MG Audio Cables – An Education in Sound

Planus AG2 (Pure Silver Revision 2) Interconnect
List Price: $1600 for 1 meter or $2500 for 1.5 meter pair
Planus III AG (Pure Silver) Speaker Cable
List Price: 6 foot pair $3,000, 8 foot pair $4,000, 10 foot pair $5,000

Review by
Brian Boehler

Stereomojo introduced MG Audio to the audio community at large in April 2012. My conclusion along with supporting documentation from Marvin Bolden and James Darby was that the cable set was magical and I ended up using the Planus II and Planus AG as my reference cables. Needless to say, I was delighted and impressed with the results in my system.

Over the past year, I have been on a fascinating audio discovery/journey along with the owners of MG Audio as they shared their development and improvement process and what in the cable design process made a real world audible difference. On the surface this can sound rather mundane. Nevertheless, trust me when I tell you it was a very educational process for me and I discovered things I would have never believed and frankly would have poo pooed in the past.

Let me take you on this journey and share my experiences and new found knowledge. Not long after Stereomojo broke the world's first review of MG Audio, you saw multiple reviews pop up across many of

the audio webzines. Every one of the reviews agreed the cables were extraordinary and a tremendous value compared to their competition.

After the elation of praise wound down and sales had taken a very positive leap, the principals of MG Audio started talking about how they might improve their product and take the next step. They believed they had nailed the low end of their product line but felt there were further opportunities at the high end. As long time audiophiles and aspiring audio businessmen, they wanted to see what they could do without the typical budget constraints.

From day one, MG Audio has been committed to flat audio foils as opposed to round, rectangular, or square wires. They believe there is a magic to the foil topology which can't be duplicated in other wire types. The proof, as they say, is in the pudding and I would offer many positive reviews that bear out their basic engineering approach and validates their assumptions.

Greg Graff and Lee Matuszczak worked to optimize their cable materials and geometry to implement new concepts to see what results they could achieve. Many of the new concepts could not be modeled in software or be accomplished with empirical reviews but only through good old fashion trial and error by building the concepts one after the other. This is a very expensive and time consuming process. I watched them go down this path and try multiple configurations at tremendous cost to MG Audio. I think it would be safe to say they poured a majority of their profits after supporting shows, their customers, and stock back into research and development. While they would like to enjoy some benefits of their work, their desire to push the envelope resulted in all of the dollars going right back into research, development and prototypes for engineering evaluation and listening tests.

Electrical & Relevant Parameters in Cables

In order to understand why cables can sound so different and why everyone has a favorite flavor, you need to have a basic knowledge of what makes up a wire. I'm not talking about the actual wire or weave or dielectric, rather the electrical parameters as a result of the design choices. Here is an extremely simplified description of electrical parameters of cables.

- Inductance: Inductance in a speaker cable is largely determined by the area or spacing between the conductors. Many speaker cables have conductors which run side by side ("twin-lead"). These conductors are separated by a small distance, so have low to moderate inductance... a good thing.

- Capacitance: Capacitance is also largely a function of how close the conductors are to one another. Wires which are close to one another generally have high capacitance... generally a bad thing. Note: this is just the opposite wire configuration from what we need for low inductance.

- Resistance: Resistance is the tendency for the wire in a cable to oppose the flow of current. Most cables are designed to have low resistance so they don't significantly reduce the damping factor of the amplifier or result in excessive power loss within the wire itself.

    - Skin Effect: Skin effect can be thought of as a special case of resistance. As the frequency of a signal in a wire increases, the signal begins to travel along the outside of

the wire (the skin) more than it does through the center of the wire. This has the effect of reducing the size (or effective gauge) of the wire since current flow is no longer uniform in the wire, it now travels along the surface or skin of the wire.

The use of large flat foils in the MG Audio products does help to reduce skin effect since there is significantly more surface area (skin) for the signal to travel along at high frequencies than an equivalent gauge round wire. At low frequencies this shouldn't be too important since the signal travels uniformly through the entire cross section of the wire, regardless of its shape. In spite of this, I hear an improved bass response, a sense of speed and no overhang like I get in round wire.

The interaction of these three parameters can have a profound influence on what you ultimately hear as music in your room. There is no one right formula for designing a cable around the interaction of these parameters. Greg and Lee looked at their designs and set about optimizing various parameters of their cables.

