



Final S95 Subwoofer User Manual



release 1.0 –US-

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FINAL SOUND SOLUTIONS S95 SUBWOOFER MANUAL vs. 1.0 -US- ©FSS 2007RJ 1


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1. Safety Instructions

	<p><u>WARNING:</u></p> <p>Do not exposure to rain, moisture or high humidity.</p> <p>Do not open - High voltage inside</p> <p>Do not cover the speaker. (e.g. with curtains)</p> <p>Use only a mains-adaptor approved for the country of use.</p> <p>Refer servicing to a qualified Final Sound dealer.</p>
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Important Safety Instructions:

- 1) Read these instructions.
- 2) Keep these instructions.
- 3) Heed all warnings.
- 4) Follow all instructions.
- 5) Do not use this apparatus near water.
- 6) Clean only with dry cloth.
- 7) Do not block any ventilations openings. Install in accordance with the manufacturer's instructions.
- 8) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- 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. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet
- 10) Protect the 12V DC power adaptor cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- 11) Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over. 
- 12) Unplug this apparatus during thunderstorms or when unused for long periods of time.
- 13) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, for instance when the power-supply cord or plug is damaged, liquid has been spilled or objects are fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
- 14) Do not open the apparatus.
- 15) To reduce the risk of electric shock, do not remove the back panel of the subwoofer. There are no user-serviceable parts inside. Refer servicing to a qualified Final Sound dealer.

Warning: High Voltage Inside. To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.

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

Explanation of used symbols:



This flash symbol indicates that the outlet carrying this symbol is carrying a dangerous voltage.



The double insulation symbol indicates a double insulated product. In a double-insulated product, two systems of insulation are provided instead of grounding.



The exclamation mark indicates that special attention has to be given to the indicated remark.

2. Welcome

Thank you for buying the Final Sound S95 subwoofer. The S95 is carefully hand built using the finest materials available and is designed for maximum performance. This manual contains important safety information as well as helpful advice and should be carefully studied before use.

WORLD WIDE WARRANTY

In addition to any local Warranty, Final Sound offers a **1 year** conditional Worldwide Warranty to the end user. Please see your dealer for any warranty service.

< PLEASE FILL IN YOUR WARRANTY TERMS – THIS IS OUR WARRANTY STATEMENT >

In addition to any local Warranty, Final Sound offers a 1 year conditional Worldwide Warranty to the end user. Please see your dealer for any warranty service.

Final Sound warrants its subwoofers to be free from defects in material and workmanship for a period of 1 year from the date of purchase. Final Sound and/or its designated representatives shall have all final determination about the validity of a warranty claim. This warranty shall not apply to any product that has been subject to misuse, neglect, accident, or abnormal conditions of operation, including but not limited to use in professional sound/PA systems. Burnt voice coils and broken tinsel leads are not covered as warrantable items. This warranty is limited to the original owner, and is not transferable.

Final Sound's obligation under this warranty is limited to repairing, replacing or refunding the original purchase price (exclusive of shipping charges), at Final Sound's option, any product returned to the factory within 1 year of the date of purchase, provided that Final Sound determines that the unit is defective and has been used in compliance with the terms of this warranty.

For products that failed due to manufacturing defects Final Sound will reimburse shipping costs. Shipping costs will be limited to delivery by UPS Ground. Costs incurred above and beyond these levels will not be reimbursed.

If the failure has been caused by misuse, neglect, accident, or abnormal conditions of operation, repair or replacement will be billed at a nominal cost, pursuant to customer agreement to such repair or replacement. No shipping costs will be reimbursed.

The foregoing warranty is exclusive and in lieu of all other warranties, expressed or implied, including, but not limited to, any warranty of merchantability or fitness for any particular purpose. Final Sound shall not be liable for any special, incidental or consequential damages, whether in contract, tort, or otherwise.

3. Design Safety

This subwoofer is supplied with a removable IEC power cord. Use only IEC power cords designed for the power receptacle of your country, and with a minimum current rating of 2.5A.

For 220V operation, a 1A fuse is required. For 110V operation, a 2A fuse is required. In both cases the fuse must be rated for 250V operation. Use only the rated sized fuses. Do not use without the fuse cover in place. If the fuse holder is damaged or worn, see your dealer for replacement.

4. Loudspeaker & Subwoofer positioning

Loudspeakers

For acoustical reasons it's not recommendable to locate your loudspeakers following a strict symmetrical placement. Try to keep the distance from the left loudspeakers (front and rear) to the wall a little different from the distance the right loudspeakers measures from the wall. The secret behind a good sounding room is not to get rid of resonances, but to spread them as evenly as possible across the frequency spectrum. Asymmetrical placement of loudspeakers will be a little bit helpful to accomplish that situation.

