



# SERVICE manual

# XPM-3000

## Power Amplifier

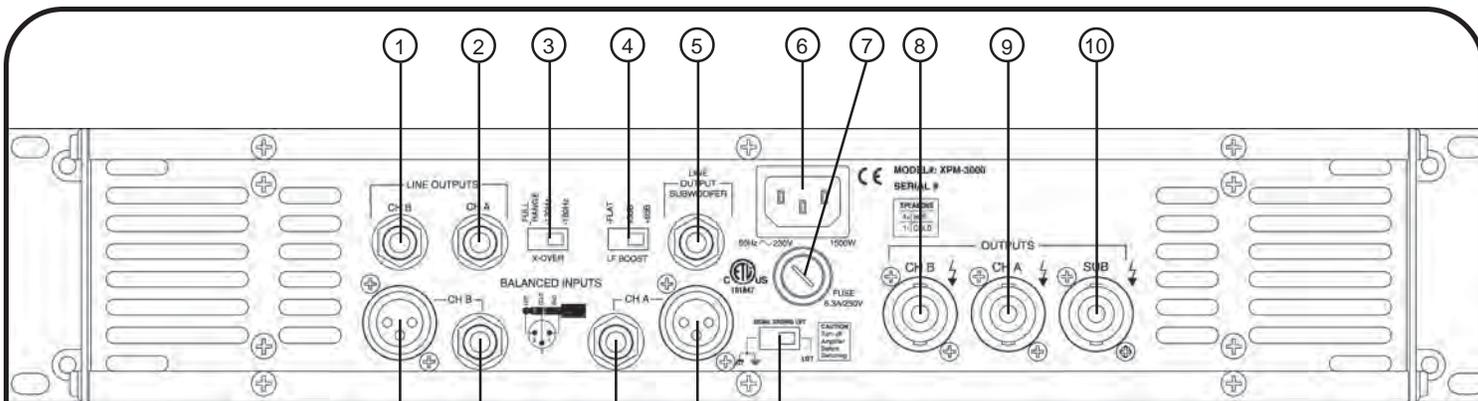


### CONTENT'S:

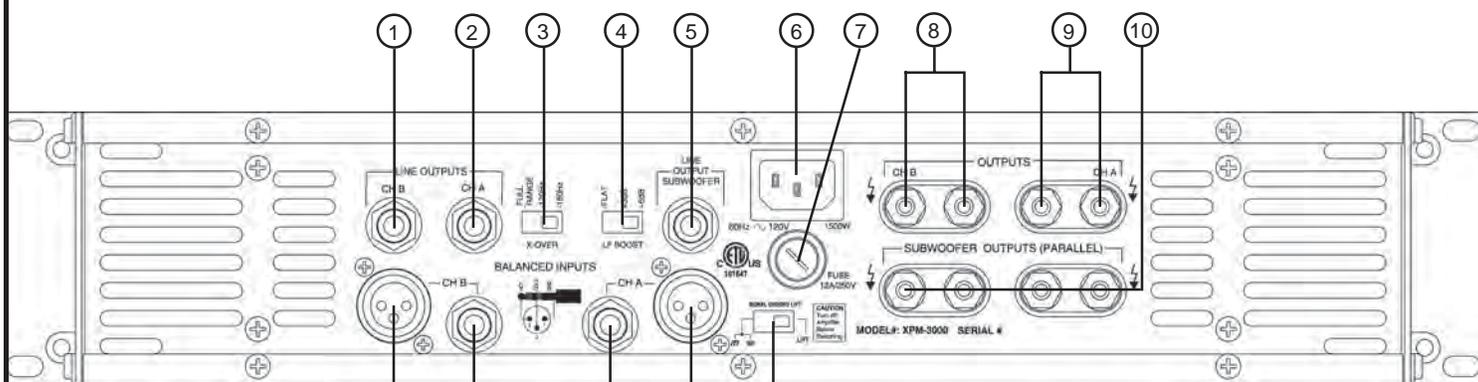
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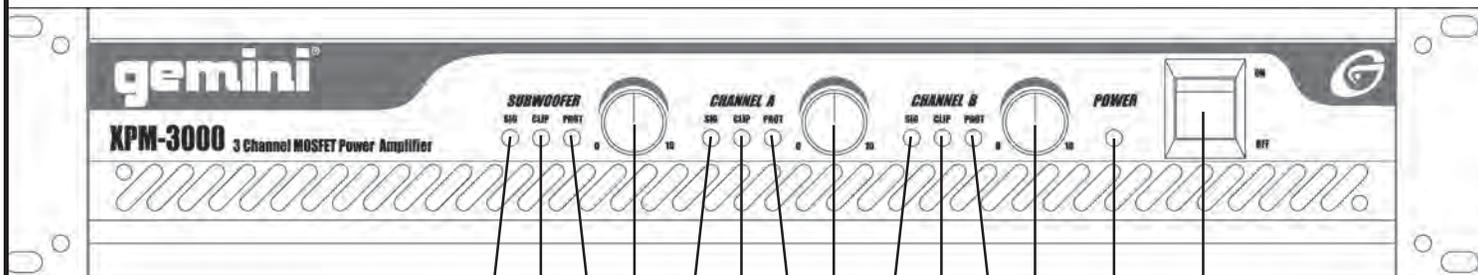
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120 Clover Place P.O. Box 6928  
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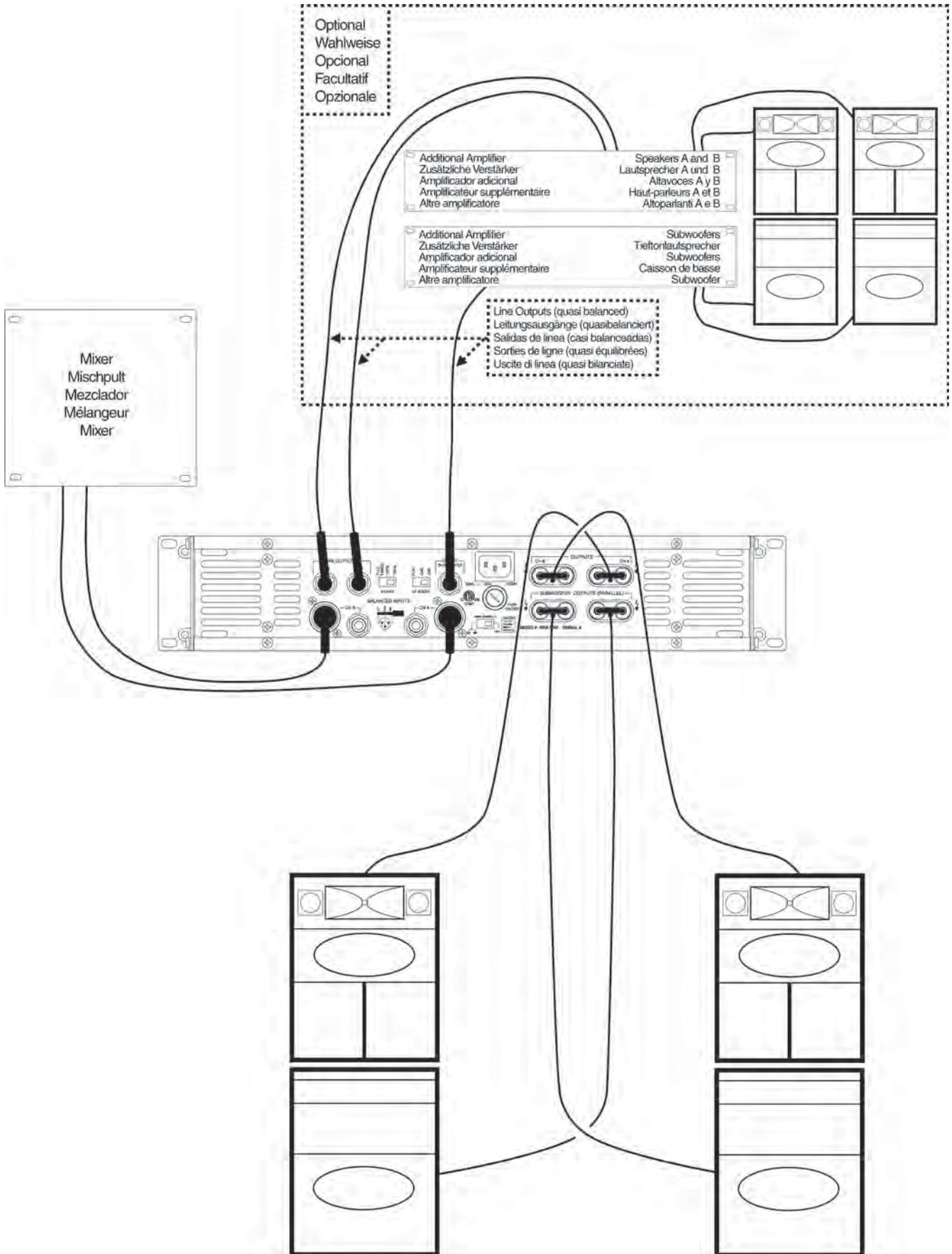