New Ideas to Explore

MG Audio started looking at copper and silver and if a combination of the two materials could produce a synergistic effect by incorporating the best attributes of both materials. So what is the right formula for combining the materials? 20% silver and 80% copper or just the opposite or something in-between? Does the desired affect seem the same in both interconnects and speaker wire? Where to start? Lots of built pairs of interconnect and speaker wire and lots of listening. All worked well to some degree although some were deemed subjectively better than others. Buy why? In the end they abandoned this idea and decided to concentrate on other engineering parameters.

They started experimenting with a combination of foil materials, foil thicknesses, foil widths, dielectric material, the mastic/adhesive which bonds the foil and dielectric together, spacing of the positive and negative runs and the re-enforcement of the pressure points which could get damaged in rougher handling. Last but not least, they wanted a good looking product which everyone would be proud to own.

Based on my initial review, I stated MG Audio products focused on value, solid design, and high grade materials with minimal marketing and engineering snake oil. I think they have succeeded very nicely and kept the focus on solid engineering, great value for your dollar and innovative solutions.

What is MG Audio Planus III and Why Do You Care?

After the initial Stereomojo review, MG Audio introduced Planus III (copper – not silver) which was a wider and thinner copper foil speaker cable. While somewhat imposing visually, it essentially upped the ante nicely for the speaker cable and provided better bass integration and a larger soundstage. I really liked the overall improvement and replaced the Planus II with the new Planus III. Current pricing for Planus III; 6 foot pair $1,500, 8 foot pair $1,900, 10 foot pair $2,300. I wanted to share this information because they used the basic geometry of Planus III (Copper) to model and launch Planus III AG (Silver). So what have they wrought with all of this hard work and experimenting?

New MG Audio Reference Product

So what has MG Audio been up to and what are the latest products I have observed them labor over for the past year? In the initial review, I stated I was going with the Planus AG interconnect since I found the silver pretty magical in my system. MG Audio thought it might be interesting to build a prototype set of silver (AG) speaker cables based on the design brief/geometry of the Planus III. During this ensuing period they played with the dielectric thickness and the mastic which bonded the foil to the Teflon (PTFE) dielectric material. Without giving away any trade secrets, they varied the thickness of the dielectric material, the type of mastic and the thickness of the foil. Width of the foil is a function of the thickness of the foil based on maintaining a certain gauge of equivalent wire.

The silver foil is specially made for them since getting 99.99% silver foil in the thicknesses they are dealing with is not a standard stock item from suppliers. This was a very expensive undertaking and resulted in a large outlay of dollars to reach the minimum order. They also had stocking costs associated with the materials which is also not inexpensive. Now here comes the part of the review where you can call me crazy and tell me I need a hearing aid. During all of the various listening tests I found the following results which made me scratch my head in confusion:

- Different PTFE/Teflon formulations from various vendors have a different sound? Yes, you read this right; I have heard in my own system the differences in formulations and manufacturers. I can clearly demonstrate to myself some are more musically right and others are slightly diffuse and unmusical. Hmmmmpf! Go figure!
- Different mastics/adhesives have a different sound. The one adhesive which is the most friendly to work with is not the best sounding. If the foil isn't laid extremely carefully then it can kink or not lay perfectly flat. One of the mastics will release the foil if handled carefully and allow some minor reprocessing. The mastic which sounds the best is very unforgiving. If you have a slight kink or lay the foil off just a little, good luck doing any rework/repair. I could tell a difference on both the interconnect and the speaker wire. The problem for MG Audio is the work effort/hours and fall-out of bad product both increased fairly dramatically. This led them to use the "special" mastic on the interconnects and not on the speaker wire. The difference is real, although frankly we are down in the minutia from a sound standpoint for most people and systems.

MG Audio currently offers one statement interconnect and one statement speaker cable. The Planus III AG speaker cable is their statement level speaker wire. A 6 foot pair runs $3,000; 8 foot pair - $4,000 and 10 foot pair - $5,000. For pure silver this is really inexpensive. Notice I didn't say cheap but inexpensive compared to pure silver speaker cable sets out there today from other manufacturers. I have seen the manpower and effort required to build a set of cables and seen their cost structure and mark-up. Trust me when I tell everyone you are getting a steal. Oh, I almost forgot to tell you the speaker wire is hand laid versus an automated fabrication process. Think how much extra effort it takes and tell me their pricing isn't amazing!

For the interconnect, MG Audio offers the Planus AG2 (Silver) and update to the AG based on what they learned through trial & error and processes discovered building the Planus III AG speaker cable. The Planus AG2 Interconnect for a 1 meter pair is $1,600 and a 1.5 meter pair is $2,500. The AG2 has the revised geometry compared to the AG which I have been using and the "special" mastic on the interconnect. Is it better? Most definitely! It removed a layer of very light haze I didn't even know existed. The openness and clarity are simply stunning.