Subwoofers

Coloration, due to resonance, is strongest at bass frequencies between 20 and 200 Hertz. It's much easier to obtain high absorption at higher frequencies. So, the placement of a subwoofer is critical. Theoretically, the smoothest low-frequency response is obtained when the subwoofer is as close as possible to the listener's ears. The received sound from the subwoofer is then dominated by the direct radiation rather than by room resonances. Practically the subwoofer should be placed on the base line between the front panels. That's also advisable from a phase perspective and if the subwoofer outputs frequencies higher than 100Hz. You cannot locate frequencies below 100Hertz. If the output is above 100Hz, it's easy to locate the sound coming from the subwoofer. Then, it's common wisdom to keep the sub near the front panels and not along the wall or in the corner.

If you don't want to put the sub between the front panels and if the output is below 100Hz, the second best location is nearby the corner of the room, consistent with the acoustic theory that all the room modes will be excited evenly from this location. But, useful lessons learned from the real world tells us that the best approach in coping with subwoofers is to use your ears and play around a little bit.

Because the S95 subwoofer is solely intended to form a combination with our Final Sound FVSS-201 DVD Receiver, it will usually output frequencies higher than 100Hz. For these applications we recommend a subwoofer position on the base line between the loudspeaker panels.

Typical room layout

The following figure 0 represents a typical room set up for stereo and/or virtual surround. The figure shows:

- The subwoofer's preferred positions.
- The base line between the front loudspeakers.
- The stereo loudspeaker's position.
- A preferred unequal distance between the side walls and the panels (a, b).

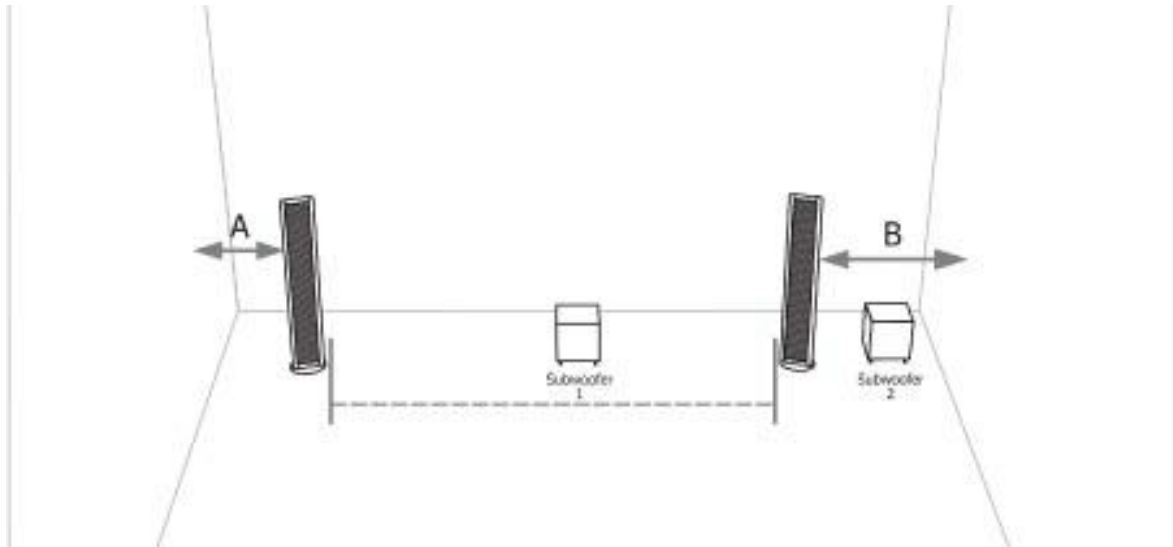


Figure 0

Daisy Chain subwoofers

The S95 subwoofer presents the possibility for a daisy chain configuration. Instead of connecting one single subwoofer to the Final Sound FVSS-201 DVD receiver, it will bring great advantage to connect two subwoofers, especially in larger rooms. Just connect one subwoofer to the receiver's **sub out** and connect the second subwoofer's **line in** to the first subwoofer's **line out** terminal.

Position one subwoofer near the left electrostatic panel and the other one near the right electrostatic panel. Position both subwoofers on the base line. It's also possible to position both subwoofers in the room's corners, behind the base line. Please adjust the subwoofer's distance accordingly in the receiver's SPEAKER SET UP menu.

