

Sunfire®

==XT™
SERIES

ATMOS™
Subwoofer

XTATM265
and XTATM265230

User's Manual



CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

ATTENTION
RISQUE DE CHOC ELECTRIQUE
NE PAS OUVRIR



WARNING:

To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.

AVIS:

Pour réduire le risque d'incendie ou de choc électrique, ne pas exposer cet appareil sous la pluie et l'humidité.

The apparatus shall not be exposed to dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on apparatus.

L'appareil ne doit pas être exposé aux écoulements ou aux éclaboussures et aucun objet ne contenant de liquide, tel qu'un vase, ne doit être placé sur l'objet.



The lightning flash with arrowhead symbol, 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 electric shock to persons.

Le symbole de l'éclair fléché dans un triangle équilatéral, est destiné à alerter l'utilisateur de la présence d'une "tension dangereuse" dans le boîtier du produit qui peuvent être des ampleur suffisante pour constituer un risque d'électrocution aux personnes.



This symbol is intended to alert the user to the presence of important operation and maintenance (servicing) instructions in the literature accompanying the appliance.

Ce symbole est destiné à alerter l'utilisateur de la présence d'opération et de maintenance (entretien) dans la documentation accompagnant l'appareil.

Important Safety Instructions

1. Read these Instructions.
Lisez ces instructions.
2. Keep these Instructions.
Conservez ces instructions.
3. Heed all Warnings.
Respectez tous les avertissements.
4. Follow all instructions.
Suivez toutes les instructions.
5. Do not use this apparatus near water.
Ne pas utiliser cet appareil près de l'eau.
6. Clean only with a dry cloth.
Nettoyer uniquement avec un chiffon sec.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
Ne pas bloquer les ouvertures de ventilation. Installer conformément aux instructions du fabricant.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
Ne pas installer près de sources de chaleur telles que radiateurs, registres de chaleur, poêles ou autres appareils (y compris les amplificateurs) produisant de la chaleur.
9. Do not defeat the safety purpose of the polarized or grounding - type plug. A polarized plug has two blades with one wider than the other. When the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
Ne détruisez pas la sécurité de la terre ou polarisées - fiche. Une fiche polarisée possède deux lames dont une est plus large que l'autre. Si la fiche fournie ne rentre pas dans votre prise,

consultez un électricien pour remplacer la prise obsolète.

10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
Protégez le cordon d'alimentation d'être piétiné ou pincé, particulièrement au niveau des fiches, des prises, et le point où ils sortent de l'appareil.
11. Only use attachments/accessories specified by the manufacturer.
N'utilisez que des accessoires spécifiés par le fabricant.
12. Use only with a cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart or rack is used, use caution when moving the cart/apparatus, combination to avoid injury from tip-over.

Utilisez uniquement un chariot, stand, trépied, support ou table spécifiés par le fabricant ou vendu avec l'appareil. Quand un panier ou rack est utilisé, faites attention lorsque vous déplacez l'ensemble chariot / appareil, pour éviter d'éventuelles blessures en cas de chute.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
Débranchez cet appareil pendant les orages ou lorsqu'il n'est pas utilisé pendant de longues périodes de temps.
14. Refer all servicing to qualified service personnel. Servicing is required when

the apparatus 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 apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

Confiez toute réparation à un personnel qualifié. Une réparation est nécessaire lorsque l'appareil a été endommagé de quelque façon que ce cordon d'alimentation ou la fiche est endommagé, liquide a été renversé ou des objets sont tombés dans l'appareil, l'appareil a été exposé à la pluie ou à l'humidité, ne fonctionne pas normalement, ou s'il est tombé.


15. **WARNING:** The mains plug (appliance coupler) is used as disconnect device, the disconnect device shall remain readily operable.
AVERTISSEMENT: La fiche d'alimentation (appareil coupleur) est utilisé comme dispositif de déconnexion, le dispositif de déconnexion doit rester facilement accessible.
16. No naked flame sources, such as lighted candles, should be placed on the apparatus.
Aucune source de flamme nue, telle que des bougies allumées, ne doit être placé sur l'appareil
17. Protective earthing terminal. The apparatus should be connected to a mains socket outlet with a protective earthing connection. 
Borne de terre de protection. L'appareil doit être connecté à une prise secteur avec une prise de terre.

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Introduction

Thank you for purchasing this Sunfire ATMOS Subwoofer. We hope you enjoy it and the music it makes as much as we have enjoyed creating it for you.

The big breakthrough features of the subwoofer are its uncanny tracking downconverter, its long throw, high back-electromotive force driver, and its fully automatic room equalizer. Taken together, they provide this subwoofer with as much bass as you could get from several 15 inch drivers mounted in a cabinet the size of a small refrigerator.

Unpacking

Your Sunfire Subwoofer should reach you in perfect condition. If you do notice any shipping damage, please contact your Sunfire Dealer immediately.

Gently lift out the unit and remove all the packing material. It is important to save all the packing materials and the box in case your subwoofer ever needs to be moved or shipped for repair.

Make sure that you keep your sales receipt. It is the only way to establish the duration of your Limited Warranty and it may come in useful for insurance purposes.

Please take a moment to fill out and mail the Sunfire Customer Response card. Also read the serial number located on the control panel and record it here:

Serial Number:

Purchased from:

Date:

Features

- 1400 watt, high efficiency amplifier
- Automatic Room Equalization mode
- Measurement Microphone included
- Very low distortion
- Long throw, premium quality drivers
- Stunning output from a small cube!
- Automatic signal-sensing turn-on and standby mode
- 12 VDC trigger input for remote turn-on
- Line-level unbalanced inputs
- Line-level outputs with high-pass or full-range switch
- Continuously variable phase control
- Continuously variable crossover frequency adjustment, 30 to 100 Hz
- Continuously variable volume level control
- Soft clipping circuit allows graceful overload and prevents speaker damage due to clipping
- Gold-plated inputs and outputs.

Care

To maintain the speaker cabinet's finish, first unplug the power cord and then use a soft cloth to clean the surfaces.

If your Sunfire Subwoofer needs servicing, please read the Troubleshooting section on page 21. If a problem persists, contact your nearest authorized Sunfire Dealer.

