

PA-410

SERVICE NOTES

First Edition

Issued by RJA

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SPECIFICATIONS／スペック

PA-410:Powered Mixer

Mixer Section／ミキサー部

- ◎Frequency Response／周波数特性 : 10 Hz to 50 kHz +1 / -2 dB (SENS: min)
 ◎Total Harmonic Distortion／全高調波歪率 : 0.03 % or less／以下
 (SENS: min, 20 Hz to 20 kHz at nominal output／規定出力時)

◎Noise Level／ノイズ・レベル

(input terminated with 150 ohm, IHF-A weighted)

／(入力150ΩターミネートIHF-A,タイプ) : Equivalent Input Noise Level／入力換算ノイズ・レベル

-125 dBm

Residual Noise Level／残留ノイズ・レベル(all EQ: flat)

-120 dBm

[all fader : min]

-80 dBm

[master fader : max]

[all channel fader: min]

-70 dBm

[master fader : max]

[all channel fader : max]

[all SENS : min]

-55 dBm

[master fader : max]

[all channel fader : max]

[all SENS : max]

- ◎Crosstalk／クロストーク : -70 dB or less／以下(1 kHz Between channels／チャンネル間)

-75 dB or less／以下(1 kHz Between L and R／LR間)

- ◎Equalizer／イコライザー : Normal Channel／ノーマル・チャンネル

HIGH EQ : ±15 dB (10 kHz shelving type／シェルビング・タイプ)

MID EQ : ±15 dB (2 kHz peaking type／ピーキング・タイプ)

LOW EQ : ±15 dB (100 Hz shelving type／シェルビング・タイプ)

Stereo Channel／ステレオ・チャンネル

HIGH EQ : ±15 dB (10 kHz shelving type／シェルビング・タイプ)

LOW EQ : ±15 dB (100 Hz shelving type／シェルビング・タイプ)

- ◎Graphic Equalizer／グラフィック・イコライザー : Center frequency／中心周波数: 60, 120, 360, 1 k, 2.5 k, 6.3 k, 12 k [Hz]

Variable Range／可変範囲 : ±12 dB

- ◎Digital Reverb／デジタル・リバーブ : Sampling Frequency／サンプリング周波数: 32 kHz

Signal Processing／信号処理:

A/D Conversion／A/D変換;

16 bit linear／ビット・リニア

128 times oversampling／倍オーバーサンプリング

$\Delta\Sigma$ modulation／変調、AF method／方式

D/A Conversion／D/A変換;

16 bit linear／ビット・リニア

Power Amplifier Section／パワー・アンプ部

- ◎Rated Power Output／定格出力 : 200 W x 2 (stereo, 4 Ω load, 20Hz to 20kHz, 0.1% or less THD)
 ／(ステレオ 4 Ω 負荷、20Hz～20kHz、0.1%THD以下)
 120 W x 2 (stereo, 8 Ω load, 20Hz to 20kHz, 0.1% or less THD)
 ／(ステレオ 8 Ω 負荷、20Hz～20kHz、0.1%THD以下)

◎Recommended Load Impedance

／推奨負荷インピーダンス : 4 Ω or greater／以上 (stereo／ステレオ)

- ◎Frequency Response／周波数特性 : 10 Hz to 50 Hz／10Hz～50Hz(±1 dB, 1 W / 8 Ω)

- ◎Power Band Width／出力帯域幅 : 10 Hz to 50 kHz (stereo, 8 Ω load, half power, 0.1 % or less THD)

- ◎Total Harmonic Distortion／全高調波歪率 : 0.03 % or less／以下 (stereo, 8 Ω load, 1 kHz, half power)
 ／(ステレオ 8 Ω 負荷、1kHz、定格出力時)

- ◎Signal-to-Noise Ratio／S/N比 : 120dB or greater／以上 (power input terminated with 150 Ω, IHF-A weighted)
 ／(入力150 Ωターミネート、IHF-A,タイプ)

- ◎Damping Factor／ダンピング・ファクター …… : 90 or greater／以上 (8 Ω load／負荷、1 kHz)
- ◎Channel Separation／チャンネル・セパレイション… : 60 dB or greater／以上 (8 Ω load, 1 kHz, half power, IHF-A weighted)
／(8 Ω 負荷、1kHz、定格出力時IHF-A、タイプ)
- ◎Input Sensitivity／入力感度 …… : +4 dBm (200 W / 4 Ω, 1 kHz)
- ◎Protection／保護 …… : Power ON / OFF Muting
DC Protection
Thermal Protection
PC Limiter
- ◎Cooling Fan／冷却ファン …… : Thermal Switching Two-Speed Fan

Others／その他

- ◎Controls／コントロール …… : Normal Channel／ノーマル・チャンネル
PAD Switches／パッドスイッチ(0 / -20 dB) ×6
SENS Knobs／センスつまみ ×6
HIGH Knobs／ハイつまみ ×6
MID Knobs／ミドルつまみ ×6
LOW Knobs／ローつまみ ×6
MON Knobs／モニターつまみ ×6
EFF / REV Knobs／エフェクト/リバーブつまみ ×6
PAN Knobs／パンポットつまみ ×6
Channel Faders／チャンネル・フェーダー ×6
Stereo Channel／ステレオ・チャンネル
SENS Knobs／センスつまみ ×2
AUX Switches／AUXスイッチ (1/2/3, 4/5/6) ×2
HIGH Knobs／ハイつまみ ×2
LOW Knobs／ローつまみ ×2
MON Knobs／モニターつまみ ×2
EFF / REV Knobs／エフェクト/リバーブつまみ ×2
BALANCE Knobs／バランスつまみ ×2
Channel Faders／チャンネル・フェーダー ×2
RTN Knob／リターンつまみ
SEND EFF Knob／センド・エフェクトつまみ
MON Fader／モニターフェーダー
REVERB MODE Knob／リバーブ・モードつまみ
(ROOM 1 / ROOM 2 / HALL / PLATE)
REVERB LEVEL Knob／リバーブ・モードつまみ
Equalizer／イコライザー (7 band／7バンド) ×2
EQ Buttons／イコライザー・スイッチ ×2 (L,R)
Master Volume Faders／マスター・フェーダー ×2 (L,R)
Power Amplifier Switch／パワー・アンプ・スイッチ
((L / R) / (L + R / MON))
Power Switch／電源スイッチ
- ◎Indicators／インジケータ …… : PEAK Indicatorsx／ピーク・インジゲーター ×2 (L,R)
- ◎Meter／メーター …… : VU Meters／VUメーター ×2 (L,R)
- ◎Connectors／接続端子 …… : Input Connectors／インプット・コネクター
(XLR-3-31 type／タイプ) ×6
Input Jacks／インプット・ジャック
(1/4 inch TRS phone type／TRS標準タイプ) ×6
Input Jacks／インプット・ジャック
(1/4 inch phone type／標準タイプ) ×4(L(MONO),R)
Input Jacks／インプット・ジャック
(RCA phono type／RCAピンタイプ) ×8 (L,R)
Return Jacks／リターン・ジャック
(1/4 inch phone type／標準タイプ) ×2(L(MONO),R)
Send Monitor Jack／センド・モニター・ジャック
(1/4 inch phone type／標準タイプ)
Send Effect Jack／センド・エフェクト・ジャック
(1/4 inch phone type／標準タイプ)
Master Output Jacks／マスター・アウト・ジャック
(1/4 inch phone type／標準タイプ) ×2 (L,R)
Power In Jacks／パワー・イン・ジャック
(1/4 inch phone type標準タイプ) ×2 (L,R)

- Rec Output Jacks／レック・アウト・ジャック
(RCA phono type／ピン・タイプ) ×2 (L,R)
Speaker Output Jacks／スピーカー・アウト・ジャック
(1/4 inch phone type／標準タイプ) ×2 (L,R)
Headphones Jack／ヘッドホン・ジャック
(Stereo phone type／ステレオ標準タイプ)

- ◎Power Supply／電源 …… : AC 117 V, AC 230 V (50 / 60Hz)
- ◎Power Consumption／消費電力 …… : 450 W (AC 117 V), 480 W (AC 230 V)
- ◎Dimensions／外形寸法 …… : 538 (W) x 555 (D) x 183 (H) mm
21-3/16 (W) x 21-7/8 (D) x 7-1/4 (H) inches
- ◎Weight／重量 …… : 24.7 kg / 54 lbs 8 oz
- ◎Accessories／付属品 …… : Owner's Manual／取扱説明書、保証書

(Half Power = 60W)

(0 dBm = 0.775 Vrms)

NOTE : In the interest of product improvement, the specifications and/or appearance of this unit are subject to change without prior notice.

注：製品の仕様および外観は、改良のため予告なく変更することがあります。

INPUT/OUTPUT STANDARDS／入出力規格

Mixer Input Standard／ミキサー入力規格

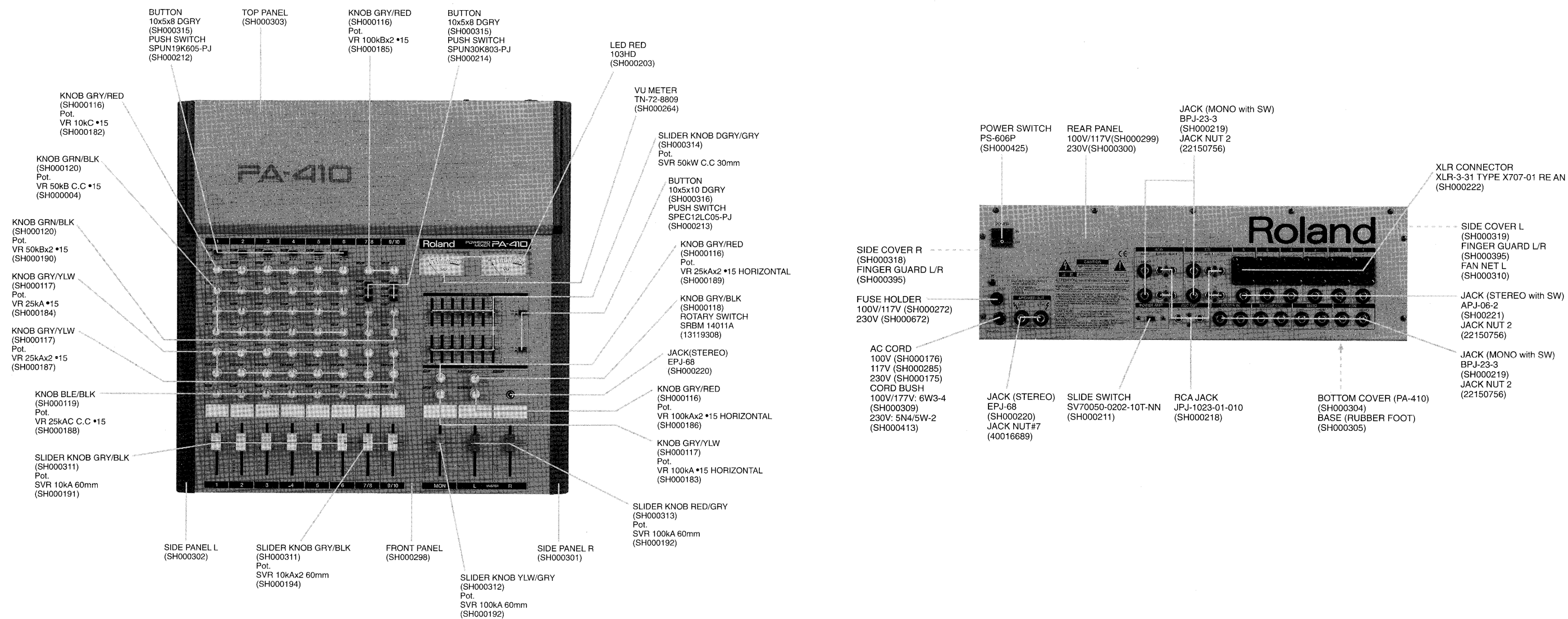
Input／入力		Nominal Input Level ／規定入力	Non-Clip Max, Input／ 無歪み最大入力	Input Impedance／ 入力インピーダンス	Type of Connectors／ 使用コネクター
CHANNEL INPUT (SENS = MAX) (PAD = 0 dB)	CH1 to CH6 (XLR-BAL)	-60 dBm (0.78 mV)	-34 dBm (15.5 mV)	10 kΩ	XLR-3-31 Type
	CH1 to CH6 (PHONE-BAL)	-60 dBm (0.78 mV)	-34 dBm (15.5 mV)	10 kΩ	1/4 inch TRS Phone Type ／TRS標準ジャック
	CH1 to CH6 (PHONE-UNBAL)	-60 dBm (0.78 mV)	-34 dBm (15.5 mV)	5 kΩ	1/4 inch TRS Phone Type ／TRS標準ジャック
CHANNEL INPUT (SENS = MIN) (PAD = 0 dB)	CH1 to CH6 (XLR-BAL)	-20 dBm (77.5 mV)	+6 dBm (1.55V)	10 kΩ	XLR-3-31 Type
	CH1 to CH6 (PHONE-BAL)	-20 dBm (77.5 mV)	+6 dBm (1.55V)	10 kΩ	1/4 inch TRS Phone Type ／TRS標準ジャック
	CH1 to CH6 (PHONE-UNBAL)	-20 dBm (77.5 mV)	+6 dBm (1.55V)	5 kΩ	1/4 inch TRS Phone Type ／TRS標準ジャック
CHANNEL INPUT (SENS = MIN) (PAD = -20 dB)	CH1 to CH6 (XLR-BAL)	0 dBm (0.778 V)	+26 dBm (15.5 V)	10 kΩ	XLR-3-31 Type
	CH1 to CH6 (PHONE-BAL)	0 dBm (0.778 V)	+26 dBm (15.5 V)	10 kΩ	1/4 inch TRS Phone Type ／TRS標準ジャック
	CH1 to CH6 (PHONE-UNBAL)	0 dBm (0.778 V)	+26 dBm (15.5 V)	5 kΩ	1/4 inch TRS Phone Type ／TRS標準ジャック
STEREO CHANNEL INPUT (SENS = MIN)	AUX 1/2, 4/5	0 dBm (0.775 V)	+20 dBm (7.75 V)	30 kΩ	RCA Phone Type ／RCAピンジャック
	AUX 3, 6	0 dBm (0.775 V)	+20 dBm (7.75 V)	30 kΩ (ST) 15 kΩ (MON)	1/4 inch Phone Type ／標準ジャック
STEREO CHANNEL INPUT (SENS = MAX)	AUX 1/2, 4/5	-20 dBm (77.5 mV)	0 dBm (0.775 V)	30 kΩ	RCA Phone Type ／RCAピンジャック
	AUX 3, 6	-20 dBm (77.5 mV)	0 dBm (0.775 V)	30 kΩ (ST) 15 kΩ (MON)	1/4 inch Phone Type ／標準ジャック
RETURN	RTN	-20 dBm (77.5 mV)	—	25 kΩ (ST) 12.5 kΩ (MON)	1/4 inch Phone Type ／標準ジャック

