

Service Manual

ORDER NO.
RRV3491

AUDIO/VIDEO MULTI-CHANNEL RECEIVER

VSX-416-K VSX-416-S

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

Model	Type	Power Requirement	The voltage can be converted by the following method.
VSX-416-K	SPWXJ	AC 110 V/120 to 127 V/220 V/240 V	With the voltage selector
VSX-416-S	SFLXJ	AC 110 V/120 to 127 V/220 V/240 V	With the voltage selector
VSX-416-S	YPWXJ	AC 240 V	_____
VSX-416-S	NAXJ5	AC 220 V	_____

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

Model No.	Order No.	Remarks
VSX-516-K/KUCXJ	RRV3329	

● For SPECIFICATIONS and PANEL FACILITIES, refer to the operating instructions.

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1. CONTRAST OF MISCELLANEOUS PARTS

NOTES: ● Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.

● The \triangle 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.

● Reference Nos. indicate the pages and Nos. in the service manual for the base model.

● 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.)

● 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 × 10¹ → 561 RD1/4PU $\begin{matrix} 5 & 6 & 1 \\ \hline \end{matrix}$ J

47k Ω → 47 × 10³ → 473 RD1/4PU $\begin{matrix} 4 & 7 & 3 \\ \hline \end{matrix}$ J

0.5 Ω → R50 RN2H $\begin{matrix} R & 5 & 0 \\ \hline \end{matrix}$ K

1 Ω → 1R0 RS1P $\begin{matrix} 1 & R & 0 \\ \hline \end{matrix}$ K

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

5.62k Ω → 562 × 10¹ → 5621 RN1/4PC $\begin{matrix} 5 & 6 & 2 & 1 \\ \hline \end{matrix}$ F

■ CONTRAST TABLE

VSX-416-K/SPWXJ, VSX-416-S/SFLXJ, YPWXJ, NAXJ5 and VSX-516-K/MYXJ5 are constructed the same except for the following :

Ref. No.	Mark	Symbol and Description	Part No.					Remarks
			VSX-516-K /MYXJ5	VSX-416-K /SPWXJ	VSX-416-S /SFLXJ	VSX-416-S /YPWXJ	VSX-416-S /NAXJ5	
PCB ASSEMBLIES								
P9-1		DSP ASSY	AWX8572	AWX8573	AWX8573	AWX8573	AWX8573	
P9-4		MAIN ASSY	XWK3230	XWK3246	XWK3246	XWK3246	XWK3246	
P11-1	NSP	COMPLEX ASSY	XWK3210	XWK3239	XWK3239	XWK3240	XWK3240	
P9-10		FRONT DISPLAY ASSY	XWZ4052	XWZ4051	XWZ4051	XWZ4051	XWZ4051	
P9-11		PRIMARY ASSY	XWZ4073	XWZ4074	XWZ4074	XWZ4075	XWZ4075	
P9-11		REGULATOR ASSY	XWZ4116	XWZ4077	XWZ4077	XWZ4077	XWZ4077	
P9-3	NSP	AMP ASSY	XWK3220	XWK3243	XWK3243	XWK3243	XWK3243	
P9-13		POWER PACK ASSY	XWZ4083	XWZ4119	XWZ4119	XWZ4119	XWZ4119	
P9-13		TRAMS2 ASSY	XWZ4092	XWZ4091	XWZ4091	XWZ4091	XWZ4091	
P11-4		USB IN ASSY	XWK3247	Not used	Not used	Not used	Not used	
P9-5		USB ASSY	AWX8704	Not used	Not used	Not used	Not used	
PACKING SECTION								
P7-1	NSP	FM Antenna	ADH7030	Not used	Not used	Not used	Not used	
P7-3		Microphone ASSY	APM7008	Not used	Not used	Not used	Not used	
P7-5		Battery (R6) 2P (JE)	XEX3002	Not used	Not used	Not used	Not used	
P7-7		Operating Instructions (English/Italian)	XRE3121	Not used	Not used	Not used	Not used	
P7-7		Operating Instructions (English)	Not used	XRB3058	XRB3058	XRB3058	Not used	
P7-8		Operating Instructions (Dutch/Spanish)	XRC3223	Not used	Not used	Not used	Not used	
P7-8		Operating Instructions (Chinese)	Not used	Not used	Not used	Not used	XRC3229	
P7-9	Operating Instructions (French/German)	XRC3224	Not used	Not used	Not used	Not used		
P7-9	Operating Instructions (Chinese/Spanish)	Not used	Not used	XRC3228	Not used	Not used		
P7-10		Remote Control	XXD3102	XXD3101	XXD3101	XXD3101	XXD3101	
P7-14	NSP	Packing Case	XHD3589	XHD3600	XHD3601	XHD3601	XHD3602	
P7-15		Battery Cover	XZN3139	Not used	XZN3139	Not used	Not used	
P7-16		Label (WEEE)	ARW7322	Not used	Not used	Not used	Not used	
P7-17		Warranty Card	ARY7065	Not used	Not used	Not used	ARY7046	
		\triangle AC power Cord	Not used	ADG7100	ADG7104	Not used	Not used	
		\triangle AC power Cord	Not used	Not used	XDG3034	Not used	Not used	
	\triangle AC power Cord	Not used	ADG7062	ADG7062	Not used	Not used		
	\triangle J-Shape Plug	Not used	AKX7008	AKX7008	AKX7008	AKX7008		

