



# **SERVICE manual**

# **XTR-400**

## **ACTIVE SPEAKER SYSTEM**

### **SUBWOOFER / SATELLITES**



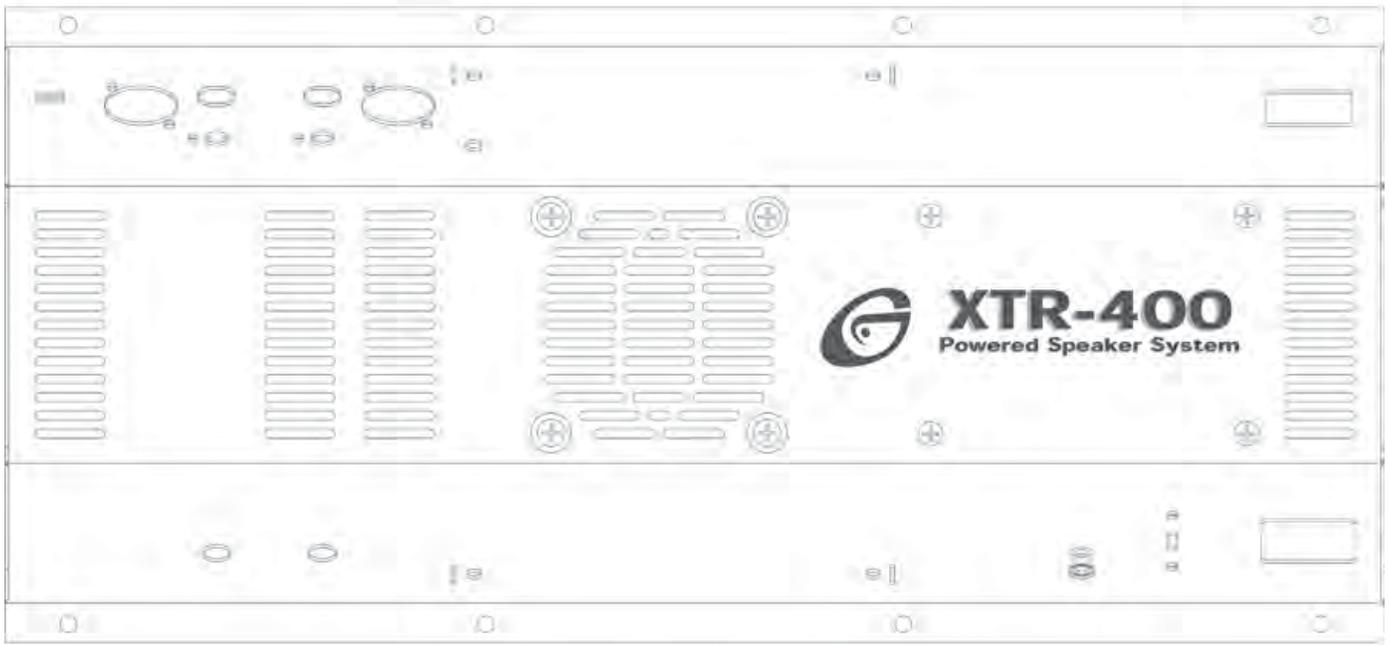
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# AMPLIFIER

## TOP PANEL



## BOTTOM PANEL



## INTRODUCTION:

Congratulations on your purchase of an **XTR-400** speaker system engineered & manufactured by **Gemini Sound Products**. This state of the art speaker system is backed up by a three-year warranty. The **XTR-400** offers ultimate fidelity, power handling, and an array of features that makes it a highly versatile, compact, self contained & powered speaker system.

## FEATURES:

- Active self-powered 400W rms tri-amp design.
- One 15-inch bandpass subwoofer. Features top-hat hardware for pole mounting of a satellite speaker and metal corner protectors.
- Two high quality satellite speakers featuring 10-inch woofers and dual piezo horns housed in trapezoidal cabinets. Satellite speakers are uniquely designed for placement on stands or for use as floor monitors, and protected by full front metal grill and metal corners.
- Built-in active optimized crossovers.
- Sensitivity/Volume controls.
- Satellites equipped with reliable Speakon™ connectors for exceptional sound. (cables must be purchased separately)
- Signal Ground Lift Switch for achieving the quietest possible hum-free operation.
- Airflow controlled by variable speed fan for maximum cooling and quietest possible operation.
- Mono or Stereo operation.
- AC line voltage selector switch allows reconfiguring amplifier for either 110-120V or 220-240V AC lines.
- Compact design featuring large metal handles and casters for ease in transporting.