Mixer Output Standard／ミキサー出力規格

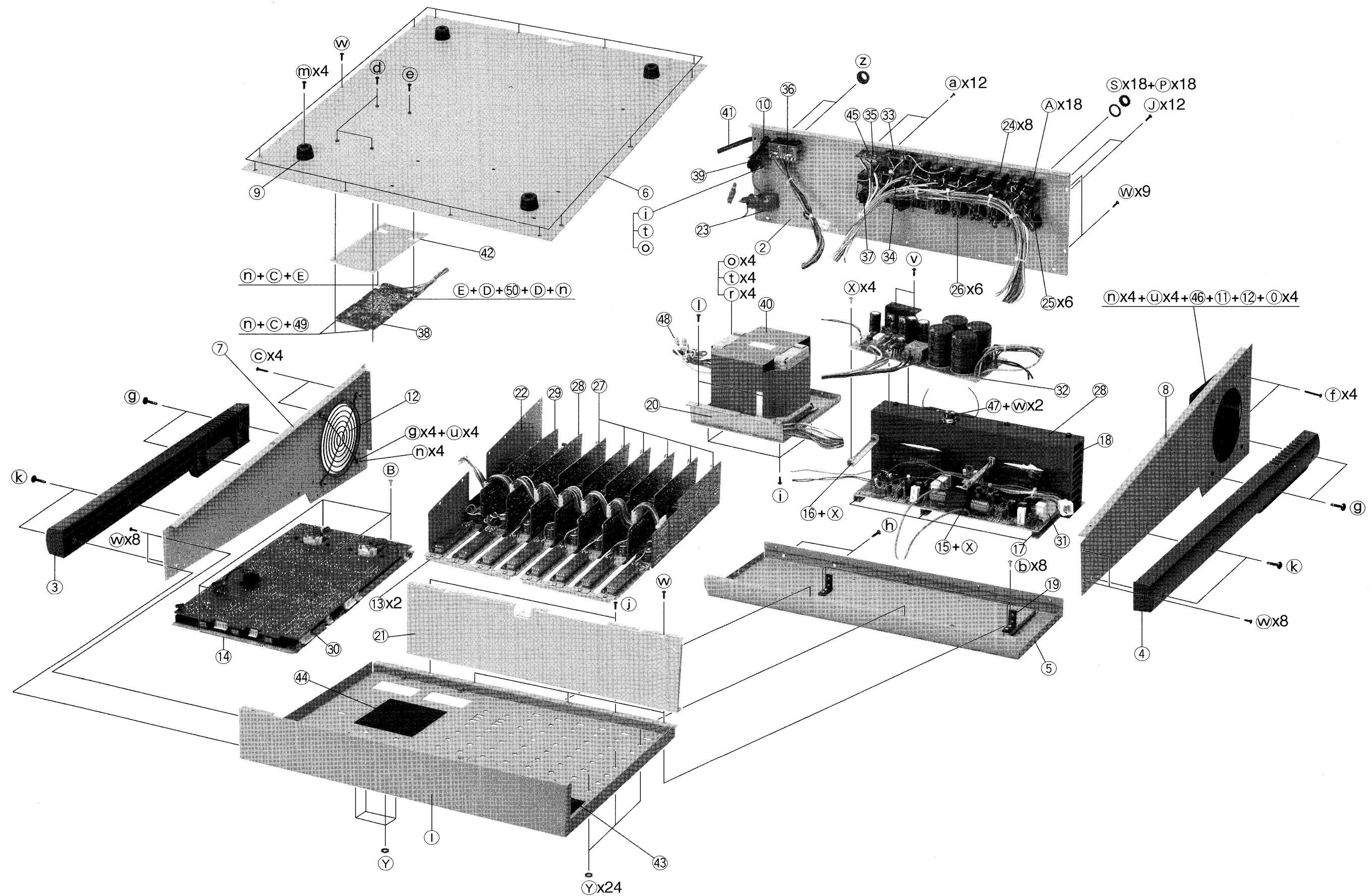
Output／出力		Nominal Output Level ／規定出力	Non-Clip Max, Output／ 無歪み最大出力	Output Impedance／ 出力インピーダンス	Recommended Load Impedance／ 奨励負荷インピーダンス	Type of Connectors／ 使用コネクター
MASTER OUT	L, R	+4 dBm (1.23 V)	+20 dBm (7.75 V)	2 kΩ	10 kΩ or greater	1/4 inch Phone Type ／標準ジャック
SEND	MON, EFF	+4 dBm (1.23 V)	+20 dBm (7.75 V)	2 kΩ	10 kΩ or greater	1/4 inch Phone Type ／標準ジャック
REC	L, R	-10 dBm (0.245 V)	+10 dBm (2.45 V)	2 kΩ	10 kΩ or greater	RCA Phone Type ／RCAピンジャック
PHONES	L, R	—	300mW+300mW	100 Ω (Both ch)	8 Ω or greater	Stereo Phone Type ／ステレオ標準ジャック

* 0 dBm = 0.775 Vrms

LOCATION OF CONTROLS／パネル配置図 (RX-62)



EXPLODED VIEW 1 / 分解图 1



EXPLODED VIEW 1

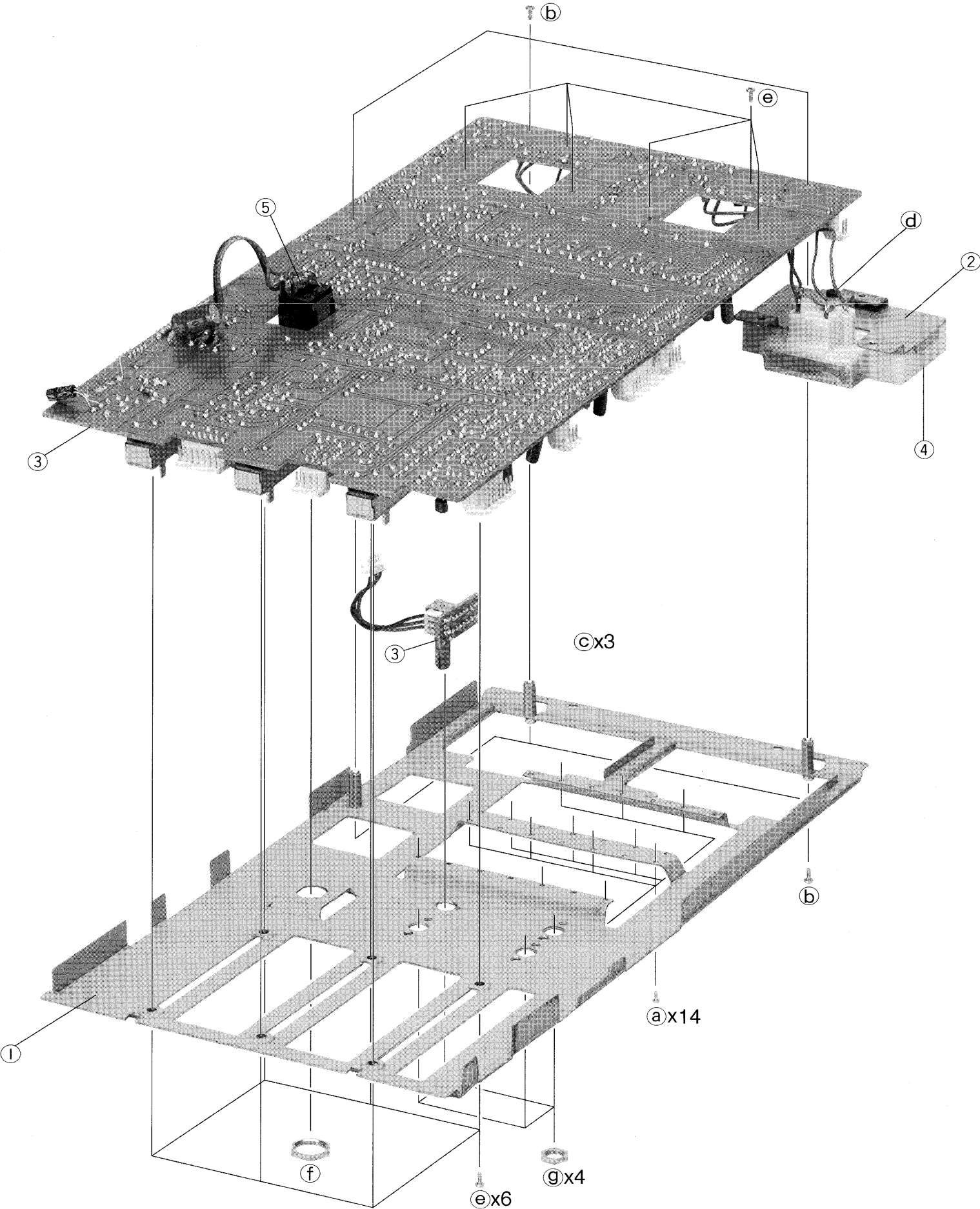
[PARTS]

No.	PART No.	PART NAME
①	SH000298	FRONT PANEL(PA-410)
②	SH000299	REAR PANEL(100V/117V)
	SH000300	REAR PANEL(230V)
③	SH000301	SIDE PANEL R
④	SH000302	SIDE PANEL L
⑤	SH000303	TOP PANEL(PA-410)
⑥	SH000304	BOTOM COVER(PA-410)
⑦	SH000318	SIDE COVER R
⑧	SH000319	SIDE COVER L
⑨	SH000305	BASE(RUBBER FOOT)
⑩	SH000309	CODE BUSH 100V/117V
	SH000413	CODE BUSH 230V
⑪	SH000310	FAN NET L
⑫	SH000395	FINGER GUARD L/R
⑬	SH000317	CHANNEL CHASSIS HOLDER
⑭	SH000323	PA410-C PCB CHASSIS
⑮	SH000324	PA410-E HOLDER A
⑯	SH000325	PA410-E HOLDER B
⑰	SH000326	POWER AMP PCB OLDER
⑱	SH000328	HEAT SINK HOLDER
⑲	SH000329	HEAT SINK HOLDER BLK
⑳	SH000332	TRANSFORMER HOLDR
㉑	SH000336	SHIELD CHASSIS
㉒	SH000337	CHANNEL SHIELD CHASSIS
㉓	SH000425	POWER SWITCH
㉔	SH000219	JACK(MONO with SW)BPJ-23-2
㉕	SH000221	JACK (STEREO with SW)APJ-06-2
㉖	SH000222	XLR CONNECTOR X707-01 RE'AN
㉗	SH000414	CH1-6 PCB ASSY
㉘	SH000415	CH7,8 PCB ASSY
㉙	SH000416	CH9,10 PCB ASSY
㉚	SH000417	MAIN PCB ASSY
㉛	SH000418	POWER AMP PCB ASSY
㉜	SH000419	P.S PCB ASSY
㉝	SH000420	REC OUT PCB ASSY
㉞	SH000421	AUX 1,2 PCB ASSY
㉟	SH000422	AUX 4,5 PCB ASSY
㊱	SH000423	SW PCB ASSY
㊲	SH000424	SPEAKER OUT PCB ASSY
㊳	SH000284	RV-3P ASSY
㊴	SH000272	FUSE HOLDER 100V/117V
	SH000072	FUSE HOLDER 230V
㊵	SH000195	TRANSFORMER 100V/117V/230V
㊶	SH000176	AC CORD 100V
	SH000285	AC CORD 117V
	SH000175	AC CORD 230V
㊷	SH000375	RV-3P INSHULATION SHEET
㊸	SH000376	CHANNEL FADER MASK
㊹	SH000377	EQ FADER MASK
㊺	SH000378	AMP-SW MASK
㊻	SH000283	FAN
㊼	SH000216	THERMAL SW 50 DEGREES
㊽	SH000427	CORD CONNECTOR TN-2(UL/CSA)
㊾	SH000372	PCB SUPPORT RS-2
㊿	SH000335	CABLE CLAMP CC-2

[SCREW]

Ⓐ	SH000347	PAN MACHINE SCREW M2.6x4 BZC
Ⓑ	SH000348	PAN MACHINE SCREW M3x6 NI
Ⓒ	40010267	BINDING MACHINE SCREW M3x10 BZC
Ⓓ	40010278	BINDING MACHINE SCREW M3x12 BZC
Ⓔ	SH000352	BINDING MACHINE SCREW M3x18 BZC
Ⓕ	40010301	BINDING MACHINE SCREW M3x20 BZC
Ⓖ	SH000354	TRUSS TAPTIGHT A 3.5x25 BZC
Ⓗ	40010323	BINDING MACHINE SCREW M4x6 BZC
Ⓘ	40010345	BINDING MACHINE SCREW M4x10 BZC
Ⓢ	40010912	BINDING TAPTIGHT B 3x8 BZC
Ⓚ	SH000359	TRUSS TAPTIGHT A 3.5x30 BZC
Ⓛ	40010956	BINDING TAPTIGHT B 4x8 BZC
Ⓜ	SH000361	TRUSS TAPTIGHT A 4x16 BZC
Ⓝ	40011789	HEX NUT M3 ZC
Ⓞ	40019056	HEX NUT M4 ZC
Ⓟ	40016689	JACK NUT #7
Ⓠ	SH000365	PLAIN WASHER 3x7x0.5 BZC
Ⓡ	SH000368	ABS JACK WASHER 12x17x1 BLK
Ⓣ	40011889	EXTRNAL TOOTH WASHER M4 ZC
Ⓤ	40011801	SPRING WASHER M3 ZC
Ⓥ	SH000409	PAN MACHINE SCREW M3x6 BZC
Ⓦ	40010901	BINDING TAPTIGHT B 3x6 BZC
Ⓧ	SH000410	PAN WASHER HEAD MACHINE SCREW M3x6 NI
Ⓨ	SH000158	HEX NUT M7x2 BZC
Ⓩ	22150756	JACK NUT 2
Ⓐ	40011923	INTERNAL TOOTH WASHER M9 ZC
Ⓑ	40010167	BINDING MACHINE SCREW M3x4 ZC
Ⓒ	40123312	INTERNAL TOOTH WASHER M3 ZC
Ⓓ	SH000367	PLAIN WASHER 4x9x1 BZC
Ⓔ	40013290	SPACER 3.2x5x6mm

EXPLODED VIEW 2／分解図 2



EXPLODED VIEW 2

[PARTS]

No.	PART No.	PART NAME
①	SH000323	PA410-C PCB CHASSIS
②	SH000327	VU METER HOLDER
③	SH000417	MAIN PCB ASSY
④	SH000264	VU METER
⑤	SH000220	JACK(STEREO)EPJ-68

[SCREW]

a	SH000145	PAN MACHINE SCREW M2x3 NI
b	SH000348	PAN MACHINE SCREW M3x6 NI
c	SH000374	STAND OFF M3 L15C
d	SH000153	BINDING TAPTIGHT B 3x6 BZC
e	SH000147	BINDING MACHINE SCREW M3x4 NI
f	SH000***	HEX NUT M12 NI(JACK Accessory)
g	SH000158	HEX NUT M7x0.75(VR Accessory)

PARTS LIST/パーツリスト

SAFETY PRECAUTIONS:

The parts marked △ have safety-related characteristics. Use only listed parts for replacement.

安全上の注意：

△が付いている部品は、安全上特別な規格でつくられたものです。交換の際は、注意をよく読み、指定された部品番号以外の部品は使わないようにして下さい。

CONSIDERATIONS ON PARTS ORDERING

When ordering any parts listed in the parts list, please specify the following items in the order sheet.

	QTY	PART NUMBER	DESCRIPTION	MODEL NUMBER
Ex.	10	22575241	Sharp Key	C-20/50
	15	2247017300	Knob (orange)	DAC-15D

Failure to completely fill the above items with correct number and description will result in delayed or even undelivered replacement.

