

SuperSub

Powered Subwoofer System

OWNER'S MANUAL

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Thank you for your purchase of the NHT SuperSub Powered Subwoofer System. Please take a few minutes to read through this Owner's Manual prior to installing your new subwoofer. The information provided will help you to obtain maximum performance from your audio system. If you have questions or need assistance at any time during the installation or operation of your new speaker, please call your NHT dealer or our Toll Free Customer Hotline at:

1-800-225-9847

Please retain the SuperSub's packaging to protect the speaker in the event that you move or transport it.

SuperSub Specifications

- **System Type:** Vented subwoofer with built-in amplifier
- **Driver Complement:** (2) 6.5" long-throw polypropylene woofers
- **Power Output:** 150 watts mono into 4 ohms
- **Frequency Response:** 33Hz - 180KHz, +/- 3dB
- **Distortion:** Less than 0.03% at full power
- **Crossover:** Low-pass continuously variable between 40-180Hz, 12dB/octave
Fixed high-pass at 100Hz, 12dB/octave (line-level)
Fixed high-pass at 100Hz (8ohms), 6dB/octave (high-level)
- **Input Connectors:** Gold-plated RCA jacks for line level input
5-way binding posts for speaker level input
- **Output Connectors:** Gold-plated RCA jacks for line level high pass output
5-way binding posts for speaker level high pass output
- **Phase Control:** 2 position selectable at 0 (normal) and 180 (rev) degrees
- **Standby Mode:** (defeatable) Automatic when no signal is present for >20 minutes
- **Weight:** Subwoofer - 38 lbs.
- **Dimensions:** 14.3"H x 11.3"W x 16"D
- **Finish:** Subwoofer - High gloss black
Amplifier - Matte black

Specifications are subject to change without notice, in accordance with our policy of continuously upgrading the performance of our products.