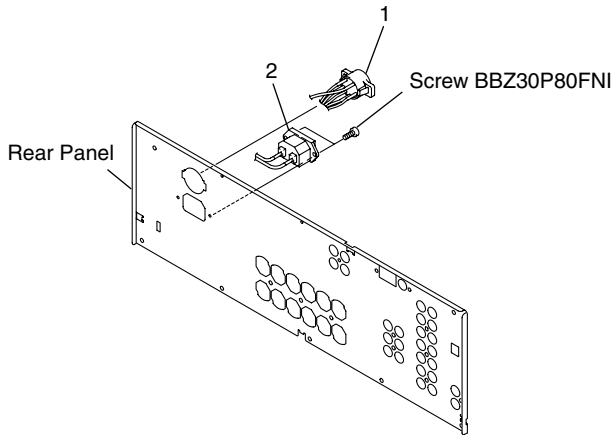
Ref. No.	Mark	Symbol and Description	Part No.					Remarks
			VSX-516-K /MYXJ5	VSX-416-K /SPWXJ	VSX-416-S /SFLXJ	VSX-416-S /YPWXJ	VSX-416-S /NAXJ5	
		Power Plug Adapter	Not used	AKX7022	Not used	Not used	Not used	
		Caution Card 220V	Not used	XRR3001	XRR3001	Not used	Not used	
		Caution Card SD SB	Not used	Not used	ARM7063	Not used	Not used	
		Caution Ccard SB	Not used	Not used	ARM7064	Not used	Not used	
		Polyethylene Bag	Z21-038	Not used	Z21-038	Not used	Not used	
		EXTERIOR SECTION						
P9-2		FM/AM Tuner Unit	AXX7170	AXX7211	AXX7211	AXX7211	AXX7211	
P9-18	⚠	Transformer	XTS3102	XTS3090	XTS3090	XTS3090	XTS3090	
P9-19	⚠	Fuse (6.3 A)	REK1027	REK1030	REK1030	REK1030	REK1030	
	⚠	Fuse (3.15A)	Not used	REK1027	REK1027	REK1027	REK1027	
P9-20		Fuse Card	AAX7493	Not used	Not used	AAX7493	Not used	FU2, FU3
P9-20	NSP	Fuse Card	Not used	XAX3218	XAX3218	Not used	Not used	
P9-21	⚠	AC Power Cord	VDG1080	Not used	Not used	XDG3017	VDG1088	
P9-33	NSP	H/Sink (MTL)	XNH3044	XNH3043	XNH3043	XNH3043	XNH3043	
P9-27		17P F.F.C/30V	Not used	XDD3203	XDD3203	XDD3203	XDD3203	
P9-28		25P F.F.C/30V	XDD3201	Not used	Not used	Not used	Not used	
P9-31		R Panel	XNC3414	XNC3418	XNC3435	XNC3436	XNC3419	
P9-36	⚠	Cord Stopper	CM-22B	Not used	Not used	CM-22B	CM-22B	
P9-37		Insulator	PNW2766	AMR7198	AMR7198	AMR7198	AMR7198	
P9-39		Bonnet	XZN3183	Not used	XZN3184	XZN3184	XZN3184	
P9-40	NSP	Label	VRW1629	VRW1629	VRW1629	VRW1629	Not used	
P9-41		ICP Label (PAP)	XAX3121	Not used	Not used	Not used	Not used	
P9-46		Screw	BBZ30P080FTB	BBZ30P080FTB	BBZ30P080FNI	BBZ30P080FNI	BBZ30P080FNI	
	⚠	Voltage Selector	Not used	AKX-507	AKX-507	Not used	Not used	No.1
	⚠	AC Inlet ASSY	Not used	ADX7395	ADX7395	Not used	Not used	No.2
	NSP	CCC S&E Label	Not used	Not used	Not used	Not used	DRW2310	Rear Panel
	NSP	SISIR Label 516SF	Not used	Not used	XAX3579	Not used	Not used	Rear Panel
	NSP	DF Label	Not used	Not used	AAX7960	Not used	Not used	Rear Panel
		FRONT PANEL SECTION						
P11-9		D Panel	XAK3535	XAK3529	XAK3529	XAK3529	XAK3529	
P11-10	NSP	Gold Foil Label	XAX3487	Not used	Not used	Not used	Not used	
P11-11	NSP	F Panel ASSY	XXG3249	XXG3255	XXG3256	XXG3256	XXG3256	
P11-12		TUNER BTN	XAD3230	Not used	XAD3248	XAD3248	XAD3248	
P11-13		SUB BTN	XAD3231	Not used	XAD3249	XAD3249	XAD3249	
P11-14		FUNC BTN	XAD3232	Not used	XAD3250	XAD3250	XAD3250	
P11-15		LISTEN BTN	XAD3233	Not used	Not used	Not used	Not used	
P11-16		JOG Button	XAD3240	Not used	XAD3251	XAD3251	XAD3251	
P11-16		JOG Button	Not used	Not used	XAD3252	XAD3252	XAD3252	
P11-17		Pioneer badge B	XAM3006	Not used	VAM1129	VAM1129	VAM1129	
P11-18		FRT Panel	XMB3227	XMB3234	XMB3235	XMB3235	XMB3235	
P11-20		Earth Plate	XNG3144	Not used	Not used	Not used	Not used	
P11-21		4P Shielded Cable	XDX3028	Not used	Not used	Not used	Not used	
P11-22		5P F.F.C/30V	XDD3199	Not used	Not used	Not used	Not used	
		JOG Knob	XAB3046	Not used	XAB3048	XAB3048	XAB3048	
		VOL Knob	XAB3049	Not used	XAB3051	XAB3051	XAB3051	
		Standby BTN	XAD3202	Not used	XAD3203	XAD3203	XAD3203	

Notes : ●The numbers in the remarks column correspond to the numbers on the “EXPLODED VIEWS”.

● For PCB ASSEMBLIES, Refer to “CONTRAST OF PCB ASSEMBLIES” and “2. SCHEMATIC DIAGRAM”.

EXPLODED VIEWS

EXTERIOR SECTION (SPWXJ and SFLXJ types)



CONTRAST OF PCB ASSEMBLIES

AF MAIN ASSY

XWK3246 and XWK3230 are constructed the same except for the following :

Mark	Symbol and Description	Part No.		Remarks
		XWK3230	XWK3246	
	D253	UDZS13(B)	UDZS27(B)	
	D255	UDZS13(B)	Not used	
	IC106	HA17558AF	Not used	
	IC315	BA4560RF	Not used	
	IC5001	LC72725M	Not used	
	Q251	Not used	2SD2704K	
	Q255	2SC4081(QR)	RT1N241M	
	Q259	RT1P241M	Not used	
	Q260	2SC4081(QR)	Not used	
	R279	RS1/16S104J	Not used	
	R280	Not used	RS1/16S0R0J	
	R282	RS1/16S473J	Not used	
	R286, 288, 290	RS1/16S332J	Not used	
	R291	RS1/16S0R0J	Not used	
	R292	RS1/16S182J	Not used	
	R434	RS1/16S104J	Not used	
	R437	Not used	RS1/16S164J	
	R463, 465, 466	RS1/16S223J	Not used	
	R464	RS1/16S223J	RS1/16S0R0J	
	R504	RS1/16S222J	Not used	
	R507	RS1/16S104J	Not used	
	R512	RS1/16S362J	Not used	
	R514	RS1/16S153J	Not used	
	R515	RS1/16S0R0J	Not used	
	R516	RS1/16S103J	Not used	
	R5010, 5011	RS1/16S473J	Not used	
	R5012, 5013	RS1/16S102J	Not used	
	R9023	RS1/16S472J	RS1/16S0R0J	
	R9024	Not used	RS1/16S472J	
	R9026	RS1/16S0R0J	RS1/16S622J	
	R9042-9044	RS1/16S103J	Not used	
	C103-114	CCSRCH101J50	Not used	
	C148, 152, 264	CKSRYB223K25	CKSRYB223K50	
	C170, 171	CEAT100M50	Not used	
	C181, 182, 185-192, 197, 198	CCSRCH101J50	Not used	