## CAUTIONS:

1. All operating instructions should be read before using this equipment.
2. To reduce the risk of electrical shock, do not open the unit. There are, **NO USER REPLACEABLE PARTS INSIDE**. Please refer servicing to a qualified Gemini Sound Products service technician.

In the USA: If you experience problems with this unit, please call 1 (732) 738-9003 for Gemini Customer Service. Do not attempt to return this equipment to your dealer.

3. Do not expose this unit to direct sunlight or to a heat source such as a radiator or stove.
4. This unit should be cleaned only with a damp cloth. Avoid solvents or other cleaning detergents.
5. When moving this equipment, it should be placed in its original carton and packaging. This will reduce the risk of damage during transit.
6. **DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.**
7. **DO NOT USE ANY SPRAY CLEANER OR LUBRICANT ON ANY CONTROLS OR SWITCHES.**

## CONNECTIONS:

### 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:** XLR INPUT JACKS (1) 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" PHONO INPUT JACKS:** 1/4" PHONO INPUT JACKS (2) accept a balanced as well as an unbalanced line. 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.

**SENSITIVITY/VOLUME CONTROLS:** SENSITIVITY/VOLUME CONTROLS (10) control the input levels for each channel of the 2 satellite speakers. The volume level of the subwoofer is controlled automatically to match the volume levels of the satellite speakers. It will always maintain a perfect balance to give you incredible sound quality!

**SIGNAL GROUND LIFT SWITCH:** SIGNAL GROUND LIFT SWITCH (7) is used to lift the balanced input connectors' ground/shield from the amplifier's ground. When the signal ground 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.

## OUTPUT SECTION:

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

**SPEAKER OUTPUTS (3):** The speaker output connectors are **Speakon™** connectors that will accept cables with **Speakon™** connectors. (These cables must be purchased separately) The subwoofer is already connected internally, so you don't have to worry about connecting it to the amplifier.

## AC POWER SECTION:

**POWER SWITCH (8):** turns the unit on and off.

**POWER LED (9):** the power LED lights when the power is on.

**FUSE (4):** replace with proper type and rating.

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

**AC LINE VOLTAGE SELECTOR SWITCH (5)** allows reconfiguring amplifier for either **110-120V** or **220-240V AC** lines.

## OPERATION:

### STEREO OPERATION:

The unit has two channels for stereo operation. Each channel provides a separate signal at the speaker outputs. The following instructions are for use with **8W** speakers of matched power ratings. We suggest only using the speakers that come with the unit.

1. With the power **OFF**, connect your input cables from your music source (such as your mixer) to the **Channel 1** and **Channel 2 INPUTS** using the **XLR INPUT JACKS (1)** or **1/4" PHONO INPUT JACKS (2)**.
2. Connect your speakers to the **Channel 1** and **Channel 2 SPEAKER OUTPUTS (3)**.
3. With the **SENSITIVITY/VOLUME CONTROLS (10)** of both channels set to zero (fully counter clockwise), turn the **POWER SWITCH (8), ON**. Okay, now try playing some music and/or talking into your microphone, and set the level of your input as high as you think you'll need it. This way it will be as high above the amplifier's noise floor as possible so you'll get the best possible sound with the least amount of noise. Now play some music and listen for audible distortion. If you do hear distortion decrease the output level using the **SENSITIVITY/VOLUME CONTROLS (10)**.

### MONO OPERATION:

Connect your **MONO** signal to the **Channel 1** input (**1 or 2**). Now create a link by connecting the remaining **Channel 1** input to a **Channel 2** input (**1 or 2**) using a standard balanced cable (may be purchased separately). You can adjust the level of each satellite speaker using its channel's **SENSITIVITY/VOLUME CONTROL (10)**.

### USING THE SIGNAL GROUND LIFT SWITCH:

Depending on how your sound system is hooked up, sometimes applying the ground will create a quieter signal path. Sometimes lifting the ground can eliminate ground loops and that annoying hum to give you quieter and cleaner overall sound.

