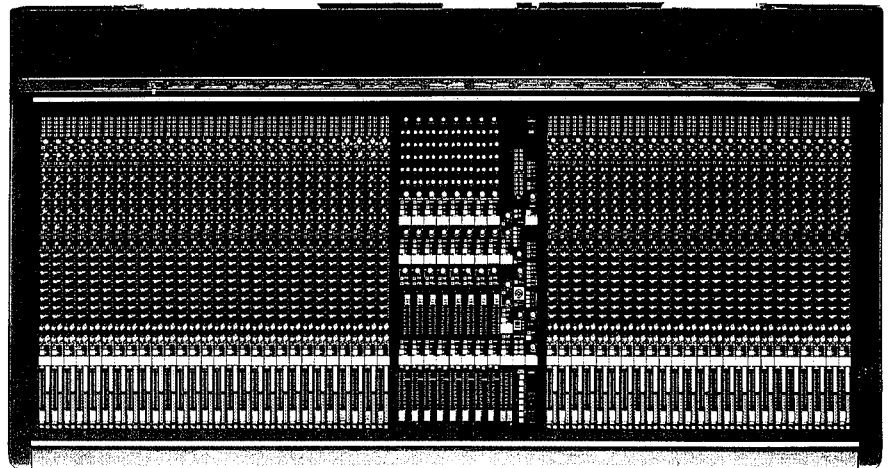


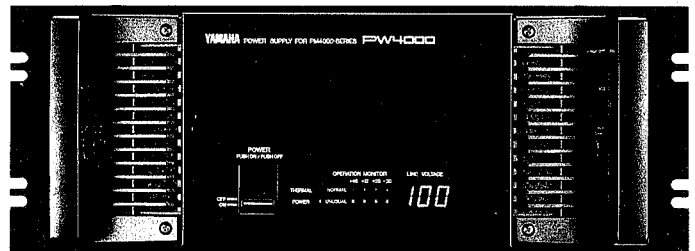
PROFESSIONAL AUDIO MIXING CONSOLE PM4000

POWER SUPPLY for PM4000 Series PW4000

SERVICE MANUAL



PM4000-48



PW4000

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PM4000/PW4000

IMPORTANT NOTICE

This manual has been provided for the use of authorized Yamaha Retailers and their service personnel. It has been assumed that basic service procedures inherent to the industry, and more specifically Yamaha Products, are already known and understood by the users, and have therefore not been restated.

WARNING: Failure to follow appropriate service and safety procedures when servicing this product may result in personal injury, destruction of expensive components and failure of the product to perform as specified. For these reasons, we advise all Yamaha product owners that all service required should be performed by an authorized Yamaha Retailer or the appointed service representative.

IMPORTANT: The presentation or sale of this manual to any individual or firm does not constitute authorization, certification, recognition of any applicable technical capabilities, or establish a principle-agent relationship of any form.

The data provided is believed to be accurate and applicable to the unit(s) indicated on the cover. The research, engineering, and service departments of Yamaha are continually striving to improve Yamaha products. Modifications are, therefore, inevitable and changes in specification are subject to change without notice or obligation to retrofit. Should any discrepancy appear to exist, please contact the distributor's Service Division.

WARNING: Static discharges can destroy expensive components. Discharge any static electricity your body may have accumulated by grounding yourself to the ground buss in the unit (heavy gauge black wires connect to this buss).

IMPORTANT: Turn the unit OFF during disassembly and parts replacement. Recheck all work before you apply power to the unit.

WARNING: CHEMICAL CONTENT NOTICE!

The solder used in the production of this product contains LEAD. In addition, other electrical/electronic and/or plastic (where applicable) components may also contain traces of chemicals found by the California Health and Welfare Agency (and possibly other entities) to cause cancer and/or birth defects or other reproductive harm.

DO NOT PLACE SOLDER, ELECTRICAL/ELECTRONIC OR PLASTIC COMPONENTS IN YOUR MOUTH FOR ANY REASON WHAT SO EVER!

Avoid prolonged, unprotected contact between solder and your skin! When soldering, do not inhale solder fumes or expose eyes to solder/flux vapor!

If you come in contact with solder or components located inside the enclosure of this product, wash your hands before handling food.

SPECIFICATIONS (総合仕様)

PM4000 Mixing Console General Specifications

Total Harmonic Distortion (Master Output)	<0.1% (THD+N) <0.01% (2nd – 10th harmonics)	20 Hz – 20 kHz @ +14 dBu, 600Ω 20 Hz – 20 kHz @ +14 dBu, 600Ω
Frequency Response (Master Output)	0 +1 dB, -3 dB	20 Hz – 20 kHz @ +4 dBu, 600Ω
Hum & Noise (48 Channels) (20 Hz – 20 kHz) RS + 150Ω Input Gain = Max. Input Pad = OFF Input Sensitivity = -70 dB	-128 dB	Equivalent Input Noise
	-100 dB	Residual Output Noise
	-85 dB (89 dB S/N)	GROUP OUT Master fader at nominal level, all channel assign switches OFF
	-54 dB (58 dB S/N)	GROUP OUT Master fader at nominal level, one channel fader at nominal level
	-84 dB (88 dB S/N)	STEREO OUT Master fader at nominal level, all channel assign switches OFF
-94 dB (98 dB S/N)	MTRX OUT Master and Matrix mix controls at maximum level, all GROUP to MTRX switches OFF	
Crosstalk	-80 dB @ 1 kHz, -70 dB @ 10 kHz	adjacent inputs or input to output
Maximum Voltage Gain	94 dB	CH IN to GROUP OUT/STEREO OUT (CH to ST)/MTRX OUT
	104 dB	CH IN to stereo out (G to ST)
	90 dB	CH IN to AUX OUT (PRE)/AUX ST OUT (PRE, LVL)
	100 dB	CH IN to AUX OUT (POST)/AUX ST OUT (POST, LVL)
	87 dB	CH IN to AUX ST OUT (PRE, PAN)
	84 dB	CH IN to CH DIRECT OUT
	104 dB	CH IN to MONITOR OUT (GROUP to MONITOR)
	84 dB	CH IN to MONITOR OUT (INPUT CUE)
	94 dB	ST IN (ST/L/R) to GROUP OUT
	91 dB	ST IN (L+R) to GROUP OUT
	87 dB	ST IN (ST/L/R) to AUX OUT (mono, PRE)
	90 dB	ST IN (L/R) to AUX OUT (mono, PRE)
	90 dB	ST IN (ST/L/R) to AUX ST OUT (stereo, PRE LVL)
	87 dB	ST IN (L+R) to AUX ST OUT (stereo, PRE LVL)
	87 dB	ST IN (ST/L/R) to AUX ST OUT (stereo, PRE, BAL)
	84 dB	ST IN (L+R) to AUX ST OUT (stereo, PRE, BAL)
	64 dB	TB IN to TB OUT
	0 dB	SUB IN (MTRX) to MTRX OUT
	10 dB	SUB IN (Others) to OUT (Others)
10 dB	2TR IN to MONITOR OUT	
Channel Equalization	±15 dB maximum	HIGH 1k – 20 kHz (shelving/peaking, Q = 0.5 – 3)
		HI-MID 0.4 k – 8 kHz (peaking, Q = 0.5 – 3)
		LO-MID 80 – 1.6 kHz (peaking, Q = 0.5 – 3)
		LOW 30 – 600 Hz (shelving/peaking, Q = 0.5 – 3)
Channel High Pass Filter	12 dB/octave	Roll off below 20 – 400 Hz @ -3 dB points
Oscillator/Noise Generator	Switchable sine wave @ 100 Hz, 1 kHz, 10 kHz or pink noise	Frequency sweepable at x0.2 – 2.0 nominal; less than 1% THD at +4 dBu
CH Preamp & EQ Peak Indicators	Red LED	Built into each input and stereo-in module; turns on when pre-EQ level or post-EQ level reaches 3 dB below clipping
Channel LED Meter	6 LEDs	Level meter built into each monaural and stereo input module

VU Meters (0 VU = +4 dBu output) 24 or 32 channel consoles	2 large meters	Illuminated meters: STEREO L,R	
	12 small meters	Illuminated meters, all switchable: #1 – #4; GROUP (1 – 4) / MTRX (1 – 4) / AUX (1 – 4) #5 – #8; GROUP (5 – 8) / MTRX (5 – 8) / AUX (5 – 8) #9; AUX ST1 L / MONITOR A L (pre-MONITOR control) #10; AUX ST1 R / MONITOR A R (pre-MONITOR control) #11; AUX ST 2 L / TB #12; AUX ST 2 R / OSC	
40 or 48 channel consoles	16 small meters	Illuminated meters, all switchable: #1 – #8; GROUP (1 – 8) / MTRX (1 – 8) / AUX (1 – 8) #9; GROUP 1 / MTRX 1 / AUX ST1 L #10; GROUP 2 / MTRX 2 / AUX ST1R #11; GROUP 3 / MTRX 3 / AUX ST2L #12; GROUP 4 / MTRX 4 / AUX ST2R #13; GROUP 5 / MTRX 5 / MONITOR A L (pre) #14; GROUP 6 / MTRX 6 / MONITOR A R (pre) #15; GROUP 7 / MTRX 7 / TB #16; GROUP 8 / MTRX 8 / OSC	
VU Meter Peak Indicators	LED (red)	Built into each VU meter, the LED turns on when the pre-line amp level reaches 3 dB below clipping	
Phantom Power	+48 V dc	Available at balanced inputs (via 6.8 kΩ current limiting/isolation resistors) for powering condenser microphones; may be turned ON or OFF via rear-panel Phantom Master switch. When Master is ON, individual channels may be turned OFF or ON via +48V switches on the mono input, stereo input and talkback modules	
Dimensions (W x H x D)	48 Channel	2086 x 346 x 1121 mm	82- ¹ / ₈ x 13- ⁵ / ₈ x 44- ¹ / ₈ inches
	40 Channel	1846 x 346 x 1121 mm	72- ¹¹ / ₁₆ x 13- ⁵ / ₈ x 44- ¹ / ₈ inches
	32 Channel	1586 x 346 x 1121 mm	62- ⁷ / ₁₆ x 13- ⁵ / ₈ x 44- ¹ / ₈ inches
	24 Channel	1346 x 346 x 1121 mm	53 x 13- ⁵ / ₈ x 44- ¹ / ₈ inches
Weight	48 Channel	183 kg	403 lbs. 7 oz
	40 Channel	161 kg	354 lbs. 14 oz
	32 Channel	137 kg	301 lbs. 15 oz
	24 Channel	115 kg	253 lbs. 7 oz

PW/4000 Power Supply Specifications

Power Requirements	Japan	100 V, 50/60 Hz	48 Channel	1100 W
			40 Channel	1000 W
			32 Channel	900 W
			24 Channel	800 W
	CSA/UL General	120 V, 60 Hz	1500 VA	1250W
		230/240 V, 50/60 Hz		1250W
DC Output Voltages			±19V	13 A
			+12V	8 A
			+48 V	0.7 A
Fuses	Main (x3)		6 A	250 V
	Sub (x1)		2A	250 V
Dimensions (W x H x D)		480.0 x 186.0 x 460.6 mm	18.8 x 7.3 x 18.1 inches	
Weight		36 kg	79.4 pounds	

INPUT CHARACTERISTICS

Connection	PAD	Gain Trim	Actual load Impedance	For use with Nominal	Input level (*3)			Connector in Mixer (*2)
					Sensitivity (*4)	Nominal	Max before Clip	
CH IN 1 ~ [ch (*1)] ST CH IN 1 ~ 4ch	0	-70	3kΩ	50Ω ~ 600Ω mics and 600Ω lines	-90 dB (0.025 mV)	-70 dB (0.25 mV)	-48 dB (3.09 mV)	XLR-3-31 type
	30				-60 dB (0.775 mV)	-40 dB (7.75 mV)	-18 dB (97.6 mV)	
	0	-20			-40 dB (7.75 mV)	-20 dB (77.5 mV)	+2 dB (0.976 V)	
	30	-10 dB (245 mV)			+10 dB (2.45 V)	+32 dB (30.9 V)		
SUB IN GROUP (1 ~ 8) STEREO (L, R) AUX (1 ~ 8) AUX ST1, 2 (L, R) CUE (L, R) MTRIX (1 ~ 8)			10kΩ	600Ω lines	-6 dB (388 mV) +4 dB (1.23 V)	+4 dB (1.23 V)	+26 dB (15.5 V)	XLR-3-31 type
TALKBACK IN	-50		3kΩ	50 ~ 600Ω mics	-70 dB (0.25 mV)	-50 dB (2.45 mV)	-28 dB (30.3 mV)	XLR-3-31 type
	+4	600Ω lines		-16 dB (123 mV)	+4 dB (1.23 V)	+26 dB (15.5 V)		
INSERT IN CH 1 ~ [ch (*1)] ST CH 1 ~ 4ch GROUP (1 ~ 8) STEREO (L, R) AUX (1 ~ 8) AUX ST1, 2 (L, R) MTRIX (1 ~ 8)			10kΩ	600Ω lines	-16 dB (123 mV)	+4 dB (1.23 V)	+26 dB (15.5 V)	Phone Jack (TRS)
		-6 dB (388 mV)						
		+4 dB (1.23 V)						
2TR IN 1, 2 (L, R)			10kΩ	600Ω lines	-6 dB (388 mV)	+4 dB (1.23 V)	+26 dB (15.5 V)	XLR-3-31 type

NOTES: *1 PM4000 -24: 24 ch, -32: 32 ch, -40C: 40 ch, -48C: 48 ch
 *2 All XLR connectors are electronically balanced. Phone jacks are balanced with Tip = signal high (+), Ring = signal low (-), and Sleeve = ground.
 *3 In these specifications, when dB represents a specific voltage, 0 dB is referenced to 0.775 Vrms.
 *4 Sensitivity is the lowest level that will produce an output of +4 dB (1.23 V), or the nominal output level when the unit is set to maximum level.