Mark	Symbol and Description	Part No.		Remarks
		XWK3230	XWK3246	
	C282 C286, 288 C290 C291, 292 C386, 387	CEAT2R2M50 CCSRCH331J50 CEAT100M50 CKSRYB103K50 CCSRCH101J50	Not used Not used Not used Not used Not used	
	C388 C390, 393 C5011 C5013, 5014 C5015	CEAT220M50 CKSRYB103K50 CEJQ100M50 CCSRCH270J50 CEJQ470M16	Not used Not used Not used Not used Not used	
	C5016 C5017 C5020 C9011, 9014 X5001	CKSRYB103K50 CCSRCH561J50 CKSRYB472K50 CKSRYB473K16 ASS7004	Not used Not used Not used CKSRYB473K25 Not used	
	CN108 CN109 CN112	CKS3370 XKP3055 CKS3390	Not used XKP3054 CKS3382	

KF FRONT DISPLAY ASSY

XWZ4051 and XWZ4052 are constructed the same except for the following :

Mark	Symbol and Description	Part No.		Remarks
		XWZ4052	XWZ4051	
	D500 R550 V401	SLI-343DCW(STU) RS1/16S181J XAV3025	Not used Not used XAV3033	

UF PRIMARY ASSY

XWZ4074, XWZ4075 and XWZ4073 are constructed the same except for the following :

Mark	Symbol and Description	Part No.			Remarks
		XWZ4073	XWZ4074	XWZ4075	
	D58 T51 J8807 J8808 H53-56	MTZJ5.1B ATT7040 ZWX-STD.JW-0R58 Not used Not used	MTZJ5R1(B) XTT3006 Not used ZWX-STD.JW-0R58 AKR7001	MTZJ5R1(B) XTT3006 Not used ZWX-STD.JW-0R58 Not used	
NSP NSP	S51	Not used	XKX3005	Not used	

PF REGULATOR ASSY

XWZ4077 and XWZ4116 are constructed the same except for the following :

Mark	Symbol and Description	Part No.		Remarks
		XWZ4116	XWZ4077	
	IC807 D813 R802 R819 C816	TA7805S MTZJ6.2B RS2LMF221J RS1/16S0R0J CEAT101M10	Not used Not used Not used Not used Not used	
	C817	CKSRYB103K25	Not used	

CF POWER PACK ASSY

XWZ4119 and XWZ4083 are constructed the same except for the following :

Mark	Symbol and Description	Part No.		Remarks
		XWZ4083	XWZ4119	
	IC600, 602	STK412-230C	Not used	
	IC603	Not used	STK413-230C	
	Q631	2SD2704K	Not used	
	Q633	2SC2240(GRBL)	Not used	
	Q651	2SD2704K	Not used	
	Q655	2SC2240(GRBL)	Not used	
	Q681	Not used	2SD2704K	
	Q683	Not used	2SC2240(GRBL)	
	Q804	RT1N431M	RT1N241M	
	D631, 632, 651, 653	1SS133	Not used	
	D647, 648	MTZJ15A	Not used	
	D757, 758	1SS355	Not used	
	D683, 684	Not used	1SS133-T	
	L501	ATH1004	Not used	
	CN751	XKE3042	Not used	
	CN753	XKE3044	Not used	
	CN754	Not used	XKE3050	
	CN755	Not used	XKE3049	
	CN812	XKP3067	Not used	
	CN813	CKS3390	Not used	
	CN815	XKM3006	XKM3005	
	CN817	Not used	CKS3382	
	RY501	XSR3012	Not used	
NSP	J602	DB919NB0	Not used	
NSP	J604	Not used	DB211NB0	
NSP	J605	Not used	DB410NB0	
NSP	J8806	ZWX-STD.JW-0R58	ZWX-STD.JW-0R58	
	R631	RD1/4PU222J	Not used	
	R632	RS1/16S103J	Not used	
	R635	RD1/4PU273J	Not used	
	R636	RD1/4PU821J	Not used	
	R637	RD1/4PU273J	Not used	
	R638	RD1/4PU331J	Not used	
	R639	ACN7094	Not used	
	R640	RD1/4PU182J	Not used	
	R641	RD1/4PU821J	Not used	
	R642	RD1/4PU223J	Not used	
	R647, 648	RD1/4PU562J	Not used	
	R651	RD1/4PU222J	Not used	
	R653	RS1/16S103J	Not used	
	R659	RD1/4PU273J	Not used	
	R661	RD1/4PU821J	Not used	
	R663	RD1/4PU273J	Not used	
	R665	RD1/4PU331J	Not used	
	R667	ACN7094	Not used	
	R669	RD1/4PU182J	Not used	
	R671	RD1/4PU821J	Not used	
	R673	RD1/4PU223J	Not used	
	R680	RS1/16S0R0J	Not used	
	R681	Not used	RD1/4PU222J	
	R682	Not used	RS1/16S103J	
	R685	Not used	RD1/4PU273J	
	R686	Not used	RD1/4PU821J	
	R687	Not used	RD1/4PU273J	
	R690	Not used	RD1/4PU331J	

Mark	Symbol and Description	Part No.		Remarks
		XWZ4083	XWZ4119	
R691		Not used	ACN7094	
R692		Not used	RD1/4PU182J	
R693		Not used	RD1/4PU821J	
R694		Not used	RD1/4PU223J	
R699		RD1/4PU333J	Not used	
R707, R708		RD1/4PU124J	RD1/4PU104J	
R709, R710		Not used	RS1LMF472J	
R789		RD1/4PUF101J	Not used	
R790		RS1LMF4R7J	Not used	
R811		RS1/16S0R0J	Not used	
C517		CQMBA224J50	Not used	
C630		CEANP2R2M50	No tused	
C632		CKSRYP331K50	Not used	
C633		CEAT4R7M50	Not used	
C634		CCSRCH470J50	Not used	
C635		CEAT101M16	Not used	
C636, 637		CCSRCH470J50	Not used	
C653		CKSRYP331K50	Not used	
C655		CEAT4R7M50	Not used	
C657		CCSRCH470J50	Not used	
C659		CEAT101M16	Not used	
C661, 663		CCSRCH470J50	Not used	
C665		CEANP2R2M50	Not used	
C682		Not used	CKSRYP331K50	
C683		Not used	CEAT4R7M50	
C684		Not used	CCSRCH470J50	
C685		Not used	CEAT101M16	
C686, 687		Not used	CCSRCH470J50	
C688		Not used	CEANP2R2M50	
C766		CQMBA123J50	Not used	
C785		CQMBA224J50	Not used	

