Variable Tuning Ultra-X12 Subwoofer

Owner's Manual

Outlaw®

Please Read First

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION: *To reduce the risk of electric shock, do not remove the cover. No user serviceable parts inside. Refer to qualified personnel.*

WARNING: *To reduce the risk of fire or electric shock, do not expose this appliance to rain or moisture.*

The lightning flash with arrowhead, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electrical shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING: Important Safeguards

- **Read Instructions** All the safety and operating instructions should be read before the unit is operated.
- **Retain Instructions** The safety and operating instructions should be retained for future reference.
- **Follow Instructions** All operating instructions should be followed.
- **Cleaning** Unplug the unit from the wall outlet before cleaning. The unit should be cleaned only as recommended by the manufacturer.
- **Attachments** Do not use attachments not recommended by the unit manufacturer as they may cause hazards.
- **Water and Moisture** Do not use the unit near water—for example, near a bath tub, wash bowl, kitchen sink, or laundry tub; in a wet basement; or near a swimming pool.
- **Power Sources** The unit should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supplied to your home, consult your unit dealer or local power company.
- **Power-Cord Protection** Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords where they enter a plug, or a convenience receptacle, and the point where they exit from the unit.
- **Lightning** For added protection for the unit during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the unit due to lightning and power-line surges.
- **Overloading** Do not overload wall outlets, extension cords, or integral convenience receptacles as this can result in a risk of fire or electric shock.
- **Object and Liquid Entry** Never push objects of any kind into the unit through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind on the unit.
- **Servicing** Do not attempt to service the unit yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to Outlaw Audio.
- **Damage Requiring Service** Unplug the unit from the wall outlet and refer servicing to Outlaw Audio under the following conditions:
  - When the power-supply cord or plug is damaged,
  - If liquid has been spilled, or objects have fallen into the unit,
  - If the unit has been exposed to rain or water,
  - If the unit does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions, as an improper adjustment of other controls may result in damage and will often require extensive work by Outlaw Audio to restore the unit to its normal operation,
  - If the Ultra-X12 has been dropped or damaged in any way, the unit should be examined by Outlaw Audio.
  - When the unit exhibits a distinct change in performance—this indicates a need for service.

Precautions

Verify The Line Voltage
Your new Subwoofer has been factory configured for 120 volt AC lines. Connecting the Ultra-X12 to a line voltage other than that for which it is intended can create a safety and fire hazard, and may damage the subwoofer. If you have any questions about the voltage requirements for your specific model, or about the line voltage in your area, contact Outlaw Audio before plugging the unit into a wall outlet.

Verify AC Circuit Capacity
The high power output of your Ultra-X12 may require heavy power draw under full load conditions; connecting it to a circuit used by other heavy power devices, such as air conditioners, may cause circuit breakers to trip.

It is always a good idea to avoid using any audio or video equipment on the same AC circuit as equipment with motors, such as air conditioners or refrigerators. This will lessen the possibility of power variation and electrical start-up noise affecting your sound system.

Extension Cords and Power Strips
We do not recommend that extension cords be used with this product unless they are of sufficient gauge to pass the necessary current during full load conditions. Most inexpensive extension cords are not capable of such high-current loads. Similarly, should you use a power strip, surge protector or any type of AC power line conditioning equipment, make certain that it is also able to handle the high current loads this product will produce.

Handle the AC Power Cord Gently
When disconnecting the power cord from an AC outlet, always pull the plug, never pull the cord. If you do not intend to use the subwoofer for any considerable length of time, disconnect the plug from the AC outlet. If the power cord is replaced, make certain that it is of similar gauge. As with all electrical devices, do not run power cords under rugs or carpets or place heavy objects on them. Damaged power cords should be replaced immediately with cords meeting factory specifications.

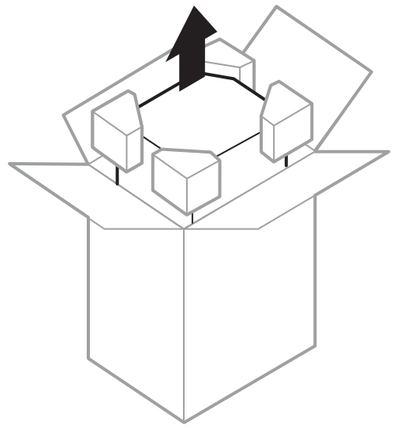
Wiring
Cables that are run inside of walls should have the appropriate markings to indicate complaince with, and listing by the UL , CSA or other standards required by the UL, CSA, NEC or your local building codes. Questions about cables inside of walls should be referred to a qualified custom installer, or a licensed electrician or low-voltage contractor.

Do Not Open The Cabinet
There are no user serviceable components inside this product. Opening the cabinet may present a shock hazard, and any modification to the product will void your warranty. If water or any metal object, such as a paper clip, coin or a staple, accidentally falls inside the unit, disconnect it from the AC power source immediately, and contact Outlaw Audio for further instructions.

IMPORTANT SAFETY NOTE
Before connecting a new component such as the Ultra-X12 to your audio or home theater system, it is always good practice to make certain that all components are turned off, and preferably unplugged from their AC power source. Many modern electronics products feature automatic turn-on circuits that may be activated during an installation, causing the potential for damage to electronic components and/or speakers. Such damage is not covered by product warranties and Outlaw Audio specifically disclaims responsibility for any such damage.

Unpacking

Save all packing materials



The carton and packing materials used in shipping your new subwoofer were specially designed to cushion it from the shocks and vibrations of shipping. We require that you save the carton and packing materials in case the unit ever needs to be shipped back to us for any reason.

To minimize the size of the carton for storage, you may wish to flatten it by carefully opening the top and bottom flaps and folding the carton. Packing materials that cannot be collapsed should be saved along with the carton in a plastic bag.

Your new Ultra-X12 subwoofer is engineered using heavy-duty materials for high reliability and weighs 66 pounds and requires that you pay special attention during unpacking and installation. You may wish to have someone help you remove the unit from its carton and place it in the proper location.

The Outlaw Audio 30-Day Satisfaction Guarantee

This product is guaranteed to satisfy all your needs for a high performance subwoofer system. If for any reason, you are not completely satisfied with it, please contact us at 866-OUTLAWS (688-5297) within 30 days of receipt of the unit and you will receive a return authorization.

The original box and packing materials are required for all returns. We recommend that you keep the packing (even after 30 days) so that if you ever move, or the subwoofer requires service, the unit will be adequately protected.

If you decide to return the Ultra, the only cost you will be responsible for is the original shipping charge at time of purchase. When your subwoofer arrives, we will inspect it to insure that it was shipped back to us in original condition with all of the accessories. Upon satisfactory inspection, we will issue a credit for your original purchase price less your original outbound freight cost.

Outlaw Audio Limited Warranty

This warranty protects the owner of the Outlaw Model Ultra-X12 (the PRODUCT) for three (3) years from the date of purchase.

This warranty covers all defects in material and workmanship with the following specific exceptions. These are:

- Damage caused by improper installation or adjustment
- Damage caused by accident, unreasonable use or neglect, or acts of God
- Damage from failure to follow instructions contained in this Owner's Manual
- Damage from the performance of repairs by someone not authorized by Outlaw Audio
- Any unit on which the serial number has been effaced, modified, or removed
- Damage occurring during shipment
- Units which have been altered or modified in design, appearance or construction

This warranty covers only the actual defects within the PRODUCT itself. IT DOES NOT cover any installation or removal costs, normal setup costs, claims based on any misrepresentation by the seller, or performance variations resulting from installation related circumstances such as signal quality, AC power or incompatibilities with speakers and/or other system components.

During the warranty period, Outlaw Audio will, at its option, either repair the defect, or replace the defective product, or the defective parts, or components thereof, at no charge to the owner for parts and labor covered by this warranty. If necessary repairs are not covered by this warranty, or if a unit is examined which is not in need of repair, you will be charged for the repairs and/or the examination, as well as round trip shipping. If non-warranted repairs are needed, we will notify you of the estimated cost and ask for your authorization to perform said repairs.

You must pay shipping charges incurred in getting your Product to Outlaw. We will pay the return shipping charges if the repairs are covered by the warranty. Please save the original shipping cartons as the unit MUST be returned in the original carton and packing. (Replacement cartons are available for purchase.)

If your product needs service, please call Outlaw Audio, LLC. at 866-OUTLAWS (688-5297).