OUTPUT CHARACTERISTICS

Connection	Actual source Impedance	For use with Nominal	Output level (*3)		Connector in Mixer (*2)
			Nominal	Max before Clip	
GROUP OUT (1 ~ 8) STEREO OUT (L, R) MTRIX OUT (1 ~ 8) AUX OUT (1 ~ 8) AUX ST1, 2 OUT (L, R) TALKBACK OUT OSC OUT	150 Ω	600Ω lines	+4 dB (1.23 V)	+24 dB (12.3 V)	XLR-3-32 type
CH DIRECT OUT 1 ~ [ch (*1)]	150 Ω	600Ω lines	+4 dB (1.23 V)	+24 dB (12.3 V)	Phone Jack (TRS)
CH INSERT OUT 1 ~ [ch (*1)] ST CH INSERT OUT 1 ~ 4ch GROUP INSERT OUT (1 ~ 8) STEREO INSERT OUT (L, R) MTRIX INSERT OUT (1 ~ 8) AUX INSERT OUT (1 ~ 8) AUX ST1, 2 INSERT OUT (L, R)	150 Ω	10kΩ lines	+4 dB (1.23 V)	+24 dB (12.3 V)	Phone Jack (TRS)
PHONES OUT 1, 2 (L, R)	15 Ω	8Ω Phones	75 mW	150 mW	Phone Jack (STEREO)
		40Ω Phones	65 mW	150 mW	

NOTES: *1 PM4000 -24: 24 ch, -32: 32 ch, -40C: 40 ch, -48C: 48 ch
 *2 All XLR connectors are electronically balanced. Phone jacks are balanced with Tip = signal high (+), Ring = signal low (-), and Sleeve = ground. Phone Jacks (STEREO) are unbalanced.
 *3 In these specifications, when dB represents a specific voltage, 0 dB is referenced to 0.775 Vrms.

■入力仕様

コネクション	PAD	GAIN Trim	実効入力インピーダンス	ソースインピーダンス	入力レベル ⁴			使用コネクタ ³
					感度 ²	ノミナルレベル	MAX (クリップ時)	
MONO CH IN * 1~*ch	0	-70	3kΩ	50~600Ω Mics & 600Ω Lines	-90dB (0.025mV)	-70dB (0.25mV)	-48dB (3.09mV)	XLR-3-31 type
	30				-60dB (0.775mV)	-40dB (7.75mV)	-18dB (97.6mV)	
STEREO CH IN 1~4ch	0	-20	10kΩ	600Ω Lines	-40dB (7.75mV)	-20dB (77.5mV)	+2dB (0.976V)	
	30				-10dB (245mV)	+10dB (2.45V)	+32dB (30.9V)	
SUB IN								
GROUP (1~8)			10kΩ	600Ω Lines	-6dB (388mV)	+4dB (1.23V)	+26dB (15.5V)	XLR-3-31 type
STEREO (L, R)								
AUX (1~8)								
AUX ST1, 2 (L, R)								
CUE (L, R)								
MTRX (1~8)			10kΩ	600Ω Lines	+4dB (1.23V)	+4dB (1.23V)	+26dB (15.5V)	XLR-3-31 type
TALKBACK IN	-50		3kΩ	50~600Ω Mics	-70dB (0.25mV)	-50dB (2.45mV)	-28dB (30.9mV)	XLR-3-31 type
	+4			600Ω Lines	-16dB (123mV)	+4dB (1.23V)	+26dB (15.5V)	
INSERT IN								
CH ¹ 1~*ch			10kΩ	600Ω Lines	-16dB (123mV)	+4dB (1.23V)	+26dB (15.5V)	Phones Jack (TRS)
ST CH 1~4ch								
GROUP (1~8)			10kΩ	600Ω Lines	-6dB (388mV)	+4dB (1.23V)	+26dB (15.5V)	Phones Jack (TRS)
STEREO (L, R)								
AUX (1~8)								
AUX ST1, 2 (L, R)								
MTRX (1~8)			10kΩ	600Ω Lines	+4dB (1.23V)	+4dB (1.23V)	+26dB (15.5V)	Phones Jack (TRS)
2TR IN 1, 2 (L, R)			10kΩ	600Ω Lines	-6dB (388mV)	+4dB (1.23V)	+26dB (15.5V)	XLR-3-31 type

* 1 PM4000 - 24 : 24ch, - 32 : 32ch, - 40C : 40ch, - 48C : 48ch

* 2 規定出力レベル (+4dB = 1.23V) の出力を得るために必要な最小の入力レベル

* 3 全てのXLRコネクタおよびフォンジャックはバランスタイプ (T = +, R = -, S = GND)

* 4 0dB = 0.775Vrms

■出力仕様

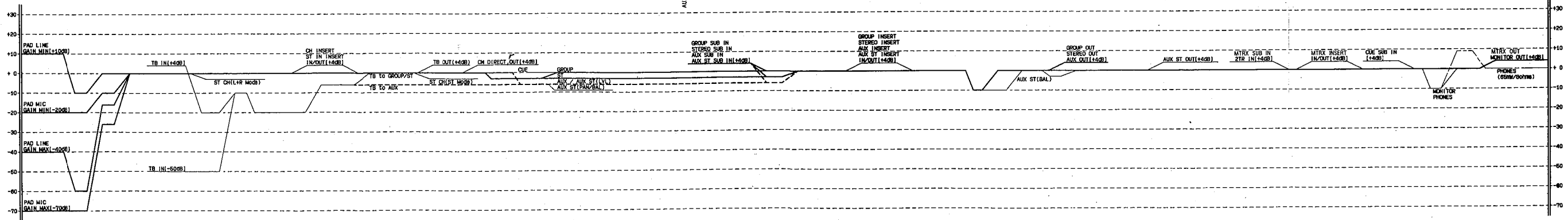
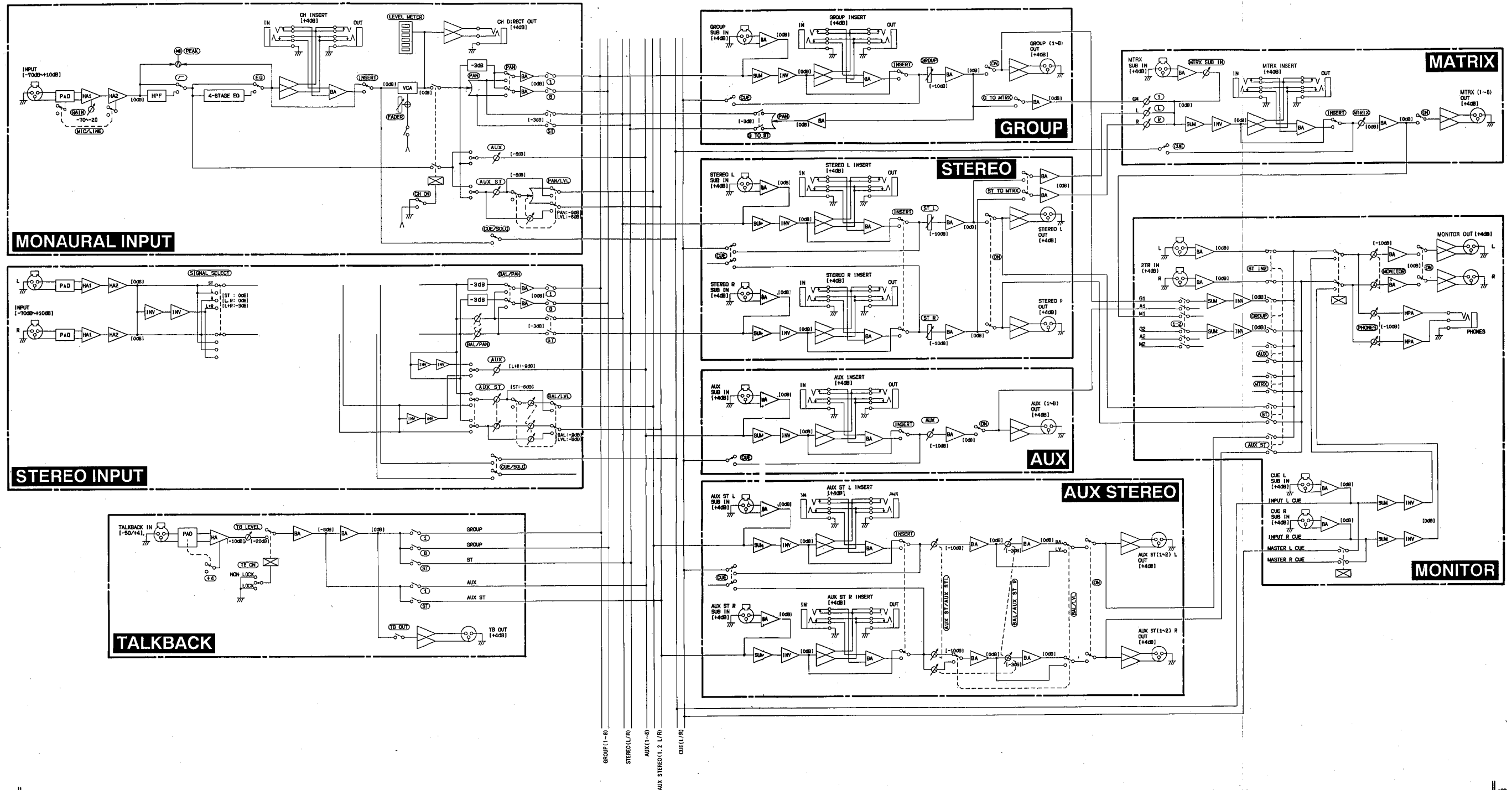
コネクション	実効ソースインピーダンス	ノミナルレベル時	出力レベル ³		使用コネクタ
			ノミナルレベル	MAX (クリップ時)	
GROUP OUT (1~8)	150Ω	600Ω Lines	+4dB (1.23V)	+24dB (12.3V)	XLR-3-32 type
STEREO OUT (L, R)					
MTRX OUT (1~8)					
AUX OUT (1~8)					
AUX ST1, 2 OUT (L, R)					
MONITOR A, B OUT (L, R)					
TALKBACK OUT					
OSC OUT					
CH DIRECT OUT ¹ 1~*CH	150Ω	600Ω Lines	+4dB (1.23V)	+24dB (12.3V)	Phone Jack (TRS)
CH INSERT OUT ¹ 1~*CH					
ST CH INSERT OUT 1~4ch	150Ω	10kΩ Lines	+4dB (1.23V)	+24dB (12.3V)	Phone Jack (TRS)
GROUP INSERT OUT (1~8)					
STEREO INSERT OUT (L, R)					
MTRX INSERT OUT (1~8)					
AUX INSERT OUT (1~8)					
AUX ST1, 2 INSERT OUT (L, R)					
PHONES OUT 1, 2 (L, R)	150Ω	8Ω Phones	75mW	150mW	Phones Jack (Stereo)
		40Ω Phones	65mW	150mW	

* 1 PM4000 - 24 : 24ch, - 32 : 32ch, - 40C : 40ch, - 48C : 48ch

* 2 全てのXLRコネクタおよびフォンジャックはバランスタイプ (T = +, R = -, S = GND)

