

iSP

Technologies

**ACTIVE
SERIES**



XMAX 212

**ACTIVE SUBWOOFER SYSTEM
OWNERS MANUAL**

IMPORTANT SAFETY INSTRUCTIONS!

Please read the following very carefully before operating this unit

- Read **ALL** instructions carefully before using this unit. Keep these instructions for future reference. Heed all warnings and follow all instructions.
- Do not use this unit near water, in the rain or where there is moisture. If this warning is ignored a serious electrical shock or death may occur.
- Do not attempt to service this unit. No user serviceable parts inside. Refer servicing to qualified, ISP approved service personnel. Servicing is required when the unit has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the unit, the unit has been exposed to rain or moisture, does not operate normally, or has been dropped.
- Do not block any ventilation openings on the unit. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus that produces heat.
- Do not defeat the grounding pin on the power plug. A grounding-type plug has two blades and a third grounding prong. If the provided plug does not fit into your outlet, please consult an electrician for replacement of the outlet, which may be obsolete. Take care to avoid
- Care should be taken to avoid spilling any foreign objects or liquid into this unit. Avoid expose of this equipment to dripping or splashing and ensure that no objects filled with liquids, such as vases, are placed on the equipment.
- Only use accessories or attachments that are specified by the manufacturer.
- Use only with the castor attachment, stand, connecting bracket, or table specified by the manufacturer, or sold as an accessory with the unit. When a castor attachment is used, use caution when moving the cart/apparatus combination to avoid injury from tipping over.
- To completely disconnect this unit from the AC Mains, disconnect the power supply cord plug from the AC receptacle.
- This active speaker system has three internal power amplifiers and an external heatsink located on the back of the speaker for cooling of the internal amplifiers. Care should be taken to avoid placing this active speaker in a location where the external heatsink does not allow proper cooling of the internal amplifiers. Avoid placing this system close to other heat sources. The external heatsink may reach high temperatures under normal use. Do not block the external heatsink with any other object. Make certain there is proper ventilation for the external heatsink when is use.
- Do not drive the XMAX 212™ into excessive heavy distortion for an extended period of time to avoid premature speaker failure.
- Failure to follow these instructions may void the warranty.



THIS UNIT CONTAINS POTENTIALLY LETHAL VOLTAGES. TO PREVENT ELECTRIC SHOCK OR HAZARD, DO NOT REMOVE THE POWER AMPLIFIER MODULE, INPUT PANEL OR AC INPUT PANEL. NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED ISP TECHNOLOGIES SERVICE PERSONNEL.



The lightning bolt triangle is used to alert the user to the risk of electric shock.



The exclamation point triangle is used to alert the user to important operating or maintenance instructions.

Caution: Exposure to extremely high noise levels can cause permanent hearing loss.

The XMAX212 speaker system is capable of producing in excess of 136db SPL at 1 meter. Continued exposure to noise levels in excess of 90db may cause permanent hearing loss. Below is a chart of the OSHA (Occupational Safety & Health Administration) regulations for Occupational Noise Exposure. Please note: OSHA requires hearing protection for any work environment when the sound levels exceed those shown in Table G-16 when measured on the A scale of a standard sound level meter at slow response.

TABLE G-16- PERMISSIBLE NOISE EXPOSURES	
Duration per day, hours	Sound level dBA slow response
8	90
6	92
4	95
3	97
2	100
1 1/2	102
1	105
1/2	110
1/4	115

INTRODUCTION

Thank you for purchasing ISP Technologies XMAX212 active subwoofer system. The XMAX212™ is a high output active subwoofer system for high SPL sound reinforcement applications. The XMAX212 was designed with dual 500-watt 12-inch woofers that are horn loaded. The XMAX212 incorporates a *High Current D-CAT™* power amplifier system capable of producing over 1000 watts RMS power. The amplifier receives its input signal from an internal fourth order crossover network specifically designed to provide optimized phase and frequency response for a composite system. The internal amplifier is based on ISP Technologies patent pending D-CAT (Dynamic Current Amplifier Technology) amplifier technology. The D-CAT technology is capable of delivering extremely high output current providing an improvement in transient response, output current, and a noticeable improvement in **PUNCH**. The D-CAT amplifier technology utilizes a monolithic power amplifier pre-driver that reduces parts count and greatly improves reliability. The D-CAT amplifiers provide improved reliability by including several protection modes including and over temperature protection global limiting and transformer thermal protection.