Overview

Your Sunfire ATMOS Subwoofer is designed to give you the best possible low-frequency sound quality for your Home Theater experience. It incorporates a tremendously powerful built-in amplifier and a pair of drivers to produce tight, floor-rumbling, denture-rattling bass that you can feel as well as hear.

The subwoofer has an automatic equalization system which will tailor the subwoofer output to compensate for any room effects.

The subwoofer has an adjustable high cut filter and line-level inputs for easy incorporation into existing systems, or as part of a subwoofer/satellite speaker combination.

Controls for adjusting the volume, crossover frequency and phase, allow the subwoofer to be perfectly matched to any listening environment and audio components.

The Drivers

To have lots of bass requires moving lots of air. Your Sunfire Subwoofer incorporates two drivers that can move back and forth approximately five times more than a normal subwoofer. This gives it a lot of air moving capacity which allows for majestic bass performance.

Two drivers share the acoustic output. Sometimes one driver appears to be moving more than the other. They both move the same amount only when operating at the limit of their excursion and power output, or when bass requirements and music requirements demand maximum output from the system. Otherwise, the power is shared between the two drivers in a way that depends on the momentary amplitude and the momentary musical spectrum. It is normal for one or the other to move more or less than its mate during operation.

The Amplifier

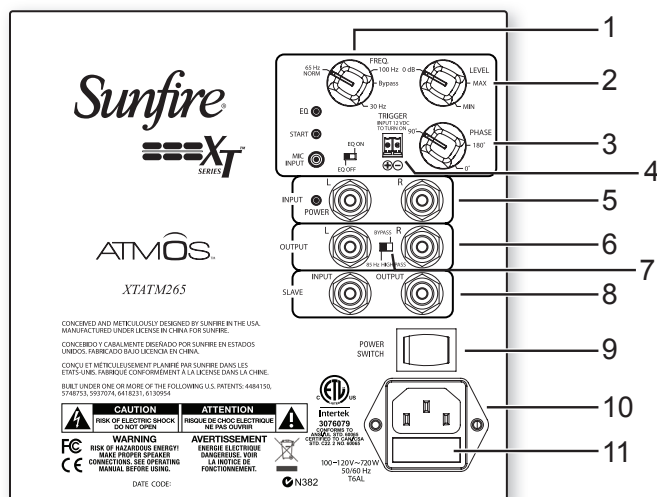
The large movement range of the drivers creates greater air pressure inside the box than a conventional subwoofer. Therefore, the drive amplifier must be much more powerful than an ordinary subwoofer amplifier. In fact, it has to be so powerful, it is almost hard to believe.

The power amplifier within your Sunfire Subwoofer is capable of delivering over 1400 watts into a 3.3 ohm resistor (the driver voice coil resistance). When the same full output is applied to the driver, however, the enormous back-electromotive force generated as a consequence of its large motion and giant magnet, causes the current flow to be much less than if it were a 3.3 ohm resistor. It is this singular property of the driver that allows the subwoofer to be approximately ten times more efficient than a subwoofer this size would normally be.

A compressor circuit kicks in automatically if the input signal level reaches a level that would overload the driver. This maintains a ceiling on the output without clipping. If the input signal is driven even further, a 'soft clipping' circuit is enabled. This allows the subwoofer to put more sound into the room to satiate the power hungry user, but without distortion or damage to the subwoofer. Thus, for explosive scenes in movies, this produces extremely high sound pressure levels (SPL) in your room without the drivers banging against the mechanical stops.

For more details of the subwoofer design, please call us or view our website: www.sunfire.com.

Control Panel Features



1. Crossover Frequency

This control changes the high frequency cutoff point. With the control set to 100 Hz, the subwoofer will reproduce frequencies up to 100 Hz. If the control is set fully clockwise, the crossover is bypassed and the subwoofer will reproduce a wide frequency range. With the control fully counter-clockwise the subwoofer reproduces a narrow range, up to 30 Hz.

Rotate the control until the bass sounds natural. If the mid-bass sounds natural but you want more low bass, turn this control down a little, then turn the Volume control up by about the same amount. This increases the low-bass output while leaving the mid-bass output the same.

2. Level

This control lets you match the output level of the subwoofer to the level of your other speakers. The subwoofer output will increase as this control is rotated clockwise. When you have just

installed your system, turn this down before turning on your subwoofer. This will prevent any loud surprises.

3. Phase Control

This control changes the relative phase of the subwoofer with respect to the other speakers. Use this control to help blend the subwoofer with the rest of the system. This is accomplished by adjusting the control in small increments as you listen for the most bass at your listening position. As a final trim, readjust the Crossover Frequency and Volume controls after the Phase has been set.

4. Trigger Input

The trigger input can be used to automatically turn on the subwoofer from Standby mode. To do this, connect +12 VDC to the positive (+) terminal, and ground to the negative (–) terminal. Home Theater preamplifiers such as the Sunfire Theater Grand series, have matching 12 VDC Trigger outputs. When they are turned on, the subwoofer will turn on.

5. Line-Level Inputs

Connect these unbalanced inputs with RCA type patch cords to the line-level outputs of your receiver or preamp.

If your preamplifier or receiver has a single sub/LFE output, connect it to either input jack (see page 14).

6. Line-Level Outputs

Line-level output signals are available at these jacks. These outputs are active whenever a signal is hooked up to the inputs of the subwoofer. The outputs are not affected by the volume level, phase, frequency control, or EQ of the subwoofer.

To use the outputs, connect the preamp outputs on your preamp/receiver to the subwoofer's line-level inputs using good quality RCA type patch cords. Then connect a second set of patch cords from these subwoofer outputs to the line-level inputs of your main amplifier.

The adjacent Output Switch (7) allows the outputs to be either high-pass, or full range, see below.

7. Output Switch

This switch affects the frequency range of the line-level outputs.

In the Bypass position, the outputs are a full-range copy of the input signals.

In the 85 Hz position, the outputs are a copy of the input signals with the frequencies below 85 Hz removed. We recommend using this position if your speakers are not designed to reproduce low frequencies.

If your main speakers are capable of operating full range, then use the Bypass position.

