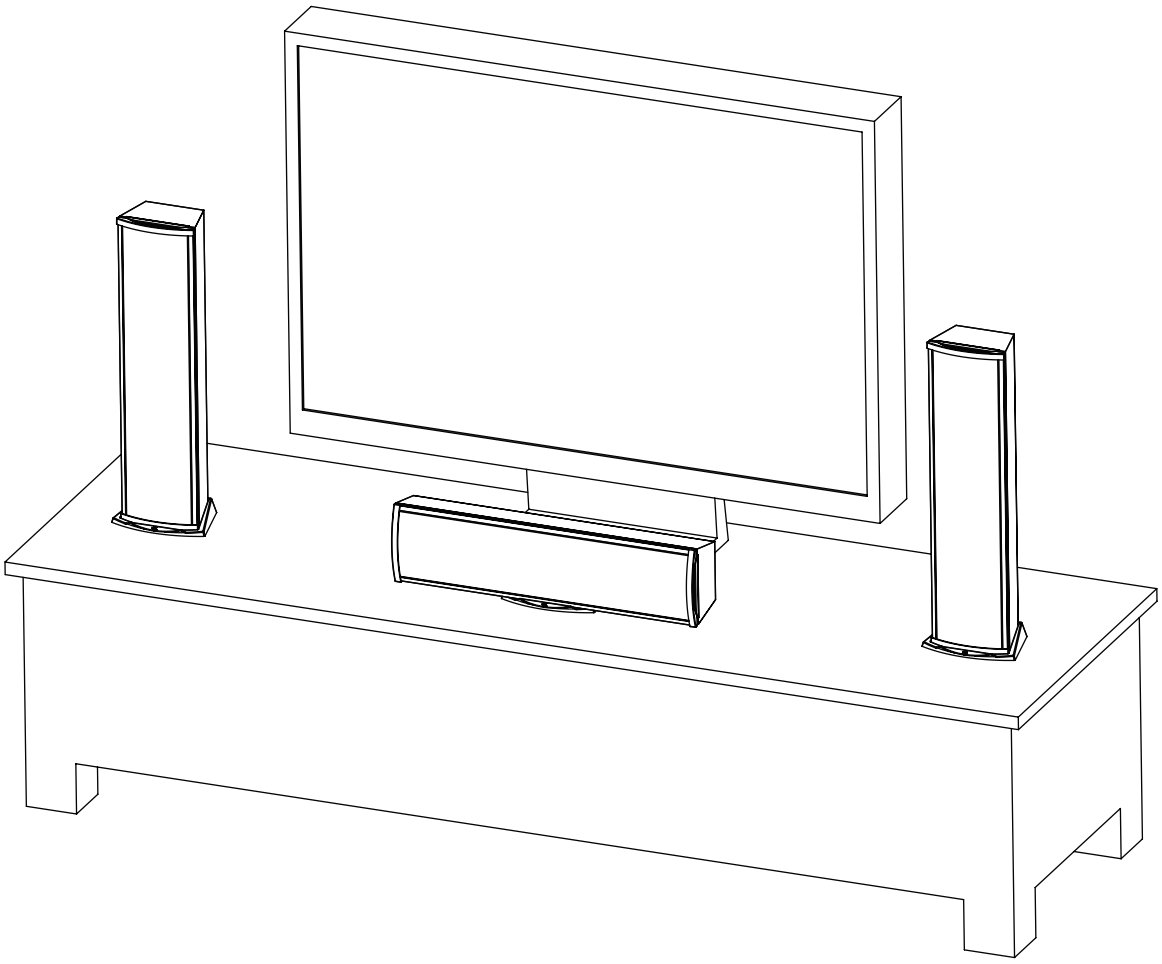
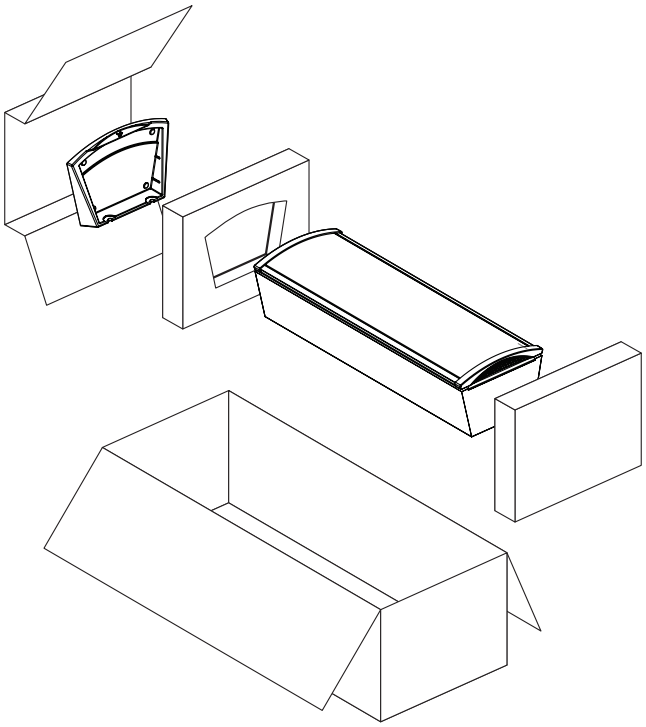
ENCORE™ TF

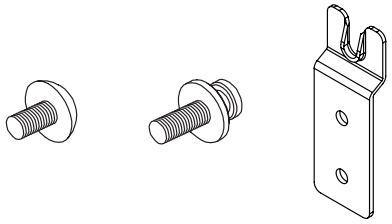
user's manual



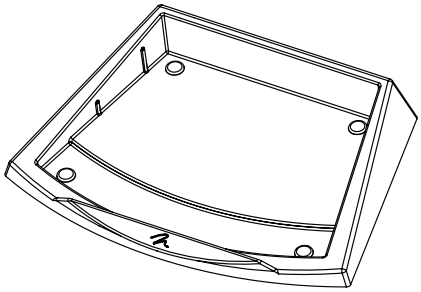
MARTIN LOGAN
DESIGN SERIES

The Great American Speaker Company





x 2



x 1

CE

Encore TF

FC Tested to Comply with FCC Standards

FOR HOME OR OFFICE USE

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Serial Number: _____

Record your serial number here for easy reference. You will need this information when filling out your warranty registration. Encore TF's serial number is located near the binding posts and on the shipping container.

