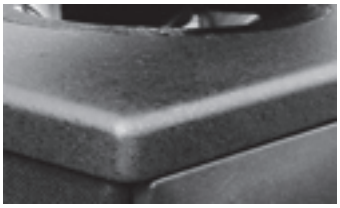
GREEN MOUNTAIN AUDIO

time-coherent speakers designed by advanced physics

Pico Executive HD Ownership Guide



Contents

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for more information

The first steps

Initial receipt. You'll receive two shipping cartons. Inspect each for damage, looking specifically for signs of impacts and punctures. If none are present, proceed while being alert for any damage as you begin to unpack them. Look and listen for any rattles, cracks, and chips. If damage is discovered, contact either your Authorized GMA Retailer or the GMA Factory. We will manage the claim process for you. The shipping-label side of each carton is the front of the speaker. As you unpack the speakers, mark each piece of packing material in terms of 'front,' 'back,' 'top,' or 'bottom.' The materials may be stored in a dry place. The cartons may be flattened. Plan to keep the packaging -- the custom materials will be expensive to replace. It's also a good idea to buy 'replacement cost' insurance to protect your speaker investment.

Photo #1
Although the shipping carton is upright in this photo, you'll want to lay it on its back during the unpacking stage. This is what you'll see when you open the carton flaps.

Overview. You'll prepare the midrange/tweeter modules first and then the woofer cabinet. The last step will be to mount the midrange and tweeter. Afterwards we'll guide you through connecting your amplifier's wires, placing the speakers, and fine-tuning.

Unpacking. Lay the master carton marked 'Open First' on its back with its label-side up. Open the flaps. You'll see the woofer cabinet and another carton on top of it. Inside that internal carton is the midrange and tweeter module (Photo #1). Remove the foam corners in the middle of the shipping carton (Photo #2), and then remove the internal midrange/tweeter carton. Open its top flaps. Remove the large rectangle of Styrofoam (Photo #3). You'll see a bag of accessories in one corner. Open the bag and keep close by the 5/32" hex wrench -- used to attach the midrange and tweeter modules -- and the four 'cap screws' (size "1-inch by 10-24") which you'll need to fasten the modules to the woofer cabinet. Next, remove the gray foam covering the tweeter module (Photo #4) and that small white Styrofoam divider.

NOTES: To prepare the midrange and tweeter modules: 1. The two modules are wired together. Lift both of them at the same time. You may want a partner's help with this step. 2. **NEVER** touch either the midrange's cone or the tweeter's dome. The modules were packed on their sides, with the cone and dome both pointed to the OUTER SIDES of the carton. **You may grab anywhere else!** 3. The plastic bags covering each were pulled tight over the drivers' faces -- remember to do this if ever you need to re-pack.

Photo #2
With the carton on its back on the floor, first remove the foam corners from the middle of the carton.

Photo #3
Remove this internal box from the shipping carton. Open its flaps and remove the large piece of Styrofoam.

Photo #4
Remove the gray foam covering the tweeter module and that small white block of Styrofoam.

Connecting the modules. Lift out the modules together and lay them on their **sides** on the carpet or at least on a soft towel. Thread two of the cap screws by hand into the holes at the top of the midrange module, until they just begin to come through the inside edge of the large slot (Photo #5). Lay the modules on their **backs** and insert the tweeter module straight into the slot. Hold it while tightening the two screws into its aluminum channel, using the wrench (Photo #6).

NOTES: 1. Don't tighten those two screws more than just moderately snug for now. 2. Don't allow the two screws to tighten against the black marble -- they must always stay inside the aluminum channel. Later, excess wire can be pushed inside the tweeter's module (Photo #7).

Preparing the woofer cabinet. Remove the Styrofoam and the bag covering the woofer cabinet (Photo #8). Attach the four cone feet to the bolts on the bottom and tighten by hand if the speakers will be placed on carpeted floors (Photo #9). Their pointed tips will pierce the carpet and its padding (your weight will help). The tips of the cones unscrew so that you can adjust them for maximum stability. The goal is to stabilize the speakers such that they don't wiggle. If the cabinets can move, you'll notice a poor bass response and vague stereo image.

If the Pico Executive will be placed onto a sideboard or credenza, four felt discs are already attached at each corner of the bottom of the woofer cabinet, so the cones shouldn't be necessary. If the speakers are to placed on a hardwood or tile floor, attach the four cones and then place the dimpled discs under them. The cabinets must be stable for the best sound.