DF TRANS2 ASSY

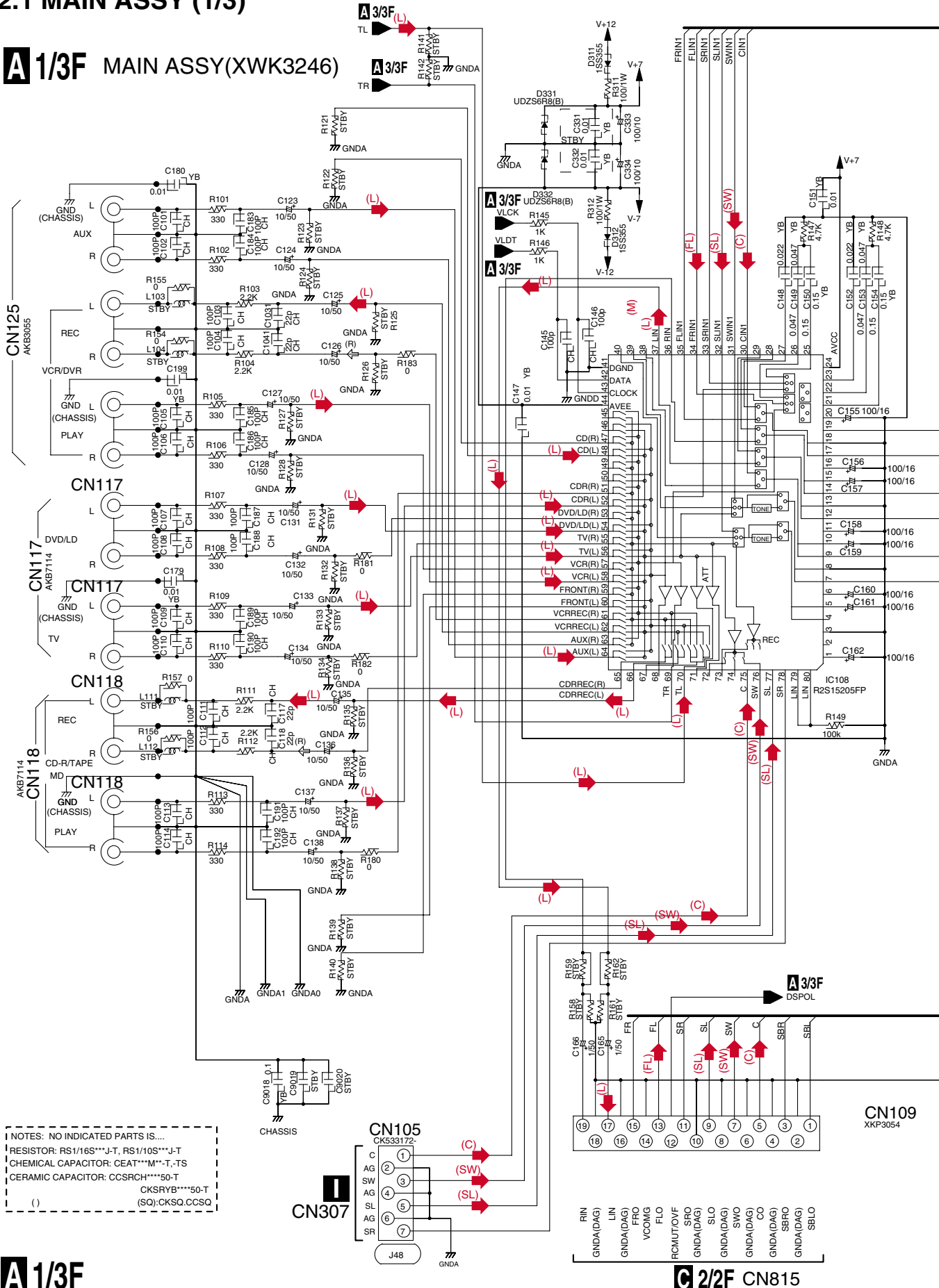
XWZ4091 and XWZ4092 are constructed the same except for the following :

Mark	Symbol and Description	Part No.		Remarks
		XWZ4092	XWZ4091	
⚠	IC853 IC Protector	AEK7021	AEK7018	

2. SCHEMATIC DIAGRAM

2.1 MAIN ASSY (1/3)

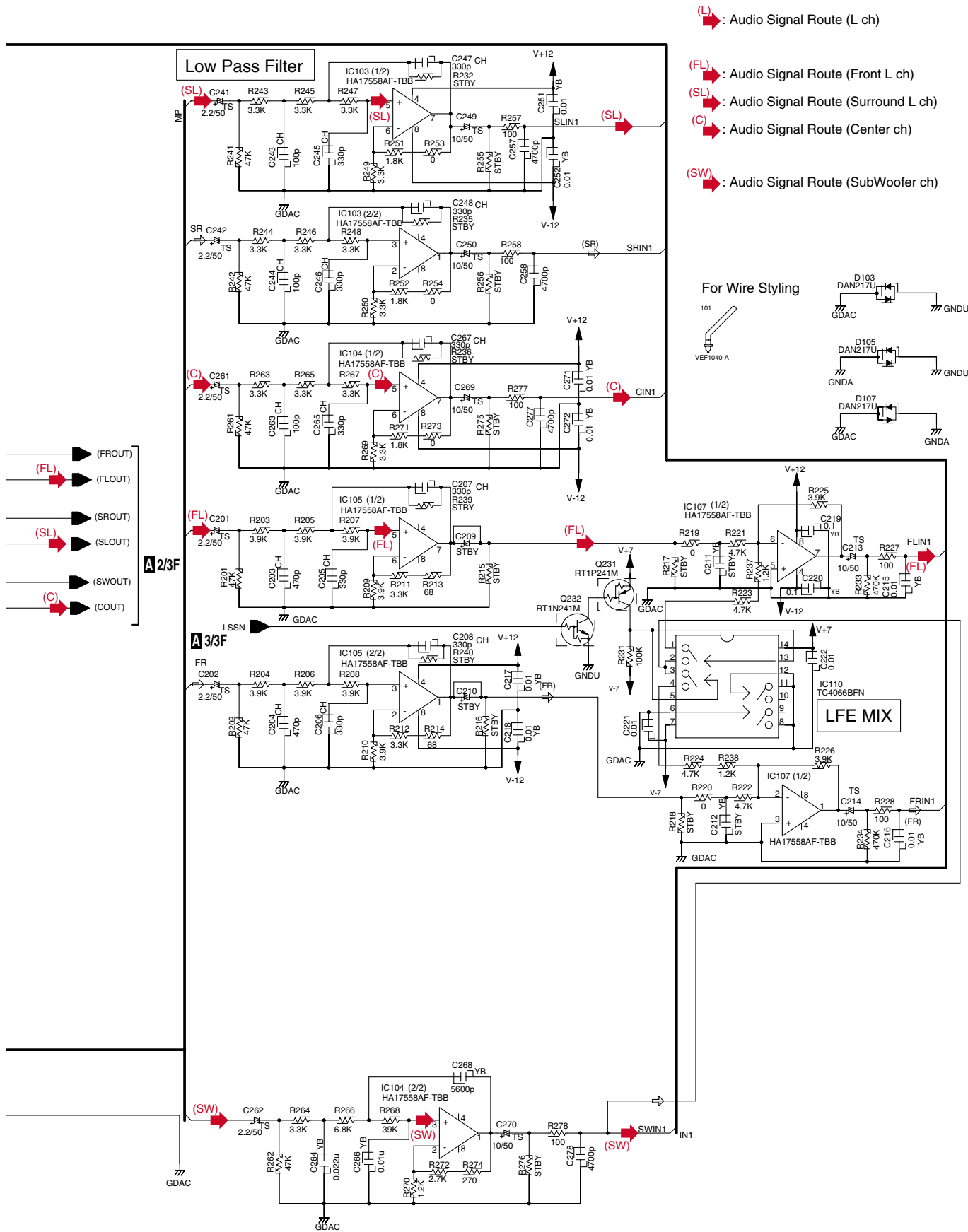
A 1/3F MAIN ASSY(XWK3246)



