

SET - UP M A N U A L F O R T H E

STATEMENT SYSTEM

MARTIN·LOGAN, LTD.
THE ELECTROSTATIC TECHNOLOGY

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Introduction

Congratulations! You are about to experience the highest resolution, most dynamic, extended sound-stage system in the galaxy, the Statement!

The Martin-Logan STATEMENT represents the culmination of an intensive, dedicated group research program directed toward establishing a world class reference system utilizing leading-edge technology, without compromising durability, reliability, craftsmanship, or aesthetic design.

As a result of our continuous research and development program here at Martin-Logan, we decided that it was time to incorporate some of our latest technologies into a reference product.

System Set-up

Checklist

The Statement system consists of the following items:

- 2 - electrostatic panels mounted in frames
- 2 - electrostatic panel pedestals with uprights
- 2 - interface modules
- 4 - interface riser blocks
- 2 - woofer columns
- 2 - crossover modules*
- 2 - crossover power supplies*
- 1 - toolkit
- 4 - power cords*

* Add two more if system is balanced.

Before setting-up the system, please make note that odd serial numbers for all components (woofer tower, stator, interface, crossover, power supply (example: XICL001)) are matched for use as the right channel, while even serial numbers for all components are matched for the left channel.

Woofer Assemblies

The woofer assemblies are connected to the amplifier via either the 5-way binding posts or screw terminals on the backplate of the woofer column. As can be seen from the back panel of the Statement woofer, the signal connectors are strapped in such a way that you can use one amplifier out of the box.

If you desire or require double amplification, the electronic crossover modules have dual, low-level, low-pass, outputs. By removing the straps on the woofer backplate you can directly access, via one set of 5-way binding posts, two woofers at a time. Hence you are able to use two bass amplifiers. This option is available for the consideration of amplifiers which do not perform their best into a 2 ohm load. When using two amplifiers, each one will see only a 4 ohm load.

Electrostatic Panel Assemblies

The electrostatic panel assemblies should first be assembled mechanically. The method of assembly consists of setting the pedestal on the floor then sliding the left and right upright braces on to their hidden fasteners. Observe figure 1. Next, bring the electrostatic panel assembly to the braces and attach via the hidden fasteners. Finally, attach the interface riser blocks via the hidden fasteners and install the interface module on-top of the risers.

You are now ready to connect the electrostatic panel to the interface module via the three color coded pin-plugs. Naturally, black to black, green to green and red to red. The blue stat panel wire goes to the green pin-plug on the interface module.

Observing from the back of the interface module you will see five-way binding posts, screw terminals, soft-contour switches, and the AC input.

Proceed by plugging in the AC power cord, first at the interface module, then to the wall outlet. Then attach to your high-pass amplifier via the screw terminals or the five-way binding posts. They are internally parallel connected so that either terminal set may be used.

**Do not use both with different power amplifiers!
Use only one!**

Crossover Settings

Before you connect the crossover and begin listening, there are some internal switches that must be set. However, if you are using identical amplifiers for the high and low pass sections of the **Statement**, you may skip this step.

Remove the covers from the crossover modules that have the control knob. Inside you will see, towards the back, two red dip switches. The left dip switch as you face the crossover attenuates the low pass, the right dip switch attenuates the high-pass. These switches will balance the gain in amplifiers with different gain characteristics.

The following formula will help you calculate the gain of each amplifier:

$$\text{Amplifier Gain} = 20 \log \left[\frac{\sqrt{(\text{Rated Output @ 8 ohms}) \times 8}}{\text{Input Sensitivity}} \right]$$

Below is a list of switch settings to help you select the proper gain switch settings.

As you detent the switch towards the rear jacks, you are engaging that switch. In other words, you are turning the transducer down by 1 decibel per position as you detent the switch in numerical order away from 1. In order to

properly engage a switch, you need to have all other switches opposed away from the rear jacks (off - one switch on at a time). Begin by setting both the low-pass and the high-pass in the number one position. If the high-pass and low-pass amplifiers have the same gain, the system is designed to operate with both dip switches set to "1" (Position "1" represents no attenuation). If the gain difference is known, attenuate the higher gain amplifier by the known gain difference using the switch one number higher than the attenuation needed in dB (ie: switch "4" is 3db attenuation-all switches open is 8dB down).