パーツ発注に関するお願い

オーダーシートには、必ず下記の4項目は正確に記入して下さい。(例外は除く)

	必要数	パーツナンバー	品名	使用機種
例)	10	22575241	Sharp Key	C-20/50
	15	2247017300	Knob (orange)	DAC-15D

もし記入漏れ、誤記等有る場合、必要部品が発送出来なかったり、大幅な遅れの原因になります。御協力をお願いします。

NOTE:The parts marked # are new (initial parts).
注意: # のついた部品は新規部品です。

CASING/ケース				
#	SH000298	PANEL PA410 Roland	FRONT PANEL	510-10630-402-0
#	SH000299	BACK PANEL PA410 JIS/UL/CSA	REAR PANEL (100V/117V)	511-10970-701-0
#	SH000300	BACK PANEL PA410 CE	REAR PANEL (230V)	511-10970-803-0
#	SH000318	R SIDE BRKT. GRY	SIDE COVER R	551-10079-200-0
#	SH000319	L SIDE BRKT. GRY	SIDE COVER L	551-10080-200-0
#	SH000301	R SIDE PANEL PA410 Roland	SIDE PANEL R	512-11320-120-0
#	SH000302	L SIDE PANEL PA410 Roland	SIDE PANEL L	512-11330-120-0
#	SH000303	TOP COV. PA410 Roland	TOP PANEL	516-10090-200-0
#	SH000304	BOT. COVER PA410	BOTTOM COVER	517-10510-102-0
#	SH000305	FEET D25*16 (FFT-3)	BASE(RUBBER FOOT)	525-00019-020-0
#	SH000310	FAN NET BLK PA410 120*120	FAN NET L	528-20003-010-0
#	SH000395	"FAN NET BLK PWA2400 12""	FINGER GUARD L/R	528-00001-200-0

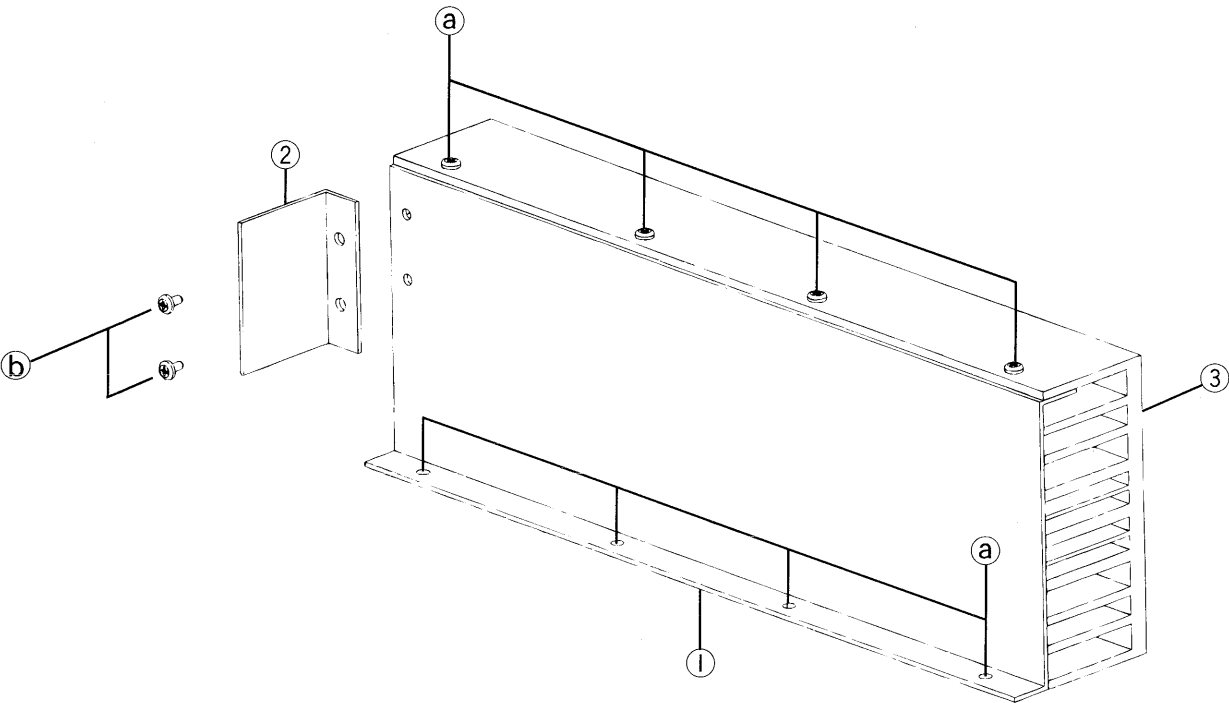
CHASSIS／シャーシ				
#	SH000317	VR BRKT. ZNW	CHANNEL CHASSIS HOLDER	551-10065-000-0
#	SH000320	TMP/SW FIXED ZNW	THERMAL SW HOLDER	552-10129-000-0
#	SH000321	VR FIXED A ZNW	MONO CHANNEL CHASSIS	552-10132-000-0
#	SH000322	VR FIXED B ZNW	STEREO CHANNEL CHASSIS	552-10133-000-0
#	SH000323	MA FIXED ZNW	PA-410-C PCB CHASSIS	552-10134-002-0
#	SH000324	POWER PCB FIXED A ZNW	PA-410-E HOLDER A	552-10135-000-0
#	SH000325	POWER PCB FIXED B ZNW	PA-410-E HOLDER B	552-10136-000-0
#	SH000326	PCB FIXED ZNW	POWER AMP PCB HOLDER	552-10137-000-0
#	SH000327	VU METER FIXED ZNW	VU METER HOLDER	552-10138-000-0
#	SH000328	HEAT SINK FIXED A ZNW	HEAT SINK HOLDER	552-10139-001-0
#	SH000329	HEAT SINK FIXED B BLK	HEAT SINK HOLDER BLK	552-10140-310-0
#	SH000330	RCA JACK FIXED A ZNW	RCA HOLDER 25mm	552-10141-000-0
#	SH000331	RCA JACK FIXED B ZNW	RCA HOLDER 36mm	552-10142-000-0
#	SH000332	X'MER FIXED ZNW	TRANSFORMER HOLDER	552-10143-000-0
#	SH000334	L-FIXED ZNW	SW PCB HOLDER	552-10145-000-0
#	SH000336	SHIELD PLATE ZNW	SHIELD CHASSIS	553-10023-000-0
#	SH000337	CH SHIELD PLATE ZNW	CHANNEL SHIELD	553-10024-000-0
#	SH000391	VR SHIELD PLATE(VR INSU)	CH1 SHIELD PLATE	553-20004-000-0

KNOB/ツマミ、ボタン				
#	SH000311	S/KNOB 25*13*12 GRY+BLK	CHANNEL SLIDER	541-10061-821-0
#	SH000312	S/KNOB 25*13*12 YLW+GRY	MONO SLIDER	541-10061-921-0
#	SH000313	S/KNOB 25*13*12 RED+GRY	MASTER SLIDER	541-10062-021-0
#	SH000314	S/KNOB 4*9*8 DGRY+GRY	EQ SLIDER	541-20020-420-0
#	SH000315	P/KNOB 10*5*8 DGRY	CHANNEL SLIDER	542-10070-221-0
#	SH000316	P/KNOB 10*5*10 DGRY	EQ SW	542-10120-220-0
#	SH000116	R/KNOB D13*16 GRY/RED	KNOB GRAY/RED	540-10270-120-0
#	SH000117	R/KNOB D13*16 GRY/YLW	KNOB GRY/YLW	540-10270-220-0
#	SH000118	R/KNOB D13*16 GRY/BLK	KNOB GRY/BLK	540-10270-320-0
#	SH000119	R/KNOB D13*16 BLU/BLK	KNOB BLU/BLK	540-10270-420-0
#	SH000120	R/KNOB D13*16 GRN/BLK	KNOB GRN/BLK	540-10270-520-0

SWITCH/スイッチ				
#	SH000211	SLD/SW SV70050-0202-10T-NN	SLIDE SW 2POLES	210-01202-290-0
#	SH000212	PSH/SW SPIJN19K605-PJ	2POLES	210-02201-230-0
#	SH000213	PSH/SW SPEC12LC05-PJ	2POLES	210-02201-270-0
#	SH000214	PSH/SW SPUN30K803-PJ	3KEYS	210-02203-040-0
#	SH000425	ROCKER SWITCH PS-606P	POWER SW	210-03201-004-0
#	13119308	SRBM 14011A	REVERB MODE SW602	RTC

JACK, SOCKET/ジャック、ソケット				
#	SH000218	1P RCA/J JPJ-1023 HOSIDEN	JPJ-1023-01-010	211-00010-020-0
#	SH000219	6D3/ J BPJ-23-2	MONO JACK	211-01601-110-0
#	SH000220	PHONO JACK EPJ-68	HEAD PHONES	211-01602-190-0
#	SH000221	6D3/J APJ-06-2	STEREO JACK	211-01602-220-0
#	SH000222	XLR/J X707-01 RE AN	XLR-3-31 TYPE	211-03400-000-0

METER/メーター				
#	SH000264	VU METER TN-72-8809	VU METER	260-11000-060-0



EXPLODED VIEW 2

[PARTS]		
No.	PART No.	PART NAME
①	SH000328	HEAT SINK HOLDER
②	SH000391	CH1 SHIELD PLATE
③	SH000306	HEAT SINK (PA410)
[SCREW]		
Ⓐ	SH000355	BINDING MACHINE SCREW M4x6 BZC
Ⓑ	SH000153	BINDING TAPTIGHT B 3x6 BZC

PWB ASSY／基板完成品					
#	SH000414	CH1-6 PCB ASSY NOTE:CH1-6 PCB ASSY include the following parts. 注意:補修用 CH1-6 PCB ASSY は下記の部品を含みます。	PA410-A PCB ASSY	F01-00000-001-0	
#	SH000321	VR FIXED A ZNW	MONO CHANNEL CHASSIS	552-10132-000-0	
#	SH000145	M/E PAN SCR. M2.0*3 NI	PAN MACHINE SCREW M2x3 NI	590-42003-100-0	
#	SH000158	HEX.NUT M7.0x2.0 BLK	HEX NUT M7x2 BZC	600-00702-020-0	
#	SH000415	CH7/8 PCB ASSY NOTE:CH7/8 PCB ASSY include the following parts. 注意:補修用 CH7/8 PCB ASSY は下記の部品を含みます。	PA410-B1 PCB ASSY	F01-00000-002-0	
#	SH000322	VR FIXED B ZNW	STEREO CHANNEL CHASSIS	522-10133-000-0	
#	SH000145	M/E PAN SCR. M2.0*3 NI	PAN MACHINE SCREW M2x3 NI	590-42003-100-0	
#	SH000158	HEX.NUT M7.0x2.0 BLK	HEX NUT M7x2 BZC	600-00702-020-0	
#	SH000416	CH9/10 PCB ASSY NOTE:CH9/10 PCB ASSY include the following parts. 注意:補修用 CH9/10 PCB ASSY は下記の部品を含みます。	PA410-B2 PCB ASSY	F01-00000-003-0	
#	SH000322	VR FIXED B ZNW	STEREO CHANNEL CHASSIS	522-10133-000-0	
#	SH000145	M/E PAN SCR. M2.0*3 NI	PAN MACHINE SCREW M2x3 NI	590-42003-100-0	
#	SH000158	HEX.NUT M7.0x2.0 BLK	HEX NUT M7x2 BZC	600-00702-020-0	
#	SH000417	MAIN PCB ASSY NOTE:MAIN PCB ASSY include the following parts. 注意:補修用 MAIN PCB ASSY は下記の部品を含みます。	PA410-C PCB ASSY	F01-00000-004-0	
#	SH000295	3P RIBBON WIRE 100MM	CH FADER,PHONES	385-03101-220-0	
#	SH000296	3P RIBBON WIRE 230MM	PHONES, MAIN	385-03231-220-0	
#	SH000220	PHONO JACK EPJ-68	HEAD PHONES	211-01602-190-0	
#	SH000323	MA FIXED ZNW	PA-410-C PCB CHASSIS	552-10134-002-0	
#	SH000264	VU METER TN-72-8809	VU METER	260-11000-060-0	
#	22150518	HEX. BOSS 5.5*15 M3	STAND OFF M3 L 15C	615-10052-630-0	
#	SH000145	M/E PAN SCR. M2.0x3 NI	PAN MACHINE SCREW M2x3 NI	590-42003-100-0	
#	SH000409	M/E PAN SCR. M3.0x6 BLK	PAN MACHINE SCREW M3x6 BZC	590-43006-200-0	
#	40010167	M/E SET SCR.M3.0x4 NI	BINDING MACHINE SCREW M3x4 NI	590-53004-100-0	
#	SH000418	POWER AMP PCB ASSY NOTE:POWER AMP PCB ASSY include the following parts. 注意:補修用 POWER AMP PCB ASSY は下記の部品を含みます。	PA410-D PCB ASSY	F01-00000-005-0	
#	SH000292	2P RIBBON WIRE 80MM	to TERMINAL PROTECTOR	385-02081-220-0	
#	SH000294	2P RIBBON WIRE 600MM	to SPEAKER OUT PCB ASSY	385-02601-220-0	
# △	SH000210	IC STK4050V SANYO	POWER IC STK4050V	160-00009-900-0	
#	SH000217	TMP/SW T105ARIUI MATSUSHITA	THERMAL PROTECTOR 1 05DEGREES	210-10105-000-0	
#	SH000306	HEAT SINK PMD800	HEAT SINK	526-10030-111-0	
#	SH000320	TMP/SW FIXED ZNW	THERMAL SW HOLDER	552-10129-000-0	
#	SH000329	HEAT SINK FIXED B BLK	HEAT SINK HOLDER BLK	552-10140-310-0	
#	SH000326	PCB FIXED ZNW	POWER AMP PCB HOLDER	552-10137-000-0	
#	SH000348	M/E PAN SCR. M3.0*6 NI	PAN MACHINE SCREW M3x6 NI	590-43006-100-0	
#	40010167	M/E SET SCR. M3.0*4 NI	BINDING MACHINE SCREW M3x4 NI	590-53004-100-0	
#	SH000351	M/E SET SCR.M3.0*16 BLK	BINDING MACHINE SCREW M3x16 BZC	590-53016-200-0	
#	SH000365	PLA. WAS. D3.0*D7.0*0.5 BLK	PLAIN WASHER 3x7x0.5 BZC	610-00300-502-0	
#	40010267	M/E SET SCR.M3.0*10 BLK	BINDING MACHINE SCREW M3x10 BZC	590-53010-200-0	
#	SH000419	P.S PCB ASSY(230V) NOTE1:P.S PCB ASSY include the following parts. 注意1:補修用 P.S PCB ASSY は下記の部品を含みます。	PA410-E PCB ASSY(230V)	F01-00000-006-0	
#	SH000078	RUBBER WASHER TO-2203	RADIATION SHEET TO-2203	313-00000-060-0	
#	SH000079	BUSHES 602S(V.O)	TRANSISTOR NYLON WASHER	314-00000-050-0	
#	SH000024	UA7915 FAIRCHILD	-15V VOLTAGE REGURATOR	160-00002-900-0	
#	SH000397	UA7815 FAIRCHILD	+15V VOLTAGE REGURATOR	160-00005-900-0	
#	SH000348	M/E PAN SCR. M3.0*6 NI	PAN MACHINE SCREW M3x6 NI	590-43006-100-0	
#	SH000308	TRANS HEAT SINK	REGURATOR HEAT SINK	526-10032-110-0	
#	SH000357	T/P SET SCR. M2. 6*6 ZN	BINDING MACHINE SCREW M2.6x6 ZC	591-52606-000-0	
NOTE2:Replacement P.S PCB ASSY is 230V version only. 230V version differs from 100V/117V version only in fuse system. Order proper fuses and fuse labels separatery if necessary.(refer to the table below.					
注意2:補修用 P.S.PCB ASSY は230V仕様です。電圧仕様による違いはヒューズ値、ヒューズ貼りマークのみです。 100V/117V用ヒューズ、ヒューズ貼りマークが必要な場合は別途発注してください。(下表参照)					
		Fuse	Part No.	Fuse label	Part No.
100V/117V	F501、F502、F503	2A/250V	SH000270	2.0A 250V	40014456
	F504	1A/250V	SH000266	1.0A 250V	40014412
#	SH000420	REC OUT PCB ASSY NOTE:REC OUT PCB ASSY include the following parts. 注意:補修用 REC OUT PCB ASSY は下記の部品を含みます。	PA410-F PCB ASSY	F01-00000-007-0	
#	SH000331	RCA JACK FIXED B ZNW	RCA HOLDER 36mm	552-10142-000-0	
#	SH000256	8P WAFER/P 760/830MM	BLK/BRN/RED/ORG (CN308 to AUX, REC)	212-10080-330-0	
#	SH000289	M.WIRE UL1007 #22 80MM BLK	REC OUT to G	379-03800-101-0	
#	SH000347	M/E PAN SCR. M2.6*4 BLK	PAN MACHINE SCREW M2.6x4 BZC	590-42604-200-0	
#	SH000421	AUX 1/2 PCB ASSY NOTE:AUX 1/2 PCB ASSY include the following parts. 注意:補修用AUX1/2 PCB ASSY は下記の部品を含みます。	PA410-G1 PCB ASSY	F01-00000-008-0	
#	SH000262	12P WAFER/P 800MM	WHT (AUX1,AUX2)	212-10120-080-0	
#	SH000087	M. WIRE UL1007 #22 50MM BLK	AUX 3L/R TO GND BLK	379-03500-101-0	
#	SH000288	M.WIRE UL1007 #22 50MM GRN	(AUX 3,6R)	379-03500-151-0	
#	SH000330	RCA JACK FIXED A ZNW	RCA HOLDER 25mm	552-10141-000-0	
#	SH000347	M/E PAN SCR. M2.6*4 BLK	PAN MACHINE SCREW M2.6x4 BZC	590-42604-200-0	
#	SH000422	AUX 4/5 PCB ASSY NOTE:AUX 4/5 PCB ASSY include the following parts. 注意:補修用AUX 4/5 PCB ASSY は下記の部品を含みます。	PA410-G2 PCB ASSY	F01-00000-009-0	
#	SH000263	12P WAFER/P 800MM	RED (AUX 4,5)	212-10120-090-0	
#	SH000087	M. WIRE UL1007 #22 50MM BLK	AUX 3L/R TO GND BLK	379-03500-101-0	
#	SH000288	M.WIRE UL1007 #22 50MM GRN	(AUX 3,6R)	379-03500-151-0	
#	SH000330	RCA JACK FIXED A ZNW	RCA HOLDER 25mm	552-10141-000-0	
#	SH000347	M/E PAN SCR. M2.6*4 BLK	PAN MACHINE SCREW M2.6x4 BZC	590-42604-200-0	

