more damages will occur when turns on the power once again!

• According to a symptom, perform the following confirmation beforehand.

1) Is the operation of fan motor in normal condition?

2) Are there any Fuses and IC protectors open?

3) After turn on the power, confirm that the supply voltage of the point that can be measured is appropriate.

4) Whether the voltage of pin3 of IC601 or IC602 is equal to (VL-0.7V). If not (eg, equal to VH), then change the corresponding power pack IC601 or IC602.

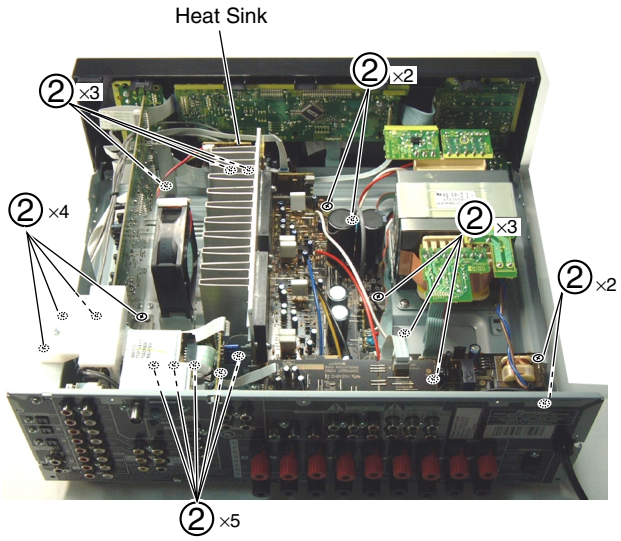
5) Furthermore, check the output DC voltage of each channel of power pack IC601 and IC602 to limit the failure channel and identify the defect power pack.

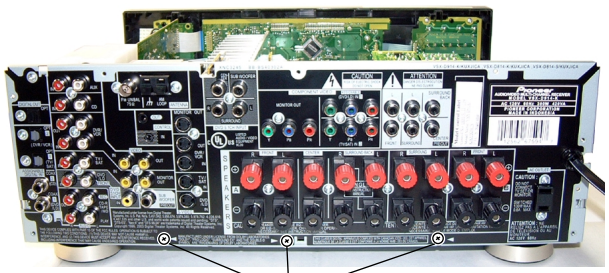
• After identify the failure channel, check that each part is not damaged (resistor, diode... etc. value / open / short)

7.1.6 DISASSEMBLY

■ Diagnosis

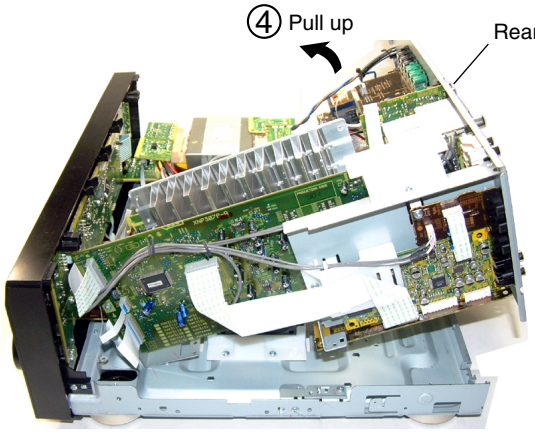
① Remove the top cover (seven screws).



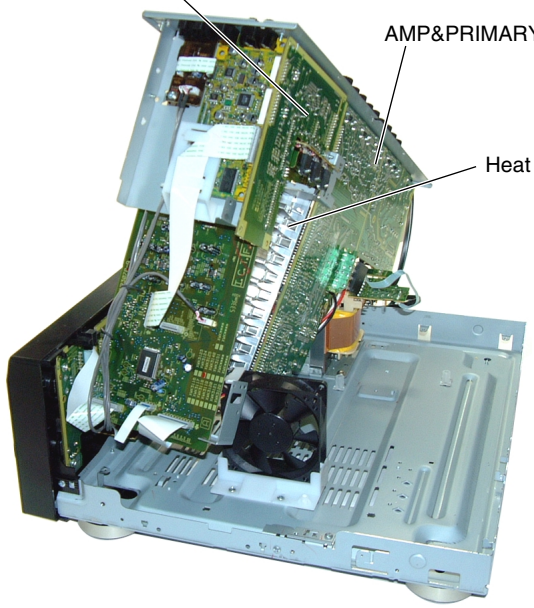


Note : This photograph may show a different model.
However, the method for disassembly is the same.

④ Pull up



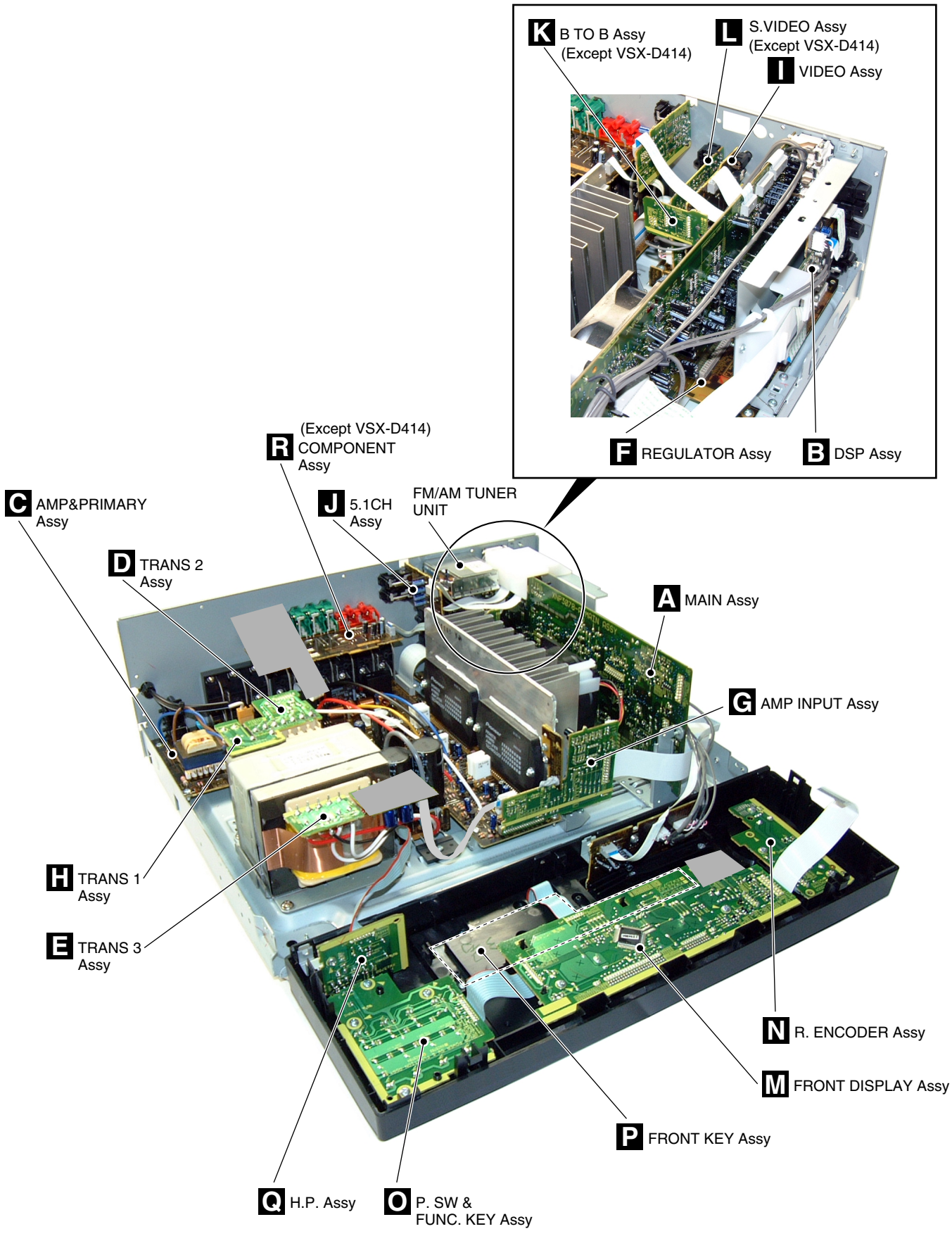
⑤ Diagnosis



Note : This photograph may show a different model.
However, the method for disassembly is the same.