230V

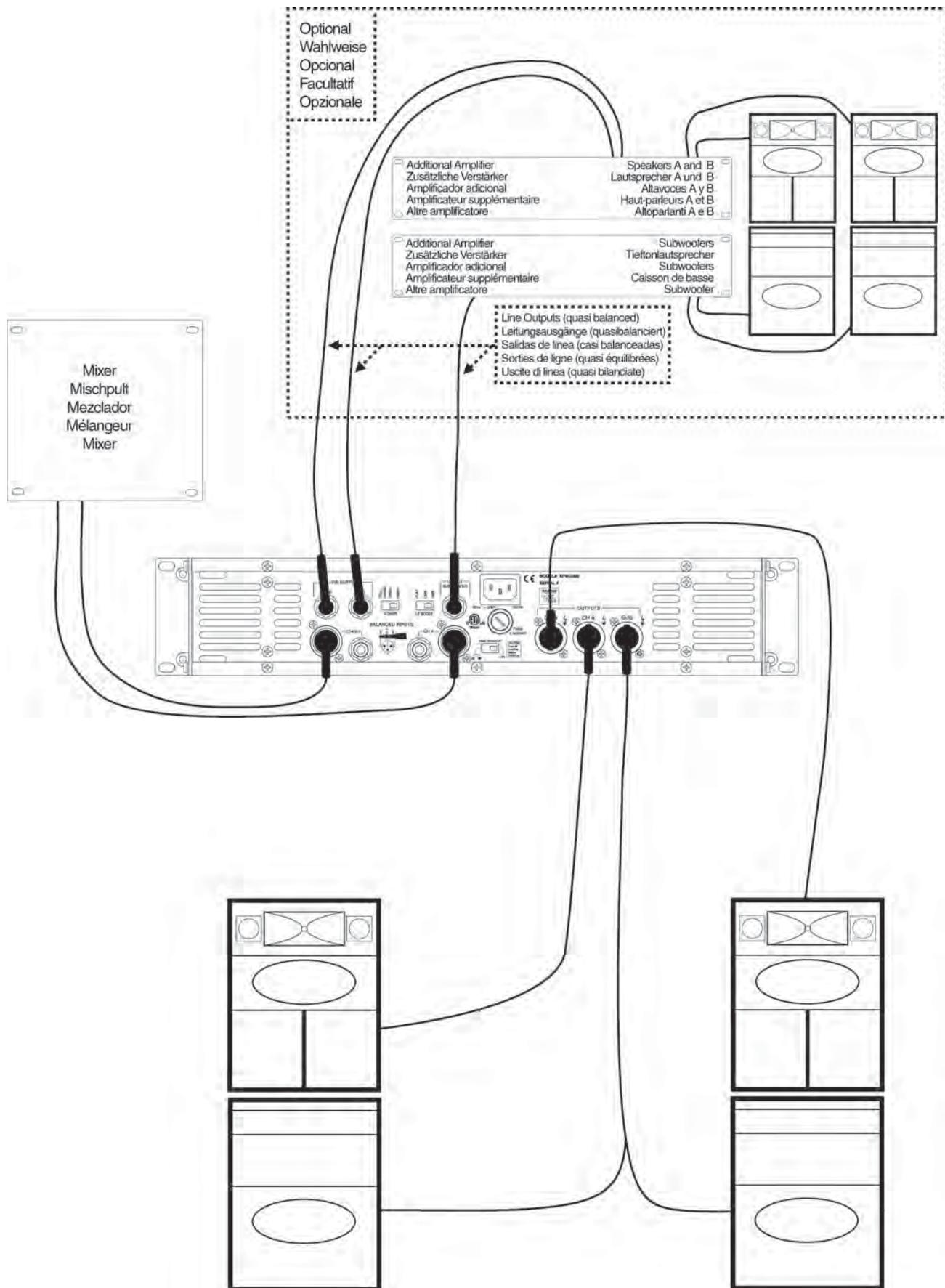


120V





# 230V



# Connections, Controls and Indicators

## Rear Panel

**Note: 120V and 230V units have different types of output connectors on the rear panel.**

### Input Section:

There are two parallel input connectors (one female XLR and one 1/4" jack) per channel. Either can be used as an input or as a link to chain amplifiers.

**XLR Input Jacks (11, 14):** electronically balanced inputs accept a standard XLR male connector. Pin 1 = shield/ground, pin 2 = hot or positive (+) and pin 3 = cold or negative (-).

**1/4" Input Jacks (12, 13):** accept a balanced as well as an unbalanced line level signal. The unbalanced line uses a standard tip-sleeve connection. The tip is positive and the sleeve is negative/ground. The balanced line uses a tip-ring-sleeve connection. Tip = hot or positive (+), ring = cold or negative (-), and sleeve = shield/ground.

**Signal Ground Lift Switch (15)** is used to lift the balanced input connectors' ground/shield from the amplifier's ground. When the signal ground is lifted, the sound source disconnects from the amplifier's ground preventing ground loops which can generate hum and noise. See the Signal Ground Lift Switch Instructions for more detail.

### AC Power Section:

**Fuse (7):** replace fuse with those of proper type and rating.

**AC Cord Outlet (6)** is used to attach the power cord to the unit.

### Signal Processing Section:

Disconnect the unit from the AC power source before making any connections.

**Crossover Switch (3):** Use the crossover switch to set the crossover frequency between the subwoofer and the satellite channels (Channels A and B) at 120 Hz or 180 Hz. Or you can set the crossover switch to FULL RANGE if you do not wish to use a subwoofer (the full range signal will then go to the satellite channels).

**Low Frequency Boost Switch (4):** The LF Boost Switch can be used to optimize the performance of the subwoofer. The LF boost effect uses specialized filter circuitry, including a subsonic filter, to cut off subsonic frequencies which keeps the subwoofer from wasting available energy. The filter also provides an optional +3 dB or +6 dB boost at 40 Hz which is suitable for most subwoofers. The circuitry optimizes the performance of the subwoofer by focusing the signal's energy to match the subwoofer's characteristics. Set the switch to be FLAT, +3 dB or +6 dB based on your subwoofer and your experience.

**NOTE: The LF Boost settings only effect the subwoofer channel and will not effect the satellite channels.**

**Line Outputs (1, 2, 5):** the amplifier has quasi balanced post crossover line outputs. The line outputs connectors are 1/4" TRS and can be used to connect to additional amplifiers (optional).

### Output Section:

#### Speaker Outputs:

Pay close attention to polarity (shown on the back of the unit) when connecting your speakers. Connecting your speaker systems using the wrong polarity will not damage your speakers, but it will impact the quality of the sound (lack of bass and incorrect stereo image).

**Speaker Outputs for 120V Unit (8, 9, 10):** the speaker output connectors are 5-way binding posts that will accept standard banana plugs, spade lugs or bare wire. Make sure that all the connections are clean when using bare wire connections. If any strands of wire from one connector touch the adjacent connector, the sound will be distorted, and your amplifier will overheat and go into protection mode.

**NOTE (120V only): Two subwoofer output connectors are provided to connect two subwoofers with separate cables. These outputs are wired in parallel and are connected to a mono subwoofer channel (subwoofer output is not directional and does not require a stereo signal). The combined load for the subwoofer channel must not be less than 2 Ohms (a single 2 Ohm speaker OR two 4 Ohm speakers OR four 8 Ohm speakers).**

**Speaker Outputs for 230V Unit (8, 9, 10):** Neutrik Speakon connectors are provided to connect speakers to the amplifier quickly and easily. They are high current rated and provide very stable and durable contacts. Every Speakon connector has pin 1- as negative and pin 1+ as positive.