#	SH000423	SW PCB ASSY NOTE:SW PCB ASSY include the following parts. 注意:補修用 SW PCB ASSY は下記の部品を含みます。	PA410-H PCB ASSY	F01-00000-010-0
#	SH000408	3P WAFER/P 650MM GRY	PCB-H T15 TO CN303	212-10032-140-0
#	SH000255	7P WAFER/P 1100MM	PCB-H (T2,4,8 to CN306)	212-10070-420-0
#	SH000334	L-FIXED ZNW	SW PCB HOLDER	552-10145-000-0
#	SH000347	M/E PAN SCR. M2.6*4 BLK	PAN MACHINE SCREW M2.6x4 BZC	590-42604-200-0
#	SH000424	SPEAKER OUT PCB ASSY NOTE:SPEAKER OUT PCB ASSY include the following parts. 注意:補修用SPEAKER OUT PCB ASSY は下記の部品を含みます。	PA410-X PCB ASSY	F01-00000-011-0
#	SH000253	5P WAFER/P 550MM	(CN301 to 4P OUT PCB)	212-10051-120-0
#	SH000284	KIT DIGITAL REVERB RV-3P NOTE : RV3P ASSY include the following parts. 注意:補修用 RV3P ASSY は下記の部品を含みます。	RV-3P ASSY	358-10003-000-0
#	SH000261	11P WAFER/P 450MM	(REV to CN304)	212-10110-080-0

IC				
#	SH000208	IC TA7317 TOSHIBA	PROTECTOR IC	160-00002-200-0
#	SH000209	IC M55229P MITSUBISHI	EQUALIZER IC	160-00002-300-0
# △	SH000210	IC STK4050V SANYO	POWER IC STK4050V	160-00009-900-0
#	SH000180	CDS P873-G35-552	PHOTO COUPLER P873-G35-552	010-00001-010-0
# △	SH000024	UA7915 FAIRCHILD	-15V VOLTAGE REGURATOR	160-00002-900-0
# △	SH000026	UA7815 FAIRCHILD	+15V VOLTAGE REGURATOR	160-00005-000-0
#	SH000023	IC 4556D JRC	OP AMP NJM4556D	160-00002-800-0
#	SH000022	IC 4558DY JRC	OP AMP NJM4558DY	160-00000-900-0

TRANSISTOR／トランジスタ				
#	SH000204	TRAN. 2SC3421-Y TOSHIBA	TRANSISTOR	120-00000-400-0
#	SH000205	TRAN. 2SC1815 GR TOSHIBA	TRANSISTOR	120-00000-800-0
#	SH000206	TRAN. 2SA1358-Y TOSHIBA	TRANSISTOR	121-00000-600-0
#	SH000207	TRAN. 2SA1240-F SANYO	TRANSISTOR	121-00003-500-0
#	SH000018	TRAN. 2SC1740 LN-R ROHM	TRANSISTOR	120-00004-600-0
#	SH000019	TRAN. 2SC2878 TOSHIBA	TRANSISTOR	120-00006-200-0
#	SH000021	TRAN. 2SA970-BL TOSHIBA	TRANSISTOR	121-00000-500-0
#	SH000017	TRAN. 2SC2240-BL TOSHIBA	TRANSISTOR	120-00001-010-0

DIODE／ダイオード				
#	SH000198	DIODE IN4004 SILTEK T	DIODE	090-00007-020-0
# △	SH000199	DIODE IN4148 FAIRCHILD	DIODE	090-02000-000-0
#	SH000200	DIODE IN60P UNIZON	DIODE	090-02001-000-0
# △	SH000201	B/DIODE PB154M SIITEK	BRIDGE DIODE	090-10000-100-0
# △	SH000202	B/DIODE KBPC 3506W	BRIDGE DIODE	090-10008-100-0
#	SH000203	LED 103HD HRED	LED(RE:PEAK)	100-00020-020-0

RESISTOR／抵抗				
# △	SH000179	FUSE RES. 100 J 80MA 0.25W P	FUSE RESISTOR	004-10126-800-0
#	SH000402	CEMENT RES. 470J 7W M	470ohm 7W	003-47004-600-0
#	SH000403	CEMENT RES. 10J 2W U	10ohm 2W	003-10071-601-0
#	SH000404	CEMENT RES. 0.33J 5W SQM	0.33ohm 5W	003-33093-601-0
#	SH000405	CEMENT RES. 4.7J 5W	4.7ohm 5W	003-47083-601-0
#	SH000406	CEMENT RES. 20J 5W M	20ohm 5W	003-20073-600-0
#	SH000407	CEMENT RES. 1k2 +-5% 2W P	1.2kohm +-5% 2W	005-12226-100-0

POTENTIOMETOR／ボリューム				
#	SH000181	T/VR 10K 0.1W D8 3M S	TRIMMER 10K (VR381,382)	020-10354-002-0
#	SH000182	SR/VR 10K C 15MM P	VR 10KC 15mm (GAIN :VR101)	022-10320-020-0
#	SH000183	SR/VR 100K A 15MM P	VR 100KA 15mm (EFFECT SEND :VR351)	022-10420-050-0
#	SH000184	SR/VR 25K A 15MM P	VR 25KA 15mm (MON,EFF :VR105,VR106)	022-25320-000-0
#	SH000185	DR/VR 100K B 15MM P	VR 100KB x 2 15mm(GAIN:VR201)	023-10420-030-0
#	SH000186	D.ROT/VR 100K A 15MM P	VR 100KA x 2 15mm(REV LEV:VR361)	023-10420-130-0
#	SH000187	DR/VR 25K A 15MM P K-NOBL	VR 25KA x 2 15mm(MON, EFF:VR204,205)	023-25320-000-0
#	SH000188	DR/VR 25K AC 15MM P	VR 25KAC C.C 15mm(PAN:VR107,206)	023-25320-010-0
#	SH000189	DR/VR 25K A 15MM P	VR 25KA x 2 15mm(RTN:VR331)	023-25320-040-0
#	SH000190	DR/VR 50K B 15MM P	VR 50KB x 2 C.C 15mm(LOW,HIGH:NR202,203)	023-50320-000-0
#	SH000191	SS/VR 10K A 60MM P	SVR 10KA 60mm(CH:VR108)	026-10316-020-0
#	SH000192	SS/VR 100K A 60MM P	SVR 100KA 60mm(MON,L,R:VR301,302,321)	026-10416-000-0
#	SH000193	SS/VR 50K W 30MM P	SVR 50KW C.C 30mm (EQ:VR601-607,631-637)	026-50334-000-0
#	SH000194	DS/VR 10K A 60MM P	SVR 10KA x 2 60mm (S CH:VR207)	027-10316-000-0
#	SH000004	SR/VR 50KB 15MMP	VR 50 x BC.C 15mm(Low, Mid, High:VR102,103,104)	022-50320-000-0

CAPACITOR／コンデンサ				
# △	SH000178	LINE/C 0.0047MF M 400V	0.0047MF/400V	058-47236-001-0
#	SH000398	M/C 0.0068MF J 50V 2	0.0068MF/50V	046-68204-000-0
#	SH000399	M/C 0.47MF K 250V 15	0.47MFK/-250V	046-47425-000-0
#	SH000400	E/C 6800MF Z 80V 50*30P	6800MFZ/80V	030-68878-041-0
#	SH000401	C/C2 4700PFM 250V 5	4700PFM/250V	042-472A6-000-0

INDUCTOR,COIL,FILTER／インダクター、コイル、フィルタ				
#	SH000196	INDUCTANCE 1UH K M	10H INDUCTER	075-10082-100-0

RELAY／リレー				
#	SH000197	RELAY JC2AF DC24V MATUSHITA	JC 2AF DC 24V	076-02421-000-0

FUSE,FUSE HOLDS／ヒューズ、ヒューズホルダー

#	SH000412	FUSE 2A 250V VDES	FUSE T2AL 250V for 230V	280-20263-000-0
#	SH000265	FUSE 1A 250V	FUSE T1AL 250V for 230V	280-10263-001-0
#	SH000269	FUSE 6.3A 250V VDE /CE S	FUSE T6.3AL 250V for 230V	280-63263-000-0
#	SH000270	FUSE 2A 250V UL/CSA/JIS SB S	FUSE 2A 250V for 100V/117V	280-2028B-001-0
#	SH000266	FUSE 1A 250V UL/CSA JIS/SB/S	FUSE 1A 250V for 100V/117V	280-1028B-001-0
#	SH000267	FUSE 10A 250V UL/CSA/JES S	for 100V/117V	280-1038B-001-0
#	SH000271	FUSE CLIP FH-1208		281-00000-010-0
#	SH000272	FUSE HOLDER P/N FH-032 EDK	FUSE HOLDER 100V/117V	281-04000-020-0
#	SH000072	FUSE HOLDER FH-B02 EDK	FUSE HOLDER 230V	281-04000-000-0

CONNECTOR／コネクタ

#	SH000223	2P B.E/S SHF-1AA	2P 360DEGREES (CN312,314)	211-09021-000-0
#	SH000224	3P B.E/S SHF-1AA	3P 360DEGREES (CN303,309)	211-09031-000-0
#	SH000225	4P B.E/S SHF-1AA	4P 360DEGREES (CN302,307,311)	211-09041-000-0
#	SH000226	5P B.E/S SHF-1AA	5P 360DEGREES (CN301,305)	211-09051-000-0
#	SH000227	7P B.E/S SHF-1AA	7P 360DEGREES (CN306)	211-09071-000-0
#	SH000228	8P B.F/S SHF-1AA	8P 360DEGREES (CN308)	211-09081-000-0
#	SH000229	11P B.F/S SHF-I-AA	11P 360DEGREES(CN304)	211-09111-000-0
#	SH000230	2P WAFER/S 5267-02A	2P 180DEGREES	211-10021-150-0
#	SH000231	3P WAFER/S 5267-03A	3P 180DEGREES(T23,CN313A,CN506)	211-10031-011-0
#	SH000232	5P WAFER/S 2532-05	5P 180DEGREES(CN501)	211-10051-150-0
#	SH000233	9P WAFER/S 2533-09	L 9P 90DEGREES	211-10091-120-0
#	SH000234	9P WAFER/S 2532-09	9P 180DEGREES	211-10091-130-0
#	SH000235	12P WAFER/S 2533-12	L12P 90DEGREES	211-10121-030-0
#	SH000034	2P WAFER/S 2532-02	2P 180DEGREES(CN503)	211-10021-160-0

WIRING CABLE／ワイヤリング、ケーブル

#	SH000236	2P WAFFR/P 350/500MM	BRN/BLK T35(POWER AMP)	212-10022-550-0
#	SH000237	2P WAFER/P 200MM	BRN/BLK (CN312-CN502)	212-10022-560-0
#	SH000238	2P WAFFR/P 270MM GRY	T37(POWER AMP)	212-10022-570-0
#	SH000239	2P WAFER/P 400MM YLW	T38	212-10022-580-0
#	SH000240	2P WAFER/P 200MM	WHT/BLK (FAN, TRM SW)	212-10022-590-0
#	SH000241	3P WAFER/P 350MM BLK	BLK(CH1)	212-10032-080-0
#	SH000242	3P WAFER/P 400MM BWN	BRN(CH2)	212-10032-090-0
#	SH000243	3P WAFER/P 450MM	RED(CH3)	212-10032-100-0
#	SH000244	3P WAFER/P 500MM ONG	ORG(CH4)	212-10032-110-0
#	SH000245	3P WAFER/P 550MM YLW	YLW(CH5)	212-10032-120-0
#	SH000246	3P WAFER/P 650MM GRN	GRN(CH6)	212-10032-130-0
#	SH000247	3P WAFER/P 500MM	(CN309-CN506)	212-10032-150-0
#	SH000248	3P WAFER/P 60MM	(MODE SW to MAIN:CN309-CN506)	212-10032-160-0
#	SH000249	4P WAFER/P 660MM	RED/GRY (RTN to CN311)	212-10040-940-0
#	SH000250	4P WAFER/P 800MM	GRY/BLK (MASTER TO CN307)	212-10040-950-0
#	SH000251	4P WAFER/P 650MM	ORG/RED(POWER IN to CN306)	212-10040-960-0
#	SH000252	5P WAFER/P 700MM	(CN501 to CN305)	212-10051-110-0
#	SH000253	5P WAFER/P 550MM	(CN301 to 4P OUT PCB)	212-10051-120-0
#	SH000254	6P WAFER/P 90MM 1007#24	STEREO FADER	212-10061-180-0
#	SH000255	7P WAFER/P 1100MM	PCB-H (T2,4,8 to CN306)	212-10070-420-0
#	SH000256	8P WAFER/P 760/830MM	BLK/BRN/RED/ORG (CN308 to AUX, REC)	212-10080-330-0
#	SH000257	9P WAFER/P 60MM 1007#24	T12 (CH to CH)	212-10090-220-0
#	SH000258	9P WAFER/P 150MM	9P POWER(POWER PCB to AMP)	212-10090-230-0
#	SH000259	9P WAFER/P 90-300NN	9P AMP (POWER AMP to POWER PCB)	212-10090-240-0
#	SH000260	9P WAFER/P 200MM	9P (POWER to TRANS)	212-10090-250-0
#	SH000261	11P WAFER/P 450MM	(REV IO CN304)	212-10110-080-0
#	SH000262	12P WAFER/P 800MM	WHT (AUX1,AUX2)	212-10120-080-0
#	SH000263	12P WAFER/P 800MM	RED (AUX 4,5)	212-10120-090-0
#	SH000286	D.S WIRE UL2547#28 80MM GRY	XLR to PHONE	376-00208-185-0
#	SH000287	M.WIRE UL1007 #22 50MM RED	L (MONO)	379-03500-120-0
#	SH000288	M.WIRE UL1007 #22 50MM GRN	(AUX 3,6R)	379-03500-151-0
#	SH000289	M.WIRE UL1007 #22 80MM BLK	REC OUT to G	379-03800-101-0
#	SH000290	M.WIRE UL1015 #8 300MM BLU	BLU (POWER PCB 8 to JACK G)	379-10301-161-0
#	SH000291	M.WIRE UL1617 #18 150MM RED	POWER SW to FUSE	379-29151-121-0
#	SH000292	2P RIBBON WIRE 80MM		385-02081-220-0
#	SH000293	2P RIBBON WIRE 500MM	BLK SP G	385-02501-220-0
#	SH000294	2P RIBBON WIRE 600MM		385-02601-220-0
#	SH000295	3P RIBBON WIRE 100MM	CH FADER,PHONES	385-03101-220-0
#	SH000296	3P RIBBON WIRE 230MM	PHONES, MAIN	385-03231-220-0
#	SH000297	4P RIBBON WIRE 70MM	VU METER	385-04071-220-0
#	SH000087	M. WIRE UL1007 #22 50MM BLK	AUX 3L/R To GND BLK	379-03500-101-0
#	SH000408	3P WAFER/P 650MM GRY	PCB-H T15 To CN303	212-10032-140-0