Thank you—the MartinLogan owner,

for loving what we do,

and

making it possible for us to do what we love.

CONTENTS

Contents 4
Introduction and Installation in Brief. 5
Introduction
Installation in Brief
Connection. 6
Signal Connection
Break-In
Installation. 7
Installation Options
Using the Non-Skid Grip Feet
Mounting the Speaker On A Wall
Home Theater 10
ATF™ (Advanced Thin Film). 11
FAQ and Troubleshooting. 12
Frequently Asked Questions
Troubleshooting
General Information 13
Specifications
Warranty and Registration
Serial Number
Service
Dimensional Drawings. 14
Glossary of Audio Terms 15

In accordance with the European Union WEEE (Waste Electrical and Electronic Equipment) directive effective August 13, 2005, we would like to notify you that this product may contain regulated materials which upon disposal, according to the WEEE directive, require special reuse and recycling processing.

For this reason MartinLogan has arranged with our distributors in European Union member nations to collect and recycle this product at no cost to you. To find your local distributor please contact the dealer from whom you purchased this product, email info@martinlogan.com or visit the distributor locator at www.martinlogan.com.

Please note, only this product itself falls under the WEEE directive. When disposing of packaging and other related shipping materials we encourage you to recycle these items through the normal channels.

The lightning bolt flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of potentially "dangerous voltage" within the product's enclosure that may be sufficient to constitute a risk of electric shock.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

Introduction

Congratulations! You have invested in a new world of home cinema!

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

The materials in your new Encore TF speaker are of the highest quality and will provide years of enduring enjoyment and deepening respect.

This User's Manual will explain in detail the operation of your Encore TF speaker and the philosophy applied to its design. A clear understanding of your speaker will insure that you obtain maximum performance and pleasure from this most exacting transducer. It has been designed and constructed to give you years of trouble-free listening enjoyment.

WARNING!

- Refer servicing to a qualified technician.
- To prevent fire or shock hazard, do not expose this module to moisture.
- Turn amplifier off should any abnormal conditions occur.
- Do not drive speaker beyond its rated power.

Installation in Brief

We know you are eager to hear your new MartinLogan loudspeaker, so this section is provided to allow fast and easy set up. Once your new speaker is operational, please take the time to read, in depth, the rest of the information in the enclosed manual. It will give you perspective on how to attain the greatest possible performance from this most exacting transducer.

If you experience any difficulties in the setup or operation of your MartinLogan speaker, please refer to the 'Connection' section of this manual.

Should you encounter a persistent problem that cannot be resolved, please contact your authorized MartinLogan dealer. They will provide you with the appropriate technical analysis to alleviate the situation.

Step 1: Unpacking
Remove your new Encore TF speaker from the packing.

Step 2: Placement
Place the Encore TF near the desired location. Please see the 'Installation' section (pages 7–9) for more placement details.

Step 3: Signal Connection
Use the best speaker cables you can. Higher quality cables, available from your specialty dealer, are recommended and will give you superior performance. Spade connectors are suggested for optimum contact and ease of installation.

Attach your speaker cables to the signal input section on the rear panel. Be consistent when connecting speaker leads to the terminals on the back of the Encore TF. Take great care to assign the same color to the (+) terminal on both the speaker and the amplifier. Please see the 'Connections' section (page 6) for more details.

Step 4: Listen and Enjoy
Now, you may turn on your system and enjoy!

CONNECTION

Signal Connection

Use the best speaker cables you can. The length and type of speaker cable used in your system will have an audible effect. Under no circumstance should a wire of gauge higher (thinner) than #16 be used. In general, the longer the length used, the greater the necessity of a lower gauge, and the lower the gauge, the better the sound, with diminishing returns setting in around #8 to #12.

A variety of speaker cables are now available whose manufacturers claim better performance than standard heavy gauge wire. We have verified this in many cases, and the improvements available are often more noticeable than the differences between wires of different gauge. The effects of cables may be masked if the equipment is not of the highest quality.

We also recommend, if possible, that short runs of speaker cable connect the power amplifier and speaker and that high quality long interconnect cables be used to connect the preamplifier and power amplifier. This results in the power amplifiers being close to the speakers, which may be practically or cosmetically difficult, but if the length of the speaker cables can be reduced to a few meters, sonic advantages may be obtained.

Connections are done at the signal input section on the rear electronics panel of the Encore TF (see figure 1). Use spade connectors for optimum contact. Make certain that all of your connections are tight.

Be consistent when connecting speaker leads to the terminals on the back of the Encore TF. Take great care to assign the same color to the (+) terminal on both the speaker and the amplifier.

WARNING! Turn your amplifier off before making or breaking any signal connections!

Break-In

When you first begin to play your Encore TF speaker it will sound a bit bass shy. This is due to the high-quality, long-life components used in our woofers. Our custom made woofers require at least 30 hours of break-in at 90 dB (moderate listening levels) before any critical listening. The break-in requirements of the crossover components (and, to a lesser degree, the ATF transducer) are equal.

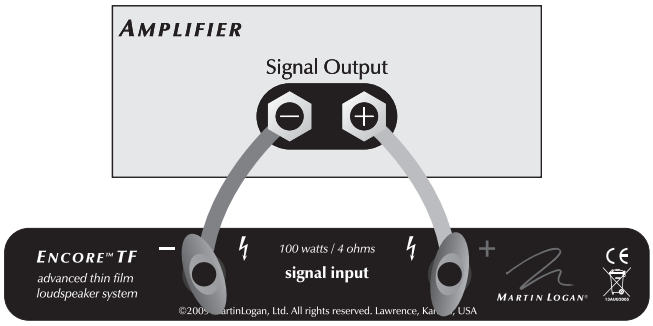


Figure 1. Speaker level connection. One channel shown.