1. With the power amp **ON**, listen to the system in idle mode (no music or signal) with the ground **ON**. The **SIGNAL GROUND LIFT SWITCH (7)** will be in the left position.
2. Turn the power **OFF** before moving the **SIGNAL GROUND LIFT SWITCH (7)**. Now lift the ground by moving the **SIGNAL GROUND LIFT SWITCH (7)** to the right. Turn the power back **ON** and listen to determine which position makes the overall sound quieter with the least amount of noise and hum.

**CAUTION: DO NOT DISCONNECT THE AC GROUND ON THE POWER AMPLIFIER IN ANY WAY. THIS CAN BE VERY HAZARDOUS!!**

## SETUP:

There are various ways to set up this system:

### BASIC SETUP:

Okay, this is your basic setup, perfect for small parties and venues. The ideal location for your subwoofer is close to a wall or in a corner. This will give you the fullest bass response. Your 2 satellite speakers can be placed up on stands on each side (stands must be purchased separately).

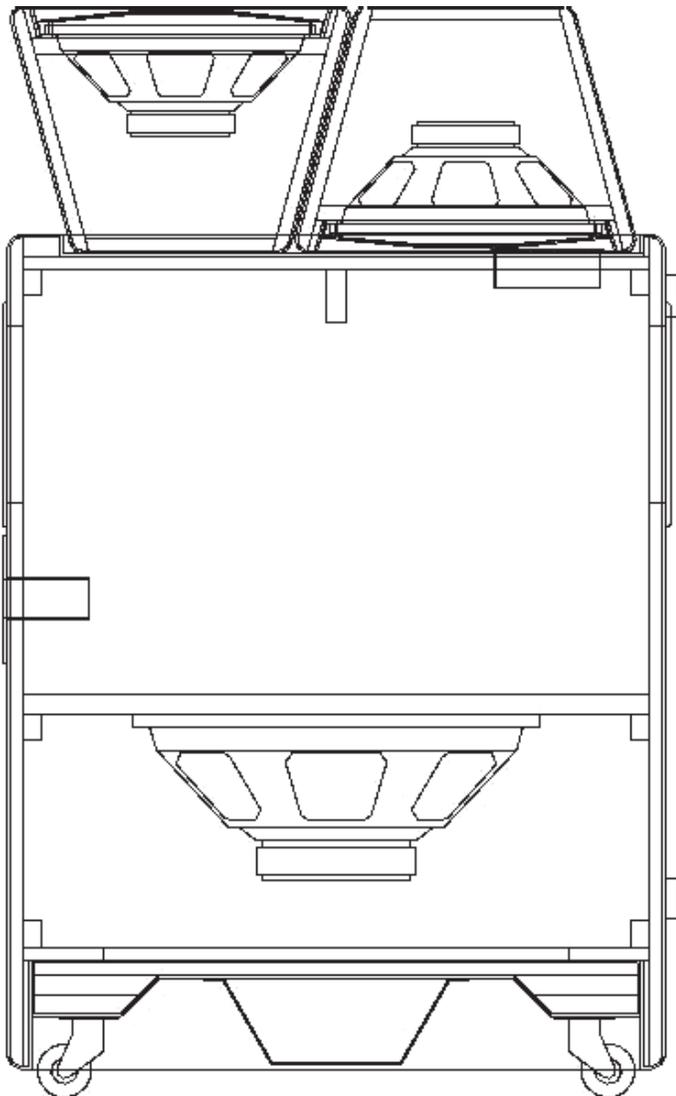
### TWO-SYSTEM SETUP:

This setup is perfect for larger venues. This setup requires 2 XTR-400 systems. This will give you a total of 800 watts rms! Place a subwoofer on each side to the left and right. Using the high-hat hardware and connecting pole (which can be purchased separately), place the pole in the high-hat socket on the subwoofer, and a satellite speaker on top of the pole. The 2 remaining satellite speakers may be used as either floor monitors, or placed on stands elsewhere in the room giving you a louder and fuller sound.

Each speaker system in this setup must be used in **MONO** mode (see Mono section). Connect the system that is on the left side of the audience to the **LEFT** channel of your mixer, and the system that is on the right side of the audience to the **RIGHT** channel of your mixer.