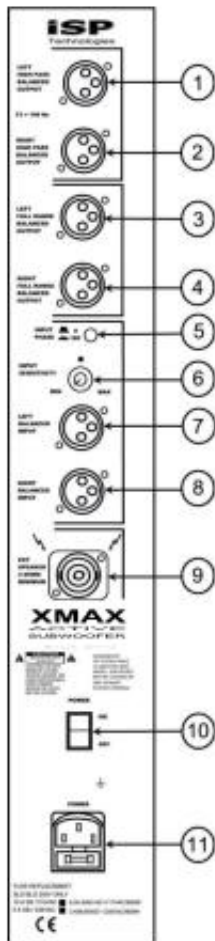
The XMAX212 offers XLR balanced inputs and XLR balanced full range and High Pass outputs allowing connections for multiple speakers in a system. A sensitivity adjustment knob allows you to adapt the XMAX212 speaker for a wide range of common signal levels. The XMAX212 subwoofer cabinet is made of high quality 13 ply Baltic birch plywood with a durable spray on black finish for long life.

PLACEMENT

The XMAX212 is designed to sit directly on the floor or stage. Do not position or mount the cabinet where it can tip over and fall on someone. Do not attempt to mount the cabinet on speaker stands. Do not attempt to 'fly' (suspend by cables, chains, ropes, etc.) the cabinet. It was not designed for flying. Position it only on a flat, stable surface where it is not in danger of tipping over. The highest level of performance will be achieved when the XMAX212 is used in pairs and mounted at floor level against a back or sidewall.

Also, note that the placement of the cabinet relative to floor and walls will affect the low frequency response. Placing it closer to the floor and walls will reinforce the low frequency response. Also, make sure that adequate space (at least 6 inches) is left behind the cabinet for airflow over the internal amplifier heatsink.

REAR PANEL DESCRIPTION

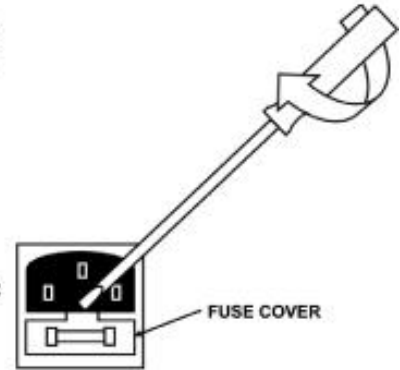


1. **LEFT HIGH PASS BALANCED OUTPUT-** This XLR male connector provides a balanced high pass output from the left channel input. The high pass frequency is set at 100 Hz with a 24 dB per octave roll off.
2. **RIGHT HIGH PASS BALANCED OUTPUT-** This XLR male connector provides a balanced high pass output from the right channel input. The high pass frequency is set at 100 Hz with a 24 dB per octave roll off.
3. **LEFT FULL RANGE BALANCED OUTPUT-** This XLR male connector provides a balanced full range output from the left channel input. This connector may be used to daisy-chain the full range signal to additional powered sub cabinets such as another XMAX212 or SA115.
4. **RIGHT FULL RANGE BALANCED OUTPUT--** This XLR male connector provides a balanced full range output from the right channel input. This connector may be used to daisy-chain the full range signal to additional powered sub cabinets such as another SA118 or SA115.
5. **INPUT/PHASE SWITCH-** This switch will function to bypass the internal crossover feeding the input to the internal power amp of the XMAX212 subwoofer. On other models, this will control the phase of the input signal, feeding the internal amplifier, but is configured to bypass the crossover for the XMAX212 subwoofer. This will allow the use of an external crossover to configure the system. This switch will not affect any of the balanced outputs.
6. **INPUT SENSITIVITY-** This control determines the overall input level of the signal to the power amp section of the subwoofer cabinet. Adjusting this level will not affect the level of the signal passing through to the full range or the high pass outputs.
7. **LEFT BALANCED INPUT-** This female XLR connector provides an input for the left channel signal source. This will also feed the left channel signal to the left high pass and left full range balanced outputs.
8. **RIGHT BALANCED INPUT-** This female XLR connector provides an input for the right channel signal source. This will also feed the right channel signal to the left high pass and right full range balanced outputs.
9. **EXTENTION SPEAKER OUTPUT- THIS OUTPUT IS NOT FUNCTIONAL ON THE XMAX212 SUBWOOFER.**
10. **POWER SWITCH-** This switch provides power to the subwoofer amp section. Make sure that the input sensitivity control is set to minimum upon power up
11. **POWER INLET MODULE-** This module provides a connection for the power cord and also houses the mains fuse. **(See Fuse Replacement Section)**

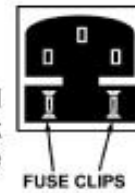
FUSE REPLACEMENT

1. Use a small screwdriver as shown to slide the fuse cover out from the power inlet module. The fuse can be found inside the fuse cover module after it is pulled out.

