Genesis

Genesis Monitor 1 System
Owner's Manual

Description
Standing 64.5 inches tall and only 11 inches wide, the Monitor 1 is a full range loudspeaker system capable of delivering live listening levels, true active servo bass response down to 25 Hz and high frequency response beyond 32 kHz.

The Monitor 1 has two planar ribbon tweeters, one in front and one in the rear. To cover the midrange, the Monitor 1 utilizes our revolutionary new 5.5 inch titanium driver and to cover the mid bass frequencies, there are two 6.5 inch metal cone mid bass couplers.

The bass frequencies are handled by a 15 inch side firing metal cone woofer, that is powered by a 500 watt GSAT power amplifier that is built in to the back of the unit.

Like all Genesis loudspeakers, the Monitor 1's are a dipole design producing sound from both the front and the rear, one out of phase with the other. While the advantages of a dipole design are many, the two main benefits are ease of placement in the room and a greater degree of spacious natural sound reproduction.

Dipoles achieve their superior performance because they create a radiation pattern such that the energy radiating to the sides of the speakers plane is nearly zero. So, with very little acoustical energy reaching the side walls of your living room not only is placement of the speakers easy but, remarkably, the listener is able to experience the music unencumbered by the normal room iterations which plague most other speakers.

The Monitor's magic is in the drivers
The tweeter used in both the front and the back of the Monitor's 1 series has been described by many reviewers in both the American and foreign Audiophile press as possibly "the world's best." It is a 1 inch planar ribbon design and is hand-crafted from an extremely thin laminated membrane of aluminum and Kapton and measures a mere 0.0005 inch thick. The advantage of incorporating such an extremely thin membrane is that of low mass. The result of this design is a driver that has a rapid and uniform

response to high frequency transients and has the speed of the best ribbon/electrostatic designs without the high distortion and poor dispersion that is typically associated with them
The midrange driver is truly unique and revolutionary. Machined from pure titanium, one of the lightest and stiffest materials kn ... to man, this new 5.5 inch low mass driver is one of the best transducers ever made with transient response nearly instantaneous enabling the Monitor 1 to sound lifelike and effortless.

To create a "sound bridge" between the midrange and the servo woofer system, the Monitor 1 series incorporates a 6.5 inch metal cone mid bass coupler. This metal cone is an extremely light and stiff design capable of handling the huge dynamic range demands of the system while maintaining extremely low coloration and excellent transient response.

Servo control of the woofers and metal cone technology is key to the phenomenal bass performance of the Monitor 1. In a traditional woofer system "heavy", "soggy" or "boomy" bass is present to some degree because the woofer has high mass and therefore high inertia causing poor control and high distortion. In a servo bass system, complete control of the woofer is made possible by the addition of a motion sensor (accelerometer) mounted directly on the woofer itself. Lower distortion, greater frequency extension and tight control yield musically accurate yet "floor shaking" bass.

The metal cone servo controlled woofer system of the Monitor 1 is driven with a built in amplifier of unique design. Known as GSAT, the Monitor 1 utilizes a technology of amplification first introduced to the audio world by Genesis co-founder Arnie Nudell and is known as a switching amplifier. Acclaimed for their performance by virtue of their perfect linear response, near perfect efficiency and "slam factor", switching amplifier technology is clearly superior to almost any other form of amplification.

Set up the speakers.
A good starting position for the Genesis Monitor 1's is about 20% of the way into the room as measured from the wall behind the loudspeakers (you can place them much closer to the rear wall if you wish). In the case of the classic setup based on dividing the room into thirds (speakers one third the room length from the rear wall) you want to sit approximately two thirds the way in the room, again as measured from the rear wall. If you have placed the speakers closer to the rear wall, a good rule of thumb is to try and sit approximately ten to twelve feet from the speaker. Generally speaking, the speakers should fire into the long dimension of the room.

Measure the distance between the tweeters on each panel. Both tweeters should be in the center, between the left and the right speaker. Start with approximately six to eight feet apart (two and three quarter meters) if your room dimensions will allow. **Make sure that the tweeters are on the inside edge of each speaker. That**

is, tweeters should be in the center between the left and right speakers, woofers would then be pointing outside towards your side walls.

When positioning your speakers, make sure each speaker is within 10 feet of a power receptacle so you will be able to plug the GSAT built in power amplifier in.

Connecting the Monitor 1
There are two connections that need to be made to each channel of the Monitor 1. One is the output of your power amplifier and the other is the power cord for the GSAT amplifier.