You will need to present proof of purchase to establish warranty status. For warranty service, proof of purchase or proof of warranty transfer is required. In the event that such proof cannot be provided, non-warranty service is available, provided that the serial number label has not been altered in any manner.

In the event that you wish to return your Outlaw Product back to us, for any reason, please call to arrange for a Return Authorization Number. This will ensure that your problem is discussed with a service technician who will determine if there is a quick solution to your problem.

Outlaw Audio shall not be liable for, or in any way responsible for, any incidental or consequential damages of any kind. Some states do not allow limitations on how long an implied warranty lasts and/or do not allow the exclusion of incidental or consequential damages, therefore, the limitations and exclusions stated herein may not apply to you. This warranty gives you specific legal rights; and you may also have other rights which vary from state to state.

THERE ARE NO WARRANTIES GIVEN BY OUTLAW AUDIO WHICH EXTEND BEYOND THE DESCRIPTION GIVEN HEREIN. ANY IMPLIED WARRANTIES OF FITNESS FOR PURPOSE SOLD, MERCHANTABILITY, DESCRIPTION, QUALITY OR ANY OTHER MATTERS ARE LIMITED TO THE TERMS OF THE EXPRESSED LIMITED WARRANTY STATED HEREIN.

Products are sold on the basis of specifications applicable at the time of sales. Outlaw Audio shall have no obligation to modify products once they have been sold.

This warranty is applicable only in North America.

For applicability in other countries, please call Outlaw Audio, LLC.

® Outlaw Audio, LLC.

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Serial Number
Record your Ultra-X12's serial number and date of purchase here. The serial number is found on the back panel.

Serial Number

Date of Purchase

Overview

Variable Tuning Ultra-X12 Subwoofer

Congratulations on the purchase of an Outlaw Audio Variable Tuning Ultra-X12. You now own one of the finest subwoofers available. The Ultra-X12 subwoofer provides deep, tight, bass extension that's powerful enough to meet the most demanding requirements of any movie or musical source.

The Ultra-X12 subwoofer blends effortlessly with both small satellite speakers and large tower speakers alike. This seamless integration is made possible by a flexible crossover network that may also be bypassed for use with advanced bass-management systems.

Before you Begin

In order to receive the maximum enjoyment from your new subwoofer, please take a few minutes to read this manual. This important information will help you make certain that the Ultra is properly configured for operation with the rest of the equipment in your system. This brief investment of time will provide major dividends by making certain that your subwoofer is properly connected, placed, and optimized for the specifics of your installation.

If you have any questions about this product, its installation or operation, please contact us via e-mail at **customerservice@outlawaudio.com** or via telephone at **866-OUTLAWS** (688-5297).

Features

Model Ultra-X12 Features

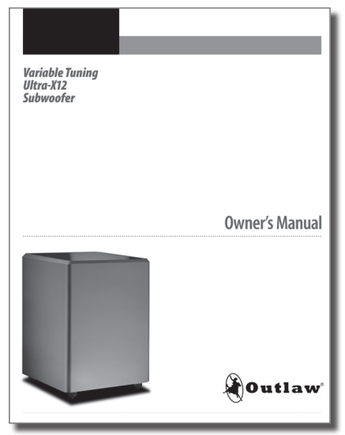
The Outlaw Model Ultra-X12 is a state of the art, high performance, powered subwoofer. It is built utilizing totally complementary circuitry from input to output.

Among the Variable Tuning Ultra-X12's many features are:

- A down firing design that virtually eliminates audible port noise
- A long throw 12" driver for deep bass extension
- A powerful 350 watt Audera™ amplifier for precise driver control
- Signal Sense for automatic turn on/off
- 180-degree phase control
- Line and speaker level inputs
- Variable Port Tuning
- Detachable power cord

Accessories

Model Ultra-X12 Accessories



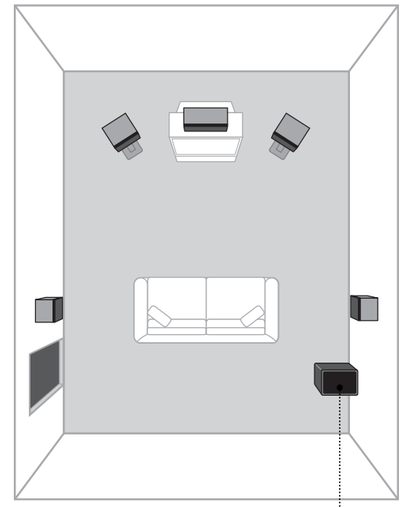
After unpacking your subwoofer please confirm that the following accessories have been included.

- AC Power Cord
- 4 Black (Metal) Carpet Spikes
- 4 Black (Metal) Dimpled Discs
- Port Plug (Installed in port on bottom of subwoofer)
- Owner's Manual

If any of these items are missing from your shipment, please contact Outlaw Audio immediately.

Subwoofers, Bass, and Overall System Performance

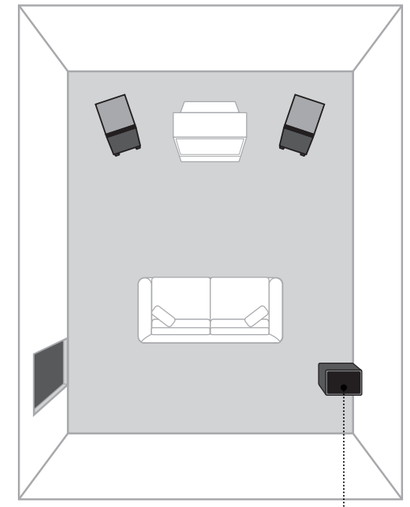
Typical Multi-channel System with Satellite Speakers



Powered Subwoofer

Restores frequencies below 200Hz not reproduced by satellite speakers

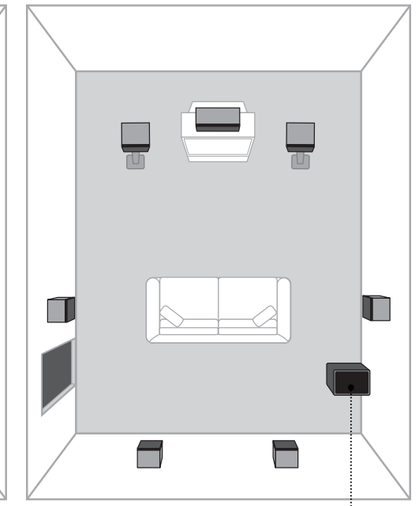
Typical Two-channel System with Traditional Bookshelf or Tower Speakers



Powered Subwoofer

Augments or restores bottom two octaves of sound (20Hz to 80Hz) often missing from traditional tower or bookshelf speakers

Typical 7.1 Multi-channel Digital System



Powered Subwoofer

Provides the LFE (low frequency extension) output in a 5.1, 6.1 or 7.1 multi-channel digital system

The goal of an audio system is to recreate the source material as accurately as possible. The components needed to perform this task are an audio source, a receiver, or processor/amplifier combination, and speakers.

In the era of digital, multi-channel sound, many listeners have chosen to use frequency-limited "satellite" speakers for the front, center and surround channels. By limiting their frequency range, these speakers may be made smaller, to more easily fit into a wide range of spaces.

However, by eliminating the capability to reproduce bass frequencies, a separate speaker that is custom designed to deal with signals below 200Hz is required. That speaker, along with its accompanying, built-in amplifier, is a powered subwoofer.

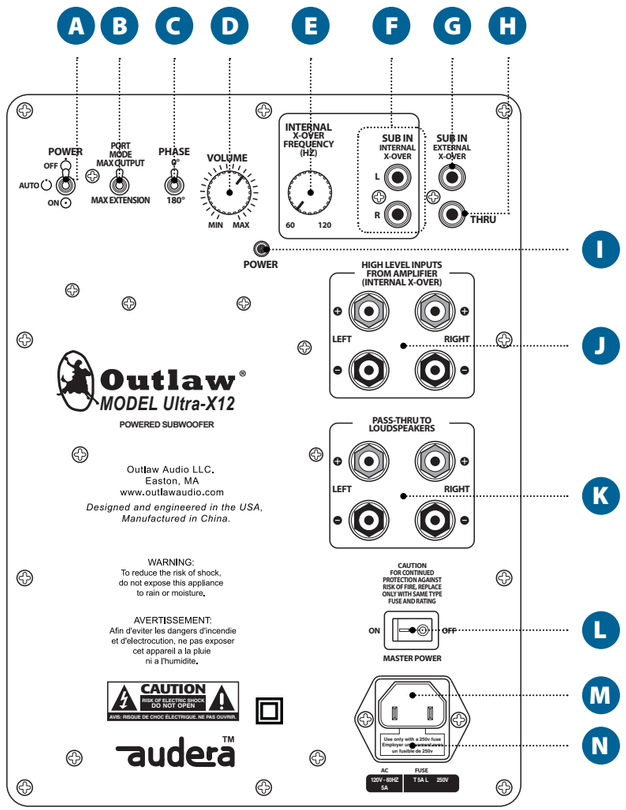
Even in two-channel systems with traditional bookshelf or tower speakers, the bottom two octaves of sound (20 Hz to 80 Hz) are frequently rolled off or not reproduced at all. Here, too, a specialized speaker/amplifier combination is required to deliver the full spectrum of sound from a system.