5. Features of the S95 SUBWOOFER

PANEL CONTROLS (see figure 7)

The S95 subwoofer has the following features, including:

- Variable volume (level) control (Min-Max)
- Auto turn-on
- Low level line-in
- Low level line out
- Switch able power supply (110-120/220-240V user selectable)

The cabinet of the S95 uses 19mm thick high-density composite walls. The cabinet is finished in a beautiful black satin finish.

The amplifier is a 75W RMS class A/B design. It features a large power transformer, oversized power supply capacitors, and a large external aluminum heat sink to ensure long-term cool operation.

The driver is a long throw 8 inch driver, heavy gauge cast aluminum basket, epoxy-reinforced paper pulp cone. The linear motor strength curve from this motor ensures extremely low distortion and compression over the full operating bandwidth, as well as a very high transient response.

EXPLANATION OF PANEL CONTROLS

The Final Sound S95 subwoofer makes the most optimal match with the Final electrostatic loudspeakers. Choosing the S95 in the Final Sound FVSS-201 DVD Receiver's menu and choosing either the 90i, 150i or 300i electrostatic panels, will automatically set the optimal filtering for the panels and for the subwoofer.

Standard Controls

The level control allows setting the gain of the built-in amplifier to match your main loudspeakers. A total range of 60 dB is provided, allowing integration with nearly any situation.

The On/Automatic switch: in the 'Automatic mode', the sub will switch on when receiving a signal and switch off when receiving no signal after a certain amount of time. In the 'On mode' it will stay on permanently.

The On/Off switch will apply main power to the subwoofer. Switch it 'off' during lightning or holidays.

6. Connecting the S95 to your system

EXPLANATION OF AVAILABLE CONNECTIONS

The line level input (LINE IN) is a standard RCA connector, and is compatible with the Final Sound FVSS-201 DVD Receiver's Sub Out connector.

WARNING: Eventually, the S95 can be driven by a standard AV-receiver's LFE output. That's only possible when this subwoofer output (LFE) is equipped with an internal low pass filter. Please consult your receiver's user manual.

The LINE OUT is used to daisy chain other S95 subwoofers.

The power connection is a standard IEC connector with a built-in fuse holder. The power supply cord must be plugged into the connector before the power supply cord is plugged into the wall socket.

The fuse is contained inside the IEC connector. The small tab inside the connector must be depressed allowing the fuse holder to be slid out. The power supply cord cannot be used when the fuse holder is extended or removed.

Important

The Final Sound S95 subwoofer, is specially designed to match the requirements of the Final electrostatic loudspeakers. The crossover frequencies to several models Final electrostatic panels are programmed inside the Final Sound FVSS-201 DVD Receiver, just as the time and phase behavior.

Always switch off your system before connecting any wires!

CONNECTING the S95

- Connect a cable between the Final Sound FVSS-201 DVD Receiver's SUB OUT connector and the S95's LINE IN connector.

7. Adjusting the S95 subwoofer

PROCEDURE - QUICK INSTALLATION-

- Position the subwoofer in the desired location.
- Connect the subwoofer according to this manual's instructions.
- Set the sub's volume control to a minimum.
- Follow the instructions in the Final Sound FVSS-201 DVD Receiver's manual to set up the subwoofer, using the DVD Receiver's menu.

- Set the sub's volume (level) control half way between min and max as a starting position.
- Play some music you are familiar with.
- Adjust the subwoofer volume to a level that matches the main loudspeaker's level. Use the FVSS-201's remote control to adjust the subwoofer's level. If the sub plays too loud or not loud enough, you can fine-tune the sub's volume using the level control on the sub's back plane.
- Note that you may need to try more than one location for the subwoofer to reach optimum results.

Subwoofer level setting during operational use

The subwoofer level may vary depending on the program material. Most DVDs do have another low frequency level than CDs or concert registrations on DVD. To enjoy a convenient level of low frequency content, you may consider changing the level depending on program material.

You can adjust the subwoofer level using the FVSS-201's remote control. Push SUB and adjust the level using the VOLUME up & down keys.