Note : The unit does not operate when the screws of Speaker Terminal are taken off from Rear Panel.

Heat-sink caution in the disassembling : Because Heat-sink becomes hot, please pay attention.


K B TO B Assy
(Except VSX-D414)
L S.VIDEO Assy
(Except VSX-D414)
I VIDEO Assy
F REGULATOR Assy
B DSP Assy
R (Except VSX-D414)
COMPONENT
Assy
J 5.1CH
Assy
FM/AM TUNER
UNIT
C AMP&PRIMARY
Assy
D TRANS 2
Assy
A MAIN Assy
G AMP INPUT Assy
H TRANS 1
Assy
E TRANS 3
Assy
N R. ENCODER Assy
M FRONT DISPLAY Assy
P FRONT KEY Assy
Q H.P. Assy
O P. SW &
FUNC. KEY Assy

7.2 PARTS
7.2.1 IC

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

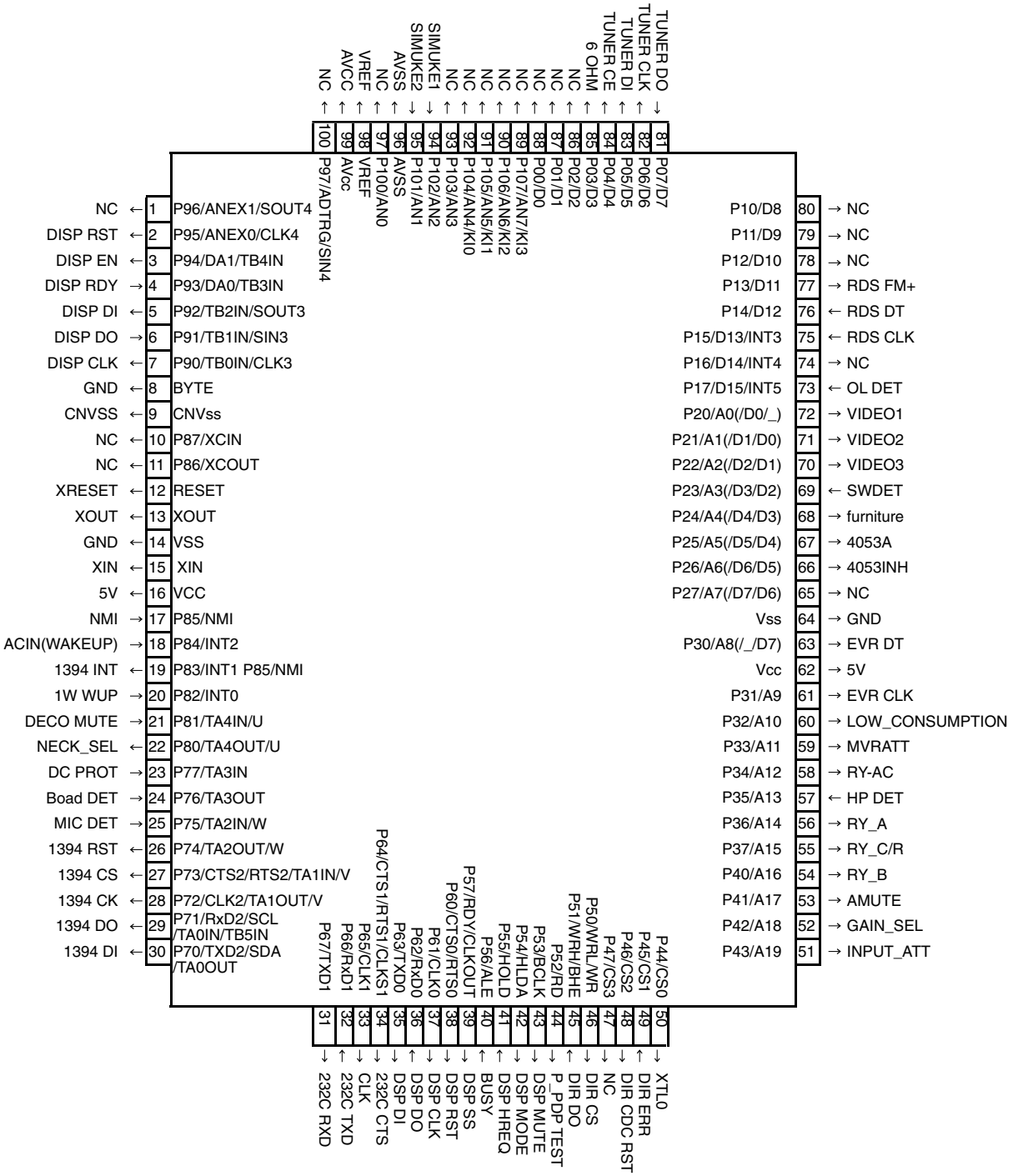
• List of IC

PD5963B, PE5420A, BD3841FS, BD3813KS

■ PD5963B (MAIN ASSY : IC9001)

• System Control MCU

■ Pin Arrangement (Top View)