**WARNING: The XPM-3000 amplifier is designed to handle low impedance loads and will operate normally with most 2 Ohm subwoofers or subwoofer combinations. The amplifier will operate normally with most 4 Ohm speakers on the satellite channels. However, for optimal performance and reliability we recommend using subwoofers and speakers with higher impedance (4 Ohms for the subwoofer and 8 Ohms for the satellite channels).**

**NOTE: There are no bridge connections in this amplifier. Please refer to the terminals' color coding for proper connection polarity.**

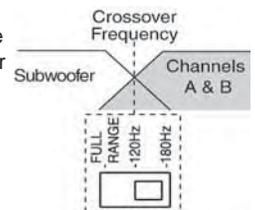
## Front Panel

**Power (23):** the power switch turns the unit on and off.

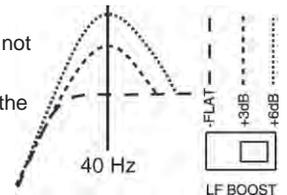
**Power LED (22):** the power LED lights when the power is on. If the power LED does not light, refer to the trouble shooting guide.

**Signal LED (16):** the signal LEDs for each channel show when a signal is present.

**Clip LED (17):** the amplifier has true clip LEDs to help you properly control the amplifier's output and achieve undistorted sound. The clip LEDs for each channel light when your signal level is so strong that the distortion reaches 1% THD. The clip LED should not remain constantly on or flash repeatedly during operation. For clean sound reproduction, the clip should only light occasionally for an instant. If the LED remains on or flashes repeatedly, you will hear distorted sound that can be damaging to your speaker system. If this occurs, reduce the signal level by lowering the input level control for the channel that is clipping or reduce the level at the source. If the clip LED lights when no signal is present, it may indicate a RF signal on the output which may cause damage to speakers (the RF signal will not be audible).



**Protect LED (18):** when you first turn on the amplifier, the protect LEDs light briefly during a turn-on delay which indicates that the outputs are disconnected internally. There will be an audible click when the outputs reconnect and the protect LEDs will turn off. Otherwise, the protect LED indicates that there is a problem either in the amplifier's external connections, load or temperature conditions or its internal functions. If one of these situations occur, the amplifier senses the problem and automatically switches into protection mode. The LED will light to warn you of the trouble and the amplifier will stop working. If this occurs, switch off the amplifier and refer to the Trouble Shooting Guide. If the protect LED remains lit when resuming amplifier operation, do not use the amplifier and contact an authorized service technician.



**Level Controls (19, 20, 21):** establish the input levels required for each channel.

## Operating Instructions

**THE AMPLIFIER'S POWER MUST BE TURNED OFF WHEN CHANGING SETTINGS.**

### Using the Amplifier With Subwoofer(s) and Satellite Speakers

The XPM-3000 has two channels for stereo operation and a common subwoofer channel. The amplifier has a built in crossover to separate the input signal between the stereo satellite channels and the mono subwoofer channel (the low frequency signal feeding the subwoofer is not directional and does not require stereo operation). The amplifier also provides an optional low frequency boost for the subwoofer channel to optimize the performance of your subwoofer.

1. With the power off, connect your input cables to the channel A and B inputs using either the **XLR INPUT JACKS (11, 14)** or **1/4" INPUT JACKS (12, 13)** for each channel. The other channel A and channel B inputs can be used to link to an additional amplifier.
2. Connect the subwoofer(s) to the subwoofer **SPEAKER OUTPUT(S) (10)**. Connect the full range loudspeakers to the channel A and channel B **SPEAKER OUTPUTS (8, 9)**. THE TOTAL SPEAKER LOAD MUST BE AT LEAST 4 OHMS PER CHANNEL FOR THE SATELLITE CHANNELS AND 2 OHMS FOR THE SUBWOOFER. If you try to operate at a lower impedance, the amplifier will overheat and then go into protection mode and stop operation until you correct the load conditions.
3. If you choose to use additional amplifiers, connect the additional amplifiers to the XPM-3000 using the **LINE OUTPUT (1, 2, 5)** connectors.

**NOTE: The line outputs tap the signal after the crossover and the low frequency boost but before the level controls.**

4. Use the **CROSSOVER SWITCH (3)** to set the crossover frequency between the subwoofer and the satellite channels (Channels A and B) at 120 Hz or 180 Hz.
5. Use the **LOW FREQUENCY BOOST SWITCH (4)** to optimize the performance of the subwoofer. The LF boost effect uses specialized filter circuitry, including a subsonic filter, to cut off subsonic frequencies which keeps the subwoofer from wasting available energy. The filter also provides an optional +3 dB or +6 dB boost at 40 Hz which is suitable for most subwoofers. Set the switch to be FLAT, +3 dB or +6 dB based on your subwoofer and your experience.

**NOTE: The LF Boost settings only effect the subwoofer channel and will not effect the satellite channels.**

6. With the **LEVEL CONTROLS (19, 20, 21)** of the channels set to zero (fully counterclockwise), turn the **POWER (23)** on. Apply a signal to the input of the amplifier. The level of the input signal should be as high as you will ever need it to be. This way, it will be as high above the amplifier's noise floor as possible, ensuring an excellent performance and signal to noise ratio. Adjust the **LEVEL CONTROLS** for each channel to achieve the desired maximum listening level. Note, when the clip LEDs light, there is distortion present in the amplifier's output section. If a clip LED remains on or flashes repeatedly, reduce the signal level by lowering the input level control for the channel that is clipping or reduce the level at the source.

### Using the Amplifier Without Subwoofer(s)

The XPM-3000 gives you the option of operating the amplifier as you would a conventional amplifier, without using subwoofer(s). This flexibility is especially useful if you don't want to transport your subwoofers at times.

1. With the power off, connect your input cables to the channel A and B inputs using either the **XLR INPUT JACKS (11, 14)** or **1/4" INPUT JACKS (12, 13)** for each channel. The other channel A and channel B inputs can be used to link to an additional amplifier.

2. Connect the loudspeakers to the channel A and channel B **SPEAKER OUTPUTS (8, 9)**. THE TOTAL SPEAKER LOAD MUST BE AT LEAST 4 OHMS PER CHANNEL FOR CHANNELS A AND B. If you try to operate at a lower impedance, the amplifier will overheat and then go into protection mode and stop operation until you correct the load conditions.
3. If you choose to use additional amplifiers, connect the additional amplifiers to the XPM-3000 using the **LINE OUTPUT (1, 2)** connectors.
4. Set the **CROSSOVER SWITCH (3)** to FULL RANGE so that the full range signal will go to the satellite channels (Channels A and B).
5. With the **LEVEL CONTROLS (20, 21)** of the channels set to zero (fully counterclockwise), turn the **POWER (23)** on. Apply a signal to the input of the amplifier. The level of the input signal should be as high as you will ever need it to be. This way, it will be as high above the amplifier's noise floor as possible, ensuring an excellent performance and signal to noise ratio. Adjust the **LEVEL CONTROLS** for each channel to achieve the desired maximum listening level. Note, when the clip LEDs light, there is distortion present in the amplifier's output section. If a clip LED remains on or flashes repeatedly, reduce the signal level by lowering the input level control for the channel that is clipping or reduce the level at the source.

### Using the Signal Ground Lift Switch

Depending on your system configuration, sometimes applying the ground will create a quieter signal path. Sometimes lifting the ground can eliminate ground loops and hum to create a quieter signal path.

1. With the power amp on, listen to the system in idle mode (no signal present) with the ground applied (the **SIGNAL GROUND LIFT SWITCH (15)** in the left position).
2. Then turn the power off before moving the **SIGNAL GROUND LIFT SWITCH (15)**. Lift the ground by moving the **SIGNAL GROUND LIFT SWITCH** to the right, turn the power back on and listen to determine which position will provide a signal devoid of background noise and hum. Keep the **SIGNAL GROUND LIFT SWITCH** in the ground position if the noise level remains the same in either position.