Finally, many multi-channel digital soundtracks contain a special audio channel devoted specifically to extreme low frequency extension. This signal is the ".1" in 5.1, 6.1 and 7.1 systems and is sometimes referred to as the LFE channel.

Regardless of which of these situations create the need, a subwoofer is absolutely essential for accurate audio reproduction of both movies and music. A properly designed subwoofer, such as the Outlaw Ultra-X12, can provide a visceral impact that most speakers are not able to provide on their own. No matter what type of speakers comprise the rest of your system, or what your favorite movie or music is, the Ultra completes the sonic presentation by providing the impact that only a subwoofer can deliver.

Ultra-X12 Rear Panel

Model Ultra-X12 Rear Panel



A. AUTO Power Switch
Setting this switch to 'ON' or 'OFF' powers the Ultra-X12 on and off. Setting the switch to 'AUTO' enables the Ultra's signal sense mode, turning the unit on automatically when an audio signal is present.

B. Port Switch
Toggles the Ultra between "Max Output" and "Max Extension" mode.

C. PHASE Switch
Switches the phase of the subwoofer with respect to the main speakers.

D. VOLUME Control
Use this knob to control the output level of the Ultra.

E. INTERNAL X-OVER FREQUENCY Control
Use this control to adjust the crossover frequency when using the SUB IN Internal X-Over Jack ,or the Left and Right High Level Inputs.

F. SUB IN INTERNAL X-OVER Jacks (Left and Right Line Level Inputs)
Connect the subwoofer output of your receiver, processor, or other source device to one or both of these jacks when using the Ultra's Internal X-Over Frequency Control. If using an external crossover, such as one from your receiver, please use the SUB IN External X-Over Jack.

G. SUB IN EXTERNAL X-OVER Jack
Connect the subwoofer output of your receiver, processor, or other source device to this jack when using an External X-Over Frequency Control, such as a receiver's crossover. If using the Ultra's Internal crossover, please use the SUB IN Internal X-Over Jack.

H. THRU Jack
Use this jack to daisy chain to an additional subwoofer.

I. POWER INDICATOR LED
Glows green when the Ultra is on and red when power is applied, but the unit is in the standby mode.

J. HIGH LEVEL INPUTS FROM AMPLIFIER (INTERNAL X-OVER)
When your receiver does not have line level outputs available for a subwoofer connection, connect the main left and right speaker outputs of the receiver here.

K. PASS-THRU TO LOUDSPEAKERS
When the speaker level inputs are used, connect the main speakers to these terminals.

L. MASTER POWER Switch
Use this switch to turn the AC power to the Ultra-X12 subwoofer on or off. If the unit will not be used for an extended period of time, we recommend setting this switch to OFF to prevent accidental activation.

M. Power Cord Jack
Connect the supplied AC power cord here, and then connect the plug end to an un-switched AC wall outlet. Should the power cord need replacement, make certain it is replaced with a cord having the identical power rating.

N. Fuse Housing
Contains a 5 x 20mm 5A slow blow fuse that protects the subwoofer. In the event that it must be replaced, be certain that a fuse with the same rating is used.

Overview

Assembling and Connecting your Subwoofer

To get the maximum performance from your new subwoofer it must be connected and positioned properly within the room and configured to match your speakers. To connect the subwoofer you will need either a single audio interconnect cable (in the case of systems with a subwoofer output), dual RCA interconnects (for a system with L/R pre-outs but no subwoofer output), or additional speaker wire.

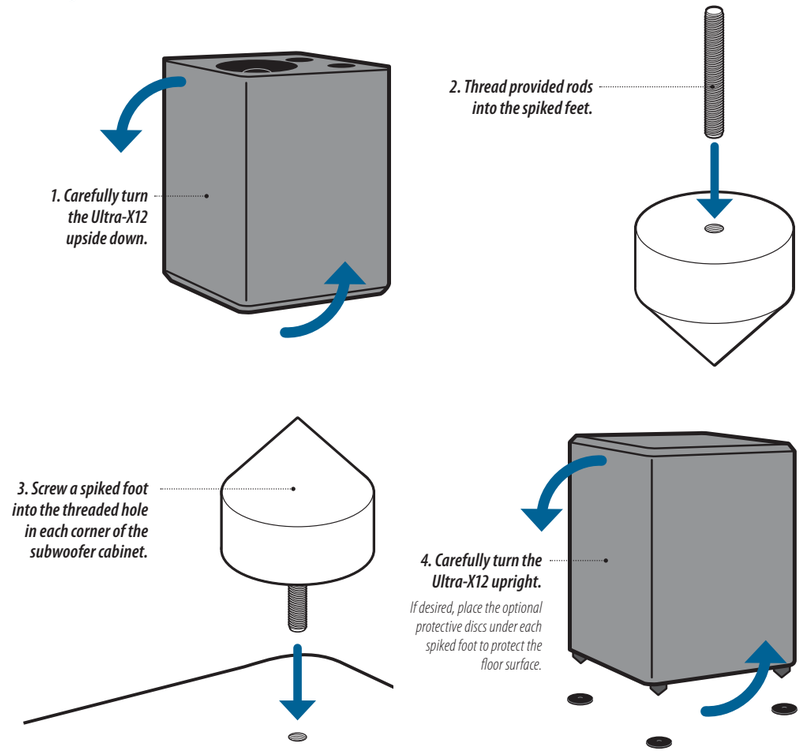
Before proceeding with the integration of the Ultra-X12 into your system, please observe the precautions and suggestions listed below.

Before you Begin

- Do not plug the power cord into the subwoofer until all other connections are made.
- Always refer to your receiver or processor's instructions for specific procedures, warnings and options.
- Do not attempt to operate the Ultra-X12 unless the feet have been properly installed. This may restrict driver movement and will cause damage to the subwoofer that is not covered by the warranty.
- When using the subwoofer on surfaces such as wood floors and certain tight weave rugs, be sure to use the supplied dimpled discs to prevent damage to the floor's surface. You are responsible for determining when use of these discs is required.
- Make sure to insert all plugs and connectors securely. Improper connections can result in noise, poor performance, or damage to the equipment.
- Do not bundle the subwoofer cable or speaker wire with the power cord. This may adversely affect the sound quality and introduce unwanted hum into your system.

Installing the Subwoofer Feet

Installing the Ultra-X12 Feet



Proper installation of the supplied feet/carpet spikes is necessary for ALL Variable Tuning subwoofer setups. These spikes provide the floor clearance required for optimal performance and safety. Failure to use the feet provided will result in damage not covered under the Outlaw Audio Warranty.

For your convenience we have provided "dimpled discs" that may be used when the Ultra is placed on non-carpet floors, such as wood, tile, certain rugs and linoleum surfaces to prevent damage to the floor or floor covering.

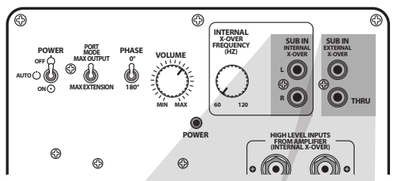
To install the carpet spikes:

1. **Carefully turn the subwoofer upside down.**
   Use a blanket or other material to prevent scratching the top surface of the subwoofer.
2. **Thread the provided rods into the spiked feet.**
   Make sure the rods are threaded all the way in.
3. **Screw a spike foot into the threaded hole in each corner of the subwoofer cabinet.**
   Tighten the spike by hand until no threads are showing and the base of the foot is flush with the bottom of the cabinet.
4. **After all four carpet spikes have been installed, turn the Ultra over so that it is upright.**
   We recommend that this be done by two people due to the weight of the unit, and to make certain that the floor surface is not damaged while the unit is being turned back to the upright position.