Installation Options

On A Stand

If your equipment rack provides a wide, level, and stable platform, the Encore TF can be placed directly on top. When used this way the non-skid rubber stand should be used beneath the speaker for stability (see figure 2).

On the Wall

The included wall mount brackets allow you to mount the Encore TF on a wall (see figures 3 and "Mounting the Encore TF On A Wall" below).

WARNING! Installation other than that described in the body of this document requires specific documentation from MartinLogan.

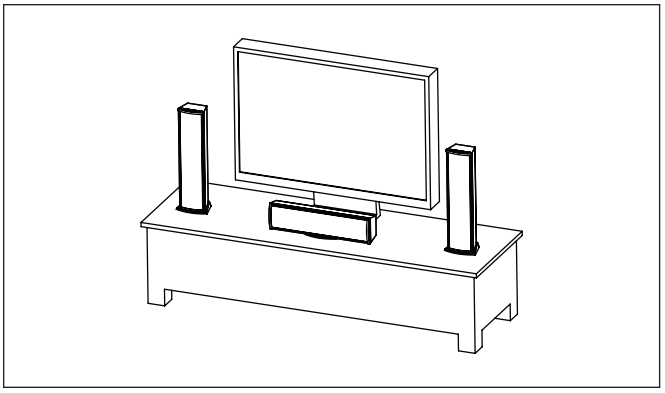


Figure 2. Encore TF installation on a flat surface.

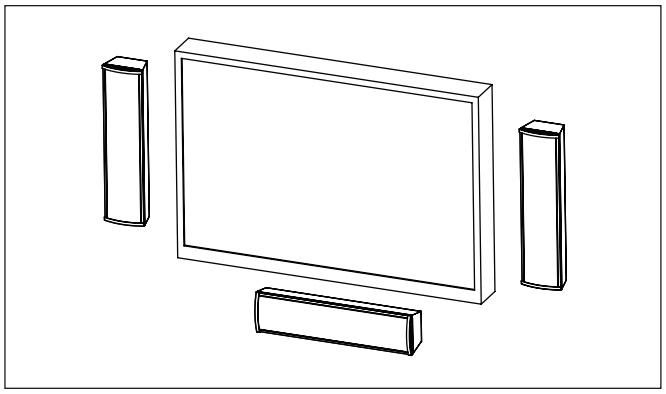


Figure 3. Encore TF installation on a wall.

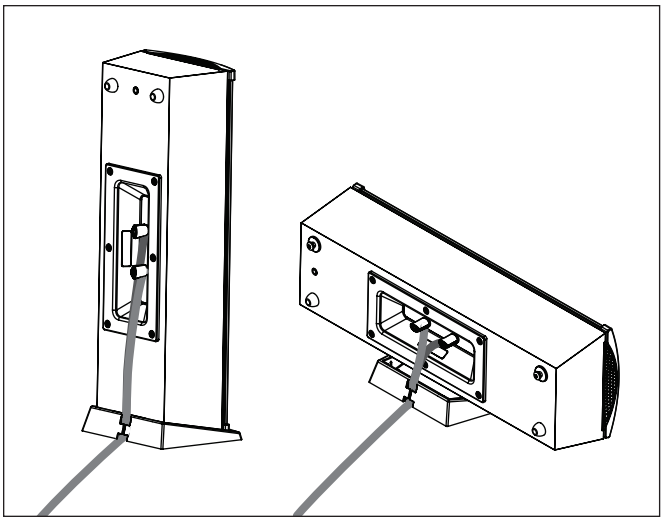


Figure 4. If Encore TF is to be used on a flat surface place the non-skid stand beneath the speaker. The stand includes a wire-routing channel to help minimize cable clutter.

Using the Non-Skid Stand

When setting Encore TF on a surface, use the non-skid stand beneath the speaker to provide traction. This stand functions for both vertical and horizontal installations. Additionally, the stand features a wire routing channel to assist in wire management (see figure 4).

Mounting the Speaker On A Wall

NOTE: These instructions assume the mounting surface is of standard wood frame and sheet rock construction. If you wish to mount the Encore TF to another type of surface, you should consult a bonded contractor.

NOTE: Before beginning study the horizontal and vertical hardware configuration drawings (figures 5 & 6).

Required hardware (included):

(2) shoulder bolts
(2) rubber bumpers
(2) wall mount brackets

Required hardware (not supplied):

(2 or 4) 1-inch Phillips head wood screws
(2 or 4) wall anchors

Required tools (not supplied):

Ruler
Level
Electric drill and 1/4" and 1/8" drill bits
Phillips screwdriver

NOTE: Vertical installation requires 1 wall mount bracket. Horizontal installation requires 2 wall mount brackets.

1 Using the dimensioned drawings (figure 5 & 6), a ruler, and level, determine your mounting locations.

2 Using a 1/8-inch drill bit, drill pilot holes for the wall mount bracket top screws.

3 If a pilot hole does not hit a stud use a 1/4-inch drill bit to widen the hole and install a wall anchor.

4 Install both wall brackets using only the top screw. Do not over tighten the top screw.

5 On the back of the Encore TF, install shoulder bolts as shown in figures 5 or 6. Install 2 rubber bumpers in the bottom holes. Test fit the speaker. Adjust the bracket positions until the speaker fits. **IMPORTANT!** At this point do not allow the speaker to hang freely—there are not enough screws installed to fully support its weight.

6 Drill the remaining pilot holes at the screw hole locations.

7 If a pilot hole does not hit a stud remove the wall bracket, use a 1/4-inch drill bit to widen the hole, and install a wall anchor.