8. Slave Input and Output

These connections simplify the hookup and operation of two ATMOS subwoofers.

Connect the slave output from the first subwoofer to the slave input of the second. This second subwoofer will then receive the optimum audio signals from the first, and there is no need to adjust the controls of the second subwoofer, as the audio is controlled by the controls and EQ setting of the first.

The second subwoofer will not require any connections to its line-level inputs, as it receives the audio through its slave input.

9. Power Switch

The power switch is used for installing and uninstalling the subwoofer, and for power conservation during long vacations. Leave it switched on at all times for normal operation.

After a period of inactivity (i.e. with no input signal), the subwoofer will automatically turn itself to Standby mode, where it is effectively muted. It can turn back on automatically when an input signal is applied, or if a 12 VDC trigger voltage is applied to the Trigger inputs, or if the Start button is pressed.

10. IEC Linecord socket

The subwoofer comes with a detachable linecord that connects here.

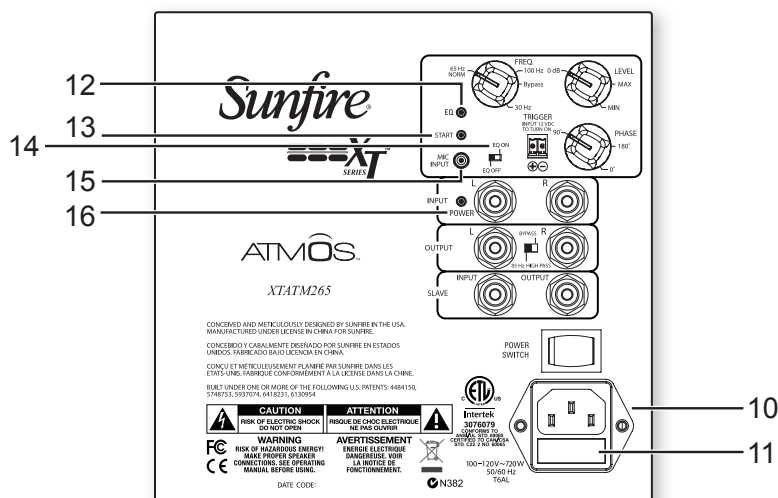
US (120 VAC) MODEL: Connect the linecord to the subwoofer before connecting the other end to a 120 Volt, 60 Hz AC outlet. The outlet must have a circuit rating of 8 amps or more (a typical home circuit is rated at 15 amps).



Never plug the US (120 VAC) Model subwoofer directly into 220-240 Volts AC as this will cause catastrophic circuit failure.

continued..

Control Panel Features continued



10. (continued)

EURO (230 VAC) MODEL: Connect the linecord to the subwoofer before connecting the other end to a 230 Volt, 50/60 Hz AC outlet. The outlet must have a circuit rating of 6 amps or more.



Never plug the EURO (230 VAC) model subwoofer directly into 120-130 Volts AC.

11. Line Fuse

The subwoofer is supplied with a conservative slow-blow type fuse to protect the electronics.



Always unplug the power cord before inspecting or changing the fuse. Never use a fuse with a larger current rating than shown on the markings next to the fuseholder.

12. EQ LED

This LED provides feedback during the EQ procedure. It also lights continuously whenever the subwoofer is not in standby.

13. Start button

Used to calibrate the EQ. See page 12 for details on the EQ calibration procedure.

14. EQ ON/OFF Switch

This switch is used to turn the EQ on or off. It allows you to easily judge the effect of the EQ on the subwoofer performance.

15. Microphone Input

This is the input connection for the supplied linear measurement microphone used during the automatic EQ procedure. See page 12 for details of the EQ procedure.

16. POWER LED

This red LED indicates when the subwoofer is connected to AC Power. When a 12 volt trigger voltage or an audio signal is applied, this LED goes out and the blue EQ LED lights up.

Installation

Observe the following general precautions and read the safety instructions on pages 2 and 3 before using your Sunfire Subwoofer.

- Never open the cabinet or remove the metal control panel as this might result in an electrical shock to you, or damage to the unit.
- Protect it from prolonged exposure to direct sunlight and other direct sources of heat, such as heating vents and radiators.
- To prevent fire or shock, do not expose the unit to rain or moisture. If fluid or a foreign object should enter the unit, immediately turn off the power and contact your Sunfire Dealer.
- Avoid excessive exposure to extreme cold or dust.
- Do not place heavy objects on top of the unit.
- Do not place the subwoofer with its control panel against the floor.
- To move the subwoofer along the floor, rotate it onto one edge onto a plastic sheet or bag, and it will slide along easier.

Heat rise

- Allow adequate ventilation around the metal control panel of the subwoofer.
- Do not let anything come into contact with the panel and keep at least two inches away from any walls.

The metal bottom plate serves as the amplifier heat sink and also as a conduit to remove internal heat to the outside and into the atmosphere. It can reach temperatures of 60 degrees C, which

will feel hot to the touch, using nerves of flesh and blood as temperature sensors. As uncomfortable as it may feel, 60 degrees C cannot burn you, and in fact is almost cool to copper, silicon, steel, and aluminum, the materials from which your subwoofer is constructed.

AC Power Considerations

Ensure that the unit is plugged into an outlet capable of supplying the correct voltage specified for your model.

Unplug your subwoofer's power cord from the electrical outlet if it will be left unused for a long period of time.

Route the power-supply cord so it is not likely to be walked on or pinched by items placed upon or against it, especially at plugs, convenience receptacles, and the point where it exits from the unit.

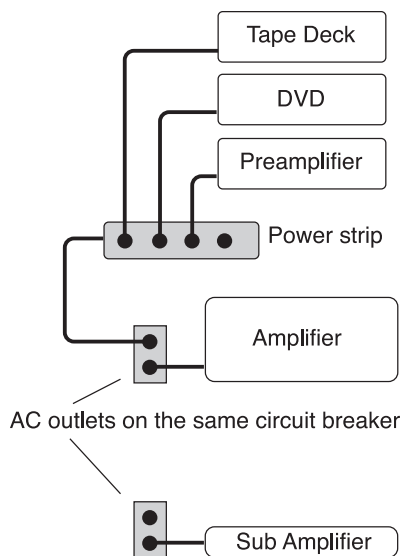
Magnetic Fields

We recommend that you place your subwoofer further than two feet away from your TV, VCR, tape deck or computer, so the speaker's magnet won't distort the colors of your TV picture or erase your video tapes, audio tapes or computer discs.