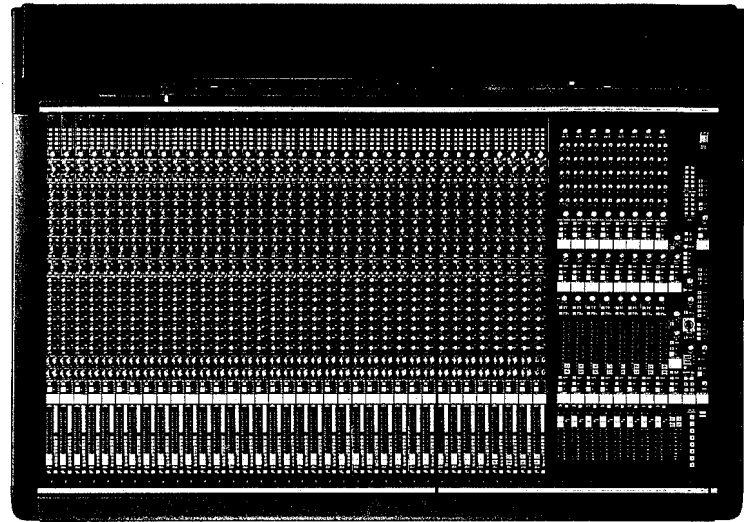
* 3 0dB = 0.775Vrms

BLOCK AND LEVEL DIAGRAM



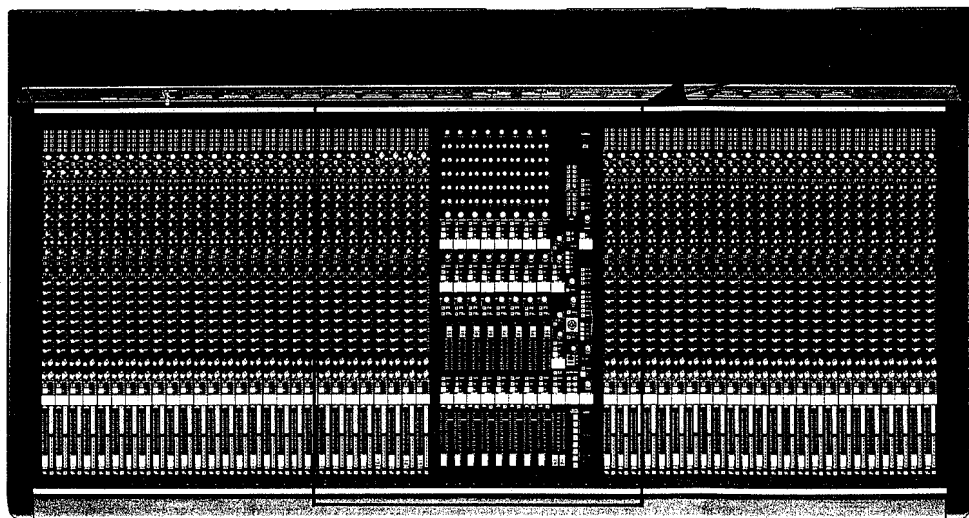
PM4000 PANEL LAYOUT (PM4000パネルレイアウト)

PM4000-32/PM4000-24

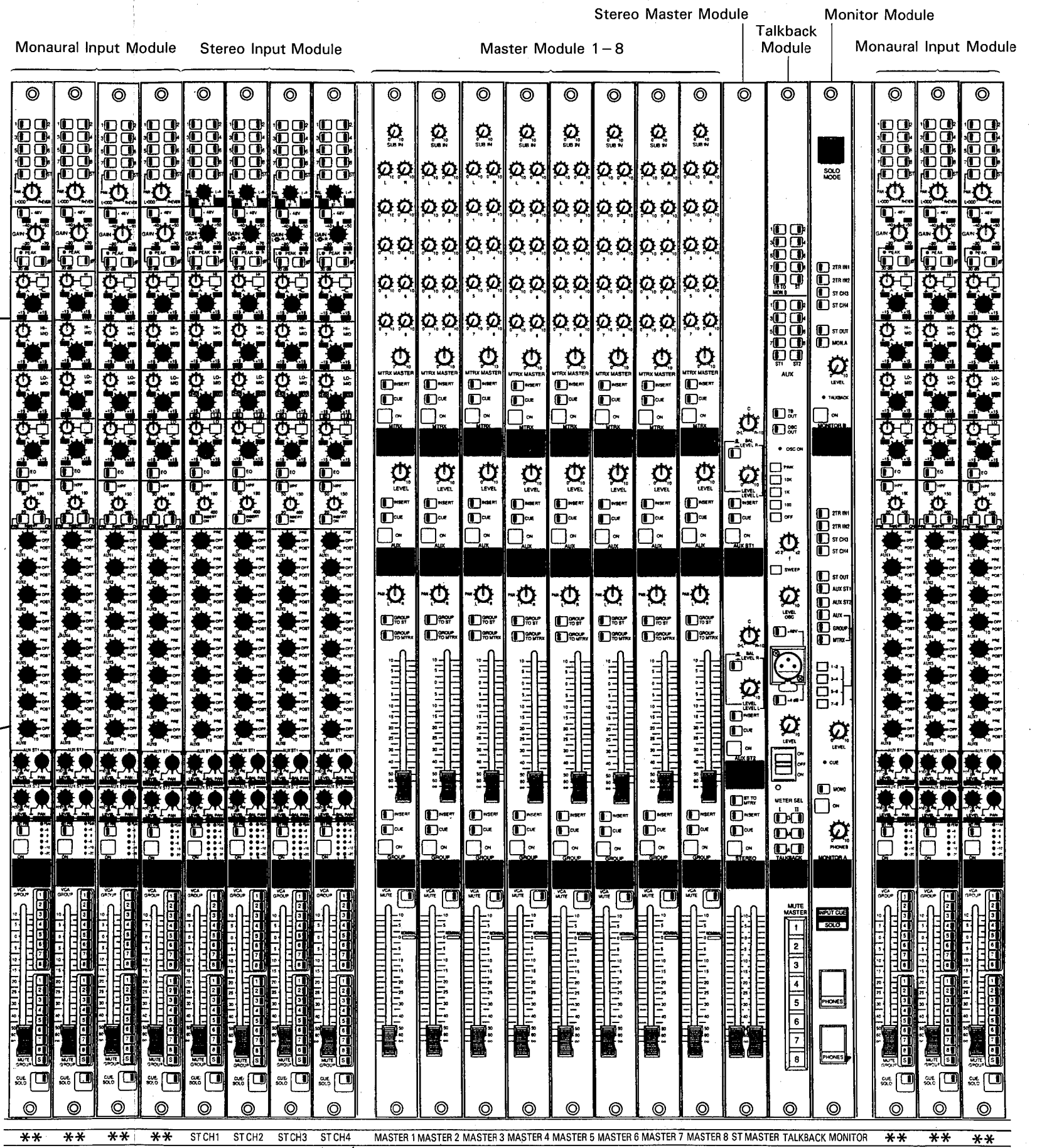


PM4000-32

PM4000-48/PM4000-40



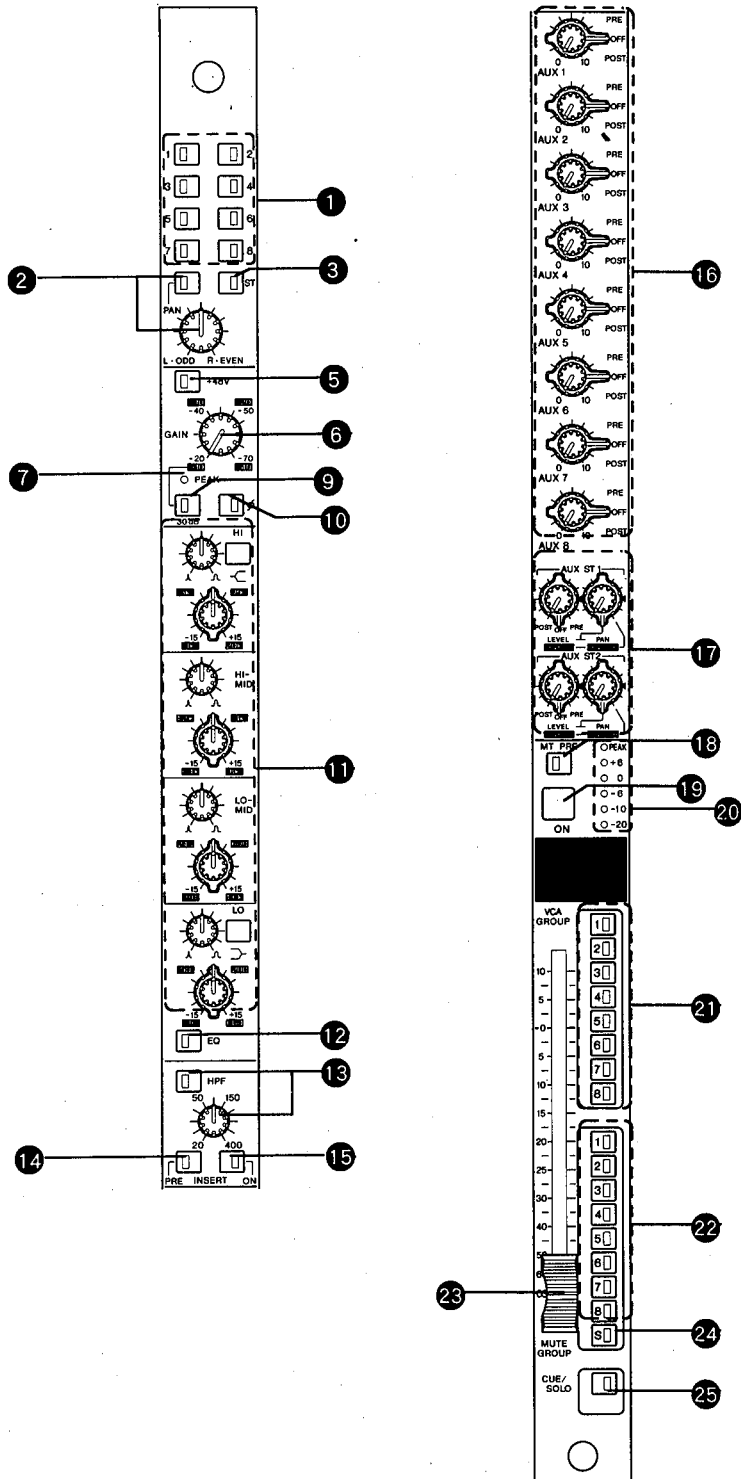
PM4000-48



** ** * * ST CH1 ST CH2 ST CH3 ST CH4 MASTER 1 MASTER 2 MASTER 3 MASTER 4 MASTER 5 MASTER 6 MASTER 7 MASTER 8 ST MASTER TALKBACK MONITOR * * * *

■ FRONT PANEL (フロントパネル)

● Monaural Input Module (MONO INPUT モジュール)

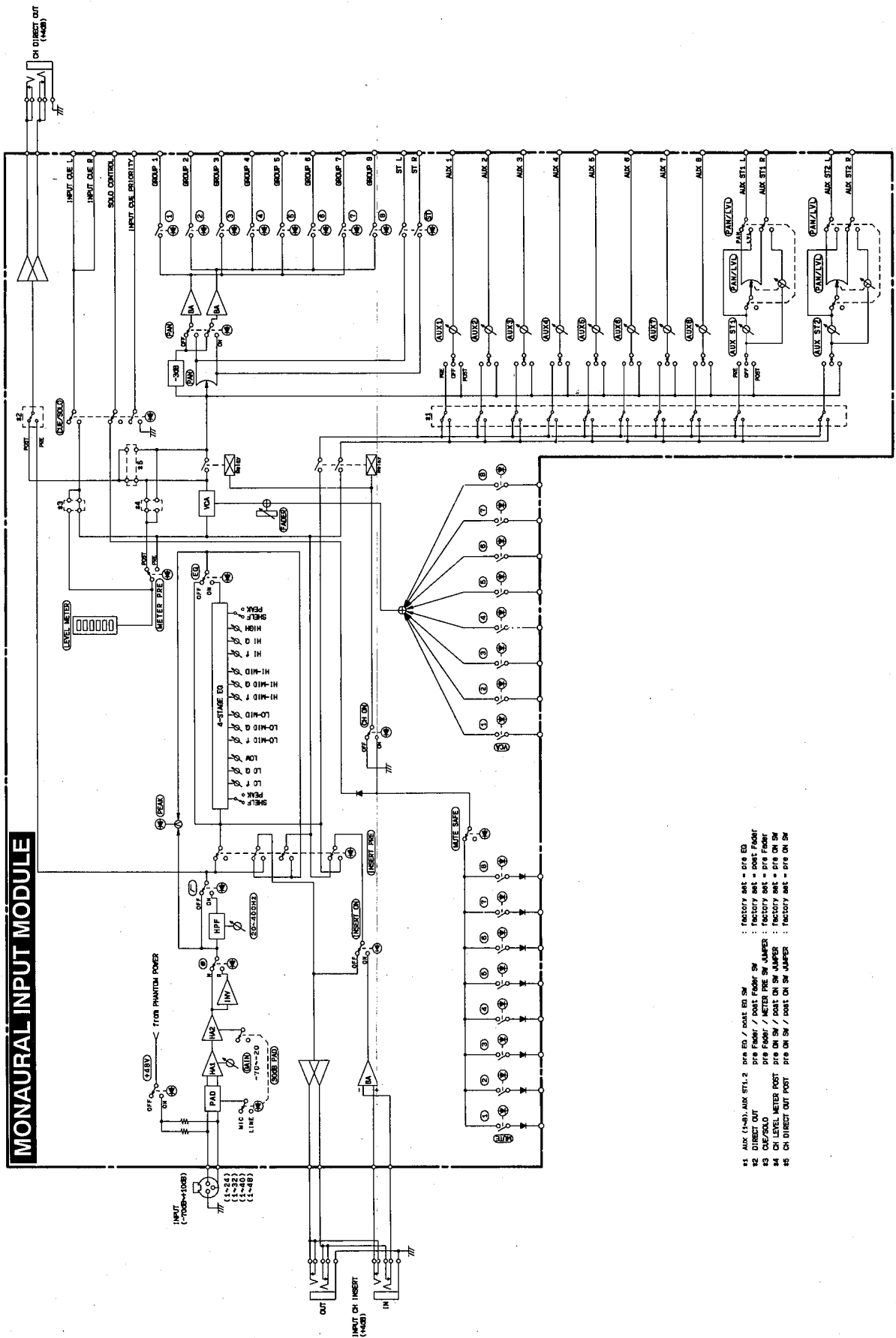


- ① 1 2 3 4 5 6 7 8 (ASSIGN switches)
- ② PAN (switch & rotary control)
- ③ ST (Stereo)
- ⑤ +48V
- ⑥ GAIN
- ⑦ PEAK
- ⑨ 30 dB (pad switch)
- ⑩ ∅ (Phase)
- ⑪ EQUALIZER
- ⑫ EQ (In/Out switch)
- ⑬ HPF (H.P. filter in/out switch and control)
- ⑭ INSERT PRE
- ⑮ INSERT ON
- ⑯ AUX 1-8 (Send level & Pre/Off/Post switches)
- ⑰ AUX ST1 & AUX ST2
- ⑱ MT PRE switch
- ⑲ ON switch (Channel On)
- ⑳ Channel level meter
- ㉑ VCA GROUP (Assign 1-8)
- ㉒ MUTE (Assign 1-8)
- ㉓ FADER
- ㉔ S (Mute safe)
- ㉕ CUE/SOLO