If the Ultra is being placed on a surface that may be damaged by the carpet spikes, place one of the supplied black, dimpled discs under each foot.

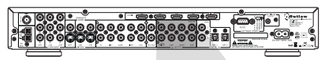
Connecting to a System with a Subwoofer Preamp Output

Ultra-X12 Low-level Inputs



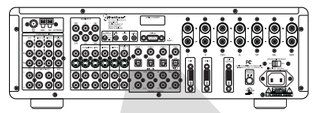
Ultra-X12 Rear Panel

Connection from Receiver or Pre/Pro with Internal Subwoofer Crossover

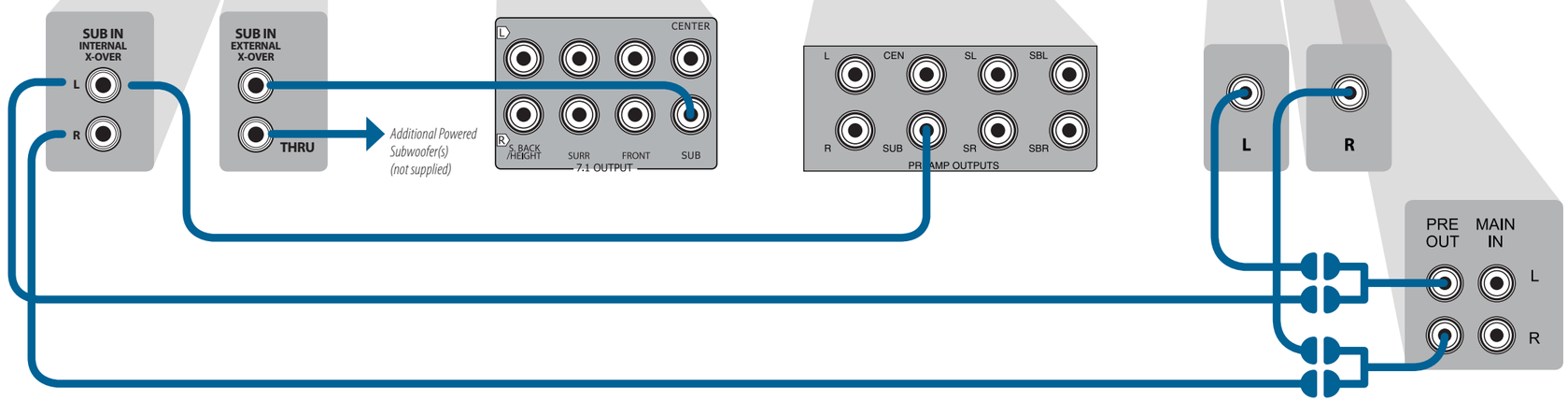


Preamp/Processor

Connection from Receiver or Pre/Pro without Subwoofer Crossover



Receiver



If a low-level subwoofer output is available, use one of the SUB IN jacks on the rear panel of the Ultra-X12 to connect to your Preamp/Processor or Receiver. Any audio device that decodes Dolby Digital or DTS soundtracks will have this type of jack. Depending on the particular brand or model, this RCA jack may be labeled "Sub," "Subwoofer," or "LFE Out."

The choice of which SUB IN jack depends on whether you want to use the Ultra's internal crossover, or an external crossover, such as the one in your Preamp/Processor or other bass management system, to process the subwoofer's audio input.

The information in this section contains some of the more common subwoofer connections. If your receiver or processor does not have this type of output you will need to follow the "Connecting to a System with No Preamp Outputs" instructions on the next page.

CAUTION: *Before you make any connections to the Ultra-X12, please make sure to turn off all system components and unplug the processor or receiver and the Ultra from their AC power source.*

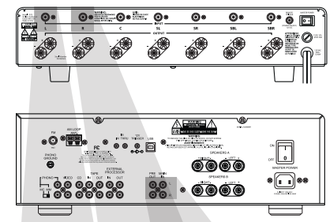
▶ To connect the Ultra-X12 to a Receiver or Processor with a Subwoofer/LFE preamp output and an internal crossover:

1. **Make sure all system components are off and the processor or receiver and Ultra-X12 are unplugged from their AC power source.**
2. **Connect a subwoofer cable from the Subwoofer/LFE output on the receiver or processor to either of the SUB IN INTERNAL X-OVER jacks on the rear panel of the Ultra-X12.**
   You can use either the Left or Right SUB IN INTERNAL X-OVER jack.
3. **To connect two subwoofers to a receiver or processor with a single subwoofer output, use the Ultra's THRU jack to daisy chain to the next subwoofer.**
   Alternatively, you can use a Y-adapter to connect two subwoofers to a single Subwoofer/LFE output.
4. **Proceed to the "Power Connection" section on page 10.**

▶ To connect the Ultra-X12 to a Receiver or Processor with a Subwoofer/LFE preamp output, but without an internal crossover:

1. **Make sure all system components are off and the processor or receiver and Ultra-X12 are unplugged from their AC power source.**
2. **Connect a subwoofer cable from the Subwoofer/LFE output on the receiver or processor to the SUB IN EXTERNAL X-OVER jack on the rear panel of the Ultra-X12.**
3. **Proceed to the "Power Connection" section on page 10.**

Connection from Receiver or Pre/Pro without a Subwoofer Preamp Output, but with Standard Left/Right Preamp Outputs



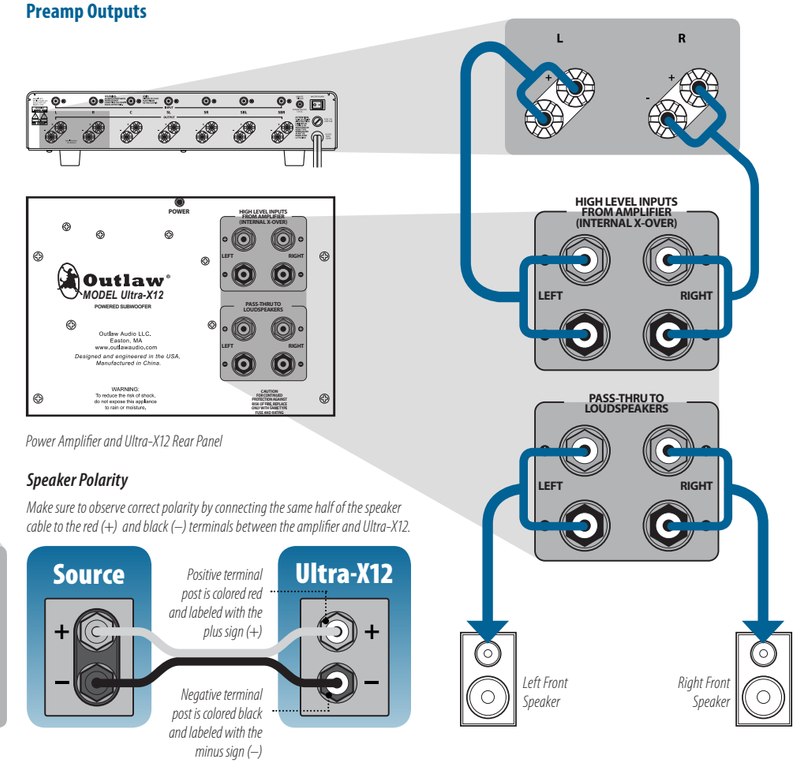
Power Amplifier and Receiver

▶ To connect the Ultra-X12 to a Receiver or Processor without a Subwoofer/LFE preamp output, but with standard Left and Right preamp outputs:

1. **Make sure all system components are off and the processor or receiver and Ultra-X12 are unplugged from their AC power source.**
2. **Connect a Y-adapter cable (not included) to the Left Preamp output on the receiver or processor**
3. **Connect a subwoofer cable from one of the two Y-adapter jacks to the Left SUB IN INTERNAL X-OVER jack on the rear panel of the Ultra-X12.**
4. **If you are using a separate power amplifier, connect a second audio cable from the remaining Y-adapter jacks to the Left Input of the amplifier.**
5. **Repeat steps 2-4 for the Right Preamp output, SUB IN INTERNAL X-OVER, and amplifier input jacks.**
6. **Proceed to the "Power Connection" section on page 10.**

Connecting to a System with No Preamp Outputs

Connection from a Receiver without Preamp Outputs



Power Amplifier and Ultra-X12 Rear Panel

Speaker Polarity

Make sure to observe correct polarity by connecting the same half of the speaker cable to the red (+) and black (–) terminals between the amplifier and Ultra-X12.

