

# Owners Manual and Set-up Guide:

## Genesis Reference Surround Loudspeaker

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## A Message from Genesis

Congratulations! You are now the owner of one of the finest loudspeakers in the world. Based on technologies developed for our flagship Genesis 1, the Genesis Reference Surround Loudspeaker is designed for those of us who require the best possible surround/rear/side loudspeaker for a reference-quality home theater system.

The Reference Surround is designed to be used as a switchable monopole or dipole surround speaker in a home theater set-up, or in an audiophile multi-channel music system where it will be used in monopole mode.

So that it will fit into the décor of any home, the cabinet design is a combination of acoustic, furniture, interior design and architectural principles. Being a Genesis absolute fidelity™ product, it is also a perfect complement to any Genesis model, all the way up to the flagship Genesis One.

Sound structural engineering principles have been applied to make the Reference Surround cabinet rigid and well-damped. All construction and even internal braces are made of 18mm MDF and have been “tongue and grooved” to ensure that the cabinet is the best environment on which to mount the transducers. This results in extremely low cabinet coloration, and excellent sound-staging and imaging. (Yes, the sound-stage is important even for rear speakers!)

Please read this Owners Manual and Set-up Guide to get the maximum enjoyment out of your purchase. Also, check out our website at [www.genesisloudspeakers.com](http://www.genesisloudspeakers.com) for the latest updates, tips & tricks and support for our owners.

## 1 A Quick Start Set-up Guide

Now that you have your new Genesis Reference Surround Loudspeaker, we realize that you can't wait to hook it up and start playing! However, please read this quick set-up guide (even if your dealer is setting it up for you) before you proceed.

### 1.1 Unpacking

Your loudspeakers will come to you in a large shipping carton weighing over 43lbs (20kgs). Use correct lifting techniques when moving the speaker carton around or lifting the speaker out of its carton. We will **not** be held liable for damage to either the speakers or your backs during unpacking and setting up.

### 1.2 Placement

If you are hanging the speakers on the wall, you will need a qualified installer to mount them on very strong brackets. The speakers weigh nearly 40 pounds (18kgs) each, and can cause death or severe injury if it falls on someone! We suggest that these speakers be professionally installed. They may be mounted in the rear corners of the home theatre room – where they act as both rear and side channels, or they may be mounted on the side or back walls.

### 1.3 Connections

The speakers should be connected directly to the speaker-level output of your power amplifiers using high quality speaker cables and the 5-way binding posts.

The high-level thru-put binding posts on the speaker are for connecting the Reference Surround to a subwoofer. We recommend the Genesis ServoSub™ 2/12t as the perfect complement to this speaker. The S2/12t is designed for corner or sidewall loading – making it the ideal companion for a surround loudspeaker.

### 1.4 Adjustments

The Reference Surround has two knobs on the back – one sets the tweeter level, and the other switches the speaker between dipole, monopole, and remote-switchable operation modes. Set the tweeter level to the 12 o'clock position and the mode to monopole as a start.

Once you familiarize yourself with its performance, putting a little bit of additional effort into tuning the speaker properly for your system (which

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absolute fidelity™



includes the room), will give you greater long-term enjoyment and benefits.

## 2 Setting up

### 2.1 Positioning

A good starting position is for the Reference Surround to be placed horizontally about 48 inches from the floor and approximately 10 degrees behind the listener, and at the same distance from the listener as the main L/C/R speakers.

Use a good quality stand that is solidly built and as rigid as possible, or hang the speakers on extremely strong brackets on the wall. The Genesis ServoSub™ 2/12t is a unique subwoofer that complements the Reference Surround to turn it into a full-range absolute fidelity™ system.

On the home theatre processor, set the speaker to “LARGE” as the Reference Surround will play to below 60Hz even without a subwoofer.

### 2.2 Loudspeaker Controls

The two knobs at the top of the plate on the back of the speaker tailor the high-frequency response of the Reference Surround and determines the mode of operation.



#### 2.2.1 Tweeter Control

The tweeter control is subtle with only a  $\pm$  one dB range, but it can make a great difference in gaining that last bit of additional performance in tuning your speakers for the system in which you are using them. They can turn your system from very good to exceptional, so take the time to work through this process.

The left knob marked TWEETER is a volume control for the front tweeter. Turning this control clockwise will increase the level of the tweeters. Use this control if you need a bit more treble, or to increase the apparent space of the soundstage. Too high a tweeter level, and you can feel that voices are too sibilant. With music, crashing cymbals are leaping out at you, and nylon stringed guitars sound steely. Start with this control at the 12 o'clock position. There is about a  $\pm$ 1dB range for this control.