8 Install bottom screws. Tighten all screws. Hang speaker.

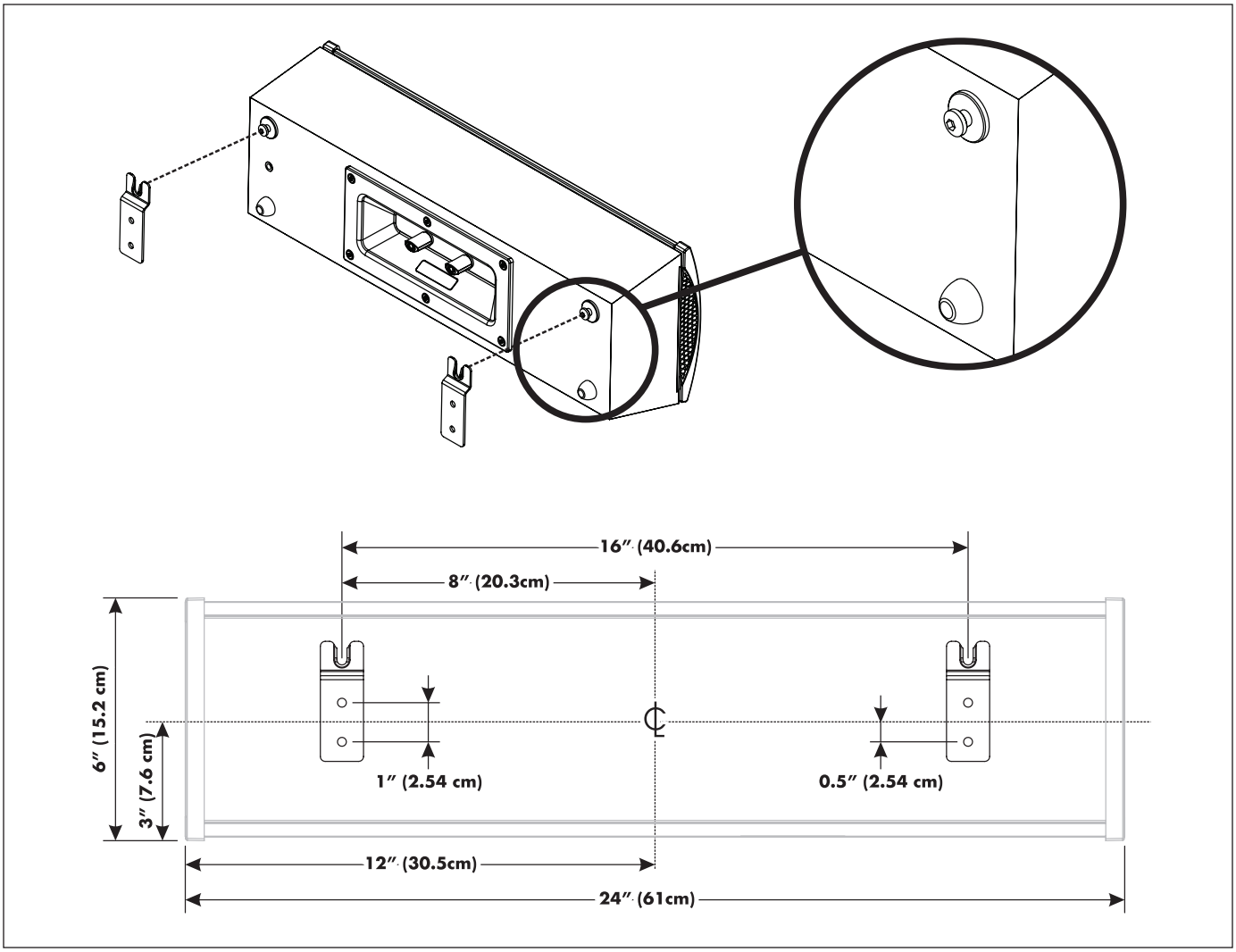


Figure 5. Horizontal hardware configuration and mounting dimensions

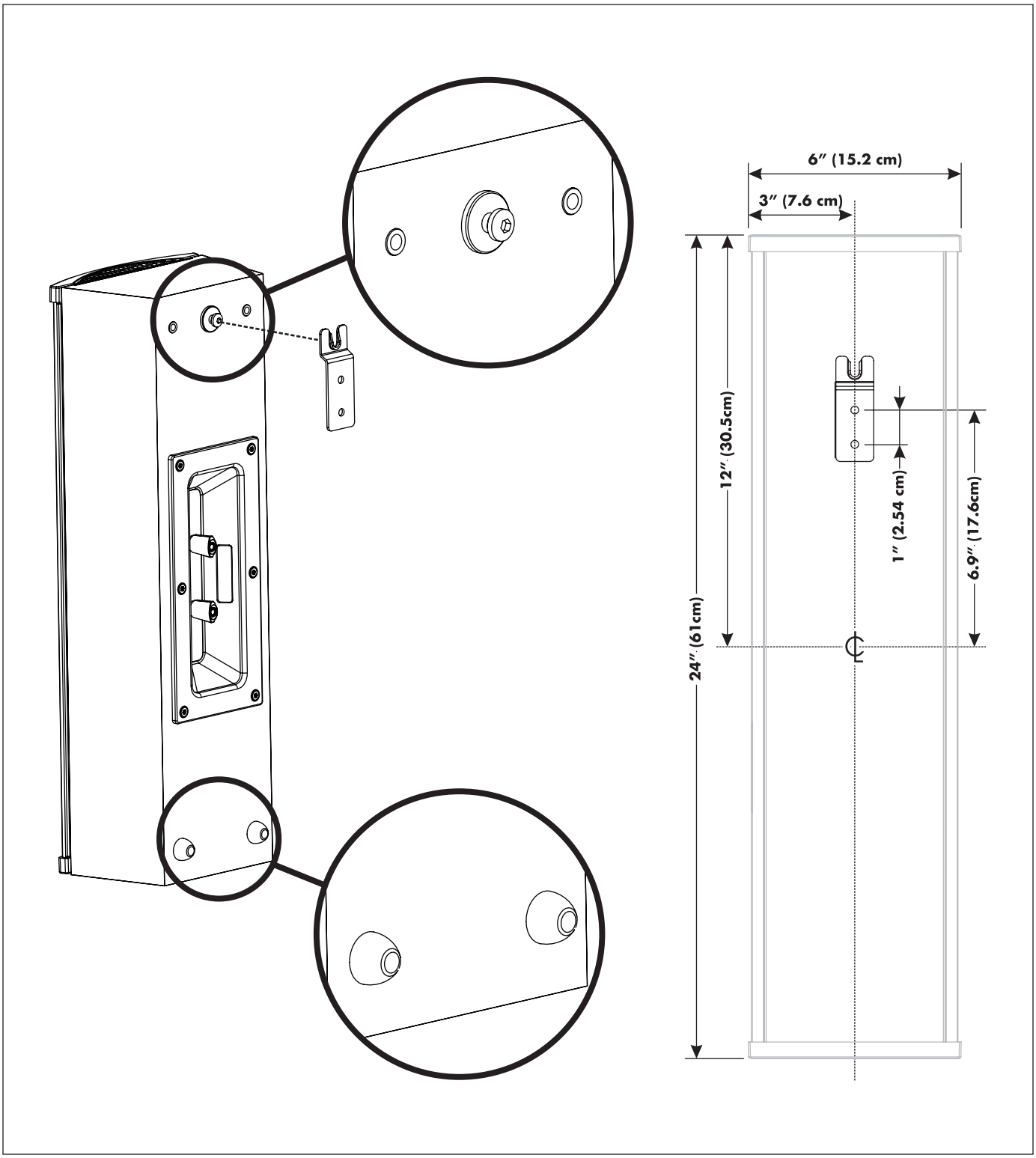


Figure 6. Vertical hardware configuration and mounting dimensions

Home Theater

It had long been the practice of stereo buffs to connect their television to a stereo system. The advantage was the use of the larger speakers and more powerful amplifier of the stereo system. Even though the sound was greatly improved, it was still mono and limited by the broadcast signal.

In the late 1970's and early 1980's two new home movie formats became widely available to the public: VCR and laser disc.

By 1985, both formats had developed into very high quality audio/video sources. In fact, the sonic performance of some video formats exceeded audio-only formats. Now, with theater-quality sound available at home, the only element missing was the "surround sound" presentation found in movie houses.

Fortunately, Dolby and DTS encoded DVD's emerged with the same surround sound information encoded on home releases as the theatrical release. Additionally, new high-resolution home-viewing formats such as Blu-ray as well as high-definition content provided via cable or satellite have evolved which include multi-channel encoded audio that is virtually master tape quality. All that is required to retrieve this information is a decoder and additional speakers and amps to reproduce it.

Home theater is a complex purchase and we recommend that you consult your local MartinLogan dealer, as they are well versed in this subject.