OPEN	CLOSED	ATTENUATION
Does not matter.	1	0 dB
1	2,3,4,5,6,7,8	-0.5 dB
1,3,4,5,6,7,8	2	-1.0 dB
1,2,4,7,8	3,5,6	-1.5 dB
1,2,4,5,6,7,8	3	-2.0 dB
1,2,3,5,7,8	4,6	-2.5 dB
1,2,3,5,6,7,8	4	-3.0 dB
1,2,3,4,6,8	5,7	-3.5 dB
1,2,3,4,6,7,8	5	-4.0 dB
1,2,3,4,5,7	6,8	-4.5 dB
1,2,3,4,5,7,8	6	-5.0 dB
1,2,3,4,5,6,8	7	-6.0 dB
1,2,3,4,5,6,7	8	-7.0 dB
1,2,3,4,5,6,7,8	None	-8.0 dB

If equipped, the best way now to obtain the optimal setting is to locate a spectrum analyzer in the room near your seating position, turn one system on with pink noise and begin to observe the relationship of the stat panel and the subwoofer at the crossover point approximately at 100 Hz. When you begin to see the spectrum becoming correct at that point, that is when you have the optimal crossover format. By correct, I mean flat, or even. The energy below 100 Hz is roughly comparable to the energy above 100 Hz. You should have reasonable tonal balance from 60 Hz onward to 200 Hz. At that point you have the optimal frequency balance at the crossover point. Keep in mind that specs and equipment can determine the best place to begin, but your ears are the most critical instrument available. Listen and adjust for your personal best balance.

System Set-up

Crossover Modules

You will notice that one of the crossover modules has red-banded Tiffany RCA connectors while the other unit has white. The red denotes the right channel module while white denotes the left. Stack the two crossover modules, with the control knobs, on top of each other and the two power supplies on top of each other. Then connect each power supply with each crossover via the supplied Neutriks power connectors.

Insert your pre-amps' output cables into the crossovers' Main Input jacks, your low-pass amplifiers' cables into the crossovers' Low Output jacks, and your high-pass amplifiers' cables into High Output jacks.

Once this is done, you may connect the crossover power supply modules to AC power.

CAUTION !
DO NOT CONNECT THE POWER SUPPLIES AND CROSSEVERS VIA THE NEUTRIKS CONNECTORS AFTER PLUGGING IN THE AC MAINS!

Plug in AC mains only after the power supplies and crossovers have been connected together. Make sure the power amplifiers are off.

Tone Shaping Controls

The Tone Shaping controls are located on the rear of the interface modules. Begin your listening session with the Activation switch in the bypassed mode. The bypassed mode means that you are now running the system in an absolute flat position and there is no contouring available. You will notice that the system is extremely high in resolution and if you have a live room or a bright front-end, you may find one of the contour modes to be more listenable. Listen for massed strings and cymbal tones. If they are bright, the contour switch can be used to smooth out this area. Generally the contour positions are not needed unless a bright front-end or bright room is in the system.

Contour "A"

You engage contour A by switching the Activation switch from bypassed to engaged and switching the Contour switch to A. Contour A allows approximately a one dB attenuation from 500 Hz to 10,000 Hz. This allows the integrity of the midrange to remain intact and the top-end extension to remain intact but eliminates the appearance of brightness.

Contour "B"

If your room or your front-end is considerably bright, then contour B may prove more effective. Contour B is another decibel of attenuation in the same region, but will create even more of the condition established by contour A. Again, begin all listening in the bypassed mode. It is recommended that you spend at least a day or two with the Activation switch set to bypassed before experimenting with any of the contour positions.

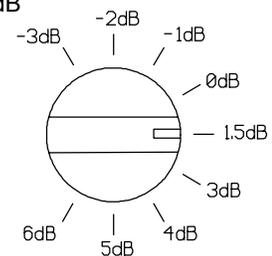
"Fun-factor" Control

First adjust control knobs on the front panel so that each knob is positioned horizontally (see illustration). This will

mean that the system is 1.5 dB in its EQ below 50 Hz.

You will notice a control knob on the front of each crossover module. That control effects the energy of the system below 50 Hz. Look at the enclosed diagram to observe the

positioning of the switch. This is allowed to either enhance or decrease energy below 50 Hz to accommodate different placement in the room. The adjustment range is from -3dB to +6dB with the 4th position clockwise being flat.



Placement

Placement is a very important part of the set up procedure.