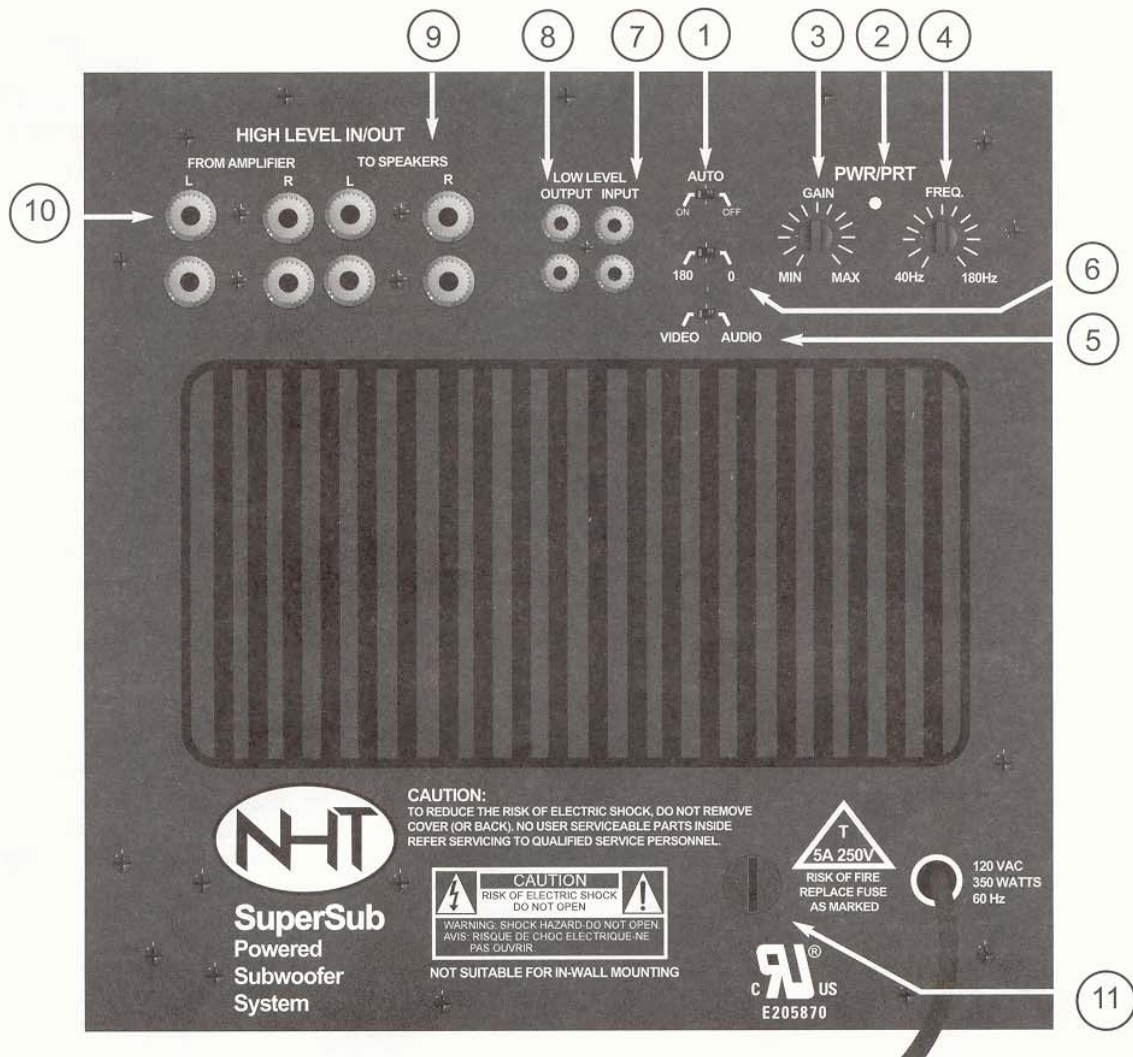
■ Design

NHT products are designed to deliver refined, musical sound from attractive and affordable packages. Our efforts are guided by the study of human hearing and are optimized for real-world use. Every NHT speaker undergoes rigorous testing and quality control at the factory to ensure you years of listening pleasure.

The NHT SuperSub Powered Subwoofer System is a compact, versatile and powerful subwoofer designed to provide low frequency reinforcement for high-performance audio and home theater systems. The system is powered by a built-in 150 watt amplifier.

The SuperSub features line-level and speaker-level inputs and outputs for connection with all types of receivers or separate audio components. To accommodate the differing listening preferences common for music and home theater, the SuperSub offers an Audio/Video Contour switch that maintains flat response for music listening and adds extra midbass output for video playback.

SuperSub (Back of Subwoofer)



- (1) **Auto/On/Off** - Activates power for subwoofer (ON),
or puts the subwoofer in automatic standby mode (AUTO).
- (2) **Power Indicator** - The green light is lit when the system is on.
The light is off when the subwoofer is in stand-by mode.
The red light is lit when the subwoofer is in protection.
- (3) **Gain Control** - Adjusts the loudness of the subwoofer independently of the main speakers.
- (4) **Low-Pass Filter** - Continuously variable low-pass crossover control.
- (5) **Audio/Video Contour Switch** - Selects response mode of subwoofer.
- (6) **Subwoofer Phase Selector** - 2-position selectable phase control for subwoofer.
- (7) **Line In** - Low level RCA input jacks.
- (8) **Line Out** - Low level RCA output jacks to receiver / main amplifier.
- (9) **Output to Satellites** - 5-way binding posts for speaker-level connection to main speakers.
- (10) **High Level Input** - 5-way binding posts for speaker-level input from receiver/amplifier.
- (11) **Fuse Holder**

■ Placement

Experimentation is the key to finding the best location for the SuperSub in your listening environment. When possible, place the subwoofer in the same horizontal plane and along the same wall as the main speakers. Low frequencies produce long wavelengths and thus interact with room boundaries significantly. Placing the subwoofer nearer to a room boundary (walls, corners) will tend to increase its bass output, but may result in "boomy" or "muddy" sound. Conversely, placing the subwoofer farther away from room boundaries will tend to decrease its bass output, but may result in improved articulation and clarity.

Note: To prevent the SuperSub subwoofer amplifier from overheating, always be sure to provide adequate space for proper ventilation. Do not place the subwoofer directly against the wall or any other surface.

Four Connection Methods

Caution: Prior to connecting the SuperSub to your audio system, it is important that all AC power connections to associated components (receivers, amplifiers, preamplifiers, processors, etc.) are either unplugged or turned off. Do not plug in or connect the SuperSub subwoofer to AC power until all connections have been made.

A subwoofer's performance in the context of your audio/video system is highly dependent upon its interaction with your main (largest) speakers. Since a subwoofer is designed only to provide low frequency response, it is important to connect it in a manner that ensures seamless integration with your speakers. There are four possible connection methods outlined in this manual. The best method for you depends on the size of your front L & R speakers and the connection options available on your receiver or preamplifier (see next section). To help you determine the best way to connect the subwoofer to your system, consider the following suggestions:

1. If you have large (full-range) main speakers...

- 1st Choice: Method #1 (line-level connection with high pass filter loop)
- 2nd Choice: Method #2 (line-level connection with no high pass filter loop)
- 3rd Choice: Method #4 (speaker-level connection with no high pass filter loop)

If your main speakers have generous bass response and you are adding a subwoofer, the resulting sound could be "muddy". You have the option of sending the main speakers a high-pass filtered signal (Method #1). With the low bass information removed from the signal before it reaches the speakers, all low frequencies are reproduced exclusively by the subwoofer. With this configuration it is usually easier to achieve smooth low frequency response, as the subwoofer reproduces a different frequency range than the speakers.

If you want to run the main speakers full-range, or if you have a receiver with no "Pre-Out" and "Main-In" (see next section), you can use the subwoofer only to provide low bass reinforcement (Connection Methods #2 and #4). The downside is that sending the speakers a full-range signal can make it difficult to integrate them with the subwoofer, as their combined low frequency output can cause irregularities (peaks and dips) in the system's low frequency response. In this case, the subwoofer's low pass setting should be quite low and it should be used only to fill in the lowest octave.

Method #3 is not recommended with large main speakers.