Each piece of a surround system can be purchased separately. Take your time and buy quality. No one has ever complained that the movie was too real. The following list and descriptions will give you only a brief outline of the responsibilities and demands placed on each speaker.

Front Left and Front Right

If these speakers will be the same two used for your stereo playback, they should be of very high quality and able to play loudly (over 102 dB) and reproduce bass below 80 Hz.

Center Channel

This is the most important speaker in a home theater system, as almost all of the dialogue and a large portion of the front speaker information is reproduced by the center channel. It is important that the center speaker be extremely accurate and mate well with the front speaker, and that it is recommended for use as a center speaker. This is not the place to cut corners.

Surround Speakers

We recommend (along with the film industry) that the surround speakers play down to at least 80 Hz. Surround speakers contain the information that makes it appear that planes are flying over your head. Some may suggest that this is the place to save money and purchase small, inexpensive speakers. If you choose to do so, be prepared to upgrade in the future as discrete multi-channel digital encoding is proliferating rapidly and the demands on surround speakers have increased.

Subwoofer

With any good surround system you will need one or more high-quality subwoofers (the .1 in a 5.1, 6.1, or 7.1 channel surround system). Most movie soundtracks contain large amounts of bass information as part of the special effects. Good subwoofers will provide a foundation for the rest of the system.

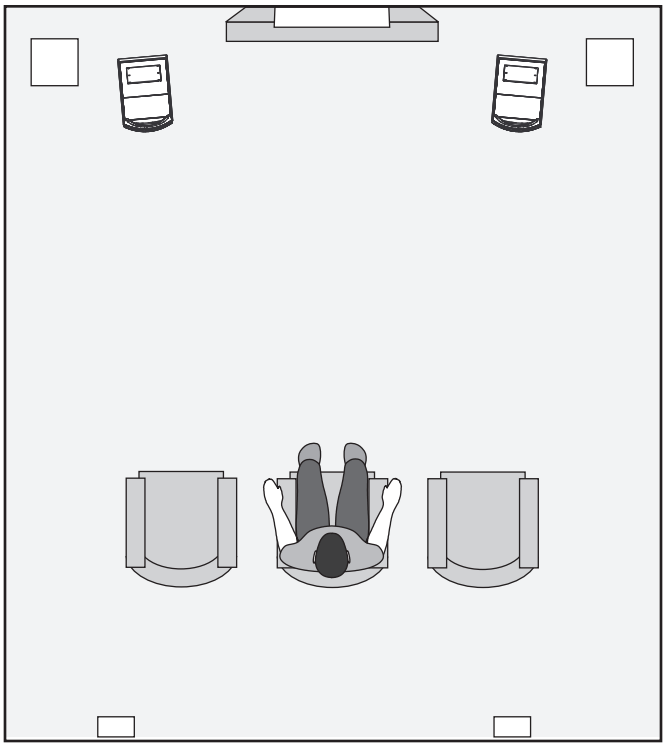


Figure 7. Source speakers as front channels, the Encore TF as the center and surround channels, and the Dynamo subwoofers as 0.1 (effects) channel.