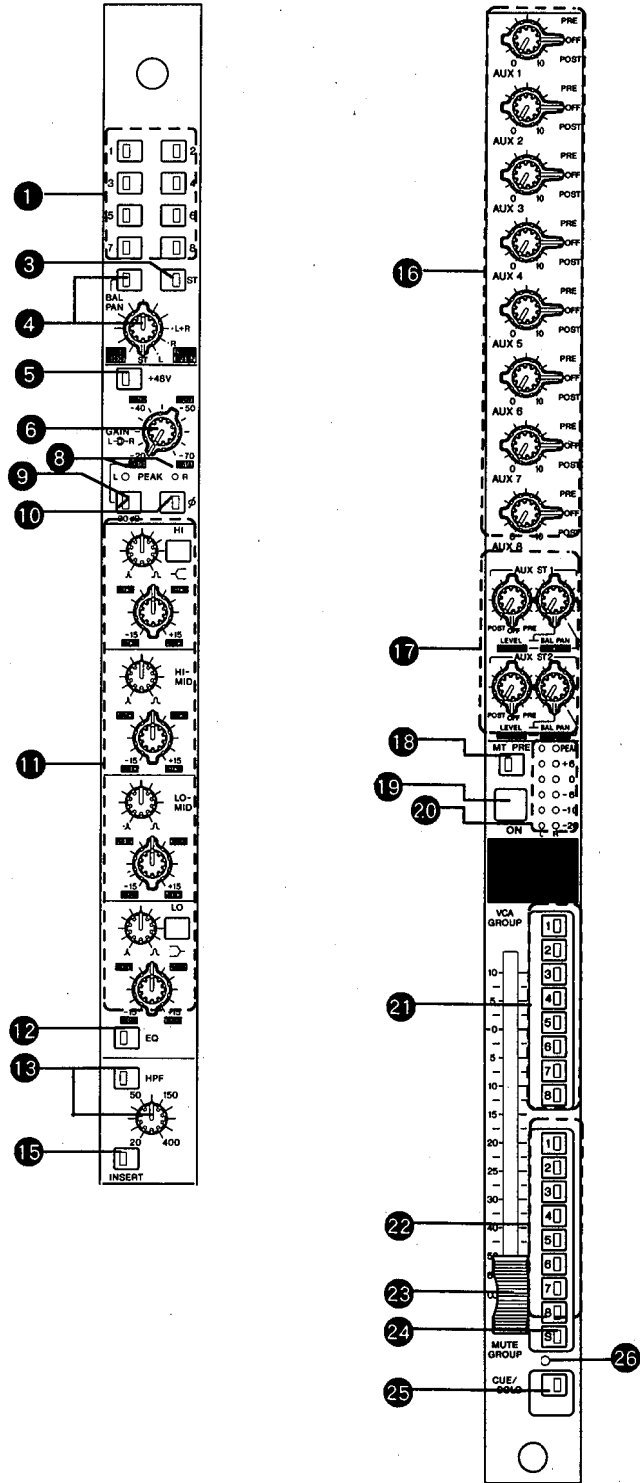
- ① GROUP OUT Assign (グループアウト選択) スイッチ
- ② PAN (パンポットON/OFF) スイッチ、コントロール
- ③ ST (STEREO OUT) 選択スイッチ
- ⑤ +48V (ファントム) スイッチ
- ⑥ GAIN (入力感度) コントロール
- ⑦ PEAKインジケータ
- ⑨ 30dB (パッドスイッチ)
- ⑩ ∅ (位相切り替え) スイッチ
- ⑪ イコライザー
- ⑫ EQ (EQ ON/OFF) スイッチ
- ⑬ HPF (ハイパスフィルタON/OFF) スイッチ、カットオフ周波数コントロール
- ⑭ INSERT PRE (チャンネルインサートPRE/POST EQ) スイッチ
- ⑮ INSERT (チャンネルインサートINのON/OFF) スイッチ
- ⑯ AUX 1~8 (AUXバス送出レベル/PRE,OFF,POST) コントロール/スイッチ
- ⑰ AUX ST1/ST2 (AUX STバス送出レベル) コントロール/スイッチ
- ⑱ MT PRE (チャンネルレベルメーターPRE/POST切替) スイッチ
- ⑲ ON (チャンネルON/OFF) スイッチ
- ⑳ CH LEVELメーター/PEAKインジケータ
- ㉑ VCA GROUP Assign (VCAグループ選択) スイッチ
- ㉒ MUTE GROUP Assign (ミュートグループ選択) スイッチ
- ㉓ チャンネルフェーダー (VCAコントロール)
- ㉔ "S" (ミュートセーフ) スイッチ
- ㉕ CUE/SOLO (モニター選択) スイッチ

Feature numbers ④ and ⑧ are not used in this module.

(このモジュールでは、④,⑧は欠番になっています。)



● Stereo Input Module (ST INPUTモジュール)

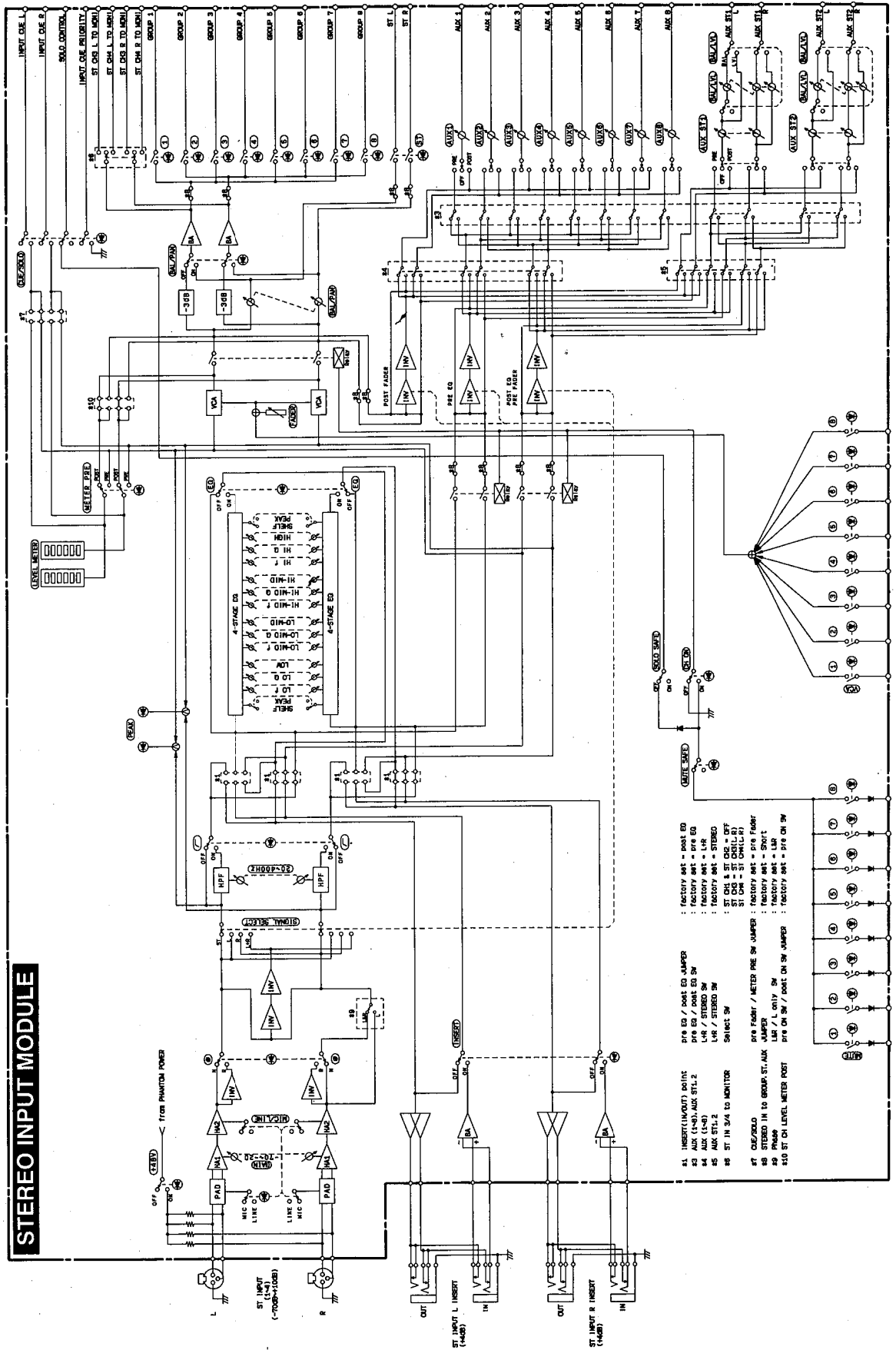


Feature numbers ②, ⑦, ⑭ are not used in this module.

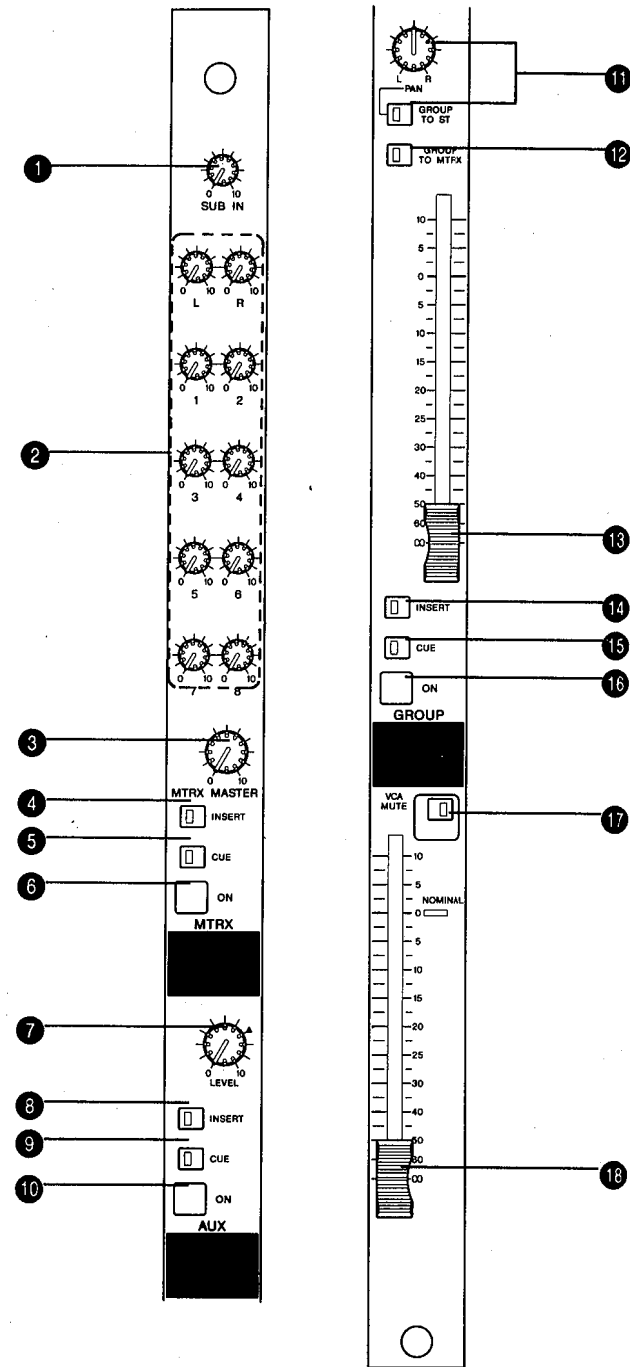
(このモジュールでは、②,⑦,⑭は欠番になっています。)