Connections

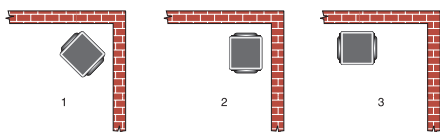
Please consider the following when setting up your new system :

- Before making or changing any connections, ALWAYS make sure that the subwoofer and your other components are turned OFF. Also turn down the volume control of the subwoofer and your preamplifier or receiver.
 - This diagram shows all the low power components sharing a power strip which is connected to the same outlet used by the amplifier.
- Whenever possible, keep the power cords away from the signal cables or speaker wires to prevent any hum or interference being heard in the speakers.
 - Choose reliable, high quality inter-connect cables, also called patch cords or RCA cables. They should be fully shielded and as short as possible for the job. The longest cable in your system will likely be to the subwoofer, so choose a good quality brand.
 - Some patch cords can be a very tight fit and there is usually a preferred method of getting them off. Some have to be removed with a twisting action. Be gentle or you may damage the jacks of the subwoofer or your other components.



- The subwoofer is connected to an outlet on the same circuit breaker, provided that the total system current draw does not exceed the breaker current rating.
- This arrangement will reduce the possibility of an audible hum in your system caused by a ground loop.

Location



Your subwoofer is designed to be placed in a corner and this will produce optimum performance.

- #1 is very good positioning.
- #2 is also excellent but may shake the back wall too much and cause things on or along the wall to rattle too much. If this occurs, use the #3 position:
- #3 Move the subwoofer approximately three feet away from the right wall and place it along the back wall as shown. This will substantially reduce the rattling of the back wall and will still pressurize the room with lots of bass.

Experiment with at least two corners and decide which is the best, or you can try the following procedure:

1. Start by placing the subwoofer right on the seat of your favorite couch or easy chair. Take care to position it so it is not likely to fall off. (This method may seem a bit odd, but it is based on principles of acoustic physics.)
2. If you are using the subwoofer as part of a Home Theater system, you can either run a calibration test (noise) signal through the subwoofer, or simply plug the analog outputs of a CD player directly into the subwoofer's line-level inputs. Turn down the subwoofer's volume level before turning on the CD, then play some of your favorite music samples with heavy bass.

3. Walk around the room, listening, and stand in all the positions where you might be able to place the subwoofer. Try crouching down, and try the corners. Find the place where the subwoofer's bass output sounds the loudest.
4. Shut things down and install the subwoofer in this position. Make sure the control panel is not touching anything, and that it can receive good ventilation.

Although low frequencies are non-directional, factors such as room reflections, standing waves, resonance and absorption will strongly affect your subwoofer's performance. Moving the subwoofer from one location to another can have a major effect on the bass response.

The Auto EQ mode will let you adjust for the room effects, but you should find the best location first.



Remember to keep the subwoofer at least two or three feet away from any TV screen, computer, VCR or magnetic tapes and discs. This will reduce the chance of the magnetic fields upsetting the TV screen or erasing your magnetic media.

Using Two Subwoofers

If you wish to use two subwoofers, the sound output will double (an increase of 3 dB). Locate the subwoofers with one in each corner and experiment with the location and phase control to achieve the best bass response.

Use the Slave input and output connections if you are using two ATMOS subwoofers.

Room Equalization Procedure

Subwoofer performance is greatly affected by the room in which it is situated, and the positioning within the room. The room effects will boost and cut the output levels reaching your listening position. This gives a "Room EQ" effect which can often be far from wonderful.

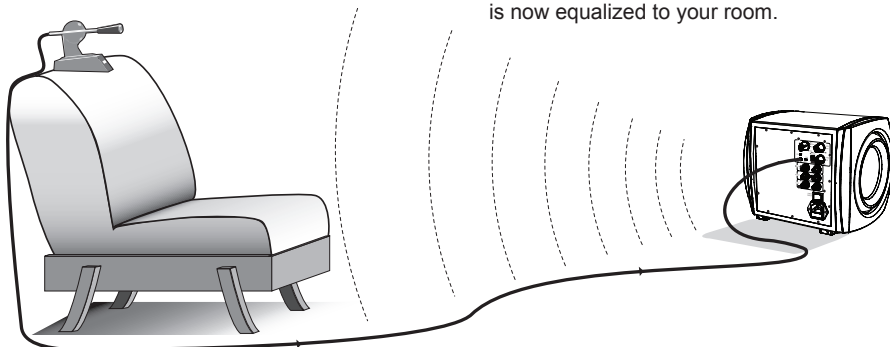
The Sunfire ATMOS can automatically adjust for the effects of Room EQ. It measures the actual frequency response using the supplied measurement microphone. Then it automatically compensates for peaks or dips and smooths out the response.

For best results it is recommended that the subwoofer crossover in your receiver or processor be set to its maximum setting (or "bypass"). This ensures that the subwoofer will be properly matched to the rest of the speakers in your system.

The following procedure will help you start the automatic equalization:

Procedure

1. Install the subwoofer in the best location you can find (see previous page).
2. The calibration must be done while the listening room is quiet. Please turn off any noisy machinery, including heating or cooling systems during this process. Have the kids play in the backyard and give the dog a treat to have him stop barking. A small amount of noise, such as quiet talking or whispering, is OK.
3. Place the microphone in the listening position (on the couch, for example), pointing in the direction you'll normally be facing while listening to your system. Only use the microphone supplied by Sunfire.
4. Plug the microphone into the subwoofer's microphone jack.
5. Set these controls:
 - Volume to 0 dB.
 - Crossover to "Bypass."
 - Phase to "0."
 - EQ ON/OFF switch to ON
6. Avoid making noise during this procedure. Turn on the subwoofer AC power switch. Next, press the START button for five seconds to enter calibration mode. You will hear a loud low rumble sound coming from the subwoofer.
7. After about 10 seconds press the START button again and sound will come from the subwoofer at a different frequency.
8. Wait another 10 seconds and press the START button again. A new frequency will come from the subwoofer.
9. You'll need to wait another 10 seconds and then press the START button again. A fourth tone will come from the subwoofer.
10. Finally, after another 10 seconds press the START button again and hold it until the sound stops. Your Atmos subwoofer is now equalized to your room.