**CAUTION: DO NOT TERMINATE THE AC GROUND ON THE POWER AMPLIFIER IN ANY WAY. TERMINATION OF THE AC GROUND CAN BE HAZARDOUS.**

# Specifications

Output Power EIA: 1kHz @ 1% THD (100 Hz @ 1% THD for the subwoofer channel)

Output Power Chart:

		Subwoofers			
		Not Used	8 Ohms	4 Ohms	2 Ohms
A and B Speakers	Impedance				
	Not Used		260	425	600
	8 Ohms	220	220	380	540
	4 Ohms	300	270	350	530

Note: the power for channels A and B is given as per channel, both channels driven

Frequency Response - 3 Channel Operation:

Channels A and B.....Crossover Frequency - 60 kHz  
 Subwoofer Channel.....20 Hz - Crossover Frequency

Frequency Response - Full Range Operation:

Channels A and B.....20 Hz - 60 kHz

Crossover:

Type.....2nd order Linkwitz-Riley  
 Crossover Frequency.....120 Hz/180 Hz

Low Frequency Boost:

Boost Frequency.....40 Hz  
 Boost Level.....+3 dB/+6 dB

Signal to Noise Ratio.....100 dB below rated power, 8 Ohms

Damping Factor:

Channels A and B.....>300 @ 8 Ohms  
 Subwoofer Channel.....>600 @ 8 Ohms

Slew Rate......25 V/ $\mu$ S

Voltage Gain.....33 dB

Input Sensitivity:

Channels A and B (for rated power at 8 Ohms).....>300 @ 8 Ohms  
 Subwoofer Channel (for rated power at 4 Ohms).....>600 @ 8 Ohms

Input Impedance Unbalanced.....10 kOhms

Input Impedance Balanced.....20 kOhms

Power consumption.....1200 VA

Note: power consumption is given at rated power at 8 Ohms per channel (Channels A and B), 4 Ohms on the subwoofer channel, all three channels driven.

AC Power Requirement:

(power connection is factory configured).....120V/ 60 Hz  
 230V/ 50 Hz

Indicators.....1 Power Indicator

1 Signal LED per channel

1 Clip LED per channel

1 Protect LED per channel

Cooling.....2 Speed Dual Fan; Front-to-Rear Forced Air

Protection.....Short Circuit, DC, Thermal Cut-off, Sub/ultrasonic  
 Frequency Filters, In-rush Current Limiter, Turn-on Delay

Connectors:

Balanced/Unbalanced Inputs.....1/4" Jack

Balanced Inputs.....XLR Female Jack

Line Outputs.....1/4" Jack

Speaker Outputs (120V unit).....5-way binding posts  
 2 Parallel 5-way binding posts for subwoofers

Speaker Outputs (230V unit).....Speakons (ch.A, ch.B and subwoofer)

Dimensions.....19" x 13.75" x 3.5" (483 x 350 x 89 mm)

Weight.....31 lbs (14 kg)

\* Specifications and design are subject to change without notice for purpose of improvement.

SYMPTOM	CAUSE	SOLUTION
<b>UNIT DOES NOT PRODUCE SOUND. POWER LED DOES NOT LIGHT.</b>	<ul style="list-style-type: none"> <li>• POWER SWITCH NOT IN ON POSITION.</li> <li>• POWER CABLE NOT CONNECTED TO AMPLIFIER OR TO OUTLET.</li> <li>• AC OUTLET NOT ACTIVE.</li> <li>• MAIN AMPLIFIER FUSE DEFECTIVE.</li> </ul>	<ul style="list-style-type: none"> <li>• MOVE POWER SWITCH TO ON POSITION.</li> <li>• CONNECT POWER CABLE TO AC SUPPLY.</li> <li>• CHECK CONDITION OF OUTLET.</li> <li>• REPLACE AMPLIFIER MAIN POWER FUSE ON REAR PANEL WITH CORRECT TYPE AND RATING.</li> </ul>
<b>POWER LED LIGHTS, BUT NO SOUND IS PRODUCED BY AMPLIFIER.</b>	<ul style="list-style-type: none"> <li>• NO INPUT SOURCE SIGNAL.</li> <li>• INPUT SOURCE NOT CONNECTED.</li> <li>• INPUT CONNECTING CABLE DEFECTIVE.</li> <li>• SPEAKER(S) NOT CONNECTED.</li> <li>• SPEAKER CABLE DEFECTIVE.</li> <li>• SPEAKER SYSTEM(S) INOPERATIVE.</li> <li>• AMPLIFIER'S LEVEL CONTROLS ARE SET TO ZERO.</li> </ul>	<ul style="list-style-type: none"> <li>• CHECK FOR PROPER FUNCTION OF INPUT SOURCE DEVICE.</li> <li>• CHECK INPUT CABLES AND CONNECTIONS. REPLACE QUESTIONABLE CABLES WITH KNOWN GOOD CABLES.</li> <li>• CHECK SPEAKER CABLES AND CONNECTIONS. REPLACE QUESTIONABLE CABLES WITH KNOWN GOOD CABLES.</li> <li>• CHECK OPERATING CONDITION AND STATUS OF SPEAKER SYSTEM(S). BE SURE THE LEVEL CONTROLS ARE PROPERLY SET.</li> </ul>
<b>SOUND IS PRESENT BUT VOLUME IS TOO LOW EVEN THOUGH SOURCE DEVICE IS SET TO A HIGH LEVEL.</b>	<ul style="list-style-type: none"> <li>• AMPLIFIER INPUT LEVEL CONTROLS ARE SET TOO LOW.</li> <li>• WRONG PIN CONNECTIONS IN CABLES.</li> </ul>	<ul style="list-style-type: none"> <li>• ADJUST LEVEL CONTROLS AS PER INSTRUCTIONS.</li> <li>• USE CORRECT CABLES (AS SHOWN ON BACK OF UNIT).</li> </ul>
<b>VERY LITTLE OR NO OUTPUT FROM SUBWOOFER OR NO BASS FROM FULL RANGE SPEAKERS WHEN OPERATING WITHOUT SUBWOOFERS.</b>	<ul style="list-style-type: none"> <li>• FREQUENCY SWITCH IS IN THE FULL RANGE MODE POSITION.</li> </ul>	<ul style="list-style-type: none"> <li>• MOVE THE FREQUENCY SWITCH TO THE 120 HZ OR THE 180 HZ POSITION.</li> </ul>
<b>LOUD 50/60 HZ OR 100/120 HZ HUM IS HEARD AT ALL TIMES THROUGH THE SPEAKER SYSTEMS.</b>	<ul style="list-style-type: none"> <li>• IMPROPER OR DEFECTIVE GROUND CONNECTION AT INPUTS. IMPROPER OR DEFECTIVE GROUND AT INPUT SOURCE DEVICE(S).</li> <li>• IMPROPER OR DEFECTIVE GROUND CONNECTION ON AC OUTLET.</li> <li>• GROUND LOOP THROUGH AC LINE CONNECTION/RACK MOUNTING.</li> </ul>	<ul style="list-style-type: none"> <li>• CHECK FOR PROPER AC LINE GROUND ON POWER AMP AND ALL INPUT DEVICES.</li> <li>• CHECK INPUT CABLES FOR ALL SOURCE DEVICES AND SIGNAL PROCESSING AS WELL AS INPUT CABLES TO POWER AMPLIFIER. CHECK POSITION OF GROUND LIFT SWITCH AS PER INSTRUCTIONS FOR LIFTING THE GROUND.</li> <li>• NEVER LIFT THE AC LINE GROUND ON THE POWER AMPLIFIER. IF YOU ARE NOT TOTALLY FAMILIAR WITH GROUND LIFTING OR UNIFICATION PROCEDURES, DO NOT ATTEMPT THEM WITHOUT FIRST CONSULTING YOUR DEALER OR A QUALIFIED SOUND TECHNICIAN FOR MORE INFORMATION ON GROUNDING. IMPROPERLY DONE, SUCH PROCEDURES CAN POSE A SAFETY AND/OR FIRE HAZARD.</li> </ul>
<b>SOUND IS DISTORTED.</b>	<ul style="list-style-type: none"> <li>• DISTORTION OCCURRING IN SOURCE DEVICE.</li> <li>• INPUT LEVEL IS SET TOO HIGH.</li> </ul>	<ul style="list-style-type: none"> <li>• CHECK CLIP INDICATORS ON INPUT SOURCE DEVICES AND RESET LEVELS IF NECESSARY TO ELIMINATE DISTORTION.</li> <li>• ADJUST LEVEL CONTROLS AS PER INSTRUCTIONS.</li> </ul>
<b>PROTECT LED REMAINS LIT OR GOES ON AND OFF INTERMITTENTLY AFTER USING AMPLIFIER FOR A SHORT TIME.</b>	<ul style="list-style-type: none"> <li>• UNIT IS OPERATING AT EXCESSIVELY HIGH TEMPERATURE.</li> <li>• EXTREMELY LOW SPEAKER IMPEDANCE.</li> <li>• SHORT IN SPEAKER CONNECTORS, SPEAKER CABLE OR SPEAKER SYSTEM.</li> </ul>	<ul style="list-style-type: none"> <li>• CHECK THAT AMPLIFIER IS ADEQUATELY VENTILATED ON THE FRONT AND REAR PANELS WHERE THE AIR VENTS AND FANS ARE LOCATED. IF OVERHEATED, LET THE AMPLIFIER COOL DOWN BEFORE APPLYING AN INPUT SIGNAL.</li> <li>• VERIFY SPEAKER SYSTEM IMPEDANCES. BE SURE THE TOTAL SPEAKER SYSTEM IMPEDANCE IS AT LEAST 4 OHM PER CHANNEL FOR CHANNELS A AND B, AND AT LEAST 2 OHM FOR THE SUBWOOFER CHANNEL. IF YOU ARE NOT SURE OF YOUR TOTAL SPEAKER IMPEDANCE LOAD, CONTACT YOUR DEALER FOR MORE INFORMATION.</li> <li>• CHECK CONDITION OF SPEAKER CABLES.</li> <li>• IF USING BARE WIRE CONNECTIONS ON THE OUTPUTS OF THE AMPLIFIER, BE SURE THAT NO STRANDS FROM ONE CONNECTOR ARE TOUCHING ANY OTHER CONNECTOR.</li> </ul>
<b>FUSE BLOWS INTERMITTENTLY.</b>	<ul style="list-style-type: none"> <li>• SPEAKER LOAD IMPEDANCE IS TOO LOW.</li> <li>• TYPE OR RATING OF THE FUSE IS NOT CORRECT.</li> </ul>	<ul style="list-style-type: none"> <li>• CHECK FOR SHORTS ON THE OUTPUTS.</li> <li>• CHECK YOUR SPEAKER IMPEDANCE (INFO FROM DEALER).</li> <li>• CHECK THAT THE FUSE TYPE AND RATING IS CORRECT.</li> </ul>
<b>PROTECT LED(S) STAY ON WITH NO SPEAKERS CONNECTED AND WITH THE AMPLIFIER COOLED DOWN.</b>	<ul style="list-style-type: none"> <li>• FAILED AMPLIFIER.</li> </ul>	<ul style="list-style-type: none"> <li>• CONTACT THE GEMINI SERVICE DEPARTMENT OR YOUR AUTHORIZED DEALER TO SPEAK TO A QUALIFIED SERVICE TECHNICIAN. IN THE U.S.A. CALL 1-732-969-9000</li> </ul>