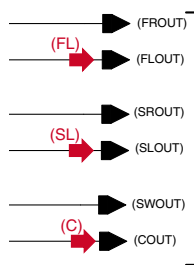
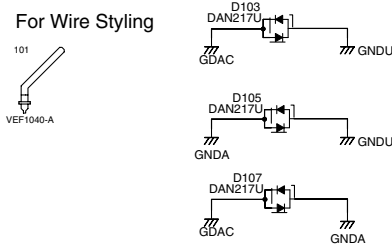
NOTES: NO INDICATED PARTS IS...
 RESISTOR: RS1/16S***J-T, RS1/10S***J-T
 CHEMICAL CAPACITOR: CEAT***M**-T, TS
 CERAMIC CAPACITOR: CCSRCH***50-T
 CKSRYB***50-T
 (SQ)CKSO.CCSQ

A 1/3F

G 2/2F CN815



- (L) : Audio Signal Route (L ch)
- (FL) : Audio Signal Route (Front L ch)
- (SL) : Audio Signal Route (Surround L ch)
- (C) : Audio Signal Route (Center ch)
- (SW) : Audio Signal Route (SubWoofer ch)

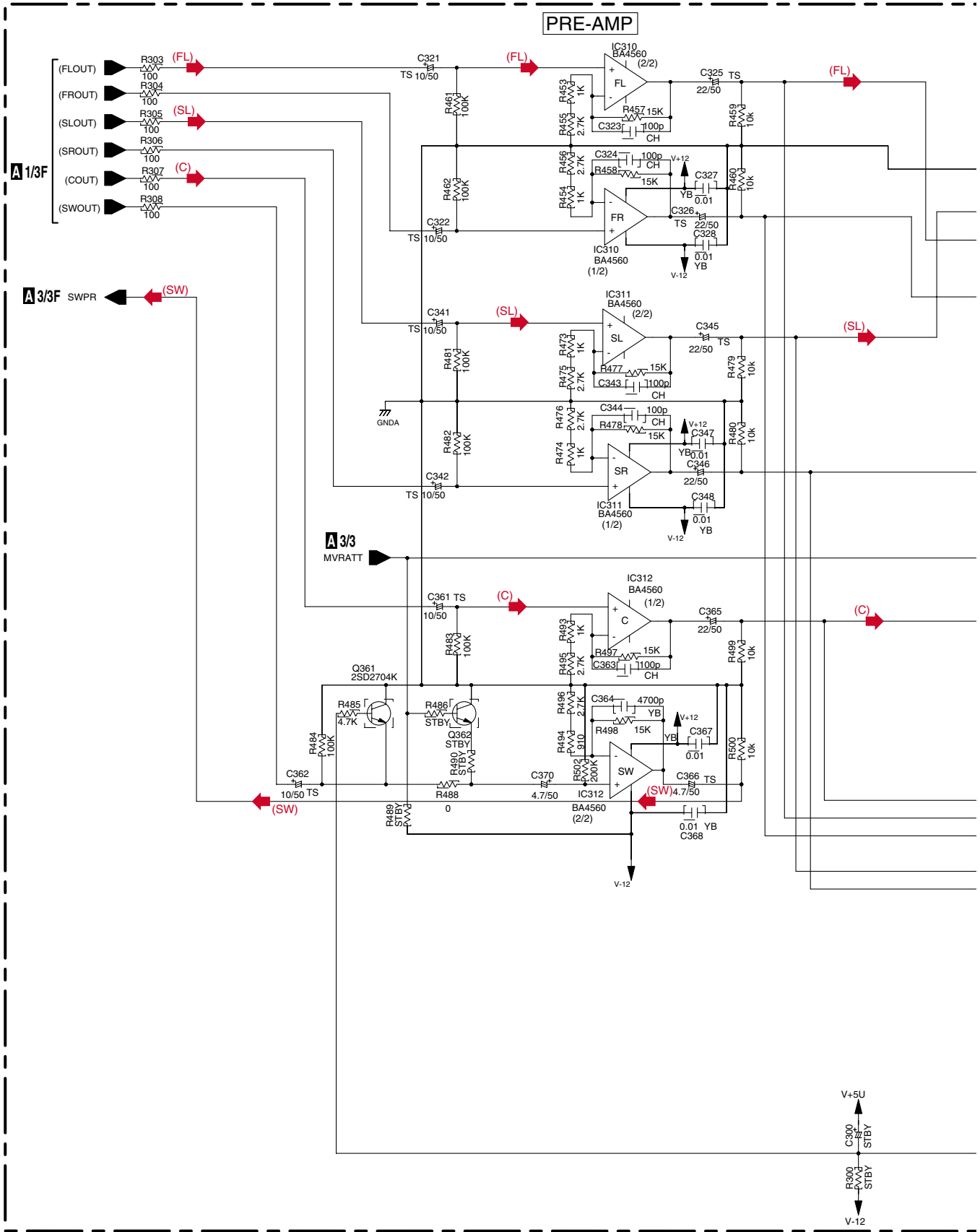


A 3/3F

LFE MIX

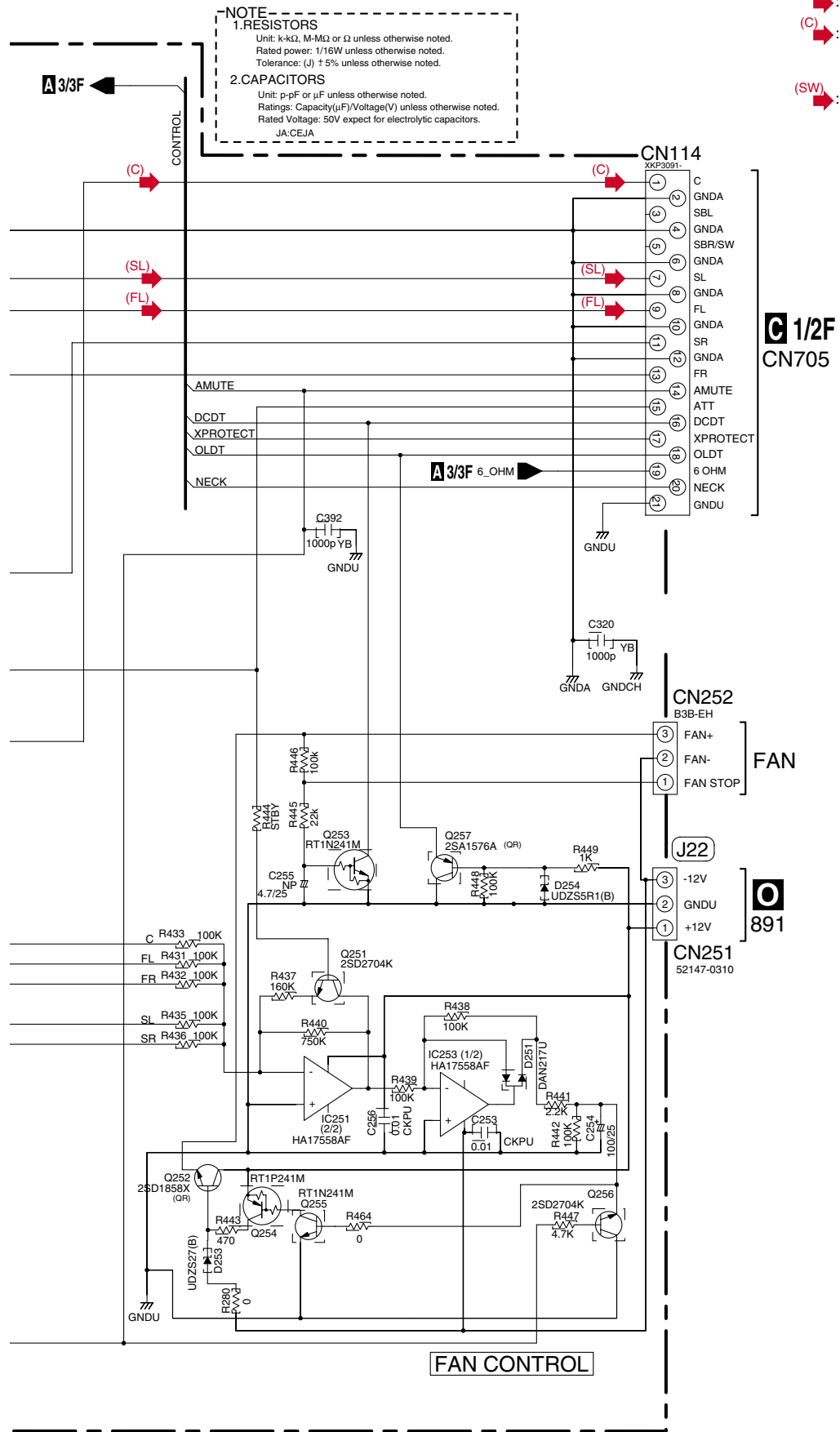
2.2 MAIN ASSY (2/3)

A 2/3F MAIN ASSY(XWK3246)



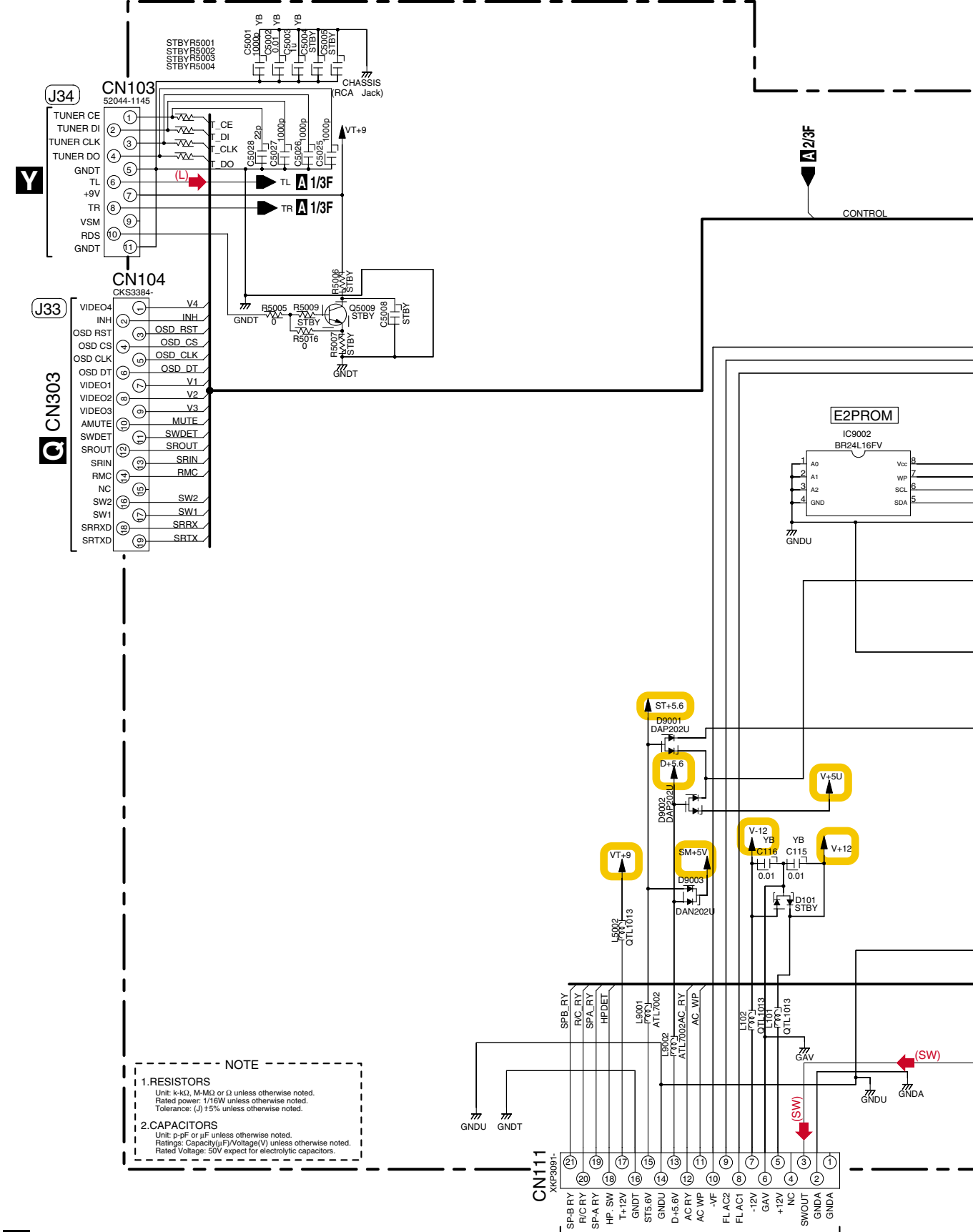
A 2/3F

- (FL) : Audio Signal Route (Front L ch)
- (SL) : Audio Signal Route (Surround L ch)
- (C) : Audio Signal Route (Center ch)
- (SW) : Audio Signal Route (SubWoofer ch)



2.3 MAIN ASSY (3/3)

A 3/3F MAIN ASSY (XWK3246)