8. Panel Layout

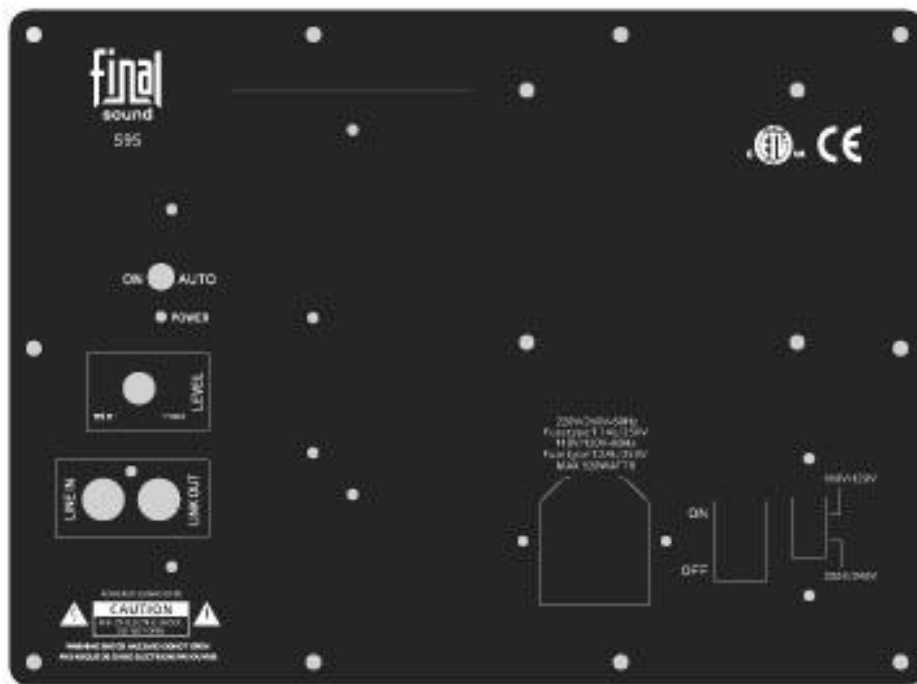


Figure 7

9. Operational Guidelines

As with all Final products, the S95 is designed to provide the highest level of performance. However, the S95 still has limits that should be observed.

- If the S95 begins to overload or heavily distort, turn down the bass or volume.
- If the S95 overwhelms the output of the main speakers, turn down the volume.
- If the bass sounds loose or dislocated, adjust placement of the subwoofer until the problem disappears.
- Placement of the subwoofer within the room is critical to the operation of the S95. For recommended locations, see chapter 'Loudspeaker & subwoofer placement'
- If the S95 malfunctions, turn the subwoofer off and on. If the problem persists, contact your dealer for additional troubleshooting.

10. Cabinet Care

The finish on the S95 is a high strength, scratch-resistant acrylic. However, as with all fine furniture finishes the cabinet can still be scratched.

Always unplug the S95 prior to cleaning.

Do not clean or dust the cabinet with any abrasive cleaner. Use only a fine quality spray or wipe-on furniture/dust cleaner.

Do not use any abrasive rag or scrubber. Use only a lint-free clean cloth.

Never use a liquid to clean the cabinet or amplifier.

11. Specifications S95

Size	36x27x33 with 5cm high feet
Weight	11.5 kg
Type	Down firing + bass reflex
Anechoic Frequency Response	35 Hz to 200Hz, ± 3 dB
In-Room Frequency Response	Typically 30 Hz to 243 Hz, ± 3 dB
THD	Less than 3% THD at 95 dB SPL from 35 Hz and up
Maximum Output	105dB SPL in room
Amplifier Type	Discrete class A/B with linear power supply
Volume Adjustment	>60 dB of range
Crossover Frequency	40 Hz to 200 Hz
Power Output	75W RMS/120W Peak
Low Level Input Impedance	20 k Ω
Effective Internal Volume	21 liter
Driver	8 inch long throw driver
Approval	ETL UL Can CE CB

12. Subwoofer FAQ

How can I connect my subwoofer and avoid hum and noise?

Hum and noise in audio systems is caused by many interference sources. Most likely is the existence of a so-called ground loop. If there is more than one ground connection path between two pieces of equipment, a ground loop occurs. You can identify ground loop problems because they mostly produce a 50Hz or 60Hz hum into the system. If the hum is 100Hz or 120Hz, without the 50/60Hz part, there are probably other sources of interference. Think about light dimmers, heavy equipment on the same power group or strong incoming rfi/emc pollution. If hum and noise problems are persistent, the best advice is to consult your dealer. These problems can be pretty complex in daily life. In this FAQ, we cannot describe all the existing knowledge about ground loops in depth. We can provide you with some basic solutions to prevent hum and noise problems.