11. Unplug the microphone and store it in a safe place.
12. Finish the setup by adjusting the Atmos VOLUME, CROSSOVER and PHASE appropriately and calibrating your surround sound receiver/processor according to its owner's manual.
13. If you add/remove heavy draperies or large furniture or move the Atmos to a new acoustic environment repeat steps 6-12.

Resetting the EQ

1. Turn off the subwoofer using the AC power switch.
2. Hold down the Start button and turn on the AC power switch.
3. Keep the Start button held down for 10 seconds while the blue EQ LED flashes.
4. When the LED goes out, the EQ is reset to the flat factory setting.

Using Two Subwoofers

1. If you are using two ATMOS subwoofers, make sure that they are connected using the SLAVE output of the first sub to the SLAVE input of the second.
2. Connect the microphone to the first ATMOS subwoofer only.
3. Follow the procedure on the previous page. The EQ room measurement will take into account the sound from both subwoofers, and the EQ adjustment will affect both subwoofers.

System Configurations

The following pages show some typical connections that you might make in your installation. They show how the inputs and outputs of the Sunfire Subwoofer are connected to your preamplifier or receiver.

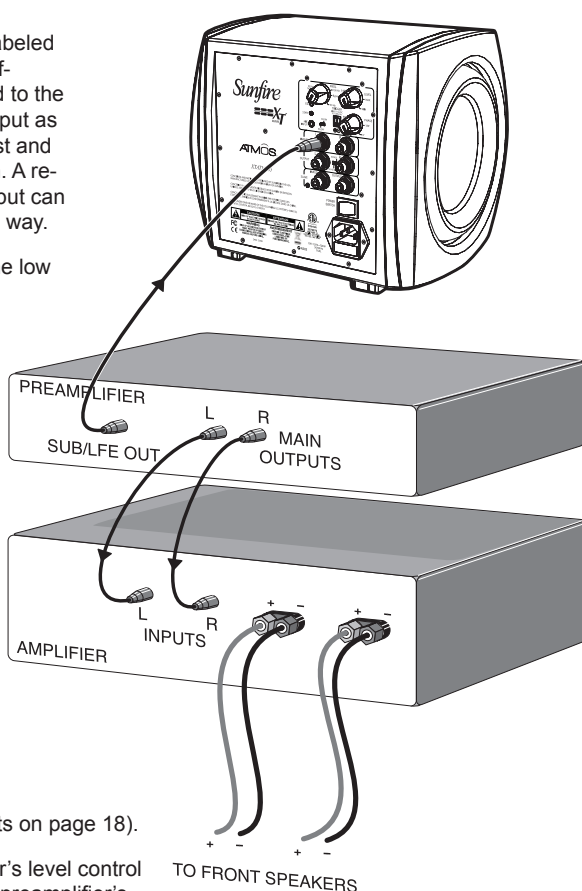
Connections to a preamplifier's subwoofer output

If your preamplifier has a subwoofer output (often labeled LFE for Low Frequency Effects), it can be connected to the subwoofer's left or right input as shown. This is the simplest and recommended connection. A receiver with a sub/LFE output can be connected in the same way.

The subwoofer will play the low frequency range and the other speakers will play the frequency range delivered to them by your amplifier.

If you have a Home Theater preamplifier, it may have an independent subwoofer volume control. Make sure this is correctly adjusted, and that the Sunfire Subwoofer's crossover frequency is set to 100 Hz. This is by no means an iron-clad rule, rather it is a good starting point. (See the crossover frequency control details on page 6 and adjustments on page 18).

You can set the subwoofer's level control to 0 dB, and then use the preamplifier's subwoofer level control for normal and routine adjustments.



Connections to a preamplifier using Y cables

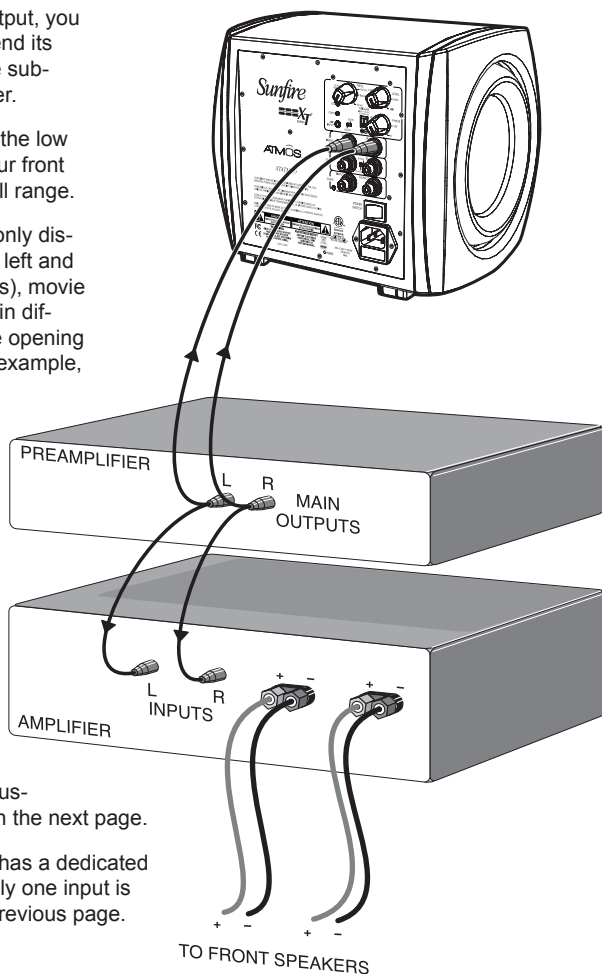
If your preamplifier does not have a dedicated sub/LFE output, you can use "Y" cables to send its main outputs to both the subwoofer and your amplifier.