Photo #5
Carefully lift out the midrange and tweeter modules. Lay them on their sides on either the carpet or a soft towel in order to connect them with the cap screws.

Photo #6
Then lay them on their backs to insert the tweeter into its channel and complete the connection process.

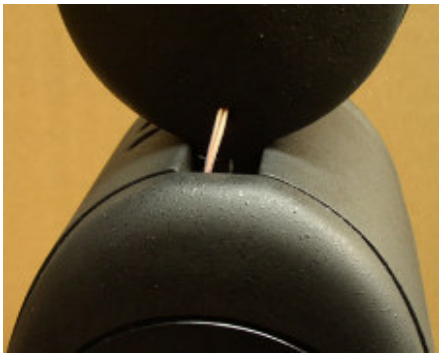


Photo #7
When finished, any excess tweeter wires can be pushed up inside its housing.

Photo #8
Remove the Styrofoam and woofer cabinet and then the plastic bag.

Photo #9
Install the cone feet if the speaker is to be placed on carpeted floors.

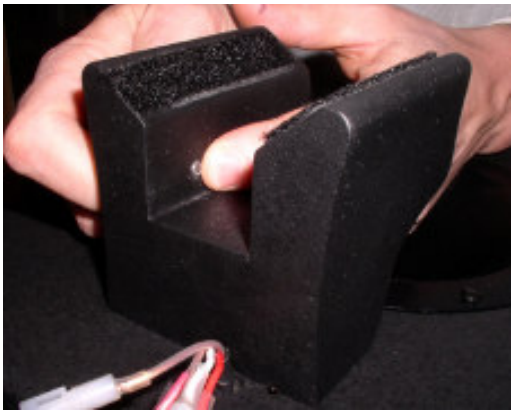


Photo #10
Thread two cap screws into the side of the woofer's marble pedestal.

Connecting the modules to the woofer cabinet. Thread two of the cap screws by hand into the holes on the side of the marble pedestal on top of the woofer cabinet, until they just begin to come through the inside edge of the large slot (Photo #10). Now lift the midrange and tweeter modules and carefully place them straight down onto the pedestal's large slot (Photo #11). Support the modules with one hand and, using the wrench, tighten the two screws into the mid-module's aluminum channel (Photo #12). Don't tighten those two screws more than just moderately snug for now. Never allow those screws to tighten against black marble -- they must stay always inside the aluminum channel. Finally, connect the four wires coming out of the woofer cabinet to the matching four wires from the midrange module -- solid-red to solid-red, white to white, clear/copper to clear/copper, and red-marked clear/copper to red-marked clear/copper (Photo #13).

Connecting to the amplifier. These are 4 Ohm speakers -- which may matter to your amplifier -- consult the amplifier's owner's guide to be sure. Connect the positive (+) and negative (-) terminals using a 7/16" nut driver to tighten the binding posts. 'Finger-tight' isn't good enough. There are holes for bare wire. We don't recommend using banana plugs -- while they're used for a 'quick-change' among speakers, they don't make the best connection.

Photo #11
Place the mid-tweeter modules straight down into the woofer pedestal's slot.

Photo #12
Support the modules with one hand while tightening the screws to "moderately-snug."

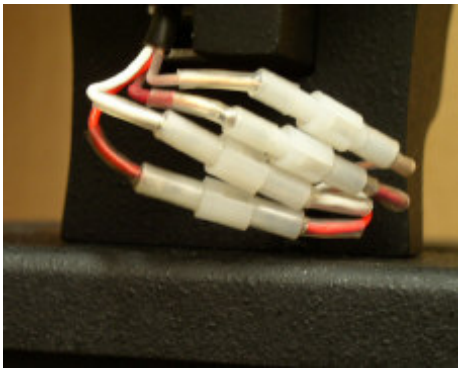


Photo #13
Connect like wires with their mates. These are 4 Ohm speakers, which may matter to your amplifier.

NOTE: Speakers have been designed for the woofer grille to be left in place.