If no low-level subwoofer output is available, you will need to run speaker wires from your main amplifier or receiver to the subwoofer amplifier. Make sure to use the same type of speaker wire as your other speaker connections.

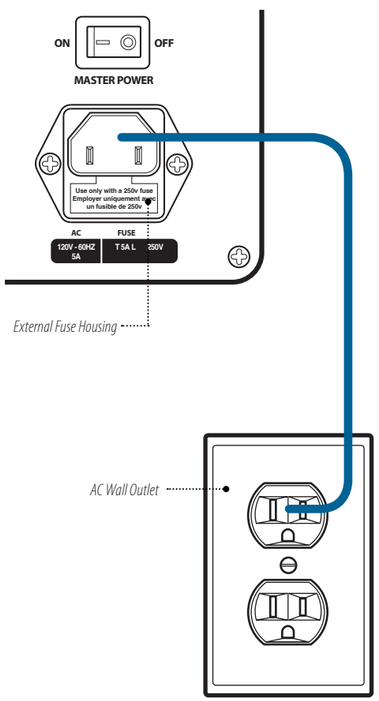
Be sure to connect the speaker wires to the appropriate binding posts on the back of the Ultra, making certain that the polarity (– and +) on the receiver or amplifier matches the polarity on the binding posts of the subwoofer amplifier. In most cases this means connecting the red terminal on the receiver or amplifier to the red terminal on the Ultra, but always check the markings on the rear panel to insure "+ to +" and "– to –" connections. Also, make sure that the negative outputs on your main amp are true ground; otherwise you would short the output of your main amp. Call or email tech support if the negative outputs on your main amplifier do not have true ground.

▶ To connect the Ultra-X12 subwoofer using high level inputs:

1. **Make sure all system components are off and the processor or receiver and Ultra-X12 are unplugged from their AC power source.**
2. **Using the same type of speaker wire for your other speaker connections, connect the left and right channel speaker outputs from your receiver or amplifier to the Ultra's HIGH LEVEL INPUTS.**
   In cases where there are both "A" and "B" terminals on the amplifier or receiver, the "A" terminals should be used. Disconnect any wires presently connected to these terminals.
3. **Using the same type of speaker wire for your other speaker connections, connect the left and right front speakers to the PASS-THRU TO LOUDSPEAKERS output terminals on the back of the Ultra-X12.**
   Make sure to observe correct polarity between the subwoofer and speaker connections. Also, be sure to prevent any positive and negative strands of speaker wire from crossing.
4. **Proceed to the "Power Connection" section on page 10.**

Power Connection

Ultra-X12 Power Connection



Once all connections have been made, connect the supplied power cord to the AC Input on the rear panel of the Ultra-X12 Subwoofer and an un-switched AC outlet, then reconnect your receiver or processor to the AC power source.

CAUTION: *Due to the power requirements of the Ultra-X12 Subwoofer, it must not be connected to the accessory outlets on a receiver or processor. If a power-strip or surge protector is used, make certain that it is rated to accommodate the Ultra's power requirements.*

The Ultra-X12 Subwoofer uses an external fuse to protect the amplifier from damage. In the event that a fuse replacement is required, be certain that a fuse of the original rating (5 x 20mm 5A slow blow fuse) is used. If the fuse continues to fail, your unit may have sustained internal component failure. In this event, please contact Outlaw for assistance.

WARNING: *Always turn the subwoofer off and unplug the power cord from the AC Power before replacing the fuse.*

Proceed to the "Setting the Variable Tuning Ultra-X12 Subwoofer's Controls" section to learn about the Ultra's controls and how they operate.

Overview

Setting the Variable Tuning Ultra-X12 Subwoofer's Controls

Now that you have made all the necessary connections between the Ultra-X12 and your receiver or processor, it's time to power up your subwoofer and adjust its controls and settings in order to properly integrate it with your speakers and room configuration.

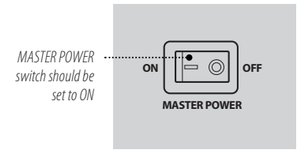
In the section titled "Subwoofer Placement," located on page 14, we will focus on determining the best location for the subwoofer. After moving your Ultra, you might need to adjust the subwoofer's controls to take advantage of its new room position.

Before you Begin

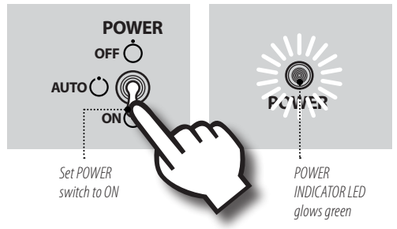
- Always refer to your receiver or processor's instructions for specific procedures, warnings, and options.
- Do not attempt to operate the Ultra-X12 unless the feet have been properly installed. This may restrict driver movement and will cause damage to the subwoofer that is not covered by the warranty.
- When making adjustments to the volume controls of your subwoofer and system speakers, we recommend using an SPL meter such as the Radio Shack model (part number 33-2050). When using the test tones, measure from the listening position and set the meter's range (if applicable) to 80dB. You will then be able to calibrate your speakers to 75dB and your subwoofer to 85dB. In order to accurately measure levels between channels use "C" weighting and the "slow" setting.

Power Controls

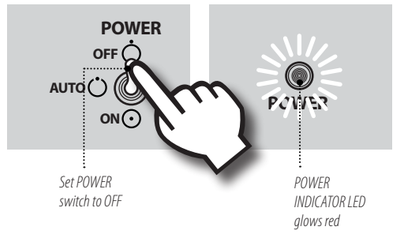
Turning the Ultra-X12 on and off manually



Turning the subwoofer on



Turning the subwoofer off



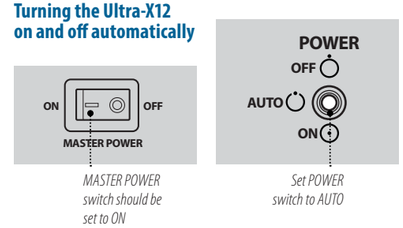
Before powering on the Ultra-X12, ensure that all the audio and AC power connections made to the subwoofer are secure, and that the other components in your system are turned off. Next, locate the MASTER POWER switch on the rear panel of the Ultra-X12 and set it to ON. This switch supplies AC current to the subwoofer. The POWER INDICATOR LED will glow red.

Normally, you can leave this switch set to ON. If the unit will not be used for an extended period of time, we recommend setting this switch off to prevent accidental activation.

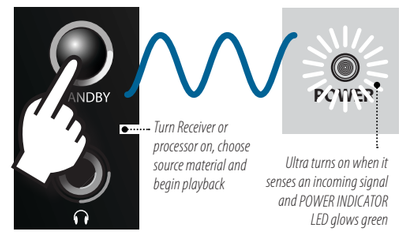
To turn the Ultra-X12 on and off manually:

1. **To turn the subwoofer on, set the Ultra's POWER toggle switch on the rear panel to ON.**
   The POWER INDICATOR LED will glow green.
2. **To turn the subwoofer off, set the Ultra's POWER toggle switch on the rear panel to OFF.**
   The POWER INDICATOR LED will glow red.

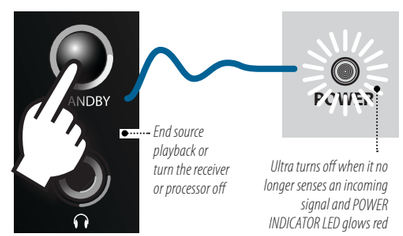
Turning the Ultra-X12 on and off automatically



Turning subwoofer on with signal sense



Turning subwoofer off with signal sense



To turn the Ultra-X12 on and off automatically using signal sense:

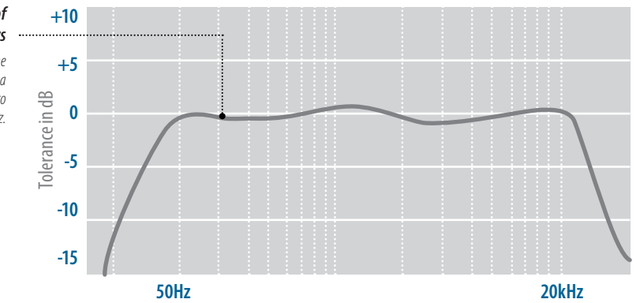
1. **Set the Ultra's POWER toggle switch on the rear panel to AUTO.**
   The POWER INDICATOR LED will glow red.
2. **Turn your receiver or processor on and begin playback of source material.**
   The subwoofer will automatically turn on when the Ultra's signal sense mode detects an audio signal at either of the SUB IN jacks or HIGH LEVEL INPUTS terminals. The POWER INDICATOR LED will glow green.
3. **Turn your receiver or processor off or end playback of source material.**
   After a few minutes without an audio signal present, the subwoofer will automatically turn off and the POWER INDICATOR LED will glow red.