The subwoofer will play the low frequency range and your front speakers will play the full range.

Although bass is commonly distributed evenly between left and right channels (L+R bass), movie soundtracks often contain differential (L-R) bass. The opening scene in "Top Gun", for example, has loads of L-R bass information. If this is not preserved, the bass in these scenes sounds anemic. Therefore, systems which do not have a dedicated sub/LFE output should use **both** the left and the right inputs as shown, for the greatest bass impact.

An alternative connection method without using Y cables is shown on the next page.

If your preamp/receiver has a dedicated sub/LFE output, then only one input is used as shown on the previous page.



Using the line-level outputs

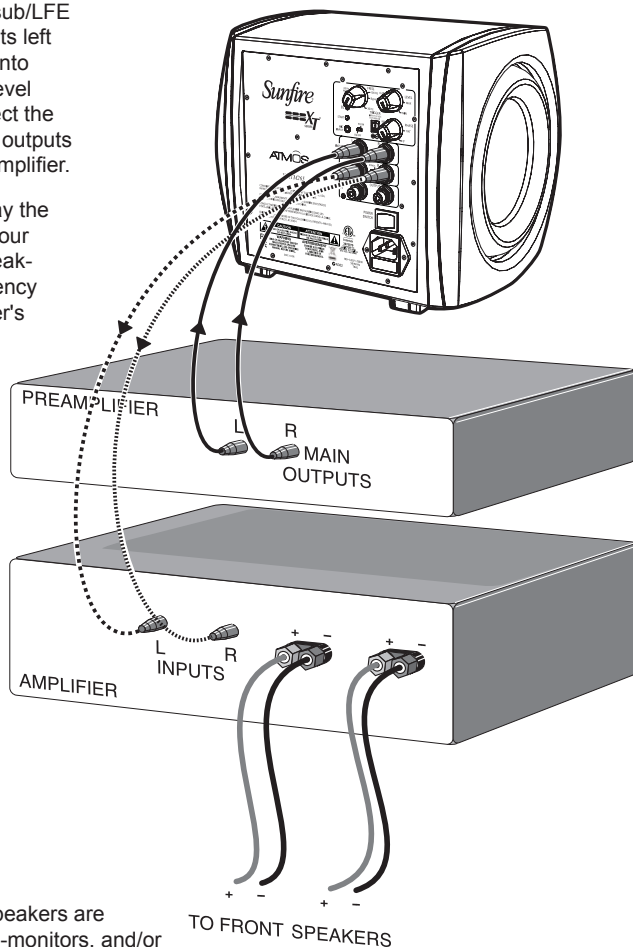
If you are using a preamplifier that does not have a sub/LFE output, you can send its left and right front output into the subwoofer's line-level inputs and then connect the subwoofer's line-level outputs to the inputs of your amplifier.

The subwoofer will play the low frequencies and your amplifier and front speakers will play the frequency range of the subwoofer's outputs.

The subwoofer's output switch lets you select BYPASS or 85 Hz.

In the 85 Hz position, the signals coming out of the subwoofer's outputs are a copy of the signals going into the subwoofer, except that the low bass is filtered out. This uses the subwoofer's passive crossover network, rather than the active network and controls. This is an excellent method if your front speakers are small satellites or mini-monitors, and/or your power amplifier is of limited power, such as a tube amp.

If the switch is set to BYPASS, then the amplifier and speakers receive the full frequency range. This is a good position if your speakers are capable of good low frequency performance.

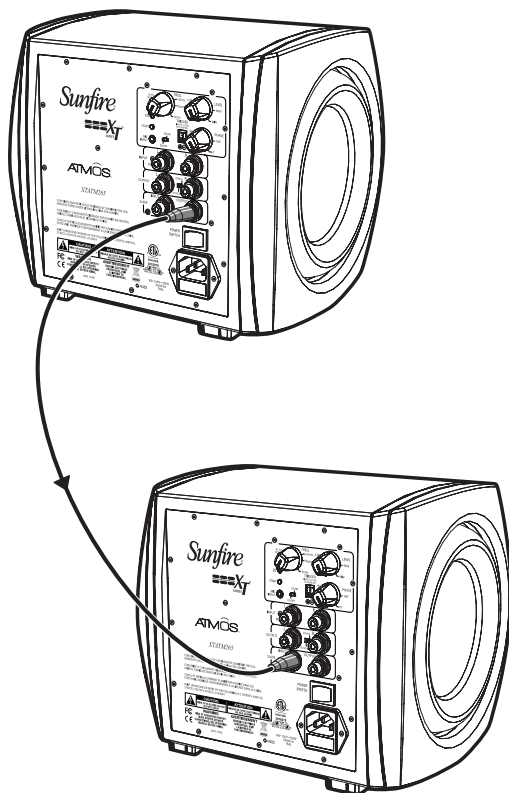


Using the slave input and output

The SLAVE output from one ATMOS subwoofer can be connected to the SLAVE input of a second ATMOS subwoofer. The second subwoofer will then receive the optimum audio signals from the first.

There is no need to adjust the controls of the second subwoofer, as the audio is controlled by the controls and EQ setting of the first. The second subwoofer does not require any connections to its line-level inputs.

Before the EQ procedure, make sure that both ATMOS subwoofers are connected together as shown. The microphone should be connected to the first subwoofer. The automatic EQ procedure will take into account the effect of both subwoofers as they play in the room.



Adjusting the controls

There are two main methods for adjusting the level, crossover frequency and phase of the Sunfire Subwoofer to match a system:

- Bob Carver's preferred method: By listening and making the adjustments to suit your taste.
- Laboratory method: By measuring the output and adjusting for a flat frequency response.

Excellent results can be obtained if you make the adjustments based on simply listening. This is Sunfire's preferred method as it allows the system to be voiced based on what sounds the best, whereas laboratory-flat frequency response can often be clinical and less than exciting.

The following procedure is for those who prefer a more methodical and scientific approach. This excerpt is from "The Audio Critic," issue 24, page 31, written by contributing editor David Rich, and is reprinted here with their kind permission.

You will need a test CD with low-frequency warble tones, and a sound pressure-level meter. The Radio Shack® SPL meter will do fine, as will the *Stereophile*® test CD.