### ACTIVE SPEAKER SYSTEM SUBWOOFER/SATELLITES

The XTR-400 features a unique design for ease in transporting. The 2 satellite speakers conveniently fit into a special recessed section of the subwoofer and are securely fastened using a strap that attaches to the handles (included).



## SPECIFICATIONS:

### Subwoofer XTR-400SUB:

Amplifier's Output Power:.....230 Wrms on subwoofer channel  
Frequency response:.....32 Hz - 100 Hz  
Components:.....15" woofer  
Features:

- Efficient band-pass cabinet design
- Large metal handles
- Metal protection corners
- Four 2" wheels
- Amplifier assembly on the back
- 35mm standmount cap on top
- Black carpet finish
- Rubber feet

Dimensions:.....WxDxH: 20"x31"x24.5"  
(508 x 788 x 622 mm)

Weight:.....96 lbs (44 kg)

### Satellites GT-1002s:

Amplifier's Output Power:.....2x85 Wrms on satellite channels  
Frequency response:.....100 Hz - 20 kHz  
Components:.....10" woofer  
6" dual piezo horn

#### Features:

- Trapezoidal cabinet
- Full front protective metal grill
- Metal protection corners
- 35 mm standmount cup on the bottom
- Black carpet finish
- Rubber feet
- Neutrik Speakon connector

Dimensions:.....W x D x H 12.5" x 9" x 18"  
(318 x 229 x 458 mm)

Weight:.....18 lbs (8 kg) each

### Total System:

Maximum SPL, continuous:.....120 dB  
Sensitivity.....1 Vrms  
Input Impedance.....10 kOhm unbalanced/20 kOhm balanced  
Features:

- Balanced XLR and 1/4" Jack inputs
- Neutrik Speakons on Satellite Channels' outputs
- Active electronic X-over (Fx=100 Hz)
- Variable speed fan
- Individual channel Sensitivity/Volume controls
- Signal Ground lift switch
- 110-120 VAC / 220-240 VAC switchable

Total Weight:.....132 lbs (60 kg)

**SPECIFICATIONS AND DESIGN ARE SUBJECT TO CHANGE WITHOUT NOTICE FOR PURPOSE OF IMPROVEMENT.**



SHOULD YOU EXPERIENCE ANY DIFFICULTIES OR PROBLEMS,  
PLEASE CALL: 1 (732) 738-9003 FOR GEMINI CUSTOMER SERVICE.

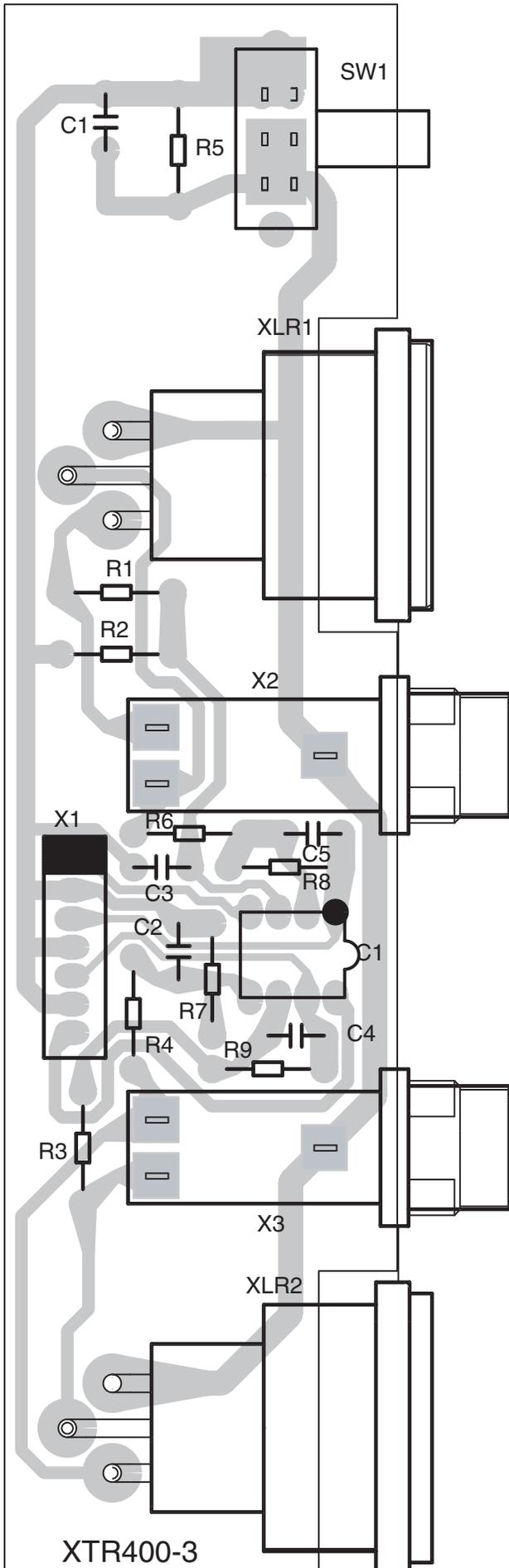
## PARTS LIST:

Item #	Designators	Description	Part Number
<b>MAIN PCB:</b>			
1	ZD3, ZD2	ZENER DIODE 1/2W 12V (RD12EB2)	079-012
2	D3, D1, D2	SILICON DIODE 1N4148	079-003
3	ZD1	ZENER DIODE 1/2W 24V (RD24EB2)	079-020
4	Q1	SILICON TRANSISTORS 2SC1815	076-003
5	Q2	SILICON TRANSISTOR 2SC4793	076-100
6	C18, C13	ELECTROLYTIC CAPACITORS 6800 $\mu$ /50V	050-198
7	REC1	BRIDGE RECTIFIER KBPC804W	086-019
8	U3, U2, U4, U1	INTEGRATED CIRCUIT TDA7294V	074-189
<b>CROSSOVER PCB:</b>			
1	VR1, VR2	ROTARY VR 10KA L:15MM	071-228
2	LD1	LED (GREEN) 5 $\phi$	080-086
3	IC1, IC3, IC2	INTEGRATED CIRCUIT NJM4558DD (BA15218,M5218AP)	074-163
<b>INPUT PCB:</b>			
1	SW1	SLIDE SWITCH SV70050	081-030
2	IC1	INTEGRATED CIRCUIT NJM4558DD (BA15218,M5218AP)	074-163
3	X3, X2	PHONE JACK 6.3 $\phi$ TRS 1/4" BAL	092-078
4	XLR2, XLR1	XLR XLF-3PH	092-069
<b>OUTPUT PCB:</b>			
1	X1, X2	SPEAKON™ CONNECTORS NL4MP	092-149
<b>OTHER:</b>			
1		AC CORD	093-369
2		AC INLET	092-105
3		DC FAN 24V	001-613
4		TRANSFORMER	059-247
5		SLIDE SWITCH	081-023
6		POWER SWITCH	083-121
7		FUSE VBS UTE 3.15A 250V	100-068
8		FUSE VBS UTE 6.3A 250V	100-071

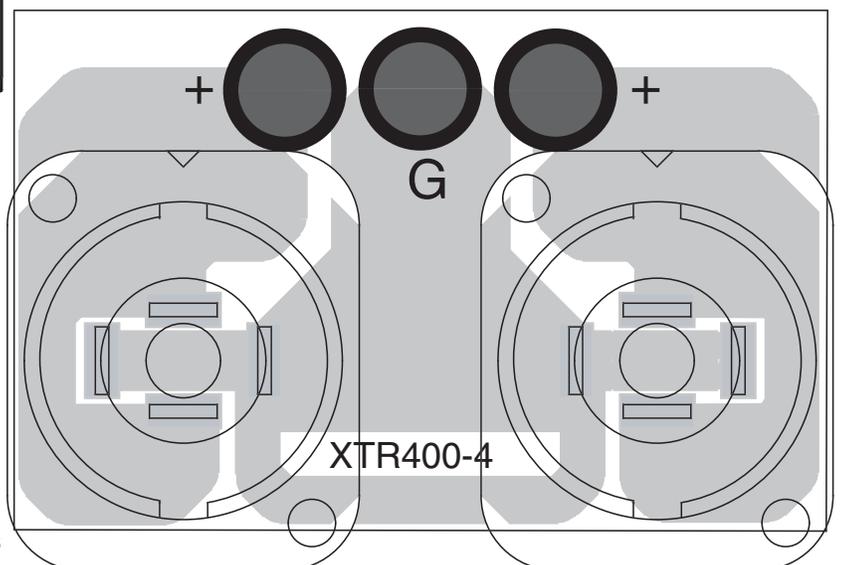
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# INPUT PCB