- ① 1 2 3 4 5 6 7 8 (ASSIGN switches)
- ② ST (Stereo)
- ③ BAL/PAN (pushbutton switch), BAL/PAN (rotary control), ST-L-R-L+R (concentric rotary signal selector switch)
- ④ +48V
- ⑤ GAIN
- ⑥ L-PEAK-R
- ⑦ 30 dB (pad switch)
- ⑧ ∅ (Phase)
- ⑨ EQUALIZER
- ⑩ EQ (In/Out switch)
- ⑪ HPF (H.P. filter in/out switch and control)
- ⑫ INSERT ON
- ⑬ AUX 1-8 (Send level & Pre/Off/Post switches)
- ⑭ AUX ST1 & AUX ST2
- ⑮ MT PRE switch
- ⑯ ON switch (Channel On)
- ⑰ L, R level meters
- ⑱ VCA GROUP (Assign 1-8)
- ⑲ MUTE (Assign 1-8)
- ⑳ FADER
- ㉑ S (Mute safe)
- ㉒ CUE/SOLO
- ㉓ Solo mute defeat switch

- ① GROUP OUT Assign (グループアウト選択) スイッチ
- ② ST (STEREO OUT) 選択スイッチ
- ③ BAL/PANスイッチ、コントロール、ST/L/R/L+Rシグナル切替スイッチ
- ④ +48V (ファントム) スイッチ
- ⑤ GAIN (入力感度) コントロール
- ⑥ L-PEAK-Rインジケータ
- ⑦ 30dB (パッドスイッチ)
- ⑧ ∅ (位相切り替え) スイッチ
- ⑨ イコライザ
- ⑩ EQ (EQ ON/OFF) スイッチ
- ⑪ HPF (ハイパスフィルタON/OFF) スイッチ、カットオフ周波数コントロール
- ⑫ INSERT (チャンネルインサートINのON/OFF) スイッチ
- ⑬ AUX 1~8 (AUXバス送出レベル/PRE,OFF,POST) コントロール/スイッチ
- ⑭ AUX ST1/ST2 (AUX STバス送出レベル) コントロール/スイッチ
- ⑮ MT PRE (チャンネルレベルメータ-PRE/POST切替) スイッチ
- ⑯ ON (チャンネルON/OFF) スイッチ
- ⑰ CH LEVELメータ/PEAKインジケータ
- ⑱ VCA GROUP Assign (VCAグループ選択) スイッチ
- ⑲ MUTE GROUP Assign (ミュートグループ選択) スイッチ
- ㉑ チャンネルフェーダー (VCAコントロール)
- ㉒ "S" (ミュートセーフ) スイッチ
- ㉓ CUE/SOLO (モニター選択) スイッチ
- ㉔ SOLO SAFE (ソロ機能解除) スイッチ

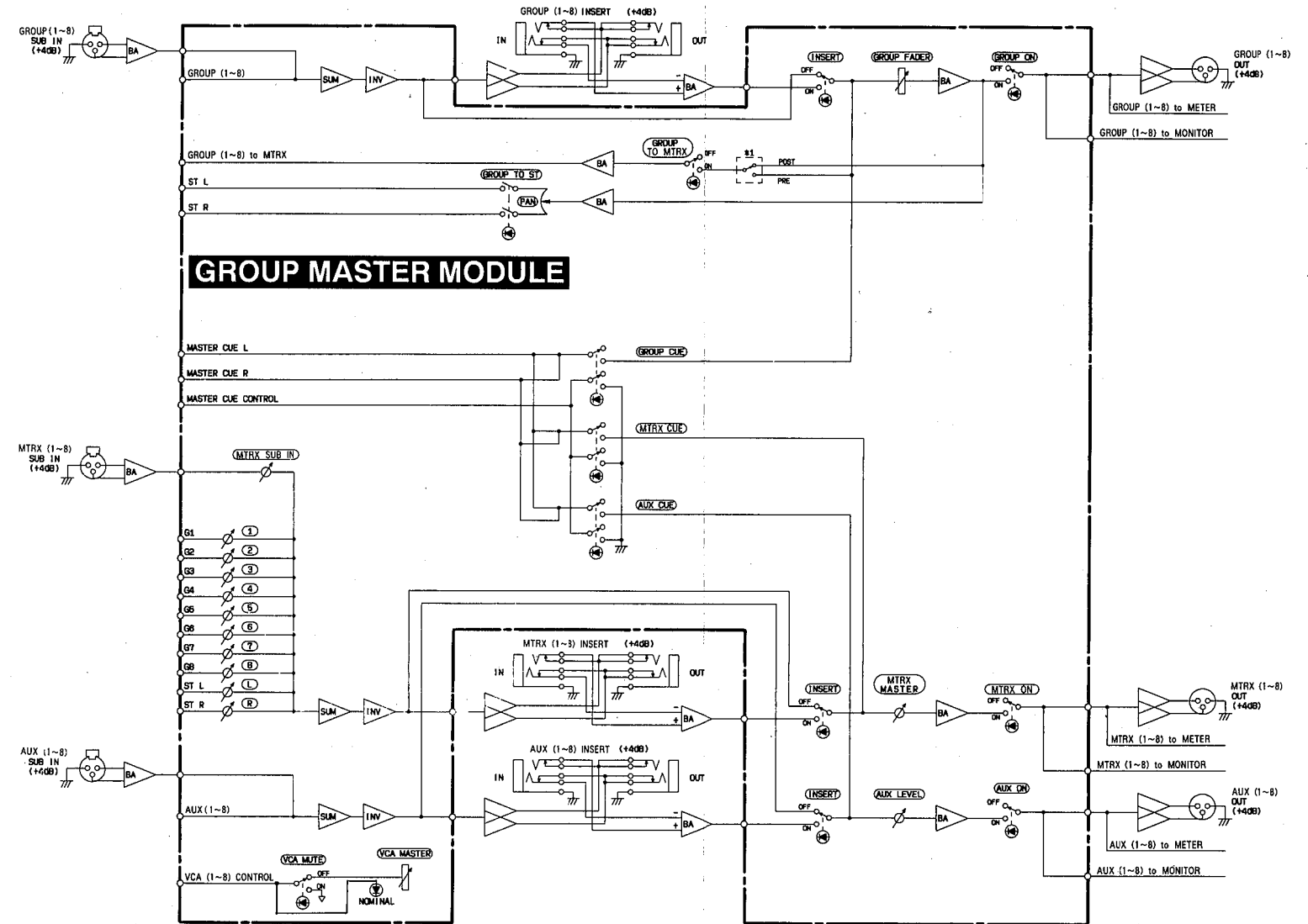


● Master Module 1-8 (GROUP MASTERモジュール)

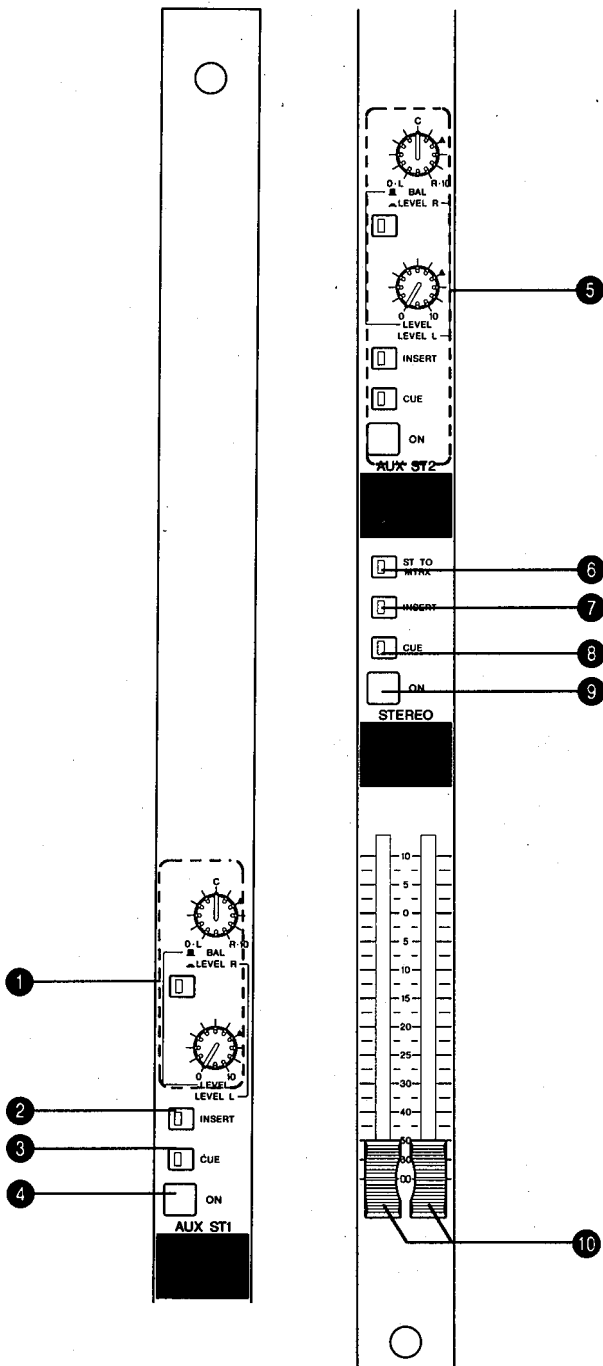


- ① SUB IN
- ② LR (Matrix mix level controls)/
1 2 3 4 5 6 7 8 (Matrix mix level controls)
- ③ MTRX MASTER
- ④ INSERT (Matrix insert)
- ⑤ CUE (Matrix cue)
- ⑥ ON (Matrix ON)
- ⑦ LEVEL (Aux send level)
- ⑧ INSERT (Aux insert)
- ⑨ CUE (Aux send cue)
- ⑩ ON (Aux On)
- ⑪ PAN (group to stereo bus)/GROUP-TO-ST
- ⑫ GROUP-TO-MTRX
- ⑬ GROUP MASTER FADER (Group Out Fader)
- ⑭ INSERT (Group insert)
- ⑮ CUE (Group cue)
- ⑯ ON (Group On)
- ⑰ VCA MUTE
- ⑱ VCA MASTER

- ① SUB IN (MTRX SUB IN入力レベル) コントロール
- ② L, R/1~8 (STEREO/GROUP) MTRXミックスコントロール
- ③ MTRX MASTER (MTRX OUT出力レベル) コントロール
- ④ INSERT (MTRXインサートON/OFF) スイッチ
- ⑤ CUE (MTRX CUE)スイッチ
- ⑥ MTRX ON (MTRX OUT出力ON/OFF) スイッチ
- ⑦ LEVEL (AUX OUT出力レベル) コントロール
- ⑧ INSERT (AUXインサートON/OFF) スイッチ
- ⑨ CUE (AUX CUE)スイッチ
- ⑩ ON (AUX OUT出力ON/OFF) スイッチ
- ⑪ PAN (パンポット) /GROUP TO STスイッチ
- ⑫ GROUP TO MTRXスイッチ
- ⑬ グループフェーダー (GROUP OUTマスターレベルコントロール)
- ⑭ INSERT (GROUPインサートON/OFF) スイッチ
- ⑮ CUE (GROUP OUT CUE) スイッチ
- ⑯ ON (GROUP OUT出力ON/OFF) スイッチ
- ⑰ VCA MUTE (VCAミュート機能) スイッチ
- ⑱ VCAマスターフェーダー

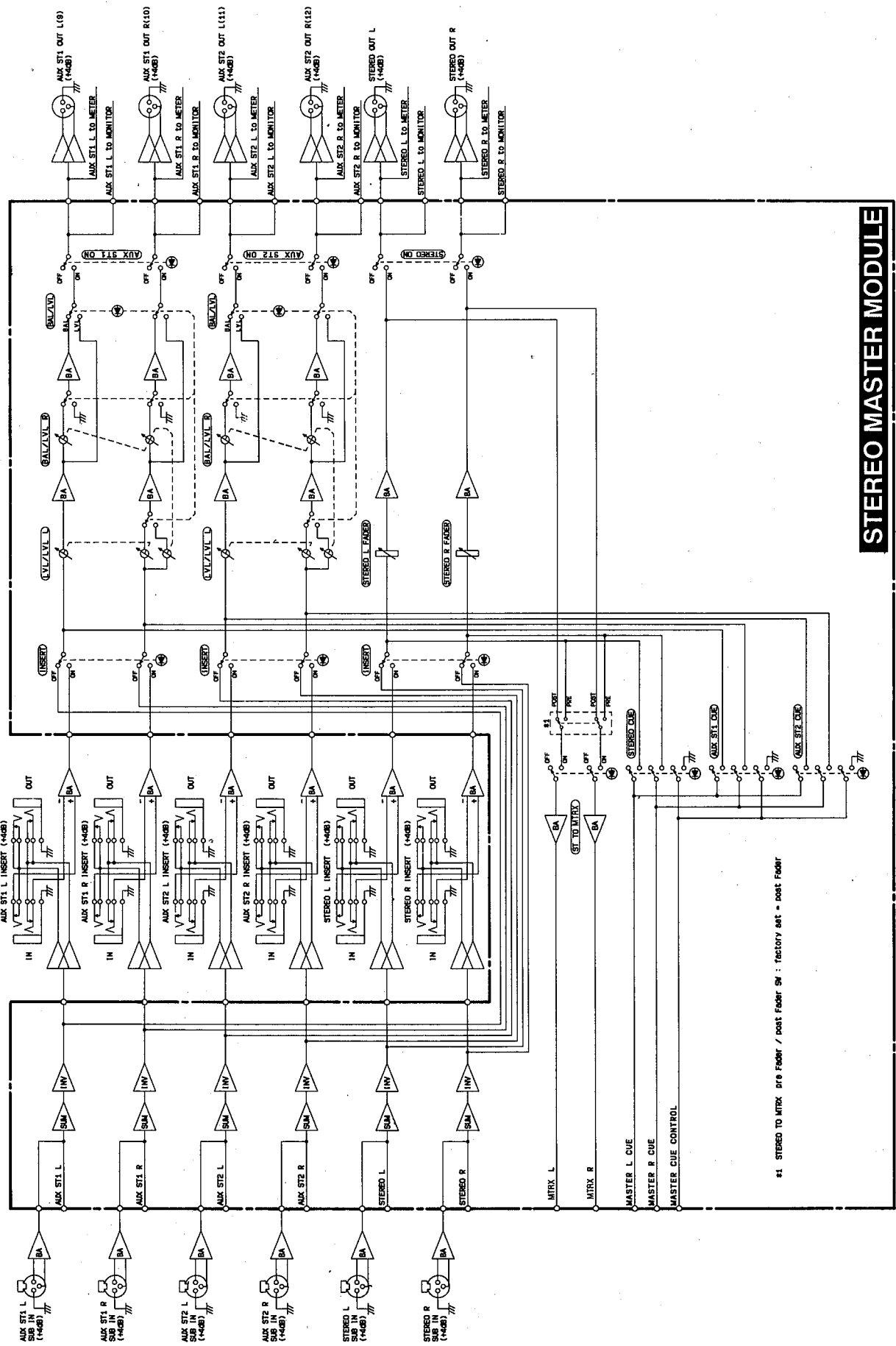


● Stereo Master Module (STEREO MASTERモジュール)