ATF Operation

The MartinLogan ATF transducer (based on RADIA planar technology) consists of a micro-thin, low-mass Kaladex diaphragm with an ultra-light, etched conductive aluminum surface suspended between two high field strength neodymium super magnet arrays (see figure 8). When an electrical current (music signal) passes through the etched aluminum on the diaphragm's surface it is simultaneously pulled towards one of the neodymium arrays and pushed away from the opposing array. When the direction of current is reversed the diaphragm is simultaneously pushed and pulled in the opposite direction, thus producing sound.

Extremely Low-Mass Diaphragm —Blazing Speed and Inner Detail

Low-mass diaphragms are crucial to a loudspeaker's ability to accurately reproduce sound. As the mass of a transducer's diaphragm decreases, its ability to resolve detail increases. With extremely low-mass characteristics, the ATF transducer tracks the audio signal with almost perfect accuracy.

MartinLogan ATF diaphragms are constructed of extremely low mass Dupont Kaladex® PEN (polyethylene naphthalate) —a material chemically similar to the low-mass PET (polyethylene terathylate) film used in MartinLogan's generation 2 electrostatic transducers, yet capable of handling the high thermal requirements required for stable magnetic thin film operation.

High Field Strength —Superb Control and Efficiency

With a field strength almost 2000% more powerful than traditional systems, Neodymium iron boron (NIB) rare-earth super magnets are one of the world's strongest commercially available magnetic materials. This incredible field strength proves ideal for maintaining perfect control over the low-mass Kaladex diaphragm. Super-low distortion levels, high-resolution, and crystal-clear transparency are just a few of the benefits resulting from this superb combination of low-mass diaphragm and high field strength.

Push-Pull Operation = Ideal Linearity

Linearity is another factor contributing to a loudspeaker's ability to achieve ultimate clarity, detail and resolution. By positioning neodymium magnet arrays in a push-pull configuration, MartinLogan ATF transducer technology maintains uniform diaphragm control, regardless of position as it traverses the entire audio signal. The push-pull concept is a major contributor to the linearity and sonic superiority of ATF transducers.

Direct Full-Surface Drive Provides Outstanding Clarity

Unlike traditional voice coil driven systems, ATF diaphragms are directly and uniformly driven throughout their entire surface. This full-surface drive system results in ultra-fast transient response with no cone break up and the ability to accurately reproduce sound with great delicacy, nuance and clarity.

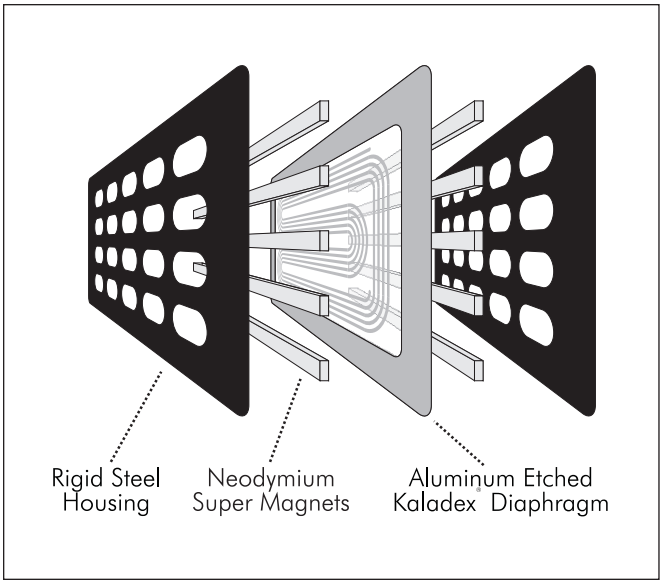


Figure 8. Cut away view of an ATF transducer. Note the simplicity due to minimal part usage.

Frequently Asked Questions and Troubleshooting

Frequently Asked Questions

How do I clean my speakers?

Just use a dust free cloth or a soft brush to remove the dust from your speakers. We recommend a specialty cloth (available at the Xtatic shop at www.martinlogan.com) that cleans your speakers better than anything else we have tried. **Do not spray any kind of cleaning agent on or in close proximity to the ATF element.**

What size amplifier should I use?

We recommend an amplifier with 100 watts per channel for most applications. Probably less would be adequate when used in home theater where a subwoofer is employed. Our hybrid designs will perform well with either a tube or transistorized amplifier, and will reveal the sonic character of either type. However, it is important that the amplifier be stable operating into varying impedance loads: a stable amplifier will be able to deliver twice its rated wattage into 4 Ohms and should again double into 2 Ohms.

Could you suggest a list of suitable electronics and cables ideal for MartinLogan speakers?

The area of electronics and cable choice is probably the most common type of question that we receive. It is also the most subjective. We have repeatedly found that brands that work well in one setup will drive someone else nuts in another. We use many brands with great success. Again, we have no favorites; we use electronics and cables quite interchangeably. We would suggest listening to a number of brands—and above all else—trust your ears. Dealers are always the best source for information when purchasing additional audio equipment.

Is there likely to be any interaction between my speakers and the television in my A/V system?

Yes. The Encore TF is not shielded and should be kept at least 2 feet away from a CRT television.

Will exposure to sunlight affect the life or performance of my speakers?

We recommend that you not place any loudspeaker in direct sunlight. The ultraviolet (UV) rays from the sun can cause deterioration of grill cloth, speaker cones, etc. Small exposures to UV will not cause a problem. In general, the filtering of UV rays through glass will greatly reduce the negative effects.