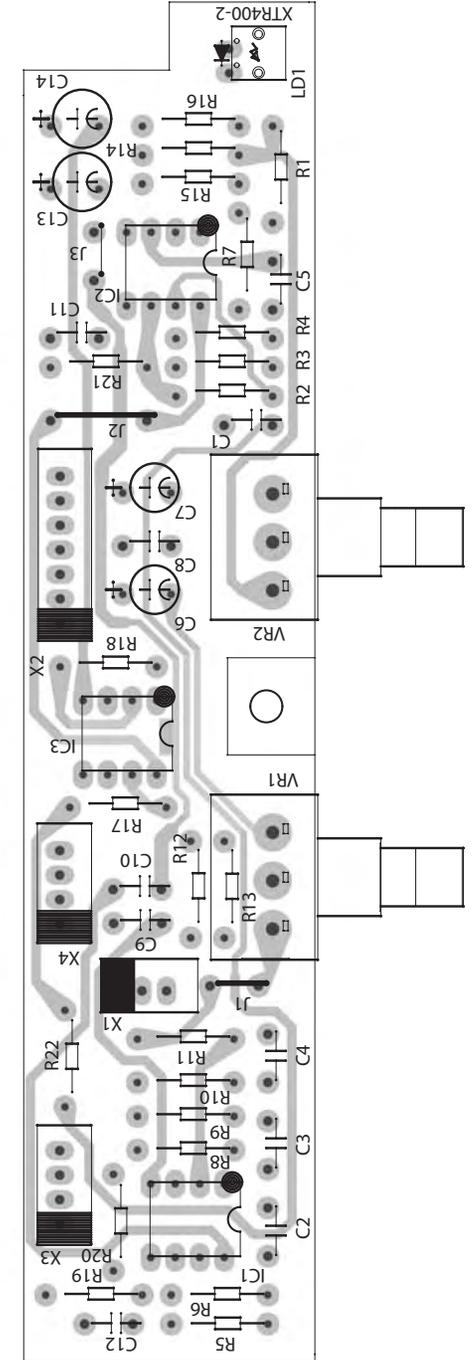
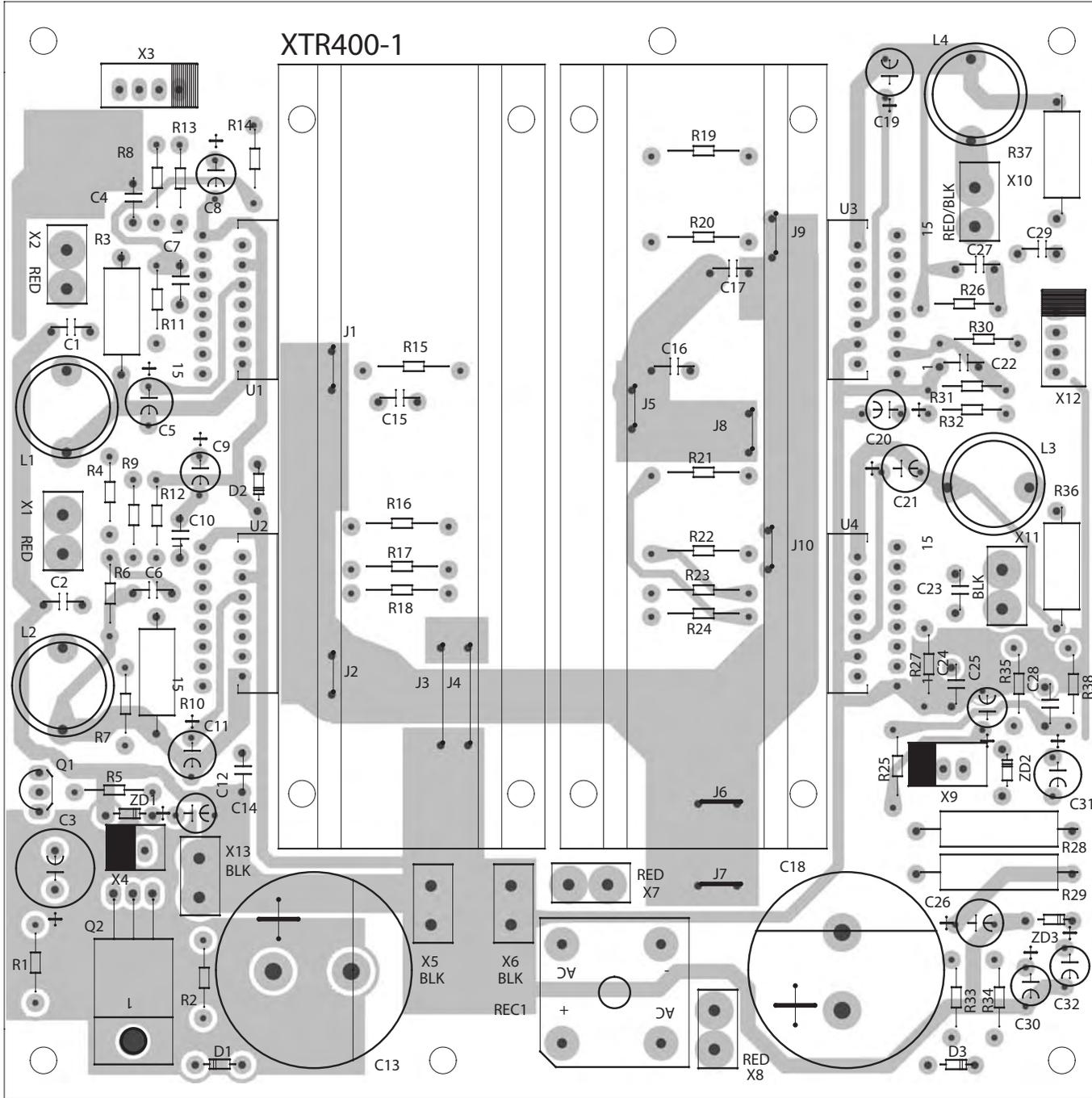
# OUTPUT PCB