Using a high quality loudspeaker cable, connect the left and right channel outputs of your power amplifier to the Monitor 1's speaker input binding posts. Make sure that the plus or positive (red) terminal of your power amplifier is connected to the plus or positive (red) terminal of the Monitor 1 and repeat the procedure for the minus or negative (black) terminal.

Connecting your power amplifier up to the Monitor 1 will also automatically provide a signal to feed the built in GSAT woofer amplifier of the Monitor 1. This is the recommended hook up both sonically and for convenience.
Make sure the switch labeled "input" is in the "off" position (down).

If you wish, you may use a long interconnect to connect your preamplifier to the Monitor 1 directly, although this method is not recommended for cable lengths longer than 10 feet. We recommend in most instances that you rely on the automatic connection provided by connecting the power amplifier to the Monitor 1 as described above.

If you choose to connect your Monitor 1 in this fashion, use a good quality interconnect cable to connect your preamplifier's output to the low level input on the back of the Monitor 1 marked "input". We **strongly recommend that you do not use interconnects longer than 10 feet (3.2 meters)** to connect the preamplifier outputs to your Monotor 1. On many preamplifiers, use of an interconnect that is too long will negatively affect the performance of your preamplifier because of the high capacitance of the cable across the output of your preamplifier.

Connect the input of the GSAT woofer amplifier to the output of your preamplifier. If your preamplifier has only one set of balanced outputs and one set of unbalanced (RCA) type outputs, choose balanced for the connection of the amplifier that is driving your main speaker. Use the remaining set of RCA outputs to feed the GSAT amplifier.

If your preamplifier does not have two outputs, use a "Y" connector to split the signal. The GSAT amplifier presents a high impedance (very easy) load to your

preamplifier and can easily be used with the "Y" connector with no degradation to your main signal.

Once connected, you must place the switch marked "input" in the "on" position.

Connect the power to the GSAT amplifier
You have been provided with a long 10 foot power cord to connect power to your Monitor's GSAT amplifier. Use this provided power cord if at all possible. If the power cord is not long enough and you must use an extension cord, make sure the extension cord is as short as possible and at least 14 gauge or heavier (the lower the number, the heavier the wire i.e.. 12 gauge is heavier than 14 gauge).
Be careful not to connect the power cord to a switched outlet (one that can turn off with a wall switch).

Before plugging the power cord into a power receptacle, look at the switch on the back of the Monitor 1 GSAT marked "voltage select" and insure it is set to the proper voltage. Failure to set the proper voltage will void your warranty should damage occur. Most countries in North America, plus Taiwan and Japan will require the 115v setting. Most European countries and other Asian countries will require 230v. Check with your local power authorities for the correct voltage in your country.

Initial settings
On the back of the Genesis Monitor 1 there are four controls. They are labeled "tweeter", "Midrange", "Gain", "Low pass".

Tweeter controls the volume level of the front tweeter. There is about a one dB range. Set this control at the two o'clock position for starters.

Midrange controls the volume of the midrange driver. There is about a dB and a half range. Set this control at the one o'clock position for starters.

Gain controls the volume of the woofer amplifier. Start with this control at the one o'clock position.

Low pass this controls how high the woofer goes in frequency. At the low extreme of 71 (Hz) the woofer will go as high as 71 Hz and then begin rolling off or reducing its volume. Recommended starting position for this control is 90 Hz. This is the 12 o'clock position and you will feel a small stop at the center position.

Input is a switch marked "on" "off". This switch selects where the woofer amplifier receives its input. In the "off" position, the woofer receives its signal from your power amplifier and is the recommended setting. When the switch is in the "on" position, the woofer receives its signal from the RCA input to the left of the switch marked "input".

Power is the on/off switch for the power amplifier. We recommend that you leave the switch in the on position always. The GSAT power amplifier has an auto off circuit that will shut the amplifier off when there is no music being played for approximately 10 seconds. The amplifier will immediately come back on when there is music.

Red light next to input. You may notice that there is a red light next to the input. When you first turn the GSAT power amplifier on, this red light will not come on. Only when you play music will the light come on. The light is the auto off indicator. It indicates when the amplifier is on and ready to play music. The light will automatically turn off (as will the amplifier) after a period of approximately 10 minutes of no music being played. The light (and the amplifier) will automatically turn on as soon as you play music.

Roughing the system in
We suggest that you start with a single vocal with instrumental accompaniment because the sound of the human voice is more easily recognizable than many instruments and is the least complex sound to deal with.