TRANSFORMER／トランス

#	SH000195	X'MER PA410UL/CSA CE JIS	100V/117V/230V	070-2026B-800-0
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AC CORD／電源コード

#	SH000175	P/CORD 10/16A 250V 6F 2P	AC CORD for 230V	370-23060-939-0
#	SH000285	P/CORD 125V 10A 6F 3P UL/CSA	AC CORD for 117V	370-08010-732-0
#	SH000176	P/CORD 100V 12A 6F 2P JIS	AC CORD for 100V	370-24610-602-0

SCREWS／ねじ類

#	SH000347	PAN MACHINE SCREW M2.6x4 BZC		590-42604-200-0
#	SH000348	PAN MACHINE SCREW M3x6 NI		590-43006-100-0
#	40010267	BINDING MACHINE SCREW M3x10 BZC		590-53010-200-0
#	40010278	BINDING MACHINE SCREW M3x12 BZC		590-53012-200-0
#	SH000351	BINDING MACHINE SCREW M3x16 BZC		590-53016-200-0
#	SH000352	BINDING MACHINE SCREW M3x18 BZC		590-53018-200-0
#	40010301	BINDING MACHINE SCREW M3x20 BZC		590-53020-200-0
#	SH000354	TRUSS TAPTIGHT A 3.5x25 BZC		591-53525-200-0
#	40010345	TRUSS TAPTIGHT M4x6 BZC		590-54006-200-0
#	SH000356	TRUSS TAPTIGHT M4x10 BZC		590-54010-200-0
#	SH000357	BINDING MACHINE SCREW 2.6*6 ZN		591-52606-000-0
#	40010912	BINDING TAPTIGHT B 3x8 BZC		591-53008-200-0
#	SH000359	TRUSS TAPTIGHT A 3.5x30 BZC		591-53530-200-0
#	40010956	BINDING TAPTIGHT B 4x8 BZC		591-54008-200-0
#	SH000361	TRUSS TAPTIGHT A 4x16 BZC		591-54016-200-0

#	40010789	HEX NUT M3 ZC		600-00302-200-0
#	40019056	HEX NUT M4 ZC		600-00403-500-0
#	40016689	JUCK NUT #7		600-70905-062-0
#	SH000365	PLAIN WASHER 3x7x0.5 BZC		610-00300-502-0
#	SH000366	PLAIN WASHER 4x10x1 ZC		610-00401-000-0
#	SH000367	PLAIN WASHER 4x9x1 BZC		610-00401-002-0
#	SH000368	ABS JACK WASHER 12x17x1 BLK		610-01201-027-0
#	40123312	INTERNAL TOOTH WASHER M3 NI		610-20300-501-0
#	40011889	EXTERNAL TOOTH WASHER M4 NI		610-30400-500-0
#	40011801	SPRING WASHER M3 ZC		610-60300-500-0
#	22150518	STAND OFF M3 L 15C		615-10052-630-0
#	SH000145	PAN MACHINE SCREW M2x3 NI		590-42003-100-0
#	SH000409	PAN MACHINE SCREW M3x6 BZC		590-43006-200-0
#	40010901	BINDING TAPTIGHT B3x6 BZC		591-53006-200-0
#	SH000410	PAN WASHER HEAD MACHINE SCREW M3x6 NI		593-53006-200-0
#	SH000158	HEX NUT M7x2 BZC		600-00702-020-0
#	22150756	JACK NUT 2		600-71208-062-0
#	40011923	INTERNAL TOTH WASHRE M9 NI		610-20900-510-0
#	40010167	BINDING MACHINE SCREW M3x4 NI		590-53004-100-0
#	SH000428	HEX NUT M12 NI(Jack Accessory)		
#	40013290	SPACER 3.2*5*6mm		614-20004-620-0
#	SH000429	SPRING WASHER M4 ZC		610-60401-001-0

PACKING／梱包材

#	SH000339	G/B 625*663*263 PA410	INNER PACKING	561-10520-201-0
#	SH000340	RT POLYLON PMD800	R PAD	565-10085-001-0
#	SH000341	LF POLYLON PMD800	L PAD	565-10086-001-0
#	SH000342	PANEL POLYLON 660x340x10	BOTTOM PAD	565-10090-000-0
#	SH000343	PANEL POLYLON 660x340x35	PANEL PAD	565-10091-000-0
#	SH000338	CARTON 640x678x288 PA410	OUTER PACKING	560-10630-201-0

MISCELLANEOUS／その他

#	SH000306	HEAT SINK PMD800	HEAT SINK	526-10030-111-0
#	SH000308	TRANS HEAT SINK	REGURATOR HEAT SINK	526-10032-110-0
#	SH000375	INSU SPACER 139*75*0.3	RV-3P INSULATION SHEET	630-10031-410-0
#	SH000376	SLIDE VR HEMELON 0*1 20*90	CHANNEL FADER MASK	631-10000-000-0
#	SH000377	EQ HEMELON 14*7	EQ FADER MASK	631-10013-000-0
#	SH000378	HEMELON 24*12	SW MASK	631-10027-000-0
#	SH000283	FAN SP1202512H DCI2V 0.7A	FAN	347-00000-150-0
#	SH000309	STR.REL BUSHIING 6W3-4	CORD BUSH (100V/117V)	527-11000-000-0
#	SH000335	CABLE CLAMP FIXED CC-2		552-20044-420-0
#	SH000216	TMP/SW 03-PN311234	THEMAL SW 50 DEGREES	210-10050-000-0
#	SH000217	TMP/SW T105ARIUI MATSUSHITA	THERMAL PROTECTOR 1 05DEGREES	210-10105-000-0
#	SH000372	TRUE D11*4.4*5 RS-2	PCB HOLDER RS-2(RV-3P)	614-20003-620-0
#	SH000373	TRUE D5*D3*6 306	SPACER 5x3x6(RV-3P)	614-20004-620-0
#	SH000078	RUBBER WASHER TO-2203	RADIATION SHEET TO-2203	313-00000-060-0
#	SH000079	BUSHES 602S(V.O)	TRANSISTOR NYLON WASHER	314-00000-050-0
#	SH000413	STR.REL BUSHING 5N4/5W-2	CORD BUSH 230V	527-01000-000-0
#	SH000427	CORD CONNECTOR TN-2(UL/CSA)		307-00000-000-0
#	SH000372	TRUE D11*4.4*5 RS-2	PCB SUPPORT RS-2	614-20003-620-0

ACCESSORIES／付属品

#	SH000172	OWN.MANU.PA-410 (English)	OWNER'S MANUAL (English)	574-01134-410-0
#	SH000173	OWN.MANU.PA-410 (Japanese)	OWNER'S MANUAL (Japanese)	574-01134-430-0

CAUTION!! PRECAUTION FOR REPAIRING PA-410／PA410修理に関する注意

1.Before performing any repair, be sure to allow the chemical capacitors C523 and C524 to discharge according the following procedure.
Using a proper resistor (recommended resistor: several tens of ohms, several tens of watts),short between the plus and minus side of the secondary power supply. At this point, care should be taken to avoid electrical shock.

2.When components such as POWER IC have been replaced, be sure to securely tighten screws (Binding Machine M3x16 BZC) (recommended torque:10kg•cm) If not tightened securely, heat dissipation of the POWER IC will be poor, possibly resulting in faulty operation.
Be sure to use silicone grease between POWER IC and heatsink.

3.Changing the transformer or primary code, it's necessary the cord connector "TN-2".
At the times to bind the "TN-2", use the exclusive tool to press it.

DESCRIPTION OF CIRCUITS(PROTECTIVE CIRCUITS)FOR PA-410

The PA-410 have built-in protective circuits, including a thermosensor, a DC sensor, a muting circuit, a overload current,and cooling fan. Should any troubles occur, these circuits protect the speaker system and the mainframe.

Thermosensor

If this thermosensor, fitted to the heatsink, senses about 105℃ or higher, the protection comes on. When the temperature falls down to about 75℃, the protection will be off.
At the time that the internal temperature of the transformer exceed about 135℃, the protection works to open the primary circuit.Then the transformer is going to be cool under 115℃, the protection will be released and connect the circuit.
*If using PA-410 hardly for many hours, the internal temperature rise and the protection works. (It's also influences around temperature.)

DC sensor

If a DC component is superimposed on the output from the speakers, the protection works.

Muting circuit

After the power is turned on, the protection works for about 2 seconds.

Overload current

If the speaker outputs are shorted, the protection works.

1.分解前に必ずケミコンC523,C524の放電を行って下さい。
放電の方法は、下記の通りです。
2次側電源の＋側と－側とを、適当な抵抗（推奨抵抗：数十オーム、数十ワット）を使用して、ショートさせて下さい。この時、感電しないように注意して下さい。

2.POWER ICを交換した時は、確実に"Binding Machine Screw M3x16 BZC"で締め付けて下さい。（推定トルク10kgf・cm）
締め付けが緩いと、POWER ICの放熱が悪くなり不良の原因となります。
また、POWER ICとヒートシンク間には必ずシリコン・グリスを散布して下さい。

3.電源トランス、電源線を交換する時は、"CORD CONNECTOR TN-2"が必要です。
CORD CONNECTOR TN-2は専用工具で圧着接続して下さい。

PA-410回路解説（保護回路）

PA-410には、温度センサー、DCセンサー、ミュートイング回路、過電流保護、冷却ファンを採用しています。

温度センサー

ヒートシンクに付いている温度センサーが、約105度になるとプロテクションがかかり、約75度になると、プロテクションを解除します。
電源トランス内部の温度が約135度になるとプロテクションがかかり、電源が切れます。約115度になると、プロテクションを解除し、電源が再復帰します。
＊フルパワー状態での長時間使用を行うと内部温度が上昇し、プロテクションがかかる場合が有ります。（室内温度にも影響します。）

DCセンサー

スピーカー・アウトにDC成分が乗ると、プロテクションがかかります。

ミュートイング回路

電源オン時、約2秒間、プロテクションがかかります。

過電流保護回路

スピーカ端子短絡などの過負荷時にプロテクションがかかります。

Cooling Fan

The fan is designed to change slow and fast. At the moderate internal temperature, the fan works slow. Whenever the surface temperature of the heatsink exceed 50℃. The fan changes to be fast.

冷却ファン

通常は低速運転していますが、ヒートシンクの表面温度が50度を越えるとファンが高速回転を開始する2段階の冷却ファンです。

ADJUSTMENT SPECIFICATIONS／調整仕様

1.Setting
INPUTAUDIO GENERATOR
(Channel 1) (1kHz, -13dBm, Sine Wave)
OUTPUTLoaded 4ohm (STEREO) /
power-resistant more than 100W
VOLTAGE METTER
KNOBGAIN, MON, EFF : MIN, PAD : 0dB
TREBLE, BASS, PAN : CENTER
CHANNEL-VOLUME,
MASTER : MAX

- Adjust the level of the AUDIO GENERATOR so taht speaker outputs are 20Vrms (100W/4ohm)

-CAUTION-
* Certainly, set the Knob "PAN" is center, and MASTER L/R are MAX (or same position)

2.Adjustment
• Adjust the trimmers SR381/DR382 which are on the PA410-C PCB Assy so that theVU METER L/R indicare level "0"

3.Confirmation
• Confirm that UV MATER L/R indicate the same level, when MASTER Fadern L/R are the same position. In the case of difference btween L and R, try agein in the adjustment 1 and 2.

1.設定
INPUTAUDIO GENERATOR
(チャンネル1) (1kHz, -13dBm, 正弦波)
OUTPUT4ohm, 100W以上抵抗負荷 (STEREO)
VOLTAGE METER
KNOBGAIN, MON, EFF, MIN, PAD : 0dB
TREBLE, BASS, PAN : CENTER
CHANNEL-VOLUME,
MASTER : MAX

- OUTPUTが20V(R.M.S) (100W/4ohm)になるように、AUDIO GENERATORの出力レベルを微調整する。

*注意：PAN は必ず中央で、MASTER L / Rは必ずMAX (同じ位置)にする事。

2.調整
• 製品VU MERERの "0" を表示するように半固定VR381, VR382 (MAIN PCB ASSY) を調整する。

3.調整確認
• MASTER L/R VOLUMEを上下してL/RのVU METERが同じような動作をするか確認する。ズレる場合は再度1,2の調整をして下さい。

BIAS ADJUSTMENT (RV-3P)／バイアス調整仕様（RV-3P）

1.Input

- (1) Connect RV-3P to CN304 on PA-410.
- (2) Feed the Square Wave (200Hz, 20mVp-p) to Ch1 of PA 410.(Fig1)
- (3) Set each Knob/Fader of PA-410 as below.
- | | |
|----------|--------|
| PAD | Off |
| SENS | Min |
| EQ | Center |
| MON | Min |
| EFF/REV | Min |
| CH Fader | Max |
- (4) Connect the scope to 8th wire(Orange) of CN304.
- (5) Adjust EFF/REV Knob of Ch1 to obtain 20mVp-p.(Fig2)

2.Setting of RV-3P

- Short each point by some wires shown below.(Fig3)

3.BIAS Adjustment

- Connect the scope to 3rd wire(Green) and 5th wire (Yellow). Then, adjust RT1 on RV-3P ASSY to obtain a waveform shown below.(Fig,4,5,6)

-CAUTION-

* Use the exclusive driver for BOSS Compact Effector "RV-3" to adjust RV-3P.