MAIN PCB

TOP LAYER

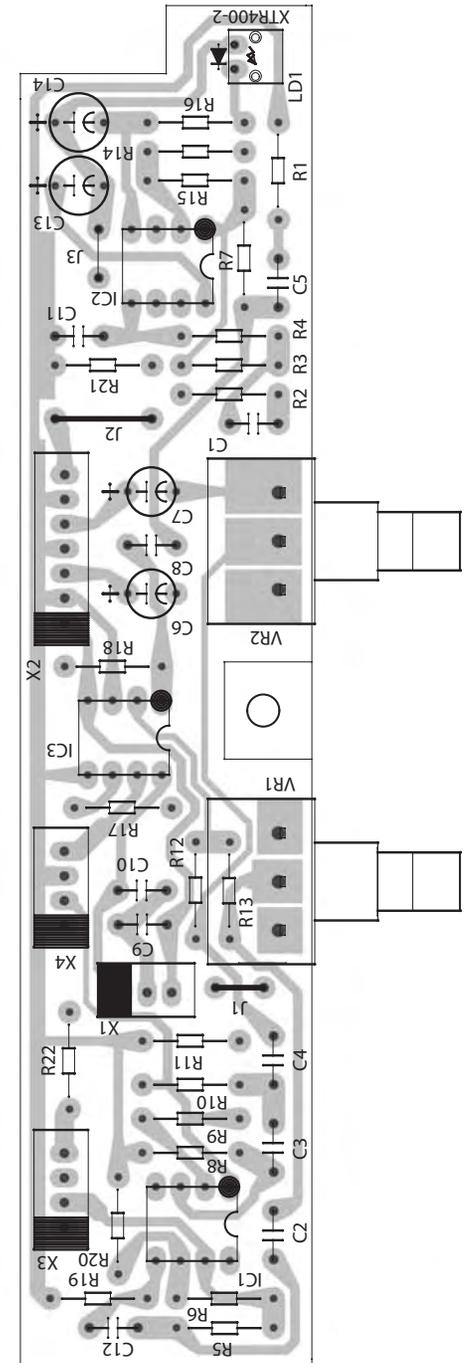