Adjusting the Crossover Frequency

Understanding Frequency Response and Crossover Frequency

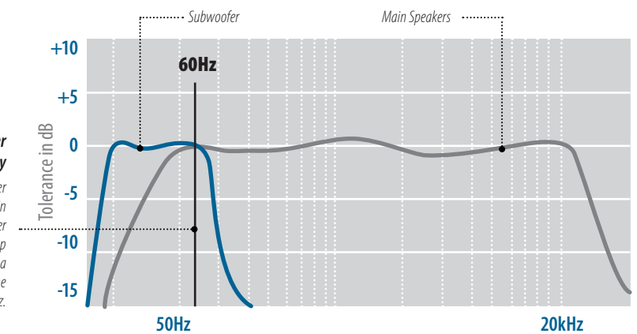
Frequency Response of Typical Front Speakers

This graph shows the frequency response of a typical set of front speakers to be 50Hz to 20kHz.



Subwoofer Crossover Frequency

The subwoofer crossover frequency is where the main speakers and subwoofer frequency responses overlap enough to produce a seamless blend between the two, in this case about 60Hz.



By adjusting the crossover frequency between the Ultra and the rest of your system, you can perfectly match your main speakers to the subwoofer. Depending on how you connected the subwoofer to your audio system, the crossover frequency is set by using the INTERNAL X-OVER FREQUENCY control on the rear panel of the Ultra, or by using the subwoofer crossover controls of your receiver or processor.

If your receiver or processor does not have internal crossover controls, and it is connected to the subwoofer using the SUB IN INTERNAL X-OVER jack or the HIGH LEVEL INPUTS FROM AMPLIFIER terminals, then follow the instructions in "Setting the Ultra-X12 Crossover control" on page 12.

If your receiver or processor has internal crossover controls, and it is connected to the subwoofer using the SUB IN EXTERNAL X-OVER jack, proceed to "Setting the Crossover with your Receiver or Processor" on the next page.

Whether you use your receiver or processor's crossover control or the Ultra's, we recommend using the speaker/subwoofer crossover setting recommended by the manufacturer of your speakers. If this information is not available, we suggest that you set the crossover to approximately 10Hz above the lowest frequency your main speakers can produce cleanly. This can usually be found on the speaker's specifications sheet or from the manufacturer's website.

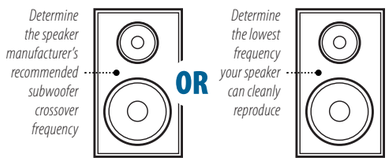
Typically, a speaker's frequency response is shown as a range from lowest to highest frequency measured in Hertz (Hz) followed by the tolerance expressed as a range measured in decibels (dB). For example, if your speakers' frequency response was rated as 50Hz – 20kHz, ±3dB, set the crossover to approximately 60Hz.

Experiment with the Ultra's crossover frequency and Volume control (see "Setting the Volume Level" on page 13) to fine-tune your subwoofer so that there is a seamless blend between the Ultra and the main speakers' output. Let your ears be your guide.

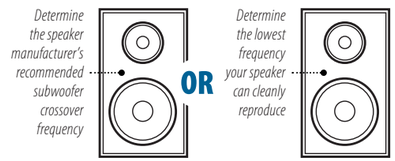
Please note that the Ultra's internal frequency settings only control the subwoofer's crossover point, leaving the main speakers unchanged. If your receiver or processor has its own crossover settings, it is better to use them as they control both the crossover point of the subwoofer and your speakers.

Adjusting the Crossover Frequency (cont'd)

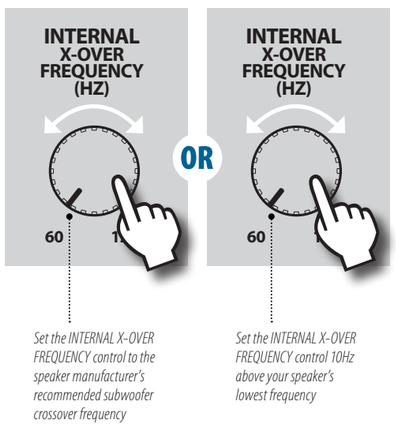
Setting the Ultra-X12 Crossover control



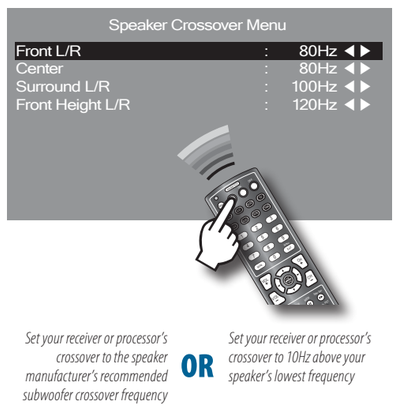
Setting the crossover with your receiver or processor



Set the subwoofer crossover frequency



Set the subwoofer crossover frequency



Before you set the crossover frequency control using the Ultra-X12, make sure your receiver or processor is connected to the Ultra-X12's SUB IN INTERNAL X-OVER jacks or HIGH LEVEL INPUTS FROM AMPLIFIER terminals.

▶ To set the crossover frequency with the Ultra-X12's INTERNAL X-OVER FREQUENCY control :

Set the Ultra's INTERNAL X-OVER FREQUENCY control to the frequency recommended by the manufacturer of your speaker.

OR

1. **Determine the lowest frequency your main speakers can reproduce, by following the steps outlined on page 11, under "Adjusting the Crossover Frequency.**
2. **Set the Ultra's INTERNAL X-OVER FREQUENCY control 10Hz above your speaker's lowest frequency.** Adjust the control lower if you hear voices coming from the subwoofer.

Before you set the crossover frequency using your receiver or processor, make sure it is connected to the Ultra-X12's SUB IN EXTERNAL X-OVER jack. Then refer to your receiver or processor's instructions for adjusting the subwoofer crossover frequency.

▶ To set the crossover frequency with your receiver or processor's crossover control :

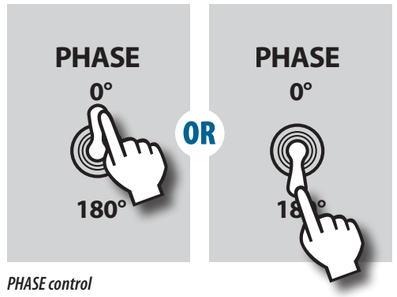
Set your receiver or processor's subwoofer crossover to the frequency recommended by the manufacturer of your speaker.

OR

1. **Determine the lowest frequency your main speakers can reproduce, by following the steps outlined on page 11, under "Adjusting the Crossover Frequency.**
2. **Set the Ultra's INTERNAL X-OVER FREQUENCY control 10Hz above your speaker's lowest frequency.** If you hear distortion coming from any of your speaker's, raise that speaker's crossover point. Adjust the crossover for the center, front left, and front right to a lower setting, if you hear voices coming from the subwoofer.

Phase Switch

Setting the Phase switch



PHASE control

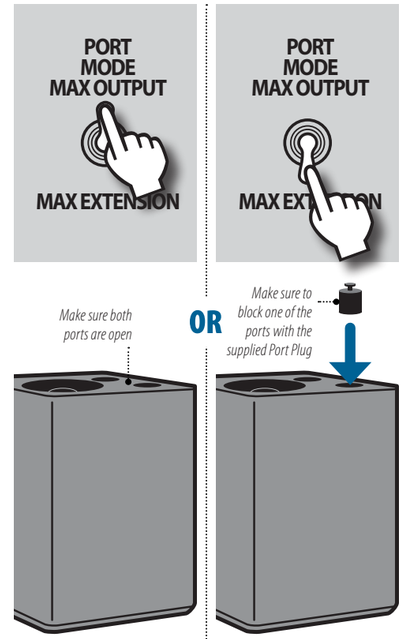
Using program material with bass content in the crossover frequency region, set the PHASE control to the positon that yields the bass-heavier sound

Depending upon the phase of your speakers, including the subwoofer, in relation to the listening position, the bass response may be smoother if you reverse the phase of the Ultra. Try both positions of the phase switch to determine which way sounds more bass-heavy.