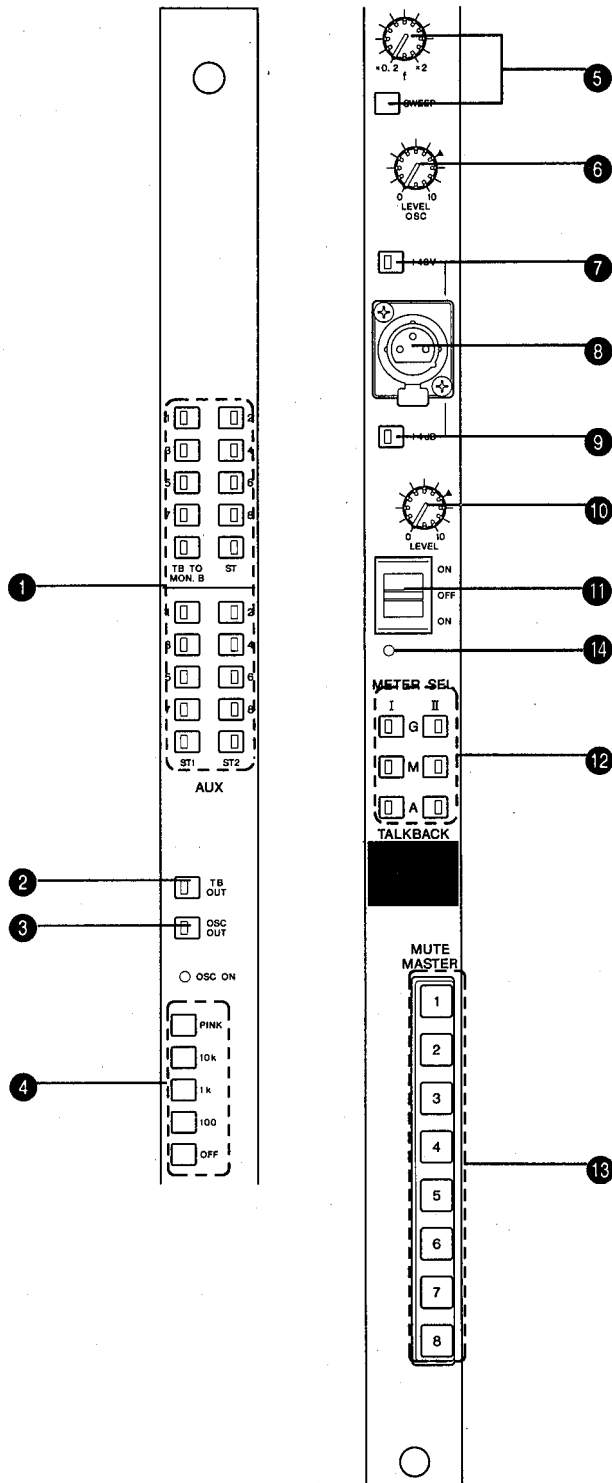
- ① BAL/LEVEL R and LEVEL/LEVEL L (rotary controls)/BAL/LEVEL (locking switch)
- ② INSERT (Aux 1 Stereo insert)
- ③ CUE (Aux 1 Stereo cue)
- ④ ON (Aux 1 Master On)
- ⑤ AUX 2 STEREO SEND MASTER SECTION
- ⑥ STEREO-TO-MTRX
- ⑦ INSERT (Stereo master insert)
- ⑧ CUE (Stereo master cue)
- ⑨ ON (Stereo master On)
- ⑩ Dual Fader

- ① BAL/LEVEL R, LEVEL/LEVEL L (AUX ST1 OUTバランス/R, L送出レベル) コントロールおよびBAL/LEVEL (バランス/レベル切替) スイッチ
- ② INSERT (AUX ST1インサートON/OFF) スイッチ
- ③ CUE (AUX ST1 CUE) スイッチ
- ④ ON (AUX ST1 OUT出力ON/OFF) スイッチ
- ⑤ AUX ST2マスターセクション
- ⑥ ST TO MTRXスイッチ
- ⑦ INSERT (STEREOインサートON/OFF) スイッチ
- ⑧ CUE (STEREO OUT CUE) スイッチ
- ⑨ ON (STEREO OUT出力ON/OFF) スイッチ
- ⑩ ステレオマスターフェーダー



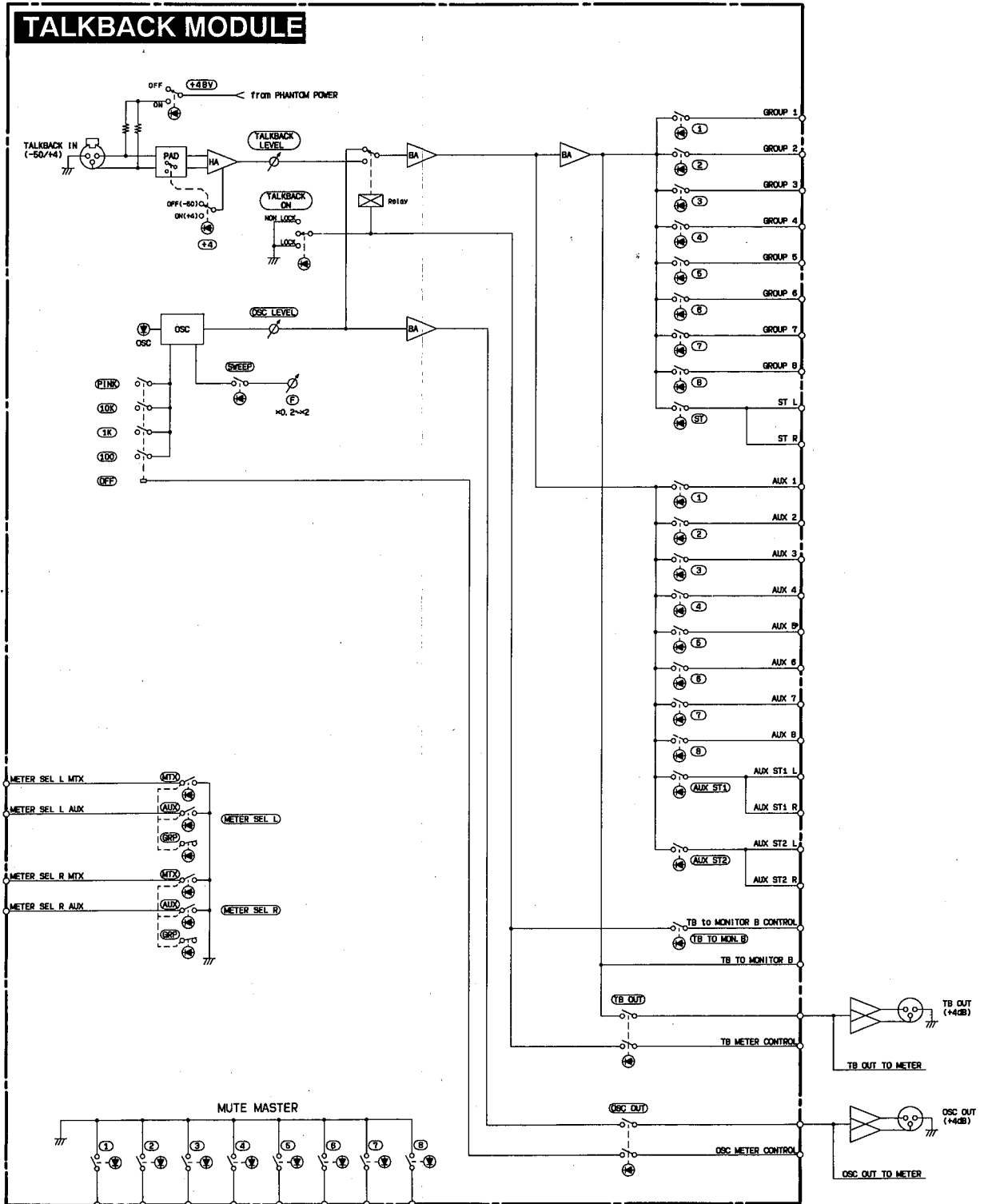
STEREO MASTER MODULE

● TB (Talkback) Module (TALKBACKモジュール)

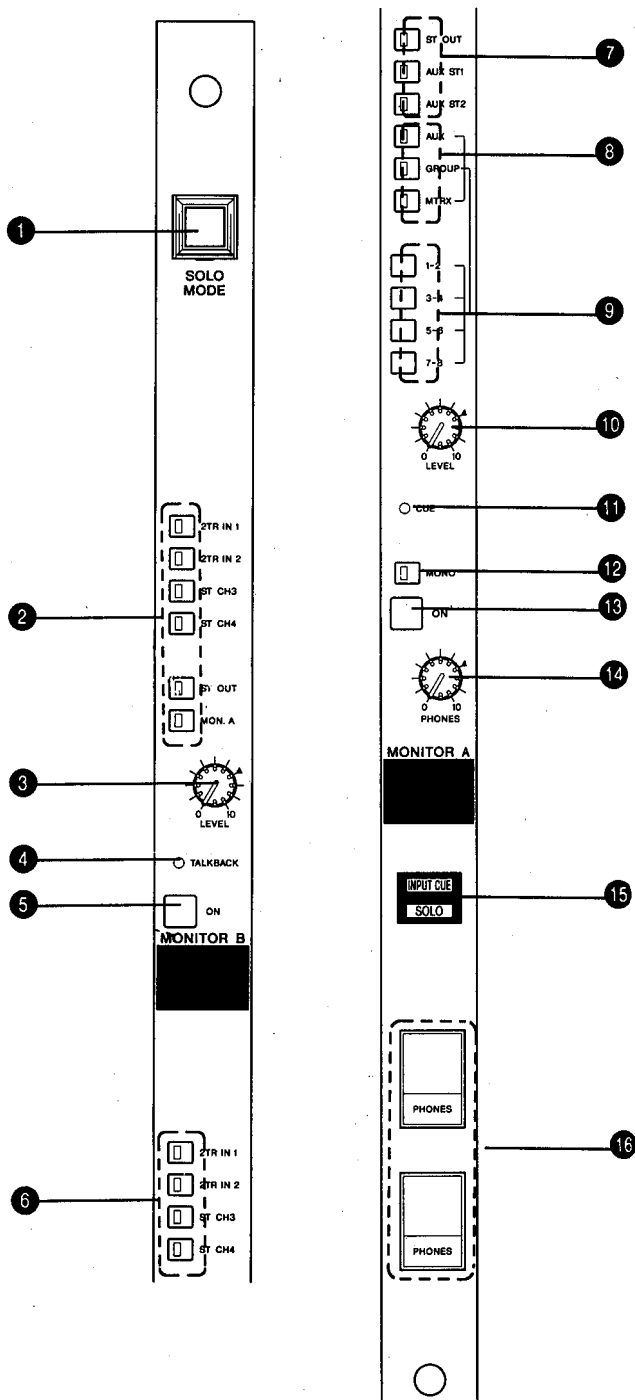


- ① 1 2 3 4 5 6 7 8 (TB/OSC To Group Bus Assign)/
TB-TO-MON.B/ST (Stereo)/AUX 1 2 3 4 5 6 7 8/
AUX ST 1 & ST 2
- ② TB OUT
- ③ OSC OUT
- ④ PINK 10K 1K 100 OFF
- ⑤ SWEEP (switch and rotary control)
- ⑥ LEVEL OSC
- ⑦ +48V
- ⑧ TB INPUT
- ⑨ +4 dB (attenuation pad)
- ⑩ LEVEL (TB Input)
- ⑪ TALKBACK ON (two-way lever switch and LED
indicator)
- ⑫ METER SEL (meter select switches)
- ⑬ MUTE MASTER
- ⑭ OSC ON