Sound Quality – Planus AG2 Interconnect

I will start with the Planus AG (original silver interconnect) versus Planus AG2 interconnect cable. Both are silver although the revised geometry and adhesive makes a difference in the final sound quality. If you remember my original review, I thought the Planus AG was magical revealing some extra detail and transparency in the right system. I did point out Planus AG could ride a fine line between musicality and what many would call "silver sheen". I'm not talking about the obvious bright silver sound or extra detail which can border on too much of a good thing. If your speaker and equipment are on the verge of being bright or not well balanced in the upper octaves, this cable might take it over the edge. Now we have a frame of reference for the Planus AG so what does the new Planus AG2 interconnect cable bring to the party? What subjective changes are manifest with this newly revised geometry?

Planus AG2 takes the music to the next higher level with enhanced refinement air/ambience, and detail. Planus AG2 is more detailed and clear while also being smoother in a musical sense. The AG2 has no nasty peaks or "sheen" normally associated with silver. The key to the Planus AG2 is you hear greater detail and further into the musical landscape including at the same time an overall smoother presentation. Think of a very slightly dirty window versus a recently cleaned window side by side. Until you see the recently cleaned window you don't recognize the other window as slightly dirty. Planus AG2 removed a layer of haze allowing me to hear more clearly into and around the musical performance. I found the leading edge and the natural decay more in balance than Planus AG. Overall, I found the difference to be musically important and a good investment in revealing more detail in a pleasing and musical way. The easiest way to share my listening experience is to say I listened to music I have cherished for decades and found new revealed details and ambience I have never heard before. What more could I ask for from an audio interconnect?

Sound Quality – Planus III AG Speaker Cable Set

The new Planus III AG uses 99.99% pure silver foil for the conductor and a new PTFE (Teflon) tape formulation for the dielectric, the same formulation used in AG2. So does the silver speaker cable mirror some of the magic we discovered with Planus AG versus Planus CU? Is the cost benefit analysis reasonable or a stretch?

The Planus III (copper) speaker cable I currently have was used to compare with the Planus III AG. What differences did I hear and at what price? I was honestly a little shocked at what I heard. The differences could be considered "subtle" and "minor" in nature although frankly you would be missing the point. Planus III AG opened a window on the sound space which was:

- More transparent – clearer sound and hear deeper into and around the sound space
- More natural and balanced – enhanced pace and timing of musical flow
- Better soundstage - wider, deeper and more three-dimensional
- Blacker background – perceived noise floor is lower than the Planus III (copper)
- Enhanced dynamic shading – scale between quiet & loud is much more delineated / gradated
- Enhanced bass transient attack – proper weight/speed with no bloat or overhang
- Better decay of sounds – much closer to what a tube amplifier does to provide decay
- Extended high frequency content – without nasty edge/glare

It should be apparent I heard differences, however, at what cost? Essentially we are talking double the price for an equivalent run of Planus III AG compared to Planus III. All of the differences I have outlined above are "subtle" although added together they create a superior sounding product. So what you really want to know is the Planus III AG worth the price difference? It depends on your system and your willingness to spend relatively large on cables. Anytime we get to the state-of-the-art or more correctly the edge-of-the-art it is generally for people who demand the absolute best performance in spite of the cost. To this end, the Planus III AG is a remarkable product which can reveal your music in a way which might astound you. If I had to rate the two products on a bang for the buck comparison, I would give the nod to the Planus III as it gives you ~85% of the performance for 1/2 the price. If I had to rate the two products on an absolute basis the Planus III AG would be the clear winner. I believe the cost difference is justified and pretty spectacular from a musical perspective.

MG Audio demonstrated these two statement products at RMAF 2013. The results were excellent. Nonetheless, as in all show environments, it might not be obvious if you were not seeking them out for these specific statement products. They also showed at THE Show in Vegas and received very positive feedback.

At the end of the day, the combination of these two products opened a window I found magical for the music in my system and a couple of other systems I put the products into. A combination of the two products will set you back $4,600 dollars and up depending on your length requirements. Price of entry is not cheap, although at the same time I can list a whole bunch of companies which charge these prices for copper and a whole lot more for silver products which are round and not foil.

If you are in the market for these type and cost of products you should check out the MG Audio Statement Products in your own system. I have never heard a change of another individual component which could wrought such musical satisfaction.
Excellent job by MG Audio!