1.入力

- RV-3P ASSYをCN304につなぎます。
 - Audio Generatorを200Hz,20mVp-p,矩形波にし、Ch1に入力します(Fig1)。
 - 各ツマミを以下のように、設定します。
- | | |
|---------------|--------|
| PAD..... | Off |
| SENS..... | Min |
| EQ..... | Center |
| MON..... | Min |
| EFF/REV..... | Min |
| CH Fader..... | Max |
- CN304の8番線（オレンジ）にオシロスコープのプローブをあてます。
 - Ch1のEFF/REVツマミを回し、オシロスコープの波形が20mVp-pになるよう調節します(Fig2)。

2.RV-3P設定

- Fig3のように、PV-3P ASSYの各ポイントをショートします。

3.バイアス調

- CN304の3番線（緑）、5番線（黄）にプローブをあてて、RV-3PのRT1をFig4のように調節します。(Fig4,5,6)

*注意：RV-3Pの調整には、BOSS Compact RV-3専用の調整ドライバーを使用して下さい。

fig.1

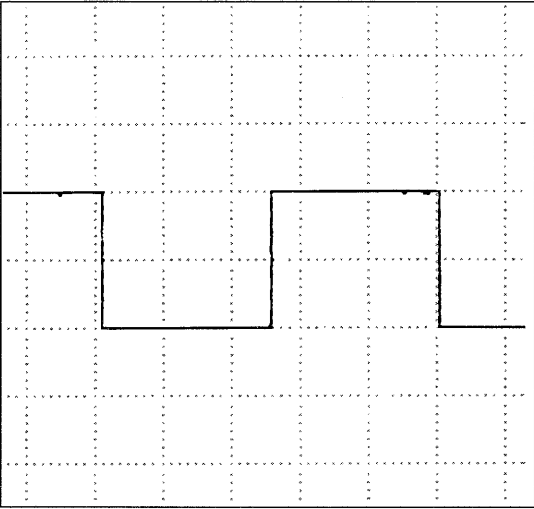


fig.2

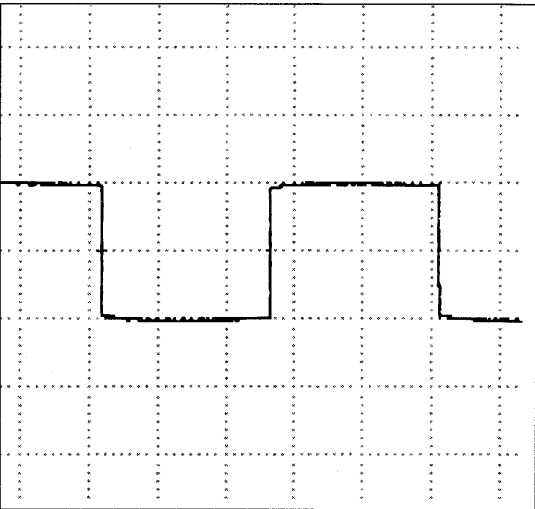


fig.4 OK

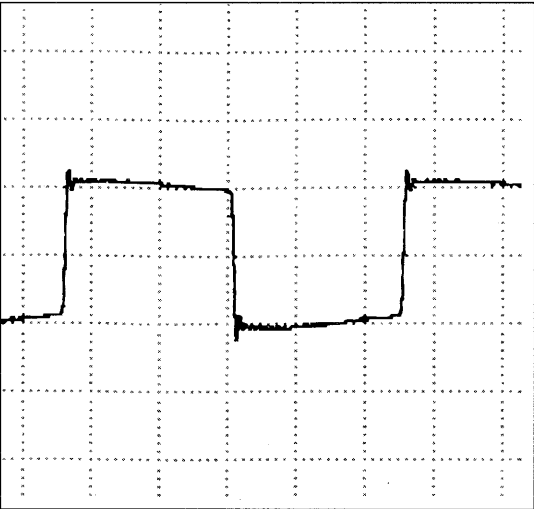
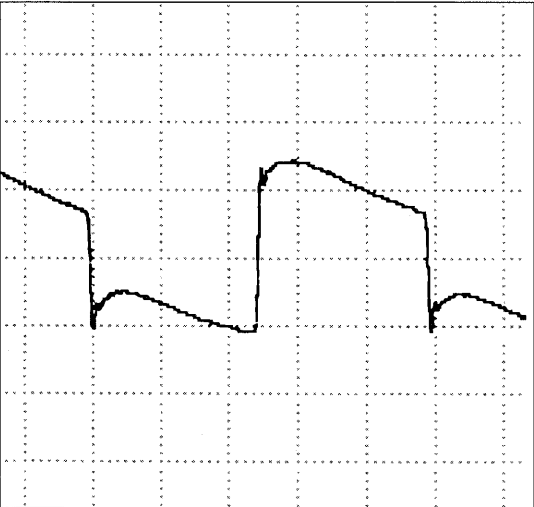


fig.5 NG

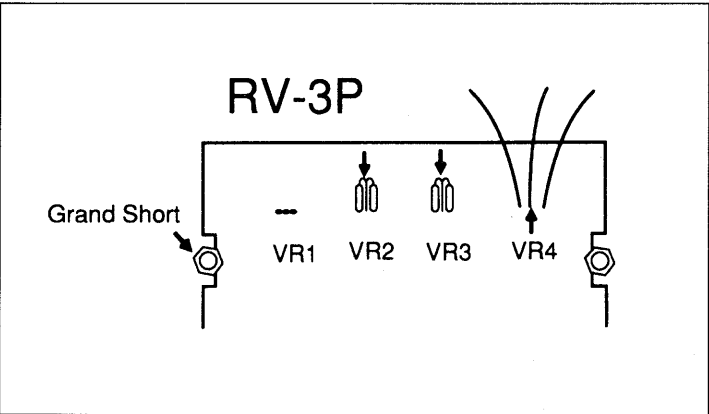


fig.6 NG



10mV / DIU
1ms / DIU

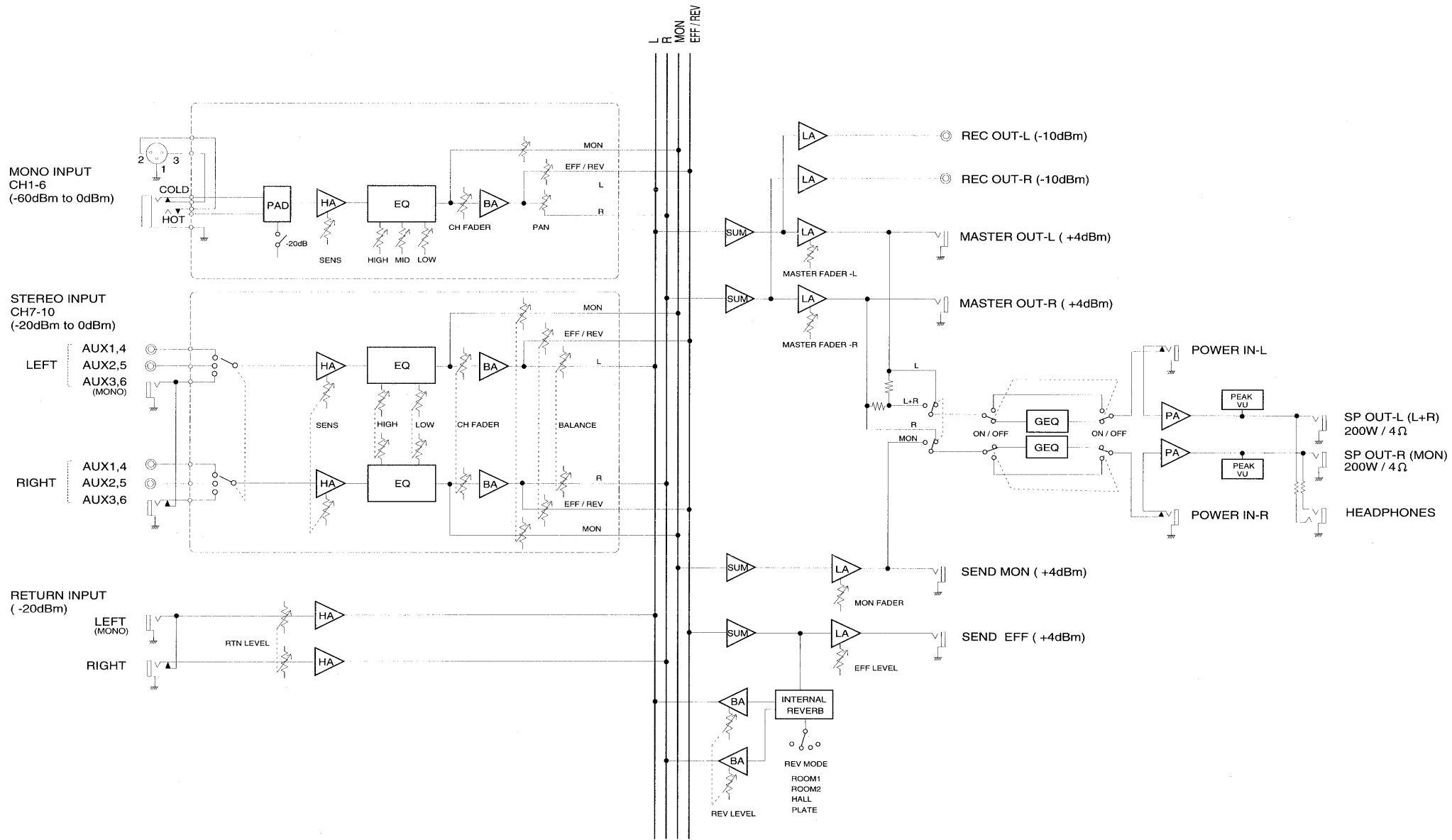
fig.3



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28

A Block DIAGRAM／ブロック図

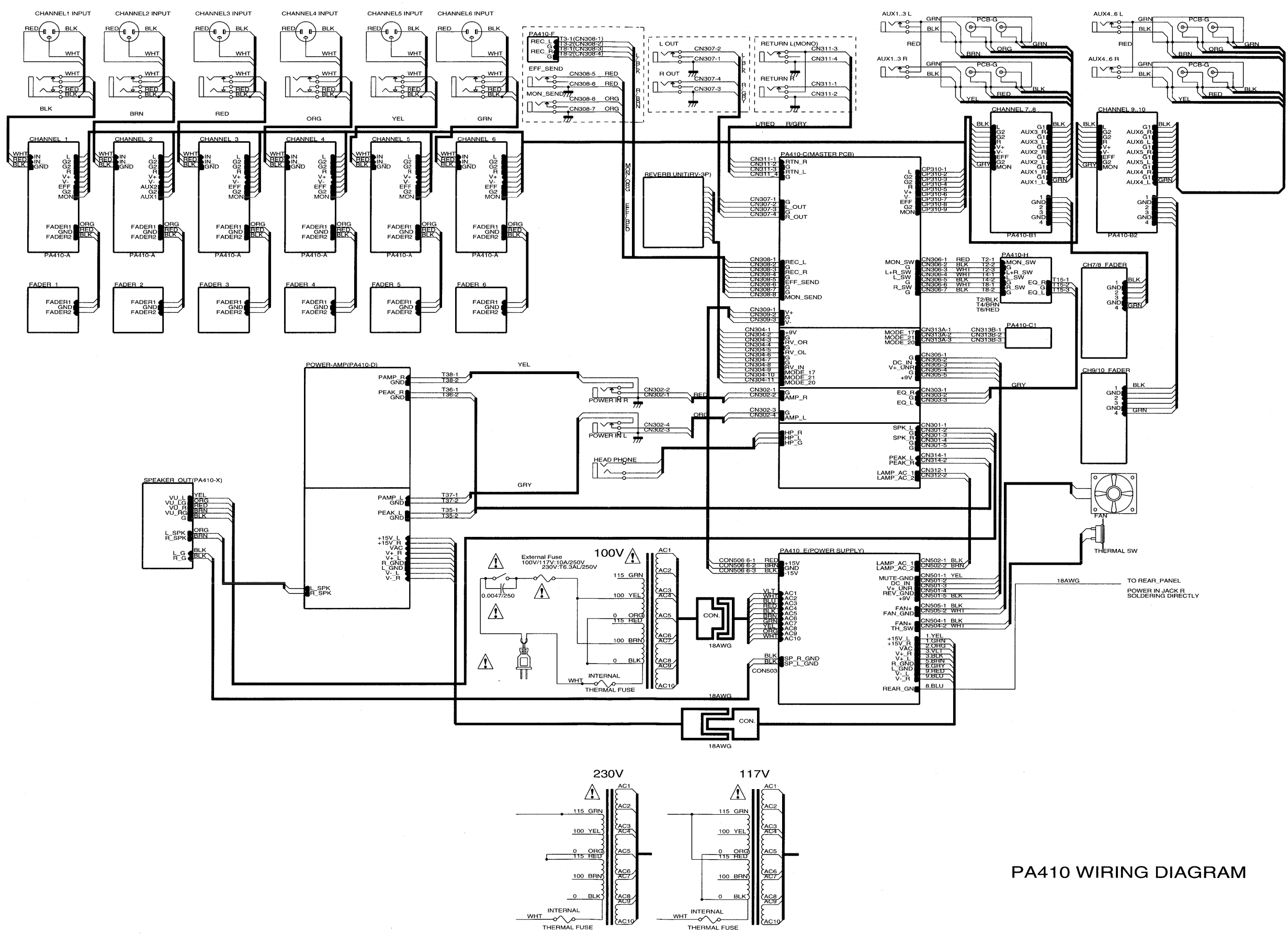
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A WIRING DIAGRAM/配線図

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PA410 WIRING DIAGRAM

U

VR207

PMDB00-1

290-19010-900

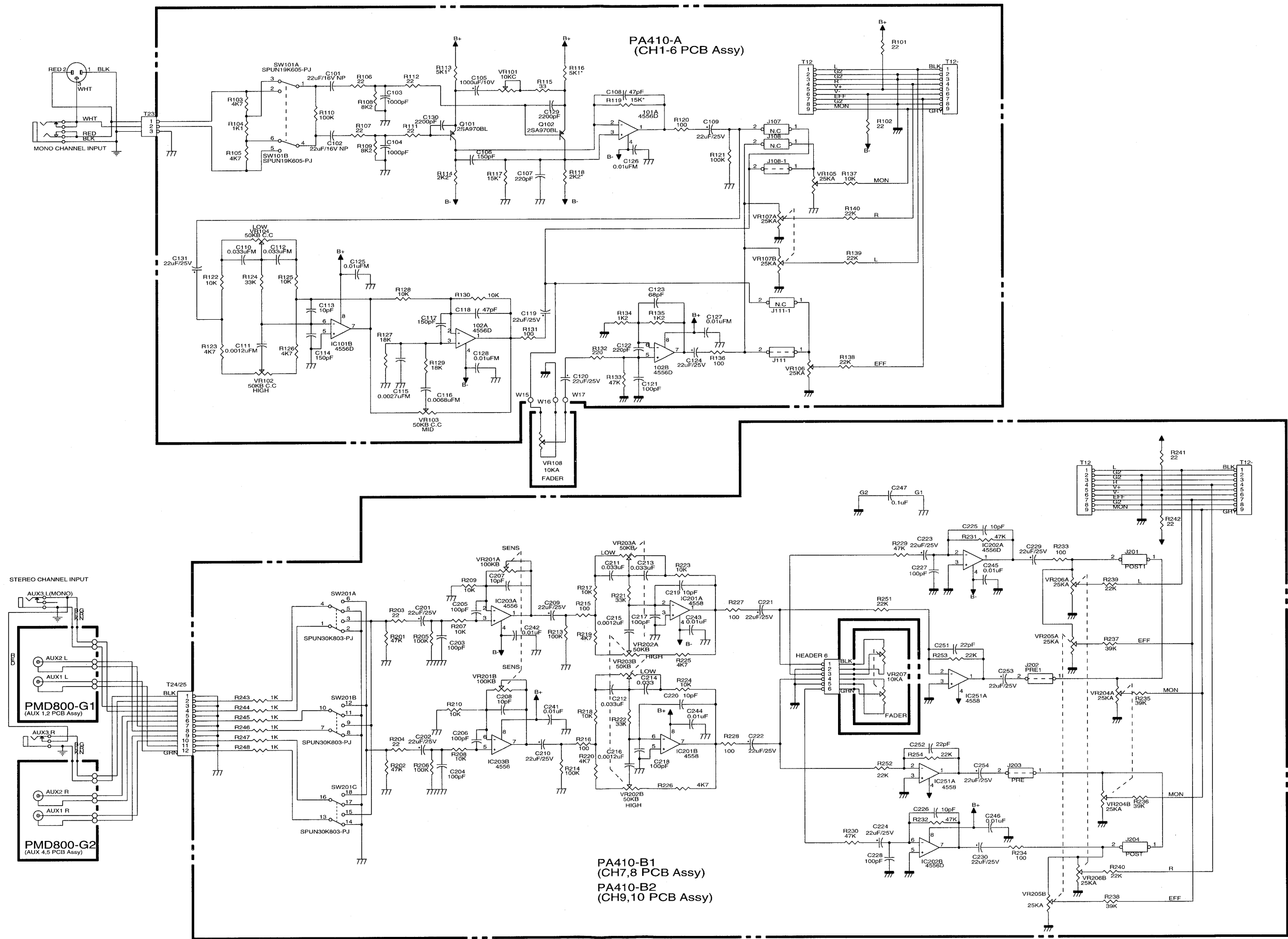
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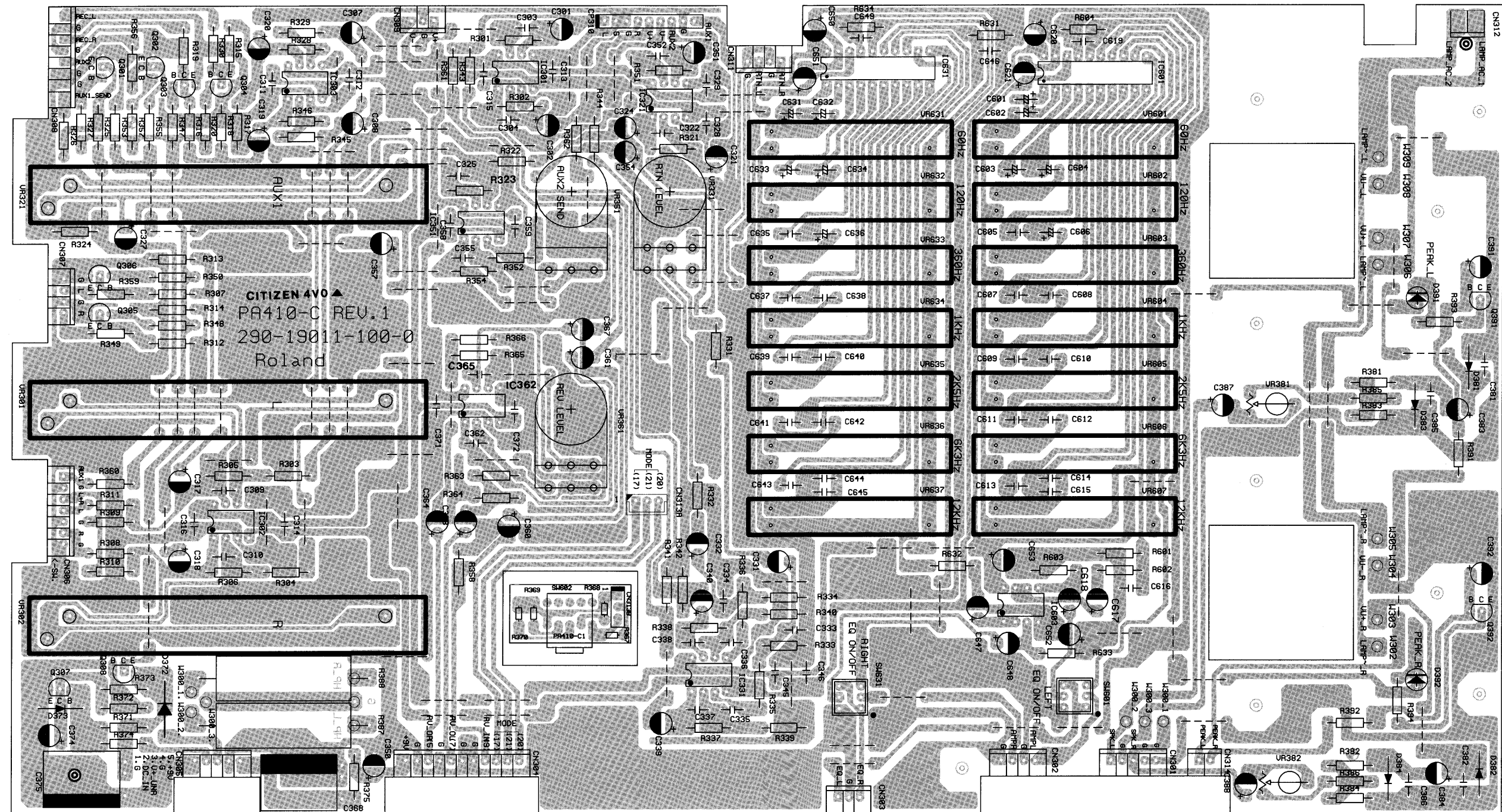
A CIRCUI T DIAGRAM / 回路図