#### 2.2.2 Mode

The Reference Surround is a monopole/dipole surround speaker.

When used primarily to reproduce movie sound effects, the speaker can be used in dipole mode. When set as such, the speaker sounds ephemeral and diffused. The Reference Surround incorporates a unique

phase shifting crossover when used in dipole mode. In most surround loudspeakers, bass is sacrificed when the speaker is switched to dipole mode. In the Reference Surround, however, the crossover splits the frequency at around 200Hz. The frequencies above 200Hz are inverted in phase, while the frequencies below 200Hz are kept in phase. This accounts for the phenomenal bass performance of this absolute fidelity surround speaker.

For most music and even Dolby Digital™ and DTS™ use, we recommend that you switch the speakers to monopole mode. We prefer this even for movies because the rear and surround channels typically produce more music and voices than sound effects even when watching DVDs.

When set in remote switchable mode, a 12V signal applied to the inner terminals at the bottom of the back-plate switches the speaker to dipole mode. The default mode is monopole.

### 2.3 Tuning the system

The best way to tune your system is to use music to tune the front left/right speakers. This way, you will have a system that will deliver audiophile quality playback. Then, using a full-range pink noise signal that can be generated by your player, processor, or a test disc, match the surround and center channels to the front left/right reference.

The ear is a phenomenal measuring instrument. With a little practice, it will be easy to distinguish subtle differences in sound. The easiest way is to use a circular pink noise pan, like on the Chesky Ultimate Surround Set-up and Test DVD-Audio disc. The pan should sound seamless on a well set-up system.

Every listening room is different, and we recommend that you take the time to carefully tune the system for the environment in which it is placed. Due to room idiosyncrasies, do not be afraid to set the left and right speakers to different levels.

Setting the tweeter level at the “12 o’clock” position is “normal” and will be the position from which you can start tuning. With the controls in this position, they may not sound perfect, but your Genesis loudspeakers will sound great straight out of the box.

If you have any questions, feel free to contact us at Genesis. Our website is the first place you can look to for more information, but you are welcome to either send us an email, or just give us a call!



### 3 The Technology used

#### 3.1 The Transducers

The transducers in the 3-way Reference Surround are all proprietary Genesis-designed drivers manufactured to our exacting standards:

##### 3.1.1 The Genesis Ribbon Tweeter

Reviewers in the audiophile press have often remarked that the Genesis circular ribbon tweeter is the world's best. It is a one inch circular planar ribbon design crafted from an extremely thin membrane of Kapton® with a photo-etched aluminium "voice coil" that is a mere 0.0005 inch thick. The entire radiating structure has less mass than the air in front of it! That is why it will accurately reproduce frequencies beyond 36 kHz.

The result of this design is a driver that has a rapid and uniform response to high frequencies and has the speed of the best ribbon/electrostatic designs, without the high distortion and poor dispersion that is typically associated with them.

The G6.1sr uses three of these tweeters per channel, one on each of the front three faces. In monopole mode, only the front tweeter is employed. In dipole mode, the front tweeter is switched off, and the tweeters on the two side faces are turned on but out of phase to one another.

##### 3.1.2 Titanium Midrange

We sometimes say that the midrange is a window into the mind of a composer or a singer. And indeed, the midrange is where the "magic" is in a well-recorded musical event.

The Reference Surround uses a Genesis-designed proprietary 5 inch titanium-coned midrange to cover this critical frequency spectrum. Manufactured out of one of the lightest and stiffest materials known, this low mass cone driver is one of the best midrange transducers ever made, with nearly instantaneous transient response, enabling the Reference Surround to sound lifelike and effortless.

The midrange is switched off in dipole mode.

##### 3.1.3 Aluminum-cone Woofers

The Reference Surround incorporates two 6.5 inch metal cone woofers. Made of a cone of solid aluminium, the suspension and voice-coil have been maximized for long, distortion-free excursion so as to increase dynamic range. Our aluminium cones are a magnitude stiffer than

plastic or paper cones, and virtually eliminate the problems caused by cone bending and break-up.

The woofers work in either monopole or dipole mode. When the Reference Surround is switched to dipole mode, a unique phase shifting crossover channels the midrange frequencies above 200Hz to these woofers, running them out of phase.

The frequencies below 200Hz are kept in phase in order to maintain the bass response of these speakers.

### **3.2 Crossover**

The crossover is the brain of the loudspeaker. In order to manage and maximize the performance of the extensive complement of transducers used in Genesis loudspeakers, we spend more money on the crossover than many other manufacturers put in their entire speaker even at the same price range.