2. If you have small (bookshelf) main speakers...

- 1st Choice: Method #1 (line-level connection with high-pass filter loop)
- 2nd Choice: Method #3 (speaker-level connection with fixed high-pass filter)

If your main speakers are smaller bookshelf-type models with limited bass response, it is advisable to send them a high-pass filtered signal (Method #1 or #3). All low bass information is removed from the signal before it reaches the speakers, and all low frequencies are reproduced exclusively by the subwoofer. Because the L & R speakers receive a signal containing only information that falls within their specified frequency response range, they exhibit reduced distortion, greater dynamic range and power handling.

Alternately, you can run small main speakers full range and use the subwoofer to reproduce all the low bass frequencies below their response capabilities (Methods #2 and 4). While simple, this configuration does not remove the burden of low frequencies from the L & R speakers and may limit their output at higher volumes.

■ What connection options are available in my system?

1. If you have a separate preamplifier and main amplifier, all four of the connection methods are available to you. Method #1 is recommended.
2. If you have an integrated amplifier or receiver (hereafter called "receiver") with "Pre-Out" and "Main-In" connections, all four of the connection methods are available to you. Method #1 is recommended.
3. If you have a receiver with "Pre-Out", "Line Out" or "Subwoofer (LFE) Out" connections but no "Main-In" connections, you may use Methods #2, #3, or #4.
4. If you have a receiver with no "Pre-Out", "Line-Out" or "Subwoofer (LFE) Out" connections, you may use Methods #3 or #4.

Detailed descriptions and diagrams of all four connection methods are found on pages 8-11.

■ Explanation of Features

The **GAIN CONTROL** allows you to adjust the volume of the subwoofer relative to the rest of the system. Many listeners make the mistake of setting subwoofers too loud, which can cause excess bloat and loss of detail and musicality. A properly calibrated subwoofer blends in with the speakers and does not call attention to itself. Observe the following guidelines for volume setting:

Turn down the volume control on the SuperSub to its lowest position (counter-clockwise). Turn on your audio system, including the SuperSub. Play some music you are familiar with and set your receiver/preamplifier volume to a comfortable listening level. Slowly increase the volume on the SuperSub, listening for proper frequency balance. When the subwoofer output is balanced with the rest of the system, you will hear improved bass extension, but you should not be aware that it is coming from the subwoofer!

From this point on, the volume control on your receiver/preamplifier will control the overall volume of your system, including the subwoofer.

The **AUDIO/VIDEO** switch allows you to optimize the SuperSub's performance for music listening or movie viewing. When listening to music, many listeners prefer a flat bass response that does not emphasize any individual frequencies. Flat bass response more realistically reproduces the sound of live instruments. However, when watching movies in a home theater system, many listeners prefer a punchier, "boomier" sound that emphasizes sounds like explosions and gunfire. Subwoofers with more output in the mid-bass regions tend to deliver this punch, at the expense of a flat response.

The **AUDIO/VIDEO** switch allows you the best of both worlds. In the "Audio" mode, the SuperSub's response is flat for accurate musical reproduction. In the "Video" mode, the output is boosted between 40Hz and the low pass frequency, and rolls off response below 35Hz to provide greater power handling at elevated listening levels.

If your main speakers are large with generous bass response and you are connecting them full-range, you will most likely be using the SuperSub only for very low bass reinforcement (usually below about 40Hz). In this case, the "Video" mode will not yield an increase in bass output at these frequencies, but will actually decrease its output, so the "Audio" mode may work better.

The continuously adjustable **LOW PASS FILTER** determines the range of frequencies that the subwoofer will reproduce. For example, a low pass setting of 100Hz means that the subwoofer reproduces only frequencies below 100Hz. The Low Pass Filter is variable between 40Hz (low bass) to 180Hz (upper bass), to accommodate a variety of speaker configurations.

If you are using Connection Method #1, your main speakers are reproducing only the frequency range >100Hz. As a starting point, set the Low Pass Filter at about 100Hz. See the "Fine Tuning" section for further adjustment guidelines.

If you are using Connection Method #2 or #4, your main speakers are reproducing the entire frequency range (including bass) and it is advantageous for the subwoofer to reproduce only those frequencies below the rated response of the main speakers. For example, if your main speakers have a rated low frequency response of 60Hz, begin with the Low-Pass Filter set at 60Hz. See the "Fine Tuning" section for further adjustment guidelines.

If you are using Connection Method #3, your main speakers are reproducing only frequencies above 100Hz, due to the fixed 100Hz high pass filter at the speaker-level outputs. As a starting point, set the Low Pass Filter at 100Hz. See the "Fine-Tuning" section for further adjustment guidelines.

The **SUBWOOFER PHASE** switch sets the phase of the subwoofer at the 0° position (normal phase) and the 180° position (reverse phase). The ability to adjust subwoofer phase is necessary in order to achieve smooth bass response in your system. The combined low frequency sound waves from the subwoofer and the main speakers can sometimes cause peaks and dips in the frequency response at the listening position. In these cases, adjusting the subwoofer phase may improve the blending and overall performance of the system.

The optimal phase setting will differ according to room conditions and placement, and the main speakers used. Experiment with phase settings by listening to a familiar CD from the listening seat, alternating phase settings on the same track. Do not attempt to evaluate the best sound while standing above the subwoofer or amplifier, as the sound at the listening position will be significantly different. The correct setting is the one in which the bass is the loudest at the listening position.