NOTE

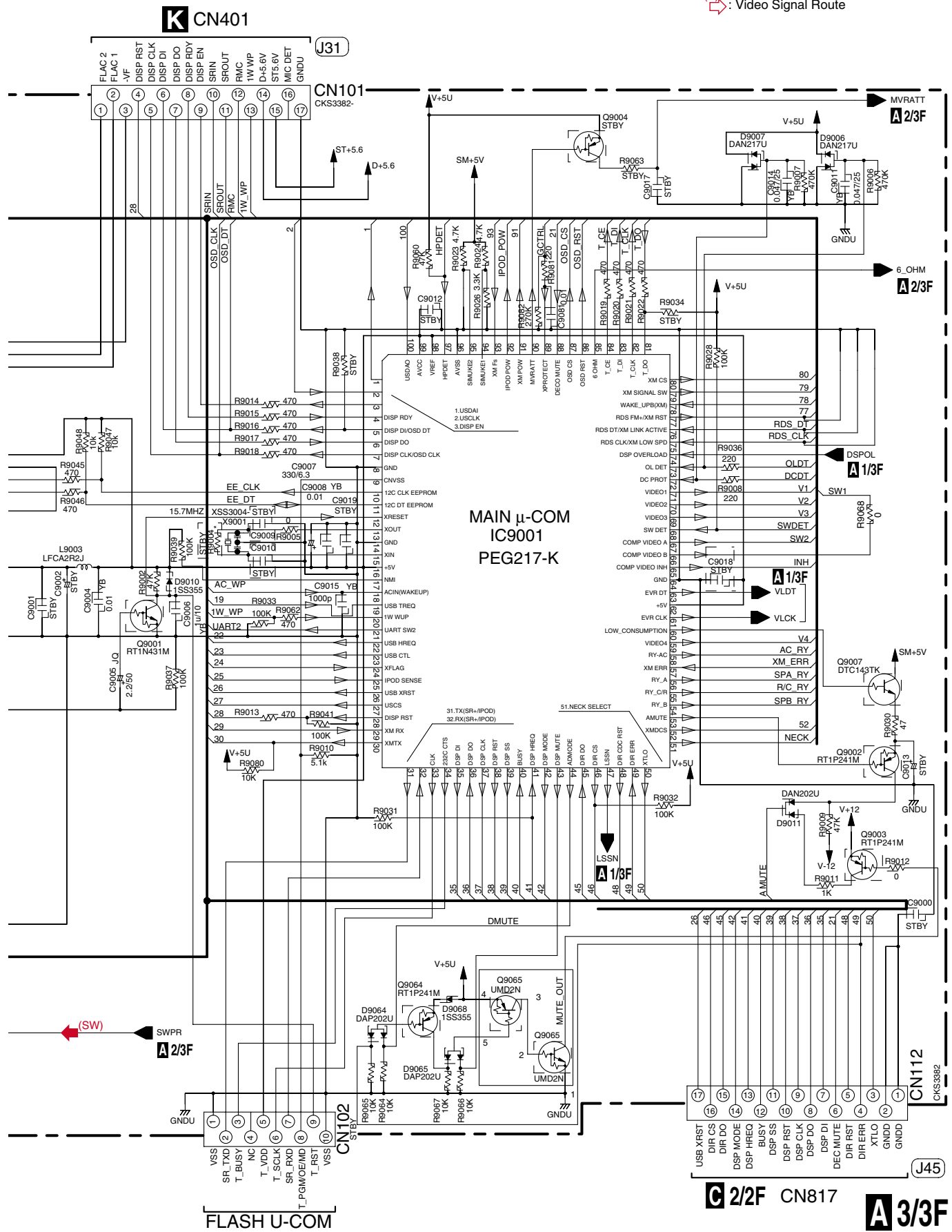
1. RESISTORS
Unit: k-kΩ, M-MΩ or Ω unless otherwise noted.
Rated power: 1/16W unless otherwise noted.
Tolerance: (J) ±5% unless otherwise noted.

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.

A 3/3F

C 2/2F CN816

(L) : Audio Signal Route (L ch)
(SW) : Audio Signal Route (SubWoofer ch)
(S) : Video Signal Route



A
B
C
D
E
F

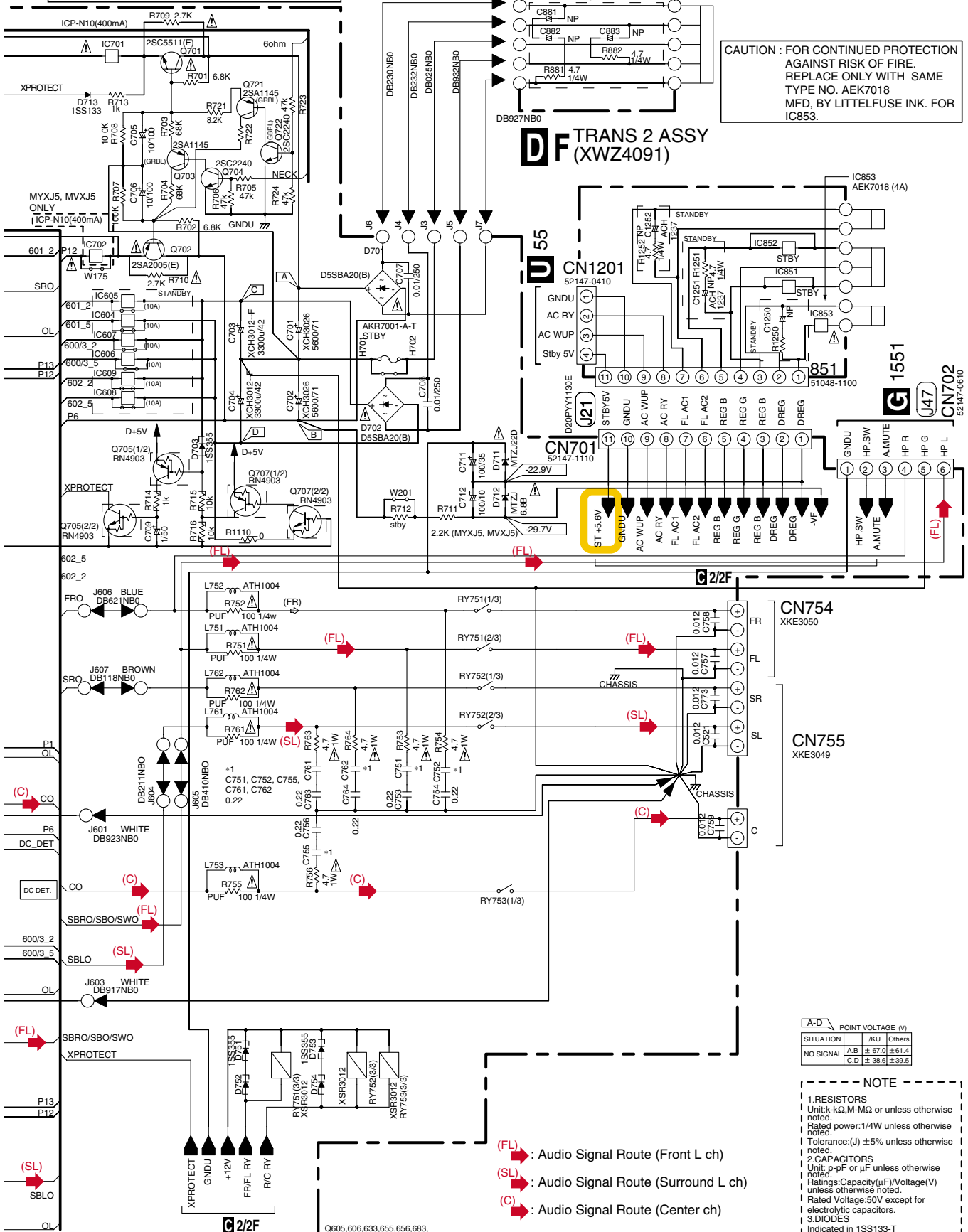
2.4 POWER PACK ASSY (1/2)