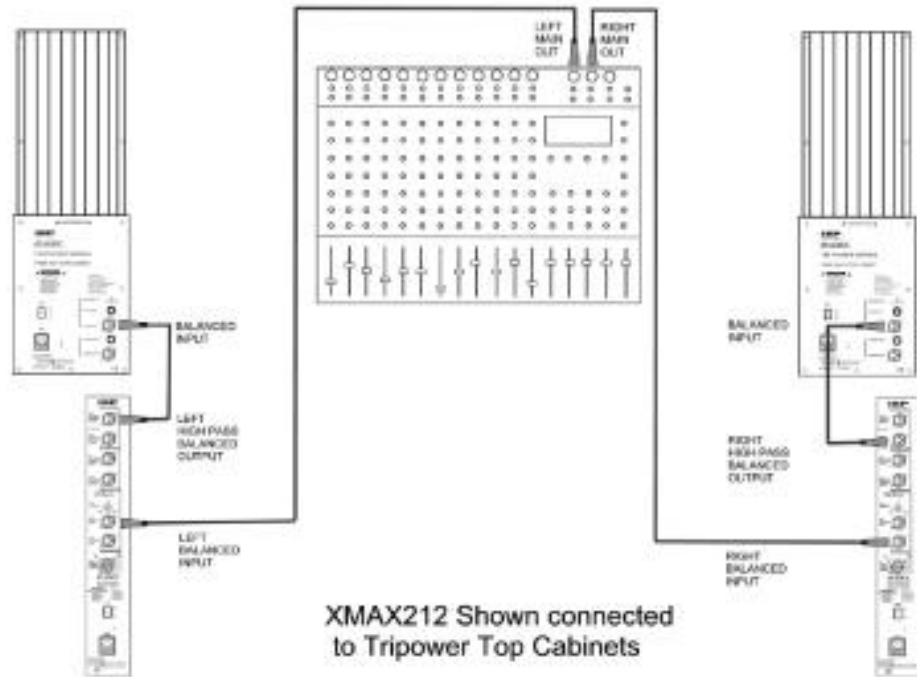
NOTE: A SMALL COMPARTMENT IS ALSO PROVIDED WITHIN THE FUSE COVER MODULE FOR STORING A SPARE FUSE.



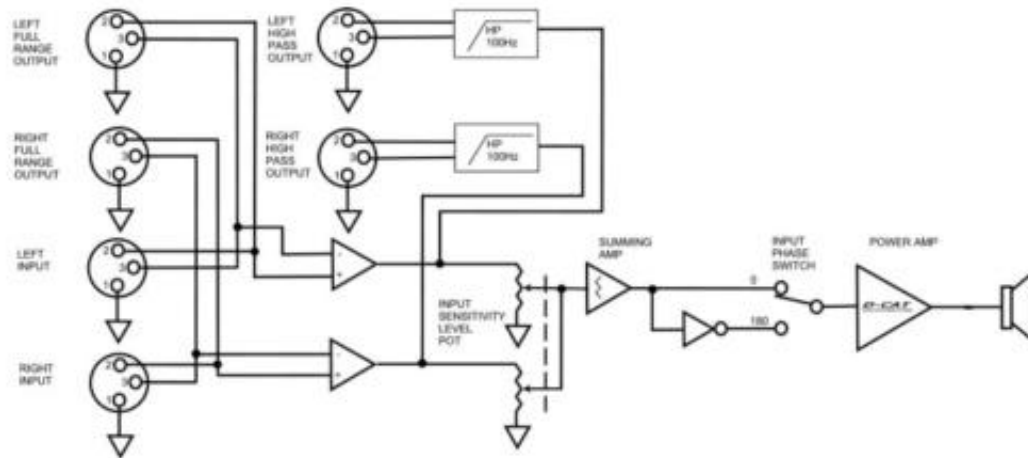
2. After replacing the fuse with another of identical specifications, push the fuse cover module fully back into place, ensuring that the fuse has snapped onto the fuse holder inside the power inlet module.