Troubleshooting

Output

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

Specifications*

System Frequency Response
70–20,000 Hz ± 3db

Sensitivity
92 dB/2.83 volts/meter

Impedance
4 Ohms

Crossover Frequency
1800Hz

Components
Air core coils, polyester and low dissipation electrolytic capacitors

Tweeter Type
1.5" x 2.25" (3.8 x 5.7 cm) ATF™ Transducer

Woofer Type
Two 4" (10.2cm) high rigidity paper cones with extended throw drive assembly, non-resonance asymmetrical chamber format; bass reflex

Power Handling
100 watts

Weight
9.5 lbs. (4.3 kg)

Size (with stand)
6.5" h x 24" w x 5.5" d (16.4 h x 61 w x 14 d cm)

Size (with wall bracket)
6" h x 24" w x 4.7" d (15.3 h x 61 w x 11.8d cm)

For detailed dimensional drawings, please see pages 8–9 & 14.

**Specifications are subject to change without notice.*

Warranty and Registration

Your Encore TF speaker is provided with an automatic Limited 90 Day Warranty coverage. You have the option, at no additional charge, to receive a Limited 5 Year Warranty coverage. To obtain the Limited 5 Year Warranty coverage you need to complete and return the Certificate of Registration, included with your speaker, and provide a copy of your dealer receipt, to MartinLogan within 30 days of purchase. For your convenience MartinLogan also offers online warranty registration at www.martinlogan.com.

MartinLogan may not honor warranty service claims unless we have a completed Warranty Registration card on file! If you did not receive a Certificate of Registration with your new Encore TF speaker you cannot be assured of having received new units. If this is the case, please contact your authorized MartinLogan dealer.

Serial Number

Encore TF's serial number is located directly beneath the binding posts.

Service

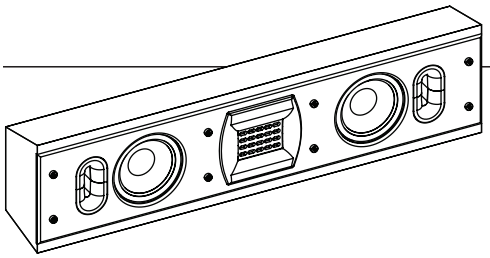
Should you be using your MartinLogan product in a country other than the one in which it was originally purchased, we ask that you note the following:

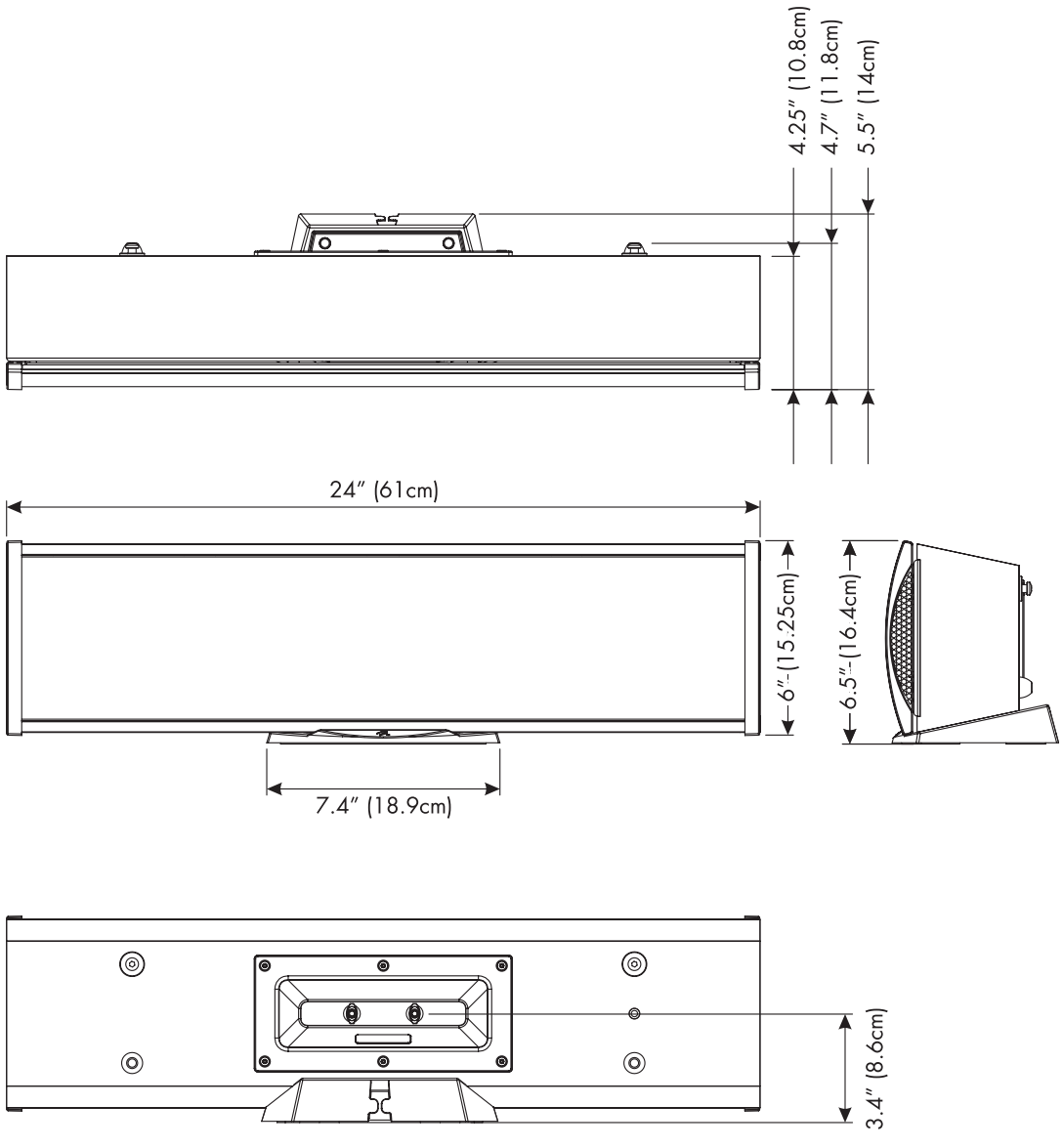
1 The appointed MartinLogan distributor for any given country is responsible for warranty servicing only on units distributed by or through it in that country in accordance with its applicable warranty.