Begin with the bass level
Turn the volume control of the subwoofer amplifier up or down until the voice sounds correct. Concentrate on the mid bass regions (as opposed to the very low bass in your recording) to achieve a natural blend. The voice and the music accompaniment should sound as if it were cut from one cloth, not separate.

Leave the low pass filter alone, for the moment, as it should remain set at approximately 90 Hz. This control will be addressed later.

If your vocal selection is a good recording (like a Chesky label or Reference Recording or Sheffield) the performer should appear to come from **behind** the loudspeakers and be at the appropriate height for a standing person. If it is not there are several remedies which this paper will address.

1. If the vocal appears to be larger than life, you should first check the system volume. Is it a volume that would be appropriate for someone actually singing in your room? If there is too much volume the artist will appear too big and the opposite is true for too little volume. If the volume is set correctly and the image is still too big, toe the speakers in a slight amount or place them closer together and re-listen. Repeat this process till you have it right.

2. If the voice is too low in height, turn the midrange control to the next highest position and the image of the voice will move upward slightly.

3. If you are not getting enough front to back depth (not appearing behind the speaker sufficiently) pull the speaker **away** from the wall a little bit at a time. If you do not have them pulled far enough away, you may not have enough front to back depth. Find the best compromise for your room, your tastes and your space requirements.

4. If you are not getting proper focus on the voice, you may place the left and right speakers closer together until you have a properly defined center image. If the speakers are too far apart you will lose the side image and if they are too close together you will have too small a center stage. We recommend you begin with six to seven feet apart (two and three quarter meters) as measured from tweeter to tweeter.

When properly set up very little sound should appear to come directly from the speaker, instead, the sound stage should extend far beyond the left and right edge of the loudspeakers and they should have tremendous front to back depth. When the recording is close miked (when the instrument or performer is very close to the recording microphone) the music may appear to come directly from the loudspeaker. This is normal. Typically, however, the sound should appear to be detached from the loudspeakers.

A simple rule of thumb to follow is that focus will be achieved by placing the speakers closer together or farther apart, and front to back depth can be adjusted by the distance from the wall behind the loudspeaker.

Further adjustments

If the voice sounds "thin" or does not have enough "chest" to its sound, turn the woofers amplifier's volume (gain) up till it does, or at this point, you may want to experiment with increasing or decreasing the low pass filter control. This control will raise or lower the frequency cutoff point of the woofer. If you find that the sound is "thin" or lacking in mid bass and that **turning the volume of the woofer amplifier up to "thicken" the sound creates too much low bass**, this is a good indication that you may want to turn the low pass filter up instead. This will extend the upper bass regions without affecting the low bass level.

Next, set the woofers using more than just a voice. Select some music that you know to have good **deep** bass. Using the gain control on the back of the GSAT amplifier, set the woofers for a **natural** and powerful bass sound. Use a symphonic piece of music if you can, or use a natural bass instrument for your guide. Try to make it sound real. You may have to return to the vocal to make sure you have not gone too far in one direction.

If, at this point, it does not have enough mid bass, turn the low pass number to a higher position or, alternately, position the speakers slightly closer together in order to achieve better mid bass coupling between the speakers. If it sounds too "fat"

turn the low pass control down or adjust the volume. This can also be accomplished with the midrange control on the rear of the speakers. At this point it is suggested to use the low pass filter control until you get to the refinement stage.

Low bass

With the speakers positioned in the recommended placement low bass in the room should not be a problem.

Should you have too much bass, simply turn the volume down on the GSAT amplifier. Too little, and the opposite will apply.

In some problematic rooms a resonance may develop at one or two frequencies that is unnatural to the music. By moving the speakers closer to the rear wall or farther from the rear wall, the resonance may be reduced at the listeners position. There are no absolute rules concerning problematic rooms, so do not be afraid to experiment with best woofer placement.

The Refinement stage

After following the rough setup guide above your speakers should sound great. However, it is always a good idea to put the finishing touch on your system. To that end we offer some of our experiences.

Note: One rule of thumb you should always keep in mind. Make one change at a time! Do not, for instance, change position of the speakers and make an adjustment to the amplifier all at once. Make each of these changes separately and note the difference - by listening - with each adjustment. One of the biggest mistakes we find customers making is too many changes at once. Make one change, then listen.