"Step 1. Disconnect the subwoofer and run the main speaker with a tone in its passband (80-100Hz). Measure the level.

Step 2. Disconnect the main speaker and reconnect the subwoofer. Set the subwoofer to its highest crossover frequency. Set the level control of the subwoofer to give the same sound pressure level with the same tone you used in Step 1.

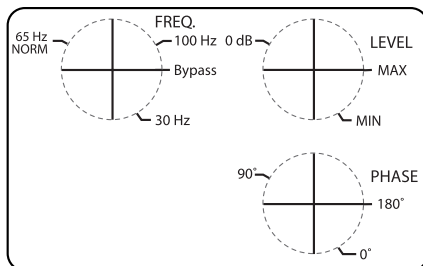
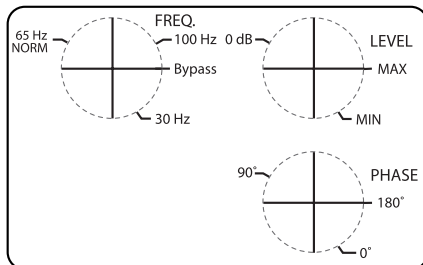
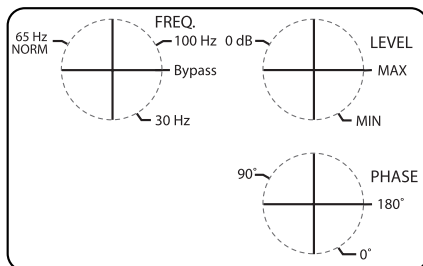
Step 3. With both the subwoofer and the main speaker connected, measure the level of the tones at the available frequencies. Because the crossover is set too high, you will have a peaked response. Adjust the crossover control to get the smoothest response.

Step 4. Use the phase control to make the response even smoother. It has its biggest effect at the crossover frequency. You can iterate between the crossover and the phase controls. Keep your hands off the level control! It was set correctly in step 2.

Step 5. Listen to the subwoofer. Resist all temptations to turn up the level control. Play something with really deep bass to confirm that your subwoofer is working."

Control settings

Use this drawing to record some of your favorite settings.



Specifications

Amplifier Output

1400 watts rms (3.3 Ω impedance)

High Cut Filter

30 Hz - 100 Hz adjustable, with a "Bypass" position.

Frequency Response

30 Hz - 100 Hz

Power Line Voltage

US model

100-120 VAC 50/60 Hz

Fuse Rating 6A slow blow

International model

220-240 VAC 50/60 Hz

Fuse Rating 4A slow blow

Dimensions

Height 8.5 inches (21.6 cm)

Width 8.9 inches (22.6 cm)

Length 10.1 inches (25.7 cm)

Weight

32 lbs (14.5 kg)

Line Power Consumption:

330 watts average, at maximum continuous output. 0.5 watts at idle.

1400 watts peak, time limited basis

Output Levels:

Greater than 106 dB peak SPL (includes room gain) from 35 Hz to 80 Hz. Measurement is one meter, anechoic.

A typical Sunfire subwoofer can be expected to beat its specified minimum peak SPL by several decibels.

Total Harmonic Distortion

Typically less than 1/10 of the fundamental between 18 to 80 Hz.

Input Sensitivity (full output):

150 mVrms for full output with volume control at maximum, 600 mVrms with volume control at middle(0dB), no output with volume control at minimum.

Input Impedance:

30 k Ω Line-Level Inputs

Driver: 6.5 inch

Extra large magnet and long throw mechanical design yield very high back-emf. The result is extraordinarily high operating efficiency – that is, more acoustic output for each watt of input.

Internal System Gain:

50 dB from input jack to speaker with volume control at 0 dB, 62 dB with control fully clockwise.

12 VDC Trigger Input

Input voltage range: 5 -18 VDC

Impedance: approx 600 Ω

(20 mA @ 12 V)

Removable terminal block.

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Troubleshooting

The Sunfire Subwoofer is expertly designed and built to provide years of trouble-free performance. Most problems that occur can usually be solved by checking your setup or making sure that the components connected to the amplifier are on and fully operational.

The following information will help you deal with common problems you may experience during normal use. If a problem still persists, please contact your Sunfire Dealer for assistance.

Not enough bass

- Check that your preamplifier's outputs are connected to the subwoofer's line-level inputs and not to the line-level outputs. If they are connected to the outputs by mistake, the bass will be weak but the subwoofer will still function.
- If your preamplifier has a single subwoofer/LFE output jack, try using a Y cable to connect it to the left and right inputs.
- Make certain the subwoofer is in a corner location, firing at 45 degrees into the walls formed by the corner. This is not absolutely essential, but will maximize the bass output and give the smoothest possible response. If you place the unit so one of the drivers is firing into one of the walls, leave three inches of clearance between the driver and the wall.
- Home Theater preamplifiers usually have a way of adjusting the level of the subwoofer/LFE output, either using a remote control or with a small volume knob on the back panel. Make sure that this is adjusted correctly.
- Check that your preamplifier or receiver's sub output is turned on. Some systems only have a sub output signal when the front speakers are set to "small."
- If the preamplifier's subwoofer/LFE output has an adjustable crossover frequency, make sure that the Sunfire subwoofer's own crossover point is set higher or part of the bass range will be missing.

Not enough bass in a 5.1 system

- 5.1 Home Theater preamplifiers usually have a bass management system which allows the bass to be redirected among your speakers. For example, the bass normally present in the front speakers can be redirected to play in the subwoofer, or the subwoofer can play the bass from all the speakers, in addition to its dedicated LFE (low frequency effects) channel. Make sure that all of the bass management options are correctly set. The preamplifier may have a way of turning the subwoofer output off entirely, so check that it is always on.
- Check that the preamplifier calibration procedure is correctly adjusted. Usually, the preamp will send a test tone through all the speakers in your system, allowing you to adjust (trim) the volume of each channel until they are all playing at the same level.
- If the bass is weak only when playing 5.1 surround sources, check that your preamplifier is correctly set to decode the 5.1 surround modes, such as Dolby Digital or DTS.
- DVD discs have a menu which allows you to select which soundtrack to play. Check that the correct 5.1 surround audio soundtrack is selected, otherwise it may just play stereo into your preamp and you won't get the true LFE signal into the subwoofer.