• Pin Function

No.	Port	Pin Name	I/O	Pin Function
1	P96/ANEX1/SOUT4	NC	I/O	
2	P95/ANEX0/CLK4	DISP RST	I/O	Reset signal to display u-com
3	P94/DA1/TB4IN	DISP EN	I/O	Enable signal to display u-com
4	P93/DA0/TB3IN	DISP RDY	I/O	Ready signal from display u-com
5	P92/TB2IN/SOUT3	DISP DI	I/O	Data out to display u-com
6	P91/TB1IN/SIN3	DISP DO	I/O	Data input from display u-com
7	P90/TB0IN/CLK3	DISP CLK	I/O	Clock signal to display u-com
8	BYTE	GND		
9	CNVss	CNVSS		
10	P87/XCIN	NC	I/O	
11	P86/XCOUT	NC	I/O	
12	RESET	XRESET	RST	
13	XOUT	XOUT	OSC	
14	VSS	GND	GND	
15	XIN	XIN	OSC	
16	VCC	5V	5V	
17	P85/NMI	NMI	I	No use
18	P84/INT2	ACIN(WAKEUP)	I/O	AC pulse input
19	P83/INT1 P85/NMI	1394 INT	I/O	No use (Standby for 1394)
20	P82/INT0	1W WUP	I/O	Wake up signal from display u-com
21	P81/TA4IN/U	DECO MUTE	I/O	1st DSP Boot success detect port
22	P80/TA4OUT/U	NECK_SEL	I/O	5.1ch, surround mode and A+B Stereo : H / Stereo : L
23	P77/TA3IN	DC PROT	I/O	AMP DC detect
24	P76/TA3OUT	Boad DET	I/O	AMP INPUT ASSY falling off detect, H : detected
25	P75/TA2IN/W	MIC DET	I/O	MIC detect (No Use)
26	P74/TA2OUT/W	1394 RST	I/O	No use (Standby for 1394)
27	P73/CTS2/RTS2/TA1IN/V	1394 CS	I/O	No use (Standby for 1394)
28	P72/CLK2/TA1OUT/V	1394 CK	I/O	No use (Standby for 1394)
29	P71/RxD2/SCL/TA0IN/TB5IN	1394 DO	I/O	No use (Standby for 1394)
30	P70/TXD2/SDA/TA0OUT	1394 DI	I/O	No use (Standby for 1394)
31	P67/TXD1	232C RXD	I/O	No use, fixed to "L" (For rewriting 232C (Data output))
32	P66/RxD1	232C TXD	I/O	No use, fixed to "L" (For rewriting 232C (Data input))
33	P65/CLK1	CLK	I/O	No use (It is necessary when writing for JIG)
34	P64/CTS1/RTS1/CLKS1	232C CTS	I/O	No use, fixed to "L" (For rewriting 232C (Admit communication))
35	P63/TXD0	DSP DI	I/O	Data output signal for communication with DSP and DIR
36	P62/RxD0	DSP DO	I/O	Data input signal for communication with DSP
37	P61/CLK0	DSP CLK	I/O	Clock signal for communication with DSP and DIR
38	P60/CTS0/RTS0	DSP RST	I/O	Reset signal for DSP
39	P57/RDY/CLKOUT	DSP SS	I/O	Slave select signal to DSP
40	P56/ALE	BUSY	I/O	Use it in MCACC
41	P55/HOLD	DSP HREQ	I/O	DSP error detect signal
42	P54/HLDA	DSP MODE	I/O	Mode select of DSP (H : ROMmode, L : RAM(PPP) mode)
43	P53/BCLK	DSP MUTE	I/O	DSP ASSY mute
44	P52/RD	P_PDPTEST	I/O	Fixed to "L" during normal operation. (for SR+ testmode only)
45	P51/WRH/BHE	DIR DO	I/O	Data input signal for communication with DIR/DAC
46	P50/WRL/WR	DIR CS	I/O	Chip select signal for communication with DIR/DAC
47	P47/CS3	NC	I/O	
48	P46/CS2	DIR CDC RST	I/O	Reset signal for DIR CODEC
49	P45/CS1	DIR ERR	I/O	lock/unlock signal
50	P44/CS0	XTL0	I/O	DIR X'tal change