Conditioning

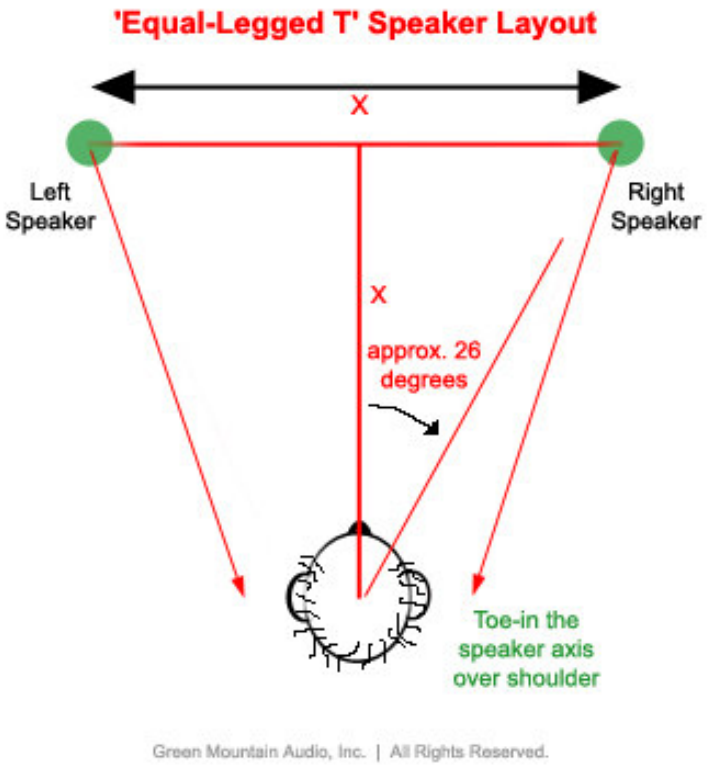
1. Determine if you want to continue to set-up the speakers -- and condition them over time in their final positions -- or condition them over the next couple of weeks before continuing with setup. Whatever your decision, fully condition the drivers before fine-tuning the speakers' positions. The speakers need 200 hours of conditioning to loosen up the drivers. Although they will sound fabulous right out-of-the-box, you will hear improved sound, even at very soft volumes, after conditioning. The bass will most especially sound better. Over time, music will become more graceful and even less-mechanical sounding.

2a. Play music at moderately-loud levels (30 Watts) and above 50 Watts as often as possible. Music should span a wide range of tones and dynamic contrasts. As a guide, at 30 Watts you will have to raise your voice to speak to someone, without having to yell or shout. Remember to slowly increase the volume. The woofer needs music with strong bass; the tweeter requires piano and saxophone. Play a variety of rock, reggae, country, pop, jazz, and R&B.

2b. If loudness during the break-in process is an issue, consider wiring the speakers 'out-of-phase,' also known as inverting one speaker's polarity. Determine which setting on your amplifier's volume creates the moderately-loud volume required for successful conditioning. Mark that position of the volume knob with a piece of tape now. Then turn the speakers face-to-face, not quite touching each other (they may be set on the floor). With the amplifier off, switch the speaker wires on the back of one of the speakers (connect the positive wire to the negative terminal, and the negative wire to the positive terminal). This 'inverted polarity' will cause the speakers to cancel much of their sonic output. Set the amplifier's volume to that moderately-loud setting that was marked with tape. Play the speakers for 200 hours.

Speakers will sound best when... You are not wearing eyeglasses and are seated in a low-backed sofa or chair; there is carpet on the floor, no coffee table or ottoman between you and the speakers, and no TV screen or equipment rack between them (unless far behind and/or speakers are more than 15' {5m} apart); the control center and CD/DVD player are always on; a power amplifier is warmed-up for a half-hour; and all cable connections are regularly cleaned with isopropyl alcohol.

Positioning and adjusting



We developed the 'Equal-Legged T' from years of experiments in rooms from 10- to 100' wide. Since visual acuity for the fixed eye "falls off" at the 53-degree span, we believe a link exists between the point at which our peripheral vision "falls off" and our keenest sense of hearing begins. This layout allows images to develop outside of the speakers' boundaries, if such information is in the recording. Separate the outboard rear corners of the speakers by a distance, "X." Your chair will be the same distance "X" from the mid-point of that line between the speakers. On your left, the dotted line indicates how the speaker's sound axis must be directed over your shoulder, not into your ear. You will see approximately 1" of the enclosures' sides when sitting in a listening chair. If the loudness of any center reflections is a factor -- for example, from the television, an entertainment center, or bare walls that are close to and in between the speakers -- do not toe-in the speakers as much. In some rooms, it is better to sit back a little farther, thus making the triangle narrower. Trust your ears. See *Using the EarSticks* to set the tweeter's final position for where you spend most of your time. Adjust it for the best seat in the middle, or for guests who are far from the speakers. In this latter case, the sound will certainly better for your entire room. The music can then be played very softly and yet have a much greater effect.