Hum

Adding any component such as a subwoofer to an existing system will often give rise to a hum which wasn't there before. Your first thought may be that the subwoofer has a problem, but this is more than likely caused by a "ground-loop" in your system.

Follow these steps to isolate the main cause of the ground-loop hum (there may even be more than one cause).

- Try to have all of your equipment on the same electrical outlet or circuit, see page 10 for more details.
- If your subwoofer is a fair distance away from your other equipment, you may use a 15 amp extension cord as long as it has a ground connection.



NOTE: Never remove the ground pin from any power cords. This is very dangerous.

- Turn off all components in your system, including the subwoofer, amplifiers and the preamplifier, before disconnecting or connecting cables.
- First remove every connection from the subwoofer to the rest of your system. Plug the subwoofer power cord back in and check for the hum. If it is still there, try plugging it into a different outlet in case it is picking up interference on the AC line.
- If you have followed the above guidelines for the power connections and a hum is still present, then there is one very common problem to consider: a "ground-loop" introduced by connecting a cable TV line to a VCR or TV, which is then connected to the preamp. This can be addressed as follows:
- Disconnect all cables which come from outside the room, such as cable TV, satellite TV, or roof top antennas. Make sure that they are disconnected where they first enter the room, so they are making no connection to your

preamplifier, TV, or any other component. If the hum is caused by the cable TV line, then you will need a "ground-loop isolator." This is an inexpensive device fitted in line with the coaxial cable feed.

- If the hum persists, disconnect all the source components one at a time from the back of the preamplifier until you identify the problem.
- Ground-loop isolators are available for audio lines and video. Once you have identified which components are causing a problem, you can fit the isolators between the component and the preamplifier.

No Auto Turn-off

- The subwoofer should go into standby mode after approximately fifteen minutes with no audio signal present. If not, check there is no background hum. The subwoofer may sense hum as a small signal and stay on. See the above hints to eliminate the hum.

No Auto Turn-on

The subwoofer should turn on (come out of standby mode) when an audio signal is applied, or 12 VDC is applied to the Trigger inputs, or if the Start button is pressed. If it does not then, check the following:

- Check that the subwoofer power switch is on.
- The subwoofer's volume control may be turned down, or no signal is received from your preamplifier.
- Check the input connections.
- Check the mode switch or menu on surround systems to be certain that a bass signal is being sent to the subwoofer.
- Use the 12V Trigger for the most reliable on/off operation.

Sunfire Limited Warranty

Sunfire, a division of The AVC Group, LLC, is proud of its products which have been built with care using advanced technology and premium component parts. Your unit has been crafted to perform properly for many years. Sunfire offers the following Warranty to you, the owner of a new Sunfire product:

Sunfire warrants the ATMOS subwoofer to be free from defects in materials and workmanship for the period of ONE year from the date of purchase. If within the applicable warranty period above purchaser discovers such item was not as warranted above and promptly notifies Sunfire in writing, Sunfire shall repair or replace the items at the company's option.

This warranty shall not apply:

- (a) to equipment not manufactured by Sunfire.
- (b) to equipment which shall have been installed by other than an authorized Sunfire installer.
- (c) to installed equipment which is not installed to Sunfire's specifications.
- (d) to equipment which shall have been repaired or altered by others than Sunfire.
- (e) to equipment which shall have been subjected to negligence, accident, or damage by circumstances beyond Sunfire's control, including, but not limited to, lightning, flood, electrical surge, tornado, earthquake, or any other catastrophic events beyond Sunfire's control, or to improper operation, maintenance or storage, or to other than normal use of service.

With respect to equipment sold by, but not manufactured by Sunfire, the warranty obligations of Sunfire shall in all respects conform and be limited to the warranty actually extended to Sunfire by its supplier. The foregoing warranties do not cover reimbursement for labor, transportation, removal, installation, or other expenses which may be incurred in connection with repair or replacement.

Except as may be expressly provided and authorized in writing by Sunfire, Sunfire shall not be subject to any other obligations or liabilities whatsoever with respect to equipment manufactured by Sunfire or services rendered by Sunfire.

THE FOREGOING WARRANTIES ARE EXCLUSIVE AND IN LIEU OF ALL OTHER EXPRESSED AND IMPLIED WARRANTIES EXCEPT WARRANTIES OF TITLE, INCLUDING BUT NOT LIMITED TO IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

ATTENTION: TO OUR VALUED CONSUMERS

To insure that consumers obtain quality pre-sale and after-sale support and service, Sunfire products are sold exclusively through authorized dealers. Sunfire products are not sold online. The warranties on Sunfire products are NOT VALID if the products have been purchased from an unauthorized dealer or an online E-tailer.

Service Assistance

We suggest that you read the Limited Warranty completely to fully understand your Warranty/Service coverage.

If your Sunfire product ever requires service, contact your nearest Sunfire authorized dealer first. If, for any reason, you are unable to receive service from your dealer you may write to us:.

Sunfire,

The AVC Group / Return Center,
2040 Creative Drive, Ste. 100
Lexington,
KY 40505-4304

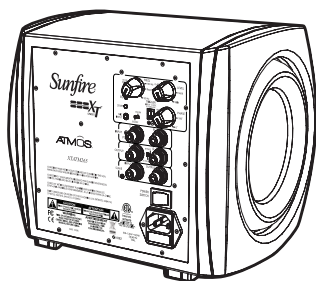
You will be directed to an authorized Sunfire Service Station or receive instructions to ship the unit to the factory. Please save the original shipping carton and packing materials in case shipping is required. Please do not ship Parcel Post.

NOTE: Before sending in your unit for repair, you must contact Sunfire for return authorization.

Include a complete description of the problem, indicating how you have it connected, the associated equipment in your system and a copy of your purchase receipt. Initial shipping costs are not paid by Sunfire; return ground shipping costs will be prepaid if repairs were covered by the scope of this Warranty.

Sunfire[®]

XT[™]
SERIES



ATMOS[™]

Subwoofer

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