2 Should a MartinLogan product require servicing in a country other than the one in which it was originally purchased, the end user may seek to have repairs performed by the nearest MartinLogan distributor, subject to that distributor's local servicing policies, but all cost of repairs (parts, labor, transportation) must be borne by the owner of the MartinLogan product.

3 If, after owning your speaker for six months, you relocate to a country other than the one in which you purchased your speaker, your warranty may be transferable. Contact MartinLogan for details.

Dimensional Drawings





Glossary of Audio Terms

AC. Abbreviation for alternating current.

Active crossover. Uses active devices (transistors, IC's, tubes) and some form of power supply to operate.

Amplitude. The extreme range of a signal. Usually measured from the average to the extreme.

Arc. The visible sparks generated by an electrical discharge.

Bass. The lowest frequencies of sound.

Bi-Amplification. Uses an electronic crossover, or line-level passive crossover, and separate power amplifiers for the high and low frequency loudspeaker drivers.

Capacitance. That property of a capacitor which determines how much charge can be stored in it for a given potential difference between its terminals, measured in farads, by the ratio of the charge stored to the potential difference.

Capacitor. A device consisting of two or more conducting plates separated from one another by an insulating material and used for storing an electrical charge. Sometimes called a condenser.

Clipping. Distortion of a signal by its being chopped off. An overload problem caused by pushing an amplifier beyond its capabilities. The flat-topped signal has high levels of harmonic distortion which creates heat in a loudspeaker and is the major cause of loudspeaker component failure.

CLS. The abbreviation for curvilinear linesource.

Crossover. An electrical circuit that divides a full bandwidth signal into the desired frequency bands for the loudspeaker components.

dB (decibel). A numerical expression of the relative loudness of a sound. The difference in decibels between two sounds is ten times the Base 10 logarithm of the ratio of their power levels.

DC. Abbreviation for direct current.

Diffraction. The breaking up of a sound wave caused by some type of mechanical interference such as a cabinet edge, grill frame or other similar object.

Diaphragm. A thin flexible membrane or cone that vibrates in response to electrical signals to produce sound waves.

Distortion. Usually referred to in terms of total harmonic distortion (THD) which is the percentage of unwanted harmonics of the drive signal present with the wanted signal. Generally used to mean any unwanted change introduced by the device under question.

Driver. See transducer.

Dynamic Range. The range between the quietest and the loudest sounds a device can handle (often quoted in dB).

Efficiency. The acoustic power delivered for a given electrical input. Often expressed as decibels/watt/meter (dB/w/m).

ESL. The abbreviation for electrostatic loudspeaker.

Headroom. The difference, in decibels, between the peak and RMS levels in program material.

Hybrid. A product created by the marriage of two different technologies. Meant here as the combination of a dynamic woofer with an electrostatic transducer.

Hz (Hertz). Unit of frequency equivalent to the number of cycles per second.

Imaging. To make a representation or imitation of the original sonic event.

Impedance. The total opposition offered by an electric circuit to the flow of an alternating current of a single frequency. It is a combination of resistance and reactance and is measured in ohms. Remember that a speaker's impedance changes with frequency, it is not a constant value.

Inductance. The property of an electrical circuit by which a varying current in it produces a varying magnetic field that introduces voltages in the same circuit or in a nearby circuit. It is measured in henrys.

Inductor. A device designed primarily to introduce inductance into an electrical circuit. Sometimes called a choke or coil.

Linearity. The extent to which any signal handling process is accomplished without amplitude distortion.

Midrange. The middle frequencies where the ear is the most sensitive.

Passive crossover. Uses no active components (transistors, IC's, tubes) and needs no power supply (AC, DC, battery) to operate. The crossover in a typical loudspeaker is of the passive variety. Passive crossovers consist of capacitors, inductors and resistors.

Phase. The amount by which one sine wave leads or lags a second wave of the same frequency. The difference is described by the term phase angle. Sine waves in phase reinforce each other; those out of phase cancel.

Pink noise. A random noise used in measurements, as it has the same amount of energy in each octave.

Polarity. The condition of being positive or negative with respect to some reference point or object.

RMS. Abbreviation for root mean square. The effective value of a given waveform is its RMS value. Acoustic power is proportional to the square of the RMS sound pressure.

Resistance. That property of a conductor by which it opposes the flow of electric current, resulting in the generation of heat in the conducting material, usually expressed in ohms.

Resistor. A device used in a circuit to provide resistance.

Resonance. The effect produced when the natural vibration frequency of a body is greatly amplified by reinforcing vibrations at the same or nearly the same frequency from another body.

Sensitivity. The volume of sound delivered for a given electrical input.

Stator. The fixed part forming the reference for the moving diaphragm in a planar speaker.

THD. The abbreviation for total harmonic distortion. (See Distortion)

TIM. The abbreviation for transient intermodulation distortion.

Transducer. Any of various devices that transmit energy from one system to another, sometimes one that converts the energy in form. Loudspeaker transducers convert electrical energy into mechanical motion.

Transient. Applies to that which lasts or stays but a short time. A change from one steady-state condition to another.

Tweeter. A small drive unit designed to reproduce only high frequencies.

Wavelength. The distance measured in the direction of progression of a wave, from any given point characterized by the same phase.

White noise. A random noise used in measurements, as it has the same amount of energy at each frequency.

Woofer. A drive unit operating in the bass frequencies only. Drive units in two-way systems are not true woofers but are more accurately described as being mid/bass drivers.

MARTIN LOGAN®
DESIGN SERIES

The Great American Speaker Company

Lawrence, Kansas, USA tel 785.749.0133 fax 785.749.5320 www.martinlogan.com

Rev. #060509