The SuperSub has a STANDBY MODE feature that is automatic and requires no user adjustment. When no signal is present for 20 minutes, the SuperSub goes into Standby Mode, and it will use a minimum of power to remain "asleep". When the system is used again, it immediately turns on as soon as a signal is received. There is no need to turn the SuperSub on and off every time it is used.

SuperSub Connection Method #1

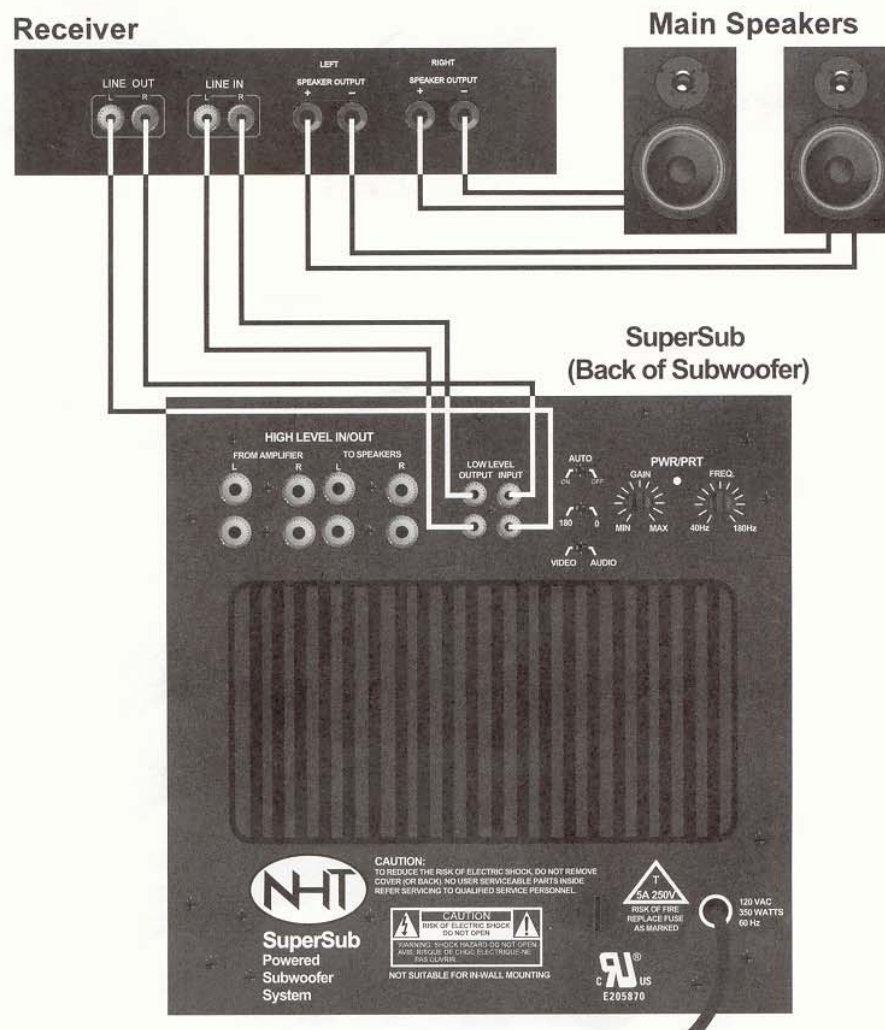
Connect the SuperSub between a receiver's "Pre-Out" and "Main-In", with high-pass filter loop.

Use if:

- You wish to send your L & R speakers a high-pass filtered signal
- You have a receiver with "Pre-Out" and "Main-In" jacks
- You have a separate preamplifier and main amplifier

This method allows your main speakers to receive a high-pass filtered signal (not full range), and the subwoofer to be utilized for low-to-mid bass reproduction. The full-range line-level signal coming from the receiver's "Pre-Out" passes through the SuperSub's fixed high-pass filter, which removes the low frequencies from the signal before sending it back to the receiver's "Main-In". This configuration effectively increases the speakers' dynamic range and power output by sparing them the difficult task of reproducing low frequency information.

1. Your L & R speakers are connected directly from your amplifier/receiver.
- 2a. If you have a receiver with "Pre-Out" and "Main-In" jacks, patch in the SuperSub between these. With an RCA interconnect cable, connect the receiver's "Pre-Out" to the SuperSub's **LOW LEVEL INPUT**. Connect a second RCA interconnect cable from the SuperSub's **LOW LEVEL OUTPUT** back to the receiver's "Main-In".
- 2b. If you have a separate preamplifier and main amplifier, connect the preamplifier output to the SuperSub's **LOW LEVEL INPUT**. Run a second interconnect cable from the SuperSub's **LOW LEVEL OUTPUT** to the main amplifier's line-level inputs. With this configuration, your preamplifier is not connected directly to your amplifier; instead the signal passes through the SuperSub before it reaches the amplifier.



