



# TONE

Mk. I

Guidebook

2005



Thank you for your purchase of the Tone bookshelf loudspeaker. Every element is designed for a lifetime of trouble free high performance playback. It is our desire to exceed your expectations in product performance, quality, durability and service. If we have simply met your expectations or have fallen short, we would sincerely appreciate knowing how we may improve. Likewise, if we have exceeded your expectations we hope to hear from you too.

Impressions of new realities struggle and flow—eventual transition.... Awareness of surroundings, songs of tranquility and warning—history and intuition instruct that patterns of sound have been a fundamental constant. Observance of nature, both physical and spiritual, teach us of the endless interplay of vibrational forces.

While traveling the line of time we can see many periods of increased awakening and technological advancement but none so powerful and rapid as that of the Scientific Revolution, Enlightenment and the birth of modern physics. The dramatic increase of understanding regarding possibility, vibration and energy coincide with our collective ability to listen and express patterns of life. David Toop in his book *Ocean Of Sound* paints a powerful image of our modern musical creativity: “...Starting with Debussy in 1889, is an erosion of categories, a peeling open of systems to make space for stimuli, new ideas, new now, this environment included sounds of the world—previously unheard musics and ambient sounds of all kinds, urban noise and bioacoustics... unfamiliar tuning system and structuring principles, improvisation and chance.”

*Welcome to Zu,*

Sean Casey, Adam Decaria, Chris Thiel, Marty Petersen, James Read, Randy Sandman, and the rest of the Zu team.

WARNING, electrocution through loudspeaker cable is possible, though very unlikely. To avoid electrocution make sure your amplifying gear is powered down prior to connecting or disconnecting loudspeaker cables. This will also reduce the possibility for accidental damage to your audio amplifier. WARNING, the Tone loudspeaker driver create stray magnetic fields that extend far beyond the boundaries of the cabinet. We recommend you keep magnetically sensitive electronics and media at least 2.5 feet [76cm] from the loudspeaker.

WARNING, Tone loudspeakers are capable of very high sound levels, play responsibly.

#### **INCLUDED WITH EACH PAIR OF TONE LOUDSPEAKERS**

- [1] connector polishing kit for copper lugs.
- [1] loudspeaker finish care kit.
- [1] Guidebook.



## INITIAL PLACEMENT

While your initial placement for the Tone loudspeakers may not be the sonic best, Tone is not overly sensitive to placement [bass response relative to listening area and room may prove otherwise]. Satisfactory room integration is attainable from nearly any position within a room, particularly if a subwoofer augments the lowest octave. Nevertheless, the following details may assist you in the pursuit of fidelity.

Placement for left / right mains or stereo: Tone Bookshelf loudspeakers should be placed to work with the natural acoustics of the room rather than fight them. The following basic points should be followed.

- Tone loudspeakers should point at, or a foot or two behind the listening position for best stereophonic accuracy.
- From the listening position, Tone loudspeakers should be equidistant.
- Angle at the central listening area should be between 60° and 110°. Wider is usually better for both stereo and home theater.

For bookshelf style, position Tones, to be about the same height as your head, if you general stand then roughly 5 - 6 feet, if you do most of your listening seated then about 3 feet. Toe them in so the super tweeters point at the focal point of the listening area.

For tabletop applications, one on either side of your monitor (no CRT's please, the magnetic field of the Tones will really screw it up) then point the loudspeakers more or less at your head.

A few details for stand mounting. Before you begin I think it's important to understand a few details. Midrange tuning is a task of a inches (centimeters / decimeters) rather than feet (decimeters) and upper octaves a mater of half inches (centimeters / millimeters) and loudspeaker firing axis. Even though midrange and treble changes can be heard at the "being positioned loudspeaker", it is helpful to have a friend position while you listen in the seating area.

Staying with the same loudspeaker "room-tuned", (remember you only tune one channel and mirror its mate) and with your favorite record playing, start tuning for mids and highs. Move it toward the closest wall, in increments of a few inches [4 - 6cm]. While moving, the "in the listening area" observer, and possibly the person positioning the loudspeaker, should notice midrange color transition from low-presense and masked to open and intimate. There may be several spots within the good sounding bass area that have good presence, go with the widest point (closest to the wall) for an expansive and engaging soundstage, don't worry about center focus, the Tone Bookshelf OB will really impress with its capacity for expansive and focused soundstage recreation. Once a midrange position is selected its time to work on the highest octave. This is usually as simple as rotating the loudspeaker to face directly at the seated listener. Now listen again for voice openness and intimacy, minor placement adjustments and face angle may be necessary.