The bass-heavier position is the setting where the output of the Ultra and the main speakers are most in phase. Use program materials with bass in the crossover region such as music containing bass drums, double basses, bass guitar, etc., to determine the correct setting.

Port Mode Switch

Setting the Port Mode switch



MAX OUTPUT Mode

Set the PORT MODE switch to MAX OUTPUT to increase the Ultra-X12's SPL.

MAX EXTENSION Mode

Set the PORT MODE switch to MAX EXTENSION to produce deeper bass from the Ultra-X12.

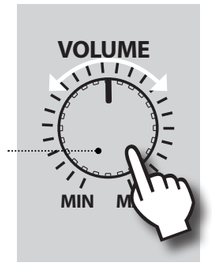
Depending on your bass preference, your Variable Tuning Ultra-X12 subwoofer has two available "tuning" modes. When the PORT MODE switch is set to MAX OUTPUT, your subwoofer will provide the greatest level of overall bass in regards to SPL (sound pressure level). Setting the PORT MODE switch to MAX EXTENSION produces the deepest bass (low frequency) levels from your subwoofer.

When using the MAX EXTENSION mode, make sure to tightly insert the provided Port Plug into one of the ports located on the bottom of the subwoofer. In MAX EXTENSION mode, both ports must remain open.

CAUTION: *Do not leave both ports open when the PORT MODE switch is in the MAX EXTENSION position as your subwoofer's performance will be compromised. If neither of the ports are blocked with the supplied Port Plug, the PORT MODE switch must remain in MAX OUTPUT mode. Failure to adhere to these requirements can lead to poor performance and damage to your subwoofer.*

Volume Control

Setting the Volume level



VOLUME control

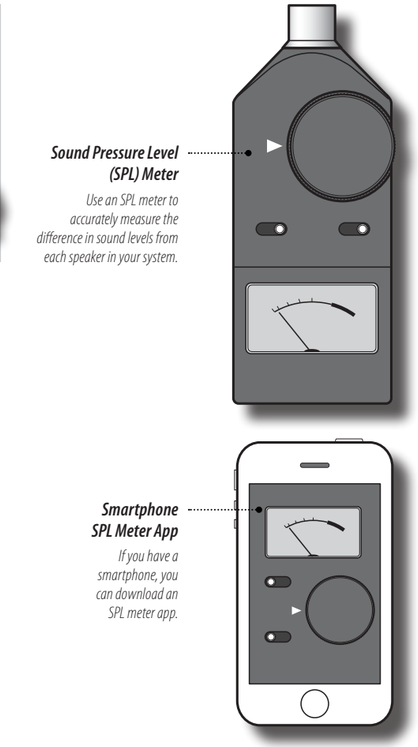
Start with the Ultra-X12's VOLUME control set to the 12 o'clock position while using your receiver or processor's test-tones to match the levels of your speakers with the subwoofer.

Use the VOLUME control on the rear panel of the subwoofer to match the output of the Ultra-X12 with the rest of your speakers. While it's possible to "rough in" the channel levels by ear, you'll get much better results by using a sound pressure level (SPL) meter. You can use either a dedicated meter like those sold under the RadioShack and Galaxy brands, or if you have a smartphone, use an SPL meter app.

Search the iPhone App Store or Android Play Store for "SPL meter." Most are available for free or at low cost. The SPL meter app does not need to be calibrated for this adjustment—only the comparitive dB level between channels matters, not the absolute dB level of each channel.

Setting the VOLUME knob to the 12 o'clock position should provide enough gain to properly match the sub level to your speakers.

Using an SPL meter to match speaker levels with the Ultra-X12



▶ To measure and set the speaker channel levels:

1. **Sitting in your favorite listening seat, turn on the SPL meter (or start the SPL meter app on your phone).** Hold the device at ear level facing the front of the room.
2. **Set the range (if necessary) to 80dB.**
3. **Refer to your receiver or processor's instructions to activate the test-tone signal.** In most cases, you will want to set your receiver or processor to -20dBFS; with necessary gain adjustments, this should correlate to approximately 75dB for your speakers. Adjust speaker channel levels to match.
4. **For the Ultra, set the SPL meter to C-Weighting Slow and the level to 85dB.** The dB level is not critical–but 85dB is the level most commonly used in home theater sub calibrations.

Note that the Radio Shack SPL meter is down about 12 dB at 16 Hz, 7 dB at 20 Hz, and 4 dB at 25 Hz. Add these numbers to the readout to compensate for these errors if necessary.

Subwoofer Placement

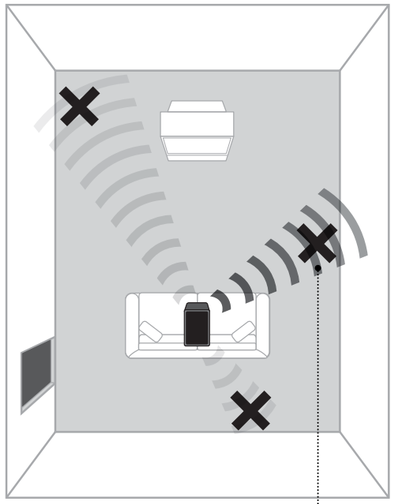
Placement of your Ultra-X12 subwoofer is a critical component in maximizing its performance. The subwoofer's specific location in a room influences its "perceived" frequency response, sound pressure level (SPL), and overall accuracy. Since each listening room differs in virtually every aspect, the ideal location will also vary.

This section will describe how to find the best location for your subwoofer and how increasing the number of subwoofers can overcome a bad listening space.

Before you Begin

The placement, crossover frequency and volume level of your subwoofer are all interdependent. Changing one parameter will affect the others. If you move your Ultra-X12 to a different location after following some of the suggestions in this section, you may find that you will need to readjust the subwoofer's volume control.

Finding the best location for your subwoofer



Subwoofer Switch Trick

Place the Ultra in the listening position, play your receiver or processor's test tone through the subwoofer, and find the location in the room that has the best bass response.

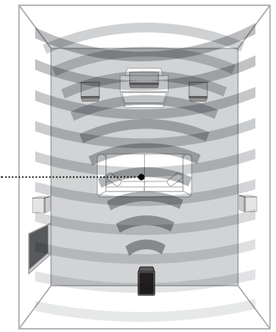
An easy way to determine the best location for your new subwoofer is use the "Subwoofer Switch Trick." This process puts the subwoofer where you normally sit and lets you play the role of the subwoofer.

First, place the subwoofer as close to your favorite listening position as possible. This should be directly in front of your couch or easy chair, right in the room's "sweet spot." You may even place the subwoofer on the chair or couch, but remember that the Ultra subwoofer is heavy, and the Outlaws are not responsible for any damage to your furniture.

Second, activate your receiver or processor's test tones (see "Setting the Volume Level" on the previous page), or use a test disc to play pink noise through the subwoofer. While the test tone is playing, move around your room and find the spots where you hear the best bass response. This might be the center of the room, a corner, or along a wall.

Finally, turn off the test tone and move the subwoofer to the location where you heard the best bass response. If that location is unacceptable or impractical, repeat the procedure until you find the spot that is the best compromise between bass performance and aesthetic considerations.

Finding the best location for your subwoofer



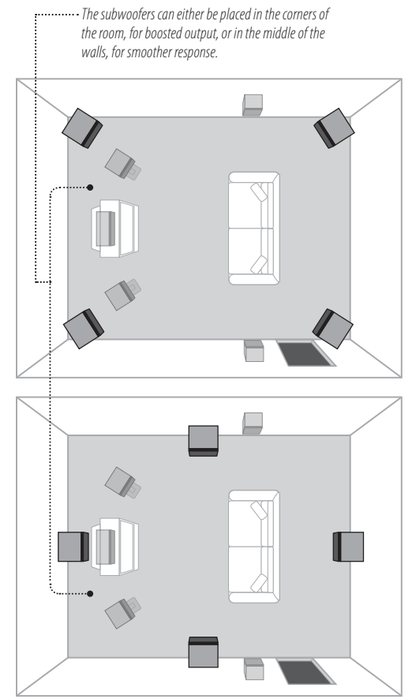
Peaks and Nulls

Audio waves from the subwoofer can bounce off the walls of your room, interfering with the new waves coming from the Ultra creating areas where the bass can be multiplied or canceled out.