Speaker care

Liberally spray the speaker cabinets using only the aerosol-version of Lemon Pledge, made by Johnson Wax. Rub with a paper towel or lint-free cloth. Polish using a second clean and dry paper towel or cloth. Gently vacuum the woofer grille. To clean and condition the leather panels, use the accessory leather lotion or other such top-quality product. Apply it every month for the first few months and then as needed. The panels are removable and marked for proper replacement onto the cabinets. Their back edges should be flush with the back face of the wood cabinet and also centered between the upper and lower edges of the cabinet in order to properly line up with the Velcro tabs. To dust the tweeter and midrange drivers, use the soft accessory brush or a canned air spray.

Using the EarSticks

Needed: Camera tripod, Tape measure, Helper, Paper, Pen or pencil

1. Insert the long rod of the EarStick to the mounting block, and then attach the extension block and the short rod, as shown. With the EarStick attached to the tripod, sit with your ear in its relaxed, natural location. Place the short end of the rod so that it almost touches that ear. Slide away from it and stand up. Whichever ear you chose for the EarStick's placement, remove that side's woofer grille **now** (snap it off, beginning at the top; there is no 'up' or 'down').

2. Ask a helper to hold a tape measure at the end of the short stick (where you were just sitting) as you walk across to the speaker with the hook-end of the tape. Place it against the center of the woofer's dustcap. Have the helper tightly pull the tape to eliminate any slack. The helper should read the measurement (by holding the tape underneath the tip of the stick and leaning over it to look straight down onto the tape) and write it down.

3. The helper will then add 3 1/16" (78mm) to the woofer distance and locate this new number on the tape while you hold the hook-end to the tip of the midrange's phase plug (at its center). Loosen the two screws on the side of the midrange pedestal and move it back and forth until that distance is met. The module may try to creep forward when you tighten those screws. If so, tighten the rear bolt first. Tighten it to a modest two-finger torque. Check the tightness the next day and every few weeks until you are certain the bolts will remain snug.

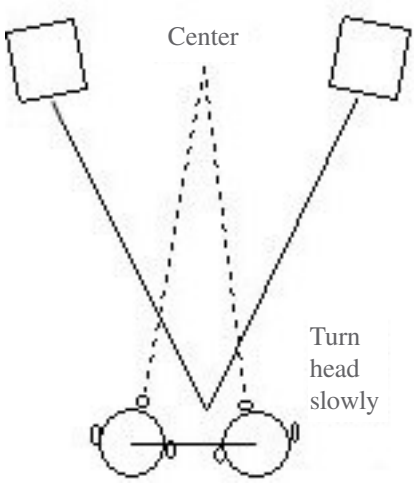
4. To this midrange distance, now add 2" (51mm). This distance is from where you were sitting to the tweeter's dome. Loosen that module's two screws and slide the tweeter until that distance is met. Again, tighten using only a modest two-finger torque.

5. Set the other speaker to match without using the EarStick. Simply measure the amount of cast marble/aluminum channel protruding from the front or the rear of the midrange module's mounting pedestal and set the other speaker to match. Measure the distance between the tweeter's cast marble/aluminum channel to the back of the midrange module's faceplate. Set the other speaker to match.

6. Measure 15' (5m) or more away from the woofer and add the midrange's and tweeter's offsets to provide better sound at lower volumes while entertaining. Record these numbers for reference.

Fine-tuning the sound

1. Setting the Center Image. With the speakers an equal distance from the wall behind, locate your chair on the exact center line between them. Houses aren't perfectly square…use a tape measure if needed. Sit in your center seat and listen to the center image of a not-too-complex recording. Close your eyes and locate its origin. Once you can literally point to the center image, check BY EAR for equal acoustic distance to the speakers. Move your shoulders left and right -- as if you were sliding on the sofa -- while your nose is pointed to the geometric center. Close your eyes (no eyeglasses), and slowly move sideways while rotating your head. The center point of your head will not move much at all. The correct angle has the most 'depth of center image.' If you are looking at the right speaker, rotate your chair very slightly to the left.