SuperSub Connection Method #2

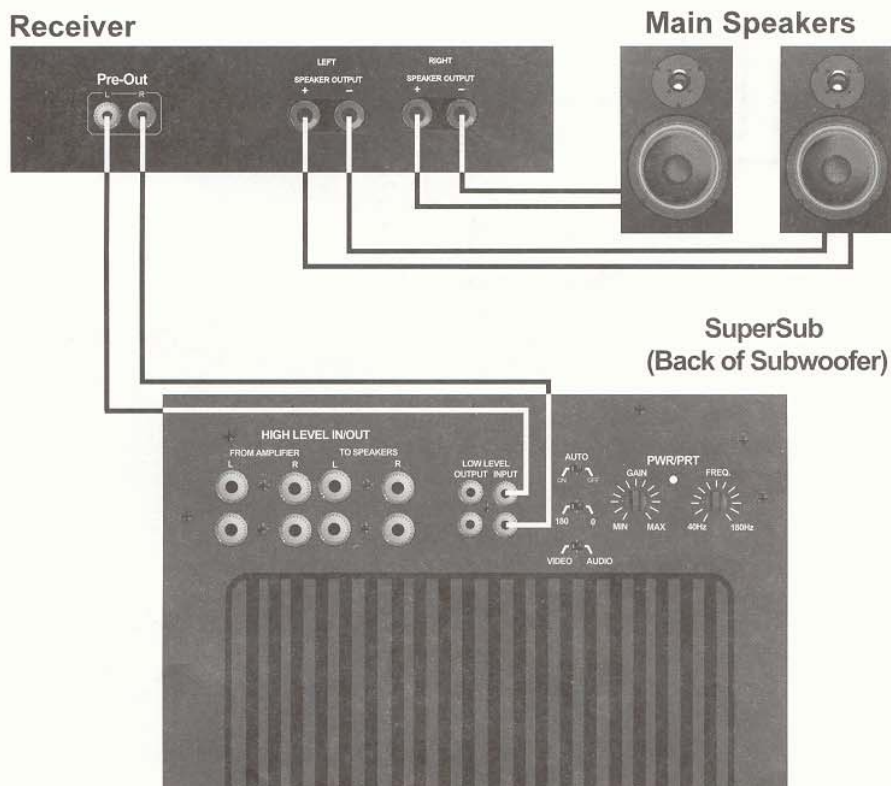
Connect the SuperSub from a receiver / preamplifier "Subwoofer (LFE) Out", "Pre-Out" or "Line-Out", with no high-pass filtering

Use if:

- You wish to run your L & R speakers full-range
- You have a receiver with "Subwoofer (LFE) Out" jacks
- You have a receiver with "Pre-Out" jacks but no "Main-In" jacks

This method allows your main speakers to receive the full range audio signal (no high-pass filtering), and the subwoofer to be utilized for low bass extension only.

1. Your L & R speakers are connected directly from your amplifier / receiver.
- 2a. If you have a receiver with "Pre-Out" (or "Line Out") jacks but no "Main-In", you may connect the SuperSub from the "Pre-Out" without having to route the signal back into the receiver. Using an RCA interconnect cable, connect the "Pre-Out" to the SuperSub's **LOW LEVEL INPUT**.
- 2b. If you have a separate preamplifier and amplifier, and the preamplifier has two pairs of "Line Out" jacks, connect one pair directly to your main amplifier, and the second pair to the SuperSub **LOW LEVEL INPUT**. If your preamplifier has only one pair of "Line Out" jacks, you may utilize two "Y"-splitters to send the line-level signal into both the main amplifier and the SuperSub.
3. Many integrated amplifiers and receivers feature a "Subwoofer Out" or "LFE Out" jack. If your receiver's "Subwoofer Out" consists of a single RCA jack, you may plug it into either the left or right **LOW LEVEL** jack on the SuperSub. Alternately, you may utilize a "Y"-splitter to split the line-level signal into both jacks.
- 3a. Check your receiver's owner's manual to see if the "Subwoofer Out" signal is full-range or low-pass filtered. On many Dolby Digital 5.1-channel receivers, the low-pass is built-in at a certain frequency (80Hz, for example), which means the signal coming out this jack has already passed through an internal filter in the receiver. If possible, bypass the low-pass filter in the receiver. Otherwise, be sure to set the SuperSub low-pass filter at its highest point (180Hz) to avoid having two low-pass filters affect the signal.