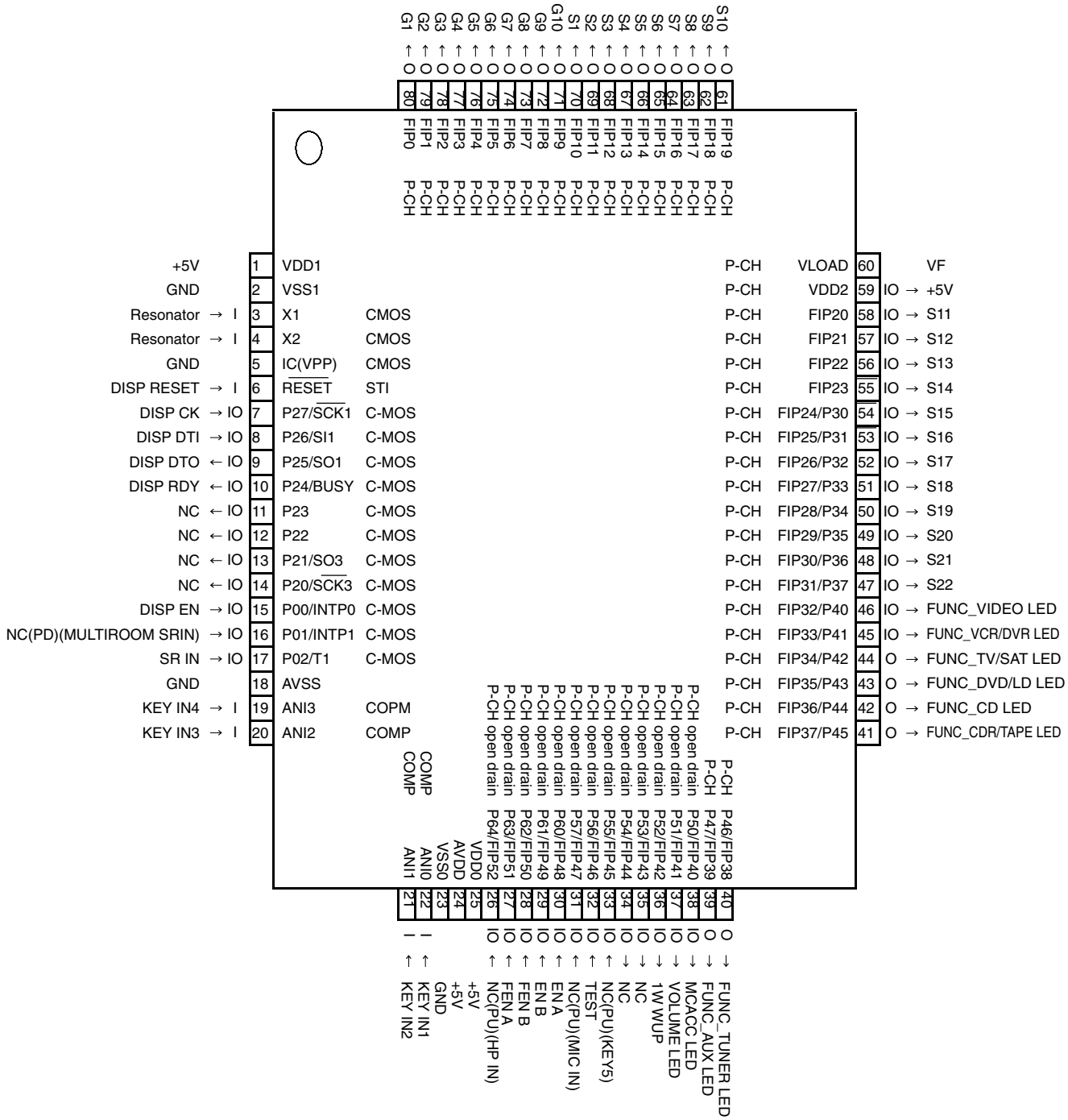
• Pin Function

No.	Port	Pin Name	I/O	Pin Function
51	P43/A19	INPUT_ATT	I/O	Analog input ATT(H : ATT ON)
52	P42/A18	GAIN_SEL	I/O	Gain select (5.1ch and Stereo of analog input : H)
53	P41/A17	AMUTE	I/O	System mute (L : Mute ON)
54	P40/A16	RY_B	I/O	Speaker B relay ON/OFF
55	P37/A15	RY_C/R	I/O	Rear/Center Speaker relay ON/OFF
56	P36/A14	RY_A	I/O	Speaker A relay ON/OFF
57	P35/A13	HP DET	I/O	HP detect, H : detected
58	P34/A12	RY-AC	I/O	AC relay ON/OFF
59	P33/A11	MVRATT	I/O	ATT control of master volume (less than -15dB : L)
60	P32/A10	LOW_CONSUMPTION	I/O	If stop mode, port L, else H
61	P31/A9	EVR CLK	I/O	Clock signal for Function and E-volume
62	Vcc	5V	5V	
63	P30/A8(/_/D7)	EVR DT	I/O	Data signal for Function and E-volume
64	Vss	GND	GND	
65	P27/A7(/D7/D6)	NC	I/O	
66	P26/A6(/D6/D5)	4053INH	I/O	Component terminal control
67	P25/A5(/D5/D4)	4053A	I/O	Component terminal control
68	P24/A4(/D4/D3)	furniture	I/O	Furniture control signal
69	P23/A3(/D3/D2)	SWDET	I/O	SWSP detect
70	P22/A2(/D2/D1)	VIDEO3	I/O	SWSP detect
71	P21/A1(/D1/D0)	VIDEO2	I/O	SWSP detect
72	P20/A0(/D0/_)	VIDEO1	I/O	NJM2296 control (VIDEO input select)
73	P17/D15/INT5	OL DET	I/O	Detect overload of AMP
74	P16/D14/INT4	NC	I/O	
75	P15/D13/INT3	RDS CLK	I/O	Fixed to "L".
76	P14/D12	DT	I/O	Fixed to "L".
77	P13/D11	FM+	I/O	Fixed to "L".
78	P12/D10	NC	I/O	
79	P11/D9	NC	I/O	
80	P10/D8	NC	I/O	
81	P07/D7	TUNER DO	I/O	Data input signal for tuner contorol
82	P06/D6	TUNER CLK	I/O	Clock signal for tuner contorol
83	P05/D5	TUNER DI	I/O	Data output signal for tuner contorol
84	P04/D4	TUNER CE	I/O	Chip select signal for tuner contorol
85	P03/D3	6 OHM	I/O	if stop mode, port L, else L/H depends on selection.
86	P02/D2	NC	I/O	
87	P01/D1	NC	I/O	
88	P00/D0	NC	I/O	
89	P107/AN7/KI3	NC	I/O	
90	P106/AN6/KI2	NC	I/O	
91	P105/AN5/KI1	NC	I/O	
92	P104/AN4/KI0	NC	I/O	
93	P103/AN3	NC	I/O	
94	P102/AN2	SIMUKE1	I/O	Input 1 to switch region
95	P101/AN1	SIMUKE2	I/O	Input 2 to switch region
96	AVSS	AVSS	GND	Connect to VSS
97	P100/AN0	NC	I/O	
98	VREF	VREF	5V	Connect to VCC
99	AVcc	AVCC	5V	Connect to VCC
100	P97/ADTRG/SIN4	NC	I/O	

■ PE5420A (FRONT ASSY : IC401)

• **System Control MCU**

■ **Pin Arrangement (Top View)**



• Pin Function

No.	Port	Pin Name	I/O	Pin Function
1	VDD1	+5V	-	positive power supply
2	VSS1	GND	-	ground potential
3	X1	Resonator	I	crystal connection for system clock oscillation
4	X2	Resonator	I	crystal connection for system clock oscillation
5	IC(VPP)	GND	-	
6	RESET	DISP RESET	I	receive reset signal from main u-com
7	P27/SCK1	DISP CK	I/O	clock signal from main u-com
8	P26/SI1	DISP DTI	I/O	datain from main u-com
9	P25/SO1	DISP DTO	I/O	data out to main u-com
10	P24/BUSY	DISP RDY	I/O	ready signal from main u-com
11	P23	NC	I/O	
12	P22	NC	I/O	
13	P21/SO3	NC	I/O	
14	P20/SCK3	NC	I/O	
15	P00/INTP0	DISP EN	I/O	enable signal from main u-com
16	P01/INTP1	NC	I/O	
17	P02/T1	SR IN	I/O	remote control signal input from main room
18	AVSS	GND	-	ground potential for A/D converter
19	ANI3	KEY IN4	I	
20	ANI2	KEY IN3	I	
21	ANI1	KEY IN2	I	
22	ANI0	KEY IN1	I	
23	VSS0	GND	-	ground potential for ports
24	AVDD	'+5V	-	analog power voltage input to A/D converter
25	VDD0	'+5V	-	positive power supply to ports
26	P64/FIP52	NC	I/O	
27	P63/FIP51	FEN A	I/O	MULTI JOG(Right)
28	P62/FIP50	FEN B	I/O	MULTI JOG(Left)
29	P61/FIP49	EN B	I/O	VOLUME JOG1(-)
30	P60/FIP48	EN A	I/O	VOLUME JOG1(+)
31	P57/FIP47	NC	I/O	
32	P56/FIP46	TEST	I/O	test mode input for checker
33	P55/FIP45	NC	I/O	
34	P54/FIP44	NC	I/O	
35	P53/FIP43	NC	I/O	
36	P52/FIP42	1W WUP	I/O	output wakeup signal to main u-com
37	P51/FIP41	VOL LED	I/O	LED Output
38	P50/FIP40	MCACC LED	I/O	LED Output
39	P47/FIP39	FUNC/AUX	O	LED Output
40	P46/FIP38	FUNC_TUNER	O	LED Output