2. Fine-tuning the Tweeter's Position. This stage of fine-tuning will depend upon your ears and can only occur once the speakers are completely at home in your environment and your ears have been re-trained to our acoustically-correct sound quality. Those driver distances -- as determined by the EarSticks -- may vary a little for your particular system. We think it is because of the phase shift and resonances in your cables, CD player, preamplifier, and amplifier, in that order. Check for the 'best' tweeter position by either slumping down a little or sitting up higher in your chair. These changes in posture will help you listen for the desired result of a pinpoint image, located at the height of the midrange driver. You don't want to hear the treble coming out at the tweeter's height -- it should come from the midrange's height. You don't want to hear bass coming from the woofer's height -- it should come from the midrange's height. You will also hear the most 'depth' to the image and the clearest enuciation of words. While all those are 'audiophile' attributes, this step is really about you hearing the most muscianship. **For the midrange/woofer alignment**. Remove eyeglasses, footstools, and coffee tables before you begin. Listen to music which includes either the lower-range male voice, the left-hand of a piano, lower notes of the acoustic guitar, viola, or cello, or the higher notes of a double bass or the tom-tom. Repeat the 'slumping' motion described earlier and listen for the resulting pinpoint in this lower-midrange tone-range. If you've slumped down / sit high -- even an inch -- and find that the pinpoint effect is actually better (with more clarity, naturalness, and with a deeper recorded ambience), then the midrange is perhaps 3/8" too close / too far away when you sit back up. Loosen the appropriate screws to move it that 3/8" away from / closer to you. After making your adjustments to the midrange location, sit back and enjoy hearing directly into the wood of the instruments and the singer's chest and throat. You can then easily estimate the depth of the concert hall and hear the most musicianship. **For the midrange/tweeter alignment.** Listen to a song that includes voice, applause, acoustic guitar, piano, violins, and/or horns -- half midrange/half tweeter sounds -- and close your eyes. After at least 30 seconds, try to pinpoint the exact location of the artist using your eyes behind your closed eyelids. Does the tweeter's sound separate from, or blend with, the midrange's location (midrange's height) when you move up and down in your chair? If so, move it in the same manner as above. **Note**: Hold the sculpture with one hand while you loosen the screws with the other.

Setting up a home theater

A believable surround-sound experience means that the five speakers around you blend to create a realistic acoustic world. Studios place surround monitors 90 to 120 degrees to the left and right -- at ear level or slightly above -- but then, the studios have no walls near their monitors. You do, and they add reflections. That same span allows your sidewall reflections to create 'holes in the side images,' just as moving the front speakers too far apart creates a hole in the middle. For a smooth blend between the surround and front channels, we suggest you try the following technique for identifying and closing up any holes in your room's sonic image. This setup will close any gaps to create a continuous, sonic arc that encompasses your visual field.

1. Ordinarily, this step would be the point at which you would want to position your speakers using our 'Equal-Legged T.' For a home theater, a strong center reflection may be a factor -- for example, the television. You would then not toe-in the speakers as much, or widen their separation (to get them away from the television screen). You would also then sit a little farther away to preserve your same triangle. The 'Equal-Legged T' layout is as wide apart as you would ever want to place the speakers.

2. Use a music DVD, such as the Eagles' Hell Freezes Over (in DTS), as it is panned evenly to all five speakers, and try the surround speakers along the side walls, where they are slightly in front of you by 5-10 degrees. Place them below your ear height, tilted up. When the surround speakers are properly placed, your room will disappear in every direction because you will be hearing the sounds from the recording instead of the reflections from side walls.

3. When all five speakers have been placed, including the center channel, it is important to make them all the same 'acoustic distance' from your ears. If the center speaker must be closer, then time-delay it to 'move it back' (one millisecond per 13.5" {34cm} of distance). Studios place their surround monitors at the same distance from the ear as the left, center, and right, and thus do not add any time delay to any particular speaker. If your speakers must also be closer to your ears than the distance to your main left and right speakers, then time-delay them to move them 'back' to the same 'listening distance' as to the front left and right speakers. On top of that delay, add another 5msec delay to the surround speakers for reproducing the older Dolby Pro-Logic and Dolby Surround movies. Some control centers automatically add this extra delay when decoding those movies.

Any of our floorstanding and bookshelf/compact speakers can be used in a surround-sound application. For the center channel, one would use Aperture. If you are using our Hammer Lite subwoofer, try to assign it just the full range of the Low Frequency Effects channel (LFE), or the '0.1' channel. For bass augmentation of Eos for two-channel music, the preferred crossover slopes are 24dB per octave for the Hammer Lite, and 12dB per octave for the Eos at a crossover point of 80Hz. These are also the usual settings for a 'THX' crossover circuit found in some control centers.