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* 1.0.1	ASSXPM300008	XPM-3000 POWER BOARD ASSY	1.000
1.1.1	105006400001	6.4m/m PIN (805551-BL2)	2.000
2.1.2	NTC0120L----	NTC 20A SCK-0120 XPM-900	1.000
3.1.3	W2010G150050	1015#14 BLACK XPM-3000	1.000
4.1.4	W2010G180059	1015#14 WHITE XPM-900U	1.000
5.1.5	6000670600--	XPM-3000-P POWER BOARD 2oz	1.000
* 2.0.2	ASSXPM300009	XPM-3000 FRONT PANEL ASSY	1.000
1.1.1	105443431703	CHASSIS XPM-3000	1.000
* 2.1.2	ASSXPM300005	XPM-3000 DISPALY BOARD OA	1.000
1.2.1	RC0035110005	RESISTORS 510ohm 1/4W T	6.000
2.2.2	RC0031020005	RESISTORS 1 K 1/4W T	4.000
3.2.3	RC0032020005	RESISTORS 2 K 1/4W T	1.000
4.2.4	RC0038220005	RESISTORS 8.2 K 1/4W T	3.000
5.2.5	RC0031030005	RESISTORS 10 K 1/4W T	15.000
6.2.6	RC0033030005	RESISTORS 30 K 1/4W T	6.000
7.2.7	RC0033040005	RESISTORS 300 K 1/4W T	3.000
8.2.8	700075050001	ZENER 7.5V 500mw	1.000
9.2.9	700120050001	ZENER 12V 500mw	3.000
10.2.10	700150050001	ZENER 15V 500mw	1.000
11.2.11	2SA970BL---T	TR 2SA970 BL T	3.000
12.2.12	6002500430--	XPM-3000-D DISPALY BOARD 2oz	1.000
* 3.1.3	ASSXPM300006	XPM-3000 DISPALY BOARD ASSY	1.000
1.2.1	MC00A222100J	MYLAR CAP .0022u	3.000
2.2.2	MC00A153100J	MYLAR CAP .015u	3.000
3.2.3	ECS00100025M	ELEC CAP 100u25v	1.000
4.2.4	ECS01000025M	ELEC CAP 1000u25v	1.000
5.2.5	ICNJM3404AD-	IC NJM3404AD	3.000
6.2.6	TRTIP122---0	TIP122	1.000
7.2.7	LDG050210030	LED 5m/m GREEN	4.000

8.2.8	LDR050410030	LED 5m/m RED	3.000
9.2.9	LDY050610030	LED 5m/m YELLOW	3.000
10.2.10	1070LED-3.5-	LED SPACER SUPPORT LED-3.5	10.000
11.2.11	JS1001R25002	BASE 2P JS-1001R-02	2.000
12.2.12	SR01MS3x061B	MS 3x6 BLACK(1JBHMC-030604)	1.000
13.2.13	NTM3x07x030Y	NUT 3m/m W/S (0J0010-030001)	1.000
14.2.14	W2040A3400BB	1007#26 4P+340+4S XPM-3000	1.000
15.2.15	W2040A4000BB	1007#26 4P+400+4S XPM-3000	1.000
16.2.16	W2080A3100BB	1007#26 8P+310+8S XPM-3000	1.000
4.1.4	107042004004	PVC XPM-3000	1.000
5.1.5	KB1819BL0001	KNOB 18x19 BLACK XPM-900	3.000
6.1.6	SWP-----9	R22-22B-11B XPM-900	1.000
7.1.7	107042002501	AIRFILTER 420x25m/m XPM-900	1.000

8.1.8	VR16A1031501	16K4x1 10Ax1 41K L-15 XPM-900	3.000
9.1.9	W5010A370032	2852#26 RED XPM-900	1.000
10.1.10	W5010A460038	2852#26 GRAY XPM-900	1.000
11.1.11	W5010A370031	2852#26 BROWN	1.000
12.1.12	SR01MS3x061B	MS 3x6 BLACK (1JBHMC-030604)	6.000
* 3.0.3	ASSXPM300010	XPM-3000 BACK BOARD ASSY	1.000
1.1.1	105242608611	BACK BOARD XPM-3000	1.000
* 2.1.2	ASSXPM300007	XPM-3000 HEAT SINK ASSY	1.000
1.2.1	106219207604	HEAT SINK 192X76X60 XMP-3000	2.000
2.2.2	106202602001	ALUMINUM PLATE 26x20m/m t=3	8.000
3.2.3	TRBUZ900NDP0	BUZ900NDP MOSFET XPM-600	4.000
4.2.4	TRBUZ905DP-0	BUZ905DP MOSFET XPM-600	4.000
5.2.5	PTH9M471--H1	PTH9M04BH471TS2F333 XPM-900	2.000
6.2.6	PTH9M222--E2	PTH9M04BE222TS2F333 XPM-900	3.000
7.2.7	SR01MS3x161W	MS 3x16 (1JBHMC-031600)	8.000
8.2.8	WS132x08x10W	3.2x0.8x10 (2IFA032-081000)	3.000
9.2.9	WS203x08x05W	SPRING W/S.M3-L (2JS100-030050)	8.000
* 3.1.3	ASSXPM300001	XPM-3000 MAIN BOARD OA	1.000
1.2.1	RC0034700005	RESISTORS 47 ohm 1/4W T	6.000
2.2.2	RC0031010005	RESISTORS 100 ohm 1/4W T	6.000
3.2.3	RC0032210005	RESISTORS 220 ohm 1/4W T	3.000
4.2.4	RC0038210005	RESISTORS 820 ohm 1/4W T	3.000
5.2.5	RC0031020005	RESISTORS 1 K 1/4W T	19.000
6.2.6	RC0031520005	RESISTORS 1.5 K 1/4W T	3.000
7.2.7	RC0033320005	RESISTORS 3.3 K 1/4W T	6.000
8.2.8	RC0031030005	RESISTORS 10 K 1/4W T	9.000
9.2.9	RC0032230005	RESISTORS 22 K 1/4W T	3.000
10.2.10	RC0034730005	RESISTORS 47 K 1/4W T	6.000
11.2.11	RC0036830005	RESISTORS 68 K 1/4W T	6.000