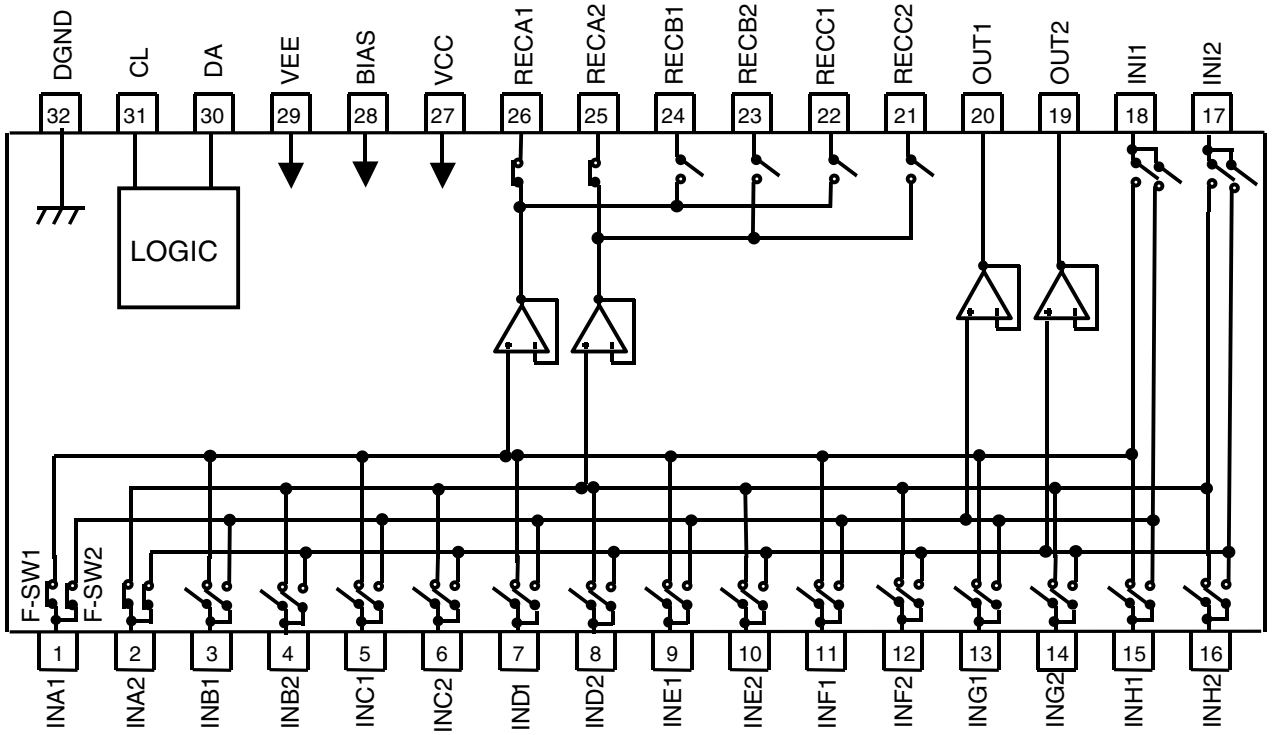
• Pin Function

No.	Port	Pin Name	I/O	Pin Function
41	FIP37/P45	FUNC_CDR	O	LED Output
42	FIP36/P44	FUNC_CD	O	LED Output
42	FIP35/P43	FUNC_DVD	O	LED Output
44	FIP34/P42	FUNC_TV	O	LED Output
45	FIP33/P41	FUNC_VCR	O	LED Output
46	FIP32/P40	FUNC_VIDEO	O	LED Output
47	FIP31/P37	S22	I/O	Display
48	FIP30/P36	S21	I/O	Display
49	FIP29/P35	S20	I/O	Display
50	FIP28/P34	S19	I/O	Display
51	FIP27/P33	S18	I/O	Display
52	FIP26/P32	S17	I/O	Display
53	FIP25/P31	S16	I/O	Display
54	FIP24/P30	S15	I/O	Display
55	FIP23	S14	O	Display
56	FIP22	S13	O	Display
57	FIP21	S12	O	Display
58	FIP20	S11	O	Display
59	VDD2	'+5V	-	positive power supply to FIP controller.
60	VLOAD	VF	-	pull down resistor connection of FIP controller
61	FIP19	S10	O	Display
62	FIP18	S9	O	Display
63	FIP17	S8	O	Display
64	FIP16	S7	O	Display
65	FIP15	S6	O	Display
66	FIP14	S5	O	Display
67	FIP13	S4	O	Display
68	FIP12	S3	O	Display
69	FIP11	S2	O	Display
70	FIP10	S1	O	Display
71	FIP9	G10	O	Display
72	FIP8	G9	O	Display
73	FIP7	G8	O	Display
74	FIP6	G7	O	Display
75	FIP5	G6	O	Display
76	FIP4	G5	O	Display
77	FIP3	G4	O	Display
78	FIP2	G3	O	Display
79	FIP1	G2	O	Display
80	FIP0	G1	O	Display

■ BD3841FS (MAIN ASSY : IC101)

• 9ch Function Switch

■ Block Diagram



* F-SW1 : INPUT FUNCTION1
F-SW2 : INPUT FUNCTION2

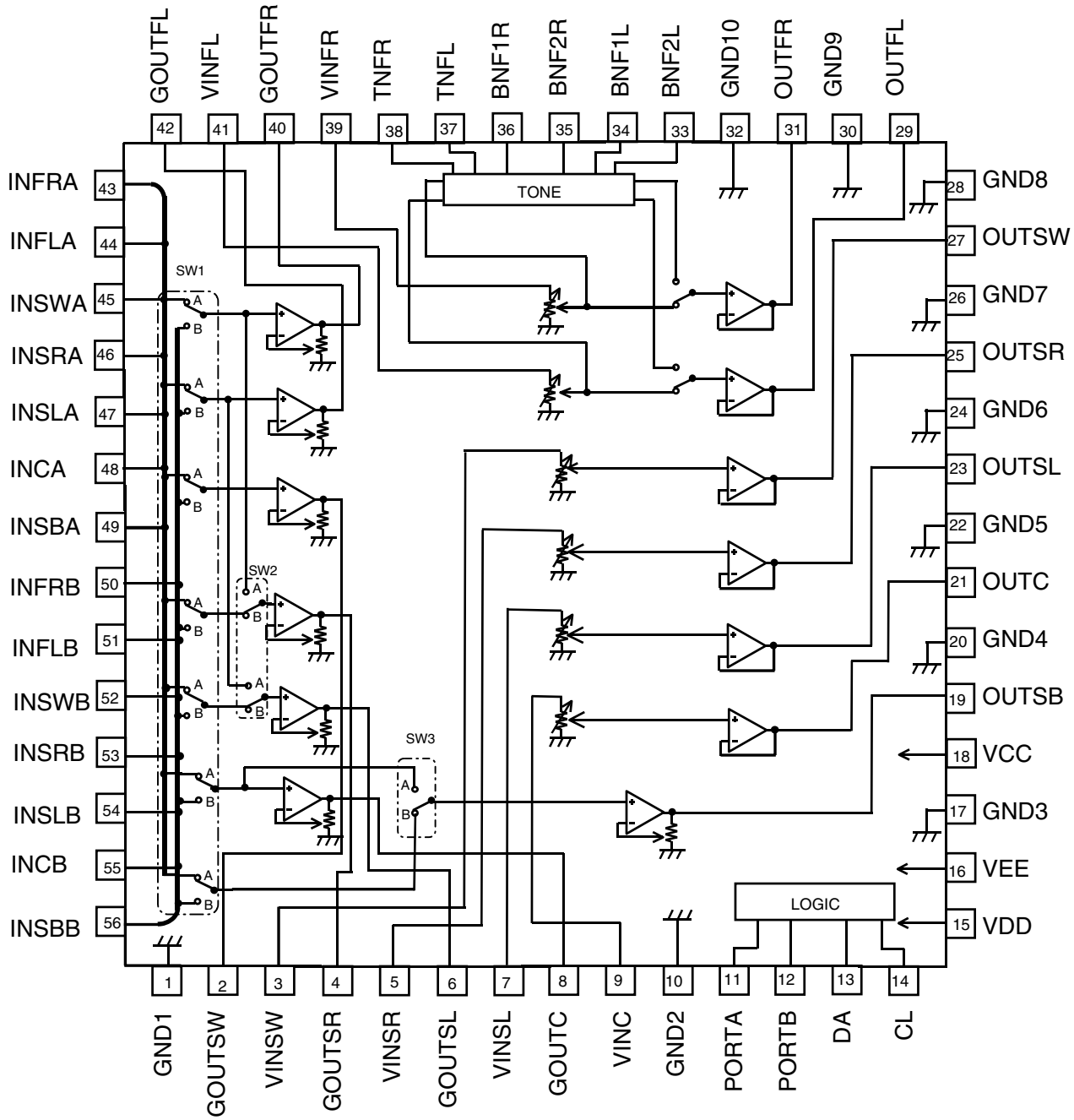
• Description of terminal

Terminal Number	Terminal Name	Description	Terminal Number	Terminal Name	Description
1	INA1	A 1ch input terminal	17	INI2	I 2ch input terminal
2	INA2	A 2ch input terminal	18	INI1	I 1ch input terminal
3	INB1	B 1ch input terminal	19	OUT2	2ch output terminal
4	INB2	B 2ch input terminal	20	OUT1	1ch output terminal
5	INC1	C 1ch input terminal	21	RECC2	C 2ch REC output terminal
6	INC2	C 2ch input terminal	22	RECC1	C 1ch REC output terminal
7	IND1	D 1ch input terminal	23	RECB2	B 2ch REC output terminal
8	IND2	D 2ch input terminal	24	RECB1	B 1ch REC output terminal
9	INE1	E1ch input terminal	25	RECA2	A 2ch REC output terminal
10	INE2	E 2ch input terminal	26	RECA1	A 1ch REC output terminal
11	INF1	F 1ch input terminal	27	VCC	(+)Power supply terminal
12	INF2	F 2ch input terminal	28	BIAS	Bias input terminal
13	ING1	G1ch input terminal	29	VEE	(-)Power supply terminal
14	ING2	G2ch input terminal	30	DA	Serial date anlatch input terminal
15	INH1	H 1ch input terminal	31	CL	Serial clock input terminal
16	INH2	H 2ch input terminal	32	DGND	Digital ground terminal