GREEN MOUNTAIN AUDIO

time-coherent speakers designed by advanced physics

Happy Ears for Life™

RETAIN YOUR RECEIPT AS PROOF OF PURCHASE.

Place / Date of Purchase

Serial Numbers

Warranty assistance

Contact your Retailer, or GMA:
help AT GreenMountainAudio.com
(719) 636-2500

Secondary owners

As of July 1, 2007, this warranty is unavailable for speakers purchased on the secondary market unless they are re-certified by either GMA Factory Service or a GMA Authorized Service Center. Contact us for details.

We are passionate about our speakers and warrant their workmanship and sonic performance for life to the original owner only after we receive the warranty registration card and a copy of the original bill of sale. The warranty registration card and receipt copy must be mailed to GMA within 30 days of the original purchase. What this means: 1. You will pay nothing for labor and parts for defects in our workmanship. 2. Perfect speakers are shipped, ready to perform to their specifications for life.

The warranty described on this page shall be in lieu of any other warranty, expressed or implied, including, but not limited to, any implied warranty of merchantability or fitness for a particular purpose. There are no warranties which exceed beyond those described in this document.

Because of factors beyond our control, our warranty only covers use for and in a home environment. It does not cover damage that occurs in any shipment; failures caused by accident, misuse, abuse, neglect, mishandling, misapplication, alteration, or modification; commercial use or service by anyone other than a GMA Authorized Service Center or GMA Factory Service; or any damage to either the speakers or custom packing and shipping materials that is attributable to Mother Nature, either to the speakers or to the custom packing and shipping materials. We determine and manage these incidents on a case-by-case basis. We reserve the right to either replace or upgrade the affected speaker(s) at our discretion. Serial Number labels that are defaced, altered or removed will automatically void this warranty, as does any disassembly or modification of the speakers.

If you choose not to retain and store the original custom shipping materials and your speakers need service under this warranty, we will sell and ship to you any missing custom packing materials so that you can re-pack and ship the speakers to us. Depending upon the model, the materials may cost up to several hundred dollars to replace. Only speakers shipped in original custom packing materials and according to delivery parameters will be serviced. The customer is responsible for all shipping costs to and from GMA. You are responsible for filing claims for shipping damages during transit to and from GMA.

There are no implied warranties and there are no express warranties except as described. Neither Green Mountain Audio nor any of its successors shall not be liable for incidental or consequential damages resulting from the use of this product, or arising out of any breach of this warranty, which is valid only for products sold in North America. Speakers purchased for use outside North America are warranted for five years or as determined by GMA Authorized Agents.

Return this Warranty Registration within 30 days of purchase

To receive Happy Ears for Life™ send this form and a copy of the bill of sale within 30 days of purchase to:
GMA-Warranty, 3333-D North El Paso Street, Colorado Springs, CO 80907

REQUIRED FOR PRODUCT REGISTRATION

The information below will be treated according to our strict Privacy Policy. We will never sell your name or compile a mailing list for sale.

1. Pico Executive HD Serial Numbers:

2. Place of purchase:

3. Name:

4. Address:

5. City:

6. State/Province:

7. Zip/Postal Code:

8. Country:

9. Telephone (area code first):

10. Primary email:

11. May we send occasional email? Y N

12. Age group: 18-25 26-34 35-44 45-54 55+

13. Gender: M F

14. Highest education: High school Some college College/university degree Master's degree Ph.D. Other

VOLUNTARY

Answer as many of the following questions as you wish. Use additional paper if needed. All information will be treated according to our strict Privacy Policy.

1. Previously owned GMA speakers? Y N

2. Reason(s) for choosing GMA speakers?

3. Other brand(s)/models that were considered?

4. Brand(s) the new GMA speakers will replace?

5. Intended use for the new GMA speakers (two-channel, multi-channel home theater, TV, etc.)?

6. One aspect you would improve about GMA speakers:

7. Married? Single?

7a. If married, was "wife acceptance factor" an issue? Y N

8. Own home? Rent?

9. Room size where the speakers will be used?

10. First learned of GMA (friend, audio forums, Google, etc.)?

11. List five favorite websites, newspapers, TV and radio stations:

12. List upstream system components (use additional paper if needed):