- 100/120Hz hum can be avoided by feeding the equipment using a 'clean' AC line. So, don't connect light dimmers, refrigerators, vacuum cleaners, fluorescent lightning and other current hungry and interference inducing equipment to the same AC-group or wall-outlet.
- Don't put all kinds of wireless equipment, including cordless cell phones and remote controlled children's toys in the neighborhood of audio and video gear.
- Use shielded AC power cables to avoid incoming rfi/emc interference. Sources can be radar equipment, transmitters for broadcast or cellular communications or your neighbor's wireless LAN.
- Mains transformers cause an AC magnetic field around them. If you stack equipment, or if you position gear close together, the magnetic fields can be coupled and hum may result.
- Magnetic fields can also be coupled to cables. So isolate signal cables, AC cables and cables transporting control signals from each other. If there is a need to cross signal cables and power cables, cross with a 90-degree angle.
- Be sure that all the cables and connectors are in good shape, and that you made the connections according to the dealer's instructions.
- Mains voltage quality problems can cause hum and noise. Sometimes, the sine wave is distorted and the line will contain harmonics. Please consult your dealer about using isolation transformers, mains filters and AC power stabilizers and conditioners.
- A typical ground loop problem can occur when two interconnected pieces of equipment (Fl. cd player and amplifier) are plugged into grounded AC wall outlets at separate locations. The signal ground is connected to earth in each of them. Try to use 'single-point grounding'. Connect your equipment to the same wall outlet.
- Using the subwoofer's high-level input, can present a new league of potential hum problems. It's known that some amplifiers in the market come with reversed loudspeaker connections. So, red is actually ground and the black terminal contains the 'hot signal'. When connecting to a subwoofer, hum may result. Try to reverse the connections (subwoofer 'off' and volume to minimum). Power the sub again and gently raise the volume. If hum still occurs, it's probably caused by some other phenomenon.
- Amplifiers with 'balanced' outputs can also be incompatible with the sub's high-level inputs. Transformer isolation at the amplifier's input side may be the right solution. Please consult your dealer.
- Problems may also occur when you connect the subwoofer, using its high-level inputs, in set-ups consisting of bi-amplified loudspeakers. Please consult your dealer.

Is it possible to use multiple subs in my stereo or home theatre set-up?

The S95 subwoofer needs to be connected to the Final Sound FVSS-201 DVD Receiver. It's possible to use multiple S95 subwoofers. From the single receiver's SUB OUT-connector, it's simply possible to daisy chain subwoofers. In case of doubt, please ask your dealer's advice.

Do I really need a subwoofer?

The Final Sound FVSS-201 is intended to operate with the 90i, 150i and 300i electrostatic panels. For these panels, you definitely need a subwoofer.

Should I unplug my subwoofer during lightning?

Yes, but try to unplug the sub and the rest of your equipment before the lightning is straight above your house. Unplug the equipment physically from the AC-line. Switching it off or using the stand-by mode does not protect at all against lightning.

Do I need a separate amplifier for my subwoofer?

Unless you buy 'passive' subwoofers: NO. Most subwoofers come with an inbuilt amplifier. Those 'active' subwoofers only need a low level (rca) of high-level connection with existing amplifiers.

Do I need separate subwoofers for music and home theatre?

Basically, a really good subwoofer can provide optimal results for both applications. In daily live, most people feel the need for a larger sub in their home theatre, because of the visceral impact, that is inherent and part of the fun of watching movies. Apart from this, listening to music needs a different balance between the subwoofer and the rest of the system, than watching and listening to movies. Most av-processors, like the Final Sound FVSS-201, will provide you with the opportunity to simply make small adjustments, using the remote control.

Can I clean my Final subwoofer?

Yes, but first disconnect the AC-line. Clean only with a damp cloth. Never use cleansers or chemicals. Never leave a wet cloth on the surface of the cabinet.

13. Limited Warranty Registration

Your FINAL SOUND S95 subwoofer is provided with limited 1-year warranty. The limited warranty will not be honored when the product has been used or handled other than in accordance with the instructions in the user manual.

We thank you and wish you great enjoyment with your new Final Sound product.

Name: _____
Email: _____
Address: _____
City: _____ State: _____
Country: _____
Authorized Final Sound dealer: _____
Salesperson's Name: _____

Please fill in for warranty registration the serial number of the unit you have bought.
(Serial number appear on labels at the back of the product)

1 Final S95 Subwoofer (e.g. S-95-A001): **S95-A** _____

To improve our products and customer service, we would greatly appreciate your answers to the following questions.

Title or profession: _____ Age: _____
How did you find out about Final Sound? _____
Advertisement in _____
Relations/friends _____
Internet: _____
Other: _____

What kind of amplifier do you use?

Brand: _____
Type: _____

If you have any comments on our products and services, please use the back of the form.
Thank you very much for taking time to complete in this form and sending it to:

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