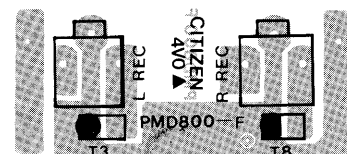
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A PWB/基板図

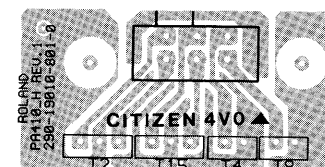
MAIN PCB ASS'Y



REC OUT PCB ASS'Y



SW PCB ASS'Y



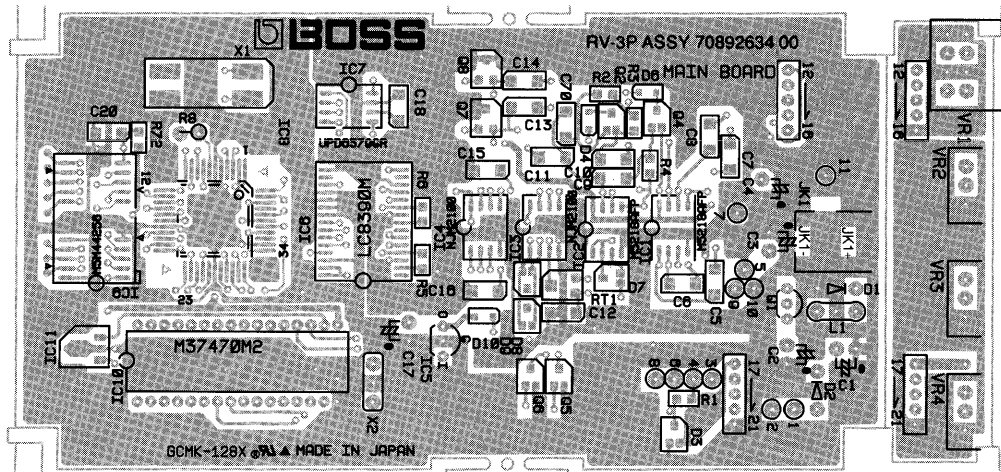
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28

A PWB／基板図

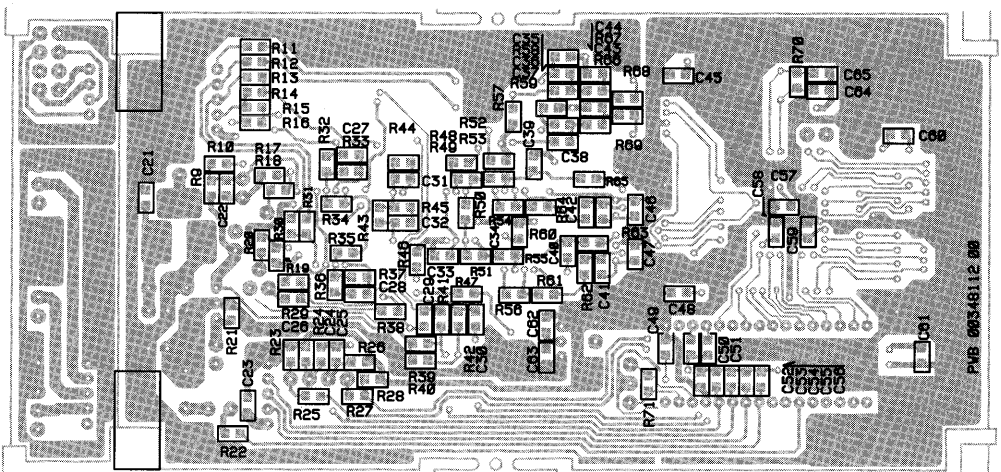
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KIT DIGITAL REVERB RV-3P

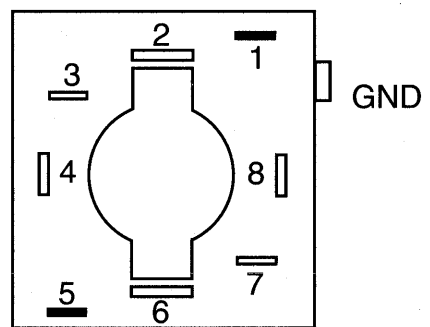
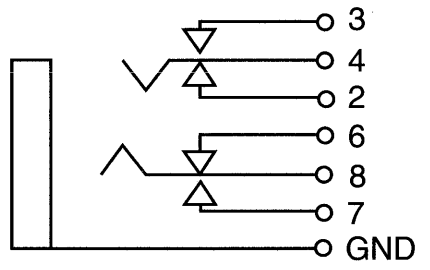
COMPONENT SIDE



SOLDER SIDE



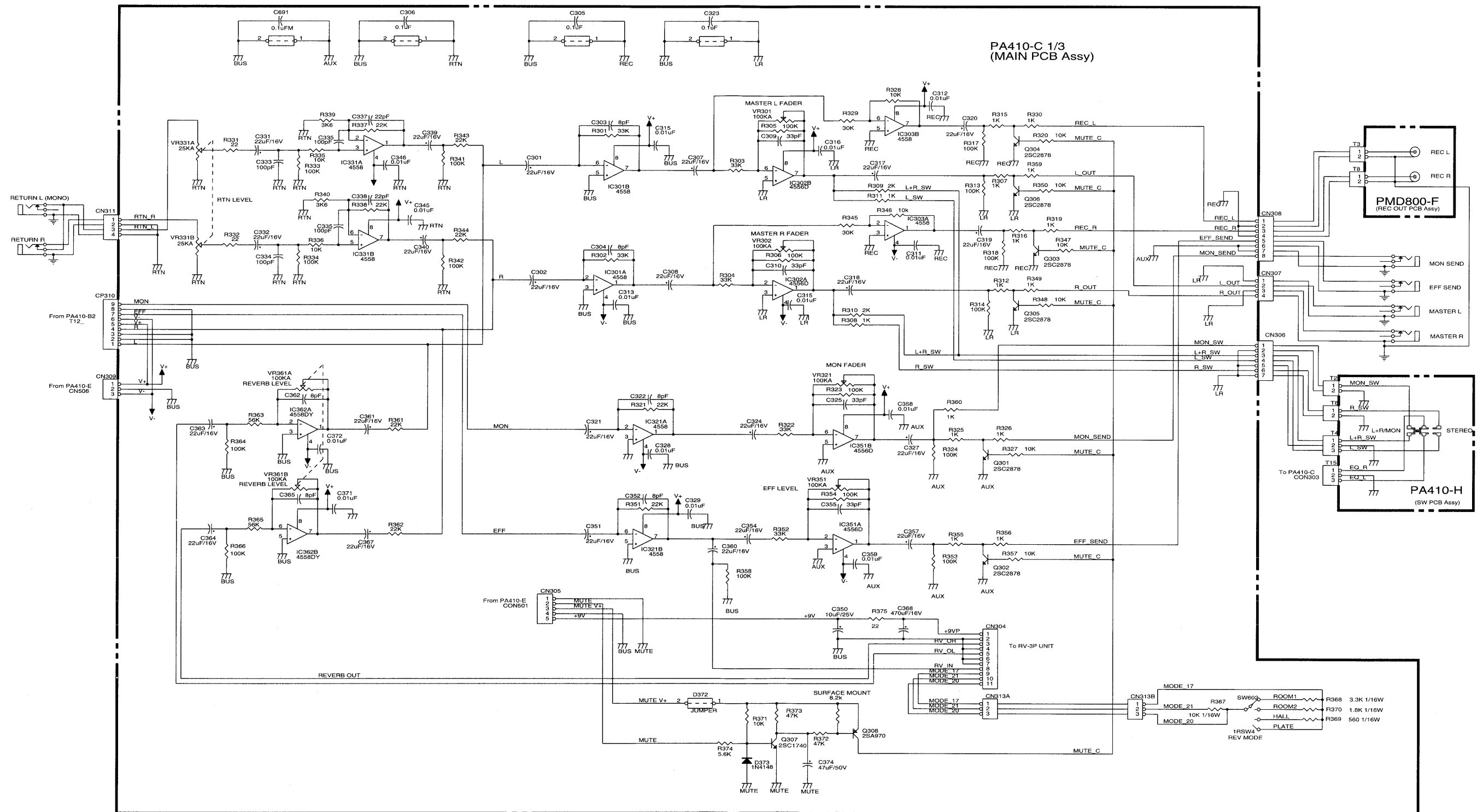
JACK(STEREO With SW)
APJ-06-2
(SH000221)



(REAR VIEW)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
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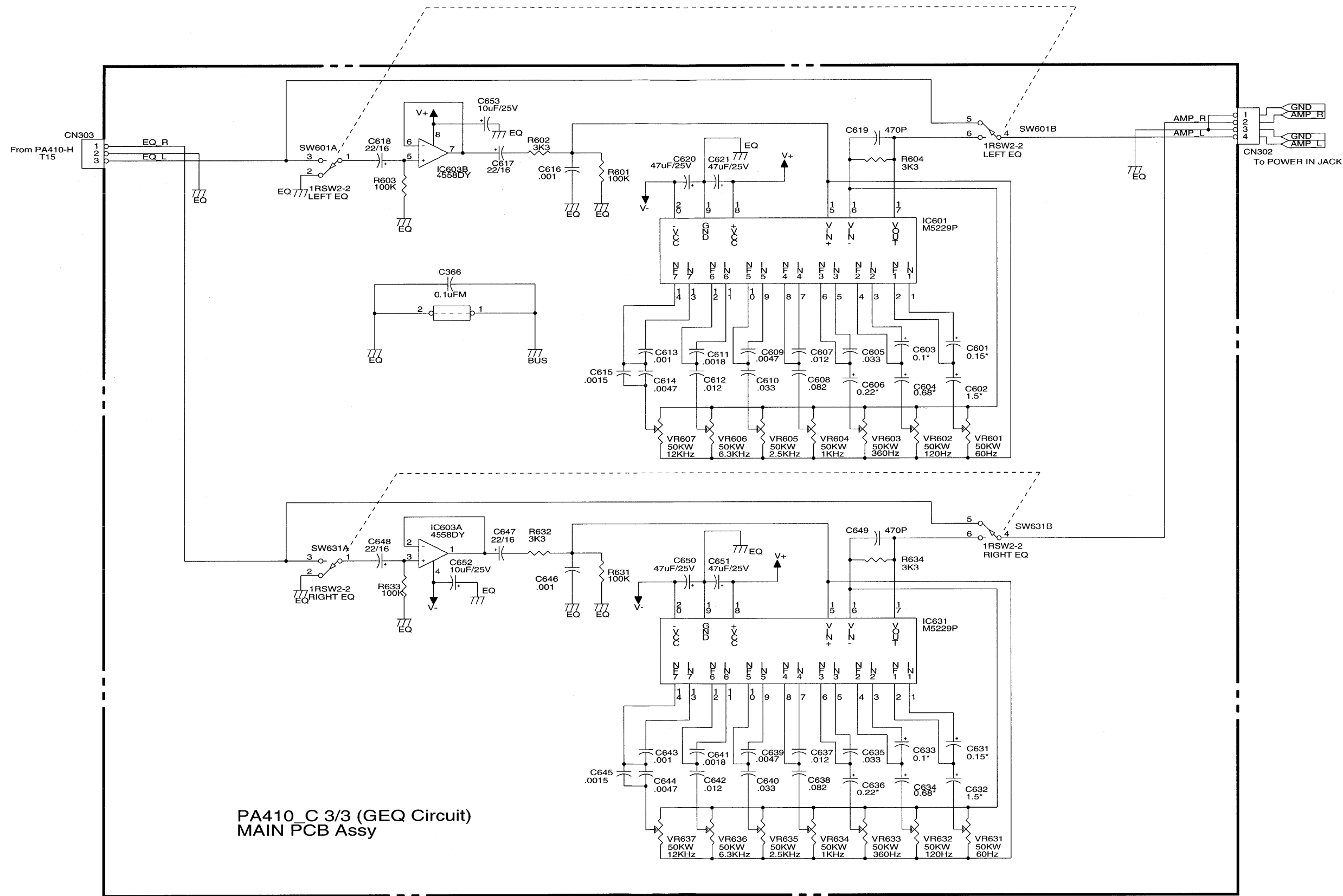
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A CIRCUIt DIAGRAM/回路図