- ① TB/OSCアウトプット選択スイッチ
- ② TB OUT (TALKBACK OUT ON/OFF) スイッチ
- ③ OSC OUT (OSC OUT ON/OFF) スイッチ
- ④ OSCモード/周波数選択スイッチ
- ⑤ SWEEP (SWEEP ON/OFF) スイッチ/SWEEPコントロ
ール
- ⑥ LEVEL OSC (発振器出力レベル) コントロール
- ⑦ +48V (TALKBACK INPUTファントム) スイッチ
- ⑧ トークバックインプット端子
- ⑨ +4 (TALKBACK IN入力感度切替) スイッチ
- ⑩ LEVEL (TALKBACK INレベル) コントロール
- ⑪ ON/OFF/ON (TALKBACK ON/OFF/ON) スイッチ
- ⑫ METER SEL (メーターセレクト) スイッチ
- ⑬ MUTE MASTER (ミュートマスターON/OFF) スイッチ
- ⑭ OSC ONインジケータ

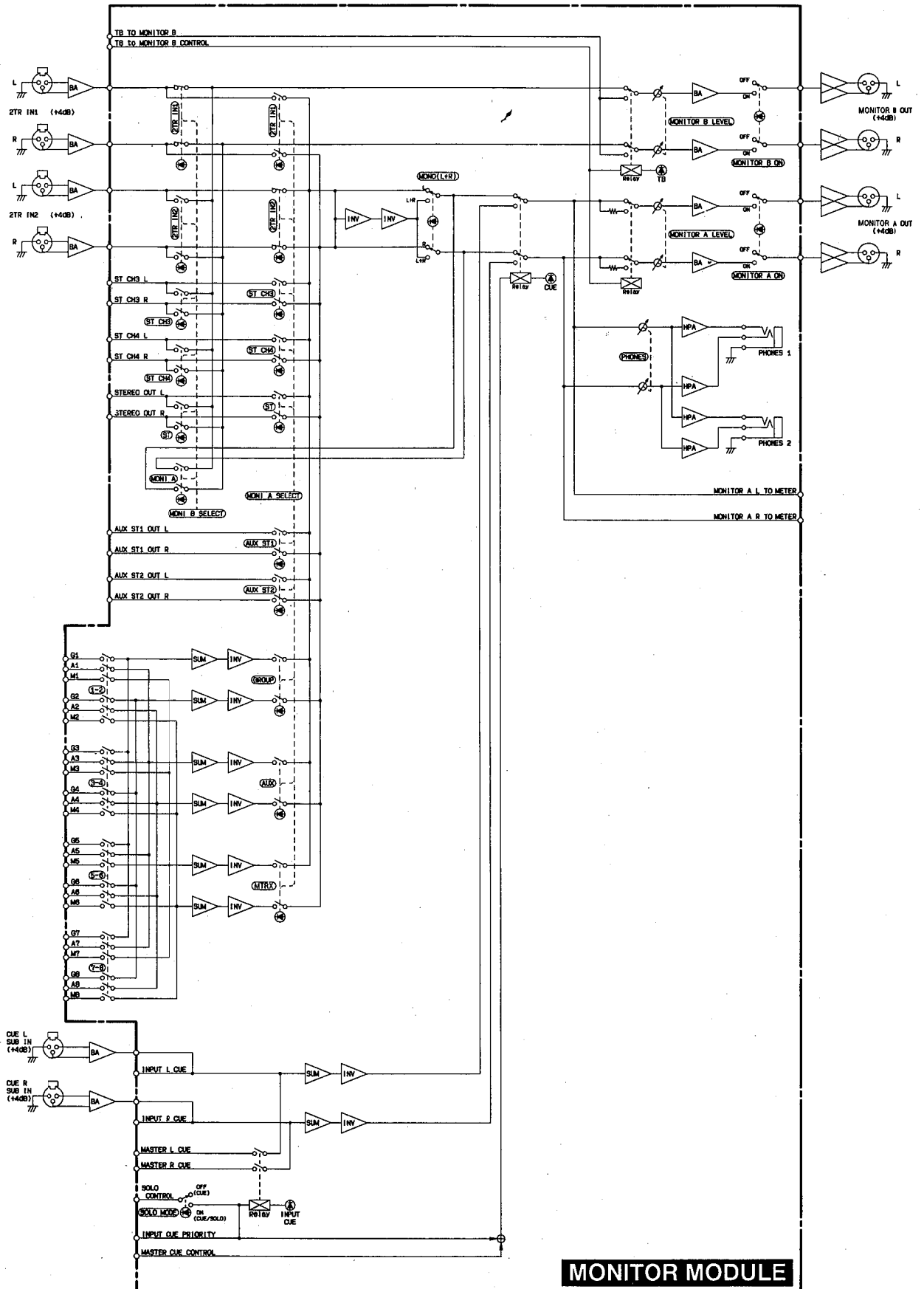


● Monitor Module (MONITORモジュール)



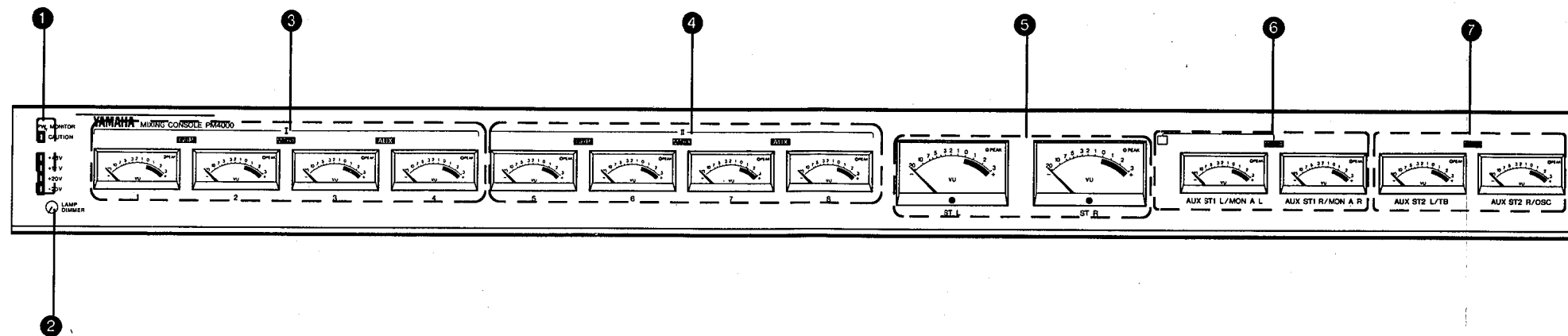
- ① SOLO MODE (switch)
- ② 2TR IN 1, 2TR IN 2, ST CH 3, ST CH 4, ST OUT, MON. A (Monitor B Source Select Switches)
- ③ LEVEL (Monitor B level control)
- ④ TALKBACK (Indicator)
- ⑤ ON switch (Monitor B On)
- ⑥ 2TR IN 1, 2TR IN 2, ST CH 3, ST CH 4 (Monitor A Source Select Switches)
- ⑦ ST OUT, AUX ST 1, AUX ST2 (Monitor A Source Select Switches)
- ⑧ AUX, GROUP, MTRX (Monitor A Source Select Switches)
- ⑨ 1-2, 3-4, 5-6, 7-8 (Aux/Group/Mtrx bus group selectors)
- ⑩ LEVEL (Monitor A level control)
- ⑪ CUE (Indicator)
- ⑫ MONO (Monitor A mode)
- ⑬ ON (Monitor A On)
- ⑭ PHONES (Level control)
- ⑮ INPUT CUE/SOLO (LED status annunciators)
- ⑯ PHONES (Output jacks)

- ① SOLO MODE (ソロモード選択) スイッチ
- ② INPUT Assign (MONITOR B入力選択) スイッチ
- ③ LEVEL (MONITOR Bレベル) コントロール
- ④ TALKBACKインジケータ
- ⑤ ON (MONITOR B出力ON/OFF) スイッチ
- ⑥ INPUT Assign (MONITOR A入力選択) スイッチ
- ⑦ ST OUT/AUX ST1/AUX ST2 (モニターA 入力選択) スイッチ
- ⑧ AUX、GROUP、MTRX (モニターA入力選択) スイッチ
- ⑨ 1-2、3-4、5-6、7-8 (AUX/GROUP/MTRXバス・グループ切替スイッチ)
- ⑩ LEVEL (MONITOR A出力レベルコントロール)
- ⑪ CUEインジケータ
- ⑫ MONO (MONITOR Aモノラル切替) スイッチ
- ⑬ ON (MONITOR A出力ON/OFF) スイッチ
- ⑭ PHONES (ヘッドフォンレベル) コントロール
- ⑮ INPUT CUE/SOLOインジケータ
- ⑯ PHONES (ヘッドフォンアウト)

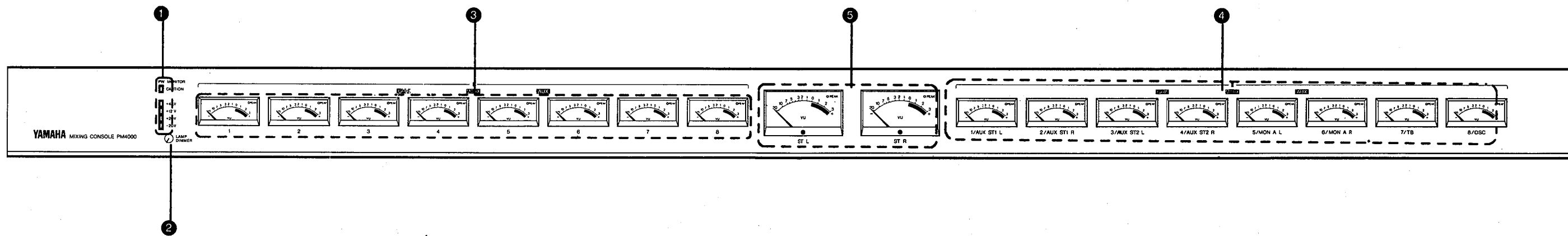


■ METER BRIDGE (メーターパネル)

- Meter Bridge for 24 or 32 Channel Mainframes
(PM4000-24, PM4000-32 RIGHT MASTERモデル)



- Meter Bridge for 40 or 48 Channel Mainframes
(PM4000-40C, PM4000-48C CENTER MASTERモデル)

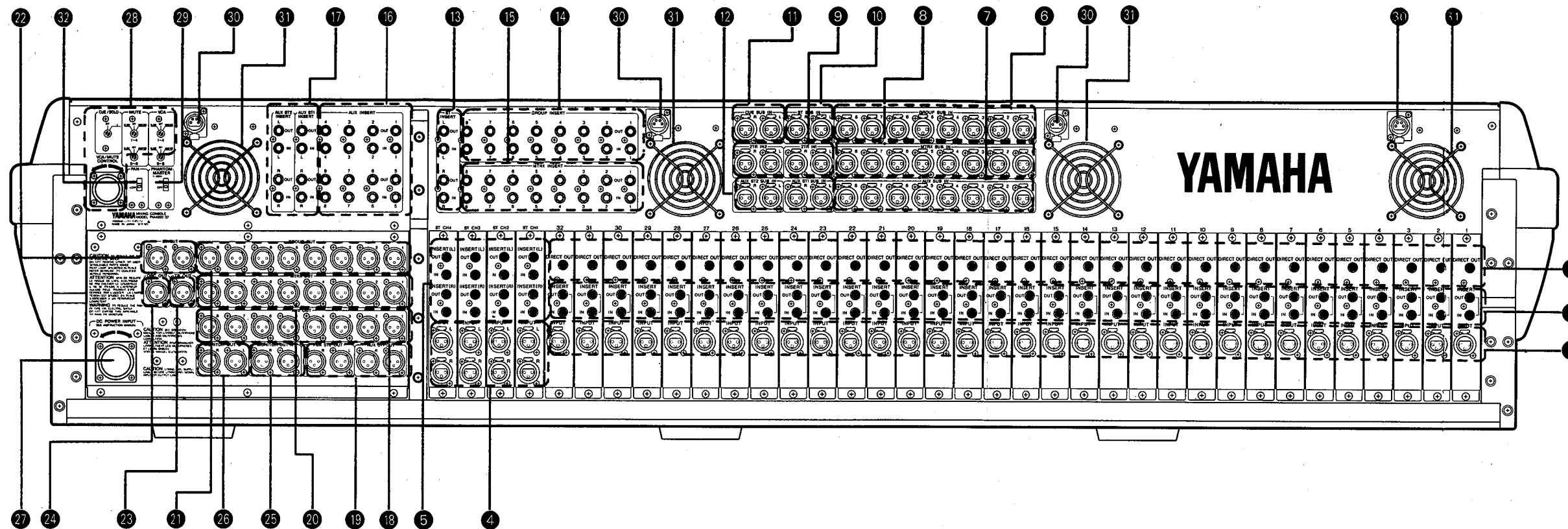


- ① PW MONITOR, +48, +12, +19, -19
(Power supply indicators)
- ② LAMP DIMMER
- ③ I (Group/Matrix/Aux meters and indicators)
- ④ II (Group/Matrix/Aux meters and indicators)
- ⑤ ST L, ST R (Stereo output meters)
- ⑥ AUX ST 1L, MON A L
AUX ST 1R, MON A R (meters and indicator)/
MON meter function switch
- ⑦ AUX ST 2 L, TB
AUX ST 2 R/OSC (meters and indicator)

- ① PW MONITOR (PW4000電源部モニター) インジケータ
- ② LAMP DIMMER (ランプ調光器)
- ③ [I] GROUP/MTRX/AUXメーター、メーターモードインジケータ
- ④ [II] GROUP/MTRX/AUXメーター、メーターモードインジケータ
- ⑤ STEREO VUメーター
- ⑥ AUX ST1/MON Aメーター、メーターモードインジケータ
- ⑦ AUX ST2/TB・OSCメーター、メーターインジケータ

■ REAR PANEL (リアパネル)

● Rear Panel for 32 Channel (PM4000-24, PM4000-32 RIGHT MASTERモデル)

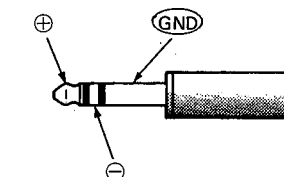


All XLR connectors and phone jacks are balanced.