12.2.12	RC0031040005	RESISTORS 100 K 1/4W T	3.000
13.2.13	RC0050A10005	RESISTORS 1 ohm 1/2W T	1.000
14.2.14	RC0053030005	RESISTORS 30 K 1/2W T	3.000
15.2.15	RC0054730005	RESISTORS 47 K 1/2W T	3.000
16.2.16	RM0030K47501	RESISTORS 475 ohm 1% 1/4W	2.000
17.2.17	RM0031K00001	RESISTORS 1K 1% 1/4W T	1.000
18.2.18	RM00310K0001	RESISTORS 10K 1% 1/4W T	8.000
19.2.19	7001N4007051	DIODE 1N4007	4.000
20.2.20	7001N4148051	DIODE 1N4148	29.000
21.2.21	700033050001	ZENER 3.3v 500mw	9.000
22.2.22	700120050001	ZENER 12V 500mw	6.000
23.2.23	700150100001	ZENER 15V 1W	2.000
24.2.24	2SA970BL---T	TR 2SA970 BL T	9.000
25.2.25	2SA1015GR--T	TR 2SA1015GR T	3.000

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26.2.26	2SC2240BL--T	TR 2SC2240 BL T	6.000
27.2.27	MCTOA102100J	MYLAR CAP .001u T	3.000
28.2.28	MPMSC104100J	MSC .1u 100V 5% T	19.000
29.2.29	6003521900--	XPM-3000-M MAIN BOARD T=2oz	1.000
* 4.1.4	ASSXPM300002	XPM-3000 MAIN BOARD ASSY	1.000
1.2.1	CCNOA101500K	CERAMIC CAP 100P 500V K SL	3.000
2.2.2	CCZOA271025K	CERAMIC CAP 270P	4.000
3.2.3	CCZOA471025K	CERAMIC CAP 470P	2.000
4.2.4	CCZOA680500K	CERAMIC CAP 68P/500V NPO	4.000
5.2.5	ECN00047018M	ELEC CAP 47u16v NP	3.000
6.2.6	ECS00010050M	ELEC CAP 10u50v	3.000
7.2.7	ECS00100025M	ELEC CAP 100u25v	3.000
8.2.8	ECS00100100M	ELEC CAP 100u100v	6.000
9.2.9	ECS00220016M	ELEC CAP 220u16v	3.000
10.2.10	ECS00220025M	ELEC CAP 220u25v	2.000
11.2.11	ECS02200025M	ELEC CAP 2200u25v	1.000
12.2.12	ECL06800100M	ELEC CAP 6800u100v	4.000
13.2.13	MPMEF104250K	MEF .1u 250V 10%	6.000
14.2.14	MPMEA104250K	MEA .1u 250V 10%	6.000
15.2.15	RC0202230005	RESISTORS 22 K 2W M	3.000
16.2.16	RC0300A27005	RESISTORS 2.7 ohm 3W M	2.000
17.2.17	RC0300A82005	RESISTORS 8.2 ohm 3W	4.000
18.2.18	RS0500222005	2.2 K 5W SQP TYPE	2.000
19.2.19	ICTL072CP---	IC TLO72CP	1.000
20.2.20	TRMJE340---0	MJE340	3.000
21.2.21	TRMJE350---0	MJE350	3.000
22.2.22	TRMPSA13---0	TR MPSA13	3.000
23.2.23	TRZ0103---0	TRIAC Z0103 MA1A600V RR-15	3.000
24.2.24	700MP3504W02	RECTIFIER MP3504W 35A 400V	1.000

25.2.25	700KBP080002	RECTIFIER KBP06 2A 600V	1.000
26.2.26	7001N5404051	DIODE 1N5404	2.000
27.2.27	RL832-----12	832-1C-C-12D XPM-900	1.000
28.2.28	RL812-----12	812H-1C-12D XPM-3000	2.000
29.2.29	MJ0860250900	CANNON JACK 086-25-90 EQ-15x2	2.000
30.2.30	MJCPJ-085---	JACK CPJ-085 XPM-900	2.000
31.2.31	COIL16115T6L	COIL 1.6x10.1x11.5T-6L XPM-900	3.000
32.2.32	SWS-----1	SS004-P022 BY-PF8 V2000	1.000
33.2.33	105006400001	6.4m/m PIN (805551-BL2)	3.000
34.2.34	JS1001025003	BASE 3P 2.5m/m	3.000
35.2.35	JS1001025004	BASE 4P 2.5m/m	2.000
36.2.36	JS1001025008	BASE 8P 2.5m/m	1.000
37.2.37	JS1120039002	2P BASE 3.96 JS-1120-02	1.000
38.2.38	106203003003	RECTIFER HEAT SINK XPB-1600	1.000

	39.2.39	SR01TP4x204Y	TP4x20 (1JBH6C-042021)	1.000
	40.2.40	WS204x10x07W	SPRING W/S.M4-L (2JS100-040050)	1.000
	41.2.41	W20105210205	1015#14 GREEN XPM-3000	1.000
	42.2.42	W20105210201	1015#14 BROWN XPM-3000	1.000
	43.2.43	W20105140205	1015#14 GREEN XPM-3000	1.000
	44.2.44	W20105120205	1015#14 GREEN XPM-3000	1.000
	45.2.45	W20105320202	1015#14 5/320/20 RED XPB-1600	1.000
	46.2.46	W20105330208	1015#14 GRAY XPM-3000	1.000
	47.2.47	W4120A1200BB	12P+120+12S XPM-3000	1.000
*	5.1.5	ASSXPM300003	XPM-3000 PRE BOARD DA	1.000
	1.2.1	RC0011010005	RESISTORS 100ohm 1/8W T	6.000
	2.2.2	RC0011040005	RESISTORS 100K 1/8W T	3.000
	3.2.3	RM00104K5301	RESISTORS 4K53 1% 1/8W T	1.000
	4.2.4	RM00106K9801	RESISTORS 6K98 1% 1/8W T	1.000
	5.2.5	RM00110K0001	RESISTORS 10K 1% 1/8W T	12.000
	6.2.6	RM00126K7001	RESISTORS 26K7 1% 1/8W T	4.000
	7.2.7	RM00143K2001	RESISTORS 43K2 1% 1/8W T	4.000
	8.2.8	RM00148K7001	RESISTORS 48K7 1% 1/8W T	3.000
	9.2.9	RM00197K6001	RESISTORS 97K6 1% 1/8W T	2.000
	10.2.10	RM001130K001	RESISTORS 130K 1% 1/8W T	4.000
	11.2.11	RM001294K001	RESISTORS 294K 1% 1/8W T	1.000
	12.2.12	6001190500--	XPM-3000-X PRE BOARD T=2oz	1.000
*	6.1.6	ASSXPM300004	XPM-3000 PRE BOARD ASSY	1.000
	1.2.1	MC00A223100J	MYLAR CAP .022u	2.000
	2.2.2	MC00A823100J	MYLAR CAP .082u	2.000
	3.2.3	MC00A224100J	MYLAR CAP .22u	4.000
	4.2.4	ECS00010050M	ELEC CAP 10u50v	3.000
	5.2.5	ICBA4558DD--	IC BA4558DD	4.000
	6.2.6	SWL-----1	SS004-P2430Em-PC10 XPM-900	2.000