## PLACEMENT FINE TUNING

If you have some flexibility on where the Tone loudspeakers are to be placed, then the following is worth reading and experimenting with. If you don't, I wouldn't stress about it, through 'em where they need to go and enjoy....

Perhaps it has been the lack of skilled engineers, maybe audiophiles at large have lacked discipline; for whatever reason the current consumer playback world is lost in its conception of acoustics and the nature of sound—much has been written in consumer magazines but little of it is genuine. Original recommended works on the subject include: Music, Physics and Engineering (formerly titled Musical Engineering) by Harry F. Olson, Science & Music by Sir James Jeans, Fundamentals Of Musical Acoustics by Arthur H. Benade, Fundamentals Of Acoustics by Lawrence E. Kinsler, Austin R. Frey, Alan B. Coppins and James V. Sanders. There are several other good sources of researched data; these represent a good cross-section.

The following technique is Zu Tone specific. It addresses the loudspeaker's relationship with the room and works for both 2-channel and multi-channel setups. How and where the loudspeakers excite the room and how the room reacts is relative to the type and source of excitation and room reactance—a function of boundaries (walls, floors, etc.), boundary properties (mass, compliance, Q, damping, texture and structure), area impedances (shape, volume), diffusion and absorption (furnishings, people, flooring, etc.), source and type of wave excitation (loudspeaker design and placement), resonators (closets, forced air ducts, hallways, etc.), even atmospheric pressure and humidity, though minor, will influence sound. While the above are beyond the scope of this guidebook, the recommendations and listed books will start you down the proper acoustic path. Again, before you trust another modern work relative to playback and acoustics please research the above listed references!

With your loudspeakers positioned for visual appeal, livability and fidelity, you can now begin fine-tuning. This involves three major steps. In sequence they are bass, mids and treble. If you can't fine-tune your system within an evening please contact us.

Base: Usually, you will have one loudspeaker that is framed with more wall space, this is the loudspeaker you will fine-tune and then simply mirror the other. Select recordings with large amounts of sustained low frequency information; dramatic pipe organ and dance music work as do test recordings that have warbled low frequency tracks (50 - 100 Hz range). Note that steady state sine, triangle and square wave signal prove very difficult to interpret. Bass information with some transient content will enable the listener to make fast work of fine-tuning. So here we go, with the loudspeaker playing at a moderate level, (only the "tuning loudspeaker" should be on) walk over and kneel down next to it. Kneeling will put your head in the seated listening horizontal plane and allow you to hear how the loudspeaker integrates with the room. Now move your head to either side of, and back and forth of the loudspeaker, say a half-meter (a foot or so) in each axis. Listen to the fidelity of the bass, does it sound woolly and muddy right behind the loudspeaker? Is the bass more defined a bit to the left or right? If the bass sounds better a bit to the left, move the loudspeaker to this position and then listen again. Remember that moving the sound source also changes how the room reacts. You should only have to move the loudspeaker three or four times to get the bass dialed in.

Midrange and treble: Once the lower octaves are sounding good, natural, vibrant midrange and treble



can now be dialed in. Before you begin I think it's important to understand a few details. Midrange tuning, while similar to that of bass, is a task of a inches [decimeters] rather than feet [half meters] and upper octaves a matter of fractions of an inches [centimeters / millimeters] and loudspeaker firing axis. Even though midrange and treble changes can be heard at the being positioned loudspeaker, it is helpful to have a friend position while you listen in the seating area. Here, you may want to select less bass heavy recordings; jazz, space-ambient, violin solos, guitar solos, stuff with good overtone color and not too heavy.