CONNECTION DIAGRAM



BALANCED CONNECTION DESCRIPTION



The ISP Sub Series has balanced XLR and inputs and outputs configured to AES standards (Audio Engineering Society). These connections are connected in a loop through configuration from the inputs to the full range outputs and will accept a balanced line-level input. The standard phase configuration is that pin 2 is (+), pin 3 is (-), and pin 1 is shielded ground on the XLR.

SPECIFICATIONS

System

Frequency Range	30Hz - 100Hz
Frequency Response (-3dB)	32Hz - 90Hz
Peak Output @ 1m	136 dB SPL
Crossover Point	100Hz (24db per Octave)
Input Type	Balanced differential
Input Impedance	10K ohms
Thermal Protection	Output Drivers have internal protection, self resetting. Heatsink temperature monitored and input is muted if safe temperature is exceeded, self-resetting. Transformer has internal thermal fuse, self-resetting.

Transducer

Low-Frequency	Transducer
Diameter	2x12"
Voice Coil Diameter	4" (76.2mm)
Power Handling	500 watts RMS each

D-CAT Technology Power Amplifier

Low-Frequency	Amplifier
Power Output	1000 watts RMS
THD	0.06% typical

Line Input Power

Voltage	117VAC, 60 Hz
Current	10 amps max 5 amps typical
Power	1700 watts

Physical

Height	43"
Front Width	24"
Depth	45"
Weight	230 lbs.
Enclosure	18mm thick, 13 ply Baltic Birch plywood
Mounting Methods	Floor mount

Note: **D-CAT** and **XMAX 212** are trademarks of ISP Technologies LLC

THERMAL CONDITIONS

The ISP XMAX212 Sub Series is capable of producing 1000 watts at full power. This generates heat that must be dissipated in order to maintain reliability and insure the amplifier components stay within their operating temperature specs. To accomplish this, the amplifier is mounted onto a heatsink that requires air movement at the rear of the cabinet. It is recommended that the rear of the cabinet have at least 6 inches of clearance from any obstruction to allow proper ventilation to occur.

The internal amplifier is cooled with a small fan. The XMAX212 is designed such that the temperature should never exceed a level where the global thermal protection becomes active. If the internal fan fails or the ventilation system is blocked so that airflow is impeded the global thermal protect may activate, which will attenuate the signal 40db when the temperature exceeds a preset point. When the temperature drops below a certain point, full signal will be restored. Tests have shown under extreme conditions that cycling will occur (40 sec. ON, 20 sec. OFF). If the global thermal protection becomes active, determine the cause for the lack of proper cooling. Correcting the problem will allow the XMAX212 to continue correct operation.

WARRANTY AND SERVICE

The Internal Circuitry is fully guaranteed to be free of defects under normal use and service for a period of three years from the date of purchase. The Speakers and Cabinet that are used in this product are fully guaranteed to be free of defects under normal use and service for a period of three years.

Any damage resulting from the misuse or the failure to follow the precautions and instructions will void the warranty.

In the event that the unit needs to be repaired. Please return the unit to ISP Technologies directly. Simply repack the unit, send a copy of the original receipt, a note stating the problem, and send it to:

ISP TECHNOLOGIES, LLC
5479 PERRY DRIVE SUITE B
WATERFORD, MI. 48329
Attn: Repair Dept.

All shipping charges must be fully prepaid.

ISP will not be responsible for any damages incurred in shipping of any unit. Any claim will need to be settled with the shipping company.

The warranty will be voided if the serial number has been tampered with in any way. The warranty card must also be filled out and sent back in order to activate the warranty.

Should you have any questions for the repair department prior to returning the product please call (248)-673-7790.

NOTE: This Product may be covered under one or more of the following patents or patents pending: 7,035,413; 6,944,305; 6,931,134; 6,831,514; 6,091,013

NOTE: If it is determined that the power amp module has failed, it is possible for an ISP certified service center to remove the module from the cabinet by removing the mounting screws and disconnecting the speaker terminals and the transformer. The module may be sent back to ISP separately. Please contact ISP for technical support to help determine if the amplifier module may be defective.



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