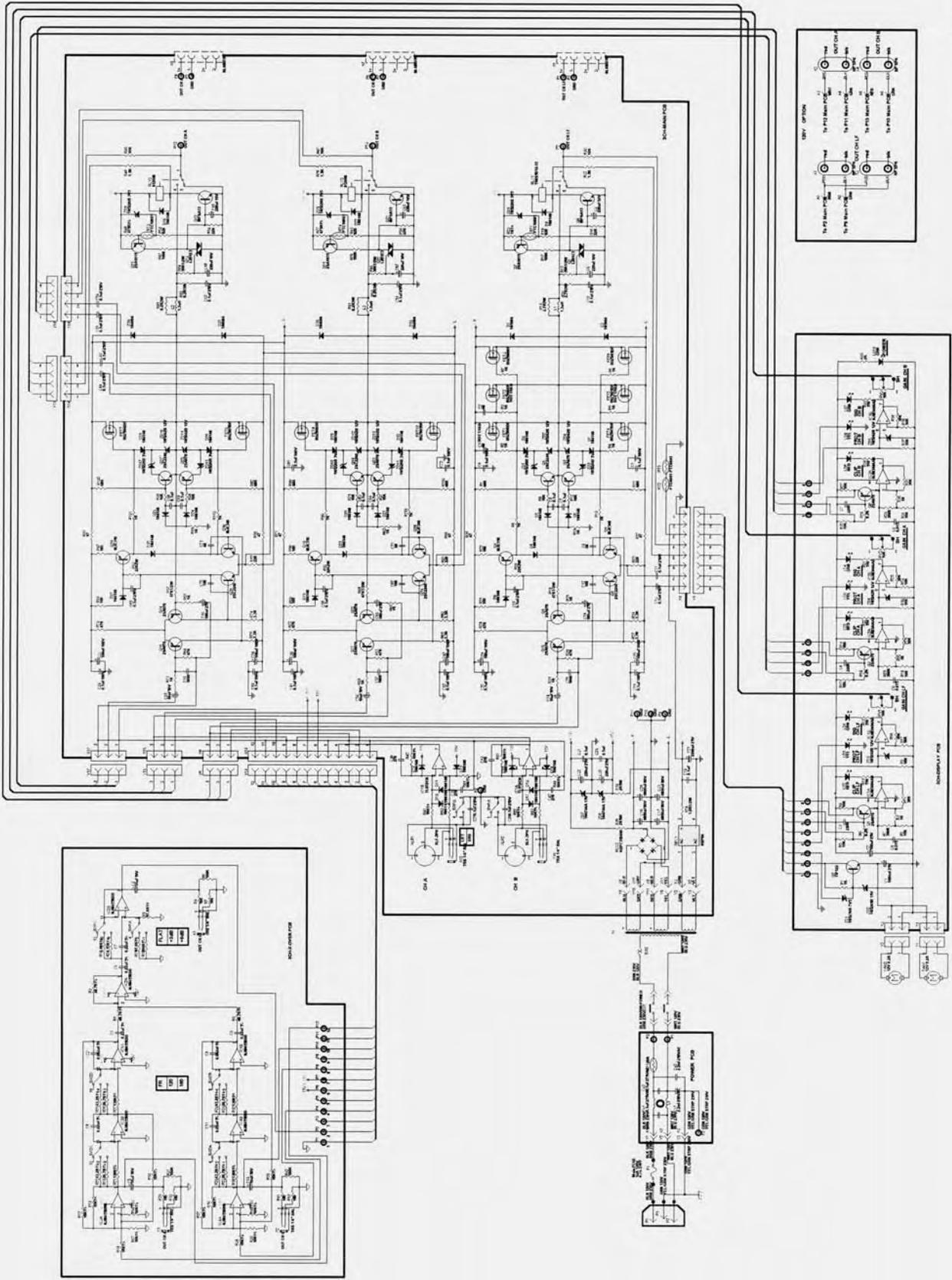
7.2.7	MJCPJ-065---	JACK CPJ-065	XPM-900	3.000
8.2.8	JS1001025012	BASE 12P	2.5m/m	1.000
7.1.7	FH630207D---	FUSE HOLD	CQ-207D	1.000
8.1.8	FS630ULC120F	FUSE 6x30	FAST/CERAMIC U/C 12A	1.000
9.1.9	A0016D130---	3P AC INLET	R-301SN-M XPM-900	1.000
10.1.10	SPK8161N0001	T.L 8161N	R/B	2.000
11.1.11	SPK8161N0002	T.L 8161N	B/R	2.000
12.1.12	1070P0.86401	TUBE 0.864	BLACK 30m/m	10.000
13.1.13	107020-----	TUBE 20m/m	XPB-1600	1.000
14.1.14	107006-----	TUBE 6 m/m		3.000
15.1.15	1070SS-6----	SELF RETAINING	SPALERS SS-6	1.000
16.1.16	LBC08-----WH	LABEL 8 m/m	(GND)	1.000
17.1.17	W2010I12510A	1015#14	4.5+125/10 G&Y XPB1500	1.000
18.1.18	W2010G505109	1015#14	WHITE XPM-900U	1.000

19.1.19	W2010G445100	1015#14 BLACK XPM-900U	1.000
20.1.20	W20110120100	1015#14 BLACK XPM-900U	1.000
21.1.21	SR01MS4x061W	MS 4x6 (PLATING)	1.000
22.1.22	SR01TP3x103B	TP 3x10 BLACK (1JBHCC-031024)	4.000
23.1.23	SR03TP4x084B	FMT+W TP 4x8 (1JBP8C-040825)	8.000
24.1.24	WS408x04x10Y	EXT TOOTH W/S. 4m/m	1.000
4.0.4	105032409601	WALL XPM-900	1.000
5.0.5	105034808501	SILD PANEL XPM-900	2.000
6.0.6	105011008501	HOLDER XPM-900	2.000
7.0.7	105343431801	TOP COVER XPM-900	1.000
8.0.8	PT160-----18	TRANS. 160m/m XPM-3000	1.000
9.0.9	FAD012080001	SP802512H L=350m/m+XH V2000	2.000
10.0.10	AL201AL50101	AL201/AL501 SJT W-A 14AWG 6FT	1.000
11.0.11	1070KG-010--	MOVEABLE BUSHING KG-010	1.000
12.0.12	1070SCB-10--	SPACER SUPPORTS SCB-10 XPM-900	4.000
13.0.13	1070YJ-98---	NYLON CLAMPER YJ-98	15.000
14.0.14	FTSF-006----	PLASTIC FOOT SF-006 V2000	4.000
15.0.15	IBXPM3000-GI	MANUAL XPM-3000 (GEMINI)	1.000
16.0.16	WDGEMINI----	GEMINI WARRANTY CARD	1.000
17.0.17	LBC06-----RD	LABEL 6 m/m (VLOT)	3.000
18.0.18	PB420215----	PLOY BAG 8.5"x16.5"X0.05	1.000
19.0.19	103012005700	SPACER 1200x570m/m PA1000	1.000
20.0.20	102056543301	SPACER XPM-900	2.000
21.0.21	102119214706	CARTON XPM-3000	1.000
22.0.22	102260018006	EXT. CARTON XPM-3000	1.000
23.0.23	SR01MS3x081W	MS 3x8 (1JPHMC-030800)	1.000
24.0.24	SR01MS3x121B	MS 3x12 BLACK	1.000
25.0.25	SR01MS3x042B	MST 3x4 BLACK (1JPH1C-030424)	2.000
26.0.26	SR01MS4x082B	MST 4x8 BLACK (1JBH1C-040825)	16.000

27.0.27	SR01TP3x063B	TP 3x6	BLACK (1JBH4C-030625)	6.000
28.0.28	SR03TP4x084B	FMT+W TP 4x8	(1JBP6C-040825)	14.000
29.0.29	SR10MS8x631B	5/16x2 1/2		1.000
30.0.30	NTM8x17x080B	NUT 5/16	(0A0220-310005)	1.000
31.0.31	WS407x03x09Y	EXT TOOTH W/S.	3m/m	1.000







REV	DATE	BY	CHKD
1.0	11/11/88	J. J. ...	J. J. ...
2.0	11/11/88	J. J. ...	J. J. ...
3.0	11/11/88	J. J. ...	J. J. ...
4.0	11/11/88	J. J. ...	J. J. ...
5.0	11/11/88	J. J. ...	J. J. ...
6.0	11/11/88	J. J. ...	J. J. ...
7.0	11/11/88	J. J. ...	J. J. ...
8.0	11/11/88	J. J. ...	J. J. ...
9.0	11/11/88	J. J. ...	J. J. ...
10.0	11/11/88	J. J. ...	J. J. ...