We recommend that you start with the system roughly two meters from the wall behind the speakers, woofers on the outside of the stat panels, woofer fronts flush with and beside the stat panel frame fronts. Recommended toe-in is 10 degrees or less. Narrow rooms may require the woofers to be on the inside of the stat panels. Soundstage and imaging are affected by the relative placement of the woofers with respect to the stat panels. The woofer columns may be moved back half way between the stat panels and the wall, however, this will affect the bass response, time alignment, and woofer/stat panel relative levels. Crossover settings may need re-adjustment. Also, even though the best results seem to occur with the stat panel cable connector polarity dots up, time alignment variations may warrant experimentation with inverting the stat panel polarity (red dot down).

We have found that, generally, the best performance results with the woofers positioned close to the left and right walls and to the outside of the stat panels.

Narrow Rooms

A narrow room almost dictates that the woofers will be to the inside of the stat panels. Experiment with the position that results in the widest soundstage, tightest and most extended bass, and the best balance at the lower midrange area.

Wide Rooms

You have more room to experiment here. Place your stat panels for the best soundstage. You will find that they can be placed quite far apart and still provide excellent middle center staging with the stage width extending beyond the outer edges of both stat panels. Initially, try placing the woofers to the outside of the stats, close to the side walls.

Woofer/Room Interaction vs. Time Alignment

The crossover is provided at 125 Hz so you have some latitude for movement without much trade-off regarding imaging. However, you will find dramatic changes regarding woofer/room placement.

The most extended bass response generally occurs when placing the woofers at the corners of the room, however a horn effect can occur affecting the lower midrange area. If the woofer is placed between the stats, generally a prominence in the upper bass will occur due to rear wall reflection enhancement, with a recession in the lower bass (your "Fun Factor Control" will solve this problem).

It is for the above reasons that we recommend your starting position begin with the woofers to the outside and parallel with the frontal plane of the stats. Once you have established a reference listening condition, begin to experiment and don't be afraid to move the woofer tower all over the back wall area.

Room Treatment

Room treatment is a crucial part of the system set up. We recommend experimentation with sound absorbing panels and/or diffusers. It is most important to avoid sonic glare from reflections off the wall behind the speakers and behind the listener. Consider, however, that too much acoustic treatment may cause the system to sound too dry. We have found that a 2' wide panel 6' tall placed directly behind the stat panel on the wall can be very effective without damping the sound too much.

Experimenting with center dampers such as the ASC half rounds on the wall between the speakers can enhance center staging.

Experimenting with damping on the back wall, if it is close to the listening position, can also help establish a superior imaging condition.

Experimenting with damping on the side walls directly to the side of the stat panels, particularly in narrow rooms, can result in superior imaging and reduced "glare" in conditions where the room and wall surfaces are hard.

Room Acoustics

Your Room

This is one of those areas that requires a little background to understand and some time and experimentation to obtain the best performance from your system.

Your room is actually a component and an important part of your system. This component is a very large variable and can dramatically add to, or subtract from, a great musical experience, depending on how well you attend to it.

All sound is composed of waves. Each note has its own wave size, with the lower bass notes literally encompassing from 10' to as much as 40'! Your room participates in this wave experience like a 3 dimensional pool with waves reflecting and becoming enhanced depending on the size of the room and the types of surfaces in the room.

Remember, your audio system can literally generate all of the information required to recreate a musical event in time, space, and tonal balance. The purpose of your room, ideally, is to not contribute to that information. However, every room does contribute to the sound and the better speaker manufacturers have designed their systems to accommodate this phenomenon.

Let's talk about a few important terms before we begin.

Terminology

Standing Waves. The parallel walls in your room will reinforce certain notes to the point that they will sound louder than the rest of the audio spectrum and cause "one note bass", "boomy bass", or "tubby bass". For instance, 100Hz represents a 10' wavelength. Your room will reinforce that specific frequency if one of the dominant dimensions is 10'. Large objects in the room such as cabinetry or furniture can help to minimize this potential problem. Some serious "audiophiles" will literally build a special room with no parallel walls just to get away from this phenomenon.

Reflective Surfaces. The hard surfaces of your room, particularly if close to your speaker system, will reflect those waves back into the room over and over again, confusing the clarity and imaging of your system. The smaller sound waves are mostly affected here and occur in the mid and high frequencies. This is where voice and frequencies as high as the cymbals can occur.

Near Field Reflections. Those reflective surfaces of the room that are the closest to your speaker system, particularly if they are hard surfaces, can reflect the musical energy back into the room, confusing the imaging and tonal balance of your system. Excessive brightness can result from this condition and diffuse, ill defined imaging can easily occur if too many surfaces near your speakers are hard and sharp in their relative angle to your system.