SuperSub Connection Method #3

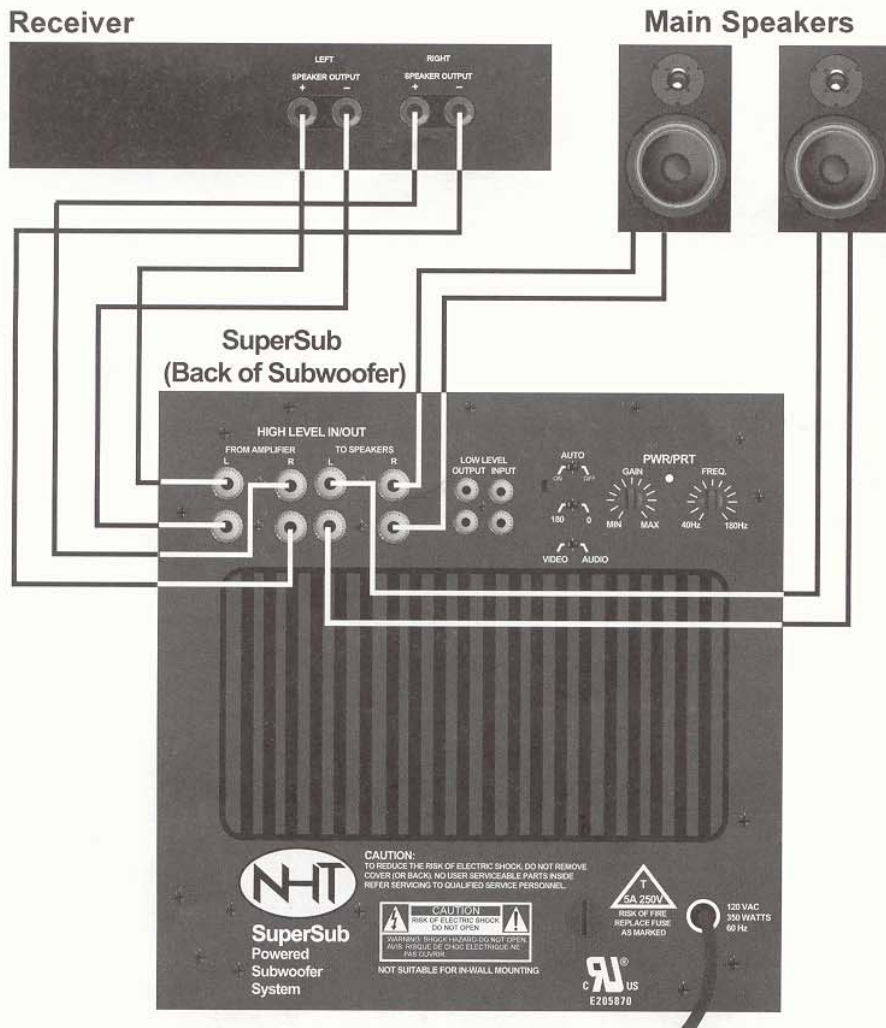
Connect the SuperSub at speaker level from the receiver's speaker outputs, with fixed high-pass filter.

Use if:

- You wish to send your L & R speakers a high-pass filtered signal
- Your receiver has no "Pre-Out", "Line Out" or "Subwoofer Out" jacks

This method of connection is recommended if you have a receiver with no line level preamplifier output of any sort and you want your L & R speakers to receive a high-pass filtered signal. The SuperSub may be connected to the system at speaker level between the receiver and the speakers. The SuperSub's speaker-level output has a fixed 100Hz high-pass filter that removes frequencies below 100Hz before sending the signal on to the speakers. The speaker-level high-pass filter is not adjustable. This method is not recommended if the L & R speakers are large, full range models.

1. Connect a pair of speaker cables from your receiver's front L & R speaker output terminals to the SuperSub's **HIGH LEVEL IN-FROM AMPLIFIER** binding posts.
2. Connect a second pair of speaker cables from the SuperSub's **HIGH LEVEL OUT-TO SPEAKERS** binding posts to the L & R speakers.



SuperSub Connection Method #4

Connect the SuperSub at speaker level from the receiver's speaker outputs, with no high-pass filter.

Use if:

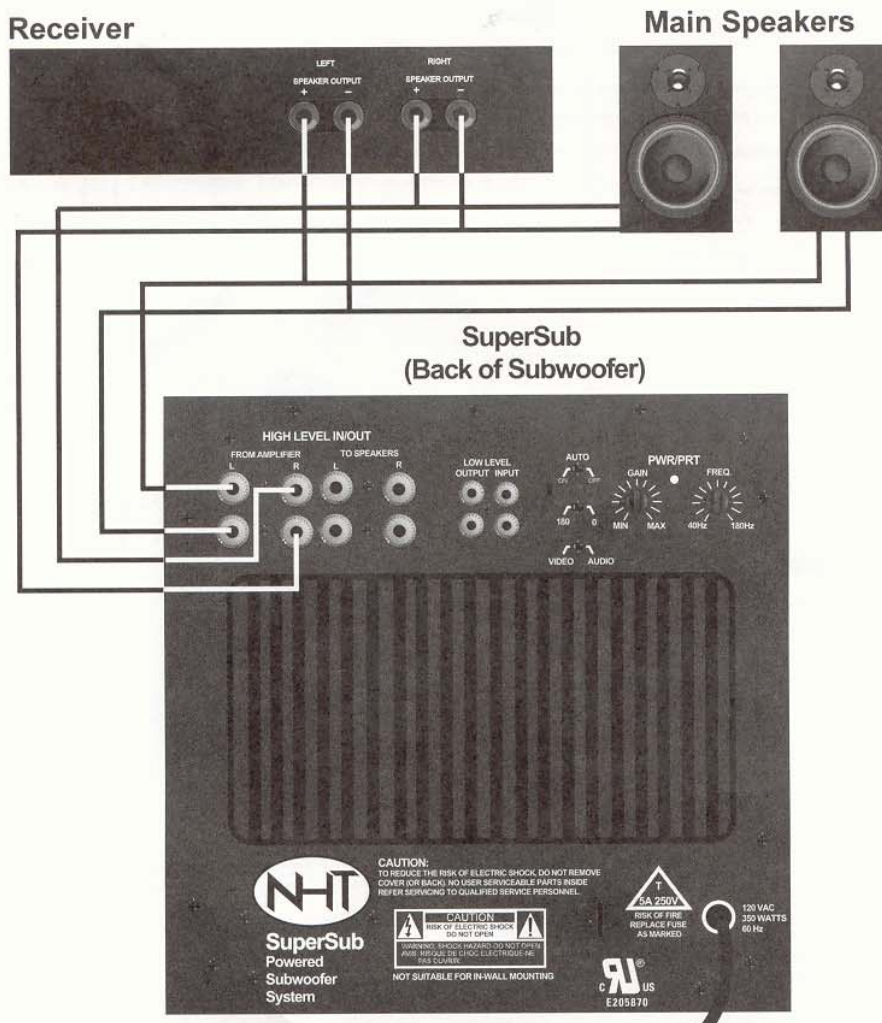
You wish to send your L & R speakers a full range signal