Staying with the same loudspeaker "room-tuned" for low frequencies, [remember you only tune one channel and mirror its mate] and with your favorite less heavy recording playing, start tuning for mids and highs. Move it toward the closest wall, in increments of a few inches [4 - 6cm]. While moving, the "sweet spot" listener, and possibly the person positioning the loudspeaker, should notice midrange color transition from low-presence and masked to open and intimate. There may be several spots within the good sounding bass area that have good presence, go with the widest point [closest to the wall] for an expansive and engaging soundstage. Don't worry about center focus, the Druid will knock your socks off with its capacity for expansive and focused soundstage recreation. Once a midrange position is selected its time to work on the highest octave. This is usually as simple as rotating the Druid loudspeaker to face directly at, or just behind, the seated listener. Now listen again for voice openness and intimacy, minor placement adjustments and loudspeaker face angle may be necessary.

#### ADDITIONAL THOUGHTS ABOUT PLAYBACK, ROOM, AND TONALITY

The attack, more than any other aspect of a waveform, gives the listener the clues to process source, direction, amplitude, character, intelligence, and so on. Close in importance are the dynamics within that immediately follow the attack. A simple example: When a piano key is struck, three main components are set in motion. These make up the attack of a note; the mechanical noises including that of the impinging hammer, initial string motion, which has many extra components and initial coupling of piano body and sound board. The first few milliseconds are very dynamic and have many features. To get the attack correct is solely a function of the playback system and has very little to do with the room. Aside from placement, if you have changed your system to combat your room, attack and dynamics can never be correct. Most people can only pinpoint tonal problems with steady-state or semi steady-state music or signal, this is a big problem because room influence on steady-state sounds are huge, usually the single largest influence. Not realizing this, people usually tweak things to get the steady-state and decay tonally correct which inadvertently kills the life in the attack. This is a reason why cables as tone control, digital room correction, parametric equalizers and the like can never fix fundamental problems, unless of course the time axis is also programmed and correlated to harmonic structure and then set to react to any dynamic anomalies within the signal—we're a few decades out on that I think.

#### **BREAK-IN**

[Zu loudspeakers shipped after September 31, 2006 are manufactured and processed under the Zu burn-in system. This new aging process cannot be duplicated and ensures your Zu loudspeakers will sound their very best. A new pair of Zu loudspeakers that have been hit with the Zu burn-in process

will reach peak performance within a very short time of a user firing them up, less than three days typically, depends on weather and shipping conditions, and the user no longer needs to be concerned with burning them in with specified program material or at high playback levels. We are pretty excited about the system and process and we hope you are too.]

## **AMPLIFICATION**

Bipolar or F.E.T., class A or switching, O.T.L. or transformer isolated, one bottle single ended triodes or 500 Watt “who needs central heating” pentodes; Tone loudspeakers will work well with most all audio amplification designs. Sure some will prefer one over another, for assistance on which might fit your idea of playback fidelity please give us a call, we’re hear to help.

## **LOUDSPEAKER CABLE**

The most common abuse in hi-fi is to use cable as a form of tone control. Doing so usually leads to frustration and further loss of fidelity. When cable affects timbre it affects timing, phase, frequency response, and so on. Timbre problems are usually solved with loudspeaker break-in and correct loudspeaker placement. One last note on tonality and cable, if the cable has good properties relative to phase, gain, group delay, impedance, and bandwidth, it will likely convey with fidelity the transmitted emotion and color.

## **MAINTENANCE AND CLEANING OF FINISH**

For cleaning and dusting of your Tone loudspeaker simply use a clean damp 100% cotton or microfiber towel. Dusting of the 10” drivers should only be done with hand-held compressed air as used in photograph and sensitive electronics dusting.

## **MAINTENANCE AND CLEANING OF BINDING POST TERMINALS**

The unplated pure copper binding post terminals should also be cleaned once or twice a year using the supplied polishing compound. Once you have cleaned and polished the binding posts and spade lugs (if you are also using our unplated pure copper spade lugs) avoid touching the spades or the binding posts. Keeping the contacts free of the halides and oils of your skin help ensure a long term and trouble free connection.

## **INSTRUCTIONS FOR CLEANING AND POLISHING THE TONE BINDING POSTS**

1. Wash your hands with soap and water prior to cleaning the terminals.
2. Completely remove the machined aluminum binding post nut and black plastic terminal block. This will make for easy access of the pure copper lugs.
3. Using the supplied polish cloth (jar labeled “polish”), rub the exposed copper lug until it is clean,



usually about 15 - 30 seconds is all that is needed.