■ BD3813KS (MAIN ASSY : IC108)

• 6.1ch Audio Sound Processor

■ Block Diagram



• Description of terminal

Terminal Number	Terminal Name	Description	Terminal Number	Terminal Name	Description
1	GND1	Ground terminal	14	CL	Serial clock input terminal
2	GOUTSW	Sub woofer input gain output terminal	15	VDD	Power supply terminal for port
3	VINSW	Subwoofer volume input terminal	16	VEE	(-)Power supply terminal
4	GOUTSR	Surround Rch input gain output terminal	17	GND3	Ground terminal
5	VINSR	Surround Rch volume input terminal	18	VCC	(+)Power supply terminal
6	GOUTSL	Surround Lch input gain output terminal	19	OUTSB	Surround backoutput terminal
7	VINSL	Surround Lch volume input terminal	20	GND4	Ground terminal
8	GOUTC	Center speakerinput gain output terminal	21	OUTC	Center speaker output terminal
9	VINC	Center speaker volume input terminal	22	GND5	Ground terminal
10	GND2	Ground terminal	23	OUTSL	Surround Lch output terminal
11	PORTA	Output terminal for port	24	GND6	Ground terminal
12	IPORTB	Output terminal for port	25	OUTSR	Surround Rch output terminal
13	DA	Serial data and latch input terminal	26	GND7	Ground terminal

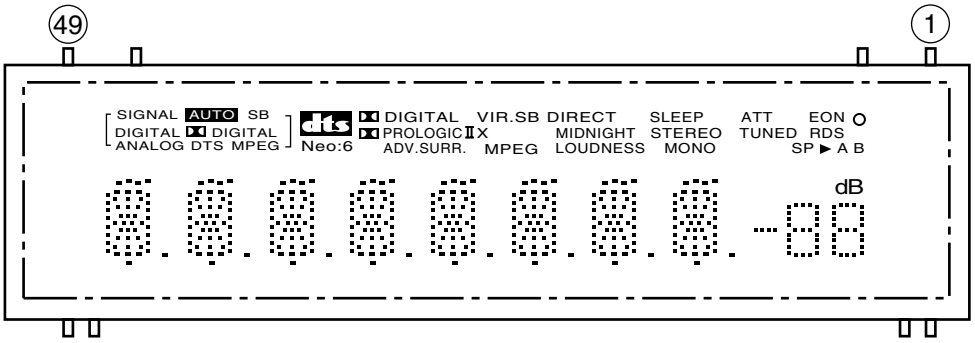
Terminal Number	Terminal Name	Description	Terminal Number	Terminal Name	Description
27	OUTSW	Sub woofer output terminal	42	GOUTFL	Lch input gain output terminal
28	GND8	Ground terminal	43	INFRA	Rch DVD inputterminal
29	OUTFL	Lch output terminal	44	INFLA	Lch DVD input terminal
30	GND9	Ground terminal	45	INSWA	SWch DVD input terminal
31	OUTFR	Rch output terminal	46	INSRA	SRch DVD input terminal
32	GND10	Ground terminal	47	INSLA	SLch DVD input terminal
33	BNF2L	Lch bass filter terminal 2	48	INCA	Cch DVD input terminal
34	BNF1L	Lch bass filter terminal 1	49	INSBA	SBch DVD input terminal
35	BNF2R	Rch bass filter terminal 2	50	INFRB	Rch DSP input terminal
36	BNF1R	Lch bass filter terminal 1	51	INFLB	Lch DSP input terminal
37	TNFL	Lch treble filter terminal	52	INSWB	SWch DSP input terminal
38	TNFR	Rch treble filter terminal	53	INSRB	SRch DSP input terminal
39	VINFR	Rch volume Input terminal	54	INSLB	SLch DSP input terminal
40	GOUTFR	Rch input gain output terminal	55	INCB	Cch DSP input terminal
41	VINFL	Lch volume Input terminal	56	INSBB	SBch DSP input terminal

7.2.2 DISPLAY

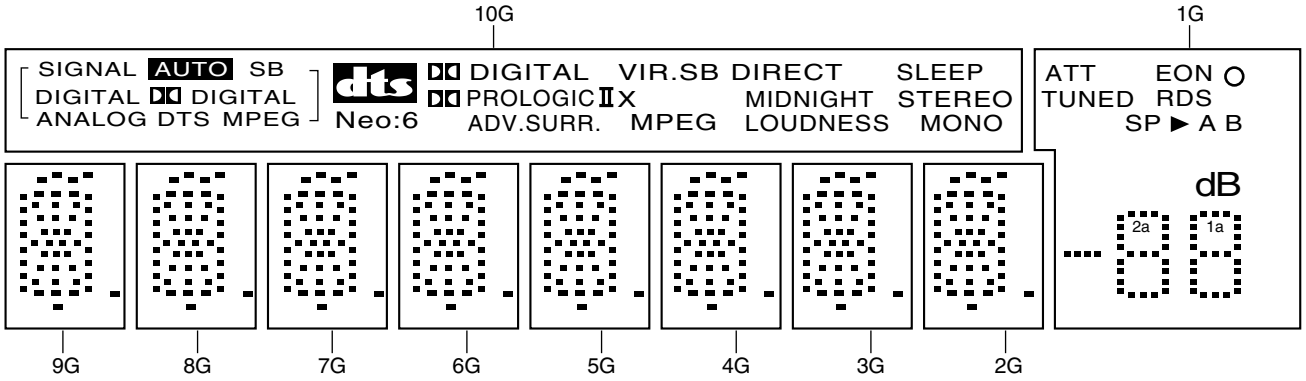
■ XAV3022 (FRONT ASSY : V401)

• FL DISPLAY

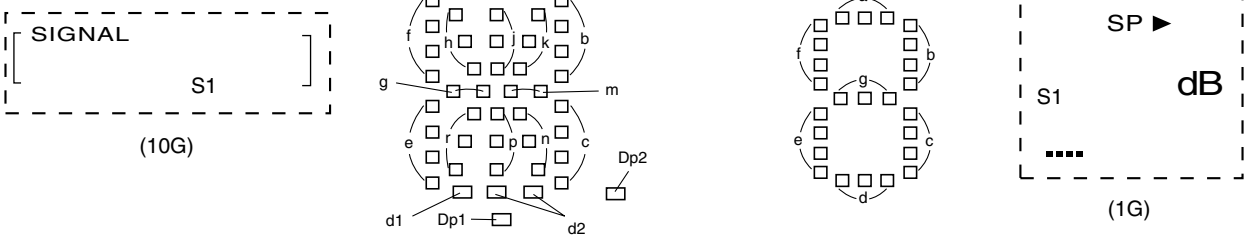
• Pin Assignment



• Grid Assignment



• Segment Designation



• Pin Connection

Pin No.	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25
Connection	F2	F2	NP	NP	P22	P21	P20	P19	P18	P17	P16	P15	P14	P13	P12	P11	P10	P9	P8	P7	P6	P5	P4	P3	P2
Pin No.	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	
Connection	P1	NX	NX	NX	NX	NX	NX	NX	NX	NX	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G	NP	NP	F1	F1	