Your receiver has no "Pre-Out", "Line Out" or "Subwoofer Out" jacks

Your receiver has two sets of speaker output terminals: "Speaker A" and "Speaker B"

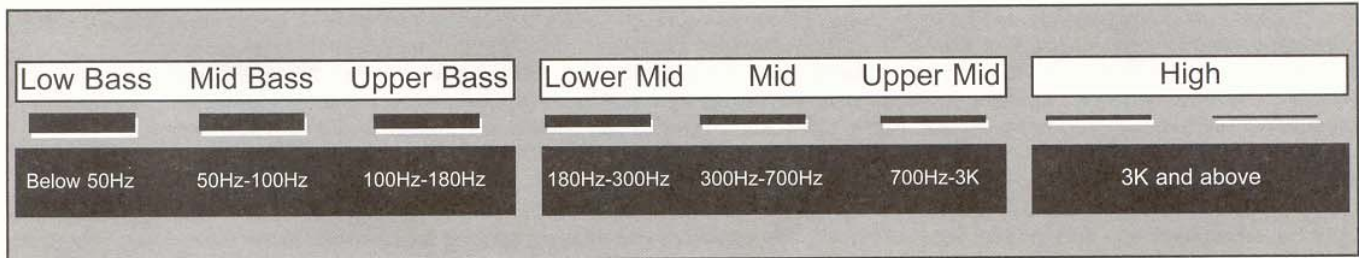
This method of connection is recommended if you have a receiver with no line level preamplifier output of any sort and you want to run your speakers full range (no high-pass filtering). If your receiver features two sets of speaker output terminals ("Speaker A" and "Speaker B") you may use "Speaker B" to connect the SuperSub.

1. Connect a pair of speaker cables from your receiver's "Speaker A" outputs directly to your main speakers.
2. Connect a second pair of speaker cables from your receiver's "Speaker B" outputs to the SuperSub's **FROM AMPLIFIER** binding posts.
3. If your receiver is not equipped with "Speaker A" and "Speaker B" output terminals, you may connect both the L & R speakers and the SuperSub in parallel from the same terminal. Connect one pair of speaker cables from the receiver's speaker output terminal to the L & R speakers. Connect a second pair of speaker cables from the receiver's same output terminal to the **FROM AMPLIFIER** binding posts. The SuperSub's binding post input does not present a significant load to the receiver and will not compromise its output to the L & R speakers.