Bass energy sets up "standing waves" in most every room. These standing waves can cause areas with too much bass, areas with too little bass, and areas in between. Try to avoid creating a listening position that falls directly between the front and back walls. The interference due to the collision between bass waves bouncing off the rear wall and new waves emanating from the Ultra can create an unnatural "build up" in the low frequencies where the bass sounds "bloated."

In other situations you might encounter a "null," caused by two low frequency waves canceling each other out. When this happens you will find that your favorite listening position is bass shy. In this type of placement situation, bass response will suffer greatly regardless of how powerful the subwoofer is. The best way to solve this problem is to change the location of the seating position so that the distance to the front of the room is different than that to the back of the room.

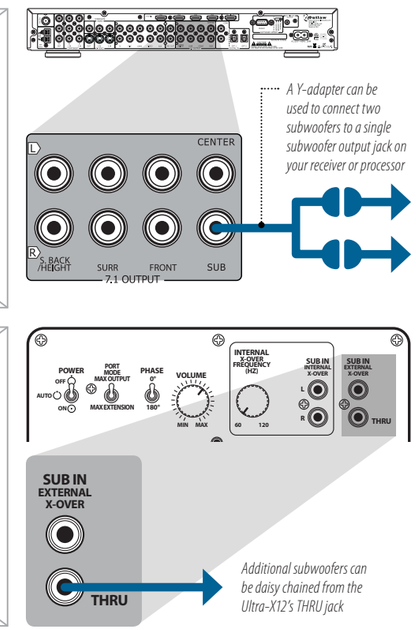
Using two or four subwoofers



Research has found that using two or four matching subwoofers results in much smoother bass response across a large seating area. If you want to make the bass sound good for several listeners (and not just you), this is worth exploring. You can place the subwoofers in the corners of the room. This will boost perceived output, but may compromise smoother bass response. Placing the subwoofers in the middle of the walls would be more desirable for smoother bass response. While you might assume additional subwoofers are for added SPL, the greatest benefit will actually be smoother bass response.

Room shape, the cubic volume of the room, furniture, floor coverings and even wall and ceiling material all play a roll in bass performance. These factors create peaks and dips in the amplitude level of low frequencies at different points in the room. That said, two properly positioned subwoofers will distribute the bass throughout the room with greater accuracy than a single sub. For this reason, many professional acousticians and installers recommend more than one subwoofer. The final result is that you will create a much larger "sweet spot" where the bass is powerful, but more importantly, smooth and consistent. If near perfect bass response is your goal, consider using two or more Ultra-X12 Subwoofers.

Connecting two or four subwoofers



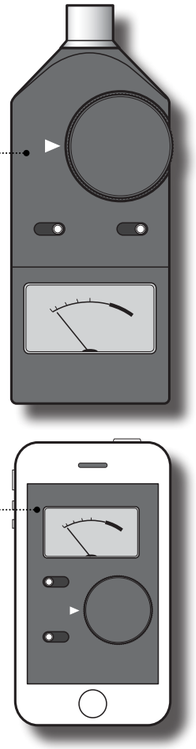
To connect more than one subwoofer to your receiver or processor you can use a Y-adapter. Insert the single male end of the adapter to the subwoofer output of your receiver or processor. On the opposite end of the Y-adapter you will now have two separate subwoofer outputs, one for each sub. Be sure to use a Y-adapter that is of equal or better quality than the subwoofer cables you intend to use.

Alternatively, you can use the THRU jack on the rear panel of the Ultra-X-12 to daisy chain one or more subwoofers.

If setting the subwoofers in the corners or middle of the walls as shown above does not produce the best results, you can use the same procedure used for determining the placement of the first subwoofer on the previous page. However, the second sub should be placed in the seating area outside of the "sweet spot" where good bass response is also required.

Walk around the room until you find the area where the bass sounds the best, just as described in the process for locating a single sub. This spot will almost always be different than the one that was best for the primary sub.

Level Calibration of Multiple Subs



When calibrating the final levels of each subwoofer, you may want to reduce their output to compensate for the added 3 or 4 dB of gain created by using multiple subwoofers.

When locating and calibrating the level of each additional subwoofer be sure to turn off the other sub(s). This will help you to determine ideal placement without being mislead by the response of the first sub.

If you sense a loss of bass output after properly locating and calibrating the additional subwoofers, the likely problem is that one or more of units are out of phase with each other. If this occurs, try flipping the phase switch on the back of each of the subs until the bass returns.

For more information regarding setting the phase control and volume level of the additional subwoofer(s), please refer to "Setting the Phase Switch," on page 12, and "Setting the Volume Level," on page 13.

When You Are Away

If you won't be using your system for an extended period of time, it is always a good idea to turn the subwoofer off using the rear panel MASTER POWER switch. This will prevent the automatic turn on circuits from accidentally powering the subwoofer on, during your absence.

Cleaning

When the Ultra X-12 Subwoofer cabinet becomes dirty, wipe it with a clean, soft, dry cloth. If necessary, first wipe the surface with a soft cloth slightly dampened with mild soapy water, then with a fresh cloth dampened with clean water. Wipe dry immediately with a dry cloth.

NEVER use benzene, thinner, alcohol, or other volatile cleaning agent. Do not use abrasive cleaners, as they may damage the finish of the cabinet. Avoid spraying insecticide, waxes, polishing agents, or any aerosol product near the unit.

Troubleshooting and Service Information

Your Outlaw Model Ultra-X12 Subwoofer is designed for trouble free operation. If you follow the instructions in this manual you should enjoy many years of high quality listening enjoyment. However, as with any sophisticated electronic device, there may be occasional problems upon initial installation, or during the life of the unit. The items on this list are a brief guide to the minor problems that you may be able to correct yourself. If these solutions do not rectify a problem, or if the problem persists, contact us for assistance. The Ultra-X12 does not contain any user serviceable parts. If you suspect a problem that may require service assistance, contact **customerservice@outlawaudio.com**, or call at **866-688-5292**.

It is important that any repairs be carried out only by Outlaw Audio Service Department. This will assure proper service and preserve the protection of your Limited Warranty. Keep your sales slip or receipt in a safe place with this manual so that it will be available to verify the purchase date, should you experience a problem covered by our warranty.

Symptom	Solution
Humming or Buzzing Noise	Power down your system and remove the Interconnects between your components. Power your system back on. If the hum goes away when the interconnects are disconnected, the hum is coming from the rest of your equipment. Plug in the Interconnects one at a time for each component until you come across the specific component generating the hum.
No output from the subwoofer (POWER Indicator light does not come on)	▶ Check that the power cord is plugged in securely at both ends and make sure that the power outlet the subwoofer is plugged into is functioning properly. ▶ Check the fuse. The fuse is located just below the power plug on the subwoofer. Unplug the power cord and remove the fuse holder with a screwdriver and check the fuse. If the fuse is blown, replace it with a 5 x 20 mm 5A slow blow fuse. ▶ If the fuse blows again, the Ultra has most likely sustained internal component failure. Email or call technical support for assistance.
The subwoofer is not receiving a signal (Red POWER Indicator light does not turn green)	Recheck the connections between the receiver/processor and the subwoofer. On the back of the subwoofer, make sure the power switch is set to "auto" or "on".
No output from the subwoofer (POWER INDICATOR light stays red)	Connect the signal cable to another subwoofer. If you get output, then the fault lies with the Ultra. Please email or call technical support for further assistance.
No output from the subwoofer (POWER INDICATOR light turns green)	Please ensure your subwoofer interconnect cable is functional. To do this, replace your interconnect with a known working cable. If you continue to experience a lack of output, please contact technical support via email or phone.

Specifications

Subwoofer	
Driver Type	Down Firing, 12" Long-throw Woofer
Ports	Dual
Amplifier Section	
Amplifier Power Rating	350WRMS
Frequency Response	17Hz -160Hz ± 2 dB Max Extension 22Hz -160Hz ± 2 dB Max Output
Crossover Type	4th Order Low Pass Network
Crossover Frequency	60Hz to 120Hz and Bypass
Phase	0 to 180 Degrees
SPL	120dB (subject to placement and room gain)
General	
Dimensions including feet (HxWxD)	21.25" x 16.0" x 23.0"
Weight	66 lbs

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