1. A common problem we find with many setups is a tendency to separate the speakers too far from each other. This gives an unnaturally wide soundstage **between** the two speakers, and creates problems beyond the unnatural width of the center stage. The key problem is a lack of soundstage information **beyond** the left and right sides of the speakers. Another is improper focus of instruments and voices which is typically "corrected" by the user with too much toe in. Yet another problem is a lack of mid bass energy. In order for the appropriate amount of mid bass energy to be present, the speakers should be close enough together to achieve proper "coupling" of the titanium midrange driver. Coupling is desirable in the lower frequencies and simply means that the left and right drivers "work together" as opposed to working separately.

In order to achieve what the speaker is capable of we suggest you focus your efforts on a proper **balance** of soundstage elements that includes information

beyond the left and right sides of the speakers, front to back depth well behind the speaker, excellent focus of instruments and voices with proper vertical information and mid bass fill.

A Genesis loudspeaker system, correctly set up, can and should provide a soundstage that is wall to wall and with pinpoint focus, the speakers disappearing completely on a recording containing such information.

2. If you find that the sound is not spacious enough or you are not getting enough front to back depth, pull the speaker away from the wall (towards the listening position). This is typically preferable to separating the two speakers too far and will almost always give you better depth and soundstage information. A word of caution, however, if you move the speakers too far from the wall behind the speakers you may lose focus

3. If you find there isn't enough deep bass, your first remedy is the volume control on the woofer amplifier. This has several limitations. First, turned up too high, you may get some distortion on very low frequencies. Secondly, you may make the mid bass produced by the top of the woofer out of proportion with the mid bass produced by the bottom of the midrange ribbon. This would tend to sound "boomy" in the mid bass regions.

A good rule of thumb is to first set the volume control of the subwoofer for proper midbass rather than low bass. The theory is, if the midbass is correct, then the low bass should be very close to correct. If the midbass is proper and the low bass is still not right, here are some other suggestions.

Push the speakers back towards the rear wall. This will increase the coupling of the woofers to the room. Do this procedure in small increments (approximately one inch at a time) and return often to the recordings you have used to adjust the front to back depth and soundstage properties of your system. It is easy, yet unproductive, to go too far in one direction (and if you move the speakers too far from the rear wall you may lose low bass extension).

A good balance between proper low bass extension and a deep and spacious soundstage needs to be established to optimize your new speaker's performance.

Room Treatment

No room is perfect. To optimize your sonic presentation it may be helpful to treat your room. Here are some guidelines;

1. This loudspeaker is a dipole and therefore there is sound coming from both the front and the back of the speaker. How the wall behind the loudspeaker is treated or not treated is important. Generally speaking, the Genesis loudspeakers prefer a live wall behind the speaker and a dead wall behind the listener. By these

terms we mean the amount of reflection of sound. A typical wall of glass or, brick, cement or drywall material is a reflective surface. A heavily curtained or sound proofed wall would be considered a "dead wall" or a non reflective wall. A normal thin curtain across a window causes only a small amount of absorption.

2. Because the speaker is a dipole it is less sensitive to the side walls. However, as a rule of thumb, it is a good idea to keep the speaker as far away from the side walls as is practical. With this in mind, it may be helpful to add some damping material or diffuser panels to the point of first reflection. This is a point on the side walls between the listener and the loudspeaker. It is where the sound from the loudspeaker first hits the side wall, then bounces to the listener. This reflection is undesirable because it is slightly delayed from the original sound. This point on the side wall can be easily determined with the help of a second person and a mirror.

Sitting in your listening position have an assistant hold a mirror up on the side wall. Move the mirror along the wall until you can see the tweeter. This is the point of first reflection. A diffuser (see your dealer), an absorptive material or even a piece of furniture can help break up this point of first reflection.

Mastering the refinements of the system

Fine tuning an audio system is an art that will take time and patience. It can be one of the more rewarding learning experiences you will have in the pursuit of music and its enjoyment.

One of the best pieces of advice we can offer is that you take advantage of the ear's ability to identify similarities in sound. This ability is useful in fine tuning your system because if every recording you listen to has a similarity of sound (too much or too little of a certain frequency for instance) then you can be fairly certain that you have yet to perfect your setup. Keep at it and remember to enjoy your music as you work on perfecting your setup.

If you have any questions, feel free to contact us at Genesis.

Note: Should your woofer amplifier unexpectedly turn off and you are unable to turn it back on, you have overheated the amplifier or have played it too hard. It may take up to ten minutes for the amplifier to turn back on. Be patient and turn off the music. Let the amplifier rest and cool down. The

causes for this are typically too much volume. Refer to the section on increasing the low frequency response of your speakers without turning up the volume control. If the amplifier does not automatically come back on, unplug the unit from the power receptacle in the wall and wait for a few minutes before plugging it in.

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