4. Wipe the polish off the copper lugs with the supplied white buffing cloth. [DO NOT WASH THE POLISH OFF, POLISH MUST BE REMOVED BY BUFFING ONLY.]
5. Refit the black plastic terminal block and machined aluminum binding post nut.
6. Again wash your hands with soap and water. The polishing does contain a small amount of petroleum distillate.

If you are also using our loudspeaker cable fitted with our pure copper spade lugs, we recommend that you clean your spades the same time that you clean your Druid binding posts. Polish each spade for 15 to 30 seconds then buff with the white buffing cloth.

## **WARRANTY INFORMATION**

Zu products are designed and manufactured to the highest quality. However, if something does go wrong Zu will fix or replace the product free of charge.

All standard Zu cables have a limited lifetime warranty with the exception of the Mobius headphone cable which has a two-year limited warranty. Cable warranty does not cover misuse or broken connectors damaged from misalignment or over tightening. Limited lifetime warranty is available to the original purchaser only.

Zu loudspeakers have a five year limited warranty from date of purchase to original owner. If under normal home use you have any problems with drivers, cable, parts, cabinet, we are going to fix or replace the product. Loudspeaker warranty and service can usually be performed by the user, also known as DIY Service, in such cases Zu will provide full technical support, instructions usually including a DVD video, and any special tools. This provides faster repair of product reducing down time, minimizes handling hassle and damage potential to both Zu and you, and reduces shipping costs.

Zu loudspeaker finish warranty covers color changes, finish checking, and oxidizing. While every effort is made to ensure a perfect finish that will last a lifetime, this warranty does not cover damage from impact and abrasion; or seam / core construction visibilities in extreme high temperature / high humidity environments.

Zu phonograph cartridges have a limited two year materials and workmanship warranty. This warranty does not cover misuse or accident. It does not cover premature stylus wear from playing dirty records.

Zu products are designed to be used in temperature and humidity controlled environments, namely your home or office unless otherwise stated. Storage of Zu Audio products, particularly loudspeakers, in uncontrolled environment may cause damage to the product and will void the warranty.

If in the highly unlikely event that a Zu product arrives to you Dead On Arrival (D.O.A.), and after

discussing it with a Zu tech, we will ship another of the same product at our expense and arrange for the D.O.A. product to be collected. If after inspection however we find that you have misrepresented a returned product's condition, and that it was improperly handled or used, Zu will charge you for all damaged parts, labor, shipping and handling of the product.

Warranty does not apply to damage caused by operating the product outside the intended use, accident, another product, misuse, abuse, flood, fire, earthquake or any other external causes. Warranty does not cover damage caused by modification or service performed by anyone other than a Zu representative. Cosmetic damage is also excluded from warranty, as is all product that has any part of the Zu serial number removed.

When a product or part is exchanged the replacement becomes your property and the suspect or damaged part becomes Zu's property. Parts provided by Zu must be used in products for which the warranty service is claimed.

What you can expect if warranty service is needed

Cable: exchange for new or at least functionally equivalent to the original cable product, or repair.

Loudspeakers: replacement of product or parts including user-serviceable parts, or repair.

Phonograph cartridges: exchange for new or at least functionally equivalent to the original product, or repair.

If warranty becomes necessary, you must call or email for a Return Material Authorization (R.M.A.) number, or to arrange for user serviceable parts. This provides opportunity to assist in diagnosing the problem and helps us to schedule for rapid turnaround in the event that parts, service or repair is needed. Upon factory inspection of parts or product, warranty eligibility will be determined.

While service options, parts availability and response times will vary, we do our best to keep you happy and strive for same day turnaround on cable problems, and one to three day turnarounds on phonograph and loudspeaker problems. Depending on the situation you may be responsible for shipping and other charges. International customers should know that Zu will comply with all applicable export / import laws and regulations, you may be responsible for custom duties, taxes, broker fees, freight, and other charges.

When shipping of product or part is required, repackage the complete product, or part, in its original packaging. If you have any questions about packaging please call or email. Product damage caused from incorrect repackaging is not eligible for refund or warranty and the freight company may also reject your insurance claim. Until we have the product back in the shop and sign off that it is eligible, the product is still your property, we recommend you insure or declare the full value when shipping. We also recommend that you only ship with a freight company that has a good reputation and offers tracking and insurance for the full amount.





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A **Revolution.**  
in American Hi-Fi