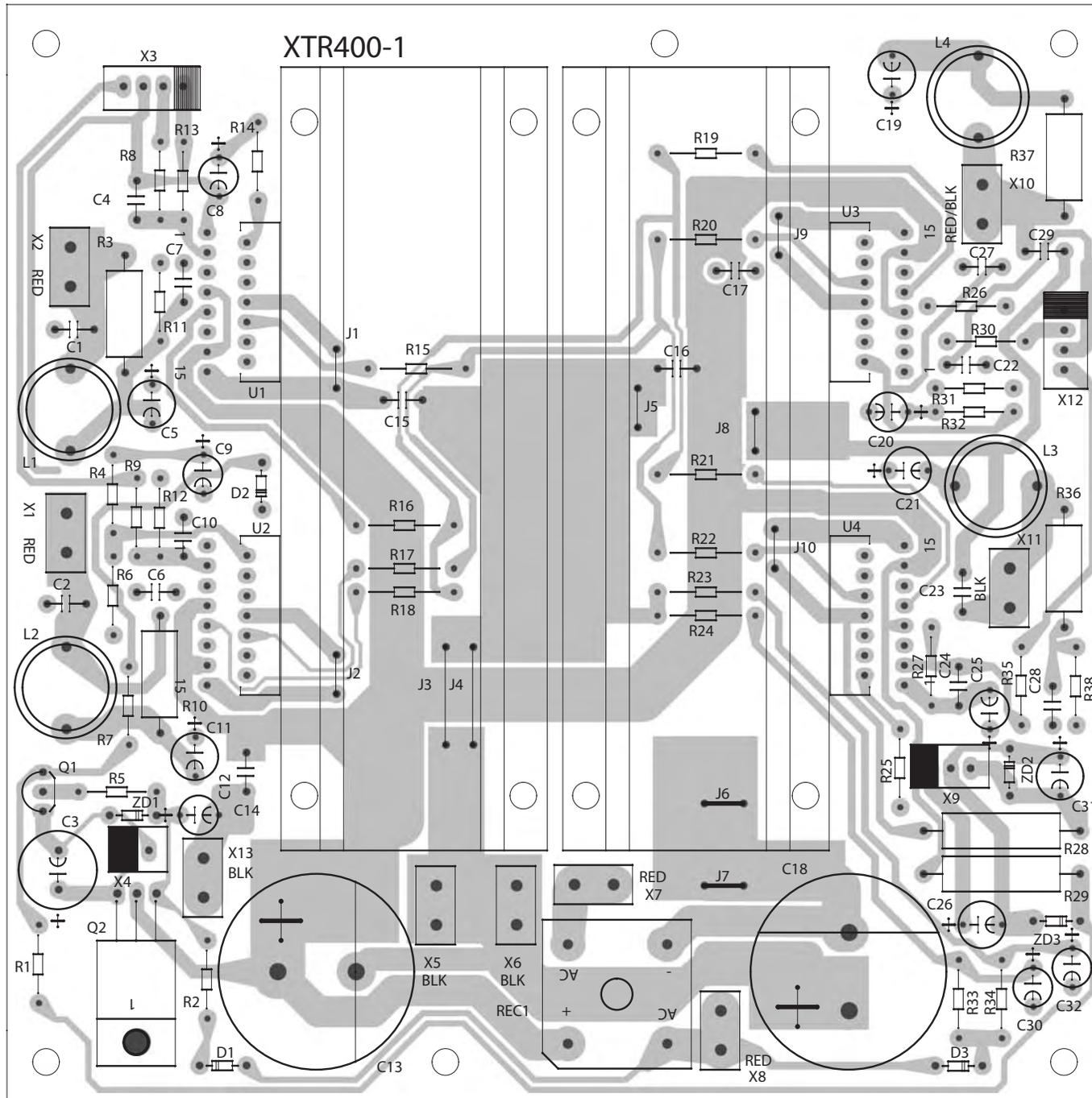
X-OVER



MAIN PCB

BOTTOM LAYER

X-OVER



# SCHEMATIC