Resonant Surfaces and Objects. All of the surfaces and objects in your room are subject to the frequencies generated by your system. Much like an instrument, they will vibrate and "carry on" in syncopation with the music and contribute in a negative way to the music. Ringing, boominess, and even brightness can occur simply because they are "singing along" with your music.

Resonant Cavities. Small alcoves or closet type areas in your room can be chambers that create their own "standing waves" and can drum their own "one note" sounds.

Clap your hands. Can you hear an instant echo respond back? You have near-field reflections. Stomp your foot on the floor. Can you hear a "boom"? You have standing waves or large panel resonances such as a poorly supported wall. Put your head in a small cavity area and talk loudly. Can you hear a booming? You have just experienced a cavity resonance.

Rules of Thumb

Hard vs. Soft Surfaces. If one surface of your room (wall, floor, ceiling) is hard, a good rule of thumb suggests to try to have the opposing surface soft. So, if you have a hard wall of glass or paneling on one side of the room, it is best to have drapery or wall hangings on the opposing wall. If you have a hard ceiling, it generally is a good idea to have a soft floor of carpeting or area rugs. Large, soft furniture also counts to help damp a highly reflective room.

This rule suggests that a little reflection is good. As a matter of fact, some rooms can be so “over damped” with carpeting, drapes and sound absorbers that the music system can sound dull and lifeless. On the other hand, rooms can be so hard that the system can sound like a gymnasium with too much reflection and brightness. The point is that balance is the optimum environment.

Break-up Objects. Objects with complex shapes, such as bookshelves, cabinetry, and multiple shaped walls can help to break up those sonic gremlins and diffuse any dominant frequencies.

Solid Coupling. Your loudspeaker system generates frequency vibrations or waves into the room. This is how it creates sound. Those vibrations will vary from 20 per second to 20,000 per second. If your speaker system is not securely planted on the floor or solid surface, it can shake as it produces sound, and consequently the sound can be compromised. If your speaker is setting on the carpet and only foot gliders are used, the bass can be ill defined and even boomy. Additionally, the imaging can be poorly located and diffuse if the system is not on solid footing.

Bipolar Speakers and Your Room

Martin-Logan electrostatic loudspeakers are known as bipolar radiators. This means that they produce sound from both their fronts and their backs. Consequently, musical information is reflected by the wall behind them and may arrive either in or out of step with the information produced by the front of the speaker.

The low frequencies can either be enhanced or nulled by the position from the back wall. Your Statements's have been designed to be placed 3 feet from the back wall to obtain the best results, however your room may see things differently. So, listening to the difference of the bass response as a result of the changes in distance from the back wall can allow you to get the best combination of depth of bass and tonal balance.

The mid-range and high frequencies can also be affected, but in a different way. The timing of the first wave as it is first radiated to your ears and then the reflected information as it arrives at your ears later in time, can result in confusion of the precious timing information that carries the clues to imaging and, consequently result in blurred imaging and excessive brightness. Soft walls, curtains, wall hangings, or sound dampeners (your dealer can give you good information here) can be effective if these negative conditions occur.

Troubleshooting

No Output.

- Check that all your system components are turned on.
- Check your speaker wires and connections.
- Check all interconnecting cables.

Weak Output, Loss of Highs.

- Check the power cord. Is it properly connected to the ESL?

Exaggerated Highs, Brightness.

- Check the toe-in of the speakers.
- Check the setting of the **Soft Contour** switch.

Muddy Bass

- Check placement. Try moving the speakers closer to the back and side walls.
- Check the type of feet being used. Try attaching the coupling spikes.

Lack of Bass

- Check your speaker wires. Is the polarity correct?

Poor Imaging

- Check placement. Are both speakers the same distance from the walls? Do they have the same amount of toe-in? Try moving the speakers away from the back and side walls.
- Check the polarity of the speaker wires. Are they connected properly?

Popping and Ticking Sounds, Funny Noises

- These occasional noises are harmless and will not hurt your audio system or your speakers. All electrostatic speakers are guilty of making odd noises at one time or another.
- These noises may be caused by dirt and dust particles collecting on the speaker, by high humidity or by AC line fluctuations that may occur in your area.
- Dirt and dust may be vacuumed off with a brush attachment connected to your vacuum cleaner or you may blow them off with compressed air.
- DO NOT SPRAY ANY KIND OF CLEANING AGENT ON OR IN CLOSE PROXIMITY TO THEM.**

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