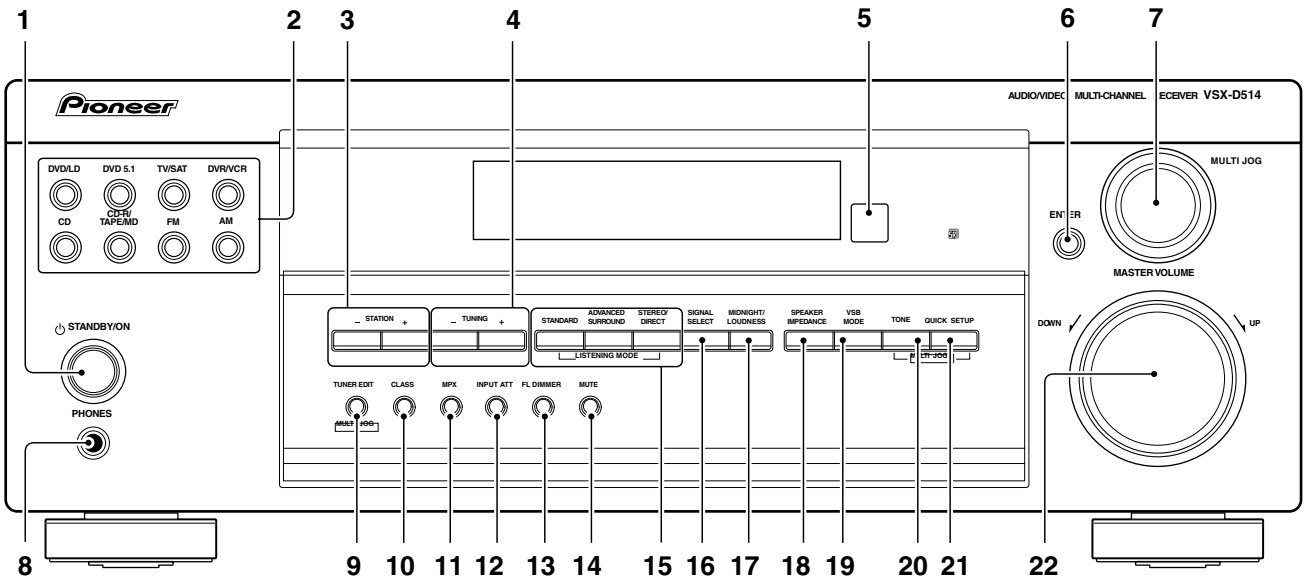
NOTE 1) F1, F2..... Filament
2) NP..... No pin
3) NX..... No extend pin
4) DL..... Datum Line
5) 1G to 10G..... Grid
6) Field of vision is a minimum of 21.8° from the lower side.

• Anode Connection

	10G	9G-2G	1G
P1	S1	a1	ATT
P2	AUTO	a2	EON
P3	SB	h	○
P4	DIGITAL	j	TUNED
P5	ANALOG	k	RDS
P6	DIGITAL (L)	b	S1
P7	DTS	f	A
P8	MPEG (L)	m	B
P9	dts	g	1a
P10	MPEG (R)	c	1b
P11	DIGITAL (R)	e	1f
P12	PRO LOGIC II	r	1g
P13	Neo:6	p	1c
P14	VIR.SB	n	1e
P15	ADV.SURR.	d1	1d
P16	X	d2	2a
P17	DIRECT	Dp2	2b
P18	MIDNIGHT	Dp1	2f
P19	LOUDNESS	S1	2g
P20	SLEEP	S4	2c
P21	STEREO	S2	2e
P22	MONO	S3	2d

8. PANEL FACILITIES

Front Panel



1 ⏻ STANDBY/ON
Switches the receiver between on and standby.

2 INPUT SELECT buttons
Use to select the input source.

3 STATION (+/–) buttons
Select station presets when using the tuner .

4 TUNING (+/–) buttons
Select the frequency when using the tuner .

5 Remote sensor
Receives the signals from the remote control.

6 ENTER

7 MULTI JOG dial
The **MULTI JOG** dial performs a number of tasks. Use it to select options after pressing **TONE**, **QUICK SETUP** or **TUNER EDIT**

8 PHONES jack
Use to connect headphones.

9 TUNER EDIT
Press to memorize and name a station for recall.

10 CLASS
Switches between the three banks (classes) of station presets.

11 MPX
Press the **MPX** button to receive a radio broadcast in mono.

12 INPUT ATT
Use to attenuate (lower) the level of an analog input signal to prevent distortion.

13 FL DIMMER
Use this button to make the fluorescent display (FL) dimmer or brighter.

14 MUTE
Use to mute the sound or restore the sound if it has been muted.

15 LISTENING MODE buttons

STANDARD
Press for Standard decoding and to switch between the various Pro Logic II options.

ADVANCED SURROUND
Use to switch between the various surround modes.

STEREO/DIRECT
Switches direct playback on or off Direct playback bypasses the tone controls and channel levels for the most accurate reproduction of a source.

16 SIGNAL SELECT
Use to select between an analog or digital signal.

17 MIDNIGHT/LOUDNESS
Use to switch to Midnight or Loudness listening.

18 SPEAKER IMPEDANCE
Use to switch the speaker impedance when using low-impedance speakers.

19 VSB MODE
Press to switch the Virtual Surround Back mode on or off.

20 TONE
Press this button to access the bass and treble controls, which you can then adjust with the **MULTI JOG** dial.

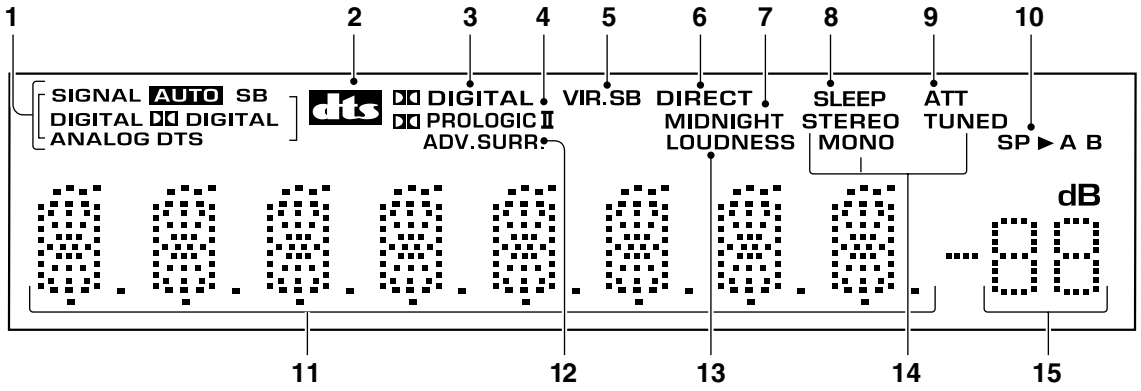
21 QUICK SETUP

22 MASTER VOLUME

Note

When the headphones are connected, there is no sound output from the speakers.