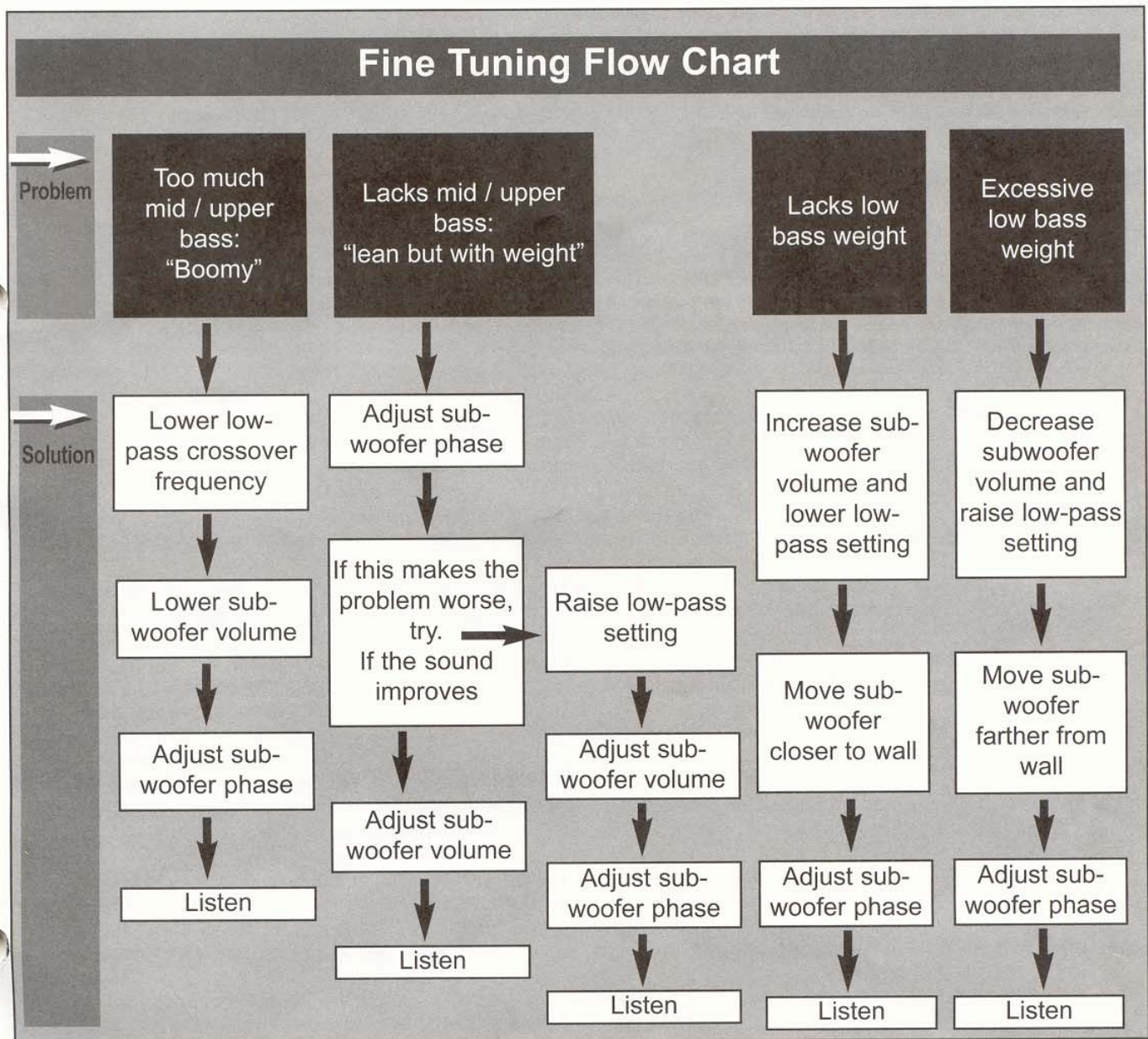


■ Fine Tuning the Subwoofer

The frequency chart below lists some terms commonly used to describe different bands of the frequency spectrum. The key to good subwoofer / speaker integration is repeated listening, followed by small re-adjustments of the subwoofer controls. The most important bass tuning functions you will control are the **LOW-PASS FILTER**, followed by the **VOLUME CONTROL** settings and then **PHASE SELECTOR**.



Listen to your system and make adjustments to achieve a seamless blend between your main speakers and the SuperSub. Four common problems are outlined below. Follow the flow chart to correct these. See the glossary for any terms you are unfamiliar with.



■ Operation

When the SuperSub is turned on, there will be an audible "pop". Do not be alarmed! This is inherent to the amplifier design and will not damage the subwoofer or your audio system. We do recommend, however, that the SuperSub power be left "on" at all times, allowing its built-in Standby Mode feature to disable the subwoofer when not in use.

The SuperSub was designed to handle a wide range of listening levels, but every component has limits. It is important to use common sense and listen for signs of possible distress from the subwoofer. Noticeable distortion or harsh breakup is an indication that the subwoofer is running beyond its capacity, and the volume should be decreased. If you feel heat emanating from the front of the woofers, reduce the level immediately. Speaker damage most often occurs from sustained high volume levels, not from transient sounds or brief musical peaks. Excessive boosting of bass, treble, or equalizer controls can worsen the problem and is not recommended.

■ Maintenance

Your SuperSub has been designed for years of trouble-free operation and requires minimal maintenance under normal use. The cabinet may be cleaned a damp cloth or mild, non-abrasive glass cleaner. Do not expose the SuperSub to direct sunlight, high temperatures or moisture. In the event that service is required, do not open the SuperSub. Refer the unit to a qualified service technician.

■ Changing the Fuse

Always replace the fuse with one of the exact same specifications. For systems operating at 115 volts, use only a 5 x 20 mm, T5A, 250-volt slow-blow fuse. For systems operating at 230 volts, use only a 5 x 20 mm, T3.15A, 250-volt slow-blow fuse.

The SuperSub amplifier has a user-serviceable fuse. To replace or change the fuse, **begin by turning the power to the OFF position and unplugging the power cord from the wall.** Next, remove the fuse holder cover next to the power cord with a flat blade screwdriver. Remove the fuse from the holder and replace it with the appropriate type. For 110 to 120 VAC, use a 5mm x 20mm T5A 250V slow-blow fuse. For 220 to 240 VAC, use a 5mm x 20mm T3.15A 250V slow-blow fuse. Reinstall the fuse holder.

■ Troubleshooting

If the SuperSub fails to operate when the Power Switch is turned on, check the power cord and all the input and output connections thoroughly. If the status LED on the amplifier plate is red, the unit is in "protect" mode. This could be caused by incorrect wiring, short circuits, or excessive volume. Turn off the Power Switch on the subwoofer for two or more seconds to reset. Double check all speaker cables to be sure that no small metal strands are present. If the LED indicator fails to illuminate, it is possible that mis-wiring or an electrical power surge has caused the protection fuse to blow. It must be replaced with one of correct type and value. Contact your local Authorized NHT Dealer or NHT immediately for assistance.