EXHIBIT 4.1.1.1

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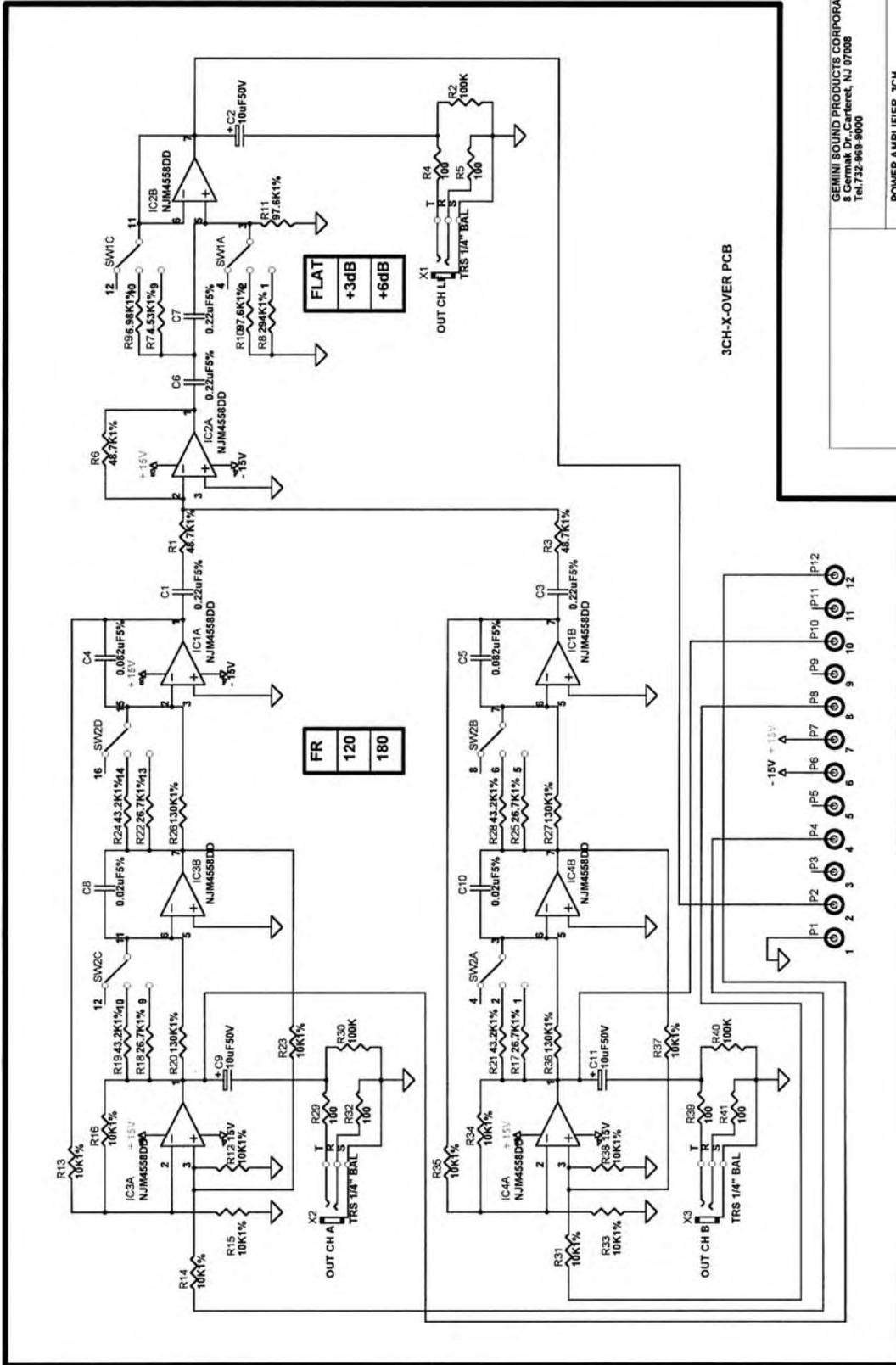
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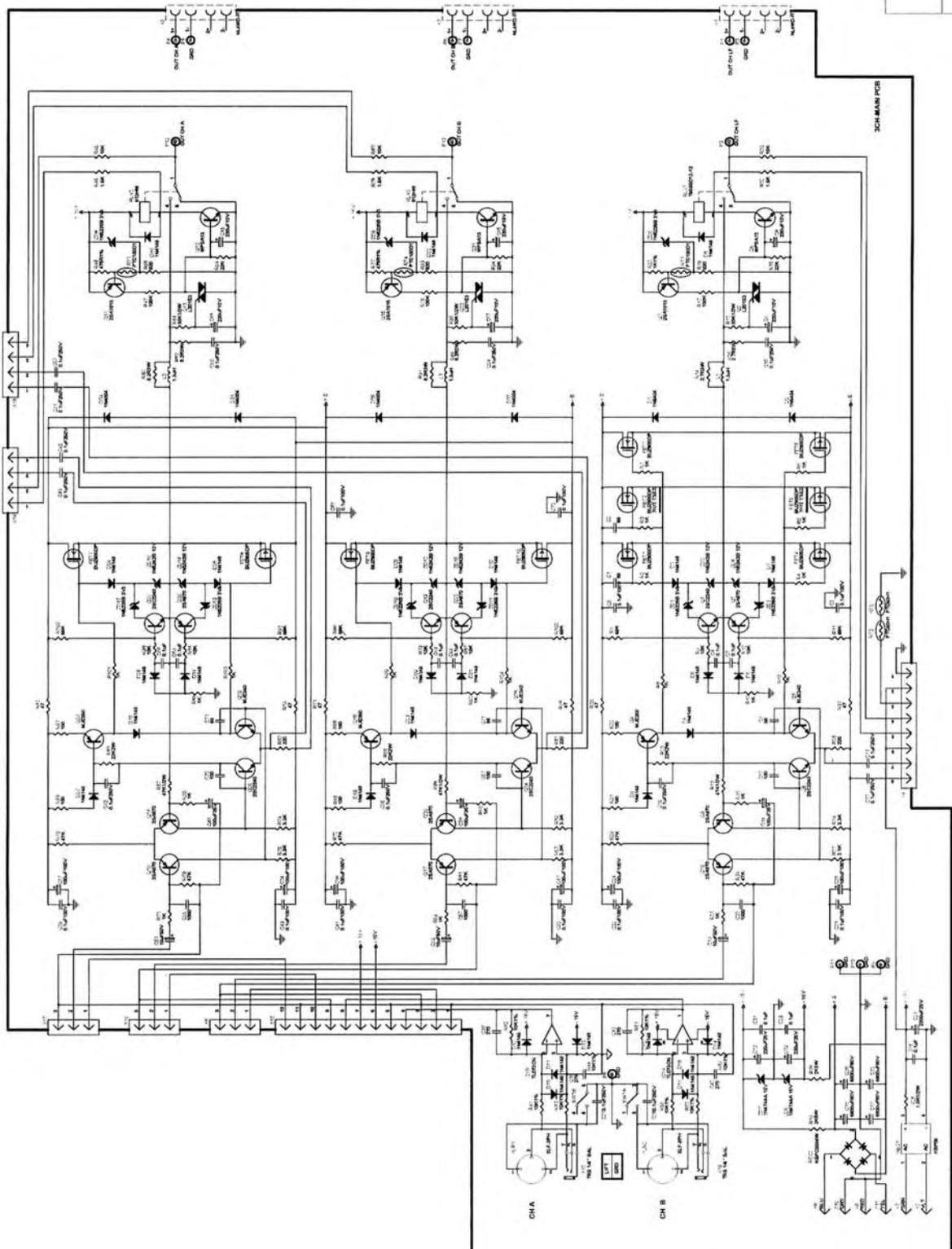
GEMINI SOUND PRODUCTS CORPORATION  
8 Germak Dr., Carteret, N.J. 07008  
Tel. 732-969-9000

POWER AMPLIFIER 3CH

Size	FCSM No.	DWG No.	Rev
OrCAD B		X-OVER PCB	Specify
Scale			Sheet
			1 of 1

1 2 3 4 5 6





300-WATT PCB

DATE	DESIGNED BY	CHKD BY	APP'D BY
300-WATT PCB			
300-WATT PCB			
300-WATT PCB			

300-WATT PCB

300-WATT PCB