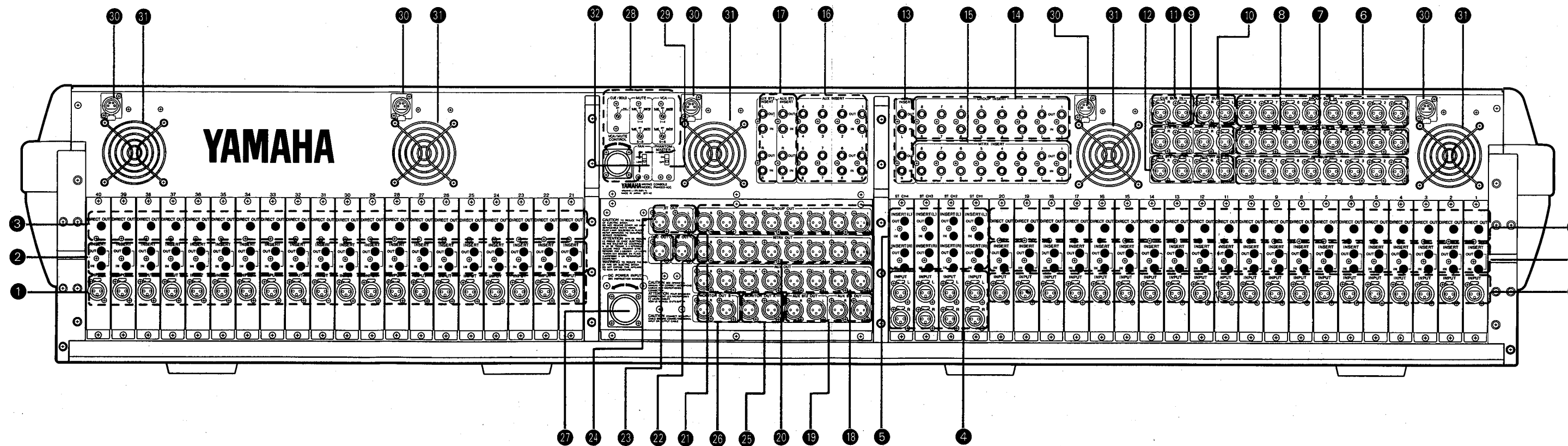
(キャノンおよびホーンジャックの入出力端子は、全て電子バランス方式になっています。)

XLR	phone jack	signal
pin 1	S	GND
pin 2	T	+ (hot)
pin 3	R	- (cold)

1/4" phone plug (#110ホーンプラグ)



● Rear Panel for 40 Channel (PM4000-40C, PM4000-48C CENTER MASTERモデル)



PM4000/PW4000

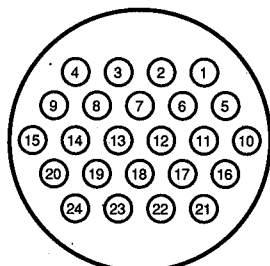
● Rear panel

- ① INPUT (connector)
- ② INSERT OUT, INSERT IN (Jacks)
- ③ DIRECT OUT (Jack)
- ④ INPUT L & INPUT R (connectors)
- ⑤ INSERT R OUT, INSERT R IN (Jacks)/
INSERT L OUT, INSERT L IN (Jacks)
- ⑥ GROUP SUB IN (1-8)
- ⑦ AUX SUB IN (1-8)
- ⑧ MTRX SUB IN (1-8)
- ⑨ 2 TR IN 1 (L, R)/2 TR IN 2 (L, R)
- ⑩ ST SUB IN (L, R)
- ⑪ CUE SUB IN (L, R)
- ⑫ AUX ST SUB IN 1 (L, R)/AUX ST SUB IN 2 (L, R)
- ⑬ ST INSERT L (IN, OUT)/ST INSERT R (IN, OUT)
- ⑭ GROUP INSERT 1-8 (IN, OUT)
- ⑮ MTRX INSERT 1-8 (IN, OUT)
- ⑯ AUX INSERT 1-8 (IN, OUT)
- ⑰ AUX ST INSERT 1 L & R (IN, OUT)/
AUX ST INSERT 2 L & R (IN, OUT)
- ⑱ AUX OUT (1-8)
- ⑲ AUX ST 1/ST 2 OUT (L, R)
- ⑳ MTRX OUT (1-8)
- ㉑ GROUP OUT (1-8)
- ㉒ STEREO OUT (L, R)
- ㉓ TB OUT
- ㉔ OSC OUT
- ㉕ MONITOR OUT A L, R
- ㉖ MONITOR OUT B L, R
- ㉗ DC POWER
- ㉘ VCA/MUTE CONTROL/
MUTE: SLAVE/OFF/MASTER (1-4, 5-8)
& CUE/SOLO On/Off MASTER/
VCA: SLAVE/OFF/MASTER (1-4, 5-8)
- ㉙ PHANTOM MASTER (+48V)
- ㉚ LAMP (4-pin XLR connector)
- ㉛ Cooling Fan
- ㉜ FAN (speed switch)

● リアパネル

- ① INPUTコネクタ
- ② INSERT IN/OUTジャック
- ③ DIRECT OUTジャック
- ④ ST CH INPUT (L,R) コネクタ
- ⑤ ST CH INSERT IN/OUT (L,R) ジャック
- ⑥ GROUP SUB IN (1~8)
- ⑦ AUX SUB IN (1~8)
- ⑧ MTRX SUB IN (1~8)
- ⑨ 2TR IN1/IN2 (L,R) コネクタ
- ⑩ ST SUB IN (L,R)
- ⑪ CUE SUB IN (L,R)
- ⑫ AUX ST SUB IN1/IN2 (L,R)
- ⑬ ST INSERT L/R (OUT,IN)
- ⑭ GROUP INSERT1~8 (OUT,IN)
- ⑮ MTRX INSERT1~8 (OUT,IN)
- ⑯ AUX INSERT1~8 (OUT,IN)
- ⑰ AUX ST1/ST2 INSERT L,R (OUT,IN)
- ⑱ AUX OUT1~8
- ⑲ AUX ST1/ST2 OUT (L,R)
- ⑳ MTRX OUT (1~8)
- ㉑ GROUP OUT (1~8)
- ㉒ ST OUT (L,R)
- ㉓ TB OUT
- ㉔ OSC OUT
- ㉕ MONITOR OUT A L,R
- ㉖ MONITOR OUT B L,R
- ㉗ DC POWER
- ㉘ VCA/MUTE CONTROL 端子、MASTER/OFF/SLAVE切替
スイッチ、CUE/SOLO OFF/CONNECT切替スイッチ
- ㉙ PHANTOM POWER MASTERスイッチ
- ㉚ LAMP (ランプ) コネクタ
- ㉛ 冷却ファン
- ㉜ FAN HIGH/LOW (冷却ファン切替) スイッチ

● VCA/MUTE Connector Pin Assignments (VCA/MUTE コネクターのピン配列)

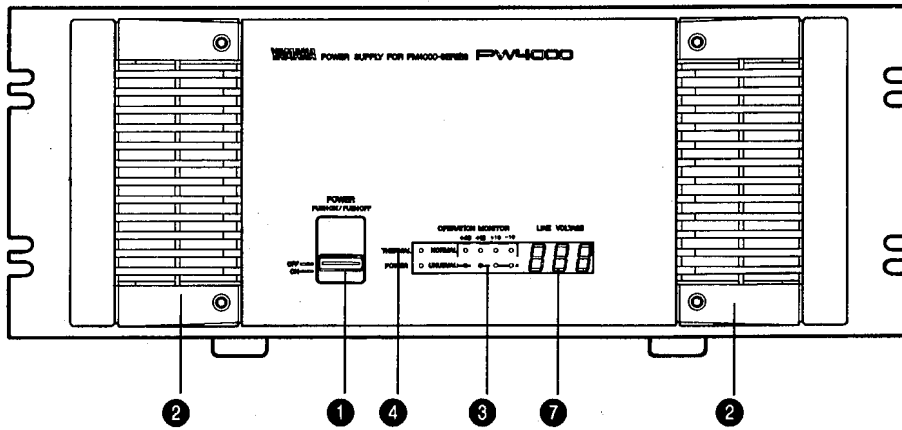


CONNECTOR PINS
(FEMALE)

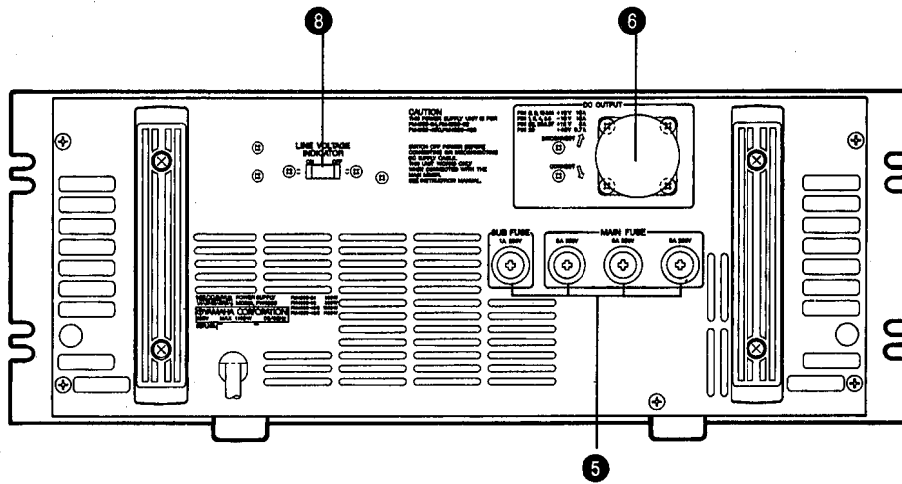
PIN №	FUNCTION	PIN №	FUNCTION
1	VCA EXT 1	13	MUTE EXT 3
2	VCA EXT 2	14	MUTE EXT 4
3	VCA EXT 3	15	MUTE EXT 5
4	VCA EXT 4	16	MUTE EXT 6
5	VCA EXT 5	17	MUTE EXT 7
6	VCA EXT 6	18	MUTE EXT 8
7	VCA EXT 7	19	GND
8	VCA EXT 8	20	GND
9	GND	21	GND
10	NC	22	INPUT CUE EXT
11	MUTE EXT 1	23	SOLO EXT
12	MUTE EXT 2	24	GND

■ PW4000 PANEL LAYOUT (PW4000パネルレイアウト)

● Front Panel (フロントパネル)



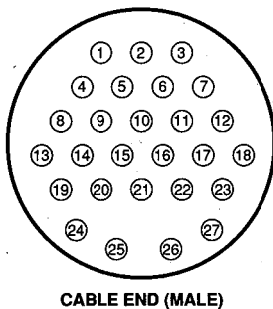
● Rear Panel (リアパネル)



- ① POWER
- ② Grille
- ③ Operation Monitor
- ④ THERMAL (Indicator)
- ⑤ FUSES
- ⑥ DC OUTPUT (Umbilical Connector)
- ⑦ LINE VOLTAGE (LED Display)
- ⑧ LINE VOLTAGE INDICATOR (Switch)

- ① POWER ON/OFFスイッチ
- ② ファン用グリル
- ③ オペレーションモニター
- ④ THERMALインジケータ
- ⑤ 電源ヒューズ
- ⑥ DC OUTPUTコネクタ
- ⑦ LINE VOLTAGE表示器
- ⑧ LINE VOLTAGE (SW)

● Umbilical Connector Pin Assignments (電源ケーブルのピン配列)



PIN N°	FUNCTION	PIN N°	FUNCTION
1	-19V	15	±19V GND
2	-19V	16	±19V GND
3	FRAME GND	17	+12V GND
4	-19V	18	+12V GND
5	-19V	19	PM CAUTION (+)
6	FRAME GND	20	+48V
7	FRAME GND	21	+48V GND
8	+19V	22	+12V
9	+19V	23	+12V
10	±19V GND	24	PW CAUTION (-)
11	±19V GND	25	REMOTE
12	+12V GND	26	REMOTE
13	+19V	27	+12V
14	+19V		