Each crossover is designed by computer modelling plus years of knowledge and experience. The inductors are designed and made for Genesis with OFC copper windings. The capacitors used are also custom made for Genesis, using high-quality polypropylene-film and tin-foil. The crossovers in each Reference Surround weighs over seven pounds (3.2kg)!

More importantly, the crossovers are designed with many, many hours of music listening and constant refining, tuning and tweaking of the circuit. Out of this comes the “magic” that is a Genesis-designed loudspeaker system. For example, by going the more expensive route of using several smaller capacitors in parallel instead of a single large one, transparency and musicality were improved.

The Reference Surround actually employs three totally separate crossovers. This accounts in part for its absolute fidelity performance. In monopole mode, a single 3-way crossover powers the front tweeter, midrange, and two woofers.

When set in dipole mode, two crossovers are used. One drives one face of the speaker with a tweeter and woofer. The other is a unique phase-shifting crossover that splits the frequency range at approximately 200Hz. The frequencies above this are driven out of phase to the other face, creating the dipole effect. The frequencies below 200Hz are in phase to the other face in order to maintain the bass performance.

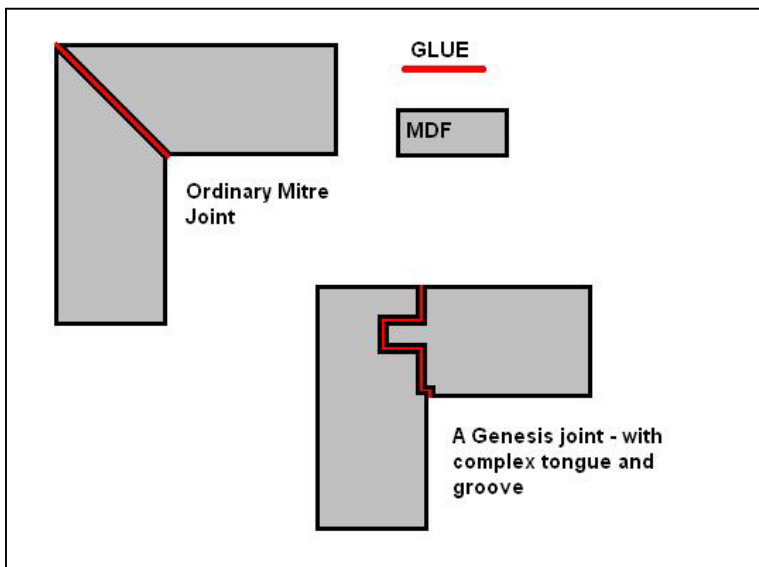


### 3.3 Vibration-free Cabinet

The cabinet was designed for aesthetics, but with an obsession to sonic quality, vibration control, structural strength and rigidity.

In some parts of the cabinet where vibration would have been the greatest, 1½ inches (36mm) of multi-layer bonded MDF was used to provide damping, structural integrity and a rigid platform for the drivers to be located. Extensive bracing was carefully incorporated using 12mm slabs of MDF to eliminate cabinet flex and panel resonance.

Incidentally, MDF was chosen as the material of choice for its damping properties and its consistency in hardness, density and rigidity. It would actually have been cheaper and easier to make the cabinet of solid wood, but that would have been a compromise.



Genesis designed a unique tongue and groove joint in order to improve the structural rigidity of the cabinet.

Crystalline glue that dissolves into the MDF was chosen to ensure that the interfaces between two panel pieces become as one. This results in the entire enclosure behaving as a single unit, with seemingly no discontinuity in material.

This results in a joint so strong that when you try to rip the joint apart, it isn't the joint that would break. The MDF would break apart first.

## 4 Specifications

- Frequency Response: 55Hz to 36kHz,  $\pm$  3dB
- Sensitivity: 89 dB, 1 watt 1 meter
- Min/Max Power (Tube): 75/500 watts per side
- Min/Max Power (Solid State): 100/1000 watts per side
- Input Impedance: 4 ohms (Nominal)
- HF Transducers: Three Genesis 1" Circular Ribbon Tweeters (front and two side)
- Midrange Transducers: One Genesis 5" titanium cone midrange
- LF Transducers: Two Genesis 6.5" aluminium cone
- Controls: Tweeter level  
Monopole/Dipole/Remote Mode
- Inputs: High-level with 5-way binding posts  
12v trigger for remote operation
- Throughputs: High-level with 5-way binding posts
- Dimensions: H 14½" x W 20½" x D 12"
- Weight: 38.5 lbs (17.5kg) per side
- Finishes: Standard Satin Black  
High Gloss Automotive (grey and silver)