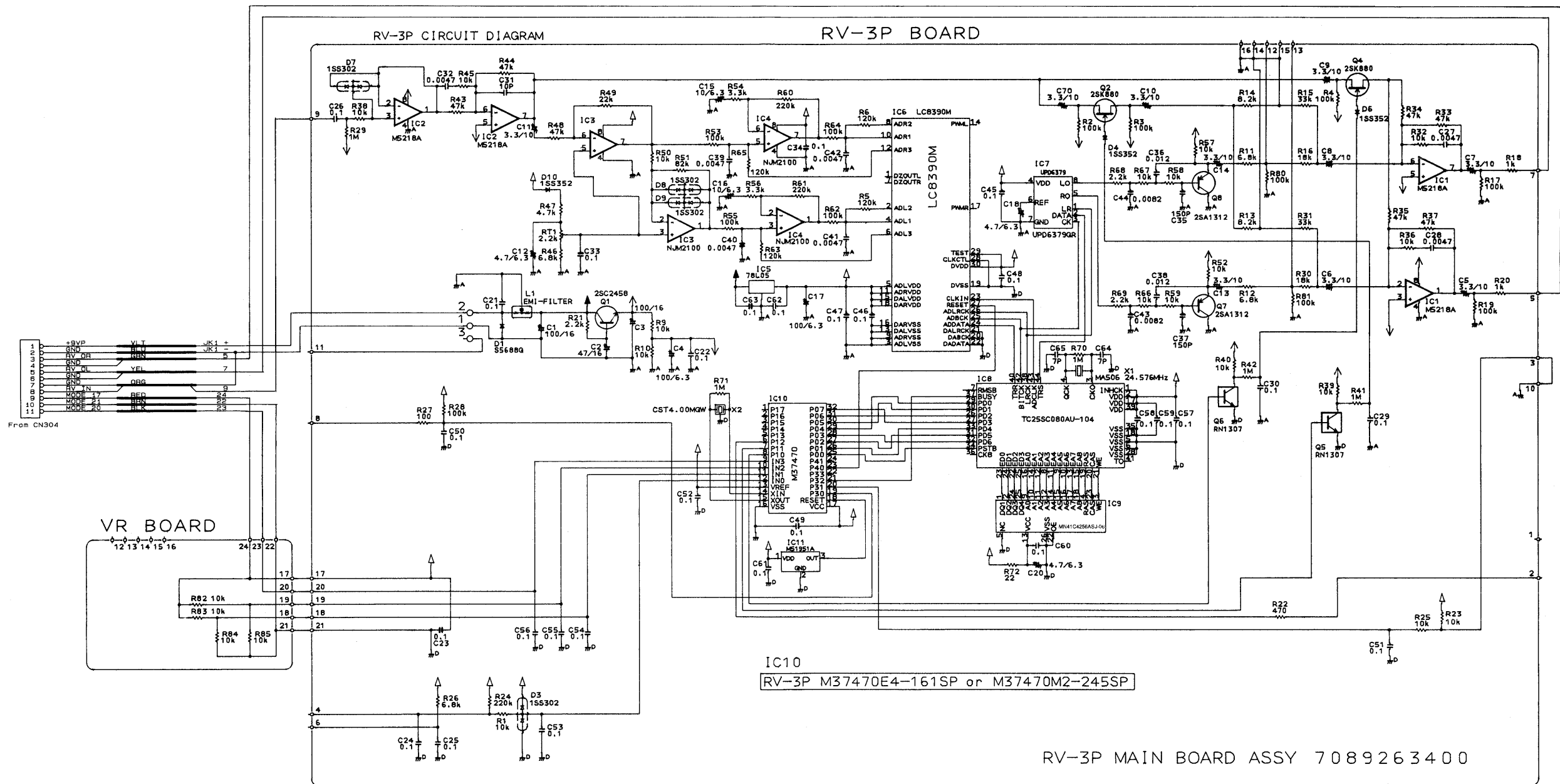
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A CIRCUI T DIAGRAM / 回路図

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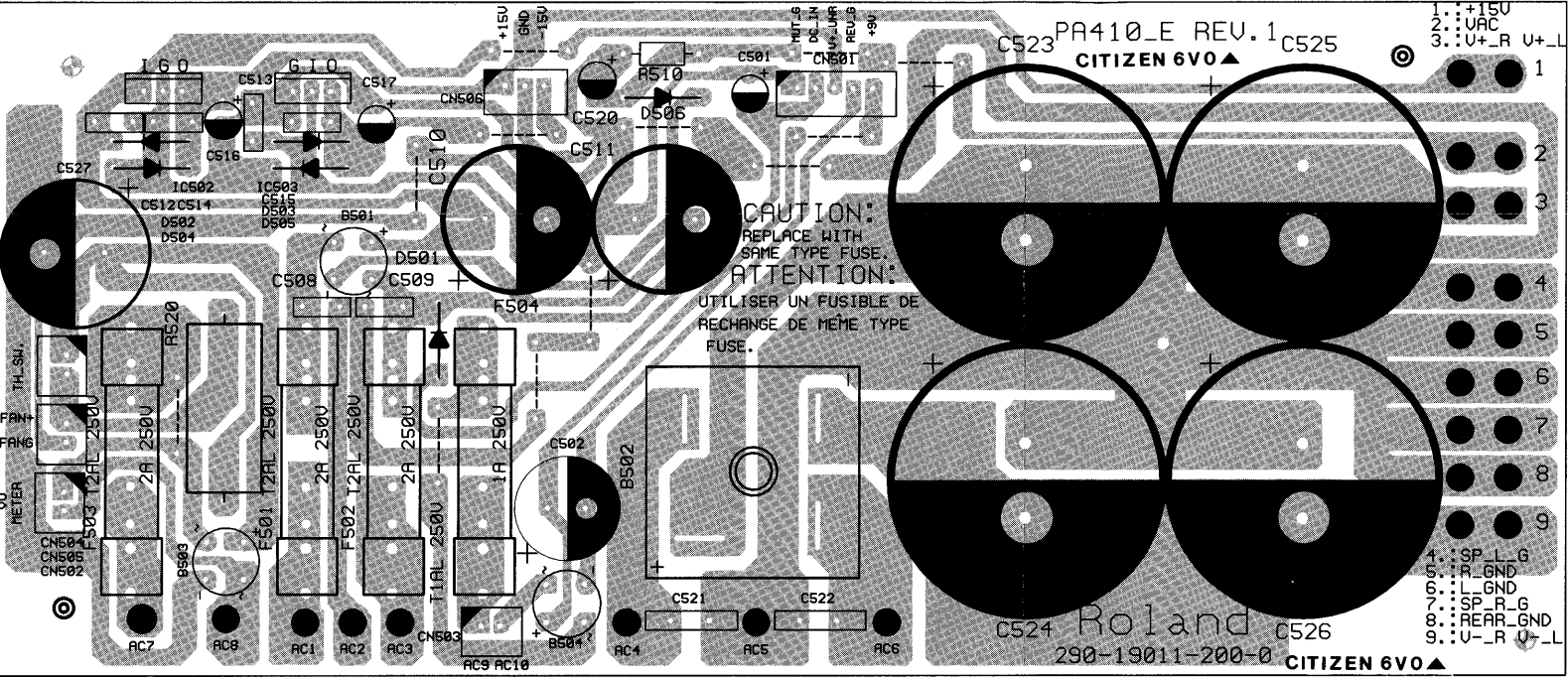


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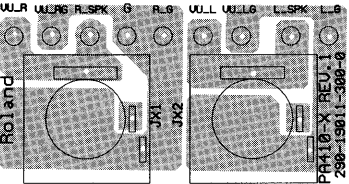
A PWB／基板図

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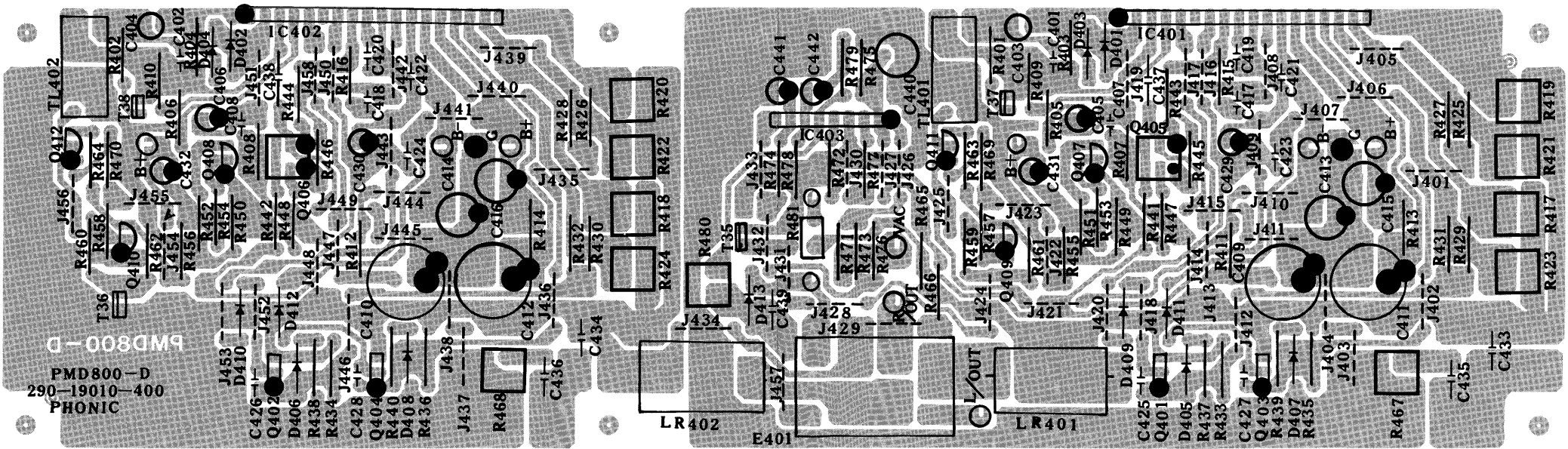
PS PCB ASS'Y(230V)



SPEAKER OUT PCB ASS'Y



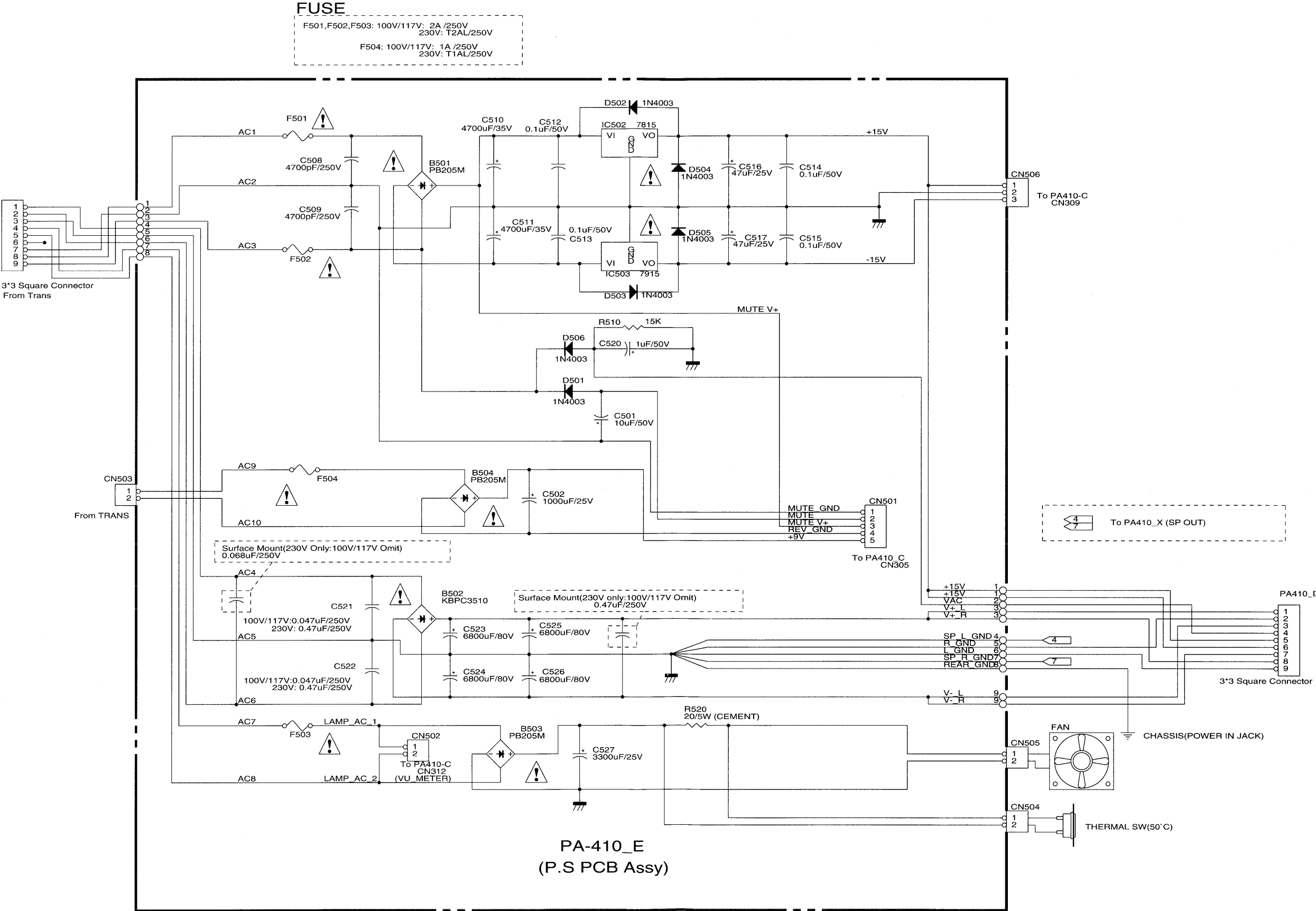
POWER AMP PCB ASS'Y



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28

A CIRCUIT DIAGRAM/回路図

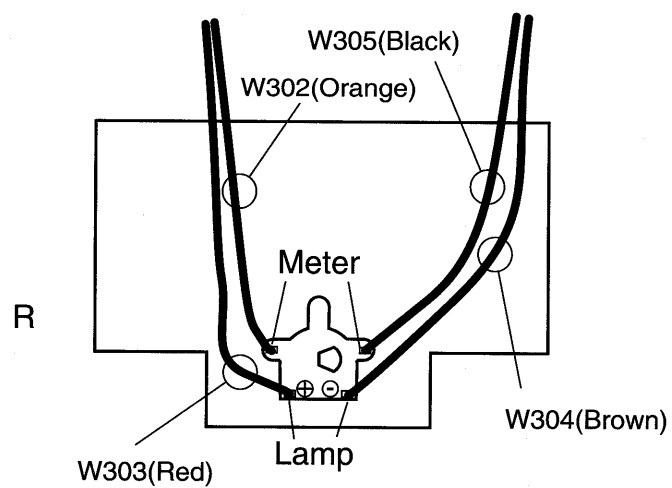
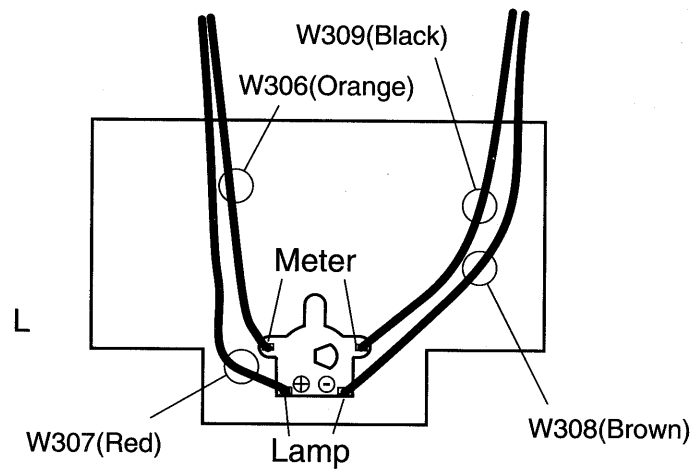
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VU METER/VUメーター

VU METER
(SH000264)

(REAR VIEW)