Display



1 SIGNAL SELECT indicators
Lights to indicate the type of input signal assigned for the current component:

AUTO : Lights when AUTO signal select is on.

DIGITAL : Lights when a digital audio signal is detected.

DIGITAL : Lights when a Dolby Digital signal is detected.

ANALOG: Lights when an analog signal is detected.

DTS: Lights when a source with DTS audio signal is detected.

SB: Lights when a source (such as DTS-ES and Dolby Digital EX) with surround back channel information is detected.

2 dts
When the Standard mode of the receiver is on, this lights to indicate decoding of a DTS signal.

3 DIGITAL
When the Standard mode of the receiver is on, this lights to indicate decoding of a Dolby Digital signal.

4 PRO LOGIC II
When the Standard mode of the receiver is on, this lights to indicate Prologic II decoding.

5 VIR.SB
Lights during Virtual surround back processing.

6 DIRECT
Lights when source direct playback is selected. Direct playback bypasses the tone controls and channel levels for the most accurate reproduction of a source.

7 MIDNIGHT
Lights during Midnight listening.

8 SLEEP
Lights when the receiver is in sleep mode.

9 ATT
Lights when **INPUT ATT** is used to attenuate (reduce) the level of the input signal (can only be used with an analog signal).

10 Speaker indicator
Shows if the speaker system is on or not. **SP ►A** means speakers are switched on. **SP ►** means the headphones are connected.

11 Character display

12 ADV. SURR. (Advanced Surround)
Lights when one of the Advanced Surround listening modes of the receiver is selected.

13 LOUDNESS
Lights during Loudness listening.

14 TUNER indicators
STEREO Lights when a stereo FM broadcast is being received in auto stereo mode.

MONO : Lights when the mono mode is set using the **MPX** button.

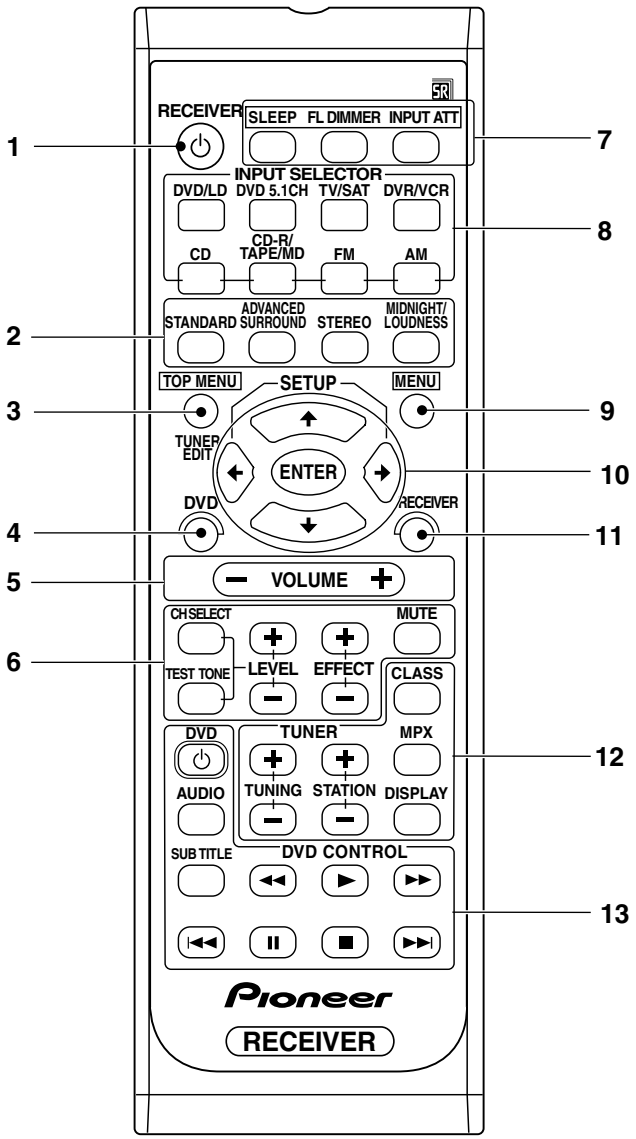
TUNED: Lights when a broadcast is being received.

15 Master volume level
Shows the overall volume level. **--- dB** indicates the minimum level, and **– 0dB** indicates the maximum level.

Note

Depending on the level settings you make for each channel, the maximum level can range between –10dB and – 0dB.

Remote Control



1 ⏻ RECEIVER
Switches the receiver between on and standby

2 STANDARD
Press for Standard decoding and to switch between the various Pro Logic II options.

ADVANCED SURROUND
Use to switch between the various surround modes.

STEREO
Switches direct playback on or off Direct playback bypasses the tone controls and channel levels for the most accurate reproduction of a source.

MIDNIGHT/LOUDNESS
Use to switch to Midnight or Loudness listening.

3 TOP MENU (DVD control)
Displays the disc 'top' menu of a DVD.

TUNER EDIT(receiver control)
Press to memorize and name a station for recall.

4 DVD
Use to switch over to the DVD controls on the remote control.

Note

The DVD controls on the remote control (**TOP MENU**, **MENU**, ←/→/↑/↓and **ENTER/SETUP** buttons) can only be used for DVD control after pressing **DVD/LD** on the remote. See below for more on the seperate**DVD CONTROL** buttons.

5 VOLUME
Use to set the overall listening volume.

6 CH SELECT
Use to select a channel when setting up the surround sound of the receiver

TEST TONE
Use to sound the test tones when setting up the surround sound of the receiver

LEVEL +/–
Use to set up the levels of the surround sound of the receiver

EFFECT +/–
Use to add or subtract the amount of effect in the Advanced Surround modes.

MUTE
Use to mute the sound or restore the sound if it has been muted.

7 SLEEP
Use to put the receiver in sleep mode and select the amount of time before the receiver turns off.

FL DIMMER
Use this button to make the fluorescent display (FL) dimmer or brighter

INPUT ATT
Use to attenuate (lower) the level of an analog input signal to prevent distortion.

8 INPUT SELECTOR buttons
Use to select the input source.

9 MENU (DVD control)
Use to access different menus associated with your DVD player

10 ← / → / ↑ / ↓ and ENTER/SETUP buttons
Use these arrow buttons when setting up your surround sound system. These buttons are also used to control DVD menus/options.

11 RECEIVER
Use to switch to the receiver controls on the remote control. Also used when setting up the surround sound for the receiver.

12 Tuner controls
The **TUNING +/–** buttons can be used to find radio frequencies. The **STATION +/–** buttons can be used to select preset radio stations.

CLASS
Use to switch between the three banks (classes) of station presets.

MPX
Use to switch between auto stereo and mono reception of FM broadcasts. If the signal is weak then switching to mono will improve the sound quality.

DISPLAY
Use to switch the display between the station preset name and the frequency.

13 DVD CONTROL buttons
You can use these buttons to control a Pioneer DVD player connected to your system.

Button	What it does
DVD ⏻	Turns DVD power on/off.
AUDIO	Changes the audio language or channel.
SUBTITLE	Displays/changes the subtitles included in multilingual DVD-Video discs.
◄◄	Press to start fast reverse scanning.
►	Starts playback.
►►	Press to start fast forward scanning.
■	Stops playback.
❚❚	Pauses a disc that's playing, or restarts a paused disc.
I◄◄	Skips to the start of the current track or chapter, then to previous tracks/chapters.
►►I	Skips to the next track or chapter.