CAUTION : FOR CONTINUED PROTECTION AGAINST RISK OF FIRE. REPLACE ONLY WITH SAME TYPE NO. ICP-N10, MFD BY ROHM CO., LTD. FOR IC701 and IC702.

E TRANS 3 ASSY (XWZ4079)

CAUTION : FOR CONTINUED PROTECTION AGAINST RISK OF FIRE. REPLACE ONLY WITH SAME TYPE NO. AEK7018 MFD, BY LITTELFUSE INK. FOR IC853.

D TRANS 2 ASSY (XWZ4091)



A-D POINT VOLTAGE (V)		
SITUATION	/KU	Others
NO SIGNAL	A.B ± 67.0 ± 61.4	
	C.D ± 38.6 ± 39.5	

- NOTE**
- 1.RESISTORS
Unit:k-Ω,M-MΩ or unless otherwise noted.
Rated power:1/4W unless otherwise noted.
Tolerance:(J) ±5% unless otherwise noted.
 - 2.CAPACITORS
Unit:p-F or μF unless otherwise noted.
Ratings:Capacity(μF)/Voltage(V) unless otherwise noted.
Rated Voltage:50V except for electrolytic capacitors.
 - 3.DIODES
Indicated in 1SS133-T

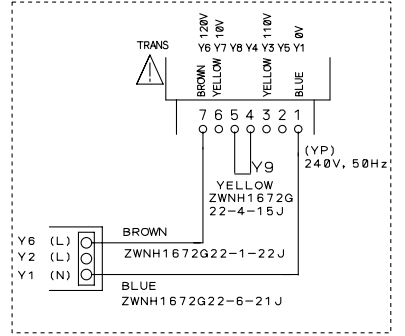
- (FL) : Audio Signal Route (Front L ch)
- (SL) : Audio Signal Route (Surround L ch)
- (CL) : Audio Signal Route (Center ch)
- (SW) : Audio Signal Route (SubWoofer ch)

C 1/2F **D** F **E**

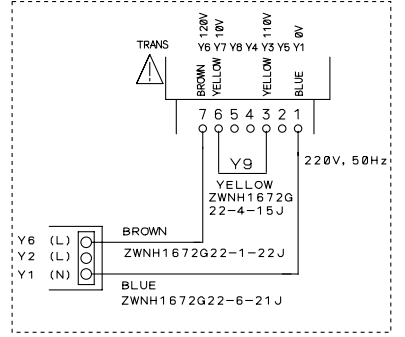
C 1/2F **D** F **E**

2.5 PRIMARY ASSY

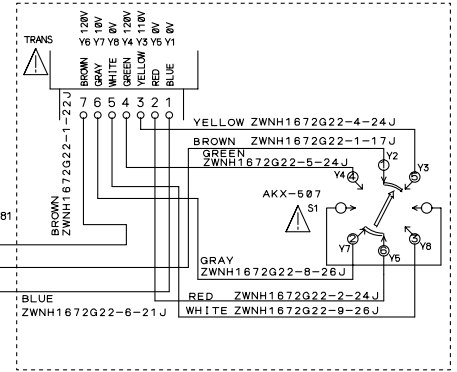
/YP MODEL



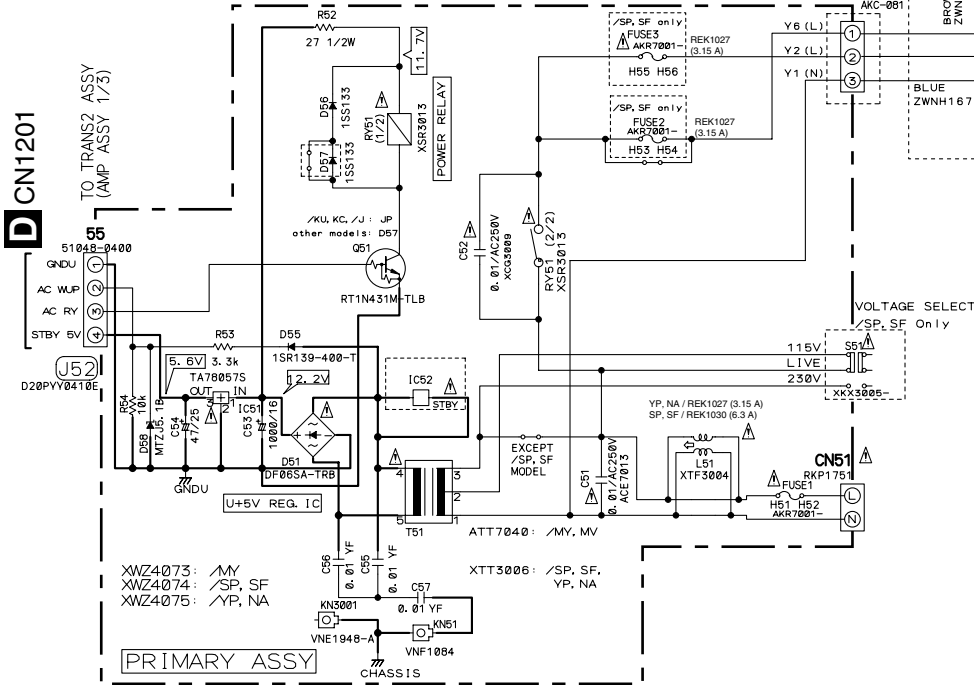
/NA MODEL



/SP, SF MODEL



UF PRIMARY ASSY (SPWXJ, SFLXJ : XWZ4074) (YPWXJ, NAXJ5 : XWZ4075)



NOTE FOR FUSE REPLACEMENT



CAUTION -FOR CONTINUED PROTECTION AGAINST RISK OF FIRE.
REPLACE WITH SAME TYPE AND RATINGS ONLY.

