

Project Visaton ARIA - SURFACE FINISH AND FINAL ASSEMBLY:

After completing following steps ...

http://www.upgrade-sound.com/downloads/Instruction_Glue_Assembly.pdf

http://www.upgrade-sound.com/downloads/Instruction_Circular_Grinding.pdf

http://www.upgrade-sound.com/downloads/Instruction_45deg_Chamfer.pdf

... now fill all gaps and dents with suitable wood filler. After drying, grind them smooth. Repeat this several times until no gaps or waviness visible anymore. Make the "finger test" frequently.

Especially if your plan is to spray-paint the surfaces, or use otherwise thin, shiny paint / lacquer, you need to spend good time on this surface smoothing, otherwise you may see even minor "imperfections", scratches afterwards clearly. Use finer sandpaper for the last grinding step, and plan for more grinding steps in-between painting layers.

If your plan is to attach wood veneers or foils, it will cover minor gaps or scratches, and surface roughness is typically no issue.



Try assembly of drivers and crossover board a last time, before proceeding to painting/lacquering. Pre-drill the holes for all the screws.

Pre-paint several times and in-between smooth the surfaces with sandpaper. Finally smooth one more time with finest grade and spray glossy lacquer. This is at least how I did it.



After all is dry and satisfactory, assemble the crossovers into pre-drilled holes.



Solder or crimp-connect the speakers. Make sure you don't ruin the speaker elements, so place some suitable protection underneath. I used the pre-cut carton sheets from the speakers' packing boxes. If you use soldering, remember that the speakers have strong magnets inside!



This is how it looks when finished. The textile-covered cube underneath the center is a subwoofer.



Sound check:

After having tested slightly bigger Visaton 2-way speaker Bijou before (http://www.upgrade-sound.com/downloads/Project_Visaton_Bijou.pdf), I was aware of the capabilities and quality of Visaton drivers and crossover circuitry. So also for Aria I expected nothing else than a breeze.

Of course also Aria can keep the Visaton promise again: Sound is very clear and pleasant, with really no wishes left for the purposes it is designed for: A High-End satellite speaker. Of course for a satellite of this small size, not much low-frequency response should be expected below 75Hz. You can see that from the following measurement graph as well. But after combined with a suitable subwoofer (low pass filtering at around 75...80Hz) the sound stage is very complete and wide. It offers enormous precision and punch without the slightest nervousity. Even without High-pass filtering circuit for the satellites, it is really amazing how these very small pieces of wonder can in a regular size living room handle even louder music and movie material with almost no effort at all.

The Visaton drivers used in Aria:

One reason for sure is the very cleverly designed 10cm driver for mid-low frequencies: TI100. It not only looks very elegant with its titanium cone, relatively massive surround and the shiny phaseplug. Anyway that is only the front appearance – on the backside note the huge double magnets, the wide-open basket and ventilated dampers for low mechanical loss.

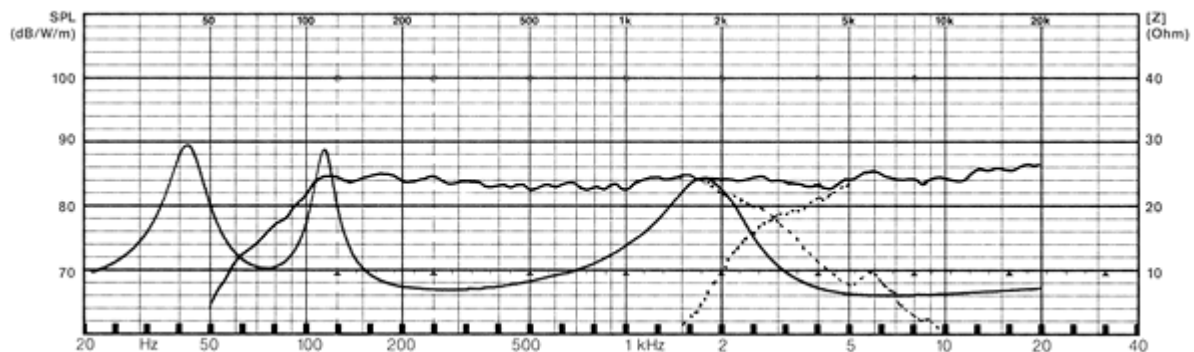
This combination stiff and ultralight titanium cone and long low-loss stroke secure minimal distortions even at respective dB levels. But also the frequency response makes this perfect for two-way projects like this Aria.

The G20SC textile dome tweeter is one of the mostly used tweeters in Visaton loudspeaker building suggestions. The reason for this success: Nice smooth response from around 2.7kHz to far beyond 20kHz, again very low distortions, no disturbing resonances and excellent omnidirectional response, yet very attractive price. This tweeter was simply a perfect hit of Visaton.

Consequently, not much crossover circuitry is needed for Aria. It confirms the simple and straightforward design. The readily assembled circuit PWB consists of only 2 air coils, two MKT capacitors and two ceramic resistors. All is high-quality selected material á la Visaton.

With all this simple perfection, a pure audiophile performance satellite speaker with low distortion from below 100Hz to almost 30kHz is the result.

Here is the measurement graph of this ARIA loudspeaker from Visaton anechoic chamber:



More technical data, construction drawings and further infos can be found here:

http://www.visaton.com/en/bauvorschlaege/2_wege/aria/index.html

For the speaker stands in above image I used granite flooring blocks (12.50Eur each) and ventilation pipes (about 10Eur/m). You could as well use carton pipes (acoustically better). Some wooden fitting/joint pieces cut to shape of the pipes are adding needed strength to the joints. These are glued to the granite surfaces before any lacquering, by same "all-purpose adhesive" as shown in the beginning of this project. Then lacquer each granites and pipes separately. Finally attach the pipes, again using feasible adhesive.

Pipes should be filled with acoustic damping material, e.g. sand or bitumen. Another "cheap" way is to stuff leftover foam, cloth or damping wool into the pipes, it reduces resonances a bit less efficiently but it doesn't require money and won't lift the centerpoint of gravity of these speaker stands too much.

Finally the loudspeakers are mounted to the pipe tops by round-shaped, tight fitting wooden pieces, firmly attached to the speakers' bottoms e.g. by screws.

Now I still need to figure out nice and elegant way to protect the speakers from my kids' curious hands.

So this is TB continued... 😊